Community Led Action for Children (CLAC)

Learning Toys Production Guide for Early Learning Programs and Home Play (from Birth to Six Years)

Developed by Amandine Baillet and Deborah Llewellyn for Plan International Australia and supported by Australian Aid.

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Contents

COVER: Children in a Plan-supported early learning program in Uganda use slates to practice writing. Colourful and locally-made posters on the walls make the classroom attractive and help support children's learning.

A boy in Indonesia works on a puzzle made from local materials.

Acknowledgements

Amandine Baillet developed *The Learning Toys Production Guide* to help communities produce learning materials for local children. The guide is a component of the Community Led Action for Children (CLAC) Early Childhood Care and Development (ECCD) toolkit produced by Deborah Llewellyn for Plan International Australia with the support of Australian Aid. Ithelps parents and early childhood facilitators organise the production of quality learning materials for ELPs and the home. It emphasises one of the key themes of the ECCD toolkit: that it is possible for every child living in poverty to experience optimal early learning experiences when the community understands the importance of the early years, and has early childhood tools and resources they can understand and apply.

One of the missing elements in early childhood programs has been the availability of low- or no-cost materials to stimulate children in each phase of early development. Llewellyn developed the initial set of learning materials during 15 years of fieldwork with several Plan International and Save the Children country offices. Special appreciation goes to Save the Children offices in the United States, Bangladesh, Mozambique, Tanzania and Bhutan, and to Plan International offices in Indonesia, Uganda, Bangladesh, Egypt, Ethiopia, Zambia, Bolivia and Timor-Leste for the early work that contributed to the ideas behind toy making for early childhood.From 2008-2012, Llewellyn worked with Katie Ramsay and Nicole Rodger from Plan International Australia to further develop and extensively field test evidenced-based strategies.

Baillet's key references were developed by Deborah Llewellyn and include: *Community Managed Early Learning Programs Curriculum Guide* (2012); *Strengthening Families for Better Early Childhood Outcomes: A Parenting Education Curriculum Guide* (2012); Pro MujerBolivia charts for producing no-cost developmentally appropriate toys (1990); classroom learning toys inventories found in the *Fieldworker's Guide for Early Childhood Development* developed for Save the Children United States (US) (2008); and literacy and board games designs developed for Save the Children Mozambique (2007) and Plan International Australia 2010.

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Defining some key terms

Child development: process during which children go through changes in skills development in a predictable timeframe (developmental milestones). Child development is influenced by many factors, such as health, care and education.

Developmental milestones: skills that a child acquires within a specific timeframe. For example, children learn how to walk between the age of nine and 15 months. Children need to develop certain skills before they can develop new ones. For example, a baby needs to crawl before they can walk.

Physical development: refers to the way children's bodies and muscles grow to increase movement and interaction with the world.

Motor development: the physical growth of children and their ability to develop their bodies and physical skills. It is also a process by which a child acquires movement patterns and skills.

Gross motor development: the development of large muscle groups in the arms and legs.

Fine motor development: the development of small muscle groups, such as hands and mouth.

Language development: the process during which children come to understand and communicate language. Children learn language as it is spoken and through mimicry. They move from simple language to more complex language. For example, at four months a baby can read lips and discriminate speech and sounds. An infant's language is called babbling. Language starts when children recall simple words associated with meanings. As children grow, words procure meaning with connections between words being formed. Their vocabulary increases as more words are learned.

Cognitive development: the development of thinking skills, memory, information processing, language and other aspects of brain development. Aspects of cognitive development include language and literacy, maths, science, arts, music, and creative expression. Pretend play is very important for the development of cognitive skills.

Social and emotional development: the foundation for cognitive development because children do better if they have a sense of wellbeing, emotional support and secure relationships. In their early years, the main emotional skills that children develop are attachment and trust, and a sense of self-worth. The main social skills that children develop are respect for others and the confidence to communicate their wants and needs. Children with healthy social and emotional skills have: lasting friendships; intimate relationships; care for their own children in the future; the ability to hold jobs; and the ability become productive citizens.

preschool/ECCD centre
These terms are used interchangeably throughout this guide. It is also recognised that different terminology is used in different local or country contexts. The important thing about quality early learning programs (ELPs) as articulated in this guide are that children benefit from an organised, group learning experience in the year or two before primary school. A quality program incorporates a range of activities to draw on children's interests and developmental stages.

preschool: also known as pre-primary class or kindergarten, is often associated with formal programs hosted/co-located at the primary school. One preconception might be that children 'learn' their alphabet and numbers in the preschool, and that learning is conducted at desks or tables with the teacher and blackboard as the prominent learning tools. In preschools that are co-located with a primary school, the teacher might be required to achieve a credential and, in most cases, is a qualified primary school teacher with a relevant teaching qualification. Formal preschools are more likely to charge fees and require uniforms, which brings up equity issues.

ECCD centre: this is often associated with non-formal learning programs organised and managed by the community. These centres might receive assistance from a service provider such as a non-government organisation (NGO) or church. One preconception is that these programs are play-based, with songs, games and stories dominating the curriculum, with little academic learning (such as the alphabet and numbers). ECCD centres are usually facilitated by a community member who has at least a Year 8 education, but rarely a university degree or official teaching certificate.

The Community Led Action for Children (CLAC) program envisions a future where quality of learning is improved in formal (i.e. preschool) and non-formal settings (i.e. ECCD centres) to include an array of stimulating activities and materials that produce measured growth in four development areas and enable children to begin school ready to succeed. Teacher training will be directed to the knowledge and skills required to ensure development and learning in young children, aged from four to six. 'Preschools' and 'ECCD centres' can work as a team to provide the same quality of learning and care to every child. In this way, those children who live in remote areas or cannot afford fees often charged at 'preschools' can achieve equitable early learning opportunities. Better and more appreciative collaboration between the community and primary school will occur.

Teachers/caregivers
The terms 'teacher' and 'caregiver' are used interchangeably throughout this guide. However, it is important to acknowledge that there can be differences (real or perceived) between teachers and caregivers that might relate to things like qualifications, remuneration, workplace and teaching and learning techniques used. How young children learn should determine how teachers of young children teach. The word 'teach' implies telling or giving information. But the correct way to teach young children is not to lecture or verbally instruct them. Early childhood teachers are therefore more like guides or facilitators and are often referred to as caregivers, rather than teachers.

Teacher: sometimes the difference between a teacher and a caregiver in an early childhood setting is that the teacher is working within a government system (i.e. formal preschools co-located with primary schools) and is paid by government. A teacher might be focused on children learning their alphabet and numbers and have a more formal classroom set up (tables and chairs).

Caregiver: a caregiver tends to be a community member, paid an honorarium, who works in a non-formal/community managed ECCD centre. Research has shown that, with training and support, community members can become highly effective caregivers. A good caregiver will prepare the environment so that it provides stimulating and challenging materials and activities for children. Effective caregivers watch closely to see what children understand and pose more challenges to push their thinking further.

Ultimately it should not matter whether a person working with young children is called a 'teacher' or 'caregiver'. The CLAC approach aims to improve the skills of people working with children so that the quality of learning and teaching helps children to develop holistically in four areas of child development so they are ready to succeed in school.

Introduction

This guide was produced to encourage early childhood workers and parents to develop educational materials from low-cost, local and recycled materials in settings where there are limited resources. It specifically targets early childhood centre caregivers, preschool and kindergarten teachers, and parents who have the capacity to make materials. It targets children under the age of four with home play materials and pre-schoolers (from four to six years of age) with learning centre materials.

Since the start of 2008, Plan International offices in Indonesia, Ethiopia, Zambia and Uganda have worked in partnership with Plan International Australia to promote the development of a holistic, participatory and low-cost approach to ECCD. The Community Led Action for Children (CLAC) approach aims to adequately support 100 per cent of young children living in economically poor communities to reach their development potential and to achieve school success.

As part of this approach, one of the objectives has been to develop a quality ELP for children aged from four to six years that meets their developmental needs, to ensure wellbeing and school readiness. For Plan International Australia and countries supporting the CLAC approach, a quality ELP is translated into a daily routine in which a significant number of activities, interactions and materials are developed and used to meet child development milestones and curriculum goals.

The daily routine

The daily routine is a crucial component of an ECCD program and supports children to gain the 'must have' skills needed to succeed in school and life. Divided into different scheduled activities, the routine can address a variety of aptitudes throughout the day if it is supported by the development and use of stimulating early learning toys. The suggested daily routine of CLAC offers children a combination of instructional and self-directed play experiences over a period of about three hours that promote competencies such as maths, literacy, and science. Each aspect of the daily routine addresses at least one of the four areas of child development (social and emotional, physical, cognitive and language).

The daily routine includes: a morning meeting (15 minutes); a structured literacy activity (one hour); self-directed play activities, also called corner play (45 minutes); outdoor play activities combined with instructional and self-directed play (30 minutes); a rotating structured maths or parent-led life skills or science activity (30 minutes); and a reflective closing meeting (15 minutes). The scheduled activities help children develop a variety of skills, such as: reading, speaking, writing and listening; maths and problem solving; gross and fine motor; and respect for self and others.

Another component of the CLAC approach is a parenting program that improves the knowledge of parents and primary carers, and builds practical skills to boost child health, learning and protection in the home and in the wider community. One activity parents engage in is the creation of early learning toys to contribute to children's learning and development through play. In ECCD centres and home settings, one goal of CLAC is for community members to understand child development through play, and to link it to the production of low-cost, locally made toys that are safe, attractive and developmentally appropriate. That way, children living in high-poverty and isolated settings can also have access to play-based experiences and learning toys that support their development.

The objective of this guide is to help staff in ELPs, and people with a strong interest in early childhood community development. It aims to help people understand the importance of play for child development and how children can learn through play.

Amandine Baillet developed and tested the methodology during six months of field experience in 2011 while working as an ECCD project facilitator for Plan International Indonesia. Baillet was able to develop stimulating early learning toys for children in Nusa Tenggara Timur (Eastern Indonesia). The

materials produced were for children in low-resource settings to be used at preschool and at home, and were developed to support school readiness. She has seen many positive developments in children's learning outcomes by empowering parents and caregivers to learn and create toys based on child development milestones.

For maximum benefit, it is recommended that this guide be used in conjunction with professional development trainings in ECCD. To allow for application in the field, program staff and trainers have the responsibility to support the groups that are developing the theoretical and practical knowledge found in this guide, and in *Community Managed Early Learning Programs Curriculum Guide* (Llewellyn, 2012) and *Strengthening Families for Better Early Childhood Outcomes: A Parenting Education Curriculum Guide* (Llewellyn, 2012).It is also important that they closely monitor and help caregivers and parents develop their understanding of child development, and of designing, producing and using learning toys in their own environment for positive outcomes. For this, program teams can hold ToT workshops.[1]

Disclaimer: All the toys in this guide have been made by the authors. However, we cannot guarantee that after following the instructions in this guide your toy will look exactly the same as the one pictured, nor that it will have the same functionality. Always be aware of safety issues when making and using toys around children.

Puzzles and games will help these children in Indonesia develop their early literacy and numeracy skills.

[1] Amandine Baillet has developed ToT workshop training outlines, which are not included in this guide. For more information, please contact Plan International Australia.

A. How play influences child development

For the young child, playing and learning is the same thing. Opportunities for early learning and opportunities for play go hand in hand, since learning for the very young child happens best through playful, game-like activity. A child who does not have a variety of opportunities to learn and explore in their infancy and early childhood starts Grade 1 at a distinct disadvantage.

Play is an important means through which children can develop in all areas. It is also a predictor of how well a child is developing. Since children are active learners, play becomes a good way to teach. By observing children's play, adults can learn about the child and find opportunities to support their development. Play provides a context for children to try new social skills and challenging new tasks, and to solve complex problems. Children also express their ideas, thoughts and feelings when engaged in symbolic play (e.g. playing house or market, or building a farm with blocks). They can learn how to control their emotions, interact with others, resolve conflicts, and gain a sense of competence. It also satisfies an innate need for imagination, curiosity and creativity. Therefore child-initiated and caregiver-supported play is an essential component of an effective ELP. It is important not to overlook or undervalue play.

Play enables children to find their place in a culture, and it can provide temporary relief from the hardships they face in day-to-day life. Children who are skilled at play have more power, influence and capacity to create meaningful lives. It builds skills like problem solving, persistence and collaboration that are required throughout life. It also helps them cope with new experiences because a playful attitude enables the mind to explore and remain open to a wide range of possibilities. Play settings are also good places for children to develop an understanding of how communities of people can and should work together. Play is a natural place to integrate academic learning, such as maths, science and literacy.

Children at play learn how to:

- make a plan and follow it through (initiative);
- learn from trial and error, imagination and problem solving;
- apply concepts of quantity, science and movement to real life;
- reason in a logical, analytical manner by acting on objects;
- communicate with classmates and negotiate differences in points of view; and
- derive satisfaction from one's own accomplishments (pride).

Blocks and building toys are important for corner play as part of the block and construction corner. Such materials, enjoyed by a boy in Uganda, help children develop a range of skills, including fine motor skills and problem solving.

B. The science of play

Several influential psychologists conducted a life study into the science of play. These included Jean Piaget, Ken Rubin, Sara Smilansky and Lev Vygotsky.[2]A useful reference for learning about the science of play and specifically the work of these three researchers is *Tools of the Mind – The Vygotskian Approach to Early Childhood Education* by Elena Bodrova and Deborah Leong (2006). Some of the important ideas found in Chapter 10, 'Developmental Accomplishments and the Leading Activity: Preschool and Kindergarten' are summarised in this section.

Children can make playful discoveries about science and maths using water and sand. It develops their measuring, reasoning and analytical skills.

[2] Refer to Chapter 10 in Bodrova, E. and Leong, D. J. (2006), *Tools of the Mind: The Vygotskian Approach to Early Education*, 2nd edition, Prentice Hall, Columbia.

Rubin explained that children's play and the development of social skills and thinking skills go hand in hand. Rubin gave names for the developmental stages of play, as outlined below.

Social categories of play

- Solitary play

The child plays alone with objects that are different from those used by others; there is no verbal communication with others about the play activity.

- Parallel play

The child plays separately at the same activity, at the same time and in the same place and in close physical proximity to another child. The child is aware of the presence of the classmate and this has some meaning for them, but each child is playing separately. There is no sharing or discussion.

- Group play

Child engages in activity with others, in which all members share a common purpose.

Jean Piaget found a relationship between play and a child's growing mental abilities. Piaget described the cognitive categories of play.[1]

Cognitive categories of play

- Functional play

Simple, repetitive muscle movements performed with or without an object. Examples are knocking over blocks, kicking a ball, pouring water, pounding a rock, and skipping rope.

- Symbolic play

When objects stand for other objects. For example, pretending a block is a mobile phone.

- Constructive play

Manipulating objects for the purpose of making or creating something. Examples are a block construction, doing a puzzle, building a sand tower, or drawing a picture.

- Dramatic play

Letting an object or person symbolise a thing or a person it is not. Examples are being the mother or baby, using a block as a hammer, feeding the doll, pretending a block is a truck.

- Games with rules

This includes game-like activities with pre-established rules and limits to which the child conforms. Examples are card games, board games, and tag games. Dramatic play that includes rules and the acting out of a pretend story with others is the most sophisticated play.

The research of Sara Smilansky focused on how children learn through play, and the relationship between play and future academic success. Smilansky found a connection between children who conducted high levels of social/dramatic play and high cognitive performance in primary school.

In the early 1900s, Russian psychologist Lev Vygotsky explained that children need "tools of the mind" to learn. Young children are able to think, attend and remember. The problem is that their thinking, attention and memory are very reactive; the object or activity must hold their attention. Without the acquisition of mental tools this attention-grabbing approach would be the only way for children to acquire information, because children could not direct and focus their attention, memory and problem-solving skills on their own. One of the most important ways that children develop "tools of the mind" is through dramatic play where children learn to manage a self-directed activity so critical in learning. Play is also important because of the social context, which influences how and what we think.

Vygotsky believed that "through the 'what will happen if…'" play process, children learn the method of scientific inquiry – observing and exploring what materials can do, sharing their observations with others, imagining what might be possible, applying prior knowledge, challenging misconceptions, and

solving problems. In play, children use the scientific skills of observing, communicating, comparing, and organising. As Vygotsky imagined it, "In play the child always behaves beyond his average age, above his daily behaviour; in play it is as though he were a head taller than himself."[3]

Researchers today continue to support Vygotsky's findings:

- At four- or five-years-old, a child's ability to play creatively with other children is a better indicator of their future academic success than any other indicator, including their vocabulary, their counting skills, or their knowledge of the alphabet.
- Dramatic play is the training ground where children learn to regulate themselves to conquer their own unruly minds.
- In dramatic play children are guided by the basic principles of life. Make-believe isn't as stimulating and satisfying if players don't stick to their roles. When children follow the rules of make-believe and push one another to follow those rules, they develop important habits of self-control.[4]

C. Commitment to low-cost, locally produced materials

One of the challenges for countries supporting the CLAC approach is the creation of low-cost learning toys that can be locally produced to support the program's curriculum. While there is some experience in developing generic materials, there is less experience in creating materials kits for learning centres and parenting groups that are linked to child development milestones and a daily routine.

Plan's field experiences show that children benefit more from low-cost and locally made learning toys because:

- Learning toys that support development milestones can be easily and abundantly created; children can play with a wide range of them.
- Learning toys and games can be designed and developed in the context of a country or community so that children learn about their own specific environment, community and culture. Locally made learning toys can also support children's learning about the 'outside world'.
- In contrast with bought learning toys, locally produced ones usually offer more extended possibilities for children to learn.
- Learning toy production enables the promotion of gender equality and the inclusion of children with disabilities. Parents and caregivers can consider ways to modify learning toys to support gender-fair play and also to support the inclusion of children with disabilities (see Appendix 1 for information about gender observation tools).
- Supported and guided by caregivers, children can make their own learning toys and games that often give them a sense of achievement, ownership and pride.

As a result, there is a need to demonstrate how a low-cost toy kit can be made and used. Field experience shows that there is a tendency for people to buy expensive, commercially made toys that cannot be replaced or replicated locally and are not developmentally appropriate.

D. How adults support development through play

Play is voluntary, not instructed. However, parents and caregivers can help children learn through play by providing enough time for play and by ensuring that the materials are stimulating for their developmental levels. Opportunities to practice and master specific skills are important. After mastery children often become bored. Novelty, or newness, is needed for the brain to continue its

[3] Ibid.
[4] This section is paraphrased from an article by Paul Tough, "Can the Right Kinds of Play Teach Self-Control?" in *The New York Times Magazine*, 25 September 2009.

development. The caregiver will need to change and add new play materials to increase novelty and stimulate children to try and learn new things.

Therefore the caregiver's role in establishing the environment for play is important. During directed play, the caregiver gives children materials to manipulate and practice concepts. The caregiver asks questions and gives the children problems to solve. During free play, the caregiver is busy observing the children. The caregiver looks for opportunities to talk meaningfully with the children and to ask probing questions that extend their thinking. The caregiver uses the opportunity to reinforce academic skills in literacy, maths and science. They also use the opportunity to develop friendships and cooperative social values between children.

Non-instructional talk

The caregiver has an important job to do during corner play — observing and talking with the children. Responsive stimulation is the cornerstone of any child development program. Non-instructional talk is now known to be one of the most important forces for cognitive development that can be used by parents and caregivers. Responsive communication can foster cognitive and language development. Some suggestions:

1. Hold natural conversations with children and encourage them to talk.
2. Listen to children and respond to what they say.
3. Stimulate them to think and extend their play to a higher level. For example, *Tell me about your block building. What other shape block could you use here? You need some food in your pot. Why don't you eat this pumpkin?* Caregiver hands them a few orange buttons. *Or would you like some other kind of food?* Caregiver hands them the button jar.
4. Add new materials to an area to increase novelty.
5. Avoid gender bias and encourage children to engage with materials in a way that expands or dissolves gender boundaries, or that socialises different aspirations; encourage boys to play house and girls to build with blocks (see Appendix 1 for information about gender observation tools).
6. Sit in one corner with children for about 10 minutes; teach them how to play a game; let them 'pretend 'to read a story to you; observe how children play. When you are sitting in one area, be aware of all the other areas and know when you are needed to help or intervene.

E. The meaning of developmentally appropriate learning toys

Throughout years of research conducted by early childhood and child care professionals, it was found that, in the early years, children experience a series of developmental stages in four areas of child development based on age. Specifically, children develop skills in the four areas of child development at different levels from: birth to one year; one to two years; two to four years; four to six years; and six to eight years.

For example, in the language area of child development, a three-month-old baby's way of communicating is to cry when they are in need of something or someone. Meanwhile, a six-year-old child's main form of communication is to be highly verbal by using words to express their feelings.

The brain develops rapidly from birth to six years, and this development happens in stages. This means the brain benefits from certain kinds of stimulation at different stages. According to scientific research, the kind of stimulation a baby's brain needs to develop is very different to what a six-year-old child's brain needs.

In addition, personality, learning capacity and family background can also affect how children develop. While children commonly gain a set of distinctive skills at particular ages, timing for development might vary from one child to another. This is due, for example, to the levels of stimulation given to

them in their environment, or simply the fact that every child is unique with their own preconditions for developing and learning.

These important findings have improved the way children are cared for during the early years. For example, guidelines on child development milestones have been created for parents, caregivers and community members to use when dealing with children. One component of these guidelines is to provide learning toys and experiences that promote brain stimulation and the mastering of specific skills and knowledge in different areas of child development, at different developmental stages. Learning toys and experiences that are linked to different ages and areas of child development are critical tools to achieve child development milestone outcomes.

When they match a child's age and developmental level, early learning toys and experiences are valuable for learning because they:

1. Are challenging enough tostimulate the child's mind.
2. Offer the right amount of challenge, gradually supporting the child's mastery of skills at a level that is suitable for them.
3. Give children an appreciation for novelty, discovery and the drive to learn about the unknown (ie when a toy is no longer age-appropriate for a child, the child gets bored with it and hasthe desire to expand their learning with new toys, games and other learning experiences).
4. Promote positive experiences, a crucial pathwayto allow the learning process to occur (eg children with the feeling of excitement while playing with a learning material are very likely to focus more and open 'learning doors').
5. Contribute to the achievement of the learning outcomes of an ELP curriculum.

The blocks and building corner helps children, like these boys in Uganda, develop reasoning skills and fine motor coordination during corner play.

F. Learning toy production practices

Children in Uganda are involved in moving and storing the learning materials from their early learning centre in a safe place each night.

Children need concrete materials to manipulate with their hands. They mainly learn from doing, not observing. With this in mind, they need ample supplies of interesting materials to use in creative ways. Innovative caregivers and parents have demonstrated the array of toys that can be made from local, low-cost and recycled materials, such as maths bags, puzzles and board games, puppets and dolls, and wooden blocks. We can go further to ensure that children of poverty have equally attractive and useful materials as those used by more privileged children.

The development and supply of learning toys needs to be more systematic with clear criteria and enough time for production. Learning toys need to match developmental learning goals, support the literacy and maths curriculum, and inspire creative free play. They should be safe, attractive and challenging enough to benefit the child. For example, a puzzle made from a simple line drawing of a cat cut into three pieces is of little interest to a four-year-old. Children like to look at pictures with lots of detail and four-year-olds can easily build puzzles of a dozen or more pieces.

Cardboard boxes can be used to make containers in which to store learning materials and keep pieces together.

New materials are needed to increase novelty. Caregivers can 'make and take' new toys at monthly caregiver development meetings. They can also involve parents in producing the learning

toys, as this is a positive way of involving parents in their children's education that has great positive carry-over effects in the home.

The storage of materials for security and to protect them from the weather must be planned. For open-air preschools, toys can be stored in bags and then placed in a metal trunk in a designated home. Children can be involved in making rules for the use and care of toys. Children can place the materials in each corner before class begins, and can be involved in the clean-up and storage of materials. This teaches children many good life skills, such as self-help and caring for belongings. It also gives them a sense of order and ritual that is very important for development. When caregivers develop their own materials they usually understand them very well, which makes it easier for them to explain to children how to use and care for them.

Things to keep in mind:

1. Choose materials that can be used in many ways, such as blocks or picture cards.
2. If an adequate supply of materials exists, rotate them to increase novelty. For example, one week the 'house play' materials might be in the imagination corner and the next week the 'market play' materials will be there. Bring in new things to generate interest. For example, fresh flowers to draw or sort in the books and pictures corner.
3. Encourage children to invent new ways to use the materials.
4. Materials should be complex enough to interest the age of the children. For example, five-year-olds need nine- to 18-piece puzzles, story books with captivating pictures, and smaller blocks rather than large ones.
5. Questions to ask: Are children bored with the materials? Has the novelty worn off? Are children doing anything new with the materials? Are the toys challenging them to master higher skills? Are children eager to show and tell you about their creations? Are most children happily occupied for one hour?
6. Caregivers can use monthly caregiver development meetings to exchange ideas about the new activities they develop for corner play and any materials that have been of interest to children.

Gender considerations
Socialisation into prescribed gender roles and unequal gender relations starts young. The home and ELP environments are key sites for exploring, challenging and ultimately transforming gender norms. Without consciously gender-transformative ECCD programming, learning outcomes and opportunities, particularly for girls, but also for boys, will continue to be constrained by gender inequality.

Many parents and caregivers justify differential treatment of boys and girls on the grounds that children have natural 'talents' or tendencies which are gender-delineated and understood to arise from natural biological differences. Added to this is the belief that they have the responsibility to socialise or prepare children to be responsible, respectful, valuable women or men within culturally prescribed gender roles. For girls, this means their future roles and necessary skills are centred around reproductive and domestic labour. For boys, emphasis is on developing leaderships skills, independence and authority. Also, boys are assumed to have superior physical strength and energy compared with girls, and there is a perceived need to regulate girls' bodies because of a belief in their vulnerability and what is 'appropriate' behaviour. These preconceptions about gender are reinforced through play, access to learning materials, lack of encouragement of cross-sex interaction between boys and girls or 'boundary-crossing' behaviour (where girls' or boys' play or behaviour is deemed more appropriate for the opposite sex) in ways that do not emphasise traditional gender boundaries or roles.

In the context of an ELP, the term 'gender inclusion' refers to the ability for teaching methods, play experiences and learning toys to be gender neutral, promote gender equality and provide an opportunity for girls and boys to explore experiences and perceptions of gender and gender socialisation. For instance, caregivers should avoid calling out boys more often than girls or letting boys participate more than girls. Corner play should be gender fair, for example, boys should be encouraged to play with dolls and girls to play with blocks or cars. During dramatic play, children often play out the roles of adults that are important to them. In this case, children should be encouraged to dress up and role play non-traditional roles (eg boys dressing up as nurses and girls as police officers). Also it is important for children to express and name their feelings openly regardless of their gender. Teachers should allow boys to cry and show their fears and for girls to express anger. Learning toys such as story books and Big Books should be carefully selected and produced to ensure the content does not reinforce traditional gender roles.

One way to ensure that learning materials are gender neutral and the use of materials is equitable among girls and boys is to conduct a gender audit of the classroom (see Appendix 1 for information about gender observation tools).

G. Learning toys production for early childhood centres training of trainers (ToT)

The development of safe, attractive and challenging learning toys needs expertise. To develop the necessary skills in toy design and production, ECCD caregivers should participate in relevant professional development training. The training should primarily support the learning of play and child development concepts, as this foundation knowledge is essential for toy production. Caregivers also need to understand that to

Plan staff and ECCD centre caregivers in Indonesia proudly display the toys they made during a toy production Training of Trainers workshop.

achieve child development outcomes, the production of toys needs a lot of care and attention. It is crucial for training workshops to facilitate discussions and practical hands-on experiences around a range of topics, such as the importance of learning toys for child development, the benefits of locally made learning toys, and developing learning toys for maths and literacy. All of the locally made toys should also be available at the training - seeing is believing!

It is important that training workshops for caregivers are practical, giving them opportunities to develop their own learning toys.

H. Toy production system ("The progressive development of the kit")

Principles:

Following the ToT workshops, it is assumed that all caregivers have gained the necessary skills and knowledge to produce toys.[5] However, it is also understood that not everyone learns at the same pace. Some caregivers might feel overwhelmed and unsure as to whether or not they are capable of applying the learning in their centres. Practice is the key for improvement. With regular hands-on experience in the field, caregivers get the opportunity to gradually enhance their theoretical and practical foundation skills to design and produce toys. Caregivers can also use these experiences to further build their understanding about the ways toys are used to support child development.

Replicating toys is often a good starting point as caregivers can take their time to observe, discuss, copy and use already existing toys. They don't have to contemplate by themselves the ways of designing a toy straight away. The replication process allows them to develop enough expertise, confidence and self-motivation to recreate these toys. Once caregivers master the replication and use of these models of toys, they often have the desire and ability to create their own. That is why it's important not to throw caregivers in the 'deep end' too quickly and instead create for them an effective toy production system that is progressive, consistent and supportive.

[5] See Footnote 1.

Example of a successful toy production process in Indonesia:

A toy production system called "The progressive development of the kit" was designed in Indonesia. Its intention was to support caregivers to gradually build their confidence, self-motivation and expertise in making their own local toys.

Amandine Baillet began by producing a range of toys found in this guide. The set of toys and duplicates were used as visuals and activity materials during ToT workshops in parts of Eastern Indonesia. During training workshops, caregivers were able to observe, take notes and draw basic sketches of the toy models. They were also given the opportunity to use the toys in brainstorming and role-play activities. Before the workshops ended, Baillet and her co-facilitators (Plan field staff known as early childhood care and development facilitators or ECCDFs) told the caregivers about the toy production system concept. The caregivers were told that they would be supported in the making of toys in their respective centres over the coming months.

At the end of each training workshop, all toys were stored in a kit and given to ECCDFs. The concept of "The progressive development of the kit" was discussed further with the ECCDFs and included explanations on aims, aspirations and use. It also included an explanation of the schedule for each field staff member to follow. (For an example of these schedules, see Appendix 2).

After the training, Baillet and all ECCDFs visited three ECCD centres. The aim was to ensure everyone understood the concept and to test its effectiveness in the field.

During the testing period and in each centre, Baillet chose a learning toy that was extracted from Week 1 schedules and allocated it to an ECCDF at each centre. She gave time for the ECCDF and caregivers to discuss the toy and brainstorm its child development benefits. Others in attendance gave feedback on what was brainstormed.

To create the toy, all ECCDFs and caregivers were asked to divide the toy production stages between groups (e.g. group one to collect the necessary resources in the community; group two to produce the toy; group three to make natural paint and decorate the toy). Once the toy making was complete, all participants were asked to reflect on the process (successes and challenges). The ECCDF and caregivers were also asked to discuss and present a mini role-play about the ways of introducing the toy to children the following week (e.g. location of toy in the classroom; how to use and care for the toys). The remaining ECCDFs were again engaged in giving feedback about the presentation. At the end of the visit, time was given to allow the team to raise any concerns or ask extra questions about the toy production system.

The next week, all ECCDFs started to support toy production in their centres, according to the schedules given to them.

"The progressive development of the kit" steps:

(Please read these steps with "The progressive development of the kit" schedules found in Appendix 2.)

- Model toy kits (with toys made from this guide) are kept by field staff centrally, in a safe and secure space.
- Weekly schedules (over a period of a few months) are designed and displayed close to the kit.
- Enough copies of this guide are printed and kept close to the kit and schedules. On Monday morning (Week 1), each facilitator consults their schedules and picks their designated toy corresponding to Week 1.
- They take the toy and guide to the designated ECCD centre that they support and introduce it to the caregivers.
- During the first four days of that week, each facilitator discusses the toy with caregivers (e.g. child development benefits, games and rules, design, resources and steps for production, use in classroom). They also make the toy with caregivers and role-plays ways of introducing it to children in the classroom.
- By the fifth day (i.e. Friday), the facilitator collects the toy and places it back in the model toy kit.
- The following Monday morning (Week 2), each facilitator consults their schedule and picks the designated toy corresponding to Week 2.
- Each facilitator repeats the same process as per Week 1.
- These steps should be used until the last week of the schedules and when all toys from the kit are replicated.

Caregivers and Plan staff making toys as part of the progressive development of the kit in Sikka, eastern Indonesia.

Notes:

- It is important for caregivers to attend the three three-day ToT workshops so they can gain the relevant skills and knowledge needed to replicate the toy kit and make their own toys.[6]
- All of the toys in this guide should be developed prior to ToT workshops so they can be used in these workshops and the toy production system. This means toys will already be familiar to caregivers because they would have been presented at the ToT workshops.
- Each week, facilitators and caregivers should use this guide to support their toy production.

[6] See Footnote 1.

- The schedules are not restricted to one toy per facilitator each week. If there are a small number of facilitators in the field or the system needs to be fast-tracked, two or more toys can be allocated for replication each week.
- Caregivers, facilitators, community members and parents will need to collect the necessary resources to produce the toys from the kit. They will also need to network with community members who could support production (e.g. woodcarvers, sewists).
- It is extremely important for facilitators to return the toys to the kit no later than each Friday afternoon so they can be used and introduced by another facilitator to their caregivers the following Monday.
- Each week, all centres should work on learning toys from the same component of the daily routine (e.g. literacy, maths, blocks and building, games and puzzles, books and pictures, sand and water play, imagination). This way, facilitators and caregivers from different communities can support each other and discuss successes and challenges.
- Commercial books are required for the books and pictures corner (three books per week rotate each week). Books need to be bought and not produced.
- Some weeks, one toy might be allocated to more than one facilitator. If they see a message 'PHOTO, PRINT, SHOW AND EXPLAIN 'in their schedules**,** the facilitator should take a picture of the toy, print it if possible, show the caregivers, and explain it to them. Or they could bring and use the photo and instructions for the toy used in this guide.
- In the schedules for the imagination corner and the sand and water play corner, there are a number of items that need to be collected. There is no need for the facilitator to take these items from the kits and to bring them to the centres. Photos of the set-up of the imagination corner and the sand and water play corners are available in this guide. Simply print these with the instructions, show the caregivers, and discuss them prior to replication.
- For the maths circle, caregivers should make individual maths bags from local materials for each child. Caregivers would have received training on the maths circle, so they should remember how to get or make the bags. If not, facilitators can refer to page 122 of this guide. For the classroom environment; there is no need to show a picture of the floor mats. The caregivers would have already seen it displayed in the room at the toy production workshops.

Plan staff and caregivers making toys as part of the progressive development of the kit in Lembata, eastern Indonesia.

Learning toys for learning centres

Introduction

A positive learning environment meets the developmental needs of children. It makes them feel safe and comfortable. It provides them with challenging and interesting learning experiences. Children are similar in many ways but they also have learning differences. These differences and preferred ways of learning are more easily accommodated if a variety of activities are available, and if children have the opportunity to learn alone, and in small or large groups. Children learn from self-directed play, interactions with classmates, and from caregiver-directed and guided learning experiences. They need a mixture of direction and freedom. The daily routine provides a predictable use of time that helps them feel safe and secure, and allows them to develop independence and self-reliance.

Learning toys – what to look for:

- Support all areas of development.
- Majority can be used in many ways, such as blocks, shells, bottle caps, and picture cards.
- Challenging, different levels of difficulty.
- Attractive and well made (colourful, careful lettering, pictures with a lot of detail).
- Ample supplies for child to create something or sustain activity over time.
- New things added to increase novelty.
- Well organised and with storage containers.
- Board games are exciting, with rules, spinners or dice and something to compete for; played by two to four children; challenging – not too easy or too difficult; bags for pieces.
- Puzzles – six to 16 pieces; can be put together with or without self-correcting base; has interesting picture from a magazine, newspaper or the internet with a lot of detail.
- Story books – at least 25 with: interesting plot; character development; informative pictures; half a page of writing; includes some new words and concepts unknown to most; arouses emotions and engages thought.

The learning environment reflects knowledge about child development, activities that help children develop, and an adequate supply of stimulating learning toys. ECCD caregivers and volunteers are learning, along with children. A daily routine, a good set of learning toys, and some established practices help new caregivers cater for children's needs and to manage the classroom in a professional way. These tools reduce anxiety for community volunteers who begin teaching with only a few days of preparation. Greater understanding will unfold as caregivers gain more knowledge and learn to reflect on practice.

Children mainly learn from doing, not observing, so they need lots of interesting materials to use in creative ways. They then take information from their experiences and readjust their thinking based on these experiences. As children get older, they acquire new skills and experiences that help the learning process. For example, as children grow physically, they are more able to manipulate and explore their own environment. Also, as children mature, they are more able to understand the point of view of other people.

Keep the principles below in mind when working with any children, including those with disabilities.

Key principles[1]

Children learn by doing
Young children need lots of experience playing with solid objects before they 'understand'.

Children learn through play
Through play, children form their understanding about the natural world, mathematical and literacy ideas, and social competence. Through play, children learn to reason. It satisfies an innate need for creativity and self-expression.

Children learn what is personally meaningful to them
Children, like adults, try to make sense of things. Curiosity motivates learning. Surprisingly children respond better to challenging tasks than to simplistic and rote ones.

Children learn well when they use what they already know as they construct new knowledge
Learning is developmental and follows a predetermined sequence. Build on what children know and can do. Children with disabilities might not meet milestones at a 'normal' age, but they follow predictable development. Pay attention to what they know and can do according to child development indicators (see Appendix 3) and what generally follows as the next developmental skill to acquire.

Children have greater potential for learning than is commonly recognised
There is no limit to the capacity of children to learn more if they are motivated, have self-confidence, and the required support.

Learning is social
Learning is influenced and motivated by social interactions. Learning cannot take place without engagement in the real world. That is why children learn more from caregiver-child interactions that are conversational rather than by rote.

Each child learns differently
Children construct new knowledge by building on what they already know. Each brain is organised differently. Children have unique strategies, approaches and capabilities that result from different language, cultural and social backgrounds. Children learn well when they can learn in their own way and have some degree of choice and control.

There is a strong relationship between emotions and learning
Strong emotions enhance memory; people learn poorly in stressful environments. The ability to think and learn effectively is closely linked to physical and emotional wellbeing. An appropriate emotional climate is critical for learning. Physical environments affect emotion and learning. The total environment influences learning.

Children learn well when they get helpful feedback
Feedback is often associated with someone pointing out errors or suggesting ways to improve performance. This type of feedback can be hurtful to children. Helpful feedback offers comments and questions that help children draw constructive conclusions.

A. School readiness indicators

In the context of learning centres, and in addition to child development milestones, school readiness is also an important factor to achieve child development outcomes. Research has shown that children who haven't had the necessary stimulation before Grade 1 are more likely to drop out of school, fall behind in education and be unsuccesful in achieving personal life goals. Good stimulation is translated by a range of activities, materials and interactions that address and respond to children's needs in the four areas of child development. Within the CLAC program, a 63 school readiness indicators document was designed as a tool for caregivers and other ECCD professionals to use in a number of activities (e.g. observing and evaluating ECCD sessions or making stimulating early learning toys). The school readiness indicators can be found in Appendix 4.

By using the indicators, observers can also determine if materials, activities and interactions from an ECCD centres can contribute to the gaining of skills needed for school and life success. During

professional development and planning, it is recommended that caregivers and other ECCD professionals always refer to the school readiness indicators at the design stage of an early learning material or activity production. This is to emphasise the idea thatmaterials have to be carefully thought through before they are produced to benefit children fully and in a variety of ways. The more child areas of child development and indicators a toy/game can address, the better it is.

B. Classroom inventory

The classroom materials suggested below is also included in the *Community Managed Early Learning Programs Curriculum Guide*developed by Deborah Llewellyn (2012). The kit was previously developed and used as a model in some countriesthat were involved in the CLAC program. All of the toys and games in this list can serveas an example of an effective ELP that support child development and school readiness.

The inventory includes materials for:

Classroom environment

- Attendance pocket chart with name cards for each child.
- Calendar pocket chart.
- Variety of colourful posters made on grain sack or cloth for durability; no paper.
- Floor covering.
- Wall clock.

Literacy circle

- Blackboard and chalk. If possible, one slate and chalk per child and/or four to five slates for the books and pictures corner. Consider building the blackboard as a low, freestanding easel that children and the caregiver can use. Provide a small stool for the person writing on the board.
- 25 story books, some bought and some homemade.
- Exercise book (journal), and pencils, sharpeners, coloured crayons or pencils, if possible.
- Alphabet picture flags or poster (upper case letter, lower case letter, and picture symbol to show sound of letter).

A grain sack can be used to create posters with upper and lower case letters and a picture to show the sound of the letter.

- Use cloth or grain sack material.
- Big Books (nine to ten), locally produced, to teach pre-reading skills.

Maths circle

- Calendar with pockets and removable number cards (use cloth).
- Number banner one – 20.
- Individual maths bags containing:
- Two strings, one long.
- Something to count and sort, such as buttons, shells, seeds, small stones, small wooden cubes of multiple colours, or2.5cm squares of cloth in multiple patterns and colours. Provide one or two sets of objects with 15 to 25 pieces. For example, 15 seashells and 20 large seedpods painted in four colours (refer to page 31 for instructions on how to make non-toxic paint).
- 25 metal bottle caps; variety of types.
- 25 paperclips (coloured clips are nice).
- 10 plastic water bottle caps, five each in two colours. If this is not possible, use one colour.
- 100 toothpicks in a plastic container or a set of 20 small sticks in multiple colours.
- One wooden die with dots. To make wooden dice, take a long strip of wood moulding and cut it into small cubes. Use a marker to make the dots. If there are two per child, make one with dots and one with numbers.
- Number cards one –20.
- 10 2.5cm square tiles, wood or laminated paper. Five are coloured white and five are coloured red on the front side. Colour the back side red and white on a diagonal to form two triangles.
- A4 – size cloth mat to use as a workspace (optional). Cloth should be a solid colour. If possible, vary colours in the class. In this way the cloth mats also serve as a learning toy for sorting or grouping children. For example, everyone with red mats is in one group, etc. It helps children focus attention on their work and not mix materials between bags.

