



**PLAN**  
INTERNATIONAL

**LEARNING TOYS PRODUCTION GUIDE  
FOR EARLY CHILDHOOD CARE AND  
EDUCATION (ECCE) CENTRES/  
PRESCHOOLS AND HOME PLAY**



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Amandine Baillet developed the *Learning Toys Production Guide for ECCE Centres and Preschools* to help communities produce learning materials for children. The guide was developed as a component of the Community Led Action for Children (CLAC) Early Childhood Development (ECD) package produced by Deborah Llewellyn for Plan International Australia with the support of Australian Aid, which includes:

- *Community Managed Early Learning Programs: Curriculum Guide* (2012); ENG
- *Strengthening Families for Better Early Childhood Outcomes: A Parenting Education Curriculum Guide* (2012); ENG
- *Effective Supports for Transition to Primary School: Curriculum Guide* (2012); ENG

This Guide aims to help early childhood educators organise the production of quality learning materials for use primarily in Early Learning Programmes and home play. It responds to one of the key principles of the CLAC approach: 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. It also addresses one of the key challenges of early childhood programs in low resource settings, namely the limited availability of low- or no-cost materials to support children's play and learning across their early years. It draws on field experience in a range of countries and other materials developed by Deborah Llewellyn including: Pro Mujer Bolivia's 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 (2008); and literacy and board games designs developed for Save the Children Mozambique (2007) and Plan International Australia (2010).

The Guide was developed and tested by Amandine Baillet during six months of field experience in 2011, while working as an ECD project facilitator for Plan International Indonesia. Special thanks to Nicole Rodger and Katie Ramsay from Plan International Australia and co-author Deborah Llewellyn for their support. Special appreciation goes to Plan International Indonesia's ECD teams at the national office (Jakarta, Java), regional office (Kupang, West Timor) and program units (Lembata and Sikka, Nusa Tenggara Timur) for their support and hard work that contributed to the completion of this guide. Thanks to Jessica Rashke and Emma Barry for editing and design support.

This updated version of the guide, including the integration of gender considerations, was produced by Melanie Swan, Nicole Rodger and Shala Nourmamode (Global Hub).

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# GLOSSARY

**Big Book:** 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 children 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 educators and/or project teams with the aim of helping children learn to read.

**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.

**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.

**Community Led Action for Children (CLAC):** an approach to ECD 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 early learning program 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 ECD.

**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.

**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.

**Developmentally appropriate:** refers to a way of teaching or facilitating learning that is based on the capacity and readiness of children's minds and bodies, in a way that is meaningful and culturally relevant. Each child learns different things at different ages. A variety of specific capabilities are defined as developmentally appropriate based on a child's age, stage of development, and individual learning style and preferences.

**Dialogic reading:** an interactive approach to reading used by educators that involves having a conversation with children about a storybook. 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.

**Early childhood:** the period below eight years of age.



**Early childhood development (ECD):** the process of change, starting during pregnancy, whereby a child masters increasingly complex levels of physical activity, thinking, feeling, communicating and interacting with others. Through this process of physical, cognitive, social and emotional development, the child acquires the knowledge, behaviours and skills that enable him/her to be happy and relate to others; to learn, function and make decisions independently; to be resilient and adapt to changes in the environment.

**Educators:** the term educator is used throughout this guide to refer to the people responsible for providing nurturing care and child-centred, play-based opportunities for learning, together with care and protection, to young children in either preschool or ECCE settings. In different settings, these people may also be called caregivers, carers or teachers. 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 caregiver tends to be a community member, paid an honorarium, who works in a community managed ECD centre

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

**Gender:** a socially constructed reflection of the norms, expectations and beliefs about the roles, relations and values associated with different genders, including female and male, in a specific society.

**Gender equality:** when all persons, regardless of their gender, enjoy the same status in society; have the same entitlements to all human rights; enjoy the same level of respect in the community; can take advantage of the same opportunities to make choices about their lives; and have the same amount of power to shape the outcomes of these choices

**Gender norms:** the shared expectations or rules about how each gender should behave. They are usually underpinned by values and ideologies related to masculinity and femininity. Gender norms that drive harmful practices or place limitations on girls and women – and on their mobility, education, decision-making power and expectations for the future – not only reflect gendered inequalities of power and gender discrimination but also reinforce gender inequality, acting as a means of upholding the social order.

**Gender socialisation:** the process through which girls and boys learn about the gender attitudes, expectations and norm of their community and society: how they are supposed to behave, what their future role will be, and how they are valued differently. Children learn these from birth, from parents/caregivers, educators, other adults - and other children.