Corner play materials

Blocks and building corner

- Blocks cut into cubes, triangles and rectangles. (Note: a rectangle is the size of two cubes; a triangle is made from diagonally cutting a cube into two pieces. Size: cubes are 5cm square; rectangles are 2.5cm x 10cm).
- 2.5cm wooden cubes (100 each of red, blue, yellow, green, purple and orange to make a total of 600).
- 40 bamboo sticks (four colours) about 20–25cm long.
- Small figures of animals, people and vehicles made of cardboard or painted on blocks.
- Cardboard discs (circles/triangles/squares) with notches that can be fitted together in a sculpture (colourful, if possible).
- Other interesting construction materials, such as tin cans, corn cobs, or large seedpods painted with bright colours.

Games and puzzles corner

- Picture puzzles, nine to 16 pieces (commercial). If locally produced, five to 10 pieces.
- Shape puzzles (tangrams, pattern blocks, geoboards; concentric shapes).
- Logic games (e.g. Memory, Tic-Tac-Toe, Dominoes, Bingo, Checkers).
- Playing cards and dice (if culturally appropriate).
- Board games with rules for shape, alphabet, or colour recognition, and counting practice.

Books and pictures corner

- Story books (three books per week; rotate each week).
- Two sets of picture cards (animals, flowers, fruit and birds). Laminated, labelled, plain on the back side; the pictures can be downloaded from the internet.
- Alphabet cards (laminated, two of each), and game activities.
- Number cards, 1–20 (laminated, two of each), and game activities.
- Wall pocket chart for sorting cards (optional).
- Drawing paper and/or slates.
- Crayons, pencils, eraser and sharpener.
- Clipped magazine or newspaper pictures and newspaper pages.
- Lace-up or beading/threading.

Imagination corner

- Small dishes, stirring spoon, coconut shells.
- Cloth dolls (male and female).
- Graduated small baskets or coconut shells.
- Balance scale.
- Pieces of solid colour cloth –A4-sized to use as a tabletop, baby bed, store counter, etc.
- Plastic mat (7.5cm x 10cm) with road and typical landscape drawn with markers or paint.
- Plastic or wooden farm animals, boats, vehicles, and people and sticks to use on mat.
- Buttons, pebbles, shells, seeds, bottle caps used for making designs or to play store or house.

Sand and water play

Sand play

- Cups of different sizes or measuring cups.
- Spoons.
- Wooden objects for making designs (i.e. sticks).
- Cups or coconut shells for moulding sand.

Water play

- Cups of different sizes or measuring cups.
- Funnels.
- Rubber tube.
- Plastic bottles with differently sized openings.
- Lids with holes for sprinkles.

C. Learning toy production methodology

To produce a set of maths and literacy play learning toys, it is important to carefully think about a specific process and a strategic way of using time. This process can include a range of steps:

1. Community research
2. Analysing.
3. Designing.
4. Buying/making stationery.
5. Collecting.
6. Producing.

Community research:
The ways of producing low-cost learning toys depends largely on the community or country context. Specifically, learning toy production relies on a community's assets and knowledge, which can vary from one country to another.

In this context, the terms assets and knowledge refer to a number of elements that are related to children and play. It ranges from traditional stories and songs, accessible resources to make toys, to the typical kind of adult/child interaction, and more. These elements are very important and must be taken into consideration because they help determine the most relevant and suitable ways of designing toys for a community.

Researching a community's assets and knowledge is also about protecting culture and some of the traditions that can be passed on from one generation to another. In doing so, it helps build a strong foundation for effective early childhood community development programs.

To understand the context before toy production time, it is useful to develop a survey that reflects on community assets and knowledge around child and play. (For an example of a toy production community survey, please refer to Appendix 5.)

Analysing:
The next step is to analyse data collected, for example, from a survey. This step helps develop a clear understanding of the specific play-related needs for children in learning centres. The needs might vary from one country to another and, at times, from one community to another.

Community survey findings in Plan working areas, Nusa Tenggara Timur, Eastern Indonesia, 2011:

- Need for already existing traditional toys and games to be upgraded with rules, so they are more stimulating and challenging for children.
- Need for the already existing learning toys to allow the mainstreaming of gender and disability. Also new toys need be designed to allow boys, girls and children with a disability to have equal play.
- Need for caregivers and community members to provide more time and space to stimulate their children through self-directed play.
- Need for children to be more exposed to early learning toys that reflect and provide information about the local environment as well as the outside world (e.g. fauna and flora, traditions etc.).
- Need for local stories and songs to be recorded, translated into books/oral stories and used in learning centres.
- Need to create more early learning toys and experiences that: are innovative; age appropriate; support competencies in maths and literacy; and promote free play.
- Need to use local artists for the illustration of books and the making of other learning toys.

The findings from research also help to identify the variety of accessible raw and discarded resources to produce toys in communities. They also help determine key people who might be useful for the production of early learning toys.

Community survey findings in Plan working areas, Nusa Tenggara Timur, Eastern Indonesia, 2011 – examples of accessible materials in communities and key people useful for learning toys production

Raw materials: bamboo, stones, seeds (non-toxic seeds called saga), coconut, woven materials, carved wood, sand.

Recycled/discarded materials: cardboard, plastic bottles.

Key people: local painter, wood carvers, and sewists.

Designing:

Before designing and producing early learning toys, it is important to plan the process and ask the question: why produce/improve local toys? Once the research has been done, it is important to define the objective/s for the production of early learning toys. Having clear objectives helps identify the type of toys to be produced.

The development of certain types of early learning toys and play experiences can be useful in the following ways:

- Helps caregivers realise that plastic toys are less beneficial to children than locally made toys.
- Informs caregivers about ways of developing materials that are accessible for children with disabilities.
- Improves already existing toys so they are more challenging and stimulating.
- Proves that learning toys can be gender neutral.
- Offers caregivers a new perspective on the production of toys.
- Explains a curriculum.
- Provides toys and games to learning centres that have none.
- Supports children to master skills in literacy, maths and science.
- Supports children with the transition to school.

Normally, the needs outlined in the research findings are the objectives. It is ideal for all of them to be achieved. But factors like timing and lack of funds and/or human resources can be great constraints. Therefore, it is important to determine objectives that are realistic, achievable, and best suit the circumstances.

Personal experience story

Plan International Australia in Melbourne arranged for me, Amandine Baillet, to work with the local field team in Sikka in Flores, Lembata and Kupang (Nusa Tenggara Timur, Eastern Indonesia) as part of the CLAC program. During that time, I was able to develop a set of maths and literacy learning toys that were linked to the program's learning centre curriculum guide, developed by Deborah Llewellyn.

Originally, I had the idea of developing early learning toys that would respond to each need found within my community questionnaire. I wanted to improve the existing early learning toys and experiences to make them more adequate for children. I also wanted to show communities and local staff a new perspective on toy production that is linked to the curriculum. Despite the importance of both, due to my restricted time in Indonesia, I had to choose only one of my two main wishes. I decided that I would translate the CLAC program's curriculum's daily routine into practice by producing the suggested list of materials and experiences that are linked to it. This was primarily to use my time to effectively challenge communities with new and innovative ways of thinking about early learning toys. Also, I wanted my actions to be aligned with Plan's sustainable approach to community development, rather than directly providing the toys produced to communities. That's why I planned on developing three identical kits for three different places, which would serve as models to replicate, learn and be inspired from.

What type of learning toys and experiences should be produced?

In the planning process, it is important to clearly define a list of learning toys and experiences that will respond to children's needs in relation to play. One approach is to brainstorm a small list of learning toys or play experience ideas based on each objective chosen for production.

When brainstorming ideas, it is crucial to consider the school readiness indicators in the areas of child development (please see the school readiness indicators in Appendix 4). This is because early learning toys must support child development and the mastering of skills useful for school and life success.

One of the main challenges is to create a learning toy that can be used in a variety of ways and helps children develop cognitive, social and emotional, physical and language skills. At the same time, it is a toy that is gender sensitive and disability inclusive, and can support children learning maths and literacy. It can also help children learn about their local environment or the wider world.

How will learning toys be produced?

It is important to think about ways of producing toys. The design phase often protects people from major risks or errors linked to production. During the design phase, the main aspects to consider are:

- the visual idea of the toy (i.e. a drawing);
- the suitable raw, discarded materials and stationery needed to produce each specific toy;
- the steps to produce each one of them; and
- the methods and materials needed to make them attractive to, and safe for, children.

Sometimes the original design of a toy might not be the most effective one and mistakes can still happen while producing it. This is a natural and acceptable process because most toys can be fixed. The more people practice designing and producing toys, the easier it gets!

When and where will learning toys be produced?

It is important to allocate time and space for toy production. The process of production is fun but it also requires concentration and attention to detail. It can sometimes be tiring and overwhelming if no realistic weekly schedule is planned. A good-sized and quiet room is the best option to produce toys, as space is needed to store stationery, and recycled and raw materials. A large table will also ensure enough space for the production of large early learning toys (e.g. posters, banners, board games).

Who can help you produce toys?

The designing phase should include the key people useful for the production of learning toys. Some of the toys might need specific skills and talents to ensure they are professionally made and attractive to children. For example, producing pocket charts requires the skills of a professional sewist or someone who can sew; producing different wooden cubes requires the skills of a professional woodcarver or someone who can carve wood. The best way to do this is to network with and negotiate support from the key people listed in the survey findings.

Buying/making stationery:

Stationery (e.g. scissors, crayons, glue etc.) plays an important part in the process. It supports the creation of very attractive learning toys without having to make a considerable effort.

However, stationery can be extremely expensive and not long-lasting. Many ECCD caregivers might not be able to afford or have access to such tools because of isolation and poverty. For professionals involved in early childhood programs with limited budgets, it is recommended to buy the needed items at low cost and in small quantities. If there is more than one producer, stationery tools can be borrowed and shared. Also, in poor and isolated communities, traditional stationery tools can be made or replaced with similar tools. For example, paint can be made from plants/fruits/vegetables; glue can be made from rice; a sharp tool can replace a pair of scissors etc. Communities need to investigate innovative and

safe ways of making or replacing traditional stationery tools and learn through trial and error. No matter if bought or made, stationery tools must be safe for children (e.g. use non-toxic paint or glue).

Collecting:

Collecting 'beautiful junk' is a crucial process that allows low-cost learning toys production to happen. To use time efficiently and avoid delays, collecting raw and discarded materials must be planned before the production phase. When all materials are collected, producers are better off because they can then start to focus on the production. It is also easier for the collection of materials to be carried out by community members rather than just one person. As a first step, create a 'beautiful junk' box for the raw and recycled materials to be stored. Let community members know the main purpose of making toys/games, and give them a list of resources needed for collection.

How to make non-toxic paint

Please note that all paint used in toy production should be non-toxic. Non-toxic paint can be bought, but it can also be handmade.

Yellow paint – grate turmeric finely. It will create a paste that can be applied directly onto materials.

Green paint – collect papaya and/or other type of green leaves and chop/crush them finely in a bowl. Add a bit of water to dissolve the natural green colour from the leaves. Apply mixture onto toys.

Black paint– apply charcoal directly onto toys. Alternatively, collect taro leaves and chop/crush them finely. Add water to dissolve the natural colour from the leaves and add some lime/whiting powder to turn the mix into a black colour. Apply mixture onto toys.

Red paint – grate turmeric finely and mix the turmeric paste with a bit of lime powder. Apply mixture onto toys.

During the collection and production phases, it is important to regularly check on the resources in the box as there might be an imbalance in quantities (e.g. too many plastic bottles and not enough fabric) and producers might run out of certain resources. Once checked, messages can be sent out to community members with an updated list of resources for collection.

Make sure that all collected materials are safe (non-toxic, no sharp items) and clean. Markets are also good sources of raw and discarded materials which sellers are often happy to give away.

Message example

Recycled materials 'beautiful junk' box

You are invited to donate raw and recycled materials for use during our toy making workshops to the 'beautiful junk' box situated at the centre's entrance. We encourage all of you to donate during that time so we can create fun, safe and age-appropriate learning toys for your children.

Materials needed: cans, plastic bottles, sticks, stones, seeds, any type of fabric, thread/string, buttons, rocks, any type of wood, boxes, tins, containers, any type of paper.

Anything else unused and/or 'ready to go to the bin' that is potentially useful for toy production.

Unwanted material: anything unsafe, smelly, unwashed or rotten.

Thanks!

Producing:

This is the last step of the process. To ensure this phase is easy to manage, it is important to have gone through the previous steps of researching, analysing, designing, buying or making stationery and collecting.

Before production starts, producers should revise the design of each learning material and, if needed, refine some of the ideas. A checklist with useful questions can be a good guide.

Example of a production checklist survey

- Does this toy/game respond to the specific needs of children in the community?
- Are children going to develop a number of skills in some of the four areas of child development from it? If yes, what are they?
- Can all children (including children with disabilities) use the toy?
- Is the toy going to be safe for children to use?
- Is the toy supporting any maths skills? If yes, which ones (e.g. comparing, counting, recognising patterns).
- Is the toy supporting any literacy skills? If yes, which ones (e.g. recognising syllables, sounds, alphabets).
- Are the raw and recycled materials right in quantity and quality to make the toy?

During production, the three main recommended tips for success are patience, slow pace and attention to detail. Without these, production can be rushed. As a result, learning toys will most likely look unattractive to children and will only last for a few days or weeks.

The toys/games also need to be tested, especially with board games that are challenging and have complex rules. Some of the best ways to test a learning material include: playing with it as if you were a child; offering people to play with it so they can give feedback; and observing a child of the relevant age playing with it.

Despite the amount of time spent on preparation, errors might be found when testing the product. However, the good news is that most learning toys can be fixed! For this, it is best to stop producing and to start thinking about a number of methods that can fix the toy/game.

Once the production of a learning material is finished, it will need a storage bag, box or container to ensure all pieces are kept together. Bags or boxes can also all be locally produced.

D. Learning toys for corner play

Introduction

Corner play can be the most important activity of the day. It is a time when children direct their learning, rather than the caregiver. By choosing to play with the things they are good at and enjoy doing, they will develop skills in all areas of development: intellectually, socially, emotionally, and physically. They will do this through hands-on learning processes, which is the way children learn. The caregiver helps the children learn through play by moving around the room, showing interest in their 'work', asking questions, and encouraging them to explore further.

When children make plans about what they will do during corner play, it helps them develop higher level thinking skills. They develop the skills to make decisions, regulate their own behaviour, and take responsibility for their actions. Some preschools ask children to make a plan with drawings to show what they will do, where they will do it, what materials they will use, who they will do it with, and how long it will take. Planning involves deciding on actions, recognising problems and solutions, and thinking about interactions with others and the consequences of those interactions.

Corner play can be set up in the four corners of the classroom space with an additional 'corner' outside for sand and water play. Children are given a chance to select a corner and decide what to play. When they finish, they clean up the materials they are using and then select another corner where there is space for them to play. Each corner has a limit on the number of children that can play at one time.

The learning toys in each corner are low-cost and locally made. The materials were selected because they can be played with in many ways at different levels. Children are less likely to become bored when they use open-ended materials. When boredom occurs, learning stops. Caregivers can add novelty to each area by bringing in materials from the local environment and by rotating the materials to be used. They can introduce new ways to use old materials, such as a game to play with the picture cards. Caregivers also produce new materials and games throughout the year as a component of the caregiver development program.

Because children have different interests, learning styles and temperaments they might be attracted to one learning corner over others. For this reason, it is a good idea to provide a variety of materials and activities designed to attract children who might not normally use that area. Take, for example, the books and pictures corner. It will attract children who like to look at books, draw pictures, be alone or with others, play a game, manipulate objects, use large muscles (putting cards in a wall chart), as well as small muscles (using pencils). All of the different types of activities in this corner build language, reading and writing skills. If a child only goes to one corner, the caregiver might ask themselves, *What can be done to interest that child in another corner?* A caregiver might also ask, *Are there enough learning opportunities in any one corner so that a child who spends a lot of time there can continue to benefit?*

The name of each corner is written on a poster and displayed in the corner. Some preschools might find it easier to write the name on a piece of heavy duty cardboard and stand it on the floor, against the wall. Each sign should have a pocket or paperclips to hold the name cards of the children who are playing at the corner.

Corner names:

- Blocks and building
- Imagination
- Books and pictures
- Games and puzzles

- Sand and water play

If the classroom is held outdoors, use a large mat to outline the floor of the classroom. Tarps used to cover trucks are a good size for 30 children. Ideally, four poles or trees will establish the outside boundaries. That way ropes or bamboo poles can be attached to the poles. Learning charts and posters can be attached to the ropes. Corner activities are set up around the edges of the tarp. Each storage bag is clearly marked with words and pictures so that materials are stored and distributed without confusion.

Corner play can also promote inclusion. It is a place where children can learn ways of socialising with other children from different backgrounds, a place where they also learn how to accept and embrace diversity, and a place where girls and boys can explore, expand and move beyond gender stereotypical roles and norms. When it is well organised, corner play has the potential to unite boys and girls, children with disabilities, and culturally diverse children in an environment where they gradually build trust and respect for each other. It can be a tool for non-discrimination that ensures all children have the same learning opportunities.

To achieve inclusion in corner play, it is important to consider the following:

- Experiences that motivate children to explore diversity can be planned. For example, in the books and pictures corner, children can be offered the chance to explore books that promote culture with detailed pictures of children from different countries/religions doing different and similar things.
- Corner play materials reflecting diversity can be selected and/or developed. For example, dolls with different facial and body features can be selected for dramatic play; objects with different shapes and textures can be placed at different corners; different games from different cultures can rotate monthly in the games and puzzles corner, etc.
- Caregivers can challenge the negative attitudes of children, such as bullying and stigmatising, and encourage them to recognise bias. They could ask children to discuss as a group an incident that has happened during corner play (e.g. saying a nasty word to a child with a disability and/or pushing them away from a corner) and the things that need to be done to avoid such an incident later.
- Caregivers can motivate children to go beyond stereotypes. For example, they should go around the room and ensure that boys are not dominating girls; they should invite girls to play with materials such as trucks, soccer balls and cars; they should also encourage boys to play with dolls and dress-ups.

1. Blocks and Building

Children can create different types of buildings (e.g. an airport) with the materials suggested in this guide.

Blocks and building corner play supports children's development in the following ways:

Cognitive: building thinking, creativity and imagination skills (e.g. which items to use and whether or not to use them with or without the other blocks and construction items, sculpting); spatial reasoning; thinking about what to build and planning how to construct it; sorting and arranging items by sizes/colours/shapes; counting items; and problem solving.

Social and emotional: if group work, collaborating with playmates to make/carry out a plan and make up a story; sharing blocks and cubes; sharing items; respecting other people's buildings by not breaking them; respecting each person's turn to play with specific items.

Physical: hand-eye coordination; stacking or connecting items in a way that they do not fall.

Language: promoting lots of interactions between children; talking about the construction and the purpose of the construction; imaginative play when the items are used to act out a real life scene (e.g. block building for a zoo; stick building for an airport; family going to a shop; discs building for a hospital, etc.).

Blocks and wooden cubes

Blocks and wooden cubes help children develop reasoning skills and fine motor coordination. They learn maths concepts, such as sorting things that are alike and different, ordering things by size, and counting. Blocks and cubes help children develop skills to use their hands and fingers well, and to coordinate hand-eye movements, which are skills that will help them read and write. At first, block and cube constructions are very simple, such as a straight line or a square. Later block buildings become more complex and three-dimensional. Children might make a design or balance blocks or cubes in a challenging way, such as a block building, which requires spatial reasoning needed for advanced mathematics.

Children in Uganda are enjoying playing with blocsk and wooden cubes.

Blocks are a popular play material during corner play. It is important not to let boys dominate the blocks and building corner. Gender-fair playtime ensures equal opportunities for participation and learning by girls and boys.

Blocks

Inventory:

- Blocks cut into cubes, triangles and rectangles
- Bag or box to store the blocks

Suggested resources:

- Wood (any type but ideally good quality as it is long-lasting)
- Tools to cut and shape the wood

Steps:

1. Cut blocks into geometric shapes — cubes, triangles and rectangles. Two triangles will form a square and two squares form a rectangle, sizes should be cubes 5cm square; rectangles 5cm x 10cm.
2. Store blocks in a bag or box when not in use.

Wooden cubes

Inventory:

- 2.5cm wooden cubes (100 each of red, blue, yellow, green, purple and orange for a total of 600; colour can vary based on availability)
- Bag or box to store the wooden cubes

Suggested resources:

- Wood (any type but ideally good quality so it is long-lasting)
- Tools to cut and shape the wood
- Non-toxic paint

Steps:

1. Paint the cubes as mentioned in the inventory.
2. Store all of the cubes in a bag or box when not in use.

Wooden cubes can support the development of fine motor skills of children, like this girl in Indonesia.

Hints and tips:

- The most rudimentary carpentry skills can produce cubes, triangles and rectangles. More advanced carpenters can produce curved shapes and columns.
- It is recommended that caregivers network with their communities and woodcarvers to help them develop this learning material.

Bamboo sticks

Bamboo sticks can be used in different ways such as for creating shapes and other designs.

Inventory:

- 40 bamboos sticks (four colours) about 8cm to 25cm long in three to four graduated sizes
- One bag to store the sticks

Suggested resources:

- Bamboo
- Tools to cut and shape bamboo
- Non-toxic paint

Steps:

- Cut and shape bamboo sticks as mentioned in the inventory.
- Paint the sticks in different colours (four colours) with non-toxic paint.
- Store all of the bamboo sticks in a bag or box when not in use.

Hints and tips:

- If no bamboo is available, another type of wood can be used.
- Polish the sticks so they are safe for children to use.

Small figures of animals, people and vehicles

The use of small figures in the blocks and building corner encourages children to engage in imaginative play.

Inventory:

- Small figures of animals, people and vehicles (these can be plastic or figures drawn on pieces of paper and then glued onto blocks of wood/thick cardboard)
- Bag or box to store the small figures

Suggested resources:

- Cardboard
- Glue
- Paper
- Scissors
- Crayons/coloured pencils, markers
- Grey lead pencil, eraser
- Sticky tape

Steps:

1. On paper glued to cardboard, draw and colour a series of people (man, woman, babies, children, etc.), animals (cats, dogs, chickens, etc.) and vehicles (motorcycles, cars, planes, etc.).
2. Once you have finished drawing and colouring, cover the back and front of the paper/cardboard with a layer of sticky tape. This will make the cardboard and paper more sturdy and long-lasting.
3. Cut out all the figures so they are separated from each other.
4. Store all of the figures in a bag or box when not in use.

Hints and tips:

- Ensure that the small figures show people from a range of cultures.
- The animals, vehicles and people should be in proportion to each other (i.e. animals should not be larger than people).

Cardboard discs

Cardboard discs involve children in making creative shapes and designs.

Inventory:

- Cardboard discs (Circles/triangles/squares)
- Bag or box to store the small discs.

Suggested resources:

- Cardboard
- Scissors
- Grey lead pencil, eraser
- Non-toxic paint

Steps:

1. On cardboard, draw a number of shapes that are around the same sized (e.g. triangle, circle, square).
2. Cut all shapes so they are separated from each other.
3. On each side of each shape, make a little notch with the scissors so the shapes can be connected together in a sculpture.
4. If possible, paint the shapes in different colours.
5. Store all of the shapes in a bag or box when not in use.

Hints and tips:

- Ensure notches are small enough to keep discs connected.
- Use bright colours to paint the cardboard discs so they are attractive to children.
- Ensure the paint is non-toxic.

Additional building materials (corn cobs, tin cans, seedpods)

Adding extra materials to the blocks and building corner encourages children to learn, for example, about shapes, colours and objects from their natural environment. It also supports them to engage in imaginative play.

Inventory:

- Interesting building materials, such as tin cans, corn cobs and large seedpods painted in bright colours
- Bag to store the building materials

Suggested resources:

- Tin cans
- Corn cobs
- Large seedpods
- Non-toxic paint

Steps:

1. Collect interesting items for building (see the resources suggested above).
2. When it's possible, paint the items collected.
3. Store all of the items in a bag or box when not in use.

Hints and tips:

- Items can be found in the natural environment, and with the help of community members.
- Make sure all of the natural items such as corn cobs are dry enough to apply paint on them.
- Ensure the paint is non-toxic.

2. Games and Puzzles

Introduction

Board games and puzzles help children solve problems, move objects with fingers, and follow rules. They can also extend their maths and literacy skills. Puzzles help children see how parts of something become a whole.

Commercial puzzles might range from nine to 16 pieces for five-year-olds. Use fewer pieces for caregiver-made puzzles (five to nine pieces). Self-correcting puzzles are ones that have a cue card that shows an outline of the shapes and how the shapes fit together. This is produced by tracing the puzzle onto a piece of heavy duty paper or cardboard. The children place the puzzle pieces on top of the cue card. They can also try to make the puzzle without the cue card for more of a challenge. Other kinds of puzzles are made from blocks. These include tangram blocks, pattern blocks, cuisenaire rods or geoboards. Children can make their own designs or replicate designs that are on cards.

There are several characteristics to consider in producing board games: 1) exciting – with rules, spinners, dice, something you are competing for; 2) attractive – colourful, nice pictures, careful lettering; 3) appropriately challenging, not too easy; and 4) includes a storage container to protect it and ensures pieces are not lost. For example, a board game can be attached to an inexpensive plastic file folder.

A number of maths and literacy board games should be produced for the free play areas. Some examples are provided in this section. By producing these, staff will learn to see some of the key characteristics of good games. Staff will then have more ideas of their own.

The games and puzzles corner includes a variety of exciting games and puzzles where children can develop literacy and maths skills in a fun way.

Maths and literacy games:

Between the ages of five and nine, most children pass through an important stage of mental development. They become able to think logically and they develop literacy skills. They can learn to pose problems and test solutions.

To begin thinking logically, they first need to examine problems or puzzles using concrete objects. Giving children experiences with concrete objects is not idle playtime, but sets up situations to practice logical thought.

Geoboards and pattern blocks are useful for sorting, classifying, logical thinking, counting, identifying patterns, and testing solutions. As children handle pattern blocks and fit them together in various configurations, they will be learning in an informal way about geometric shapes and relationships.

To begin the acquisition of literacy skills, children need lots of opportunities to talk with adults and classmates. Learning toys can also support literacy. Expose children to a variety of games that promote

the recognition and learning of alphabet letters, simple words and syllables. Children also need to play games that allow them to understand how words are formed and what their meanings are. Memory and lotto games are examples of games that address some of these skills. Lace-up puzzles, also found in the books and pictures corner, support children to develop motor and visual coordination skills, which are essential tools to succeed in writing.

Maths and literacy board games will be provided during corner play. Maths and literacy board games extend maths and literacy activities into free playtime. One new maths or literacy board game will be introduced each month. Caregivers can learn how to make the games during toy production workshops and at caregiver meetings.

How board games promote child development:

Board games support the four areas of child development. They also teach the following skills:

- Building specific maths and literacy skills;
- Developing thinking and reasoning skills;
- Developing focus, attention and persistence;
- Learning to follow directions;
- Learning to match, sequence, order and sort;
- Developing motivation to learn;
- Recognising and managing one's own feelings when losing or winning the game;
- Following the game's rules correctly;
- Taking care of game pieces;
- Playing the game fairly with classmates (no cheating);
- Respecting other people's turn to play the game;
- Using respectful words to resolve conflict with classmates;
- Coordinating hand-eye movements and using small muscles of the hands when moving token from one square to another;
- Sharing knowledge with classmates about the shapes, colours and numbers found in the game;
- Expressing feelings with words when losing or winning;
- Understanding and following the game's rules explained orally by caregivers;
- Asking questions to classmates and/or caregivers during the game;
- Actively participating in the conversation held with classmates during the game.

Shape man game

Shapes recognition and knowledge of their properties are important skills for children to learn for school readiness. 'Shape man game' is an excellent game for supporting the development of these skills.

Inventory:

- Two dice (one with dots and one with numbers)
- 24 shapes pieces and one little bag to put the shapes in (i.e. four circles, four squares, eight rectangles, eight triangles)
- One board game
- Four tokens (different colours)
- A small bag to store all of the game's items
- One long piece of string to attach the small bag to the game board

Number of players:

Two to four

Rules:

Distribute a good number of mixed shapes to each player (i.e. one circle, one square, two triangles, two rectangles each). Players place their tokens on the board game at any space they want. One player rolls the dice and moves their token along the board game, landing on a space with a shape. The player looks to see if they have a matching shape in their pile. Using the shape man's example in the middle of the board game, they use the shape to start building their own shape man on a flat surface next to the board game. Then they give a turn to another player. The other players repeat the same process. If a shape has already been used and is no longer available in the player's pile, players do nothing and have to pass their turn. If a player lands on space that says 'lose your turn', the player stays on this space and does nothing. The first player to build a shape man identical to the one in the middle of the game, with all of the shapes in their pile, wins the game.

Suggested resources:

- One folder or a big piece of cardboard
- Four plastic bottle caps (different colours)
- Medium pieces of cardboard
- Large sheet of paper
- Crayons/coloured pencils, markers (including one black marker)
- Ruler, grey lead pencil and eraser
- Piece of fabric to make the board game's cover
- Stapler and staples
- Two 2.5cm wooden or cardboard cubes
- One roll of large sticky tape
- Scissors/cutter
- One small plastic bag (or from other material)

Steps:

1. Use the inside of one folder or a big piece of cardboard and glue a same sized sheet of paper on it. The large sheet of paper may need to be cut to match the size of the folder/cardboard piece.
2. Draw (with a grey lead pencil and ruler) medium-sized strips on each side of the board (give enough space to draw medium-sized shapes).
3. Divide each strip into squares (squares are going to be the spaces to land on).
4. In each square, draw and colour a triangle, rectangle, circle or square shape. Keep a square or two to write 'lose your turn' in them.
5. In the centre of the game, draw one shape man. The shape man is made from tracing shape pieces with a black marker: one medium-sized circle, one medium-sized square, two medium-sized triangles, two medium-sized rectangles).
6. Use the medium cardboard pieces to cut 24 medium-sized shapes (eight triangles, four circles, four squares and eight rectangles).
7. Colour the shapes and neatly apply a layer of sticky tape around them so they are attractive to children, sturdy, and long-lasting.
8. Finish colouring the front of the game with crayons, coloured pencils and markers.
9. Neatly apply a layer of sticky tape around the board game so it is sturdy and long-lasting.
10. Draw dots representing numbers from one to six on each side of one die and numbers (from one to six) on each side of another die. The dice would have been made out of wood or cardboard (cardboard dice instructions are provided in Appendix 6).
11. Cut the piece of fabric the same sized as the board game length and width and staple it around the game (on the backside).
12. The four plastic bottle caps are used as tokens for the game
13. Insert games items in the small bag and attach it to the board game with a long piece of string.

Hints and tips:

- Be sure to measure the big piece of cardboard's length and width before drawing and colouring on it. Each space in the game should be equal in size.
- The most rudimentary carpentry skills can produce the cubes that will serve as dice. They should be the same size.
- If the suggested stationery items for making this game are not available, use equivalents as long as they are safe and non-toxic.

Race to the stars

Knowing how to make basic additions is an important skill children need for school readiness. 'Race to the stars' is a game that helps children learn basic maths competencies.

Inventory:

- One board game
- Six tokens with orange stars
- Six tokens with pink stars
- One die (with dots or numbers)
- One little bag for tokens and die
- One long string to attach little bag on board game

Number of players: Two

Rules:

The objective is for players to move tokens along a grid until they reach the stars. The first player who places all of their tokens on their stars is the winner. The two players sit or stand in front of each other. The board game must be placed with one grid facing one player. Each grid along the bottom is numbered 1, 2, 3, 4, 5and 6. One player collects the six orange star tokens while the other collects the six pink star tokens. The first thing each player has to do is roll a number seen on the grid to put a token on the number. Then, one player takes a turn at rolling the die. They count the number of dots or read the numbers on the die. They can move upward one token toward the stars for the number of spaces rolled on the die. The player can also choose to move two tokens for the total number of spaces on the die. For example, if the player rolls a six they can move one token two spaces and the other token four spaces. In this way children begin to practice simple addition. Once the first player has had their turn, the second player can have a turn. The two players take turns at rolling the die and moving their tokens upwards. They must roll the exact number needed to reach the stars. For example, if they need a four and they roll a six, they cannot take the move. In this way they are adding and subtracting in their mind. This also encourages them to move more than one token and further practice addition. If a player has the exact number on the die needed to reach a star, they can leave their token on that star. Once children master this game, reproduce the game using two dice and a number grid two to 12. They will learn addition by playing the game.

Suggested resources:

- One big and thick cardboard folder
- One large sheet of paper (white if possible)
- Six sheets of A4 paper (white if possible)
- 12 plastic bottle caps
- Crayons/coloured pencils, markers
- Ruler, grey lead pencil, eraser
- One piece of fabric to make the board game cover
- Stapler and staples
- One 2.5cm wooden or cardboard cubes for die
- One large roll of sticky tape
- Scissors/cutter
- Glue

Steps:

1. To make the board game's base, use the big piece of cardboard and glue the large paper sheet on it. Then glue oneA4 paper sheet on each side of the base.
2. On each A4-sized paper sheet, use a grey lead pencil, ruler and eraser to draw a grid of 12 squares. Use also crayons/coloured pencils or markers to colour the squares. Write in each square of the first bottom row of the grid one consecutive number from two to six.
3. On the top of each grid and towards the centre of the game, draw and colour a row of six stars. Use the same resources as for the grids of the game.
4. Finish decorating the front of the game with crayons, coloured pencils and markers.
5. Neatly apply and continuously strips of sticky tape around the board game so it is sturdy and long-lasting.
6. Draw, colour and cut 12 small stars on the remaining A4-sizedpaper sheets (e.g. six pink stars and six orange stars).
7. Place the stars on the top of each bottle cap and stick each one of them on the caps with small amounts of sticky tape
8. Draw dots or numbers on one die. The die would have been made out of wood or cardboard (see Appendix 6 for cardboard dice instructions).
9. Cut and adjust the piece of fabric so it is the same sized as the board game's dimensions.
10. Staple the fabric around the back side of the game.

Hints and tips:

- For a large sheet of paper, use a piece of flipchart paper or a paper tablecloth.
- If the suggested stationery items are not available, use equivalents as long as they are safe and non-toxic.
- Once children master counting and adding up to "6", then make a new board game with spaces two to 12. Use two dice. Children will now gain practice counting and adding numbers two to 12 (e.g. one with dots and one with numbers).

'Picking papayas' is a very popular game with children in Indonesia. The game helps children learn how to count and recognise numbers.

Picking papayas

Inventory:

- One board game
- One spinner
- 10 papayas
- 1 big bag for board game
- One little bag for papaya pieces

Number of players:

Two

Rules:

To begin, the children place the papayas on the tree. The papaya tree is full of papayas. Each papaya has a number on it. The game has a large spinner that is divided into 12 sections with dots to show numbers one to 10. One space on the spinner shows a basket of papayas all dumped out on the ground or a picture of a big papaya. If the child lands here, they have to put all the papayas back on the tree. Another space shows the words 'spin again'. The child spins, counts the dots, and then finds the papaya that shows the corresponding numeral. The child gets to pick the papaya. For this game, the child is practicing counting dots and then recognising a number that represents the same number of dots. When there are no more papayas on the tree, children count the number of papayas kept on their side. The child with the largest number of papayas is the winner!

Suggested resources:

a. Spinner

- One medium-sized piece of cardboard
- Crayons/coloured pencils, markers
- Sticky tape
- Paperclip
- Ruler, grey lead pencil, eraser

b. Board game

- One piece of cardboard (A4-sized)
- One long and thin strip of cardboard (same sized as the A4-sized of the cardboard)
- One big piece of cardboard (for papayas)
- One box of paperclips
- Sticky tape
- One big piece of fabric
- Staplers and staples
- Ruler, pencil, eraser
- Scissors/cutter
- Markers and crayons

Steps:

Spinner

1. Make a spinner (see cardboard spinner instructions in Appendix 7).
2. Draw a number of dots from one to 10 on each section of the spinner.
3. Use one section of the spinner to draw a big papaya or a basket of papayas all dumped out on the ground.
4. Use another one section of the spinner to write the term 'spin again!'
5. Colour the front side of the spinner in different bright colours.
6. Neatly apply and continuously strips of sticky tape around the spinner so it is sturdy and long-lasting. One layer of sticky tape should be enough.

Steps:

Board game

1. To make the base of the board game, draw and colour a papaya tree on the A4-sized piece of cardboard.
2. Neatly apply and continuously sticky tape's strips around the base of the game so that it is long-lasting and sturdy. One layer of sticky tape should be enough.
3. Use a grey lead pencil and cutter to make 10 small holes in the papaya tree. Holes should be spread out on the tree.
4. Use 10 paperclips and unfold one end of each one of them until it is pointing straight, the other ends of the clips must be flat.
5. Flip the game on his back side and insert the pointing end of each paperclip into each hole.
6. To keep the paperclips attached to the game, apply firmly a small amount of sticky tape on each flat end of the paperclips at the back of the game.
7. At this stage, the papaya tree should have the pointing ends of the paperclips sticking out of each of its holes
8. To cover the back of the game, cut and adjust a piece of fabric to the same dimension of the board game base.
9. Staple the fabric at the back and around the game base.
10. Position one long strip of cardboard vertically. Using the width of the strip, draw two lines with a pencil or marker. To draw the first line, start at the top tip of the cardboard strip, make your way down and draw a line at around two inches from the tip. For the second line, start at the bottom tip of the cardboard strip, make your way up and draw a line at around four inches from the tip. There should be three segments - one short, one long and one medium-sized - on the cardboard strip.
11. Use the line demarcations to fold the left and right segments towards the middle segment at the centre of the strip.
12. Flip the game's base on its back and with a cutter or scissors, make an incision through the fabric two inches down from the top tip of the game.
13. Insert downward the short segment of the strip in the incision, press it against the board game base and staple it to make it stick to the game
14. Straighten the long segment and fold the last segment flat and towards the game.
15. At this stage, the long strip of cardboard should support the game to stand vertically on a flat surface such as a table and just like the back of a photo frame. If not, keep readjusting the strip until it can do so.
16. Use the other big piece of cardboard to draw, colour and cut 10–14 medium-sized papayas. The extra four papayas would be to replace lost or torn ones.
17. Neatly apply and continuously strips of sticky tape around the papayas so they are sturdy and long-lasting. One layer of sticky tape should be enough.

18. Use a cutter or scissors to make one small hole on each papaya's top edge, so they can hang on the papaya tree with the help of the pointing end of the paperclips sticking out of the tree.
19. Store all of the game items in their respective bags.

Hints and tips:

- Cut medium-sized cardboard papayas so they can all fit in the tree.
- If no cardboard is available, cloth papayas can be produced.
- Ensure that the bags for storing the game's items are decorated and attractive to children.
- If the papayas are too challenging to draw, ask a talented person to help or ask someone to select and print pictures of papayas on the internet.
- To make the game more exciting, each player can have a miniature basket to put the papayas in. If unsure about how to make small baskets, simply ask someone in your community to make them with the available natural resources that are safe for children to use. The other alternative is to purchase them at the local market. Children love this game because they get to pick the pretend papaya from a tree and keep it in their own little basket.
- To clarify, the spinner only has dots, the papayas only have numbers.

Empty the bowl

'Empty the bowl' is a game that provides a fun and interactive way for children to learn about subtraction.

Inventory:

- Plastic bowl or dish
- 10 tokens (two different colours)
- Spinner
- Die
- Big bag for the bowl or dish and spinner
- Medium-sized bag for die and tokens

Number of players:
Two

Rules:

Use a small plastic bowl with 10 coloured counters and one die. Who can empty the bowl with the least rolls? One child rolls the die and takes out that many counters or tokens. They roll again and take out the number designated until the bowl is emptied. To keep score each child uses a spinner with numbers one to six or a special game board can be produced that has a way to keep score. Each time they roll the die, they move the spinner up to the next number to help them remember how many times they rolled to empty the bowl. In this game, one partner plays until they empty the bowl. The other player watches. Then it is the second player's turn to empty the bowl. After both have played, the winner is the one who emptied the bowl with the least number of rolls of the die. It will be the person with the smallest number. With this game the children are practicing subtraction without realising it. When they get good at this game, they can play with more tokens in the bowl.

Steps:

- Put the plastic bottle caps inside the bowl or dish.

Suggested resources:

Spinner:

- Large folder or big piece of cardboard
- Ruler, grey lead pencil, eraser
- Crayons/coloured pencils, markers
- Sticky tape

Steps:
Spinner

- Make a spinner (cardboard spinner instructions are in Appendix 7) and draw and colour numbers from one to six on each of its sections. Neatly apply strips of sticky tape around the spinner so it is sturdy and long-lasting.

Hints and tips:

- Materials for this game can be collected in the community or bought at the local market. The materials can also be replaced and locally made (e.g. basket to replace the bowl or dish and stones to replace the bottle caps).

All the way home

All the way home' board game should use pictures relevant to the children's' country and culture, like this version from Indonesia.

Inventory:

- Board game
- Two to four rocks to act as tokens
- Many picture cards (based on the number of things drawn in the board game)
- Medium-sized bag for tokens and cards
- Long string to attach bag to board game

Number of players:

Two to four

Rules:

Each player picks a rock as a token. They all place it at the start of the game (i.e. ECCD centre). When it's their turn, children pick a card showing a designated number of things that children might see along the way (e.g. three palm trees, two corn cobs, four volcanoes, etc.). They turn over the card, count the number of objects in the picture and move the same number of spaces along the road. It's a race to see which child can get home first. The first player who arrives at the door of the house greeted by mother and father is the winner.

Suggested resources:

- Large folder or one big piece of cardboard
- Large piece of paper
- Ruler, grey lead pencil, eraser
- Crayons/coloured pencils, markers
- Four rocks
- Sticky tape
- Cardboard paper
- Piece of fabric, the same length as the board game
- Stapler and staples
- Glue
- Scissors

Steps:

1. Cut the large piece of paper so it is the same sized as the folder or cardboard and then glue it onto the folder or cardboard.
2. Using the horizontal side of the game, draw and colour a village with lots of interesting things in it (e.g. pigs, ducks, volcanoes, corn fields, people, etc.). To draw and colour the game, use a grey lead pencil, eraser, ruler, crayons/coloured pencils and/or markers. On the bottom right of the picture, draw a centre containing children and caregivers. On the top left of the picture, draw a little house with parents greeting players at the front.
3. Neatly apply strips of sticky tape around the game so it will be sturdy and long-lasting.

4. With cardboard paper, draw, colour and cut picture cards. Use the same resources as for the game board. On each card there should a number of things that are seen in the picture board game (e.g. one pig, two volcanoes, three corn cobs, two fish, etc., until 10).
5. Neatly apply a layer of sticky tape around the cards so they are sturdy and long-lasting.
6. Cut fabric the same length as the board game and staple it around the game (back side).
7. The four rocks are used as tokens for the game
8. Insert games items in the small bag and attach it to the board game with a long piece of string.

Hints and tips:

- For a large sheet of paper, use a piece of flipchart paper or a paper tablecloth.
- Ensure the landscape of your board game is detailed, colourful and attractive to children.
- To make enough picture cards for the game, make two sets of cards.

These picture cards for 'All the way home'are relevant to the Indonesian context.

Pattern shapes race

Understanding and guessing patterns are important skills children need for school readiness. 'Pattern shapes race' helps children learn about patterns in a fun way.

Inventory

- One board game
- Two to four different colour tokens (blue, orange, white, green)
- Many picture cards (with different shape patterns)
- One medium-sized bag for cards
- One small-sized bag for tokens
- One long string to attach bags to board game

Number of players:

Two to four

Rules

Each player chooses one token and places it on the shape that has the word 'start'. The board game has a sequence of rectangle, circle, triangle and square. One player picks a card and reads the shape pattern on the card. They have to guess the next shape following the pattern that they read. For example, if the picture card shows a pattern such as *Circle, triangle, circle, triangle, circle* _____, the next shape to guess is *triangle.* If the picture card shows a pattern such as *Square, square, triangle, square, square, triangle* _____, the next shape to guess is *square*. When the player successfully guesses the next following shape on the card, they move to the next shape indicated. They place their token onto it. Once finished, the player gives turns to the next players. They repeat the same process. The winner of the game is the one who manages to guess all of the shape patterns on the cards that they pick. It is also the one who goes all the way to the shape that has the word 'finish'.

Note: some cards are more advanced than others with more difficult patterns (e.g. *Square, square, triangle, triangle, square, square, triangle,* _____). Children should begin to play with the easy set of playing cards. Once they master the game, they can be shown the more difficult version. Throughout the game, players will be challenged with odd picture cards called risk cards and odd shapes on the board game. One player can randomly pick a picture card that shows an arrow with a specific shape (i.e. square, triangle or circle). In that case, the player must place their token forward to the nearest similar shape as indicated on the card. Also, one player can pick a card with a plain cross, which means that they lose their turn and do not move their token. One player can randomly pick a card with a tick sign, which means that they are allowed to pick another card. On the board game, one player can place their token on a shape that has a smiling face. Then they are allowed to move their token forward to the nearest similar shape. One player can also place their token on a shape that has a frowning face. Then they must move their token backward to the nearest similar shape.

Suggested resources:

- Large folder or one big piece of cardboard

- Large piece of paper
- Ruler, grey lead pencil, eraser
- Crayons/coloured pencils, markers
- Four plastic bottle caps (different colours)
- Cardboard paper
- Sticky tape
- Glue
- Piece of fabric, the same length as the board game
- Stapler and staples

Steps:

1. To make the base of the board game, cut the large piece of paper so it is the same sized as the folder or cardboard and then glue it onto the folder or cardboard.
2. Use a grey lead pencil, eraser and ruler to draw the board game's base
3. Position the board game's base in a landscape layout and draw a number of separate rows of different shapes (e.g. triangles, circles and squares). The number of shapes drawn must be the exact same in each row and the separate rows must be drawn one below another.
4. Connect one shape after another by drawing a consecutive line between them. The line starts from the top left corner of the game board and finishes at the last shape situated in the bottom left corner of the board.
5. Use crayons/coloured pencils or markers to colour the shapes of the game.
6. Once the shapes are drawn, choose some of them and add, either way, a frowning face or a smiling face on each of them. The first shape in the top left corner of the game should have the word 'start' on it. The last shape on the bottom left corner should have the word 'finish' on it.
7. Neatly apply a layer of sticky tape around the game so it is sturdy and long-lasting.
8. Use cardboard paper, a grey lead pencil, eraser, ruler, crayons/coloured pencils or markers and scissors to draw, colour and cut a great number of cards with shape patterns on them. On each card there should be different patterns that are more and/or less challenging. For example, a basic one would be, *Triangle, circle, triangle, circle, triangle … what comes next?* A more challenging pattern would be, *Square, circle, triangle, square, circle, triangle, square, circle … what comes next?*
9. Draw, colour and cut a small number of risk cards with one arrow and one specific shape (triangle, circle or square) on each card.
10. Draw, colour and cut a small number of risk cards with a plain cross.
11. Finally, draw colour and cut a small number of risk cards with a plain tick.
12. Apply a neatly a layer of sticky tape around the cards so they are sturdy and long-lasting.
13. Cut the fabric the same length as the board game and staple it around the game (back side).
14. The four plastic bottle caps are used as tokens for the game.
15. Insert games items in the small bag and attach it to the board game with a long piece of string.

Hints and tips:

- For a large sheet of paper, use a piece of flipchart paper or a paper tablecloth.
- The more shapes and rows drawn on the board game, the more challenging and exciting the game is!
- Shapes must be drawn apart from each other with a gap between them.
- Remember that, to make a pattern on cards, you have to have at least two sequences (e.g. Square, circle, square, circle).

Geoboard: 'Square it up!' and 'Funny shape challenge' games[7]

A geoboard developed by a group of caregivers after a training workshop in Indonesia.

Inventory for the 'Square it up!' game:

- Geoboard
- Small bag with a good number of rubber bands
- Four to six coloured cubes (e.g. two to three green cubes and two to three yellow cubes)
- Medium-sized box for all of the game items

Number of players:

Two

Rules for 'Square it up!' game:

Two players place one geoboard in front of them and each one of them pick two to three cubes of the same colour from the board game box. On the geoboard, one player starts making one line segment of any size with one rubber band. Then they give a turn to the other player to do the same. The objective for the players is to form rubber band squares on the geoboard with no lines in the middle of them. If one player manages to form a square during their turn, they get to place one of their coloured cubes in the square. Players give each other turns at forming squares. When no more squares can be formed on the geoboard, the game is over. At the end of the game, each player collects their own coloured cubes from the geoboard and builds their own tower with them. The player who has the tallest tower is the winner.

Inventory for the 'Funny shape challenge' game:

- Two geoboards
- Two small bags with a good number of rubber bands
- Small bag of tokens
- Set of number cards (3,4,5,6,7 and 8 only)
- Medium-sized box for all of the game items

Number of players:

Two to Four.

[7]The idea behind the design and production of this geoboard model was developed by a group of caregivers during a learning material workshop in Sikka, Nusa Tenggara Timur, Eastern Indonesia, November 2011.

Rules for the 'Funny shape challenge' game:

Two to four children can play. Each player has a geoboard and some rubber bands. A stack of cards is upside down. Each card has a number written on it. The numbers are 3, 4, 5, 6, 7, and 8. There should be several sets of the same numbers. When one card is turned over the children quickly try to build a shape with that number of sides. The first to finish wins a cube or token. The rubber bands are removed and the children get ready for the next card. They can make any shape they want as long as it has the correct number of sides.

Suggested resources:

Geoboard

- Wooden board (20cmx 25cm)
- Wooden or bamboo sticks
- Rubber bands
- Non-toxic paint
- Tools to cut wood and make holes (e.g. chainsaw, small-sized driller etc.)
- Glue or other adhesive for wood

Steps:

1. With accessible tools, make a series of holes in accordance with the size of the board.
2. Cut and polish a number of bamboo or wooden sticks 5cm long. The number of sticks should correspond to the number of holes on the geoboard and the width of the sticks should match the width of the holes.
3. Use non-toxic paint to colour the board and bamboo sticks so it is attractive for children to use.
4. Apply a small drop of glue on one side of each stick and insert a stick in each hole. Allow time for the geoboard to dry, ensuring all sticks are well attached to the board.
5. Store all of the items (i.e. geoboard, rubber bands, and cubes) in the game box.

Hints and tips:

- Use non-toxic glue so the game is safe for children to use.
- If making holes in the geoboard is too challenging, ask a carpenter or someone with the right skills to help.
- Ensure all edges of the sticks are not sharp and are safe for children to use.
- Use another type of wood if bamboo is not available in the community.

Going fishing

Recognising alphabet letters is an important skill children need for school readiness. 'Going fishing' is a great way to help children learn the alphabet.

Inventory:

- One bag of fish with alphabet letters (two sets)
- One bag of a good number of picture cards
- Two boats
- One box to store all items

Number of players: Two

Rules: The game board is a big pond. Each player has a little boat. The water is full of fish; each one has a different letter written on its scales. Each player picks a card. The card has a picture. If the child can find a fish with a letter that makes the same beginning sound as the picture, they get to catch the fish and put it in their boat. Opponents have to agree that the fish's letter makes the same beginning sound as the picture. If it doesn't make the same beginning sound, players put the fish back in the pond and passes their turn. At the end, players count the number of fish in their boat. The winner is the player with the largest number of fish.

Suggested resources:

- Thick cardboard paper
- Sticky tape
- Crayons/coloured pencils, markers
- Grey lead pencil, eraser
- Two sticky tape rolls (that is, the cardboard rolls when sticky tape is finished)
- One small cardboard box
- Stapler and staples
- Scissors

Steps:

1. On thick cardboard paper, use crayons and/or coloured pencils to draw and colour a number of fish with alphabet letters on them (one fish, one letter). There should be two sets of alphabet fish.
2. Neatly apply a layer of sticky tape around all of the fish so they are sturdy and long-lasting.
3. Cut out all of the fish shapes.
4. On another thick cardboard paper, use markers to draw and colour two boats (one should have one colour and the other should have another colour).
5. Neatly apply a layer of sticky tape around each boat and cut them out.
6. Once the boats are cut, fold each base around each sticky tape roll and staple them around so they can stand. If the sail parts are not standing straight, stick a piece of cardboard paper at the back of the boats and inside each roll.
7. With cardboard paper, using markers and crayons, draw and cut picture cards.
8. Decorate the cardboard box. It will be used to store all of the items for the game.

Hints and tips:

- The stapler should be big enough to staple through the thick cardboard sticky tape rolls.
- There should be a good number of picture cards and they should be easy for children to recognise (e.g. cat, dog, motorcycle, corn, etc.).

Animal hunt

'Animal hunt' is a game useful for helping children to learn about syllables.

Inventory:

- Board game
- Two or three tokens
- Small bag of animal cards
- Die
- Long string to attach a little bag of tokens and cards

Number of players:

Two to three

Rules:

Each player picks one token and places it on the 'start' stepping-stone. They pick nine to 10 animal cards and dispatch each one of them randomly on the board game close to a stepping-stone. One player rolls the die and reads the number that they landed on. Then, according to the number on the die, they count and, at the same time, move their token on the stepping-stones.

If the player lands on a stepping-stone that has an animal picture close to it, they must name the animal and tell the other players how many syllables there are in the name. When successful, the player gets to pick the animal picture and put it inside their imaginary 'cage'. To find the answer for each animal picture card, look at the back of each card for a number that indicates the correct number of syllables. If the player lands on a stepping-stone with no animal picture, they do nothing and miss a turn. If the player gives the wrong animal name associated to the picture and/or the wrong number of syllables in the name, they must go back to the 'start' stepping-stone.

Players take turns at rolling the die, moving their tokens along the game, guessing animals' names and syllables. The game stops when one player reaches the 'finish' stepping-stone. At this stage, players count the number of cards they won. The one with the highest number of cards is the winner.

Suggested resources:

- Big piece of cardboard
- Plastic bottles
- Die
- Grey lead pencils, eraser
- Crayons/coloured pencils, markers
- Scissors
- Big piece of fabric
- Stapler and staples
- Sticky tape

Steps:

1. On the big piece of cardboard, draw and colour a path of stepping-stones winding through the forest.
2. Apply a layer of sticky tape around it so it is sturdy and long-lasting.
3. In the forest there are many animals. The pictures of animals can be drawn and glued on small cards.
4. On the back of each card write a number that tells how many syllables the word has.
5. Use plastic bottles as tokens.
6. Draw dots or numerals representing numbers from one to six on one die. The die would have been made out of wood or cardboard (see cardboard dice instructions in Appendix 6).
7. Cut fabric the same length as the board game and staple it around the game (back side).
8. Store all items in bags and attach them to board game with a long string.

Hints and tips:

- For a large sheet of paper, use a piece of flipchart paper or a paper tablecloth.
- The more stepping-stones on the forest landscape, the better. 50 is a good number.

Spin and spell

Preschool children should start to learn how to spell basic words. The 'Spin and spell' game introduces children to this skill.

Inventory:

- Spinner
- Picture cards with names or words for pictures
- Bag of seeds
- Bag to store all of the game items

Number of players: Two to four

Rules:

Each player receives three to four simple picture word cards. They take turns spinning the spinner. If the spinner lands on a letter of their word cards, they get to cover this letter on the four cards with a dry bean. The winner is the first one to cover all of the letters of the four words.

Suggested resources:

Picture word cards

- Cardboard paper
- Crayons/coloured pencils, markers
- Sticky tape

Spinner

- Medium-sized piece of cardboard
- Paperclip
- Sticky tape
- Crayons/coloured pencils, markers

Steps:

Picture word cards

1. Using cardboard paper, draw, colour and cut simple picture word cards (e.g. sun, dog, bug, fish, etc.). There should be a set of simple words that has the same number of letters.
2. Neatly apply a layer of sticky tape around the picture word cards so they are long-lasting.

Steps:

Spinner

1. Make an alphabet spinner (cardboard spinner instructions are in Appendix 7). The number of the spinner sections should match the number of letters found in the picture word cards (e.g. five sections in the spinner for letters S,O,P,A,N).
2. Draw and colour all of the letters found in the picture word cards in each section of the spinner. Draw and colour a section in the spinner showing 'spin again'.
3. Neatly apply a layer of sticky tape around the spinner so it is sturdy and long-lasting.
4. Use dry beans to cover letters of picture word cards while playing.

Hints and tips:

- The sets of word cards should have the same number of letters (three to four letters).
- Try to find a series of words that have the same letters (e.g. cat, hat, bat, etc.).
- Use non-toxic seeds so they are safe for children to use.

Picture, shape and tangram puzzles

Different types of puzzles help children learn how parts of something make a whole.

Picture puzzle

Inventory:

- One puzzle folder with a picture
- Six puzzle pieces

Number of players:

One to two.

Rules:

Assemble puzzle pieces to match the picture.

Suggested resources:

- Folder
- Envelope
- A4-sized white paper
- Grey lead pencil, eraser (optional)
- Crayons/coloured pencils, markers
- Glue
- Scissors/cutter
- Sticky tape

Steps:

1. Use the folder and stick an envelope onto its front with sticky tape.
2. On an A4-sizedpiece of white paper, draw and colour an interesting picture with details (e.g. animal, village, vehicle etc.).
3. Glue the picture on the left side of the folder.
4. On another A4-sized white paper, draw the same picture and glue the paper on the right side of the folder.
5. With a thin marker, draw lines and curves on the picture puzzle to make the puzzle pieces.
6. Neatly apply a layer of sticky tape around the picture so it is sturdy and long-lasting.
7. Cut the picture pieces following the lines and curves.
8. Keep the pieces in the envelope.

Hints and tips:

- Five to nine pieces are the ideal size when a puzzle is locally made.
- If the stationery items for making this game are not available, use equivalents that are safe for children.
- To make it more challenging, the player can solve the puzzle without the help of the picture.
- Use a pencil and eraser when drawing the puzzle in case there is a need to correct it.

Shape puzzle

Different types of puzzles help children learn how parts of something make a whole.

Inventory:

- Puzzle folder with a picture
- Six puzzle shape pieces

Number of players:

One to two.

Rules:

Assemble puzzle shape pieces to match the picture.

Suggested resources:

- Folder
- Envelope
- A4-sized white paper
- Cardboard paper (fairly thick)
- Grey lead pencil, eraser
- Crayons/coloured pencils, markers
- Glue
- Scissors/cutter
- Sticky tape

Steps:

1. Use the folder and stick an envelope onto its front with sticky tape.
2. On an A4-sized white piece of paper, draw an interesting picture with details and shapes that represent things (e.g. animal, village, vehicle etc.).
3. Glue the picture on the right side of the folder.
4. On another A4-sized paper, draw the same picture and glue the paper on the left side of folder.
5. Draw the same picture on a third A4 piece of paper and glue the paper on a piece of cardboard.
6. With a thin marker draw lines and curves around objects and things seen in the picture to make the puzzle shape pieces.
7. Neatly apply a layer of sticky tape around the picture so it is sturdy and long-lasting.
8. Cut the shape pieces following the lines and curves.
9. Keep the shape pieces into the envelope.

Hints and tips:

- Five to nine pieces are the ideal when a puzzle is locally made.
- If stationery items are not available, use equivalents as long as they are safe for children.
- To make it more challenging, the player can solve the puzzle without the help of the picture.
- Pictures can be left blank so children can colour them in.

Tangram puzzles

Tangrams are an ancient Chinese puzzle. A tangram square is made from seven pieces (three geometric shapes). Tangrams help children to learn and understand fractions.

Inventory:

- One small yellow triangle
- One medium-sized dark blue triangle shape
- One large light blue triangle shape
- One medium-sized light green triangle shape
- One small-sized red square shape
- One small-sized light orange triangle shape
- One medium-sized light purple parallelogram shape
- One bag of tangram model picture cards

Number of players:

One or more.

Rules:

One player picks a card and observes the shape on the card. With the seven coloured pieces provided, they try to replicate the shape that they see on the card. First, the player should look at one side of the card that shows how the different coloured puzzle pieces should be positioned to replicate the same shape. They must position each puzzle piece exactly as shown on the card. Once mastered and for more of a challenge, the player can turn the same card over. This time the card shows a shape with one plain colour and as a whole. The player is challenged to know - on their own - how to position the puzzle pieces in the right way to create the same shape as on the card.

Suggested resources:

- One big piece of cardboard
- One big white piece of paper
- Ruler, grey lead pencil, eraser
- Crayons/coloured pencils, markers
- Sticky tape
- Cardboard paper
- Scissors/cutter

Steps:

1. On the piece of paper glued on the cardboard, draw and colour one small yellow triangle shape, one medium-sized dark blue triangle shape, one large light blue triangle shape, one medium-sized

light green triangle shape, one small-sized red square shape, one small-sized light orange triangle shape and one medium-sized light purple parallelogram shape.
2. Neatly apply a layer of sticky tape around the cardboard so it is sturdy and long-lasting.
3. Use scissors/cutter to cut all of the shapes.
4. To make the tangram's model picture cards, divide a cardboard paper sheet or two into medium-sized rectangles.
5. On one side of each card, draw and colour a multi-coloured shape. The card must show how the different colour puzzle pieces should be positioned to obtain the shape as a whole. The shapes can be, for example, a parrot, a boat, a house etc.
6. On the other side of each card, draw the same shape but this time in one plain colour with no connections shown between the puzzle pieces.
7. Neatly apply a layer of sticky tape around each card so they are sturdy and long-lasting.
8. Place all items in a medium-sized bag.

Hints and tips:

- Children can make their own design if they want to create new cards

- Memory game: symbols and alphabet

Memorising and recognising letter symbols are important skills for preschoolers. 'Memory games' address these skills.

Inventory:
Symbols memory game

- One board game with 30 squares
- 30 pairs of identical bottle caps (tokens)
- Folder to store all of the board game items

Inventory:
Alphabet memory game

- Two sets of alphabet picture cards (upper and lower case letters and duplicates)
- 26 picture cards matching the sound of the 26 alphabet letters
- Folder to store all of the board game items

Number of players:

Two

Rules:
Symbols memory game

The two players pick six tokens and their duplicates. They place each token on one of the board game squares. All tokens must be turned on the back side so players do not see the symbols in each of them. The first player turns over one token and then a second. If they match, the player gets to keep them both. If they don't match, they turn them back over. The second player has a turn and the same rules apply for them. The two players give each other a turn. Players who can remember where specific tokens are placed on the board game to make duplicates will have an advantage. The game stops when no more tokens are on the board game. The two players count the number of tokens that they have. The one with the highest number of tokens is the winner.

Note: It is suggested that, at first, players only play with six tokens and their duplicates at a time so they can get used to the game and master it. Then, later, players can add new tokens and their duplicates to add more challenge and novelty.

Rules:
Alphabet memory game

The two players pick eight alphabet cards and their duplicates. They turn them over and lay them out in four lines of four cards. All alphabet cards must be turned on their back side so players do not see the letter on each of them. The first player turns over an alphabet card and then a second. If they match, the player gets to keep them both. If they don't match, they turn them back over. The second player has a turn and the same rules apply for them. Players who can remember where specific alphabet letters are placed on the board game to make pairs will have an advantage. The game stops when no more cards are on the board game. The two players count the number of cards that they have. The one with the most number of cards is the winner.

Note: Children play with 16 cards in total (i.e. lower or upper case and their pairs). The caregiver would have previously selected the letter cards and their pairs (e.g. letters that would have been introduced to the children at literacy circle). Once children get used to the game and master it with these specific

letters, the caregiver can choose eight new alphabet cards and their pairs (i.e. lower or upper case). Again the new letters would have been introduced to the children at literacy circle. This game's inclusion strategy creates challenge and novelty. It can also be used until all of the 26 alphabet letters have been introduced to the children. Caregivers can add another variation to the game by selecting eight alphabet cards (lower or upper case) and eight picture cards that match the alphabet cards (i.e. each alphabet card matches a picture card that starts with the letter sound).

Suggested resources:

Symbols memory game

- 30 bottle caps (same colour)
- White paper
- Glue
- Sticky tape
- Piece of cardboard
- Ruler, grey lead pencil, eraser
- Crayons/coloured pencils, markers
- Sticky tape

Suggested resources:

Alphabet memory game

- Large amount of cardboard paper
- Glue
- Ruler, grey lead pencil, eraser
- Crayons/coloured pencils, markers
- Sticky tape

Steps:

Symbols memory game

1. To make the board game, cut the piece of cardboard into a medium square. Cover the cardboard square by gluing paper on it. Draw and colour the board with a table of 12 squares.
2. Neatly apply a layer of sticky tape around the board game so it is sturdy and long-lasting.
3. To make the tokens, use paper to draw 30 little circles (the same sized as the inside of the bottle caps, so they can fit in).
4. Draw symbols and their duplicates in every two circles.
5. Cut them one by one and glue them into the inside of each bottle cap.
6. Let them dry for 30 minutes.
7. Place all of the tokens and the board game into a folder.

Steps:

Alphabet memory game

1. To make the alphabet cards, draw 104 cards (26 lower cases with 26 duplicates and 26upper cases with26 duplicates) on cardboard paper. Ensure each card is large enough to draw an alphabet letter and a small picture that matches the letter sound on it. Please note that children will play with a select number of matching letters each time they play the game. See hints and tips below.
2. On each card and from A to Z, carefully write in upper cases one alphabet letter on the top part of the card. Also, on each card, draw a picture that represents the sound of the alphabet letter. Repeat the same process for their duplicates.
3. On each card and from A to Z, carefully write in lower cases one alphabet letter on the top part of the card. Also, on each card, draw a picture that represents the sound of the alphabet letter. Repeat the same process for their duplicates.

4. To make the picture cards, draw 26 cards on cardboard paper. Ensure that each card is large enough to draw a picture on it. Each picture should match an alphabet letter/sound (e.g. a picture of an apple for letter A; a picture of a ball for letter B; a picture of a cat for letter C etc.).
5. Once all of the cards are made, neatly apply a layer of sticky tape around them so they are sturdy and long-lasting.
6. Place all of the cards into a folder.

Hints and tips:

Symbols memory game

- Symbols on cards can be, for example, a heart, a cross, a tick, a question or exclamation mark, or a little star with a circle around it, etc.
- If the circles do not stick to the bottle caps with glue, use sticky tape.

Hints and tips:

Alphabet memory game

- It is extremely important to write letters with a clear and universal type of writing, so children can learn about the alphabet symbols the right way and they don't get confused about how to write them.
- There are many cards to deal with in this game. Children might get overwhelmed and confused about handling them all. To overcome this, gradually select a set of eight cards for the children to play with each week. For example, in the first week, eight lower case letter cards and their duplicates are selected for the children; eight upper case letter cards and their duplicates are selected in the second week; in the third week, eight new lower case letter cards and their duplicates are selected; the fourth week eight new upper case letter cards and their duplicates are selected. Once all 26 alphabet cards have been introduced, children can practice matching alphabet cards with picture cards.

Stack the blocks

Woodcarvers can help you make the game of 'Stack the blocks.'

Inventory:

- 26 cubes with alphabet letters in one colour
- 26 cubes with alphabet letters in another colour
- Big bag (made out of fabric) to store all of the cubes

Number of players:
Two

Rules:
One player collects 26 cubes of the same colour and the other player collects 26 cubes of the other colour. Using the wooden letter blocks, one player makes a tower as high as they can name the letters. Then the second child does the same. The one with the highest tower wins a token. This is a fun game where children are beginning to know some letters, but not all of them.

Suggested resources:

- Wooden cubes
- Markers (e.g. one blue, one green)

Steps:

1. Produce 52 wooden cubes.
2. With one coloured marker, write each alphabet letter (upper case) on each cube (the first 26 cubes).
3. With another coloured marker, write another series of alphabet letters on each cube (the other 26 cubes).
4. Store all of the items in a bag or box when not in use.

Hints and tips:

- Get support from a woodcarver to make the wooden cubes.
- The wooden cubes should not be too big so children can easily manipulate them. On the other hand, the cubes should not be too small because space is needed to write an alphabet letter.
- The writing should be clear and universal so children learn to read the alphabet symbols correctly.

Dominoes

Discarded cardboard boxes can be used to make great dominoes for children to play with.

Inventory:

- Around 28 domino blocks
- One bag to store all of the dominoes

Number of players:

Two to four

Rules:

The players sit down in a circle. One player shuffles the dominoes by moving them around with their tiles facing down on a flat surface. They get to distribute seven dominoes per player if there are two players and five dominoes per player if there are four players. The remaining dominoes are facing down in a pile called 'the yard'. Each player has a pile of dominoes facing down on a flat surface. The player who distributed the dominoes has the first turn. They pick and turn over one domino from their pile. They place it at the centre of the circle so the other players can see the two halves of the tile and the number of dots on each of half. The next player picks another domino from their pile and turns it over. They try to match it with the first domino from the first player. Dominoes can be matched when they have, at least, one similar half of a tile with the same number of dots. Also, a domino with one blank half can be matched to another domino with any other half. In both cases, the player places their domino matching half by touching the end of the other matching domino's half. For example, they can place a domino's half with two dots next to another open domino's half with two dots. They can place a blank half next to any other open domino's half. Dominoes are played end to end only. If a player does not have a domino with a half matching with any open halves of dominoes on the table, they get to take some dominoes from 'the yard' until they have a piece that they can match. If 'the yard' becomes empty, players pass their turn to the next person until they can play. If two people play the game, the first person that has used all of their dominoes becomes the winner. If four people play the game, the first person that has used all of their dominoes becomes the first winner and the other players continue to play until there is a second and third winner. First winners get to shuffle and distribute the dominoes as well as having the first turn in the next game of dominoes.

Suggested resources:

- Big piece of cardboard
- Markers
- Ruler, grey lead pencil, eraser
- Scissors/cutter

Steps:

1. Draw a table on a piece of cardboard and divide it into small rectangles. All rectangles must have the same dimensions.
2. Divide each rectangle in half with a marker.
3. Fill each half with a combination of dots (one dot in one half and two dots in the other half, one dot in one half and three dots in the other half, one dot in one half and four dots in the other half etc.). Combinations must be made out of one dot to six dots.
4. Neatly apply a layer of sticky tape around the cardboard so it is sturdy and long-lasting.
5. Cut all of the cardboard domino pieces with scissors or a cutter.
6. Store all of the domino pieces in a small bag when not in use.

Hints and tips:

- To make it easier for children, all players can have their dominoes facing up at the beginning. They can choose the one that can match.
- Dominoes can be produced on wood. The most rudimentary carpentry skills can produce the wooden rectangles.

Colour bingo

'Colour Bingo'can be made out of discarded cardboard and plastic bottle caps.

Inventory:

- Two board games
- 16 blue bottle caps (or another colour)
- 16 orange bottle caps (or another colour)
- One pack of coloured shape cards
- One bag for all of the items

Number of players:

Two

Rules:

Each game board has 16 squares. A coloured shape is drawn in each square. The two game boards are different in some way. There is a set of coloured cards for each shape and colour. (There might be a green triangle, a red triangle, a yellow triangle, etc., as well as an orange circle, red circle etc.). One person is the caller. They mix up the cards and draw one from a special grab bag. They call out what is on the card. The players who have this coloured shape cover it with a token. The first one who covers their board calls out 'Bingo!' and wins the game. Then they get to be the caller for the next game.

Suggested resources:

- One big piece of cardboard
- Two paper sheets (A4-sized)
- Cardboard paper sheets
- Glue
- Ruler, grey lead pencil, eraser
- Crayons/coloured pencils, markers
- Sticky tape
- Scissors/cutter
- Plastic bottle caps (16 blue and 16 orange)

Steps:

1. To make the two board game bases, position the big piece of cardboard in a landscape layout and glue a paper sheet horizontally at each end of the cardboard. With scissors or a cutter, cut around the two paper sheets and discard the remaining cardboard.
2. Use a grey-lead pencil and ruler to draw a grid of 16 rectangles on each board game.
3. In each rectangle, draw a different shape and write its name inside (e.g. rectangle, triangle, square, circle etc.).
4. Colour the grid's rectangles with a different colour each time (e.g. blue, red, green, yellow etc.).
5. Neatly apply a layer of sticky tape around each board game so they are sturdy and long-lasting.

6. To make the cards, draw 32 rectangles on a number of cardboard paper sheets.
7. In each card, draw a different shape and write its name inside (e.g. rectangle, triangle, square, circle etc.). Sixteen cards should match the 16 shapes on one board game and the other 16 should match the other 16 shapes on the other board game.
8. Colour the font of each card with a different colour each time (e.g. blue, red, green, yellow etc.).
9. Cut the cards and neatly apply a layer of sticky tape around them so they are sturdy and long-lasting.
10. Place the two board games, the cards and all the plastic bottle caps in a bag.

Hints and tips:

- Ideally, the board games should be A4-sized.

Lace-ups

Lace-ups allow children to practice their hand-eye coordination, a skill needed for learning to write.

Inventory:

- Lace-up in shape forms with three to four holes
- Lace-up in animals, people or object forms with more than four holes
- Shoelaces

Games and rules:

Children insert a shoelace into the holes of the lace-up puzzles, from one hole to another, so it is connected.

Suggested materials:

- Cardboard and/or cardboard paper
- Grey lead pencil, eraser
- Crayons/coloured pencils, markers and/or non-toxic paint
- Sharpener
- Scissors/cutter
- Shoelaces
- Sticky tape
- Hole punch

Steps:

1. Use cardboard or cardboard paper and a grey lead pencil to design a small number of medium-sized shapes, people and animals.
2. Use coloured crayons, pencils, markers and/or paint to colour the shapes, people and animals.
3. Cut each shape, people and animals.
4. Apply a layer of sticky tape around the lace-up so they are sturdy and long-lasting.
5. With the help of a hole puncher or cutter, make holes around each lace-up.
6. Insert the shoelace into one of the holes of each lace-up. Make a knot so it is permanently attached to it.

Hints and tips:

- Lace-ups should be colourful so they are attractive for children to play with.
- Lace-ups should be medium-sized so children can manipulate them well with their small hands.
- For more challenging lace-ups, people and animals could be designed with their body parts detached from each other so children can solve the lace-up in a puzzle form (i.e. putting together body parts of a doll or a chicken and linking them with a shoelace).
- As an example of a lace-up, children enjoy dress-up dolls or people where body parts and/or new clothes are laced together. Another example could be a shoe mounted on a board for children to lace and practice tying a knot.
- The holes should be big enough for the shoelace to be inserted.
- The shoelace should be quite long so it can be inserted into every hole of the lace-up.

Lace-ups can be made of different shapes, animals, people and objects.

3. Books and Pictures

Introduction

This corner focuses on pictures in books, pictures on cards, and pictures that children make themselves. It combines art activities and language skills and making materials such as story books, lotto games, alphabet and picture cards. However, art supplies such as paper, glue, scissors, crayons and paints are very costly and not easily found in remote villages. Also, volunteer caregivers do not have the time to gather materials for daily art lessons. With this in mind, at least drawing should be available. If art supplies such as paint or glue are used, they should be kept away from books to make sure they are not soiled.

Children enjoy looking at books, and playing with picture, alphabet and word cards. Drawing their own pictures helps them develop the motor skills needed for writing. Children should be encouraged to be creative. Their drawings will show them that something they are thinking about can be represented in a picture. Later, they will also learn that ideas and pictures can be written as words. They can dictate the words that they want the caregiver to write in their picture. They might choose to copy or trace the words.

All art is exciting to children. It helps them develop fine motor skills and visual reasoning. They also enjoy talking about their pictures, so art motivates language development. Interesting art materials can be made available at no cost and the caregiver should be encouraged to provide them. This includes mud and water for moulding. Collages can be made with leaves and bits of paper, and glue can be made from a flour and water paste. Children might practice weaving with string and a notched piece of cardboard. Children also enjoy sewing as an art activity, as it develops reasoning and fine motor skills.

Reading to children is one of the most important things caregivers can do to help children develop their literacy skills. The books and pictures corner creates the opportunity for the caregiver to sit with a small group of childrento share a story. Children should also have the opportunity to look at books on their own. A love of books is a necessary skill for life-long learners.

It is also important for all materials in this corner to be selected in the mother tongue language, as international research shows that children learn early literacy best in their own language. Once children can master their mother tongue language, they are better able to acquire a second one.

The books and pictures corner supports children's language development, such as writing, speaking, listening to and understanding the meaning of words and sentences.

Also, almost all cultures have materials that promote literacy and can help young children learn. Materials such as local indigenous stories, songs and fables are ideal to teach early literacy to children because they offer good subject matters that they can learn from, and they support local culture, child identities and parental engagement. Through those, children develop literacy skills, learn and understand the customs, habits and rituals of their own culture, and increase their sense of belonging.

The books and pictures corner supports children's development in the following ways:

Cognitive: observing books, banners and alphabet cards; asking questions about a story, pictures and alphabet letters; understanding the meaning of words; counting cards, alphabet letters and things in pictures; developing a left to right orientation; practicing drawing and writing.

Social/emotional: learning about cultural and spiritual values; taking care of books; learning how to share the materials with peers; learning how to negotiate/co-operate with peers when playing in groups.

Physical: controlling small muscles in hands; coordinating hand-eye movement to insert and collect cards in and from banner/pocket chart; turning the pages of a book one at a time.

Language: participating in conversations about books and the alphabet; describing pictures; listening to others; learning and using new vocabulary; asking and answering questions; noticing differences in sounds in alphabet letters; recognizing and understanding that the alphabet forms words and that spoken words can be written down.

Alphabet, number and picture cards

Alphabet, number and picture cards can be used in different ways, such as creating sorting and guessing games.

Inventory:

- Two sets of 26 alphabet cards (upper case and lower case, 7cm square)
- Two sets of 26 picture cards
- Two sets of 20 number cards

Games and rules:

There are no set games and rules. Children must be able to talk in sentences and express whole thoughts before they can learn how to read. Talking about pictures and sorting them in many ways helps children develop important skills for reading. A large set of picture cards (two of each) and alphabet cards can be used in many ways. Children can play a memory game, make up a story, play 'school' with their friends, or match letters to words.

Suggested resources:

Alphabet, number and picture cards

- Big pieces of cardboard or thick cardboard paper
- Scissors/cutter
- Glue
- Ruler, grey lead pencil, eraser, sharpener
- Crayons/coloured pencils, markers, non-toxic paint
- Sticky tape
- Images cut from magazines or other mediums or white paper

Steps:

Alphabet cards

Images for cards can be printed from the internet.

1. Using a grey lead pencil, eraser and ruler, draw 52 same sized squares (7cm square) on the big pieces of cardboard (or cardboard paper).
2. Cut all squares and divide them into two sets of 26 cards.
3. With a grey lead pencil, carefully write one alphabet letter in upper and lower case (i.e. Aa, Bb, Cc etc.) on the top section of each card in both sets.
4. Use markers, crayons and/or coloured pencils or paint to colour each letter in different colours.
5. On the bottom section of each card in both sets, draw and colour a picture representing the alphabet letter (i.e. A for Apple, B for Ball, C for Cat etc.).
6. Neatly apply a layer of sticky tape around them to make them sturdy and long-lasting.

Steps:

Picture cards

1. Using a grey lead pencil, eraser and ruler, draw 52 same sized rectangles or squares on the big pieces of cardboard (or cardboard paper).
2. Cut all rectangles or squares and divide them into two sets of 26 cards.
3. On each set of cards, use a grey lead pencil with coloured crayons, pencils, markers or paint to draw colourful pictures on each card that represents a word starting with one of the letters of the alphabet (e.g. an apple for letter A, a ball for letter B etc.). Each set of picture cards should match each other.
4. Neatly apply a layer of sticky tape around the cards to make them sturdy and long-lasting.

Steps:

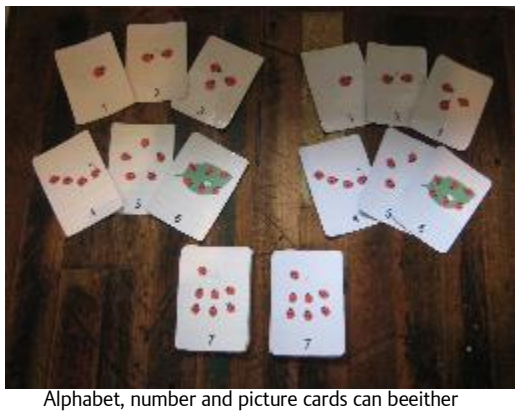
Number cards

1. Use a grey lead pencil, eraser and ruler to draw 40 same sized rectangles or squares on the big pieces of cardboard (or cardboard paper).
2. Cut all rectangles or squares and divide them into two sets of 20 cards each.
3. With one set, use a grey lead pencil with coloured crayons, pencils, markers or paint to draw numbers from one to 20 at the bottom of each card.
4. At the centre of each card, use a grey lead pencil with coloured crayons, pencils, markers or paint to draw a picture that represents each number card (e.g. one pig, two children, three bananas, four cats etc.).The picture can be about people, animals, objects etc.
5. Repeat the same process with the other set of number cards.
6. Neatly apply a layer of sticky tape around all cards to make them sturdy and long-lasting.

Hints and tips:

Alphabet cards

- One set of alphabet cards will be used for the lower case letters and the other set will be used for the upper case letters.
- The alphabet should be written in a universal way so children can learn how to visualise and recognise letters in their own environment.
- Children like to look at detailed pictures. Pictures downloaded and printed from the internet or cut from calendars, magazines and newspapers are more interesting to children than teacher-drawn cards. Glue them, one by one, on each card. If drawing cards, make them artistic, colourful and attractive with a lot of detail.



Alphabet, number and picture cards can beeither hand drawn or created using word or clip art on a computer.