**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.

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

**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.

**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 an active, hands-on and 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, as well as spinners, blocks and shapes.

**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.

**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'.

**Parent:** any person who provides care for the physical, social, and emotional needs of a child (used interchangeably with the word 'caregiver' in this document).

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

**Preschool/ECCE centre:** these terms are used interchangeably throughout this guide. It is also recognised that different terminology is used in different country contexts. Either can offer young children an organised, quality group learning experience in the year or two before primary school. A **preschool**/pre-primary school or kindergarten is typically offered by Ministries of Education and linked to formal primary school programmes. An **ECCE centre** is often a non-formal early learning program organised and managed by the community and facilitated by a community member who has at least basic education, but rarely a university degree or official teaching certificate.

**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.

**Spatial reasoning:** the ability to think about and manipulate objects in three dimensions and to understand spatial concepts (behind, below, under, over, right, left, etc.)

**Story board:** useful to help educators 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. Tangrams help children develop logical thinking and spatial reasoning.





# PART 1: LEARNING TOYS PRODUCTION GUIDE FOR EARLY CHILDHOOD CARE AND EDUCATION (ECCE) CENTRES AND PRESCHOOLS

## 1.1 INTRODUCTION

This guide was produced to support teachers/caregivers/educators of preschools/ECCE centres, as well as parents/caregivers and other community volunteers, to develop play and learning materials for young children under six years from low-cost, local and recycled materials. It covers play/learning resources that can be used for:

- Corner play/free play
- Structured play-based learning activities – including for literacy and maths.
- Home play and community playgroups

It was developed recognising that parents, families and early learning programmes in many low and middle income countries, including in humanitarian settings, do not have enough safe, developmentally appropriate learning resources for young children that support learning through play. It will also help people to understand the importance of play for child development and how children can learn through play.

Creating and making play and learning resources from low or no-cost, locally available materials brings many benefits, compared to more expensive, commercially made toys and games, including:

- A larger number of resources can be made within a limited budget – meaning that there can be enough for everyone - and these can be more easily replaced when needed.
- Toys and games can be designed and developed that fit the country or community culture and context, meaning that children can learn about their own specific environment, community and culture.
- Learning toy production enables the promotion of gender equality and the inclusion of children with disabilities. Parents/caregivers can consider ways to modify learning toys to support use by children in all their diversity, including children with disabilities
- When supported and guided by parents/caregivers and educators, children can make their own learning toys and games. This will give them a sense of achievement, ownership and pride.

For maximum benefit, it is recommended that this guide be used as part of preschool teachers/ ECCE educator/parent or caregiver training on ECD, play and play-based learning. Training of Trainers (ToT) workshop guides on play and toymaking are also available from Plan International.

*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 toys for children.*

## 1.2 PLAY, LEARNING AND TOY-MAKING – A BACKGROUND

In this section you will find:

- An introduction to early childhood development, how young children learn, and what supports their learning
- A description of the importance of play for children’s learning and wellbeing
- An explanation of how adults can support young children’s play and learning and why the use of developmentally appropriate toys is important
- A description of the links between gender socialization, play and early learning

### STARTING WITH THE BASICS: WHAT IS EARLY CHILDHOOD DEVELOPMENT, HOW DO YOUNG CHILDREN LEARN, AND WHAT SUPPORTS THEIR LEARNING?

Early Childhood Development is the process of physical, cognitive, social, emotional and language development of children from birth to eight years

- *Physical development* refers to the growth and change of the body. Includes the acquirement of gross motor skills (the ability to move and coordinate the arms, legs, and other large body parts) and fine motor skills (the ability to make and control smaller movements of the hands, fingers, feet, toes, mouth), as well as skills of coordination and sensory development (vision, hearing, touch, taste, smell).
- *Social development* involves learning the values, knowledge and skills that enable children to interact and communicate with others effectively; make and maintain relationships and



- friendships; resolve conflict; and contribute in positive ways to family, school and the community.
- *Emotional development* involves learning what feelings and emotions are, understanding how and why they happen, recognising one's own feelings and those of others, and developing effective ways of managing them.
- *Cognitive (intellectual) development* involves the acquirement of thinking, reasoning, remembering and problem-solving skills; an understanding of concepts; and general knowledge about the world and how things work. It encompasses language, literacy and numeracy, science and the arts.
- *Language development*: refers to the process by which children come to understand and communicate language during early childhood.