Hints and tips:

Picture cards

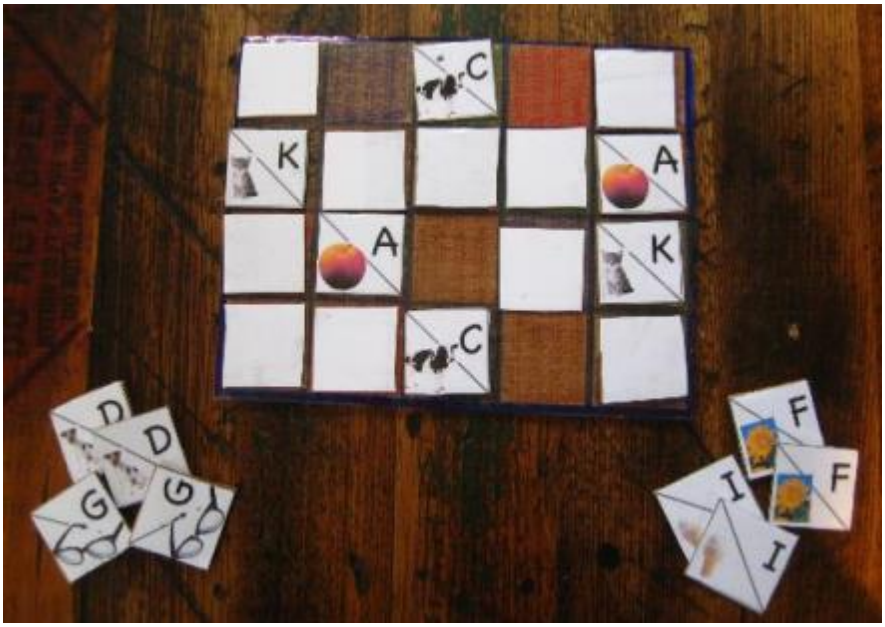
- To match both sets of cards, ensure all of the pictures collected come with a duplicate.

Hints and tips:

Number cards

- Alternatively, instead of drawing and colouring the number cards, a number of pictures could be collected from different mediums and glued onto each card. Be sure to have a good amount of the same pictures and that all of the pictures can fit onto the cards.

For all of the cards, children might want to use a pocket chart to sort them out. To produce a pocket chart, refer to the 'Learning toys for maths-structured activities: calendar and number pocket chart' section of this guide (page 119) or the 'Learning toys for literacy-structured activities: Big Books' section of this guide (page 104).



Pictures on the alphabet cards can be either drawn or printed from the internet.

Slates

Children in the Plan-supported ECCD project in Uganda have their own slates on which to practice writing, so as to develop early numeracy and literacy skills.

Inventory:

- One or two slates
- Chalks

Games and rules:

There are no set games and rules. Children can simply use the slates to draw, practice their writing and to invent games.

Suggested resources:

- Wood (any type but ideally a good quality so it can be long-lasting)
- Tools to cut and shape the wood as a medium-sized flat rectangle
- Enough waterproof black and non-toxic paint for the slates

Hints and tips:

- Caregivers can network with their communities and woodcarvers to help them develop the slates.

Books/stories

Inventory:
Classroom libraries should contain about 25 books.

Games and rules:

There are no set games and rules. Children can simply use the books to look at the pictures, recognise the words and sounds, and make sense of the story through the pictures. The caregivers can read the books to them and have a one-on-one connection. Children can also pretend to read the books to each other and discuss the pictures.

Suggested criteria for selecting and buying books:

Good storybooks for early learning programs should have an interesting plot, character development, informative pictures and half pages of writing. Children in Uganda are enjoying books.

- Books should have an exciting story line, with a variety of themes.
- They should include universal themes that connect children to the wider world beyond their village.
- They should expand children's vocabulary, concept formation, and understanding of why things happen. If not, there is no learning.
- Children need to hear and discuss a story one day and read it again the next day with further discussion. Two new books per week are suggested. One familiar book can be repeated.
- The books should have half a page of coloured pictures and half a page of words; about 12–15 pages per book.
- Memorising a story is not necessary, unless it is a famous traditional story, because there are many other things that need to be memorised, such as rhymes and songs, numbers and letters.

Hints and tips:

- It is recommended that caregivers network with their communities to help them pay for the books. Alternatively, they could get support from a supporting organisation or local government.
- Add a dozen new books each year.
- In cases where resources are low and books are few, buy 12 books for the initial collection.

Alphabet banner

By enabling children to recognise, sort, and match letters and pictures, 'alphabet banners' help children learn the alphabet.

Inventory

- Alphabet banner (pocket chart)
- One or two sets of picture/word cards

Games and rules:

There are no set games and rules. Children can: match picture/word cards to each alphabet on the letter; invent games (e.g. saying the alphabet the fastest, pointing at each letter of the banner); practice writing alphabet letters with the banner as a model; memorise the alphabet list etc.

Suggested resources:

- Grain sack
- Scissors
- Ruler, grey lead pencil, eraser
- Markers (different colours)
- Fabric, transparent plastic tablecloth
- Lighter or candle and matches

Steps:

1. Cut the grain sack on two sides to turn it into a big rectangle.
2. Use a grey lead pencil and ruler to neatly divide the rectangle grain sack into 26 medium-sized rectangles.
3. Divide each rectangle in half.
4. Use a lighter to burn the edges of the banner to prevent damage.
5. Use a grey lead pencil and a ruler to neatly draw an alphabet letter in each first half of the rectangle (i.e. A, B, C, etc.).
6. Once the alphabet letters are designed, use coloured markers to colour them in.
7. Caregivers can network with their communities and sewists to frame the banner and create pockets on it.

Hints and tips:

- Draw alphabet letters big enough so they are easy to see and understand.
- If there is enough space on each rectangle, neatly write alphabet letters in upper and lower case so children become familiar with both prints.
- Banners can be framed with fabric.
- To create pocket charts, ask the sewist to use a clear plastic table mat or equivalent. Ask them to create a pocket beside each alphabet letter. Pockets should be the size of rectangles allocated for the picture/word cards.
- The picture/word cards from this corner can be used for the banner. To make them, please follow instructions on p 77.
- Ensure that the cards can fit into each rectangle before asking someone to sew the pockets.

4. Sand and water play

Introduction

Children can make playful discoveries about science and maths by using sand and water. It develops their measuring, reasoning and analytical skills. Sand and water play is a high-energy, language-rich corner. Children are naturally talkative and cooperative as they play. Having such a fun thing to do at school makes children think positively about school and learning. It is easy to add interesting new materials by changing the size and shape of plastic bottles, adding funnels, tubes, eye droppers, squeeze bottles for squirting, things to float, and sink or spoons. Caregivers should allow children to add water to the sand so they can mould houses and tunnels. If clay is available, then this is an ideal area for playing with it. Some caregivers paint two or three long 'magic drawing sticks' that children can use to draw in the sand. The water bucket can also be used to improve health and hygiene, as children can wash their hands with soap in the water bucket before entering the classroom.

Water and sand play support the four areas of child development. They also teach the following skills:

- Observation and problem solving about scientific concepts;
- Comparing/sorting the water and sand materials by size/shape/number;
- Counting and arranging items (e.g. big to small);
- Measuring water or sand in cups;
- Building social skills and using respectful words to negotiate/cooperate/resolve conflict with other peers;
- Developing fine motor skills and controlling hand-eye coordination to pour, insert and scoop sand and water;
- Developing listening and speaking skills (e.g. describing things made with sand and water; engaging in conversation and sharing knowledge with other peers about counting/sorting/measuring; learning new vocabulary);
- Practicing drawing and writing on sand with a stick.

The sand and water corner helps children make playful discoveries about science and maths. It develops their measuring, reasoning and analytical skills.

Sand and water play learning toys

A variety of materials can be collected and used for pouring, scooping and mixing sand and water.

Inventory:

Sand play

- Cups of differently sizes or measuring cups
- Spoons
- Wooden objects for making designs (i.e. sticks)
- Cups or coconut shells for moulding sand

Water play

- Set of graduated measuring cups
- Funnels
- Rubber tube
- Plastic bottles with differently sized openings
- Lids with holes for sprinkles
- Medicine droppers (if possible) and small bottles for filling
- Spray bottles if available

Games and rules:

There are no set games and rules. Children can simply use and explore the materials however they want. This corner should allow for more than one child for social and language development through play.

Suggested resources:

Please see the inventory. It is recommended that all caregivers network with market sellers, art and craft makers, and their communities to help them collect the resources needed for the sand and water play corner.

Hints and tips:

- If some of the resources suggested in the inventory are not available or too costly, more locally based resources can replace them. For example, if the rubber tubes are hard to find, small and large bamboo tubes can be an alternative.

5. Imagination

Introduction

The imagination corner encourages creativity and socialisation. Children learn and play with familiar objects from everyday life, such as dolls or farm animals. They can use other objects such as buttons or seeds however they wish. Children can pretend to be a mother, a shopkeeper, a doctor or even a baby. Through pretending, children are not trying to escape from the reality of life, they are trying to understand it.

Some preschools put vehicles, animals and people figures in the block centre and a play mat for setting up a village scene. Putting these figures in the imagination corner draws interest to this area from children who might not otherwise choose it. Figures don't need to be expensive. Drawings of people or vehicles glued to scrap blocks of wood are enough.

Imaginative play supports the four areas of child development. It also teaches the following skills:

- Building creativity and imagination skills (e.g. creating a pretend story or replicating a familiar experience like being in the kitchen cooking with mum and dad);
- Using items as symbols to represent things;
- Assigning and taking on roles in the play;
- Learning new vocabulary;
- Practicing role playing and using words to express feelings;
- Asking and answering questions about the play and describing materials;
- Engaging in complex conversation required in role plays.

The imagination corner encourages children to socialise and be creative with others.

Balance scale

The balance scale is a great way for children to practise measuring and weighing. They learn concepts such as small,big, heavy and light.

Inventory:

- Balance scale
- Small rocks or any other similar objects as long as they are safe for children to use
- Hook to attach the balance scale on a wall or flat surface

Games and rules:

There are no set games and rules. The main use of the balance scale is to explore the concept of measuring things and understanding sizes (i.e. bigger and smaller). However, children can also use the scale in whatever way they want.

Suggested resources:

- One long piece of wood of around 4cm to 5cm wide
- Two large plastic bottles
- Three medium-sized pieces of thick string
- Tools to make holes
- Scissors/cutter

Steps:

1. Cut the long piece of wood around 50cm long.
2. Use a tool to make one hole in the centre, and two holes around 1cm away from each end.
3. Use scissors/cutter to cut the bases of the two large plastic bottles with identical heights (around 6cm to 7cm).
4. Make a hole on each side of the plastic bottle bases, around 1cm away from each edge.
5. From one hole to another, insert a string in each plastic bottle base.
6. Attach the plastic bottle bases on each side of the wooden piece by inserting their respective string in the left and right holes and tying knots.
7. Use the remaining piece of string for the hole in the centre of the wooden piece. Again, insert it and tie a knot.

Hints and tips:

- Make sure the edges of the bottles are smooth and safe for children to manipulate.
- The piece of string at the centre of the piece of wood will be useful to attach the balance scale on the wall.
- The balance scale can be suspended anywhere as long as it is reachable for children to use.
- If needed, use a hook to suspend the balance scale on a wall.

Mat, vehicles, people and animals

Inventory:[8]

- Grain mat (92cm x 122cm) with road and typical landscape, plastic or wooden vehicles, people and animals
- Bamboo sticks

Games and rules:

There are no set games and rules. Children can use the mat, vehicles, people and animals to 'pretend play' and create stories with or without other children.

Suggested resources:

- Large grain sack. As an alternative, use a piece of fabric (a bit more than 92cm x 122cm)
- Pieces of fabric for the mat's frame
- Ruler, grey lead pencil, eraser, scissors
- Tools to make holes
- Markers and/or paint
- Bamboo sticks
- Plastic vehicles, people and animals
- A small basic sewing kit (needle and thread)
- Soft bag for items

Steps:

1. Use scissors to cut one long side and the base of the grain sack so it can be unfolded as a rectangle.
2. Use the ruler and pencil to draw a large rectangle of about 92cm x 122cm on the grain sack. Leave the margins as they are going to help to make the mat's frame.
3. With a grey lead pencil with markers or paint, draw and colour a local landscape with roads onto the grain sack (e.g. village, forest etc.).
4. With pieces of fabric and a sewing kit, carefully use the margins to create a neat frame for the mat.
5. Cut and polish a number of small to medium-sized bamboo sticks.
6. Display the vehicles, people and animals on the mat when setting up the imagination corner.
7. Put all items in a bag when not in use.

Hints and tips:

- If you choose a piece of fabric over a grain sack, make sure it is a plain colour and suitable for paint and/or markers.
- The mat's landscape should be fairly detailed and it should have some interesting things to look at (e.g. houses, huts, markets, different types of trees and plants).
- If the task of framing the mat is hard, ask a community member with sewing skills to help.
- The bamboo sticks can be used to extend children's imaginations. Children can create little spaces on the mat and pretend that they have built, for example, a house or farm etc.
- Plastic vehicles, animals and people can be bought at a very low-cost at the market. Alternatively, caregivers could network with their communities and art and craft makers to help them with the production of those items. Production can be done with local materials.

[8] For photos, please refer to the photos on page 85, Imagination Introduction.

Dolls

Dolls can be made in different ways with soft materials or hard materials, just like in this photo from Uganda.

Games and rules:

There are no set games and rules. Children can use the dolls however they wish to role-play certain people and aspects of their environment (e.g. mother, baby, nurse, shop keeper, etc.).

Suggested resources:

- Two big pieces of fabric (thick and sturdy fabric is ideal)
- Two to four paper sheet or cardboard sheets
- Sticky tape
- Pins
- Scissors
- Ruler, grey lead pencil or marker
- Basic and small sewing kit (including a bright-coloured thread for mouth and eyebrows)
- Dry, non-toxic small beans (enough to fill a doll's body up)
- Wool or thick thread/cord (for hair)
- Two big buttons (for eyes)

Steps:

- To make a doll, use a grey lead pencil to draw basic body parts on a piece of paper or a cardboard sheet. Draw a large circle for the head, one large rectangle for the waist and four medium-sized and long rectangles for arms and legs. Ensure the body parts are big enough but at the same time smaller than the dimensions of the pieces of fabric because they need to fit onto both pieces.
- Cut every single piece out and assemble head, arms, waist and legs with sticky tape to create a pattern (i.e. a doll's body shape).
- Place the two pieces of fabric on top of each other on a flat surface and smooth them out.
- Place the doll's body shape pattern over the fabric pieces and pin it down with pins.
- Smooth the body out with your hands and cut the body out. Discard the remaining fabric or keep it for another art and craft project.
- At this stage, the body shape pattern is cut out and has three layers. First, there is a layer of paper or cardboard sheet; second, there is a layer of fabric; third, there is another layer of fabric.
- Take all of the pins out of the doll's body shape pattern and remove the layer of paper or cardboard sheets.
- Keep the two layers of fabric pieces on top of each other.
- To assemble the two fabric pieces together and create a three-dimensional body, use a long piece of thread and a needle to sew around them. Try to sew as close as possible to the edge of

the body. This will allow the creation of a wider body for the doll. Start sewing from the bottom of the body around to the top of the body.

- When sewing around the head, stop midway and insert the dry, small and non-toxic beans into the fabric assemblage. At this stage, the doll's body should take shape and look filled-up.
- Once the body is filled-up with the beans, finish sewing around the head up to the top.
- Use the two big buttons for the doll's eyes and place them on the doll's face.
- Sew them on firmly to ensure the doll is safe for children to use.
- Use coloured thread to create the doll's mouth. Sew the thread upward and back and forth on itself to create a curvy mouth that looks like a smile.
- Use two coloured threads to create the doll's eyebrows. Sew two small curvy lines above each eye. To make thick eyebrows sew the two long pieces of thread above each eye, back and forth, on themselves.
- To make the doll's hair, cut pieces of wool or thick thread/cord. For long hair, cut long pieces and for short hair, cut short pieces.
- Attach the doll's hair onto the top of its head by sewing the wool or thick thread/cord pieces inward.
- Reuse the same process to make a second doll.

Hints and tips:

- The most rudimentary sewing skills can produce dolls.
- Dolls of any size, shape, colour and gender can be created. Try to create a variety of them to support children in their imaginative play.
- Do not overfill the doll's body with beans as it might stretch the fabric too much and potentially break the stitches.
- For more elaborate dolls, more advanced sewists can help produce them.
- It is recommended that caregivers network with their communities and sewists to help them make the dolls.

Both boys and girls should be encouraged to play with dolls during corner play.

Other role-play materials

Dramatic play is enhanced when children have additional items to play with. Consider adding the following inventory[9]:

Inventory:

- Small dishes, stirring spoon, coconut shells
- Small clothing for dolls (e.g. baby cloth)
- Graduated small baskets or coconut shells
- Pieces of solid colour cloth – A4-sized to use as a tabletop, baby bed, store counter etc.
- Buttons, pebbles, shells, seeds, bottle caps used for making designs, or to play store or house
- Dress-up clothing

Games and rules:

There are no set games and rules. Children can use the items however they wish to support them role-playing certain people and aspects of their environment (e.g. mother, baby, nurse, shop keeper etc.).

Steps:

- Certain objects can be made or bought at a low cost and/or collected by community members. It is recommended that caregivers network with their communities and market sellers, art and craft makers to help them collect the items in the inventory (except the dolls) for the imagination corner.

Hints and tips:

- Children should be encouraged to role-play in roles that are not gender-specific.
- Have a recycling box in the community where things like clothes for dress-ups can be donated.
- If parents wait around for their children outside the centre, they can be engaged in making or collecting materials for dramatic play.

Recycled materials can be used to create fun experiences for children in the imagination corner. In Uganda, early learning programs have set up pretend shops and pharmacies for children to play with.

[9] For other photos, please refer to the photos on page 85, Imagination Introduction.

Learning toys for structured play

Introduction

Structured play is a part of the day during which children are given a set of activities with specific rules, materials and length of time. During structured play, caregivers are often the ones who organise and conduct activities with instructions for children to follow. Some activities might need children to work in groups or some to work alone. There are many examples of structured play activities and they can range from games with rules to a group discussion.

In many ways, structured play activities support children to develop a number of useful skills in the four areas of development. When instructed to work with classmates, children learn how to cooperate with others. They also learn effective ways to work as a team. Structured play also helps children learn how to listen carefully, take turns, answer questions, be outspoken and think of an effective strategy to solve a problem. Structured play might be used to promote skills to be mastered in different disciplines, such as maths, literacy, science, music, sport and more.

In this guide, the major structured play activities are divided in two competencies: literacy and maths. The suggested literacy activities are organised to support the development of listening, speaking, reading and writing skills in a fun and challenging way. The suggested maths activities are specifically chosen to engage children in becoming good observers and problem solvers, and in gaining logical thinking and maths skills. The activities also offer the opportunity for children to develop in the four areas of development.

There are many examples of structured play activities, ranging from games to group discussions.

Like free play activities, children need an ample supply of materials for structured play. Caregivers should be able to capture the children's attention every time they conduct an activity, as curiosity is a great pathway for them to learn. This can be done by rotating and using different toys for each structured activity. Quite often, structured play activities will need specific materials, such as story books for story time, journals for news sharing, alphabet notebooks for certain alphabet activities, or coloured cubes from the block centre to solve a maths challenge. If the specific materials aren't available, they can be replaced by substitutes (e.g. paper/slates for writing activities). Some other structured activities will provide the chance to use a range of open-ended materials. For example, bottle caps can be used in many ways for children to solve a maths problem (e.g. counting/stacking/making additions with caps).

Structured play activities benefit children significantly. However, structured play should not replace free play. Free play and structured play are elements of quality ELPs. Both should be available every day with one third of the daily routine allocated to free play. This is because children need different types of play activities to be able to learn how to respond accordingly to different situations and learning experiences. Too many structured play activities in one day can result in children feeling stressed and unproductive. Children can respond well to an environment with boundaries. However, if they are not offered free playtime, children might miss out on the opportunity to discover themselves, and to develop their true self and abilities. As a result, mixing free play with structured play is ideal for children to develop self-regulation and to become self-confident people.

Structured play can be used to promote skills to be mastered in different disciplines, such as maths, literacy, science, music, sport and more.

6. Learning toys for literacy-structured activities

Introduction

Language development is emphasised in every activity throughout the day. In addition, a 60- minute period is set aside for children to participate in structured literacy activities. These give special focus to speaking, reading and writing. Activities include:

- News sharing/journals;
- dialogic reading and storytelling/Big Books;
- rhymes, songs and finger play; and
- alphabet activity.

Children in a Plan-supported ECCD centre in Uganda are developing the early literacy skills that will help them succeed in school.

Skills children need for reading and writing (preschool and Grade 1)

The preschool years are an important time to develop pre-literacy skills. To become skilled and confident readers over time, children need lots of opportunities to acquire skills in the 10 areas mentioned below. Each of these skill areas is introduced in preschool and further developed in Grade 1. An effective reading and writing program does not need many materials if the materials developed are matched with the activities and skills, and if they are fully used.

Concept	Illustrative activities
1) Talking and listening Children develop important pre-reading skills by listening to interesting conversations and talking about their ideas.	'Show and tell/class news': select a child of the day through rotation. Selecting a child of the day gives every child the opportunity to be a leader. This child gets to stand in front of the class and share some news or show and describe an object. What they did yesterday, what is happening in their family, an interesting rock or insect, etc. If classmates are encouraged to ask questions, it will help them be good listeners. If there is time for other news stories, the child of the day can select a designated number of other children to talk.
2) Print and books Children need to learn the correct way to hold books and turn the pages, left to right. They need to see printed words around them and realise that the words they speak, hear and read are related.	1) Provide time each day where children can look at picture books. 2) Word hunt: give each child a page of an old newspaper to circle words they know. 3) Morning message: the caregiver writes a short greeting or some news on the board while they say the words aloud. 3) Label familiar objects in the classroom. 4) Children enjoy making a class book about a familiar subject by dictating the words to the caregiver and making their own pictures.
3) Sounds in language Children must notice that some words rhyme; all words have parts (syllables), some words begin or end with the same sound, and all words are made up of separate sounds.	1) Clap sounds in a word; find other words with the same claps (syllables). How many children have the same claps in their name? 2) Let children change a familiar rhyme or song by adding new rhyming words. 3) Caregiver pronounces three words; children raise their hand if they all begin with the same sound. Also use with ending sounds or vowels. 3) Group pictures by those that sound alike, rhyme, etc. 4) Syllable war (two children or teams): use picture cards,

	divide into two stacks and turn them upside down. Children turn over cards at the same time. The child who has the picture with the most syllables wins.
4) Alphabet Children who go to school knowing the names of letters and how to write them have an easier time learning to read.	1) Make a letter out of mud or bits of string. 2) Jigsaw ducks: cut out a duck shape for each of 12 letters. Write the letter on the duck and glue or draw one or two pictures that go with the letter. Cut each puzzle so that the child matches the letter and picture. Each puzzle should be cut differently so that it is self-correcting. 3) Tic-Tac-Toe letter toss (with beanbags): divide class in two teams – 'X'and'O'. Use string to make the cross hatches. Put letters in the squares. Each team throws the beanbag, names the letter and puts an'X' or 'O'. Three in a row win points for the team.
5) Reading aloud Reading aloud to children has been called the single most important activity for building the knowledge required for success in reading. Children's literature is a caregiver's most valuable tool because so much learning can come from a good story. It helps them develop vocabulary outside their everyday experience, new concepts, and an interest in learning to read.	Set aside a time each day to read good literature of high interest to the children. After reading the story, ask the children a question and let them discuss their answer with a partner, or have them draw a picture of something that happened in the story, or of a favourite character. They can then present their ideas to the class.
6) Code-focused skills Understanding the relationship between sounds of language and the letters of written language gives children a tool to recognise familiar words quickly and to figure out words they have not seen before. Word-study instruction helps them to apply this knowledge. Rapid word recognition means they struggle less and have more time to get meaning from what they read. Identify some frequently used words and play games with the words to help children with their phonics and reading. Of course, you will introduce a few words at a time.	This begins in preschool and continues into Grade 1. 1) Children's names written on individual cards can be sorted by the beginning letter and can be used to help children learn and remember the sound of the letter. 2) Lotto: make several game boards each with a different set of 12 high-frequency words. Make cards to match each word. Children see who can fill up their card the fastest. 3) Spin and win: use high-frequency word cards (above) in a stack, upside down. Spin a spinner or role a die to see how many cards to pick up. Children get one point for every word they can read. Unknown words are placed back at the bottom of the pile.
7) Spelling and writing Children need the chance to spell and write on their own to practice what they are learning about sounds in words and how the sounds relate to letters. At first they will draw and scribble. Then they will try to write words and invent spelling that shows how much they are learning about sounds and letters. Invented spelling encourages children to think and is a useful step before formal spelling lessons begin.	1) Daily journal: children draw a picture of something about their life. The topic can be freely chosen or assigned. If the topic is assigned, the caregiver can write a short sentence for the children to copy and then they can try and write others by themselves e.g. *This is my grandmother*. 2) Lacing cards: draw a simple picture on a board. Add holes and a shoestring to go in and out of the holes following the design, moving left to right. 3) Dictionary: give each child a notebook so they can make their own dictionary. For each new letter learned, the child could add pictures and words of familiar objects. 4) Print a word on an envelope. Put individual letters inside. Let the children practice putting the letters together to make the word by looking at the envelope. Now turn it over and try to spell the word from memory.
8) Fluency Children need to learn to read smoothly and with expression. When they lack confidence and skill, the reading is choppy and the words carry no meaning.	1) Big Books are short and interesting stories that children can learn to read quickly. They give them practice in fluency and the confidence that they can read. Small take-home copies of Big Books allow children to practice at home. 2) Word card games: using a list of frequently used words, put each word on a separate card and play games, such as memory or matching. Two identical sets of cards will be needed.

9) Vocabulary Researchers have found a strong connection between the size of vocabulary, how well the child comprehends what is read, and how well the child does in school. Children who are poor readers often do not have the vocabulary knowledge they need to get meaning from what they read. Children who know something about the world are better able to understand what they read.	1) Short walking field trips give children the opportunity to develop a vocabulary about their environment. 2) Pocket charts can be used to display photos from the newspaper or picture cards for discussing concepts, such as big or small, more or less, names and descriptions of animals etc. 3) Object guessing game: caregiver picks a theme such as objects in a house, animals, children in the class etc. The child makes up a riddle, e.g. *I am thinking of something with four legs and you eat on it.* 4) There is no better way to build vocabulary than through story books. Children can be exposed to things outside their everyday experience.
10) Comprehension Children need to understand what they are reading. Making predictions, asking questions and summarising the stories that are read to them will prepare them to comprehend stories they read alone. Dialogic reading is a practice used by caregivers when they: ask questions about words and concepts during the story; evaluate child understanding; expand the child's understanding; and review what was learned.	After reading a story to children, ask them to draw a picture of what happened in the beginning, middle and end. This will show whether they understand the story. It is a good step before acting out a story. This is called a storyboard.

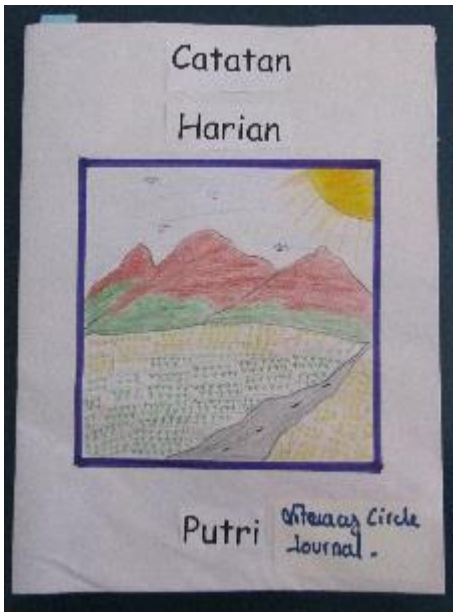
The learning toys for literacy-structured activities primarily support language acquisition, vocabulary and concepts. Literacy activities also support children's cognitive, physical and social/emotional development in the following ways:

Cognitive: learning to break a code (combinations of sounds form a word; certain endings are rhymes, new rhymes can be made by adding additional sounds to same ending etc.); learning syntax (how to meaningfully order words in a sentence); expanded understanding of the world; being able to think about things not yet experienced.

Physical: controlling small muscles in hands and coordinating hand-eye movement to draw and write, and to manipulate items used for alphabet games and hand write alphabet letters; controlling small muscles and coordinating hand-eye movement to hold a book right side up and turn the pages one at a time; creating symbols to represent things

Social and emotional: developing confidence; developing a sense of community and belonging; developing interest in lives of others; taking care of literacy materials (e.g. ensuring book pages are not torn); following structured literacy game rules explained by the caregiver; building social skills and using respectful words to negotiate/cooperate/resolve conflict with other classmates when playing structured literacy games in groups.

News sharing and journal writing



Journals are important in the daily routine. Children can use them for drawing pictures about an experience first and then talk about the drawing.

News sharing and journal writing use the children's experiences as a starting point for developing skills in language, writing and reading. It also teaches specific social/emotional skills:

- Developing confidence describing life events and listening to others;
- Developing a sense of self;
- Developing decision-making skills (e.g. *what experience am I going to share?*);
- Developing confidence to speak aloud in front of a group;
- Developing a sense of community among classmates and caregivers;
- Increasing interest in the lives of others.

In other domains, the activity specifically teaches:

Cognitive: using symbols to represent experience; using creativity and imagination to write own books about own life; observing with curiosity other people's drawings and asking questions about the story.

Language: learning to draw a picture first and writing words next; developing reading and writing skills at different ability levels; building understanding about writing and motivation to write; learning to use complex sentences and explain whole ideas; learning to sequence their thoughts and practice all aspects of writing in a meaningful context i.e. left to right progression, letter formation; punctuation and capitalisation etc.

A girl in Uganda draws a picture as part of the journal activity.

Inventory:

- Crayons or coloured pencils
- A notebook

Rules:

This literacy circle activity lasts for 20 minutes. During this time children develop the confidence to describe events in their life and to listen to others. They learn to use symbols to represent their experience. At first they draw pictures and later they learn to write words. News sharing is conducted for two days. This involves talking and listening, no writing. Journals are used for two days. This involves drawing pictures about an experience first and then talking about the drawing. Theme journals are used on the last day. All children discuss the same topic, draw a picture and write a dictated sentence.

Suggested resources:

These are listed in the inventory.

Steps:

1. If a notebook is specially designed, make a blank space at the top for children to draw pictures and lines at the bottom for children to write words.
2. The back of the same notebook can contain a personal dictionary, with one page for each letter of the alphabet and a picture of something that begins with that letter.
3. Below the alphabet letter, leave space for children to write their own words or make pictures of things that begin with that letter.
4. Space for about eight to 10 words and pictures per page should be enough.

Hints and tips:

- Children are provided with a different activity for each day of the week. Having different ways to share news will keep them interested and prevent boredom.
- Always follow the same order and then children will soon know what to expect.
- Begin each day of the week in the same way with, *What day is it?* Always ask the children to name the day of the week and write it on the board. The caregiver should briefly point to the word and then each letter, spelling it out. The caregiver should ask, *What day was yesterday? Tomorrow, what day will it be? Today I am sure that everyone has news to share. Let's get started.*
- Children should plan on using two pages per week for journal stories.

How to conduct news sharing

News sharing takes place two days per week. Children work in pairs, and take turns talking and listening. If there is an uneven number, one group can have three children.

Steps:

1. Child One gets to tell something that they saw or did since yesterday, or anything of interest. (Caregiver calls time after three minutes.) Child Two must sit very quietly and listen. Then Child Two repeats back what Child One said. Child One gets to say whether Child Two was a good listener.
2. Child Two shares something of interest (three minutes). Child One listens carefully then repeats what Child Two said. Child Two gets to tell Child One whether they were correctly able to retell what was said.
3. Forthe remainder of the time, a few children get to tell their news to the entire class. It begins with the child of the day who shares and then selects another child to share. The child of the

day changes each day which gives every child the opportunity to be a leader. Child Two shares and then calls on Child Three, until time is up.

4. After each child shares, the caregiver can use the game 'Three Questions', where children raise their hand to ask the speaker a question to get more information about what was said. For example, the news sharer can tell that they rode in a rickshaw to the market. Their friends might ask questions such as, *Did you buy anything there? What did you see along the way? How much did the rickshaw puller charge?* The child who is sharing news can pick only three questions to answer. This game keeps children actively involved with news sharing.
5. Caregiver shares a morning message. The caregiver's news might be about a personal event in their life or news around the village.

Morning message

A morning message is one sentence long. The caregiver writes the day and date and then a morning message. The caregiver says each word while writing the letters of that word. Writing it takes about 30 seconds. It is a special message from the caregiver to the children. It can tell something that will happen in school. It might also be about the caregiver's life. It might be something funny. The children are interested in their caregiver's life. They learn that words can be said and written down. Over time they will begin to recognise some of the words.

An exercise book can be used for a journal. Every child should have their own journal.

How to conduct journal writing
Picture journals – a record of my life
The children learn:

- My ideas and experiences can be represented by a symbol or drawing.
- People can look at my drawing and 'read' my story.
- This helps me understand writing and want to write.
- I can create my own books about my life.
- I am an author.

Journal writing takes place two days per week. Children can write two different entries or complete the first journal story on day two if they need more time.

Steps – day one:

1. The caregiver asks each child to think of something they saw or did since yesterday, or something important that they want the other children to know about.
2. The caregiver asks children to draw a picture of it with as much detail as possible. The children think quietly and then they begin to draw. While the children are drawing, the caregiver walks around the room and looks at the pictures. The caregiver should show genuine interest in their drawings, and speak and ask questions in a very quiet voice. This way the caregiver does not disturb the concentration of the others. The caregiver tells the children that tomorrow they will get to show their picture to a friend and tell them about it.
3. At first the concept of drawing about their life is difficult for children. They might respond by drawing an object, such as a flower or fish. The caregiver can ask them again, *Tell me something that you saw or did yesterday after school or early this morning before you came to school.* The

caregiver might ask, *Tell me something you are hoping for, something that makes you sad or happy. This is what I want you to draw a picture of. The picture is about your life.*

4. At first the drawings will be very simple, but the children will recognise exactly what is drawn and the drawing will allow them to recall the event.
5. After drawing time, the caregiver can end the session by writing a morning message on the blackboard. The caregiver writes it while saying the words. It is a short sentence. The children watch. Sometimes the caregiver might write something funny or tell about a surprise. The caregiver should make the children anticipate and look forward to the morning message.

Steps – day two:

1. Children take out their journal. They are given five minutes to finish their picture and add more details. Over time the caregiver will encourage them to try to write a word or two below the picture or 'scribble write' (five minutes).
2. Children work in pairs. Child One shows journal picture to Child Two and tells about it. Allow five minutes to combine activities two and three.
3. Then Child Two tells Child One about the journal picture.
4. The child of the day gets to 'pretend read' their journal entry to the class and show the picture. Then they pick someone who would like to share. Child Two picks Child Three, and so on, as time allows (four minutes).
5. Caregiver shares a morning message. The caregiver writes it on the blackboard while talking and while the children watch (one minute).

Story books

Reading aloud to children has been called the single most importantactivity for building the knowledge for success in reading.

The story books support the four areas of child development. They also teach the following skills:

- Building understanding of social roles and emotions;
- Being able to stay calm and focused while reading books.

In other domains, the activity specifically teaches:

Cognitive: developing a left to right orientation; building understanding of ideas from books and pictures; communicating creative ideas and meaningful issues, thus developing important concepts; developing understanding of the elements of a story (e.g. plot, character, setting, sequence, conflict resolution etc.); broadening own world with observing things outside everyday experience.

Language: building interests for books and wanting to read for self; developing oral language skills by providing something interesting to talk about; reading books for fun; becoming familiar with print; developing connections between spoken and written words; expanding vocabulary and reasoning about everyday life; developing knowledge about alphabet letters and syllables; recognising sounds that are alike or different; developing knowledge of some of the 100 high-frequency words and sight words learnt in primary school (Grade 1 and 2) and other foundation skills such as rhyming words and letter sounds.

Inventory and resources required:

Initial classroom libraries should contain about 25 books; add a dozen new books each year. In cases where resources are low and books are few, buy 12 books for the initial collection. Aim to use one commercial story book, one oral folk story and one caregiver-made Big Book each week.

Games and rules:

There are no set games and rules. Children might want to read books themselves, or be read to. The use of dialogic reading and an effective reading methodology supports child development in the four areas of child development.

Steps:

- The story books should be bought or professionally produced.

Hints and tips:
Effective reading methodology

- Read the book yourself before reading it to the class.
- Seat the children so everyone can see the pages.
- Let the children discuss the picture on the book cover.
- Note the title and author on the cover.
- Hold the book away from you with the pictures facing the children.
- Stop occasionally and ask children to predict what will happen next.
- Ask children about the meanings of the words, or point out repetitive sounds or words.
- Have conversations about the book.
- Read slowly and clearly with expression and fluency.
- After the story is complete, encourage children to discuss the story. Children should discuss characters and what happened. Compare characters, ask why they were sad or happy, and discuss why they think something happened. These are all open-ended questions with many right answers.
- Read the same book the next day and ask more questions. Also consider other follow-up activities: acting the story out; drawing pictures of favourite characters or events; making story boards that show drawings of the main events (this can be done on the blackboard); making story boards that show the sequence of events on cards that can be put in order; or making up a new ending for the story.

Dialogic reading:

- Dialogic reading is a way of using books to expand children's vocabulary and comprehension.
- Every three to four pages, ask children to predict or explain the story, e.g. *Can you tell what the monkey is doing with the coconut? What do you think the monkey will do next?*
- Ask about the meaning of difficult words. Then repeat the sentence and elaborate on its meaning so all children understand. Use the word in another context that is familiar to them.
- Point out letter or rhyming sounds that are used repeatedly in the story.
- Stop at a critical point in the story to ask what happened and why, and to describe and elaborate on the characters e.g. *What is happening to Mina? Why is she so sad?*
- If you interrupt the story too often with too many questions, the children will lose the meaning of the story. This reduces comprehension.
- After completing the story ask questions that need analysis or evaluation e.g. *Who is your favourite character and why? What would you do if you were the monkey? Do you think this is a real or imaginary story? Why do you think this?*

Big Books, pocket chart and word cards

Big Books are a method used to teach reading to young children. A Big Book is a child-friendly, fun story especially designed for beginner readers. Plan staff in Indonesia have made and used Big Books.

On the last day or two of the week, caregivers can use a Big Book at story time. Big Books are used to teach reading to young children. A Big Book is a child-friendly, fun story especially designed for beginner readers. It appeals to children because it is large in size, measuring about 30cm x 50cm. It is very short and often funny. It has few words. It is easy to read because it uses repetition. It has short sentences and a simple, interesting theme. Pocket charts that hold word cards also help develop reading skills. Children can place the cards into the pockets to form sentences.

Inventory:

- Several different Big Books
- One pocket chart
- Word cards with key words from the Big Books
- Envelopes (for the word cards)

Games, rules and method for using Big Books and word cards:

Each ELP should try to have a different Big Book each month to keep it interesting for children. Caregivers can learn how to make and use Big Books during their professional development course. Over a period of four weeks, the children and caregiver 'read' the same big book together. As they read the book, they point to each word. The children are fully engaged in the reading while the caregiver asks them to anticipate what comes next in the story. The caregiver can also use dialogic reading to discuss parts of the Big Book. Week by week, children increase their understanding about words and sentences in the big book The caregiver can use the first week to focus on the introduction of the Big Book story. The second week, she/he can concentrate on comprehension of the story. The third week, he/she can emphasise interesting language and vocabulary. Finally, the last week can be used to support children to develop code-focused skills (for more information please see section *Skills children need for reading and writing, preschool and Grade 1,* page 93).

After reading the Big Book, the caregiver can also ask general questions about the book and facilitate activities such as retelling and sequencing the story using the word cards and pocket chart. During the activity, he/she can engage children to anticipate the text that follows. He/she may also support children to expand their reading strategies and their understanding about language rules. The first and second week, children can participate in the story using the picture side of each word card. Then they can use the word side of each word card to engage in the activity in the last two weeks. The Big Book and follow-on activity is used one day a week instead of reading a story-book on this day.

Plan staff in Indonesia creating their own Big Books.

Suggested resources:

Big Books

- Flipchart paper or two pieces of A2-sized paper or normal size newspaper
- 16 A4-sized paper sheets
- Glue
- Grey lead pencil and eraser
- Coloured pencils
- Markers
- Photocopier (if produced centrally)
- One nylon string or stapler and staples (optional)

Suggested resources:

Pocket chart

- One large piece of grain sack (or heavy piece of cloth) shaped in a rectangle
- One big piece of plastic tablecloth (transparent) or similar material
- A fair amount of discarded fabric to frame to the pocket chart edges
- Ruler and pencil
- Needle and thread

Suggested resources:

Word cards

- Cardboard paper sheets
- Coloured pencils
- Grey lead pencil, eraser, sharpener
- Markers
- Ruler
- Scissors
- Sticky tape

Steps:

Big Books

1. Select a topic and draft your story on a little piece of paper. Think what kind of sentences and images will be used.
2. If using the first option, fold the two combined pieces of flipchart paper in half.
3. If using the second option, fold the two combined pieces of A2 paper in half.
4. If using the third option, unfold the newspaper and refold it so that it makes an eight-page book (including front and back of each page).
5. Use eight A4-sized paper sheets and, on each of them, draw on one side a picture that represents one sentence in the story.
6. Glue each picture on the top half of each Big Book page.
7. Ensure pictures are in the right order of the story.
8. Glue the other eightA4-sized paper sheets on each page below each picture and leave them blank.
9. Write one short and basic sentence on each of the A4-sized pieces of paper that represent each picture. Ensure that each sentence is in the right order for the story to make sense.
10. Caregivers can use this space to carefully write the words of each sentence, using neat writing.
11. Prepare binding using a nylon string or simply staple the book on its left side

Steps:

Word cards

1. On cardboard paper, draw and cut a number of cards that are a suitable size for the pocket chart and big enough for children to see.
2. On one side of each card, use markers to neatly write a key word from the Big Book.
3. On the other side of each card, use markers and coloured pencils to draw a picture that represents the key word.
4. Neatly apply a layer of sticky tape around each card to make them sturdy and long-lasting.
5. Keep cards in an envelope attached to the Big Book.

Steps:

Pocket chart

- The pocket chart should be simply made and suitable for differently sized cards. The best option is to use a plastic and transparent tablecloth to make a number of large strips that covers the width of the base (i.e. grain sack or piece of heavy cloth).
- To create the pockets, place the base vertically on a flat surface. Place every single strip horizontally on the base, under each other, leaving space between them. Use a ruler and a pencil to demarcate and divide each strip into an adequate number of rectangles. Sew only the bottom base of each strip to the grain sack or piece of fabric, then sew along each demarcated line.
- Ensure that the pocket chart is large enough to hold a large number of cards.
- Ensure that the pocket chart is large enough to place big and long size cards in it.
- To create a frame, use a fair amount of discarded fabric. Sew them neatly around the edges of the pocket chart.

Pocket charts that hold word and picture cards help develop reading skills.

Hints and tips:

1. If making the pocket chart is too challenging, caregivers can network with their communities and sewists to have them professionally made.
2. Allocate the first page of the Big Book for the book's title and illustration.
3. Point to each word when reading Big Books to children.
4. Make word cards and think up games and activities to go with each Big Book.
5. Children enjoy a story that is funny or solves a small mystery (e.g. where is the boy hiding?).

Characteristics of texts that support beginner readers:

- Placement of text: books with consistent placement of text are easier to read (e.g. illustration on the top half and text on the bottom half).
- Repetition: text that is highly predictable with one or two patterns and few word changes are easier to read.
- Language structures: similar to children's own oral language patterns are easier to read.
- Content: books about familiar objects and experiences are easier to read than books about unfamiliar topics.
- Illustrations: pictures that illustrate the meaning of the text give cues to the reader.

Gender and disability inclusion:

It is strongly recommended to produce Big Books that addresses issues relating to gender and disability. For example, it could be translated in the pictures drawn on each page (e.g. female police officers, a boy playing with dolls, a child in a wheelchair etc.) or the Big Book story of a child with a disability going to preschool and having a lot fun there (see Appendix 1 for information about gender observation tools).

Method for Big Books produced centrally:

It might not be possible for caregivers to access the necessary resources to produce quality Big Books. If so, field staff can help produce them in the office. The following is a suggested method:

1. Select a topic and draft your story on a piece of paper. Think about what kind of sentences and images will be used.
2. Use eight A4-sized paper sheets and, on each of them, draw a picture that represents each sentence of the story on one side.
3. Photocopy each A4-sized picture and distribute copies of illustrations to caregivers to colour.
4. Make the Big Books using either two pieces of A2 size paper/flipchart paper, combine them and fold them in half or unfold a newspaper and refold so it makes an eight-page book (including front and back of each page).
5. Ask caregivers to glue horizontally each picture on the top part of each Big Book's page.
6. Ask caregivers to glue horizontally one A4-sized blank paper sheet below each picture on the bottom part of each Big Book page and write one sentence representing each picture. Caregivers can use the blank space to carefully write the words of each sentence, using the size and style taught to them.
7. Ask caregivers to carefully write key words and draw pictures representing the words on each pre-made word card. Ask them also to neatly apply sticky tape around each card and to keep them in an envelope attached to the Big Book.

Rhymes and songs

Novelty can be increased in rhymes and songs by adding body movements.

Rhymes and songs support the four areas of child development. They also teach the following social and emotional skill:

- Developing a sense of cultural and spiritual values through songs.

In other domains, the activity specifically teaches:

Cognitive: pretending to be a character from the song (e.g. Humpty Dumpty); recognising clap patterns and bring capable of repeating them (e.g. clap, clap, clap... clap).

Language: building phonetic awareness; developing knowledge about sounds and language (e.g. differences and similarities of sounds); developing new vocabulary from lyrics of songs; being capable of talking about views on the song; understanding and following oral directions to act out the song; asking questions about the content of the song.

By singing rhymes and songs, children learn about the sounds of language through enjoyable linguistic games like rhymes, songs and finger play. Early skills in phonetic awareness are thought to be a predictor of later reading success. The lively nature of singing and moving to rhymes and finger play gives a nice change of pace following the quiet, more passive act of listening to a story. Many countries have a rich history of poetry and song to draw from in the preschool classroom. This is a quick five-minute activity.

To use rhymes and songs, the caregiver:

- introduces one or two new rhymes or songs each week;
- repeats a familiar rhyme or song on other days;
- increases novelty by adding body movements, finger puppets or changing rhyming words; and
- puts a few favourite rhymes or songs on posters and lets the children illustrate them.

Often, there are a number of local songs with maths concepts that can be useful for children to learn from. Maths songs can also be found on internet at www.drjean.org and www.aimsedu.org. Several sources can be found by searching for 'kindergarten music' or 'maths activities for kindergartens' online.

Alphabet activities

By participating in a short, enjoyable alphabet activity for a few minutes each day, children will learn the names and sounds of all of the alphabet letters.

The two most important ways that children learn the letters of the alphabet are by talking about the letters and by using them throughout the day as they work and play. The most important thing that children must learn is that there is a relationship between letters and sounds. They begin to learn the letters by noticing the special spatial features (shapes) of different letters. Next they learn the names of letters that have meaning for them. Noticing the letters in their name and noticing the names of friends that start with the same letter is a great way to begin.

By participating in a short, enjoyable alphabet activity for a few minutes each day, the children will learn the names and sounds of all of the alphabet letters. Each letter is reinforced when the children make letter books with pictures of objects beginning with the particular letter and sound. Caregivers also reinforce the alphabet throughout the day. They connect the alphabet letters to the story books they are reading to the children. They might use a character in a story or an important word in a story to reinforce a letter of the alphabet. They can also play letter matching or memory games with alphabet cards with the children in the books and pictures corner, or develop other board games using the letters of the alphabet. Alphabet letters can also be used for interesting art activities.

The consonants are the first sounds for preschool children to learn. They will learn the sound of the letter and connect that to the beginning sound of a common word. Vowels are much more difficult. Once children learn consonant sounds a vowel can be added. Children can play games to see which consonants can be combined with the vowel to make a word. Teach two alphabet letters per week with a review of the two letters on Friday. Focus on making words from the letters learned at points along the way. This is another way to review the letters and to understand that letters not only make sounds but that the sounds are combined to make words.

The daily 10-minute alphabet activity will teach children how to:

- recognise the letters of their own name;
- recognise letters of the alphabet;
- know the sounds of each letter;
- be able to write each letter;
- learn that words are made of letters; and
- recognise some words.

The alphabet activities support the four areas of child development. They also teach other specific physical skills:

- manipulating puppets while singing;
- developing gross motor skills with basic movements linked to the content of a song (e.g. If you're happy and you know it clap your hands!).

In other domains, it specifically teaches:

Cognitive: using a character or an important word in a story to reinforce a letter of the alphabet; building skills matching with alphabet cards in memory games.

Language: recognising letters in own name; recognising letters in alphabet; recognising all names and sounds of the alphabet; developing knowledge of the sounds of each letter; developing letter writing skills; developing knowledge that words are made of letters; recognising words; connecting alphabets to story books; learning the sound of the letter and connecting that to the beginning sound of a common word.

Inventory:

- Dry beans
- Small pieces of straw and string
- Dictionary
- Name card for each child
- Alphabet cards: plain (two sets) about 7cm square
- Large letter land alphabet cards: decorated to show sound of letter, about 20cm square

Children can use uncooked dry beans to count how many letters are in their name to help with name and alphabet recognition.

Games and rules:

Name recognition

1. A good way to learn the alphabet is to start with name recognition. Here are some activities to help children notice the letters in their name. Each activity is one day's lesson. The lessons below cover the first two weeks of school.
2. Children play with their name cards from the attendance chart. Divide the class into four groups. Give each group a bowl of uncooked dry beans. Ask the children to count how many letters are in their name. Put a bean on each letter. Ask them to look for names that have the same number of letters or grains of rice. Put the cards into a group if they have the same number of beans. Store the beans in a jar for another day.
3. Divide the class into two groups and try the activity again. *What did we find out?*
4. Children play with the name cards again and touch the first letter. Divide the class into two groups and see if they can find other names that begin with the same letter. The caregiver helps them say the letter. They lay the cards on the floor into groups. They practice saying the first letter. Finally Groups 1 and 2 show each other their work. *What did we find out?*
5. Children take their name card outside. They hold the card with one hand so it does not get dirty. They try to draw the letters of their name in the dirt with a stick.
6. Each child uses the name card. Each child goes around and says the first letter of their name so everyone can hear. Next the caregiver gives them small pieces of straw and string and asks them to try and make the letter.
7. Children sit in a circle. They put name cards on the floor. They practice clapping the letters in their name. They then take turns going around the circle, one at a time, clapping the letters. Challenge them to go faster and faster in a continuous circle with only a one second break between names.
8. The caregiver brings one sheet of newspaper for each child. The name of the child is written on the top of the page. The children say the first letter of their name. They look for that letter on the newspaper page. When they find a letter, they circle it with a pencil. The caregiver takes up the newspaper page to use on other days.
9. Children can try to write the letters of their name on a page in their journal book. The caregiver moves from one child to another and helps them say the names of the letters.
10. Caregivers can repeat activities four, six and eight above to teach each letter of each child's name.

Print in the environment

1. Labelling familiar objects in the classroom helps children see the connection between learning the alphabet and learning to read.
2. In the beginning, label only five or six objects, such as 'door', 'blackboard', and 'clock'.
3. After one month the caregiver can add a new word each week and ask the children if they found it.

4. Alternatively the class can select the object to be labelled. The caregiver will make the word card as the children watch, noticing each letter and the sound.
5. Children can all become 'word finders', looking for familiar words on advertisements, old cans and boxes, and around the community.

Introducing clusters of alphabet letters

1. A fun and easy way for children to learn alphabet letters and sounds is through stories.
2. Begin to teach alphabet letters in clusters of about four to five letters. One of the letters in each cluster should be a vowel, so that letters in clusters can be put together to make words. Each letter is written on a card.
3. A popular method is to invent a character for each letter. It can be an object or person that begins with the sound of that letter. By having a key picture or subject for each letter the child learns to associate the letter with a sound. The card is illustrated with the picture so children remember the sound of the card. The caregiver and children can make up stories about the letter people. Eventually children will put the letter cards together to make words.
4. These letter cards can be produced in the caregiver development workshops.
5. One letter is introduced each day. The caregiver makes up a story about the letter character.
6. The children find the letter in their dictionary/letter book. They trace it, copy it and make a picture.
7. After all of the letters in the group or cluster are introduced, the caregiver brings them all out and tells a story that uses all the letters. The children can also make up stories.
8. The caregiver shows the children how to put letters together to make words. The children try it.
9. The sequence is repeated with five more letters.
10. All 10 letters are reviewed.
11. The letters that have been learned are displayed on the wall each day.

(For more examples of alphabet games, please refer to Appendix 8.)

Suggested resources:
Dictionary

- One notebook
- Crayons/coloured pencils, markers (first option)
- Pictures from magazines/newspapers, glue and scissors (second option)

Suggested resources:
Name cards

- Big pieces of cardboard or thick cardboard paper
- Scissors/cutter
- Glue
- Ruler, grey lead pencil, eraser
- Crayons/coloured pencils, markers or non-toxic paint
- Sticky tape

Suggested resources:
Letter land alphabet cards

- 26 medium-sized cardboard pieces or one large piece of cardboard
- Different colour cardboard paper
- Scissors, glue, sticky tape
- Crayons/coloured pencils, markers or non-toxic paint
- Ruler, grey lead pencil, eraser

Steps:

Dictionary

1. A dictionary can be designed at the back of a notebook used for the news sharing activity (for more information please refer to page 97).
2. Select one page for each letter of the alphabet.
3. Draw or glue a picture of something that begins with that letter.
4. Below the alphabet letter, leave a blank space for children to write their own words or make pictures of things that begin with that letter.
5. Leave enough space for about eight to 10 words and pictures per page.

Steps:

Name cards

1. Using a grey lead pencil, eraser and ruler, draw a number of medium-sized rectangles on the big pieces of cardboard (or thick cardboard paper). The number of rectangles will match the number of children in the class.
2. Cut all rectangles.
3. With a grey lead pencil and eraser, neatly write each child's name on each one of the rectangles.
4. Use a black marker with coloured crayons, pencils or paint to colour the letters of each word.
5. To make them long-lasting, neatly apply a layer of sticky tape on each card from back to front.
6. The name cards can only be used for alphabet activities but also to record the attendance at the beginning of the day.

Steps:

Letter and alphabet cards

1. Draw a 20cm square on each of the cardboard pieces or draw 26 squares (20cm square) on a large piece of cardboard.
2. Cut the squares and put them aside.
3. Draw all of the letters of the alphabet on a different colour cardboard paper sheet and cut them one by one.
4. Glue each of the letters on each of the cardboard squares.
5. On each square, draw and colour pictures of things that start with the letter (i.e. A for Apple, B for Bee, C for Car etc.).
6. Neatly apply a layer of sticky tape around the squares to make them sturdy and long-lasting.

Hints and tips:

- When drawing the letter land alphabet cards, ensure they are big enough and fit in each of the 26 cardboard squares.
- For all cards and dictionary, ensure the glue is non-toxic.
- If cardboard or cardboard paper is not available, use an equivalent from available local resources.

Pictures for letter and alphabet cards can be either hand drawn or created on a computer.

7. Learning toys for maths-structured activities

Introduction

Children benefit when caregivers ask questions to encourage thinking and suggest interesting problems to solve.

A positive attitude towards mathematics and a strong foundation for learning mathematics begins in early childhood. Children learn maths concepts and skills best through everyday activities. They need many concrete materials to count, sort, compare, match, put together and take apart before they will understand the properties of a number and the meaning of maths operations – addition, subtraction, multiplication and division. To become skilled and confident in mathematics, children must believe that maths makes sense. Children benefit when caregivers ask questions to encourage thinking and suggest interesting problems to solve. They must hear and use maths language and trust their ability to solve and explain a problem. If they enjoy maths, they will see themselves as a successful learner and develop a disposition for maths in the early years. To help them develop maths competency, children need the opportunity to acquire skills in the areas mentioned below.

Skills children need for mathematics

1) Sorting and classifying

Organising objects according to their properties (size, colour, shape, texture etc.) helps children think logically and develop the language of mathematics.

Suggested activity:

Provide containers of objects, such as buttons, bottle caps, rocks or large seeds, squares of cloth and leaves. Ask the children to sort them by one attribute (such as colour). Then ask them if they can find another way to sort them. Let other children guess how they did it. Ask them to compare which group has more, which has less.

2) Recognising patterns

The ability to recognise and describe patterns is the key to mathematical thinking and is basic to understanding all concepts in mathematics. A child who does not see patterns does not expect things to make sense. Children need to get into the habit of looking for patterns as a strategy to solve maths problems.

Suggested activities:

1. Caregiver or child claps or snaps a variety of patterns. Others repeat and continue the pattern.

2. Using objects, such as buttons, bottle caps, rocks or large seeds, squares of cloth and leaves, make a simple pattern, e.g. large-small, large-small. Ask children to guess what comes next. Ask children to make a different pattern. Make the patterns more complex over time.

3. Make a triangle with matchsticks. Ask children how many matchsticks it takes to make one triangle, two triangles, three triangles? What is the pattern? Can they tell how many matchsticks would be needed for four triangles?

3) Counting and writing numerals

Being able to recite numbers in order does not mean that a child can count. A child might know the counting sequence one to 10 perfectly and still be unable to use the sequence to count a group of objects. Children need lots of practice in counting real objects. Counting with skill and understanding is an important problem-solving tool in mathematics. To write numerals, children must have the necessary motor coordination. It helps to practice writing numerals in the air and to trace large number posters in the classroom that show the starting point and directions. Writing numerals in sand or producing them in clay helps children gain practice.

Suggested activities:

1. Let children count each other as they line up to go home or outside.

2. Count a sequence and do something with the body, e.g. 1-2-3-4, spin. 1-2-3-4, spin. Let them try it backwards.

3. Circle game: stand six to eight children in a circle. Pick a number. The children count to that number. The one who says the last number sits down. Begin again with the next child. Who will be the last child standing? Try again and let the children predict who will be the last child standing.

4) Comparing

The skill of making comparisons is important in mathematics. Children start with real objects, such as girls and boys in the class, or shoes by the door, eventually comparing one number to another. The children must first understand the concept of equal groups, then more, and less. They can make picture graphs to compare numbers of things: are there more girls or boys, more shoes of one colour than another? Which names have the most or least number of letters?

Suggested activities:

1) Give each child a string. Ask them to find something the same length as the string. Next find things that are shorter than the string and longer than the string.

2) Using the water play container, have children sort objects to predict which will float and sink.

3) Two children play a ‘more’ and ‘less’ game. Each takes between one and five blocks and stacks them in a tower. Children decide who has more and who has fewer blocks. Use a spinner that shows ‘more’ and ‘less’ to determine the winner of the two stacks.

5) Understanding numbers at the concept level

When developing beginning concepts of numbers, children benefit from exploring concrete materials and relating numbers to problem situations. Each child needs to explore the numbers one to 10 with many different materials until they begin to understand relationships between numbers, patterns and similarities, and the real meaning of addition, subtraction and division. Everyday classroom situations provide many opportunities for demonstrating and solving maths word problems. Relating maths to classroom routines helps children apply maths in a real setting and see the usefulness of maths.

Suggested activities:

1. Use any small objects, count out a given number, and ask children to explore and describe the possible arrangements for the number of objects.

2. Using cubes or toothpicks, explore all the possible designs that can be made with the designated number.

3. Presto-change-o: give each child six cubes. Ask them to solve these problems: make two stacks of three, three stacks of two, one stack of five, five stacks of one etc.

4. Act out addition and subtraction word problems. Use story mats (pictures of a road/pond/house) and blocks to symbolise objects like rickshaws, fish or people. Children make up stories for their friend to solve. *There was a big fish in the water, two little fish came. How many were there? The big fish ate one little fish, how many were left?*

6) Recording numbers at the symbolic level

At this point children are able to make a written record of an abstract maths problem, e.g. *Four children were playing with blocks. One left and went to read the books. How many were playing with blocks*? *How many ways can you arrange four blocks? Can you write down the addition problems to show your work?* Writing symbolic numbers should only happen after children have a strong concept of numbers from working with concrete objects.

Suggested activities:

1. Children use the string to make a shape. They copy the shape in their notebook and write the number of sides.

2. Children repeat many of the activities listed in the box above, but this time they write down addition or subtraction problems to show what they did.

3. For story mat problems, give each child a card with an addition or subtraction problem. The child makes up a story to fit the problem.

4. Circles and stars: one partner rolls a die and draws the designated number of circles, then the partner rolls a die and draws circles. The first partner rolls again and draws that many stars in their own circles. Then the second partner does the same. They each count the stars and write it as an addition or multiplication problem. The largest number wins each round.

7) Shape and space

Children spend a great deal of time playing with and building shapes. Through play they can learn how shapes fit together. They can investigate patterns and structures of shapes and develop the ability to

reason in a spatial context. Geometry has many applications in ELPs and develops spatial reasoning, which is one of the most important skills for being good at maths.

Suggested activities:

1. Fit together paper or block shapes to make a design. Children can try to replicate their friend's design. They can count the number of each shape used. Can you make a design with three triangles and three squares?

2. Shape hunt: the caregiver draws a shape on a large poster paper and discusses the name and properties. Over several days, the children look for shapes in the local environment. At the learning centre, children can tell what they found and draw a picture of it on the poster. After several weeks looking for shapes, the children can count and compare which shape is most common in the environment.

3. Using a string, children can find things that are the same length, or longer or shorter than the string. They can use other objects for measuring – shoes are especially good. *How many shoe prints does it take to cross the room. Is our room wider or longer?*

4. *Using a designated number of small sticks, can you build a large triangle using small triangles? Can you build a large square from small squares?*

5. *How many different shapes can you make using four triangles?*

Ways of teaching maths – the importance of manipulatives

If young children are asked to solve problems abstractly with no concrete objects, they memorise answers instead of thinking through problems. Over time they rely too much on their memory and distrust their ability to think. Children who score high on tests and seem to be doing well in maths will not sustain this when maths problems are more complex, unless they develop a maths foundation where they truly understand the concepts. With the use of maths manipulatives, all children can be successful at maths, not just those few who have an innate aptitude.

Caregivers will use mathematics language in the classroom

Young children do not think about the world as if it were divided into subjects such as maths, language or science. Likewise, effective maths programs do not limit mathematics to one specified period or time of the day. They learn many important maths ideas throughout the day and across the curriculum. Effective caregivers will gain the skills to promote maths learning naturally. They will also learn how to lead a maths lesson that helps children gain key maths competencies. The primary means of teaching maths will be problem solving and playing with concrete materials.

Every day the caregiver will find ways to bring maths into the experiences of the classroom. The caregiver can have the children count when they line up, notice and record how many children are absent and present, and make a point to use relational terms and numbers (e.g. before and after, more or less) in the context of daily routine activities, such as the calendar and attendance chart. The caregiver can suggest contests for discovering shapes that exist in the village or count and compare objects in the learning centre. The caregiver will use maths concepts during story time as they discuss the order of events, comparisons among characters, and counting where it is useful. Indoor and outdoor games, as well as songs and rhymes, can also be modified to include numbers. The most important time for caregivers to use maths language is informally during corner playtime. The caregiver will move

around the class and talk to children as they play, looking for opportunities to bring in maths concepts. This provides meaningful learning on an individual basis, which is the way children learn best.

To gain the experience and confidence to do this, ELP caregivers will share ideas and experiences during professional development meetings. One or two suggestions can be presented at each meeting. The ELP caregivers should try it and report back at the next refresher training.

The learning toys for maths–structured activities support children's development in the following ways:

Cognitive: developing observation and problem-solving skills (e.g. asking questions about the calendar and numbers, *What comes after January? What is before the number 14?* Observing with curiosity numbers and pictures on the banner; asking questions about it; counting (e.g. months, years and number cards on calendar; numbers and the number of things on the banner's pictures).

Physical: controlling small muscles in hands and coordinating hand-eye movement to place and collect cards in and from the pocket chart; to manipulate maths bags items (e.g. stacking plastic bottle caps to form a tower); to point at pictures and numbers on the banner.

Social and emotional: respecting and caring for group and individual learning toys for maths.

Language: understanding and following caregiver's instructions during structured maths activities; asking and answering caregivers/classmates questions; asking questions if the maths structured activities are too challenging.

Calendar and number pocket chart

The daily calendar activity offers children the ability to develop skills such as recognising sequences and undesrtanding concepts of time (e.g. today, yesterday, next week, before and after).

The calendar and number pocket chart supports the four areas of child development. The calendar and number pocket chart also teaches specific skills:

- Building logical thinking and maths, like organising cards by categories (e.g. months, years and numbers); recognising number symbols; arranging cards in a series (e.g. months, years or numbers); showing awareness of time and sequences (e.g. knowing that one year has 12 months, one month has 30 and sometimes 31 days); understanding location and position words (e.g. December is after November); developing concepts of time: today, yesterday, next week; before and after;
- Helping classmates sort the numbers and calendar sequences; able to control own behaviour and impulses during calendar activity (e.g. knowing how to take turns answering to caregiver's questions and practicing patience);
- Developing listening and speaking skills, (e.g. actively listen to classmates, repeating back and asking questions during calendar activity); actively sharing knowledge about numbers/months/ years in a conversation (e.g. *What is the date today? What about tomorrow? Can someone tell me the number that comes after 16?*)

Inventory:

- Pocket chart
- A set of cards for days, months, years
- A set of number cards from one to 100

Games and rules:

There are no games and rules. The pocket chart can be used during corner play and in the math-structured activities. During corner play, children can challenge themselves by correctly placing one number card after another (from one to 50 and up to 100 when children are more skilled). They can also create games with their classmates (e.g. the fastest person to place a series of six consecutive number cards is the winner). During instructional maths activities, caregivers can use that as a teaching aid for numbers/symbols, calendar days, months and years.

How to conduct the calendar activity:

1. At the beginning of each maths circle time, the child of the day gets to turn over the number card to show the date.
2. The child says the day of the week and the date.
3. The caregiver asks, *What day was yesterday? What was yesterday's date?*
4. Then the class counts all of the days of the month so far together.

5. The child of the day leads the activity by pointing to each number with a small stick as all of the children count together.

Suggested resources:

Number pocket chart

- One large piece of grain sack (or heavy piece of cloth) shaped in a rectangle
- One large piece of plastic tablecloth (transparent) or similar material
- A fair amount of fabric to frame to the pocket chart edges

Suggested resources:

Days/months/years and number cards

- Big pieces of cardboard or thick cardboard paper
- Scissors/cutter
- Ruler, grey lead pencil, eraser
- Sharpener
- Crayons/coloured pencils, markers or non-toxic paint
- Sticky tape
- White paper or equivalent

Steps:

Pocket chart

- Caregivers should network with their communities and sewists to have pocket charts made.
- The pocket chart should be simply made and suitable for differently sized cards. The best option is to use a plastic and transparent tablecloth to make a number of large strips that covers the width of the base (i.e. grain sack or piece of heavy cloth). Each strip should be sewed vertically and horizontally to create pockets.

Steps:

Days/months/years

1. Using a grey lead pencil, eraser and ruler, draw 22 medium-sized rectangles on big pieces of cardboard (or thick cardboard paper).
2. Cut all rectangles and divide them into different sets (one set of seven cards for days, one set of 12 cards for months, one or two cards for the current year).
3. With a grey lead pencil, neatly write each day, month and year on each card.
4. Use the black markers, coloured pencils or black paint to colour the letters of each word.

Steps:

Number cards

1. Using a grey lead pencil, eraser and ruler, draw 100 same sized rectangles or squares on the big pieces of cardboard (or cardboard paper).
2. Cut all squares/rectangles.
3. Use coloured crayons, pencils, markers or paint to draw and colour numbers from one to 100 at the centre of each card.
4. Neatly apply a layer of sticky tape around each card to make them sturdy and long-lasting.

Hints and tips:

1. Ensure the pocket chart is large enough to have up to 100 cards and to place different shaped cards i.e. wide and long size, calendar word cards.
2. Calendar words and number cards should be written in a universal way so children can learn how to visualise and recognise letters in their own environment.

Maths Bags

Maths bags can be made from local materials and contain a range of objects including seeds, rocks, string, shells, wooden dice and number cards 1-20. These baskets were made in Indonesia.

The maths bags support the four areas of child development. The maths bags also teach specific skills:

- Practicing sorting objects into groups; identifying shapes; making patterns and finding comparisons; enjoying maths and understanding the concepts well;
- Following rules around the use of maths bags (e.g. avoiding snatching items from other classmates; informing the caregiver when an item is missing);
- Developing social skills when solving a maths problem in pairs (e.g. cooperating/negotiating well with the other classmate and using respectful words to resolve conflicts); developing confidence and brainpower;
- Demonstrating basic movements (e.g. clapping to create a sound pattern);
- Developing capacity to describe objects; learning how to write numerals (e.g. they can be created with objects first, such as dry seeds, and then drawn on paper).

Children will use concrete objects to solve maths challenges and develop understanding about maths concepts and numbers. These materials can be pulled from corner play materials and from the natural environment. An alternative approach is to provide each child with a small drawstring bag of low-cost materials that are used especially for maths. The maths toy bag enhances child excitement for maths time and serves as an incentive. It prevents loss of productive learning time that occurs when caregivers have to scramble for materials. Materials for maths bags cost aboutUS$1 per bag in many countries.

Inventory:

- Two strings one metre long
- Several things to count and sort, such as buttons, shells, seeds, small stones, small wooden cubes of multiple colours, or 2.5cm squares of cloth in multiple patterns and colours (things that are plentiful in your area, are attractive to see and touch, and have a number of characteristics that make them interesting to sort); provide two sets of objects, each with about15 to 25 pieces
- 25 metal bottle caps; variety of types
- 25 paperclips
- 10 plastic water bottle caps, five each in two colours or painted in two colours; if not possible, use one colour initially
- 100 toothpicks (in plastic container, if possible);

Children in Uganda are learning important maths concepts and skills through hands-on experience. Maths bags can be most easily made from colourful local cloth.

or set of 20 small sticks
- One wooden die with dots (to make one, take a long strip of wood moulding and cut it into small cubes. Use a marker to draw the dots. If there are two per child, make one with dots and one with numbers)
- Number cards, one to 20
- 10 2.5cm square tiles, either wood or laminated paper (front side colour: five white and five red; back side: red and white coloured on a diagonal to form two triangles)
- A4-sized cloth mat to use as a workspace (optional). Cloth should be a solid colour; if possible, vary colours in the class. In this way the cloth mats also serve as a learning toy for sorting or grouping children. For example, everyone with red mats is in one group etc. It helps children focus attention on their work and not mix materials from one bag to the next
- Small to medium-sized maths bag or basket made from local materials

Games and rules:

Every day children will be challenged to solve a problem using small objects in a maths bag or in the environment. First each child will work independently. Then they will compare or share the work with a partner or small group. The emphasis will be on playing with objects and thinking mathematically.

The maths bags are used for most maths time activities. Each day, caregivers use a maths lesson to challenge the children mathematically. Other days, the maths challenge might involve a game played in or outside the class. The children themselves and objects in the environment are then used as the materials for solving the challenge. Examples are taking a walk to look for circle shapes or sorting children into groups according to the colours of their clothes. The 100 coloured cubes in the blocks and building corner will be used for some of the maths time activities.

Children in a Plan-supported ECCD centre in eastern Indonesia show off their maths bags. The maths bags were put together by parents using local baskets and contain a range of materials including rocks, seeds, buttons, bottle tops and wooden dice.

Suggested resources and steps:

Maths bags and their contents

It is recommended that caregivers network with their communities to support the production of individual maths bags. Bags can be handmade using local cloth or other material by a professional sewist or someone with good sewing skills. They can also be made of dry banana leaves as shown on the photo on page 119. Almost all of the items to put in the maths bag can be collected in the community. It is recommended that caregivers also network with their communities, market sellers, and art and craft makers to help collect the resources for the maths bags. Alternatively, parents can help collect items for their own children.

Suggested resources and steps:

Wooden dice cube with dots

The most rudimentary carpentry skills can be used to make small cubes. It is recommended to network with a carpenter or someone who has carpentry skills to make wooden dice. Alternatively, use a thick and long strip of wood and cut it into small cubes (2cm square). Use a marker to draw a number of dots from one to six on each side. If there are two per child, make one die with dots and one with number symbols.

Hints and tips:

- Check maths bags contents halfway through the year. Both the caregiver and children should re-check the contents of maths bags to make sure things are in good order. Do the maths bags have the right number of all of the materials? Repair and replace them as needed to keep maths materials in good order. Also, it is a good time to add a few new items to increase the interest in maths. Novelty is one of the key ingredients for learning.

An example of maths bag content that give children a variety of materials to help them learn maths concepts.

Maths bags: number cards one to 20

The number cards can be either drawn or created on a computer.

Inventory:

1. A set of number cards one to 20 for each maths bag

Games and rules:

2. Number cards are used in maths challenges. They are used in a particular way based on the concept and skills the teacher wants to teach. The concepts include: counting and writing numerals; understanding numbers at a concept level; and recording numbers at a symbolic level. For more ideas for maths activities, see Appendix 9.

Suggested resources:

Number cards

- Big pieces of cardboard or thick cardboard paper
- Scissors/cutter
- Ruler, pencil (grey lead pencil), eraser
- Sharpener
- Crayons/coloured pencils, markers or non-toxic paint
- Sticky tape
- White paper or equivalent

Steps:

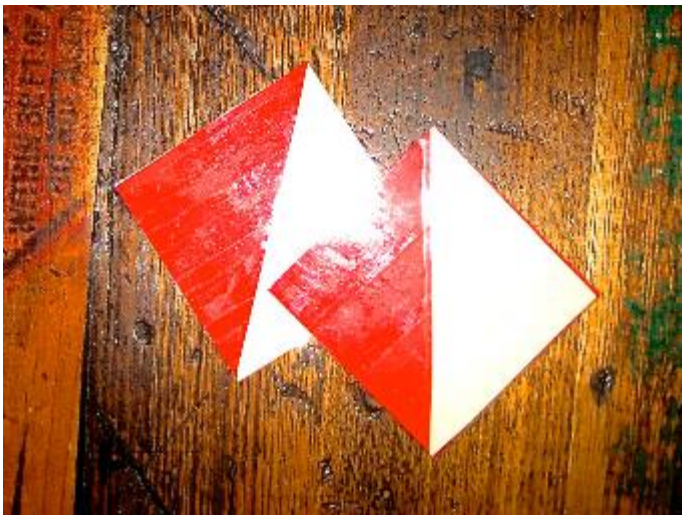
Number cards

1. Using a grey lead pencil and ruler, draw 20 same size rectangles or squares on the big pieces of cardboard (or cardboard paper).
2. Cut all squares/rectangles.
3. Use coloured pencils or markers or crayons or paint to draw and colour numbers from one to 20 at the centre of each card.
4. To make them sturdy and long lasting, apply a layer of sticky tape all around each card

Hints and tips

- Ensure the cards are the right size for children to handle.
- Ensure the cards are the right size to fit into the maths bag, so there is enough room for the other maths bag items.

Maths bags: square tiles



Square tiles are very easy to make and can teach children different concepts such as shape and space.

Inventory:

1. 10 tiles (2.5cm each) in each maths bag

Games and rules:

Square tiles are used in maths challenges. They will be used in a particular way based on the concept and skills the teacher want to teach. The concepts include recognising patterns, counting, understanding numbers at a concept level, shape and space (i.e. ability to reason in a spatial context and developing spatial reasoning).

Suggested resources:

Option one

- Wood
- Non-toxic paint

Option two

- Coloured cardboard paper (e.g. red and white)
- Scissors
- Glue
- Sticky tape

Steps:

Option one

1. The most rudimentary carpentry skills can be used to make small wooden tiles.
2. It is recommended that caregivers network with a carpenter or someone who has carpentry skills to make them.
3. Ask for a number of tiles to be cut into squares (2.5cm square each).
4. Ask for the tiles to be polished and coloured (front side colour: colour five white square tiles and five red square tiles; back side colour: on each of the square tile trace a diagonal to form two triangles, then colour one triangle in white and the other in red).

Option two

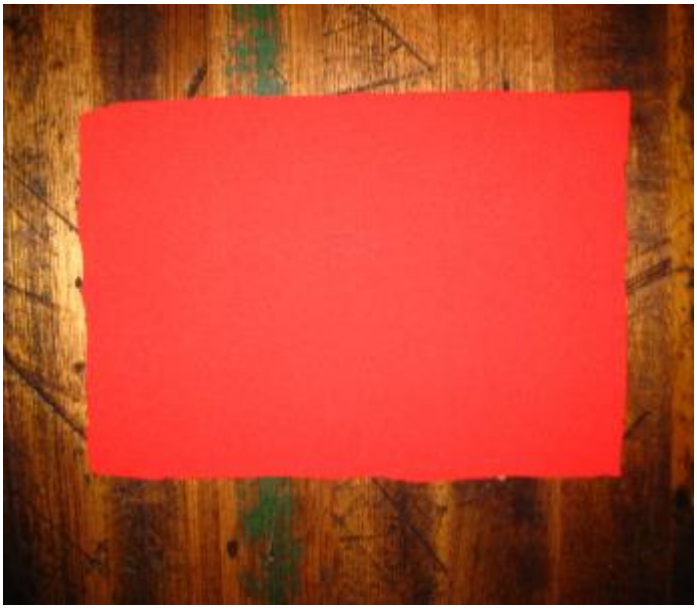
1. Cut 10 medium-sized squares with the red cardboard paper.
2. Cut 10 medium-sized squares with the white cardboard paper.
3. Use the first five red squares and cut them in half.
4. Use the first five white squares and cut them in half.
5. You should have 10 red triangles and 10 white triangles.
6. Glue one red triangle on one side of the five remaining white squares.
7. Glue one white triangle on one side of the five remaining red squares.

8. Discard the leftover triangles.
9. For them to be sturdy and long-lasting, neatly apply a layer of sticky tape around each tiles

Hints and tips:

- The number of tiles to be made will depend on the number of children. Each child should have 10 tiles in their maths bags.
- While both options for making the tiles are as effective as each other, the wooden option is strongly recommended because it will last longer.

Maths bags: A4-sized cloth mat



It is important for the cloth mat to be made from plain material so that children can distinguish the shapes of math bag's objects without being confused.

Inventory:

1. One cloth mat per maths bag

Games and rules:

There are no games and rules. The cloth mat is inserted into the maths bag so that each child has a clean and flat workspace to solve their maths challenges on.

Suggested resources:

- Different coloured cloth to create cloth mats of different colours
- Scissors

Steps:

- Cut a piece of cloth the size of an A4 piece of paper.

Hints and tips:

- The cloth should be a solid colour. If possible, vary colours in the class. In this way the cloth mats also serve as a learning toy for sorting or grouping children. For example, everyone with red mats is in one group etc. It helps children focus their attention on their work and not mix materials from one bag to the next.

Number banner

Number banners can be made with a grain sack.

The number banner supports the four areas of child development. The number banner also teaches specific skills:

- Describing pictures and numbers on the banner;
- Listening to others when they count numbers;
- Knowing that number prints represent quantity;
- Knowing that numbers can be said and written.

Inventory:

- One number banner (one to 20)

Suggested resources:

- Grain sack
- Scissors
- Ruler, grey lead pencil, eraser
- Markers (different colours)
- Fabric
- One lighter or candle and matches

Games and rules:

There are no set games and rules. The banner can be a visual tool for children to practice their counting and recognising numerals during corner play. It can also be a teaching aid for the caregiver to use during structured maths activities (e.g. the caregiver can use the banner to demonstrate how we write the number of the day; the caregiver can ask, *Can someone point at number two?*).

Steps:

1. Cut the grain sack on its two sides to turn it into a big rectangle.
2. Divide the grain sack rectangle into 20 medium-sized squares/rectangles.
3. Use a lighter to burn the edges of the banner to stop it from fraying.
4. Use a grey lead pencil to neatly draw a number on the left side of each square/rectangle.
5. Draw a picture on the right side of each square/rectangle a picture that represents the number (e.g. draw six flowers in the square to represent the number six).
6. Use markers to colour the banner's numbers and pictures.

Hints and tips:

- Draw the numbers big enough so they are easy to see and understand.
- Network with community members with sewing skills to frame the banner with fabric. Ask the person to create four holes at each corner of the banner so it can be easily attached to and removed from walls.

8. Learning toys for home play

Introduction

The importance of children's play has been explained in earlier sections of this guide. Plan's field experience has shown that when parents have the opportunity to learn about child development, they are also capable of producing locally made and low-cost toys that support the acheivement of child development milestones. This includes parents from poor socio-economic backgrounds and with basic levels of education. Parents can support their childrento develop and master skills by allowing for significant amount of times for play and ensuring that their toys are challenging enough for children's developmental levels.

Strengthening Families for Better Early Childhood Outcomes (2012) developed by Deborah Llewellyn for Plan International Australia gives parents the opportunity to understand and support child development through a non-instructional approach that values the existing knowledge and skills of parents and then builds on those. As part of this parenting program, parents are given a set of toy stimulation card and pictorial child development cards (see Appendix 10 and Appendix 11) so they can:

Fathers in Indonesia have been involved in making learning materials for children.

- learn about the different milestones (cognitive, language, social and emotional, physical) for each child age group (from birth to one year, one to two years, three to four years, five to six years, and six to eight years);
- assess the development ofchildren from each group;
- create toys that are age appropriate and;
- learn about the ways an effective toy can support child development.

Child development is best supported by parents when they understand: why play promotes child development; what makes a toy safe; and what is the right toy for their children's age and development stage. Parents also contribute well to child development when they: provide play materials that can be used in many ways; encourage imagination and creativity; interact frequently with their children;andprovide play that is challenging, with or without classmates. Their support is effective when they: observe their children as they play; interact verbally with their children during play (e.g. asking questions encouraging thinking); use the opportunity to reinforce accademic skills (e.g. maths and science) and; develop children's friendships and cooperative social values.

In addition to the Stage3 modules in*Strengthening Families for Better Early Childhood Outcomes*, this section aims to show parents, caregivers and early childhood professionals that low- to no-cost toys can be made to stimulate development based on a child's individual interests and needs in the home. It also emphasises the idea that, when parents produce toys, they can gain or extend their skills and knowledge about child development. They can also get positive feedback from their children and encourage pleasant interactions that influence great bonding.

While using this section of this guide, it is important to consider a number of factors:

- Attention to safety is essential when producing toys as children under three can choke on small objects.
- Children with physical disabilities need toys that suit their age and development level.
- Children with mental disabilities need toys that are stimulating for their developmental level only, not age.
- Children with physical disabilities should not be treated as less intelligent than their classmates.
- Toys need to be gender neutral so girls and boys can play with a variety of toys that help them reach their full potential and don't reinforce traditional gender stereotypes (e.g. boys playing with dolls and girls playing with cars).

A. Child development milestones

Child development milestones are identified as skills that children gain within a specific period of time. For example, one of many developmental milestones for children between the age of nine and 15 months is learning how to walk.

Children master skills that follow a logical order. It is necessary for them to develop certain skills first to develop others. For example, a child needs to learn how to crawl and stand before they learn to walk. Developmental milestones build on the previous ones achieved.