Young children learn and develop through play, interactions with the world and with other people around them:

- **Children learn by doing:** Young children need lots of experience playing with and “manipulating” solid objects before they will ‘understand’ new concepts.
- **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. Play 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. Children will respond better and focus more on tasks that they find challenging, than on tasks that are simplistic and rote.
- **Children learn well when they use what they already know as they construct new knowledge:** Children learn by building on what they already know and can do – and adding to this.
- **Learning is social:** Young children’s learning is influenced and motivated by social interactions. They learn through engaging with others and the real world. They will always learn more from interacting with an adult and talking about what they are doing and what is happening - than by being “taught” facts and ideas.
- **Each child learns differently:** Children construct new knowledge by building on what they already know. Each child has had different experiences and has different knowledge. Each child will have unique strategies, approaches and capabilities for learning 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. For this reason, children will always learn best – whether at home or in preschool – when they feel safe and are having fun!

## WHY IS PLAY ESSENTIAL FOR YOUNG CHILDREN’S LEARNING, DEVELOPMENT AND WELLBEING?

Play is an important means through which children develop and learn skills across all areas – physical, social, emotional, cognitive and language. Play provides a context for children to try new social skills and challenging new tasks, and to solve complex problems. Through play, children build skills such as problem solving, persistence and collaboration that are required throughout life. They can 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.

Play also satisfies an innate need for imagination, curiosity and creativity. It enables children to find their place in a culture and helps them cope with new experiences (because a playful attitude enables the mind to explore and remain open to a wide range of possibilities). 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. 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 manipulating objects and seeing what happens;
- communicate with other children and negotiate differences in points of view; and
- derive satisfaction from their own accomplishments (pride).



## THE SCIENCE OF PLAY

Several influential psychologists conducted studies to understand play. These included Jean Piaget, Ken Rubin, Sara Smilansky and Lev Vygotsky. A useful reference for learning about the science of play and specifically the work of these researchers can be found in Chapter 10, *Tools of the Mind – The Vygotskian Approach to Early Childhood Education* by Elena Bodrova and Deborah Leong (2006). Some of the important ideas are summarised below:

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 by social categories, explaining that children typically progress through these different stages as they develop and grow older:

- 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; The 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:

- 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 are not able to 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. Vygotsky believed that “through the ‘what will happen if...’” play process that occurs during different sorts of play – including dramatic play - 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 (sic).”<sup>1</sup>

Researchers today continue to support and expand the findings of these early writers on the science of play.

For more about the science of learning through play, read UNICEF and Lego Foundation (2018) *Learning through play Strengthening learning through play in early childhood education programmes* [here](#)

## ADULTS CAN SUPPORT CHILDREN'S DEVELOPMENT AND LEARNING THROUGH PLAY

Educators in preschools and ECCE centres, as well as parents at home, can support children's play and learning in different ways:

- ✓ By providing enough time for a broad range of play activities and by ensuring that safe play materials are available that are stimulating for the children's developmental levels
- ✓ By giving opportunities to try out new things, practice and master specific skills. This means changing and adding new play materials to increase novelty, supporting and encouraging children to try out new things.
- ✓ By supporting playful structured learning opportunities, during which the educator gives children materials to manipulate and practice concepts, asks questions and gives the children problems to solve.
- ✓ By providing ample opportunities for child-directed free play, while using these as opportunities to talk meaningfully with the children and to ask probing questions that extend their thinking and learning in different areas. Educators can also tap into the power of free play to help children develop friendships and pro-social skills such as cooperation, sharing, taking turns, understanding the feelings of others.

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

- ✓ By avoiding gender-stereotyped play and encouraging children to engage with materials in a way that expands or dissolves gender boundaries, or that socialises different aspirations e.g. encouraging boys to play house and girls to build with blocks.
- ✓ By using every opportunity available to engage in responsive one-to-one communication (or “non-instructional talk”) with children during their play. Some ways to do this include:
  - Holding natural conversations with children as they play and encourage them to talk.
  - Listening to children and responding to what they say.
  - Stimulating children to think and extend their play to a higher level by asking questions. For example, *Tell me about your block building. What other shape block could you use here? Do you need some food in your pot? - What could you put there? Is there anything in this jar you could use?* Educator hands them the button jar.

For more on how adults can support children’s learning through play, read LEGO Foundation (2019) *Play facilitation: the science behind the art of engaging young children*. Access [here](#)

## WHY IS USING DEVELOPMENTALLY APPROPRIATE LEARNING RESOURCES IMPORTANT?

During early childhood, children progressively develop new skills in all domains of development: cognitive, social, emotional, language and physical. They develop these through play, interaction with others and the world around them, exploration and discovery. They start by learning more basic skills before learning more complex skills.

While children typically develop particular skills within a certain age range and in the same order, the exact age at which children achieve different development milestones will vary from one child to another, depending on their inherent potential but also on the care and stimulation they are provided.

Research has shown that it is important to provide opportunities, toys and games for play and learning that are appropriate for the children’s existing levels of abilities and build on these to help them to learn and develop new and more complex skills: if you provide toys and learning resources that are too difficult, the child will be frustrated; if the learning resources are too simple, the child will probably get bored and not learn a lot!

Learning toys and resources which are appropriate for a child’s age and developmental level are valuable because they:

1. are challenging enough to stimulate 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
4. help to make play fun, exciting and positive – meaning that the child is likely to play longer and focus more.



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## 1.3 GENDER SOCIALIZATION: WHAT IS IT AND HOW IS IT LINKED TO PLAY?

Early childhood is a crucial time for the development of a child – a time when girls and boys begin to acquire a sense of themselves and their place in the world. Right from birth, children begin learning about the gender attitudes and expectations of their community and society - about how girls and boys, and women and men should behave and what their role is in society – through a process called gender socialization.

Research by Plan International<sup>2</sup> showed that parents/caregivers often encourage different sorts of play and learning activities for girls and boys. In addition, in many Early Childhood Care and Education (ECCE) centres and preschools, the curriculum/learning materials - as well as the educators' behaviours and interactions with children, and the different play and learning activities they encourage for girls and boys - often reproduced and reinforced gender attitudes and expectations for girls' and boys' behaviours, abilities and future roles. Parents, caregivers and educators justified this differential treatment of girls and boys on the grounds that girls and boys are naturally more talented at some things, or more likely to behave in certain ways, because of biological differences. Many also spoke of their responsibility for teaching and preparing children to be responsible, respectful, valuable women or men within their communities – in line with culturally prescribed gender roles. For girls, this usually meant preparing them for motherhood and caring for a home and family. For boys, this often meant that the emphasis was on developing leaderships skills, independence and authority.

These beliefs and expectations about gender – which are limiting for both girls and boys – are reinforced when parents, caregivers and educators encourage specific sorts of play or different levels of access to learning materials and activities for girls and boys. They are also reinforced when adults discourage behaviours or play that are deemed more appropriate for the opposite sex, as well as interaction between girls and boys during play.



2 Plan International (2017) Synthesis Report: Research into Gender Equality and Early Childhood Development in Eleven Countries in Asia <https://plan-international.org/research-gender-equality-and-ecd-initiatives>



It is important to remember also that many toys can reinforce unequal gender norms and socialize gender roles and stereotypes with children. For example, many toys designed for boys, like toy soldiers or action figures, teach boys to play masculine roles and to be aggressive. Many toys designed for girls, like dolls or play-kitchen sets, teach girls to assume caregiving and domestic roles and to be nurturing.

The resources that feature in this guide have been developed to support children's playful learning in ways that do not reinforce unequal gender norms and attitudes – but instead to allow children to use their imagination to explore a variety of skills, roles and behaviours in gender-equal ways. Please note that although they include toys/resources that are typically associated with play for one or other gender, such as dolls, cars and vehicles, resources for imaginary kitchen or market play, these can still be used – and it is important that they are used! – by girls and boys. It is important to ensure that parents, caregivers and educators know that all of the toys/materials in this guide are valuable play and learning resources for children, regardless of gender.

One way to assess whether your learning materials – and how these are being used – challenge gender stereotypes and roles, is to use tools from Plan International's *Gender in ECD Assessment Toolkit*. These can be accessed from Plan International.

### **A NOTE ON DISABILITY INCLUSION:**

Disability inclusion refers to the ability for teaching methods, play experiences and learning toys to facilitate the learning and development of children with intellectual, sensory or mobility impairments. Educators, 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 ECCE centre everyday). They can themselves role model to each other and to children the ways of connecting with children with a disability. Teachers, caregivers and parents also need to ensure all toys and play experiences are safe for children with a disability.

When developing toys that are explained in this guide, or when creating new toys, it is important to consider how these can be adapted to be appropriate and stimulating for children with disabilities and special needs.