As seen on the charts for each age group (see Appendix 3) there are series of skills that children need to master. The charts clearly show the different ways in which children develop by listing a series of skills in the four areas of development (cognitive, physical, language, social and emotional).

Children develop the necessary skills more often at the end of the age period and less at the beginning. Parents can support children in the process by using the child development milestones cards to monitor their progress. If a child does not develop all of the specific skills needed at their age, parents should not be worried. Children need time to be able to do certain things during a particular phase. It is a common thing for children to use all of their energy and attention on one or two skills at a time. If a child does progress in one area and not another, parents can provide further support. If a child has not mastered all of the skills of a particular stage, and if they haven't reached specific developmental milestones at a certain age, then they might have developmental delay. It is then recommended that parents seek professional advice.[10]

B. Toy cards

The toy stimulation cards are an example of how parents, even with basic education and little to no literacy skills,have the opportunity to learn how to interact with their children and stimulate their development.

Examples of these cards (see Appendix 10) were created by Plan International Indonesia, based on a set of tools produced by Carmen Velasco, Lynn Patterson and Deborah Llewellyn (Pro Mujer Bolivia, 1990). They are visual tools that support parental understanding and involvement in addressing child development milestones. Each card represents a toy that can support children to develop particular skills at a particular age. They also show how different toys made locally and with available materials can support the different phases of development. The cards are also a great foundation for parents to develop the necessary skills for toy production. Parents can start replicating the toys as seen on the cards. When they gain enough confidence and the necessary skills, they can design and produce their own toys for their children.

If funds are low, cards can be printed in batches on single pages. But if there are funds available, cards can be printed and laminated to make them sturdy and long-lasting.

[10]For more information on child developmental delay, please see Stage 3 modules in *Strengthening Families for Better Early Childhood Outcomes* by Llewellyn, D. (2012), Plan International Australia.

C. Toy production methodology

All parents have the capacity to produce low to no-cost, locally made toys for their children. They can be supported by ECCD professionals todevelop the necessary skills and knowledge to select the right toys for the right age,and to use the toys to stimulate development.

In the Stage 3 modules in *Strengthening Families for Better Early Childhood Outcomes* of the*Parenting Education Curriculum Guide*, parents participate in a series of group activities and discussions that enable them to share and extend their existing knowledge and skills on toy production. This method is also used for parents to learn new skills.

During the parenting program, parents discuss and learn about child development. They understand they are the most important influence on their children's early learning experience. They also learn that children need interesting things to touch, do, explore and figure out to develop.

Parents are given a copy of the toy stimulation cards so they can, in groups, explore toys that can be used for different areas of child development. They can also explore how to make these toys. They select an age and developmentally appropriate toy from the toy stimulation cards to replicate for their children.

During this process, parents begin to understand and discuss how toys can stimulate more than one area of child development. Parents learn that toys are very important for their children's lives and that each child is interested in different toys and activities (depending on age, interest and needs). They learn that toys should be replaced frequently or used in a different way so their children do not get bored and continue to develop.

When parents have the capacity to select the right toy for the right age, and when they can describe how to use a toy to stimulate child development, then they understand the value of toys. With time and lots of practice, parents learn how to be creative and make their own toys for children.[11]

The following section shows examples of toys that are taken from the toy stimulation cards for replication. Specific toys were selected to show that interesting and challenging toys do not need to be bought. Instead, they can be made out of materials that are commonly found as cast-off items and raw materials in any community. For example:

- Fabric is often used to make dolls, soft toys or for dress-ups/pretend play experiences.
- Thread or string is useful for making soft toys, lace-up puzzles, jewellery or mobiles.
- Buttons, rocks and pasta are great for jewellery, sorting/comparing games and musical instruments.
- Wood enables the creation of musical instruments, drawing games and dolls.
- Paper can be used to make great puzzles, matching games and mobiles.
- Boxes are useful to produce vehicles, cubby or doll's houses and shape games.
- Bottles, tins and containers can be used for the production of pouring/scooping toys, musical instruments, fitting games and more.

In the following section, a number of step-by-step instructions are given to parents so they can produce some of the toys found in the toy stimulation cards. Instructions are also given to produce toys not found in the cards (see Appendix 12). With the instructions for each toy are listed some skills that children will gain from the toy, which will help parents understand how and why children learn particular skills using specific toys.

[11]For more information on educating parents in toy production and use, please see Stage 3 modules in *Strengthening Families for Better Early Childhood Outcomes* by Llewellyn, D. (2012), Plan International Australia.

9. Examples of toys from the toy stimulation cards – children aged from birth to one year

The examples of toys for children aged birth to one-year support children's development in the following ways:

Cognitive: reacting to the motion, geometric shapes, sounds and colours of toy; looking interested in and fascinated by the toy; exploring the effect when dropping, banging and throwing the toys; looking for toy when they are hidden by an adult (object permanence).

Social and emotional: showing anger or frustration when toy taken away from child's line of sight or hands; pushing away toy if not wanted; playing 'Peek-a-Boo' with toy and an adult; smiling when an adult interacts with toy or shows how to interact with toy; developing positive sense of self and competence.

Physical: reaching for the toy; holding, grasping, exploring toy with hands and mouths; transferring it from one hand to another; hitting toy's items together; squeezing, stroking, pushing, picking up and paying with toy; hitting items together.

Language: looking at adult decribing toy; saying and or repeating two to three words to describe toy; crying and/or pointing with finger when wants to reach toy; making sounds/babbling when playing with items.

Mobile

Inventory:

- Mobile

Suggested resources:

- Three medium-sized wooden sticks
- Roll of string
- Around 15 to 20 small, light and round natural objects (e.g. seed pods)
- Different coloured wool, thread or non-toxic paint to decorate

Steps:

1. Use a piece of string to join the three wooden sticks together from their centre. It should look like a cross once attached.
2. Cut a number of differently sized string pieces.
3. Hold the wooden cross and attach each piece of string on each stick and in different positions.
4. Thread three to four natural objects along each string piece.
5. Use coloured thread, wool or paint to decorate mobile's items.
6. Form a loop with a piece of string and attach it at the centre of the wooden stick's cross. This will help suspend the mobile from the ceiling of a room.

Hints and tips:

- The cross could be made with one or two wooden sticks.
- Different mobile objects can be selected for the mobile (e.g. natural objects, such as nut shells, sea shells, seed pods or other objects, such as buttons).
- Ensure the objects are large enough and well attached to the strings so it is safe for very young children to use.
- Objects on the string should be spaced out from each other.

Mobiles can be made with material such as wood and string.

Bottle instrument

Inventory:

- Bottle instrument

Suggested resources:

- One medium-sized transparent plastic bottle and cap
- A small collection of medium-sized objects (e.g. rocks, seed pods, wooden sticks, coloured string pieces)
- Non-toxic paint
- One long piece of string
- Markers

Steps:

1. Colour the objects in different colours with non-toxic paint.
2. Let them dry and insert them in the bottle.
3. Close the bottle with the cap.
4. Tighten the piece of string around the bottleneck.
5. Decorate the bottle with markers.

Hints and tips:

- Paint the objects in bright colours to attract young children's attention.
- Ensure all objects can be inserted in the bottle before colouring them.
- Close the bottle with the cap as tight as possible to ensure it is safe for young children to use.
- Ensure the bottle is only partly decorated so children can see and observe what's inside.

A bottle instrument can stimulate young children with its sound, colours and shapes.

Soft snake

Inventory:

- One soft snake

Suggested resources:

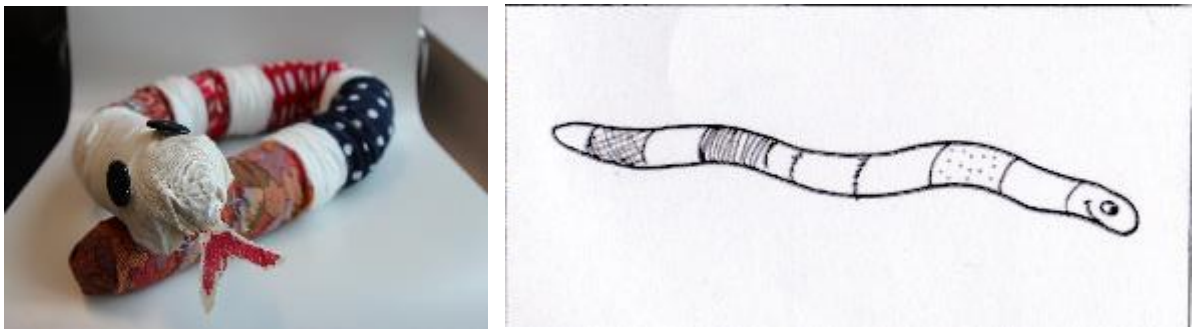
- Stuffing
- Pair of tights
- Fabric with different patterns
- Plain coloured piece of fabric
- Two large buttons
- Coloured needle and thread
- One red marker

Steps:

1. Cut one leg of the pair of tights and discard the rest.
2. Stuff the leg with stuffing.
3. Close up the open end of the tight. The snake's body is made.
4. Sew fabric around the snake's body.
5. On one edge of the snake's body, sew the fabric to make a pointy tail.
6. On the other edge, sew the fabric to make a curvy face.
7. Sew the big buttons, side by side, on the snake face.
8. Sew a mouth on the snake's face with a coloured thread.
9. With a red marker, draw a snake's tongue on a plain coloured piece of fabric.
10. Colour the tongue in red, cut it and sew it at the centre of the snake's mouth.

Hints and tips:

- If no stuffing is available, use soft materials to stuff the snake (e.g. cotton). Non-toxic seeds are also great for stuffing but it is not going to be as soft.
- One piece of fabric can be used for the entire body of the snake or different pieces of fabric can be used for different parts of the body. Fabric should have different colours and patterns to attract children's attention and interest in the shapes and colours.
- Ensure the big buttons are sewn well so children cannot pull them out. Alternatively, draw the eyes with a black or green marker.



A soft snake can be made out of discarded fabric.

Picture cards

Inventory:

- A collection of colourful picture cards (10 to 20 cards)

Suggested resources:

- Different colour cardboard paper
- A collection of colourful and interesting pictures showing different things (e.g. animals, people, vehicles, shapes, etc.)
- Scissors
- Glue
- Ruler, grey lead pencil, eraser
- Plastic folders
- Sticky tape

Steps:

1. Draw 10 to 20 medium-sized rectangles on the cardboard paper sheets.
2. Cut all rectangles to form cards.
3. Glue one picture on each card.
4. Wrap each card in plastic folder pieces and with sticky tape.

Hints and tips:

- If cardboard paper is not available, use normal cardboard.
- If plastic folders are not available, neatly apply a layer of sticky tape around the cards to make them sturdy and long-lasting.
- Pictures can either be drawn or collected. They can be collected from newspapers and/or magazines. They can also be printed from the internet (see MrPrintables).[12]

Picture cards can be either drawn or printed from the internet. These pictures were printed from a website called www.mrprintables.com

[12] Mr Printables, Printable Vocabulary Flashcards, Fruit and Vegetables Card, 2012, accessible from http://www.mrprintables.com/printable-vocabulary-flash-cards-fruit-vegetable.html

10. Examples of toys from the toy stimulation cards – children aged from one to two years

The examples of toys for children aged one to two years support children's development in the following ways:

Cognitive: playing make-believe with the toy/game; imitating or replicating the adult behaviour playing with it; starting to recognise the colour of the toy's/game's items; starting to count the number of toy's/game's items with the help of an adult; observing and showing interest in the toy/game; looking for toy/game when an adult hides it; reacting to the motion of the toy; dropping/banging/shaking/pushing and rolling the toy/game to explore the cause and effects; reacting to the motion of a toy/game.

Social and emotional: playing with the toy/game beside classmates and finding it difficult to share; developing a sense of choice and preference; smiling when an adult shows how the toy/game can be used; showing anger when the toy/game is taken away; pushing the toy away if not wanted; playing 'Peek-a-Boo' with the toy/game and an adult; imitating the adult after demonstrating the ways of using the toy; starting to understand how to care for the toy/game.

Physical: holding/reaching/playing/picking up toy/game; transferring it from one hand to another; exploring it with hands and mouth; grasping toy/game with both hands; using hand-eye coordination to insert one toy/game item into another; pushing and pulling toy/game; picking in and out toy's/game's items from a bag/container; walking with toy/game.

Language: pointing with a finger when wants toy/game; crying when wants it; looking at an adult describing the toy/game; following directions and commands of an adult; saying a few key words/small sentences and responding to questions in relation to the toy/game (e.g. *Where is the blue box?* Or *How many boxes are on the stick?*); pointing at the toy/game when named.

Streamer

Inventory:

- One streamer

Suggested resources:

- One long wooden stick
- Fabric with different patterns
- String or wool

Steps:

1. Cut the fabric into differently sized strips (i.e. long, medium and short).
2. Cut different lengths of pieces of string or wool (i.e. long, medium and short).
3. Place the fabric strips and string or wool pieces all together horizontally and on a flat surface.
4. Grab one side of the combined strips and string or wool pieces with one hand and hold them vertically.
5. Grab the long wooden stick with the other hand and hold it vertically.
6. Place the top edges of the combined strips and string or wool pieces onto the bottom edge of the stick.
7. Hold the wooden stick and fabric, string or wool all together with one hand.
8. Use a long piece of string to attach the top edges of the strips and pieces of string or wool with the bottom edge of the wooden stick.

Hints and tips:

- Old clothes can be used to cut strips.
- Ensure the wooden stick is safe for children to use. For this, cover both edges of the stick with wool or other soft materials. Also polish the stick to remove any sharp edges.
- Use fabric, string or wool with different colours and patterns to make the streamer attractive to children.

A streamer can be made out of a stick and pieces of fabric.

Box kebab

Inventory:

- One long wooden stick
- Six boxes

Suggested resources:

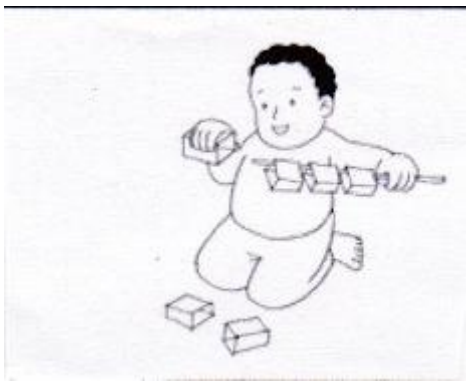
- Six small rectangle-shaped boxes
- 1 long wooden stick
- Non-toxic paint
- Scissors
- Sticky tape

Steps:

1. Unfold the ends of each box and cut them off to create rectangular tubes.
2. Paint each box in different colours.
3. Neatly apply a layer of sticky tape around all of the boxes from the outside so they are sturdy and long-lasting.
4. Store all of the kebab boxes in a bag or box when not in use.

Hints and tips:

- Ensure the wooden stick is well polished and has no sharp ends so it is safe for children to use.
- If no rectangle boxes are available, use square ones.



A box kebab is a simple toy that will help children develop fine motor skills such as inserting objects into one another.

Pull-toy (trailer/train)

Inventory:

- Trailer
- A small collection of medium-sized objects (e.g. bottle caps, rocks, seedpods, etc.)

Suggested resources:

- One medium-sized box
- Sticky tape
- Non-toxic paint
- Scissors
- Fabric
- String or wool
- Hole puncher

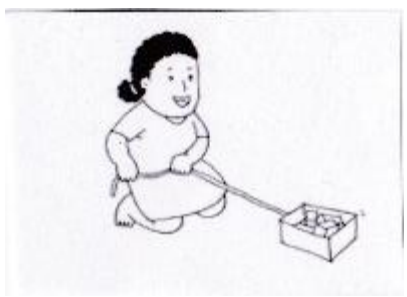
Steps:

1. Cut one side of the medium-sized box. It should look like a container in which items can be inserted.
2. Paint the box on the outside.
3. Neatly apply a layer of sticky tape around the outside so it is sturdy and long-lasting.
4. Make a small hole on one of the sides (choose any except the base).
5. Cut long pieces of string or wool.
6. Join and plait them to form a long and sturdy lace.
7. Tie a medium loop at one end of the lace.
8. Hold the other end of the lace and insert it in the box's hole
9. Attach the end of the lace to the box by tying a knot between the hole and edge of the side of the box.
10. Cut a piece of fabric that is the same size as the box's base.
11. Insert the square fabric piece in the box.
12. Take all collected objects and insert them in the trailer.

Hints and tips:

- To make the toy attractive and interesting for children, the collected objects can be painted with non-toxic paint.
- Make the lace long enough for children to be able to drag it while standing up.
- The children can decorate the trailer with different colours.





A pull-toy encourages children to use their gross motor skills such as walking and pulling.

11. Examples of toys from the toy stimulation cards – children aged from two to four years

The examples of toys for children aged two to four years support the four areas of child development. They also teach the following skills:

Cognitive: being interested in the toy/game; recognising different colours in the game/toy; counting the number of toy's/game's items and objects (e.g. petals, beads, phones); playing make-believe/elaborating dramatic play with the toy/game; when playing with another classmate or adult, asking or responding to questions about the toy/game (e.g. *Why can't I fit more beads onto the lace?*).

Social and emotional: smiling when playing with toy/game and praised by an adult (e.g. *Well done! You can blow wind on the flower and make the flower spin!*); showing understanding of toy's/game's instructions and rules (e.g. *Walk straight on the rope to the other end of it without falling*); being able to play with the toy/game alone or with others; learning how to share it with other; being possessive of the toy/game; expressing feelings; developing sense of preference and competence.

Physical: using fine and gross and fine motor skills to blow on and make a toy spin, pick up toy's items from a bag/container, taking steps, balancing, tip-toeing without falling; using hand-eye coordination to insert one item into another one; coordinating two actions simultaneously (e.g. walking and talking with a phone) and making movements with the toy.

Language: following simple directions to master the game/toy; being able to follow two to three series of instructions such as, *Insert only the green coloured beads in the lace and attach the necklace with both ends*. Or *Finish your converstion on the phone*; *go and wash your hands*; and *go and play outside*; saying few words and making small sentences to create conversations in relation to or with the toy/game (e.g. *My Flower is red, I want to play again*); asking questions about the toy/game (e.g. *How do I attach the necklace with both ends?*) and during pretend play conversations; pointing at the toy/game when named; being able to name shapes and colours of toy's/game's items; being able to speak clearly when playing with someone else.

Windflower

Inventory:

- A windflower

Suggested resources:

- Two different coloured paper sheets (A4-sized)
- One small pipe cleaner
- Scissors
- Sticky tape
- Stapler and staples
- Ruler, grey lead pencil and eraser

Steps:

1. Neatly apply a layer of sticky tape around the two A4-sized paper sheets to make them sturdy and long-lasting.
2. Roll one of the sturdy paper sheets on its length and staple both edges to form a long tube.
3. Cut the other paper sheet into a big square.
4. Draw diagonal lines to divide the square into eight same sized triangles.
5. Draw a 1cm wide circle at the centre of the square.
6. Cut every second triangle and discard them. The remaining triangles on the square should form a cross.
7. Make a hole on the outer corner of each triangle and fold into the centre of the cross so each corner meets in the centre.
8. Make one hole at the centre of the cross.
9. Insert the small pipe cleaner into each hole and form a little flower with it.
10. Make a hole in one edge of the tube.
11. Insert the flower into the tube's hole and twist the pipe cleaner so the flower and the tube stay together.

Hints and tips:

- When cutting the triangles in the square, be sure not to cut the circle at the centre of the square.
- If pipe cleaners are not available, use a small button, place it at the centre of the flower and sew the flower on the tube.
- When attaching the flower onto the tube, ensure it is slightly loose to make the flower spin when blowing on it.

A windflower can be made out of thin cardboard or paper.

Walking rope

The walking rope supports the four areas of child development. It also teaches the following skills:

- imitating adult behaviour when playing the rope game;
- understanding when they win and when they have to try walking the rope again;
- imitating adult's demonstration to walk on the rope.

Inventory:

- One walking rope

Suggested resources:

- String or wool

Steps:

1. Cut six long pieces of wool or string.
2. Combine wool or string pieces together and place it horizontally on a flat surface.
3. Tie a knot at one end and plait vigorously the strings.
4. Once finished plaiting, tie a knot at the other end.

Hints and tips:

- The rope should be long enough for the child to take a challenging number of steps.
- The rope should also be quite narrow so that the child is challenged enough to practice their balancing skills.

The walking rope can teach children how to find balance when walking.

Bead string

The bead string supports the four areas of child development. It also teaches the following skills:

- matching beads by colours and/or patterns;
- knowing that the beads need to be inserted in the lace;
- asking for help if the task of inserting beads in the lace is too challenging.

Inventory:

- Medium-sized piece of string
- Tube-shaped pasta beads

Suggested resources:

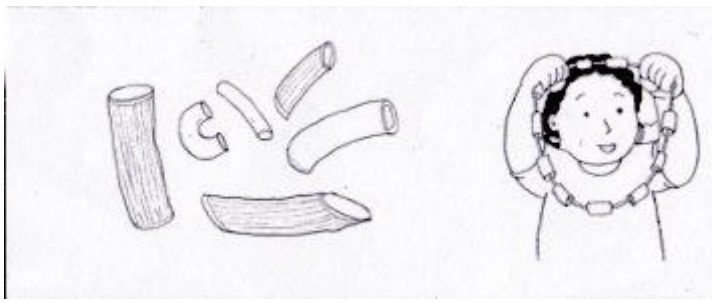
- Medium-sized piece of string
- Tube shape pasta (10 to 15 pieces)
- Non-toxic paint
- Different colourmarkers

Steps:

1. Form a small loop at one end of the string and a ball at the other end. This will help attach the bead string around the child's neck.
2. Paint each pasta bead a different colour.
3. Let them dry. Once dry, draw different patterns on them (e.g. stars, hearts, dots, waves etc.).
4. Thread the pasta beads on to the string to make the bead string.
5. Use a bag or container to store all of the items.

Hints and tips:

- The ball formed at one end of the string should be large enough to hold the loop of the bead string as a whole.
- Ensure the string is longer than the child's neck to avoid choking.
- If pasta is not available, other objects can be used as long as the string can be inserted into them and they are safe for children.



A bead string helps childrento develop their fine motor skills.

Playing phones

The playing phones support the four areas of child development. They also teach the following skills:

- enjoying imagined phone conversations with friends;
- showing emotions when pretending conversations;
- inventing other games with the playing phones;
- using self-speech to create a dialogue or story with it.

Inventory:

- Playing phones

Suggested resources:

- Two round or square tins or boxes
- One long piece of string
- Two large pieces of fabric
- Needle and thread
- Scissors

Steps:

1. Cut the bases of the two tins or boxes.
2. Insert each end of the piece of string into the inside of each of the tins or boxes.
3. Cut two long and large strips of fabric; wrap each one of them on the surface of the tins or boxes.
4. To hold the fabric pieces and the tins or boxes together, neatly sew the fabric surplus around the surface of the tins or boxes.
5. At this stage, both of the tins or boxes are wrapped in fabric; one long string piece connects them together and there is a surplus of fabric at both ends of the tins or boxes.
6. To close each end of the tins or boxes, combine the fabric surplus and sew the tip of it tightly so it is resistant.
7. Tuck the tips inside each tin or box to create phone receivers for children's ears.

Hints and tips:

- If the edges of the tins are sharp, make them safer by covering them with a soft material, such as masking tape.
- If fabric is not available, paint the tins or boxes with homemade and non-toxic paint to make them attractive for children.

The playing phones toy helps support children's language development.

Horse puppet

The horse puppet supports the four areas of child development. It also teaches the following skills:

- knowing the body parts of the horse and the concept of large (e.g. *Large head*) and small (e.g. *Small eyes*);
- imitating the horse;
- making up stories and singing songs related to the horse;
- playing happily with the horse alone and performing with it in front of an audience;
- using self-speech to create a dialogue or story with it.

Inventory:

- Horse head puppet

Suggested resources:

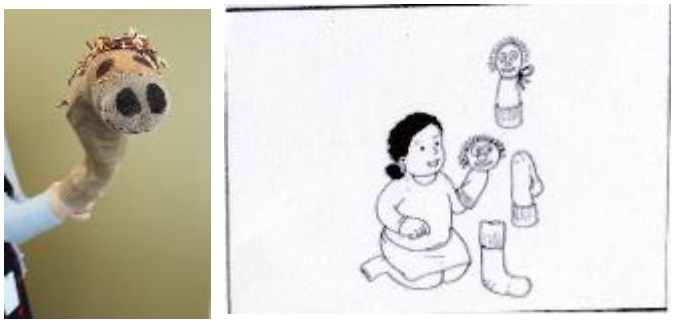
- Large brown sock
- Soft materials to stuff the horse head (e.g. pieces of fabric, stuffing or cotton)
- Pieces of string, wool of strips of fabric (ideally black, white, grey and or brown)
- Fabric (ideally black, white, grey and or brown)
- Black marker
- Scissors
- Needle and thread
- One ribbon, piece of string or elastic

Steps:

1. Stuff the sock all the way to the top.
2. Cut two circle-shaped pieces of fabric and sew them side by side at the bottom of the sock.
3. Draw two big dots in each circle with a marker to make the horse's eyes.
4. Draw, side by side, two oval-shaped dots (nostrils) and a small upward curve (mouth) on the tip at the bottom of the sock. The horse's face is now made.
5. To make the horse's hair, cut short length pieces of wool/string/fabric strips.
6. Join all of the pieces and sew them in a row on the top of the horse's head.

Hints and tips:

- Stuff the sock as much as possible to allow space to make the horse's face.
- Ensure the circle-shaped fabric pieces are slightly smaller than the size of the horse's head.
- Be sure to sew the horse's hair tightly so it does not fall out.
- This horse puppet is only one example of puppet making. Use creativity and imagination to make other different sock puppets such as, people and puppets of other animals. A variety of puppets will help children create more complex pretend stories and conversations.



Socks can make great puppets such as this horse.

12. Examples of toys from the toy stimulation cards – children aged from four to six years

The examples of toys for children aged four to six years support children's development in the following ways:

Cognitive: promoting thinking and problem solving; being able to define the colours of the toy/game; knowing the concept of big and small and differentiating the size of each toy's/game's items; counting toy's/game's items; knowing the game's rules; using the toy/game for pretend play; asking questions in relation to the toy/game (e.g. *Why are there only one or two pins on the floor?*); organising toy's/game's items by size, number symbols (e.g. one to six); understanding concepts of large, medium and small through toy's/game's items; assigning and acting out roles, such as "baby"or "daddy".

Social and emotional: feeling happy and joyful; playing with the toy/game alongside and with other children; being able to share/take turns with the toy/game; putting the toy/game away when finished playing with it; playing cooperatively with toy/game; understanding when a classmate has not played well with the toy/game (e.g. snatching them, hurting others with them etc.); understanding the rules of the toy/game; asking for help if the game/toy is too challenging to play with; developing imaginative play with the toy/game and inventing other games with it.

Physical: using fine motor skills to pick up toy's/game's items and pack them away; using hand-eye coordination to place toy's/game's items in a certain way to create designs and to stack them on the top of each other.

Language: asking questions about the toy/game (e.g. *Where does this puzzle piece go?*); using language to express feelings (e.g. *Yes! I won!*; *I am happy I can solve the puzzle myself*); following a series of two-three unrealated directions (e.g. *Stack the boxes*; *go and wash your hands*; *go outside and play*); speaking clearly in sentences and using many words when playing with toy/game in a group; using sentences and many words to describe toy/game; being able to name the colours/shapes of the toy/game; counting the number of toy's/game's items; asking a caregiver or others for help if the game/toy is too challenging.

Puzzle

The puzzle supports the four areas of child development. It also teaches the following skills:

- reasoning skills to assemble the puzzle (e.g. looking for the next puzzle piece showing a cat's tail to assemble this piece showing the cat's body);
- turning all pieces on their picture side;
- picking up and placing pieces on puzzle's base;
- putting the puzzle's pieces in and out of a container/bag.

Inventory:

- One puzzle with four to six puzzle pieces

Suggested resources:

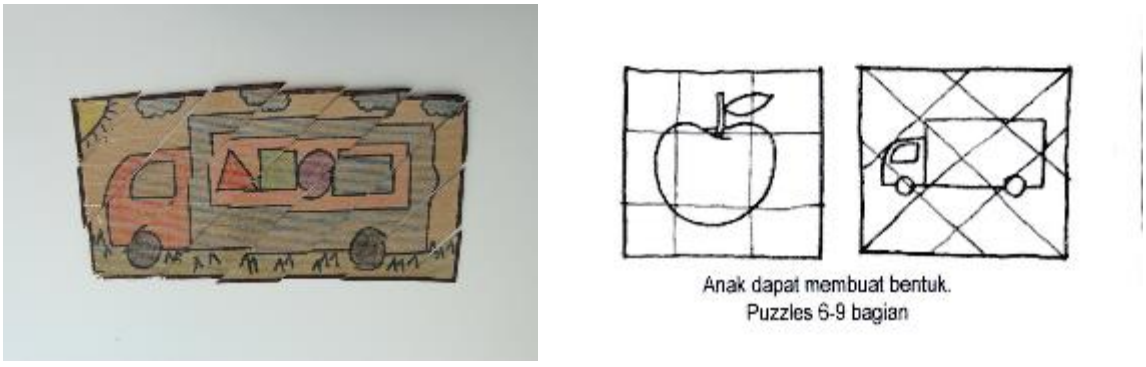
- Square or rectangle shaped piece of cardboard
- Coloured pencils, paints or markers
- Ruler, grey.lead pencil, eraser
- Sticky tape
- Scissors

Steps:

1. Draw a fairly detailed picture on the cardboard piece.
2. Colour the picture with a variety of bright colours.
3. Neatly apply a layer of sticky tape around the picture to make it sturdy and long-lasting.
4. Draw five to six consecutive diagonal lines on the picture with a grey lead pencil.
5. Cut the lines to form puzzle pieces.
6. Store all of the puzzle pieces in a bag or box when not in use.

Hints and tips:

- First make puzzles of four to six pieces. When children can solve these, increase the number of puzzle pieces.
- Children are interested in pictures with lots of details.
- If markers and coloured pencils are not available, use non-toxic paint.
- Puzzle pieces can also be formed as square pieces or other different shapes.



Puzzles are a great way for children to learn how parts of something can become a whole.

Bowling set

The bowling set supports the four areas of child development. It also teaches the following skills:

- enjoying an audience when playing the game;
- being able to throw the ball and receive it;
- using hand-eye coordination to throw the ball straight and hard enough to make all of the pins fall;
- using both hands to make all pins stand up together.

Inventory:

- One ball
- Six pins

Suggested resources:

- Six plastic bottles
- Different coloured fabric with different patterns
- Needle and threads
- Soft materials for stuffing (e.g. small pieces of fabric, cotton or stuffing)
- Large size sock
- Scissors

Steps:

1. Cut six large strips of fabric and sew one around each bottle's 'body'.
2. Cut six narrow strips of fabric and wrap one around each bottle's 'neck'.
3. Stuff the sock with soft materials and close it by sewing the entrance. This will form the bowling ball.
4. Cut a medium-sized piece of fabric, wrap it and sew it around the ball.

Hints and tips:

- Use fabric that has interesting colours and patterns.
- Ensure the ball is large enough for the game.
- The ball can also be made a little heavy by inserting a lot of non-toxic seeds in it.

A bowling set can be made out of bottles and fabric.

Differently sized numbered boxes

The differently sized numbered boxes support the four areas of child development. They also teach the following skills:

- knowing which box comes first and which box comes last;
- understanding opposites such as 'large box' and 'small box';
- using the boxes for dramatic or construction play;
- showing curiosity on how to organise the boxes;
- using the boxes for imaginative play with friends;
- using balance to hold all of the boxes at once;
- knowing and using key words such as 'below', ' behind' or 'in front of';
- counting the boxes and saying the numbers one to six.

Inventory:

- Six differently sized boxes

Suggested materials:

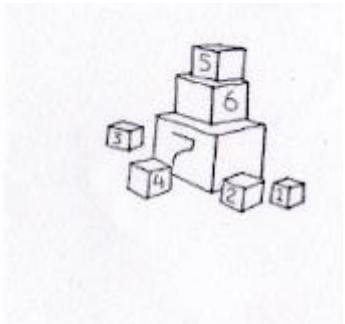
- Six differently sized boxes
- Recycled paper such as newspaper
- Non-toxic paint (different colours)
- Marker
- Sticky tape

Steps:

1. Collect six differently sized boxes.
2. Wrap them with recycled paper.
3. Paint each side of each box with one colour (e.g. one box – blue, one box – green etc.).
4. Write one number on each side of each box (e.g. number one on each side of one box, number two on each side of one box etc.).
5. Keep boxes in a dry place, such as a container.

Hints and tips:

1. If it is too challenging to collect six gradual size boxes, collect the ones that you can and cut them to create different sizes.
2. The number of boxes can be increased once the child has mastered the sorting process with six boxes (by number and sizes).
3. If no recycled paper is available, paint directly onto the boxes.
4. Ensure the boxes are used indoors or when it is not raining to avoid damage.



Different sized numbered boxes can be used by children in many ways, such as sorting them from the smallest one to the largest one.

Design sticks

The design sticks support the four areas of child development. They also teach the following skills:

- knowing which pile has more sticks and which pile has less sticks;
- drawing pictures with sticks that represent things such as a house, car etc.;
- being able to make basic patterns with the sticks such as *One small stick, one medium stick, one large stick, one small stick, one medium stick, one large stick etc.*;
- being able to design numerals with sticks and name them (e.g. *1, 2, 3, etc.*);
- recognising and naming the colours of each stick;
- drawing pictures with sticks and explaining it;
- practicing writing name with sticks and other simple words such as *Dog*;
- being able to copy a design with the sticks;
- being able to make shape designs;
- using clear language when negotiating the making of picture with another classmate.

Inventory:

- A collection of wooden sticks of differently sizeds(e.g. 20 largesticks, 20 medium sticks, 20 small sticks, 20 smaller sticks)

Suggested resources:

- 20 thin wooden sticks (e.g. any type of wood such as bamboo, kebab sticks etc.)
- Scissors or an equivalent sharp tool

Steps:

1. Cut the 20 long sticks in half to make 40 long sticks.
2. Pick the first 20 of the long sticks pile and again cut them in half to make 40 medium sticks.
3. Pick the first 20 of the medium sticks pile and again cut them at the third of their length to make 20 small sticks and 20 smaller sticks.

Hints and tips:

- Ensure the sticks are well polished and safe for children to use.
- To extend child learning, such as sorting sticks by colour, sticks can be coloured with non-toxic paint.
- The sticks should be stored in a bag or box when not in use.

Design sticks are a simple and effective way for children to develop numerous skills such as sorting, counting and recognising patterns.

Appendices

Appendix 1

Gender observation tools[13]
About this set of tools

These tools are examples that can be used to help project staff, caregivers, teachers, supervisors etc. to encourage observation and awareness of how gender plays out in the classroom. One way to ensure 'gender conscious' ECCD is to conduct a gender audit of the ECCD centre environment, materials, participation and interactions.

Below are three exercises or sub-tools, which can be conducted together or separately as structured observation exercises. The exercises are quite intensive in nature, and require considerable concentration and attention to detail. It might be more effective to limit the duration of each and do them separately over time.

The set of tools comprises the following:

- Tool 1: Observation exercise 1 – Observation of ECCD caregivers with girls and boys
- Tool 2: Observation exercise 2 – Paired observation exercise
- Tool 3: Observation exercise 3 – Observation of girl and boy children's activities, participation and interaction

Overview of the exercises

Facilitators:

ECCD project staff from the supporting organisation, as well as ECCD centre committees, caregivers and primary school teachers can undertake observation activities, sometimes separately, and sometimes together.

Timing and frequency:

- Phase 1: can be used for the purposes of initial learning and awareness raising by ECCD project staff.
- Phase 2: (implementation): can be used by ECCD caregivers and committee members, and primary school teachers, at any time during implementation.
- Phase 3: (monitoring and evaluation – M&E): can be used periodically in a more systematic way as an M&E tool for assessing change over time.

Duration: Each activity can be conducted for a shorter or longer period of time, depending on the amount of time available.

Purpose: To encourage greater awareness, including self-awareness, of conscious and subconscious patterns of gender differentiation in the treatment of girls and boys and its impact on their educational and life opportunities and outcomes.

[13] These tools have been extracted from a Toolbox and Guide for Plan International: Kilsby D., Trembath, A. (2013), *Toolbox and Guide for addressing gender inequality in early childhood care and development through Plan Uganda's Community Led Action for Children program. Based on learning from the Gender in Early Childhood Care and Development Study*, unpublished.

Materials: Checklists and pens

Preparation:

- Prepare materials and plan a suitable time, with the full cooperation of caregivers or teachers under observation, including time for debriefing, discussion and action-planning.

Venue: ECCD centre or primary school – indoors and outdoors.

Documentation: Using observation sheets and writing down observations during the exercise tends to be the easiest way to do the observation activity. It will already be documented as part of the process. A plan can be made for regularly collecting and analysing a selection of observation sheets. These can become a means of recording, assessing and analysing change over time (M&E).

Instructions: Select which area of observation you would like to focus on and select the relevant tool. Sit somewhere unobtrusive. Observe and take detailed notes using the checklist for that tool.

Special note: Video footage can be used for groups to observe and review classroom and playtime activities. This would provide the opportunity for discussion among more staff, caregivers and committee members than is otherwise possible. A series of still photos can also be used. Clear patterns emerge once people know what to look for. For example, in reviewing the set of photos that were taken during the research, a pattern became apparent through the images. Girls were often at the bottom of the climbing equipment in the playgrounds, trying or often simply waiting to get onto the climbing equipment, while the boys were on it. In photos where girls are on the climbing equipment, usually the boys are not. Also a couple of photos show a boy actually elbowing a girl off a climbing structure and out of his way! These photos were taken rapidly and randomly. Together they illustrate a pattern that can be difficult to spot while everything is moving fast in the playground.

Special guidance notes and skills needed for facilitators:

- No special skills are required for conducting the observation exercise, but ECCD project staff and ECCD centre staff will need to have skills in sensitively giving feedback. Training is recommended to ensure this is done constructively and effectively.

Lessons learned from trialling the tool during the research:

- Detailed observation is difficult with large class sizes, and it was difficult to record many different issues on one long record sheet. The tools have been broken down into separate tools. Different focus topics of observation are under specific headings. Record sheets can be simplified so that one focus area is observed at one time. One of the tools has now been redesigned so two observers can work as a pair during the same session. Other tools could also be shared between more than one observer, with different topics observed by different observers.
- Observers should remain completely silent except when providing feedback. The observer role is not to direct or interfere with the process, nor to make judgments on anyone, but simply to watch and learn with an open mind.

Acknowledgement: Some of the tools were adapted from the *Gender Loops Toolbox.*[14]

Observation tool 1: observation of ECCD caregivers with girls and boys

[14] Abril, P. *et. al.*, (2008), *Gender Loops Toolbox for gender-conscious and equitable early childhood centres*, EU-Leonard da Vinci programme, Berlin.

1. Briefly sketch the layout of the ECCD space/s, indoor and outdoor, and indicate the distribution and location of materials (play equipment, toys etc.).

   Ideally, a sketch can be made of each centre or classroom at the beginning of each year, with photocopies made that can be used for observation sessions throughout the year.

   Copies of these diagrams can be shared so that ECCD project staff can use them for periodic observation. Over time, changes in the layout and design of the centres and classrooms will form monitoring data that shows change over time and the degree to which, and ways in which, spaces are becoming more gender-responsive and inclusive.

2. Note which spaces are used by girls and boys and for what activities at different times throughout the session.

4. Compare roles, functions and activities of male and female teachers:

- Is there a difference in the level of authority they have or tasks they are responsible for?
- Do they dress or behave differently in any way? What image do these differences create in terms of being role-models as men and women?

In the course of one structured session:

5. Who does the caregiver or teacher call to the front of the room to help or to present – how many boys, how many girls?

6. Do teachers ask boys and girls to assist with tasks of a differentiated gendered nature?

   - Which tasks are girls asked to do?
   - Which tasks are boys asked to do?

7. In what ways do teachers mediate in conflicts between boys and girls?

   - What do they do when girls are fighting with each other?
   - What do they do when boys are fighting with each other?
   - What do they do when girls and boys are fighting with each other?

8. What are the gendered patterns of behaviours that are encouraged and discouraged?

   - What behaviours are boys encouraged to do and/or are rewarded for?
   - What behaviours are girls encouraged to do and/or are rewarded for?
   - What behaviours are boys discouraged from doing and/or are punished or disciplined for?
   - What behaviours are girls discouraged from doing and/or are punished or disciplined for?

In the course of a free play time, indoors or outdoors:

9. Gendered differences in activities:

   - Which activities do the teachers or caregivers actively encourage girls to participate in? How do they encourage girls to do these activities?
   - Which activities do the teachers or caregivers actively encourage boys to participate in? How do they encourage boys to do these activities?
   - Do the teachers or caregivers actively encourage girls and boys to participate in activities that are being dominated by the other gender? How do they do this?
   - What behaviours are boys encouraged to do and/or are rewarded for?

- What behaviours are girls encouraged to do and/or are rewarded for?
- What behaviours are boys discouraged from doing and/or are punished or disciplined for?
- What behaviours are girls discouraged from doing and/or are punished or disciplined for?