## 1.4 PRODUCING PLAYFUL LEARNING TOYS

In this section you will find:

- Basic principles and steps for the production and use of locally made toys and for training of educators and parents in their production and use

### INTRODUCTION:

Children mainly learn from doing, not observing. This means that “manipulatives” are important play and learning resources: these are different objects or materials that can be touched, moved around and used in creative ways; and that facilitate learning of concepts and different skills. Examples are blocks, beads, puzzles, puppets and dolls.

As you plan which playful learning toys and games you will produce, keep the following criteria and considerations in mind:

- Which children are you producing playful learning resources for – what are their ages and developmental stages? Remember that materials should be complex enough to interest the children. Five-year-olds, for instance, need nine- to 18-piece puzzles, story books with detailed pictures, and smaller blocks rather than large ones.
- What are your learning goals for these children in different areas – maths, literacy, science, etc.?
- Which resources are needed for different sorts of play and learning activities: free play, corner play, structured play, games?
- How will you ensure that the playful learning resources you develop are safe, attractive and as long-lasting as possible?
- How will you encourage children to invent new and creative ways to use the materials?
- How can you ensure that you regularly produce new resources, to replace toys when needed and to increase novelty?
- How will you store the learning materials that are made? For instance, for open-air or mobile preschools, toys will need to be stored ideally in waterproof bags or boxes.

### Tips!

- Put safety first! Remember that as well as playing with toys/learning materials, children throw them, hit with them, put in their mouths etc. You must ensure that non-toxic paint is used for painting and that toys have NO sharp edges. Avoid making and using materials that are small enough to be put up noses, in ears or swallowed - particularly for the younger children.
- Produce materials that can be used in many ways, such as blocks or picture cards.
- If an adequate supply of materials exists, rotate them to increase novelty. For example, you could put out the ‘house play’ materials in the imagination corner, and the next week the ‘market play’ materials.
- Try to bring in new things and “found materials” to generate interest and to complement the learning resources you have developed. For example, you could bring in fresh flowers or leaves, to draw or sort
- Regularly review how children are using the materials. Do they seem to be bored with them – 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 what they are doing, as they play with them?



## TRAINING EDUCATORS OF ECCE CENTRES/PRESCHOOLS TO MAKE TOYS AND PLAYFUL LEARNING RESOURCES

As mentioned above, training on toymaking should be facilitated as part of broader training that also covers child development, learning and play, and gives participants hands-on experience with making and using toys and games with children. This is essential for teachers/educators to not only produce toys but also to know how each toy/resource supports learning of different skills and how children can be supported to use them.

Toymaking training typically starts with providing educators an opportunity to make copies of a toy/resource which you have already prepared. They observe how the toy is made (perhaps making sketches), and then have an opportunity to make the toy themselves. They can practice and role-play how the toy could be used and discuss what the child development benefits could be. This is easier than asking teachers/educators to design a toy or learning resource from scratch, and helps to build expertise, confidence and the motivation to later create learning resources of their own.

Make sure that you have plenty of space for the toy-making training: you will need plenty of table space or – if it is culturally acceptable – use the floor (making sure that it is clean).

School readiness indicators are another important tool to support toymaking for ECCE centres. A '63 school readiness indicators' document was designed as a tool for educators/teachers to use in a number of activities (e.g. observing and evaluating ECCE sessions or making stimulating early learning toys). The school readiness indicators can be found in Appendix 1 and are included as a tool in the ToT training for ECCE centres. Using the indicators helps in planning toy design, and to think through materials development before production, to ensure that they will benefit children in a variety of ways. The more areas of child development and indicators a toy/game can address, the better it is.



Finally, try and make toymaking FUN! Put on some music, get a conversation going about people's lives, show and celebrate what each person produces along the way!

For more on toymaking training for teachers/educators, including a suggested schedule and follow-up process, please seek out the accompanying ToT guide.

**Remember!** Not all teachers/educators will feel ready to use the toys they have produced and apply what they have learned in their early learning programmes after just one training. Providing opportunities to practice is key! Try to use regular learning circles and mentoring sessions to give teachers and educators an opportunity to exchange ideas about what activities and resources they have used, learn what has gone well, and produce new playful learning resources. If the toymaking training facilitators regularly visit the preschools/ECCE centres, they can also use these visits to see how learning resources are being developed and used, answer questions and provide support.

For training parents/caregivers and community volunteers on play and toy development for home play and community-based playgroups, there is a separate ToT guide.

## PRODUCING A KIT OF LEARNING TOYS FOR ECCE CENTRES AND PRESCHOOLS

The list or “inventory” of playful learning materials suggested below is drawn from the *Community Managed Early Learning Programs Curriculum Guide* developed by Deborah Llewellyn (2012).