Observation tool 2: paired observation exercise

One observer watches the teacher's or caregiver's interactions with boys, and one watches the teacher's or caregiver's interactions with girls:

1. What kinds of behaviours do caregivers or teachers use towards boys? Note the following:
   - body language
   - voice (tone, volume, kinds of words used)
   - compliments
   - criticisms
   - general level of attention
   - physical contact
   - discipline
   - response to expression of different emotions such as crying
2. What kinds of behaviours do caregivers or teachers use towards girls:
   - body language
   - voice (tone, volume, kinds of words used)
   - compliments
   - criticisms
   - general level of attention
   - physical contact
   - discipline
   - response to expression of different emotions such as crying

Observation tool 3: observation of girl and boy children's activities, participation and interaction during an ECCD session

1. Accompaniment to the centre:
   - Who accompanies girl children to the centre, if any? (e.g. grandfather, grandmother, mother, father, older girl child, older boy child, other female relative, other male relative).
   - Who accompanies boy children to the centre, if any? (e.g. grandfather, grandmother, mother, father, older girl child, older boy child, other female relative, other male relative).
   - Who comes to collect girl children at the end of the day?
   - Who comes to collect boy children at the end of the day?
   - To what extent does the person accompanying the child initiate interaction with centre staff? Specify category of relative who initiates interaction.
   - To what extent do centre staff interact with the different categories of relative accompanying the child?
2. What kinds of different gendered behaviour of children are evident at mealtimes?
   - Do caregivers give any direction to girls and boys at mealtimes? If so, what, and how is it gendered?
   - Where do boys sit and who do they sit with?
   - Where do girls sit and who do they sit with?
   - How do boys behave towards one another while they are eating?

- How does the caregiver respond to the behaviour of boys at mealtimes?
- How do girls behave towards one another while they are eating?
- What do boys do when they have finished eating?
- What do boys do when they have finished eating?

3. Teacher-child interaction:

    - Is there a difference in the ways that girls approach teachers relative to boys?
    - How often do boys initiate interaction with teachers?
    - How often do girls initiate interaction with teachers?

4. Gendered differences in activities:

    - Which activities do the girls choose to do/are directed by caregivers to do during playtime?
    - Note the reactions of caregivers to different activities chosen by girls:
        - Which activities are encouraged and how are they encouraged?
        - Which activities are discouraged and how are they discouraged?
    - Which activities do the boys choose to do/are directed by caregivers to do during playtime?
    - Note the reactions of caregivers to different activities chosen by boys:
        - Which activities are encouraged and how are they encouraged?
        - Which activities are discouraged and how are they discouraged?

5. Boys and girls interacting

    - To what extent do boys choose to play with other boys? Which activities do they choose to play with other boys?
    - To what extent do girls choose to play with other girls? Which activities do they choose to play with other girls?
    - To what extent do boys choose to play with girls? Which activities do they choose to play with girls?
    - To what extent do girls choose to play with boys? Which activities do they choose to play with boys?
    - Does the caregiver encourage:
        - Boys playing together with other boys? Which activities does the caregiver encourage boys to play with other boys? For what reason do you believe the caregiver does this?
        - Girls playing together with other girls? Which activities does the caregiver encourage girls to play with other girls? For what reason do you believe the caregiver does this?
        - Boys playing together with girls? Which activities does the caregiver encourage boys to play together with girls? For what reason do you believe the caregiver does this?

Appendix 2

"The progressive development of the kit" methodology

- These schedules are to be used with the *Learning Toys Production Guide* over a period of 25 weeks. Each free and structured play activity is looked at over a period of three to four weeks.
- Each week, facilitators (project staff) and caregivers reproduce and analyse one to two toys. Toys are introduced to the children the following week.
- All information about how to use these schedules is found in Section H of the *Learning Toys Production Guide.*
- These schedules are suitable for six staff members. Each facilitator is numbered from one to six. If there are more or less staff on the project, simply tailor these schedules to the right number of staff.
- The symbol '*' means that the facilitator should take or print a picture of the toy/game to show and explain to caregiver. They cannot take the toy as it has already been allocated to another facilitator. Alternatively, the facilitator can bring the photo of the toy and the instructions on how to make it found in the *Learning Toys Production Guide*.
- At the end of Week 25, it is assumed that caregivers and facilitators have developed practical and theoretical knowledge that will enable them to create and design their own toys and games.

Blocks and building corner	**Week 1**	**Week 2**	**Week 3**
Blocks and Wooden Cubes	Facilitator: 1; 6*	Facilitator: 3; 2*	Facilitator: 4; 5*
Bamboo sticks	Facilitator: 6; 2*	Facilitator: 5; 4*	Facilitator: 1; 3*
Small figures of animals, people, vehicles	Facilitator: 3; 5*	Facilitator: 2; 1*	Facilitator: 6; 4*
Cardboard discs	Facilitator: 4; 3*	Facilitator: 6; 5*	Facilitator: 2; 1*
Additional building materials	Facilitator: 2; 1*	Facilitator: 4; 6*	Facilitator: 5; 3*

Games and puzzles corner (Part 1)	**Week 4**	**Week 5**	**Week 6**	**Week 7**

Shape man game	Facilitator: 1; 2*	Facilitator: 3; 4*	Facilitator: 5; 6*	
Race to the stars	Facilitator: 2; 3*	Facilitator: 4; 5*	Facilitator: 6; 1*	
Picking papayas	Facilitator: 3; 4*	Facilitator: 5; 6*	Facilitator: 1; 2*	
Empty the bowl	Facilitator: 4; 5*	Facilitator: 6; 1*	Facilitator: 2; 3*	
All the way home	Facilitator: 5; 6*	Facilitator: 1; 2*	Facilitator: 3; 4*	
Pattern shapes race	Facilitator: 6; 1*	Facilitator: 3; 2*	Facilitator: 4; 5*	
Geoboard – 'Square it up!' and 'Funny shape' challenge games				Facilitator: 1*; 2*; 3*, 4*, 5*, 6*
Dominoes				Facilitator: 1*; 2*; 3*; 4*; 5*; 6*

Games and puzzles corner (Part 2)	**Week 8**	**Week 9**	**Week 10**	**Week 11**
Going fishing	Facilitator: 1; 2*	Facilitator: 3; 4*	Facilitator: 5; 6*	
Animal hunt	Facilitator: 2; 3*	Facilitator: 4; 5*	Facilitator: 6; 1*	
Spin and spell	Facilitator: 3; 4*	Facilitator: 5; 6*	Facilitator: 1; 2*	

	Facilitator: 4; 5*	Facilitator: 6; 1*	Facilitator: 2; 3*	
Picture, shape and tangram puzzles				
Memory game: symbols and alphabet	Facilitator: 5; 6*	Facilitator: 1; 2*	Facilitator: 3; 4*	
Stack the blocks	Facilitator: 6; 2*	Facilitator: 3; 1*	Facilitator: 4; 5*	
Colour bingo				Facilitator: 1*; 2*; 3*; 4*; 5*; 6*

Books and pictures corner	**Week 12**	**Week 13**	**Week 14**
Alphabet, number and picture cards	Facilitator: 1; 6*	Facilitator: 3; 2*	Facilitator: 4; 5*
Lace-ups	Facilitator: 6; 2*	Facilitator: 5; 4*	Facilitator: 1; 3*
Slates	Facilitator: 3; 5*	Facilitator: 2; 1*	Facilitator: 6; 4*
Books/stories	Facilitator: 4; 3*	Facilitator: 6; 5*	Facilitator: 2; 1*
Alphabet banner	Facilitator: 2; 1*	Facilitator: 4; 6*	Facilitator: 5; 3*

Sand and water corner	**Week 15**
Sand and water play learning toys	Facilitator: 1*; 2*; 3*; 4*; 5*; 6*

Dramatic play corner	**Week 16**	**Week 17**	**Week 18**
Balance scale	Facilitator: 1*; 6*	Facilitator: 3*; 4*	Facilitator: 2*; 5*
Mat, vehicles, people and animals	Facilitator: 6*; 2*	Facilitator: 5*; 3*	Facilitator: 1*; 4*
Dolls	Facilitator: 2*; 1*	Facilitator: 6*; 5*	Facilitator: 3*; 4*
Other role play materials	Facilitator: 4*; 5*	Facilitator: 2*; 6*	Facilitator: 1*; 3*

Literacy-structured activities	**Week 19**	**Week 20**	**Week 21**
News sharing and journal writing	Facilitator: 1; 6*	Facilitator: 3; 2*	Facilitator: 4; 5*
Story books	Facilitator: 6; 2*	Facilitator: 5; 4*	Facilitator: 1; 3*
Big Books, pocket chart and word cards	Facilitator: 3; 5*	Facilitator: 2; 1*	Facilitator: 6; 4*
Rhymes and songs	Facilitator: 4; 3*	Facilitator: 6; 5*	Facilitator: 2; 1*
Alphabet activities	Facilitator: 2; 1*	Facilitator: 4; 6*	Facilitator: 5; 3*

Maths-structured activities	**Week 22**	**Week 23**	**Week 24**	**Week 25**
Calendar and number pocket chart	Facilitator: 1; 6*	Facilitator: 3; 2*	Facilitator: 4; 5*	
Maths bags	Facilitator: 6; 2*	Facilitator: 5; 4*	Facilitator: 1; 3*	
Maths bags: number cards one to 20	Facilitator: 3; 5*	Facilitator: 2; 1*	Facilitator: 6; 4*	
Maths bags: square tiles	Facilitator: 4; 3*	Facilitator: 6; 5*	Facilitator: 2; 1*	
Maths bags: A4-sized cloth mat	Facilitator: 2; 1*	Facilitator: 4; 6*	Facilitator: 5; 3*	
Number banner				Facilitator: 1*, 2*, 3*, 4*, 5*, 6*

Appendix 3

Child development indicators (birth to eight years)[15]
For use with pictorial child development cards for non-readers[16]

Age	Gross motor	Fine motor	Language	Cognitive	Social and emotional
0 to 3 months	• Brings closed fists to mouth • Raises the head • Moves arms and legs	• Opens and closes hands • Grasps fingers • Holds small objects	• Cries when needs something • Stops crying when attended • Makes sounds • Looks at person speaking	• Reacts to sound, light and motion • Discovers hands • Looks at patterns • Prefers to look at human face and geometric shapes • Anticipates feeding	• Gazes at faces • Happy when sees mother; turns head when hears mother's voice • Nurses frequently • Social smile
3 to 6 months	• Lifts head and trunk • Rolls over • Reaches for objects • Sits with support	• Reaches for dangling objects • Grasps objects in both hands • Explores objects with hands and mouth	• Makes sounds to get attention • Recognises voice of mother • Starts to imitate sounds • Listens to conversation	• Recognises faces • Shows interest in small objects • Discovers that objects exist when out of sight • Explores cause and effect, drops objects, bangs	• Recognises father and mother • Laughs at funny faces • Shows anger when toy taken away • Shows interest in other children
6 to 12 months	• Sits alone • Crawls • Pulls up and takes steps when supported • Rolls ball • Holds out arms and legs when being dressed	• Plays with small objects • Picks up small objects with two fingers • Transfers objects hand to hand • Hits objects together • Enjoys clapping	• Reaches for mother or father • Babbles to self • Says two or three words • Begins to respond to words • Points with finger when wants something	• Waves 'bye-bye'; shakes head for 'no' • Looks for objects that are hidden • Pushes and rolls toys • Looks in a mirror and smiles at self • Fascinated with small objects	• Likes people; prefers caregiver • May cry when caregiver leaves; • May cry when strangers appear • Plays 'peek a boo' • Pushes away things not wanted
12 to 18 months	• Takes steps • Climbs • Walks well • Pushes and pulls objects	• Takes objects out of containers • Stacks boxes • Takes tops off • Begins to feed self	• Points to objects or pictures when named • Obeys simple commands • Says few words clearly; important people/ objects; and few other words such as 'my'; 'more'; 'all gone' • By 15 months, puts several words together; by 18 months learning nine new words a day • Responds when asked, "Where?"	• Recognises name • Points to some body parts • Pulls an object to reach something • Interested in everything they see • Knows when picture book is upside down	• Shows little understanding of rules and warnings • Smiles when praised; cries when scolded • Possessive of toys • Imitates gestures • Enjoys songs and simple picture book stories
18 to 24 months	• Runs without difficulty • Walks backward • Squats • Hops	• Puts objects in and out of containers • Can peel peas or banana • Builds with	• Can say own name • Says two to three word sentences • Can listen to short stories • Uses language to serve needs	• Knows/can name two to three body parts • Understands yes and no • Starts to play make believe • Imitates adult behaviour	• Shows affection by hugging, smiling • Imitates what adults do • Washes own hands • Says no; asserts

[15] Adapted from Pro Mujer Bolivia, 1990 (the child development pictorial tools used in this document); 'Early childhood counts: a programming guide on early childhood care for development', The World Bank, 2000, see http://www-wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000094946_00072405363524; UNICEF's *Facts for Life*, fourth edition, 2010, see http://www.factsforlifeglobal.org/; and 'The ABCs of child development', PBS (no date), see http://www.pbs.org/wholechild/abc/

[16] Recommendation: select three indicators from each domain for each age cluster that can be easily understood by picture. See example from Plan Indonesia in Appendix 11.

	• Walks up and down stairs with aid • Moves to music	blocks • Uses hands to drink from cup • Scribbles with whole arm movement	• Says hello and goodbye • Can follow a simple direction	when playing • Matches similar objects • Knows 'me' and 'you'	independence • Plays beside other children; difficulty sharing

Child development indicators (two to eight years)[17]

For use with pictorial child development cards for non-readers[18]

Age	Gross motor	Fine motor	Language	Cognitive	Social and emotional
2 to 3 years	• Jumps over objects • Walks on tiptoe • Throws and kicks ball • Likes to help dress and undress self	• Washes hands without help • Pours sand from one container to next • Draws a circle • Rolls clay • Opens jars, turns screws and objects • Turns book pages • Feeds self	• Repeats phrases • Points to common objects when named • Asks questions • Begins to use language to express ideas/feelings • Recites short poems • Names colours	• Knows colours • Knows difference between large and small • Loves to pretend and imitates animals • Grasps categories such as 'chicken' 'dog' • Can make simple choices	• Displays affection • Plays happily alone but likes audience • Plays beside other children, not with • Loves small chores • Understands instructions and begins to test authority
3 to 4 years	• Walks on toes • Jumps forward • Throws and receives ball • Balances on one foot • Begins to dress self	• Holds pencil correctly • Can draw 159recognizable figures, crosses and circles • Tears paper • Buttons • Builds a tower of blocks • Makes shapes with clay	• Converses with others; recounts events that happened during day • Remembers songs • Knows shapes and colours • Follows series of two related directions	• Matches like objects; sorts by colour or size • Knows purpose of objects • Understands sentences with time concept • Uses pretend play • Asks, "Why?" • Understands some number concepts	• Begins to play with other children • Learns to share • Shows first signs of sympathy • Asks for help • Uses toilet independently • Helps with small household tasks
4 to 5 years	• Hops on one foot • Walks along a line • Kicks ball in a direction • Walks up and down stairs, but brings feet together on each step	• Can string objects • Can copy drawings • Can cut along a line • Washes own hands • Prints a few letters	• Speaks in sentences; uses many words • Can name what they see • Speaks clearly • Knows above, below, in front of • Counts to five • Likes to say poems and sing songs • Asks questions: *When? How? Why?*	• Orders objects large to small • Knows first and last • Knows more or less • Understands opposites • Elaborates dramatic play • Draws pictures to represent objects • Can tell full names • Up to 15 minutes attention span	• Shows emotion • Puts objects away • Can dress with a little help • Plays cooperatively with peers • Can share and take turns • Identifies with own gender
5 to 6 years	• Walks backward • Catches ball • Turns somersault • Can hop and	• Can draw a girl or boy • Makes figures from clay • Can draw shapes • Practices self-care	• Counts to 10 or 20 • Recognises and names colours • Tells stories • Highly verbal • Uses the word	• Can say purpose of body parts • Can tell where lives • Understands sequence of events • Can order objects	• Develops friendships • Enjoys imaginative play with friends • Beginning to understand some moral values: good and bad; fairness

[17] Adapted from Pro Mujer Bolivia, 1990 (the child development pictorial tools used in this document); 'Early childhood counts: a programming guide on early childhood care for development', The World Bank, 2000, see http://www-wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000094946_00072405363524; UNICEF's *Facts for Life*, fourth edition, 2010, see http://www.factsforlifeglobal.org/; and 'The ABCs of child development', PBS (no date), see http://www.pbs.org/wholechild/abc/

[18] Recommendation: select three indicators from each domain for each age cluster that can be easily understood by picture.

	count • Can skip • Can walk up and down stairs alone, alternating feet	habits independently	"because" • Follows three unrelated commands • Listens to long stories • Uses words to express feelings	by size • Draws and explains picture • Retells a story • Combines thoughts into one sentence • Curious about how things work • Reads	• Invents games • Dresses and undresses without any help
6 to 8 years	• Can run, jump, hop, skip, throw, catch and swim • Can balance easily • Uses movement to express feelings • Shows coordination • Learns concepts through physical action	• Controls hand muscles • Hand-eye coordination • Uses tools for writing and drawing	• Can describe feelings, events, objects, etc., in words • Sentences consist of five or more words • Can engage in conversation • Vocabulary increases • Can follow oral instructions • Can draw and write • Understands symbols	• Displays curiosity. Asks questions: *What? Why? How?* • Uses persistence in solving a challenging problem • Some understanding of cause and effect • Uses creativity and imagination • Sorts by category • Understands time • Can count accurately • Imagination in play • Can role play	• Positive self-esteem and identity • Can adjust to new situations • Manages feelings • Expresses needs • Demonstrates self-direction and independence • Takes responsibility, shows initiative • Follows routines and rules, but likes to do things own way • Plays well with others • Recognises feelings; own and others • Controls emotions

Appendix 4

School Readiness Indicators from four to six years)[19]

Social and emotional development	Health and physical development	Cognitive development	Language development
Sense of self 1. Likes self and feels valued. 2. Adjusts easily to new situations. 3. Demonstrates appropriate trust in adults. 4. Recognises own feelings and manages them well. 5. Confident to express needs. 6. Is learning to practice cultural and spiritual values. **Responsibility for self and others** 7. Follows through on simple tasks to take care of self. 8. Helps others. 9. Takes responsibility for own wellbeing without being told to do so. 10. Follows routines and rules. 11. Respects and cares for home, classroom and personal items. **Social behaviour** 12. Sociable, plays well with other children, has at least one friend. 13. Shows empathy for peers and stands up for what is fair. 14. Able to control own behaviour and impulses. 15. Uses respectful words to resolve conflicts. 16. Can tell right from wrong.	**Gross motor** 17. Demonstrates basic movements – runs, jumps hops, skips, balances. 18. Uses body movements to express feelings and needs. 19. Shows coordination with swings, ropes, climbing, etc. 20. Can throw, kick and catch. **Fine motor** 21. Controls small muscles in hands: pours, cuts, traces, twists, inserts, ties, pounds. 22. Coordinates hand-eye movement. 23. Uses tools for writing and drawing. **Healthy body** 24. Uses toilet. 25. Washes hands with soap after toilet and before eating. 26. Eats three nutritious meals every day (protein and fruits and vegetables). 27. Drinks safe water. 28. Is immunised, takes vitamin A supplement, and is de-wormed. 29. Lives/plays in clean and safe environment, protected from injury. 30. Sleeps under insecticide treated nets in malaria regions. 31. Can identify community health worker.	**Observation and problem solving** 32. Observes with curiosity. 33. Asks questions, *What? Why? How?* (Without fear.) 34. Shows persistence in solving a problem. 35. Uses creativity and imagination. 36. Reflective; applies learning to new context. **Logical thinking and math** 37. Compares, sorts and matches objects by size, shape, colour, number, amount. 38. Organises by category. 39. Arranges objects in series (for example, big to small). 40. Recognises patterns and can repeat them. 41. Shows awareness of time and sequence. 42. Understands location and position words (for example, above). 43. Counts objects accurately, not by rote to 10 or 20, some skills at higher level, up to 50 or 100. 44. Solves puzzle-picture and geometric puzzles of up to 12 pieces. **Represents with symbols** 45. Takes on pretend roles. 46. Makes believe with objects. 47. Uses a symbol to represent.	**Listening and speaking** 48. Talks with others about personal experiences/views. 49. Describes objects, events and relations. 50. Expresses feelings in words. 51. Actively listens to others (can repeat back and ask questions to further understanding). 52. Notices differences in sounds. 53. Uses new vocabulary. 54. Understands and follows oral directions. 55. Asks and answers questions. 56. Actively participates in conversations. **Reading and writing** 57. Draws to represent ideas and develops motor skills to write. 58. Enjoys and values oral stories and storybooks. 59. Comprehends what is read. 60. Knows that print carries a message. 61. Knows that spoken words can be written down. 62. Knows letters and sounds. 63. Writes name, alphabet, and some words.

[19] Llewellyn, D. (2012), 'School readiness indicators (from four to six years)' in D. Llewellyn (2012*), Community Led Action for Children Toolkit: Community Managed Early Learning Programs Curriculum Guide,* Plan International Australia

Appendix 5

Toy production community survey

- What are the traditional local stories that could be told to the children or translated into children's language books?
- What are the traditional songs (with a story) that could be used for children in Early Learning Programs?
- What are the local resources that are produced frequently and/or in bulk that can be used as learning materials? (Weaving, art and craft, woodcarving etc.).
- What are the natural resources that could be used for learning materials? (Rice, coconuts, bamboos, sand, what else?).
- How do caregivers collect recycling materials? Do they buy them at the market? Do they collect them themselves? Or do they ask parents to collect them for the centre?
- What are the easy ways to access resources? What are the 'not so easy' ways to access resources?
- What resources are easy to access? What resources are 'not so easy' to access?
- Tell me about a classic/famous game that the children (aged from four to six years) like to play in their villages?
- Are there any famous books that children love to read (e.g.The Very Hungry Caterpillar in Australia)?
- What is a typical day in the life of child here?
- What are the usual outdoor games and equipment for children here?
- What is the fauna and flora? What kinds of (non-toxic) seeds are available that could be used?
- What do the children know about their local environment? And about outside their local environment?
- What are the traditions here when children interact with adults and vice versa?
- In terms of stationery, what is available? Scissors? Crayons? Paper? What else?

Developed by Amandine Baillet for Plan International Indonesia, 2011

Appendix 6

Cardboard dice instructions

Cardboard dice are easy to make and a great way to add a challenge and fun to children's games. They can add value in promoting skills in different developmental areas in specific disciplines such as maths and literacy. For instance, by using them, children can learn how to develop physical coordination; they can learn how to count and recognise numbers; and they can learn and recognise alphabet letters. Also cardboard dice do not need to be bought to be attractive to children. They can be made out of a variety of discarded and raw materials and in different ways. The suggested materials and steps below are a part of one example only.

Resources:

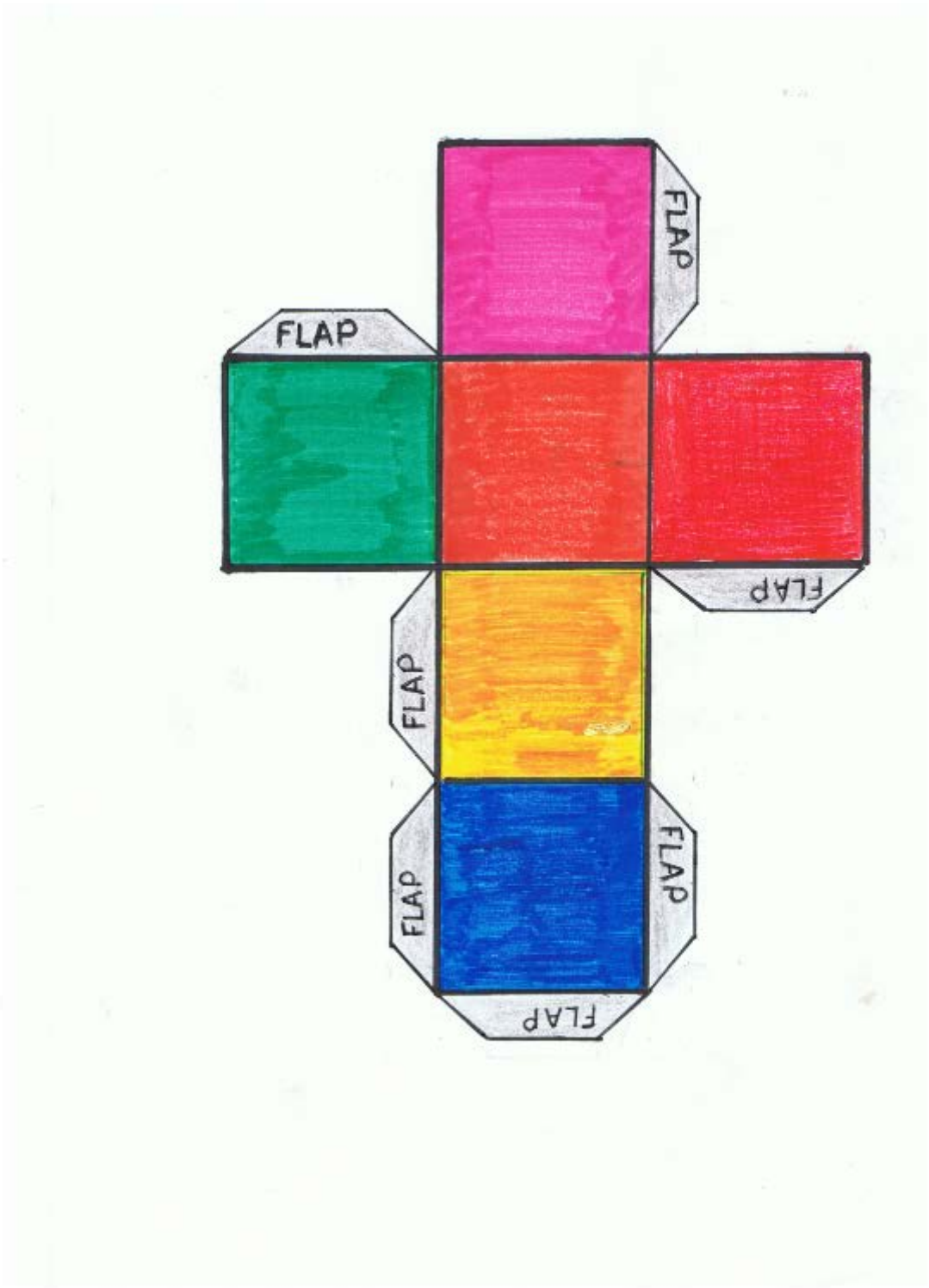
- Two large pieces of thin cardboard with a stiff and smooth surface (e.g. cereal boxes)
- One dice design template (e.g. refer to the one below)
- One pair of scissors or one cutter
- One black marker
- Non-toxic glue

Steps:

1. Use the template below and glue it neatly on to a piece of cardboard.
2. Sometimes, paper glued on cardboard can create creases. To avoid this, press the template firmly onto the cardboard piece to make it flat with a smooth surface.
3. Leave the glued template on the cardboard to dry for few minutes.
4. Cut out the combined template and cardboard with a cutter or scissors, following the design's edges.
5. Fold the design in wood by the following order of colour: blue, yellow, red, green, pink, orange.
6. At this stage the die cube is made. It should be left out for a few minutes so the glue can dry inside it.
7. Once dry, grab the die and with a black marker, and neatly write one consecutive number from 1 to 6 on each surface of the die.
8. To create a second die with dots, use the same template as below and repeat the same process in steps 1 to 6. Use a black marker to neatly write consecutive dots from 1 to 6 on each surface of the die.

Hints and tips:

- When folding the design in, it should be carefully done at a 90-degree angle so that each roll of the die is accurate. Each flap should also be inserted in and attached to the inside of the die cube with a small amount of glue.
- This design template works for one die only. To create more than one die, print or photocopy this template as many times as you want. If no printer or photocopier is available, carefully reproduce this design onto pieces of paper.
- You can also change the size of this design. But be aware that the smaller the design, the more difficult it will be to make each die. So it is important to have a template of a fairly large design.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Appendix 7

Cardboard spinner instructions

Cardboard spinners are easy to make and a great way to add challenges and fun to children's games. They can add value in promoting skills in different developmental areas in specific disciplines such as maths and literacy. For instance, by using them, children can learn how to develop physical coordination; they can learn how to count and recognise numbers; and they can learn and recognise alphabet letters. Also cardboard spinners do not need to be purchased to be attractive to children. They can be made out of a variety of discarded and raw materials and in different ways. The suggested materials and steps below are a part of one example only.

Resources:

- Two cardboard pieces (large sizes)
- One paperclip
- One grey lead pencil, eraser and ruler
- Colour pencils or crayons or markers or paint
- Sharp scissors with thin blades
- Non-toxic glue
- Sticky tape

Steps:

1. Use the first large piece of cardboard to cut a medium-sized square.
2. Colour each side of the square and keep it aside.
3. Use the second large piece of cardboard to cut a medium-sized circle. The circle should be slightly smaller than the square so it can fit in it. Keep the remaining cardboard scraps aside. It's going to be used later on.
4. With a grey lead pencil and a ruler, divide accurately the circle into sections. The number of section is different from one game to another. Please consult each game's rules and instructions to determine the specific number of each spinner's sections.
5. In each section, add colour, words and pictures. The label of each spinner's section is different from one game to another. Please consult each game's rules and instructions to determine the specific label of spinner's sections.
6. Once the circle is divided into sections, labelled and decorated, turn it over on its backside and apply neatly a thin layer of glue all around its edges.
7. To make the spinner base, grab the medium-sized cardboard square and place carefully the glued side of the cardboard circle in the middle of it.
8. To ensure the cardboard circle sticks well on the square, put a flat item on it such as a heavy book and leave the combined square and circle for few minutes.
9. Use the remaining scraps to draw and colour an arrow. The arrow should be slightly smaller than the circle's diameter from the spinner base. Neatly apply a layer of sticky tape all around the arrow to make it sturdy and long lasting.
10. Also use the remaining cardboard scraps to cut two very small squares.
11. Keep the arrow and squares aside.
12. Neatly apply a layer of sticky tape all around the spinner base to make it sturdy and long lasting.
13. Place the tip of one of the scissor's blades onto the spinner base's centre (i.e. refer to circle's centre) and punch a hole with it. Be accurate. Once done, remove the scissors from the hole.
14. Grab a paper clip and unfold one end so it is bent up at a 90-degree angle.
15. Insert the paper clip's bent end inside the spinner base from underneath.

16. Press firmly the paper clip's flat end onto the bottom side of the spinner base. The bent tip sticks out of the spinner base's top side.
17. Cut a small piece of sticky tape and apply it onto the flat end of the paper clip so it sticks to the bottom side of the spinner base.
18. Grab the arrow and use a grey-lead pencil and ruler to locate its centre. To do this, measure the length of the arrow and draw a dot at its middle point.
19. Grab the two very small squares and repeat the same process in step18.
20. Combine first the two very small squares with the spinner base by poking through their two centres with the paper clip's bent end.
21. Grab the arrow and repeat the same process in step 20.
22. The spinner should now spin and be ready to use

Hints and tips:

- To make them spin well, adjust the arrow and the two very small squares if needed. For instance, the arrow and square's holes might need to be enlarged a bit more.
- The spinner has a paper clip's end sticking out that is sharp and unsafe for children to use. To make it safer, neatly apply a small amount of sticky tape all around the bent up end.

Appendix 8

Examples of alphabet games[20]

- **ABC Hunt:** Give one alphabet card and a half-page piece of newspaper to each child. The children play a game to see how many words they can find. The child uses a pencil or crayon to put a circle around the letter. Children might enjoy this activity once a week.
- **ABC Lotto:** Children work in pairs. Each pair is given six letters and a duplicate for each. The children turn over the cards and mix them up. Then they place the cards in four rows of three cards. Taking turns, they turn over two cards. If they match, and if the child can say the name, they keep the card. For a more difficult version, four children can play the game with 24 cards. Once children learn how to do it, they can continue playing the game in the words and pictures corner. Once they know the alphabet, they can play lotto with sight words.
- **Buzz:** Use the stack of alphabet cards. Mix in five cards, each with a drawing of a bee. The children sit in a circle. One child gets the stack of cards and turns it over to see a letter. The child names the letter and the sound, and puts the card at the bottom of the stack. The stack is passed to the second child, and then this is repeated around the circle. When a child turns over a picture with a bee, the entire class jumps up and buzzes around the room like a bee while the teacher rings a bell or beats the drum. The children then sit down and the game continues.
- **Spill the Beans:** Paint some large beans white. Write one alphabet letter on each with a permanent marker and put them in a can. Write the alphabet on a long strip of paper. See how fast a group of children can place the beans on the letters. Other children can slowly clap and count together. This activity can be moved to the words and pictures corner for more play.
- **Word Wall Hunt:** Use two stacks of cards that contain the same words for this game. Place the words from one stack of cards on the wall. Then each child is given a word from the second

[20] Llewellyn, D. (2012),'Literacy circle activity 4 – alphabet' in *Community Led Action for Children Toolkit: Community Managed Early Learning Programs Curriculum Guide,* Plan International Australia

stack of cards, face down so they cannot see the word yet. When the teacher says, Go, the children turn the card over to read the word. Then they quickly run to stand in front of the same word on the wall. If there are fewer words than children, the children can work in pairs. See who gets there the fastest. The teacher mixes up the words, passes them out again and repeats the activity three or four times.

- **Wall Word Riddles:** The children might also play a guessing game with the stacks of cards used in Word Wall Hunt. Each child gets one card. The child of the day looks around the room and secretly chooses one of the wall words and makes up a riddle. I am thinking of something that has a square shape and begins with the _____ sound. The person with that card holds it up. All the children turn over the word card and pass one to the right. The person who won the last word is now the leader and gets to make up another riddle about a wall word. The person with the wall word card gets the next turn.
- **Clothes Line Words:** The teacher makes three stacks of alphabet cards. Consonants on the left and right, vowels in the middle. A child chooses a consonant, vowel and another consonant and hangs them on a 'clothes line' to make a simple three-letter word. Once the teacher and children demonstrate this activity it can be moved to the words and pictures corner.
- **Letter Hunt:** Children work in pairs. A piece of paper and pencil are needed to keep score. Each pair is given one storybook to share. Starting on the first page, child one says the first letter of the alphabet and searches for it on page one. If they find it, they get one point; if they can also say the word they get another point. If the letter is not on the page, they get no points. Child two says the second letter of the alphabet and searches for it in page two only. If they find it they get one point; if they can also say the word, they get another point. If the alphabet letter is not on the page, they get no points. Child one then says the next letter of the alphabet and looks for it on page three. This continues until they get to the last page. They then continue with the alphabet but go back to the first page to look for the next letter through the book and alphabet. At the end of time, the children count the points to see who is the winner.

Appendix 9

Ideas for maths activities that promote preschool competencies

1. Counting and application of counting

a. Add counting activities to daily attendance and other daily routines. Attendance: *How many girls are present? How many boys? Are there more girls than boys? How many children are in our class? How many children are absent?* Routines: Seven children are allowed in a centre. When you choose a centre, count and see how many children are already there.
b. Teachers should use ordinal numbers – first, second and third – so that children become familiar with the meaning. "*You are the third person who has a birthday in April." "Put six stones in a row. Show me which is third, which is second etc*."
c. Check to see that each corner has objects to count. Every corner should have objects for children to count and the caregiver should encourage counting as part of play. "*Your block tower is very high. How many blocks did you use?" "I see you are serving dinner in the house. Will each plate get the same number of beans?"*
d. Produce the maths board games for every centre. Maths board games encourage children to count and move tokens on a grid. Dice games are also fun ways to encourage counting. Make sure there are maths counting games in the puzzles and games centre.
e. Produce a resource guide with number songs and rhymes. Check the internet website, "Dr Jean" for maths song lyrics (see www.drjean.org). Also Google "kindergarten maths songs". Teach these to the caregivers.

2. Reading and representing numbers

a. Every classroom should have a calendar. Each day the children can read and count the numbers up to the current day.
b. Every classroom should have a number chart to 100. Write the numbers in rows of 10 so that children can see the patterns. Write the fives and 10s in a different colour from the other numbers. Children will notice the number pattern and learn how to count by fives and 10s.
c. Each classroom should have a pocket chart that can be used for maths and literacy. Children can insert words and numbers in the pockets to form sentences.
d. Prepare materials by writing number one to 10 on cards. Also write number words one to 10 on cards. Put pictures cards representing animals. Children can make a sentence. *"I see two chickens."* Making number sentences is a fun activity during free choice time or as a structured maths activity.

3. Shapes

a. Caregivers should teach children the names and properties of basic shapes: circle, square, rectangle, and triangle. Kindergarten children can also learn the concept of oval and diamond.
b. Children should be able to describe the characteristics of the shape, draw the shape, find the shape in the environment and make pictures from shapes.
c. Make a board game related to shapes and make it available during corner play.

4. Sorting, matching and comparing

a. Sorting is a new concept for the caregivers to understand. It means putting things in groups according to one or more properties (i.e. objects that are red and large).
b. Some things we can sort include girls and boys; shoes by colour or type; natural objects such as leaves or stones; children who prefer one type of food versus children who prefer another kind of food; children whose name begins with a certain letter; and just about everything inside and outside the classroom.
c. You can play a game, *"Guess how I sorted the objects?"* Children sitting in a circle take turns thinking of different ways to sort a set of objects, such as shells or leaves or soda caps.

d. A sorting activity results in several groups of things. These can be compared. Children can count the letters on their name cards, and then sort the cards by those with the same number. These can be compared.
e. Matching refers to grouping things according to a rule: *"Two shoes to one child. How many shoes will four children need?"*
f. Counting and sorting should be an everyday activity, not just at maths circle time.
g. Teach caregivers how to make a pattern. When objects are divided into two or three groups, children can use these objects to make patterns such as *cap-bean-cap-bean*. Once children can make patterns with two objects, try three, such as *cap-bean-stick*. As children become skilled at simple patterns, increase difficulty such as *snap, snap, clap, snap, snap, clap*.

Maths bag activities to teach competencies

1. Maths bags are an important learning material for children. These bags contain sets of sticks and small objects to count and sort, such as shells, beans, seeds, rocks, pieces of string, soda bottle caps, plastic water bottle caps, paper clips, and cloth squares cut into shapes – square, triangle and circle.
2. Other things to include in the maths bags:
    a. Add one or two dice.
    b. Cut the strings into half-metre lengths. Use these to form circles for sorting and comparing objects. Use them to form geometric shapes.
    c. Add number cards one to 10. Later add + and – and = signs on cards.
    d. Increase the number of soda bottle caps. These are great for sorting and patterns.
    e. Increase the number of plastic water bottle caps. These are useful to show addition and subtraction problems by stacking.
3. Maths bag use
    a. Use contents of the maths bag to conduct a daily structured activity that teaches a maths concept. Children should solve the problem using materials from the maths bags. The activity should take about 20 minutes. See examples below.
    b. Give children the remaining ten minutes to explore maths bags materials any way they like. At this time, the teacher observes what the children make with the materials and asks maths-related questions.

Sample maths lessons to teach caregivers

Caregivers are unfamiliar with maths activities other than rote counting. Children can learn to rote count numbers to 100. However, they should acquire understanding about the properties of numbers to 20, and be able to count objects and compare groups of things with numbers up to 20. Using maths materials they can learn to add numbers with a sum up to 12 and subtract from 12. Children need lots of time to explore a number to really understand the quantity.

Provide a series of activities that teachers can use and then repeat for all numbers from two to 12. Below is a list of maths competencies to keep in mind, and sample maths lessons that can be repeated to teach numbers two to 12.

Maths competencies

1. Organises objects according to their properties (size, colour, shape, texture).
2. Recognises patterns (*large, small, large* ____; *snap, clap, clap, snap clap*____).
3. Arranges numbers and objects in a series (big to small).
4. Counts accurately to 20; with some skills in counting 50–100; and by fives and tens.
5. Matches quantities up to 10 with numerals and words.
6. Compares sets of up to at least 10 concrete objects using appropriate language (e.g. none, more than, fewer than, same number of, one more than).
7. Uses objects to solve addition and subtraction problems to ten; and group objects in tens and fives.
8. Estimates the number of objects in a group and verify results.

9. Recognises shapes – circle, triangle, square, rectangle, oval.
10. Identifies positions of objects in space (beside, below).
11. Uses a calendar, order events (today, tomorrow, and yesterday; morning, afternoon, and night).
12. Compares two objects by height, weight, and length using non-standard measure such as a string or balance.
13. Solves puzzles – geometric, picture puzzles (up to 12 pieces) and logical reasoning puzzles.

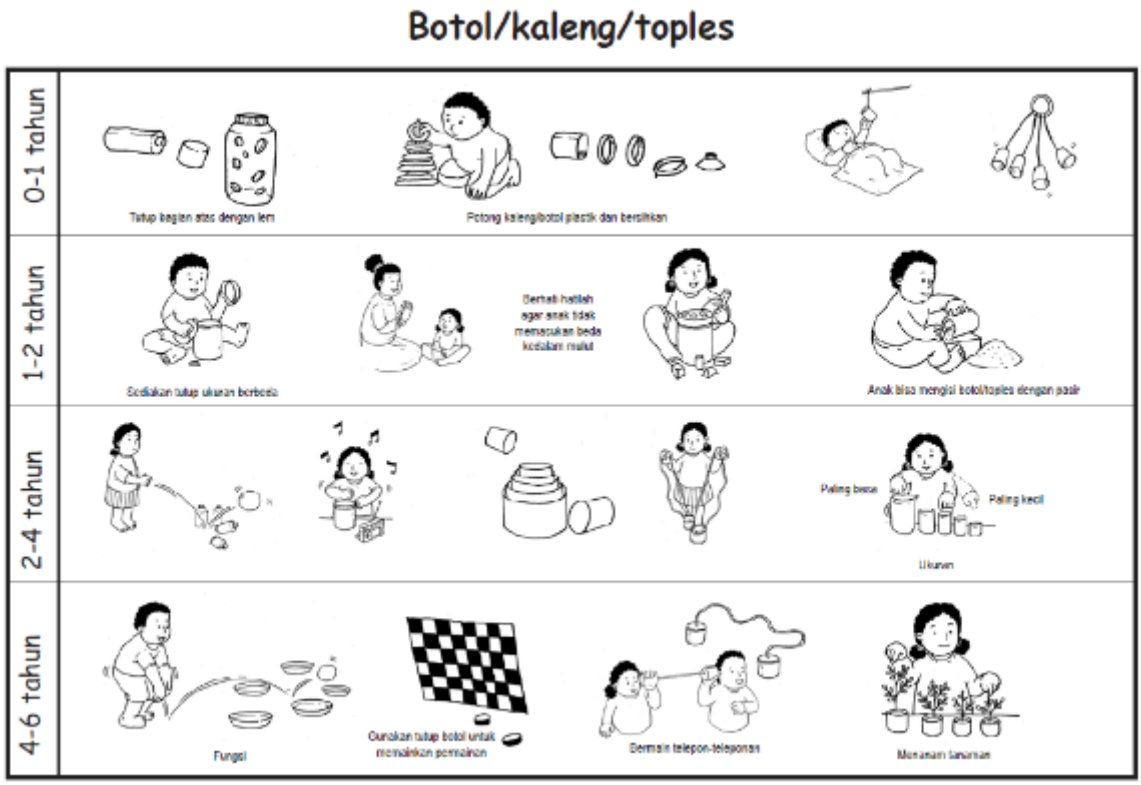
Dozen number lessons using maths bags
(Teach numbers two to 12 using the following set of activities; number 6 is provided as the example.)

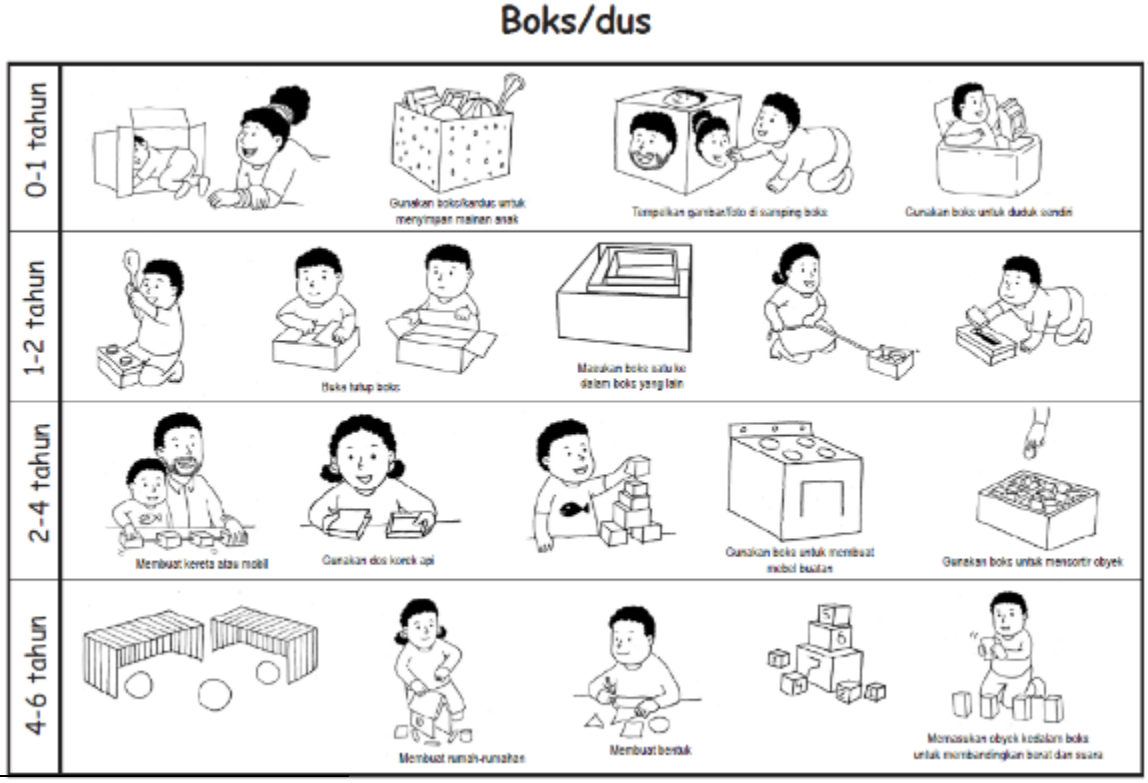
Materials	**Activity**	**Competencies**
Body blackboard	1. Introduce number 6 using these steps: • Write number 6 on the blackboard. Children write the number 6 in the air and on the back of a friend. • Invite children to clap, stamp, snap, etc. 6 times each. • Play a circle counting game where children count 1 to 6. The person who counts number 6 squats. Continue until everyone is squatting. • Play the game again starting in a different place. Ask children to predict who will be the last person standing.	#4
Sticks Notebook Pencil	**2. Designs with number 6** • Take 6 sticks from the maths bag and make a design of the number 6. • Reproduce the design in your maths notebook and write the number 6.	#4 and # 9
Dice	**3. "6" counting race** • Children stand side by side in the garden. Each child has a dice from the maths bag. • Demonstrate how to play: child roles a die and takes that many jumps. Children all count together as the friend jumps toward a finish line. • Then the next child rolls and jumps with everyone counting. • Now you are ready for the race. • Teacher calls roll and each child rolls own dice and jumps the same amount. Once everyone is in place teacher calls roll again and each child rolls and jumps according to dots on the die. • First ones to reach finish line are the winner.	#4
	4. Recognising numerals and order • Teacher writes numbers 1, 2, 3, 4, 5 and 6 on blackboard. • Take out your number cards 1,2,3,4, 5 and 6. Put them in a row in front of you. • *Does everyone have the correct order?* Let's point to each number and say it. *Which number comes before 3? Which number comes after 4? Which number comes before 5?* • *Now let's use your shells/caps to show how many each stands for. Place the correct number of buttons under each card to show how many.* • *Check your partner's work and help them if they are having difficulty.*	#4 and #5
	5. Staircase with six • Select number cards 1 to 6. • Put these in order. • Above each number put beans or bottle caps to show the number. • Form the beans in a way that they form a stair step up to the six. • Ask children to now form the staircase down the other side using 5-4-3-2-1 beans.	#3 and #4
	6. Patterns • Take out 6 each of three objects such as stones, shells, and seeds. • Make a pattern of 3 using the materials.	#2 and #4
	7. Shapes • For numbers that are multiples of 3, children can form different size triangles. For multiples of	#9 and #4

	4, children can form squares. • *Take out six sticks.* • *How many triangles can you make with your six sticks?* • *Can you use the sticks to make a big triangle?* • *Draw a picture of your work in the notebook. Write the number 6.*	
Number cards 1-6 from maths bag	**8. Memory game** Children work in pairs. Each child takes out their number cards 1 to 6. Shuffle cards and lie them face down in two rows so the order and location of the cards is not known. Teacher shows them how to play memory game. Each student takes a turn playing game. One child turns over a card. Then they turn over a second card. If they match the child gets to keep the cards, if they do not match they turn them back over. Then the next player takes a turn, also trying to remember all the cards that have been turned over so they can find a match. Compare the numbers of cards to determine the winner. At the end of the game, children sort out the numbers and put 1 to 5 back in their maths bag.	#4 and #5
	9. Addition and subtraction stories • Teacher makes up a story that deals with the number six. Different things happen in the story that requires the children to add or subtract. • As the teacher tells the story, the children show it with their beans or caps. • The story maths is more fun if the children produce a simple drawing for the picture. In the example below, the children might show a house at the bottom of the page, a school at the top and a path between. The teacher can show this on the board. • *Example.* One little girl was walking to school. She was lonely. But soon she saw a friend. She said, *"Walk with me." How many children are walking to school? How would we write this? 1 + 1 +=2.* The story can result in numbers being added or subtracted. For example, one child might need to return home because she forgot her snack. So here the children will subtract.	#7
	10. Sorting 6 objects • The teacher lines up six children in the front of the class. The teacher sorts them according to some property (tall versus short; girls versus boy; colour of clothing). The teacher asks the children to guess how they were sorted. Then the teacher re-sorts the children and they guess how they were sorted. • Children sit in groups of 6. They each take out one bottle cap or seashell from their maths bag. (Or they may take a nature walk and collect an object such as leaves, flowers or stones.) • They put the selected object in the centre of the circle. Take turns finding a way to sort the leaves into groups according to properties.	#1
	11. Addition and subtraction trains • Take out 6 paper clips and hook them together like a train. • Now make different length trains that add up to six. For example 4 car train + 2 car train. • Can you think of different arrangements? • Record these in your notebook or on a slate.	#7
Body	12. Review dance • Children clap forward in a rhythm, 1, 2, 3, 4, 5, 6 and then snap fingers as they count backward: 6, 5, 4, 3, 2, 1. • Now children slowly rise from their seat counting forward 1 to 6, and then slowly sit counting backward, 6, 5, 4, 3, 2, 1. • Finally they try to increase the counting speed with claps, snaps, rising and sitting, without losing their balance as they stand and sit. • The last activity is like a dance. Children stand with a partner, clasp right hands together up in the air and slowly walk in a circle and count 1, 2, 3, 4, 5, 6. When they reach 5, they quickly release the hand, turn direction, slap the left hands together and walk and count backward, 6, 5, 4, 3, 2, 1. See if they can do this backward and forward until they can do it smoothly without losing a beat.	Counting backward *Indicators 2, 3 and 4*

Appendix 10

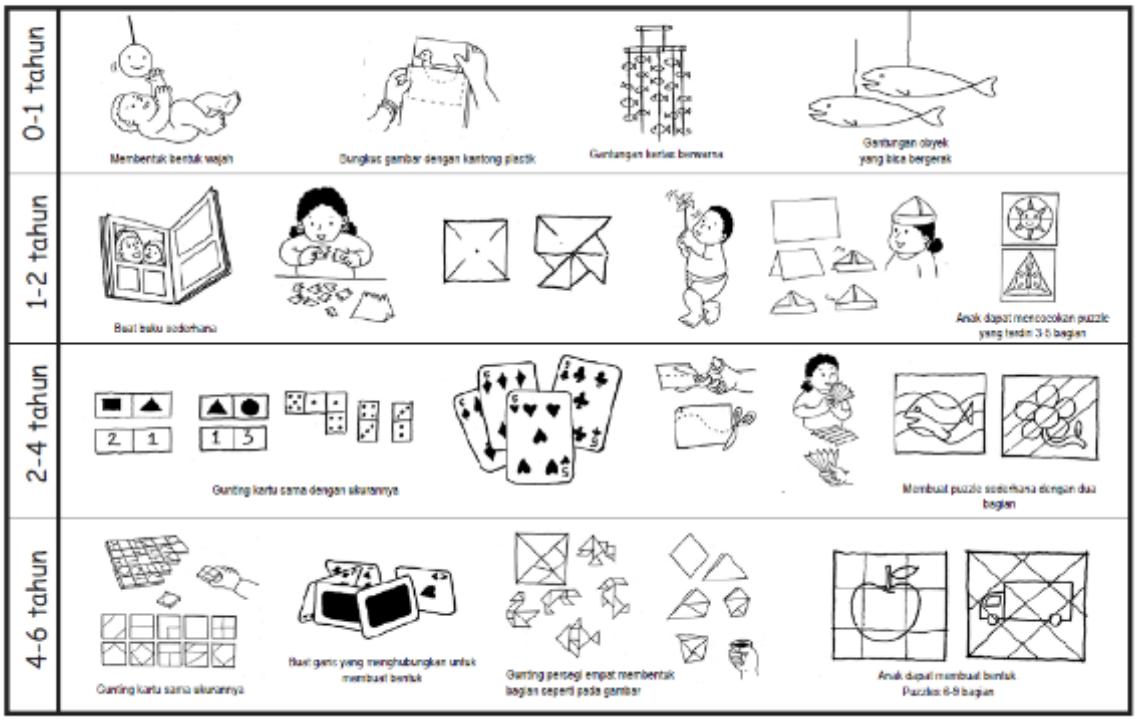
Toy Simulation Cards Example (Plan International Indonesia)[21]



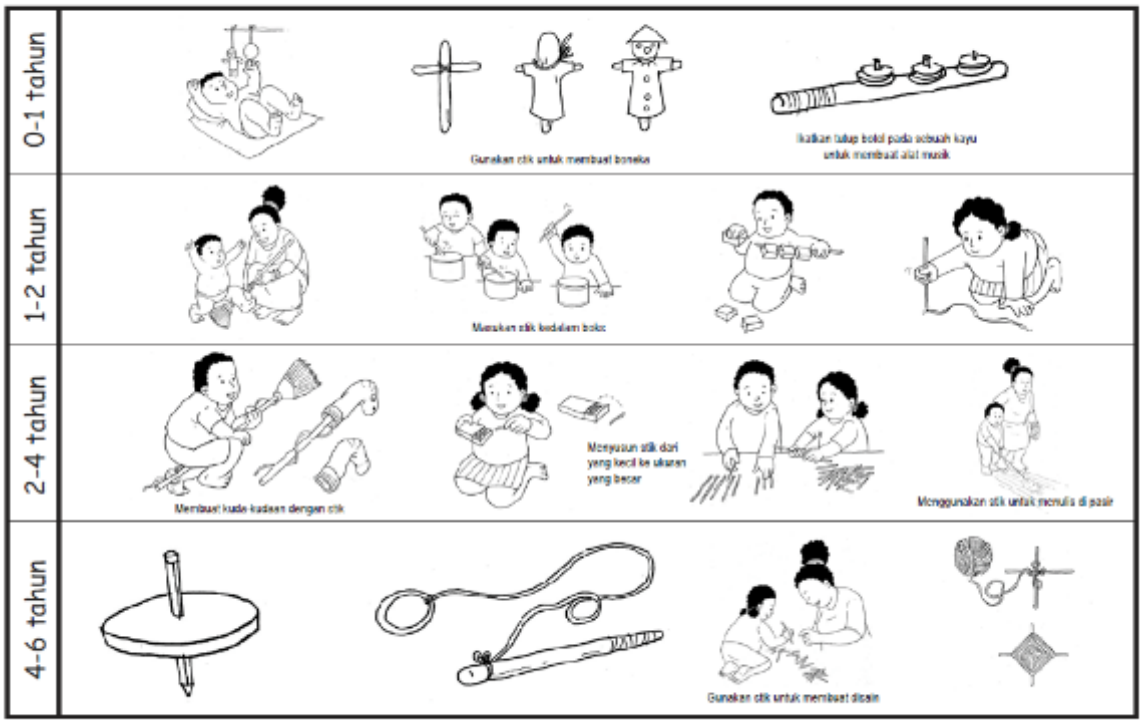


[21]Pictorial toy making cards were originally developed by Carmen Velasco, Lynn Patterson and Deborah Llewellyn (Pro Mujer, 1990) and have been adapted by Plan International Indonesia.

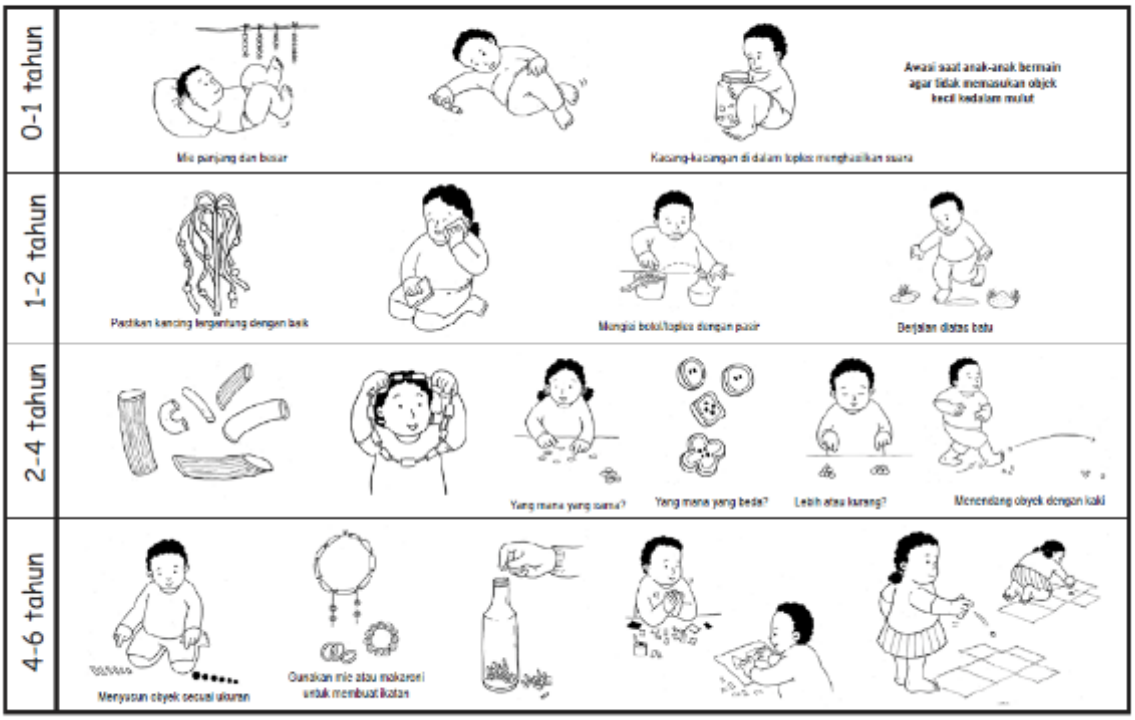
Ketas


0-1 tahun
1-2 tahun
2-4 tahun
4-6 tahun
Membentuk bentuk wajah
Dungkus gambar dengan kantong plastik
Gantungan kertas berwarna
Gantungan objek yang bisa bergerak
Buat buku sederhana
Anak dapat mencocokan puzzle yang terdiri 3-5 bagian
Gunting kartu sama dengan ukurannya
Membuat puzzle sederhana dengan dua bagian
Gunting kartu sama ukurannya
Buat garis yang menghubungkan untuk membuat bentuk
Gunting persegi empat membentuk bagian seperti pada gambar
Anak dapat membuat bentuk Puzzles 6-8 bagian

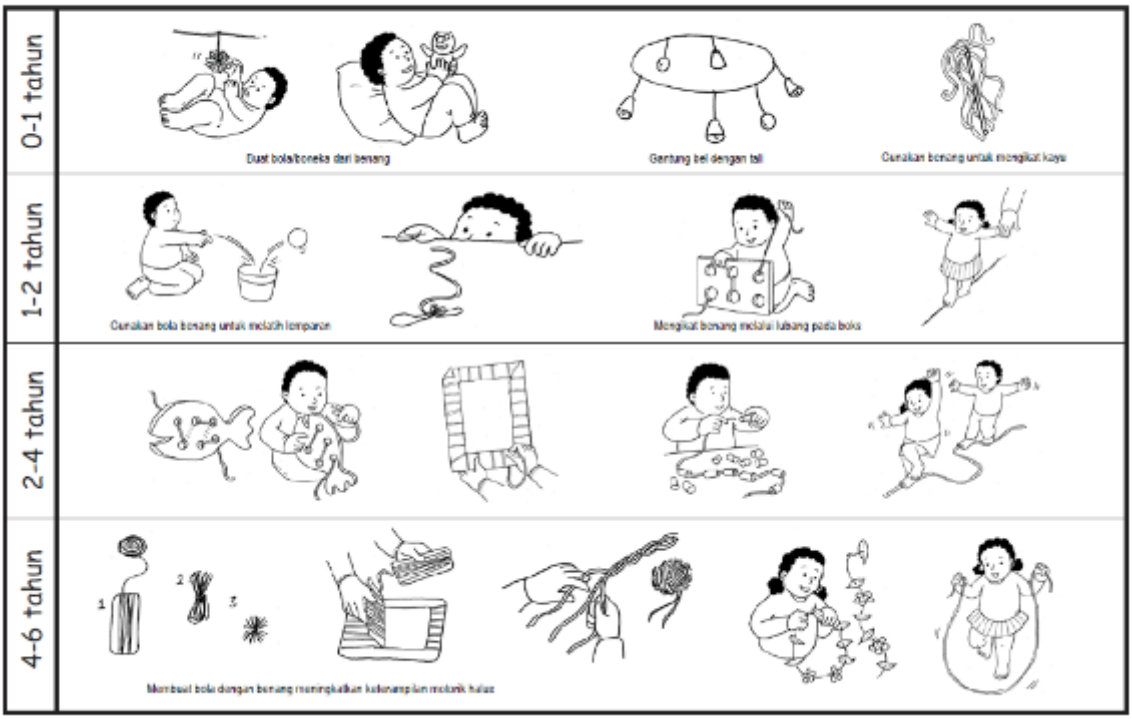
Kayu


0-1 tahun
1-2 tahun
2-4 tahun
4-6 tahun
Gunakan stik untuk membuat boneka
Ikatkan tutup botol pada sebuah kayu untuk membuat alat musik
Masukan stik kedalam botol
Menyusun stik dari yang kecil ke ukuran yang besar
Membuat kuda kudaan dengan stik
Menggunakan stik untuk menulis di pasir
Gunakan stik untuk membuat desain

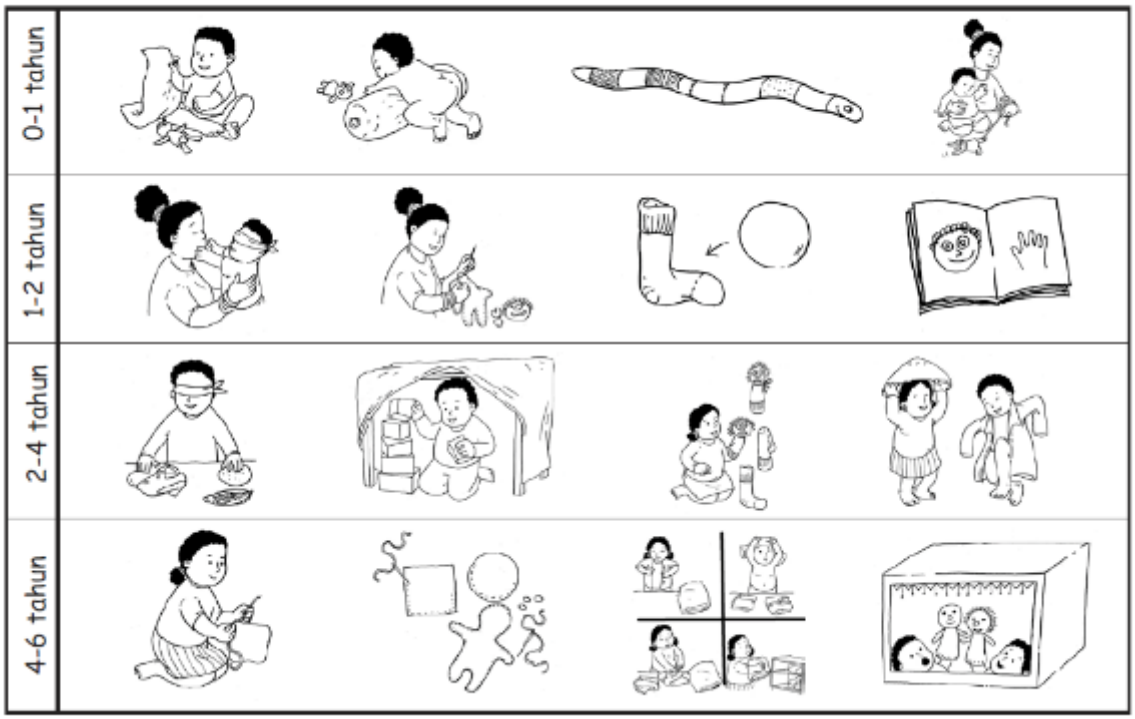
Makaroni, kancing, batu



Benang/tali



Kain



Appendix 11

Child Development Pictorial Tools Example (Plan International Indonesia)[22]

[22]Pictorial child development cards were originally developed by Carmen Velasco, Lynn Patterson and Deborah Llewellyn (Pro Mujer, 1990) and have been adapted by Plan International Indonesia.


18 - 24 bulan
2 - 3 tahun
3 - 4 tahun
4 - 5 tahun
5 - 6 tahun
Motorik Kasar
Motorik Halus
Pengucapan Bahasa
Perkembangan Kognitif
Sosial & Emosional

Appendix 12

Other examples of toys (children aged birth to one year)

Rattles

Babies and infant love the sound of rattles. They can be made in different shapes and colours.

How the rattles promote child development:

- **Cognitive:** showing interest in the rattles; exploring the cause and effect of banging, shaking, dropping the rattles; looking for the rattles when hidden; pushing and rolling the rattles.
- **Social/emotional:** showing anger when the rattle is taken away; pushing away the rattle if not wanted; playing "*Peek a Boo*" with the rattle.
- **Physical:** moving arms to shake the rattles; reaching for them; rolling/holding rattles; grasping them in both hands; exploring them with hands and mouth; transferring them from one hand to another; hitting/banging them.
- **Language:** crying when needs rattles; making sounds while playing with them; looking at person describing the rattles; shaking the rattle to get attention; pointing at rattles when wants them.

Inventory:

- Two rattles

Suggested resources – rattle one:

- One medium-sized cardboard tube
- One medium-sized empty container and lid
- Colourful fabric

- A collection of small objects such as buttons
- Metal, plastic or cardboard lid (a size matching the width of the top of the yoghurt tub)
- Sticky tape (a large roll of thick sticky tape if possible)
- String and/or wool

Steps:

1. Cut a hole at the centre of the base of the empty container. The hole should be large enough for the cardboard tube to be inserted.
2. Insert one-third of the cardboard tube at the base of the container and use sticky tape to keep it connected to the base.
3. Insert small objects in the container and close it with the lid. Apply a layer of sticky tape all around the lid.
4. Cut a large square of fabric and cover the container with it. To keep the fabric connected to the container, apply a layer of sticky tape at the base of the tub.
5. Cut a medium-sized circle of fabric and cover the tip of the cardboard tube with it. To keep the fabric connected to the tip of the tube, apply a layer of sticky tape around the edge of the tube.
6. Use coloured wool and string and tighten them around the rattle for decoration.

Suggested resources – rattle two:

- One large empty container with lid on
- A small collection of objects such as buttons
- Scissors
- Different colour fabric
- Thread and needle

Steps:

1. Open the container and insert small objects in it.
2. Close the tub with the lid on.
3. Cut a very large piece of fabric.
4. Cover the tub with the piece of fabric.
5. Connect the fabric together by sewing it neatly around the container.
6. To create a handle, twist the excess of fabric at each side of the tub and join them together by tying a knot.
7. Cut a long strip of fabric and apply it firmly all around the handle.
8. Cut two small pieces of fabric and use them to tie a pretty knot at each base of the rattle's handle.

Hints and tips:

- Ensure all lids are well sealed to the top of the container to keep small objects all together.
- Fabric should cover the entire rattle to keep all of the pieces connected and ensure the toy is sturdy and attractive.
- You can also look for other objects to make the rattle, such as tins, boxes, etc., as long as they are safe for children.
- Buttons should be fairly large and safe for children.
- If buttons are not available, they can be replaced by small rocks, non-toxic seeds etc.

Other examples of toys (children aged two to four years)

How the colour sorting game and the dolls and mushrooms promote child development:

- **Cognitive:** practising and knowing colours; knowing concepts such as small and large with different size objects; asking questions related to the toy/game; counting game's/toy's items.
- **Social/emotional:** being happy to play with game/toy alone and beside other children; being interested in playing the toy/game with other children; learning how to take turns and sharing the toy's/game's items; asking for help if the toy/game is too challenging;sharing the toy/game with other peers.
- **Physical:** using hand-eye coordination and fine motor skills to handle a toy/game; holding all toy's/game's items without dropping them.
- **Language :** pointing at toy/game when named; beginning to use language to express feelings; being able to name colours and shapes found in toy's/game's items.

Colour sorting game

A colour sorting game can be made with an egg carton, non-toxic paint and wine corks.

Colour sorting game also teaches specific skills:

- matching objects by colour
- knowing the purpose of the game
- understanding the game's rules (eg you cannot move the objects around)
- being able to follow series of two related directions such as *Find the object with the blue colour and match it to the right egg holder.*

Inventory:

- One board game
- Six matching objects

Suggested resources:

- One empty egg cardboard box (for six eggs); if egg cartons are not available, use a collection of small baskets or boxes for sorting
- Six wine corks, or objects of similar size that can be painted, such as stones
- Different colour paint
- Coloured fabric
- Two pieces of ribbon
- Staplers
- Scissors

Steps:

1. Cut the empty egg box in half. Keep one side (the one with the egg holders) and discard the other side.
2. Paint each egg holder in a different colour.
3. Paint each of the six wine corks with the same colours. One wine cork's colour should match one egg holder's colour.
4. Cut a rectangular piece of fabric slightly bigger than the egg box.
5. Cover the outside of the egg box with it and staple it on the two long sides of the box.
6. Tie the surplus of fabric at both ends with two pieces of ribbon.
7. Store the egg box and the wine corks in a bag or container.

Hints and tips:

- Once children master the game, the same game can be created with an empty egg box of 12 eggs and painted with new colours.
- Children can also use the egg carton for sorting other objects such as seashells, ribbons etc.
- If wine corks are not available, use similar type of items (e.g. stones).
- Ensure the paint is non-toxic for children.
- To make the game more challenging, children can select six different sized objects.
- Children can learn the concepts of 'small' and 'large'.
- Ensure objects are safe and big enough for children to use.

Dolls and mushrooms

The dolls and mushrooms also teach specific skills:

- using the dolls for pretend play
- sorting the objects by categories (i.e. people, vegetable)
- being able to button and unbutton the dolls' jackets
- using language to make up dialogue with the dolls

Inventory:

- Two dolls

Suggested resources:

- Four polished medium-sized wooden sticks (e.g. tongue depressor)
- Wool or string
- One button
- Fabric
- Ribbon
- Two seedpods (one round and one flat)
- Glue

Dolls and mushrooms support the engagement of children in imaginative and creative play.

- Scissors
- Thread and needle

Steps – doll one:

1. Form a cross with two wooden sticks and glue them on the top of each other to make a doll's body.
2. Cover the cross with wool or string.
3. Make miniature clothing using fabric thread and a needle. Put the cloth on the side.
4. Use one seedpod and cover it with fabric to form the doll's head.
5. Attach the doll's head on one end of the wooden sticks crossed with ribbon.
6. Dress the doll up with the clothing.
7. Sew a button on the doll's jacket so that children can dress and undress the doll.
8. Sew the doll's face to make two eyes and a mouth.

Steps – doll two:

1. Form a cross with two wooden sticks and glue them on the top of each other to make a doll's body.
2. Cover the cross with wool or string.
3. Make miniature clothing using fabric thread and a needle. Put the cloth on the side.
4. Use the flat seedpod as the doll's head and attach it on one end of the wooden sticks crossed with wool.
5. Dress the doll up with the clothing.

Hints and tips:

- Ensure the button of doll number one is big and sewed firmly enough to avoid any potential threat for children (ie choking on the button).
- Ensure the wooden parts are well polished so the toy is safe for children to use.
- This is only one example of dolls. They can be made differently with a variety of materials.

Other examples of toys (children aged four to six years)

How the lacing puzzle and dress me up paper dolls promote child development:

- **Cognitive:** knowing the colours of the toy/game; knowing the purpose of the puzzle/game; counting the toy/games items and features; asking questions about the puzzle/game.
- **Social/emotional:** enjoying playing with game/toy alone; playing with the game/toy beside other children; understanding instructions to successfully solve the puzzle; beginning to play the game/toy with other children; putting the game/toy away when finished playing with it; taking turns with the game/toy; asking for help if the game/toy is too challenging; being able to share and take turns with the toy/game.
- **Physical:** using hand-eye coordination and fine motor skills to handle toy/game.
- **Language:** knowing and naming the names of shapes and colours in the game/toy; pointing to game/toy when named; asking questions related to the game/toy; beginning to use language to express feelings such as *I did it!*; following a series of three related directions when playing the game/toy (e.g. *Dress the doll up with a pair of pants*; *Make the dolls happy with a happy face*; *Pack the game when finished*); asking questions about the game/toy.

Lacing puzzle

Lacing puzzles support children to develop fine motor skills, also important for learning how to write.

The lacing puzzle also teaches specific skills:

- using fine motor skills to undo the lace of the puzzle and hold the puzzle
- rolling the piece of string/wool and making a little ball with it

Inventory:

- One lacing puzzle

Suggested resources:

- One flat and rectangular piece of thin wood or cardboard
- Different colour paint
- Wool or string
- Paint brush
- Scissors
- Pencil and eraser
- Hole puncher

Steps:

1. Draw and paint a framed design on the piece of cardboard or wood.
2. When dry, punch holes all around the picture. Leave a round space between each hole.
3. Tie a piece of wool in one corner for threading.
4. Store the lacing puzzle in a bag or container.

Hints and tips:

- Ensure paint is non-toxic and safe for children.
- If hole punchers are not available, use the equivalent to make holes around the picture.
- To make the lacing puzzle challenging, make small holes.
- Ensure that holes are not too close to each other.

Dress me up paper dolls

Dress me up paper dolls can be made from cardboard or paper.

The dress me up paper dolls also teaches specific skills:

- ordering the different game items from large to small
- elaborating dramatic/imaginative play with the dolls
- increasing attention span when choosing clothing for the doll
- naming the doll's body parts and being able to explain their purposes
- being curious about how many ways the doll can be dressed up
- understanding the different emotions found in the game (i.e. sad, happy, angry etc.)
- inventing a game with the doll (i.e. the person dressing up the doll the quickest is the winner)
- being able to name the game and explain its purpose
- knowing concepts like '*Place the shirt below the doll's head'*
- counting the number of clothing items
- using the 'feeling words' in the game and the word 'because' (e.g. *The doll is sad because it has no clothes on and it is cold*)

Inventory:

- Two paper dolls
- A collection of paper clothes
- A collection of different faces (e.g .happy, angry, sad etc) and words matching the faces
- One storage box

Suggested resources:

- Thick paper or cardboard paper (different colours)
- Fabric
- Scissors
- Sticky tape
- Thread
- Markers (different colours)
- Pencil and eraser
- Glue

Steps:

1. Draw a medium-sized doll, a collection of clothing and accessories (e.g. skirts, pants, dress, shirts, shoes etc.), different faces (e.g. happy, sad, angry faces, etc.) on coloured paper.
2. Write a number of emotion words (e.g. happy, sad, angry etc.).

3. Cut all items.
4. Cut a piece of colourful fabric for each of the clothing items. Apply a small amount of glue at the back of each fabric piece. Stick each piece to a clothing item.
5. Cut the fabric surplus all around the clothes items. Each fabric piece should have the same shape as each clothing item.
6. Neatly apply a small layer of sticky tape all around the game's items to make them sturdy and long lasting.
7. Store all items in a small box or container.

Hints and tips:

- Ensure the lettering of each emotion word is neat so that children can practice writing the letters of the words.
- Use enough creativity when producing the game to allow children to have a number of possibilities playing with the game (e.g. enough clothing for the children to be creative dressing the doll up).
- Use simple emotion words that children at this age can understand (e.g. happy, sad, laughing, angry, crying, excited etc.).

Appendix 13

Free downloads

Homemade Math toys

http://mathcats.com/mathtoolbox/

http://www.teachingintheearlyyears.com/2012/10/homemade-math-manipulatives.html

http://www.pinterest.com/jlf5p/the-tech-savvy-math-teacher/

http://growinginpeace.wordpress.com/math-manipulatives/

http://learnersinbloom.blogspot.com/2013/02/favorite-preschool-math-ideas.html

Homemade Learning Toys – babies / toddlers /pre-schoolers

http://spoonful.com/family-fun/awesome-homemade-toys-for-toddlers

http://www.babyzone.com/baby/baby-fun-and-play/homemade-toys_65579?page=2

http://buggyandbuddy.com/homemade-toys-from-felt/

http://www.motherearthnews.com/diy/homemade-toys-instructional.aspx#axzz2hO6QKRkJ

http://www.calgaryschild.com/family-fun/606-10-great-educational-toys-to-make-at-home

http://myhomemademanipulatives.blogspot.com/

http://www.ehow.com/info_7936075_homemade-preschool-games.html

Homemade Literacy Toys

http://www.cehd.umn.edu/ceed/publications/manuals/meltresourcehandbook2005.pdf

http://www.abcand123learning.com/2010/10/literacy-games.html

http://www.pinterest.com/evelinamoore/preschool-games/

Acronyms

CLAC: Community Led Action for Children
ECCD: Early Childhood Care and Development
ECCDF: Early Childhood Care and Development Facilitator
ELP: Early Learning Program
M&E: monitoring and evaluation
NGO: non-government organisation
NTT: Nusa Tenggara Timur
ToT: training of trainers
US: United States of America

Glossary

Big Books:A Big Book is a simple, short story with very few words, short sentences and repeated words. It is large in size so that all childen in the group can easily see each page.Big Books have a simple, interesting theme like 'going to the market' or 'my feelings.' A Big Book can be made by caregivers and/or project teams with the aim of helping children learn to read.

Community Led Action for Children (CLAC): an approach to ECCD that seeks to prove that 100% of disadvantaged children in a targeted high-poverty community can achieve child wellbeing indicators and school success through effective and quality early childhood supports. The key components of CLAC are:

- A parenting program that improves knowledge and practical skills to improve child health, development, learning and protection through a process of appreciative enquiry that engages parents in discussion and action around child development.
- A low-cost, high-quality ELP that serves every child in the year or two before primary school to ensure school readiness.
- A transitions to primary school program with school and community based activities that enable children to enter school on time, stay in school and learn.
- Innovations in sector integration and improvements in government buy-in and support for ECCD.

Cuisenaire rods: a learning material used to explore mathematical skills and concepts like fractions, addition, subtraction and multiplication. The rods are different colours and lengths and enable children to see maths problems and the results.

Developmentally appropriate: refers to learning toys and play experiences that have an impact on a child's capacity to learn at a specific age and inthe four areas of development. Each child learns different things at different ages. That's why a variety of specific capabilities are defined as developmentally appropriate based on each age range (e.g. birth to six years old). Also, each child has their own unique way and pace for learning so parents and caregivers should have methods and materials that respond to the individual child.

Dialogic reading:an interactive approach to reading used by effective caregivers that involves having a conversation with children about a story book. Good techniques for dialogic reading are asking children to predict what will happen, asking them open-ended questions about the meaning of the story, discussing new words and concepts, and expanding on what children say about the story.

Disability inclusion:refers to the ability for teaching methods, play experiences and learning toys to facilitate the caring, learning and development of children with intellectual, sensory or mobility impairements. Teachers, caregivers and parents who are working with children with a disability can support them to access an adequate and stimulating learning environment in many different ways. For example, they can design specific play experiences and learning toys that support them to develop skills using their remaining senses (e.g. producing number cards in braille so that children with visual impairment can recognise numbers and symbols through touch). Teachers, caregivers and parents can also develop learning toys that promote respect and recognise the potential of children with disability (e.g. producing a story book about a child with mobility impairment who comes to the ECCD centre everyday). They can themselves role model to each other and to children the ways of connecting with children with a disability. Finally, teachers, caregivers and parents need to ensure all toys and play experiences are safe for children with a disability.

Geoboard: a board with ten pegs across and ten pegs down to form a grid of one hundred pegs. Children use rubber bands to form geometrical shapes on the board. The board can be made from wood or thick cardboard by inserting nails or pins. Make sure the pins are sufficiently glued for safety.

Hints and tips: in each toy making instruction, suggestions are given forproducing each toy. Suggestions can, for example, be about the safety and adequacy of the chosen resource or alternative ways of making or using the toy.

High frequency words: words that occur very often in reading and writing that need to be recognised to become fluent.

Learning toys/learning materials: toys, games, play experiences that are age appropriate and help children develop in the four areas of development.

Manipulatives: objects that can be used by children in a playful way to develop skills in different disciplines, such as maths. They can include discarded clean objects, such as bottle caps and paperclips, or natural resources, such as small rocks or straw.

Open-ended questions: these questions need more than just a 'yes' or 'no' answer. They need children to think, reason, problem solve and respond according to their understanding and/or feelings. These questions usually begin with 'who', 'what', 'when', 'how', or 'why'.

Sight words: words that cannot be easily sounded out and need to be recognised on sight.These need to be recognised for reading and writing to become fluent.

Story board:story boards are useful to help caregivers with low literacy skills to remember the main parts of a story. A story board is produced by dividing paper into six squares. Each section contains information about the story as follows: 1) title and author; 2) main characters; 3) the moral or take-away message; 4) what happens in the beginning; 5) what happens in the middle; and 6) what happens in the end. Children can also produce these using pictures.

Tangrams: an ancient Chinese puzzle made from seven shapes. Together the shapes form a square. The shapes can also be used to produce different pictures. Children try to produce the square or form the pictures. Directions for making a tangram can be found on the internet. Tangrams help children develop logical thinking and spatial reasoning.

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