The inventory includes materials for the classroom and for different parts of the daily routine: literacy circle, maths circle, and corner play (blocks and building, games and puzzles, imagination, books and reading, sand and water). The quantities per “classroom” are described in the following sections.

Ideally, each classroom should have an inventory or set of resources which:

- Support all areas of development.
- Can be used in many different ways (such as blocks, shells, bottle caps, and picture cards).
- Are challenging and can be used for activities with different levels of difficulty.



- Are attractive and well made (colourful, careful lettering, pictures with a lot of detail).
- Are available in enough quantities for different children to be able to use them.

### Classroom environment

- Attendance pocket chart with name cards for each child.
- Calendar pocket chart.
- Variety of colourful posters made on grain sacks or cloth for durability (rather than on paper).
- Floor covering.
- Wall clock.

### Literacy circle

- Large blackboard (on wall or easel) and chalk. If possible, one slate and chalk per child and/or four to five slates for the books and pictures corner.
- 25 story books, some bought and some homemade.
- Big Books (nine to ten), locally produced, for story time
- 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). Use cloth or grain sack material to make these wherever possible for durability.



### Maths circle

Calendar with pockets and removable number cards. Use cloth or grain sack material to make these wherever possible for durability.

- Number banners, with numbers one – 20.
- Maths bags (one per child). See the full list of contents later.

### Corner play – free play

#### Blocks and building corner

- Blocks of different shapes: cubes, triangles and rectangles.
- 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 shapes (circles/triangles/squares) for sculptures
- Other interesting construction materials, such as tin cans, corn cobs, or large seedpods painted with bright colours.



## Games and puzzles corner

- Picture puzzles: with 5 - 16 pieces
- Shape puzzles (tangrams, pattern blocks, geoboards; concentric shapes).
- A selection of 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 (try and rotate different books in each week).
- Two sets of picture cards (for instance with animals, flowers, fruit or birds)
- Two sets of alphabet cards and game activities.
- Two sets of number cards, 1–20 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 toys.

## Imagination corner

- Small dishes, stirring spoon, coconut shells.
- Cloth dolls (male and female).
- Small baskets or pots of different shapes or coconut shells.
- Balance scale.
- Pieces of solid coloured 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 which can be 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.





## A PROPOSED PROCESS FOR DEVELOPING CULTURALLY RELEVANT LEARNING TOYS

The second part of this guide explains how to make toys and learning materials which can potentially be used across different cultures and contexts. Even if you are considering using these, it's important to work with educators, parents, caregivers, and community members to ensure their support and engagement: this will also help you to ensure that the toys and learning resources you develop are culturally relevant. Below are some steps that you could take. This is not a recipe book: you may want to jump some steps, change the order, or do some things in parallel.

### Community research - start by mapping and understanding:

- What games, toys, forms of play, stories and songs are traditional and typical in the communities you will reach?
- What toys, games and learning materials are available in preschools/ECCE centres?
- Are there the right type and quantities of playful learning materials to support the learning goals of the preschool?
- What toys, games and learning materials do families have available for their children?
- What resources are available locally to produce toys? – in terms of recycled, household or found materials?
- Which community members may be able to help with toy production – for instance are there carpenters, people with sewing machines, artisans, artists?

Below are some of the questions you could use during a toy production community survey.

### TOY PRODUCTION COMMUNITY SURVEY QUESTIONS

- What is a typical day in the life of a young girl here? And a young boy? How much time do they have for play and games? Who do they play with and where?
- What are the traditional local stories that could be told to children or used for children's story books?
- What are the traditional songs (with a story) and rhymes that could be used with children?
- What are the traditional games that adults play with children, or which children are encouraged to play together? Are there any games or play that are considered appropriate only for girls or only for boys?
- What outdoor games and equipment are found for children in this community? Are there any games or play that are considered appropriate only for girls or only for boys?
- What are the resources that are produced locally and that could be used to make learning materials? Are there artisans, carpenters, people with sewing skills that could help?
- What natural resources are available that are safe for young children and could be used for learning materials? (coconuts, bamboo, sand, seeds, sticks, leaves etc...).
- How can educators access recycled materials? Are they already collecting these materials, and if so from where and who? What resources are easy or difficult to access?
- In terms of arts and crafts materials (scissors, crayons, paper etc.) what is readily available at reasonable cost?

## Identify the toys/learning materials that you will initially develop:

Make sure you analyse the data collected using this survey – together with teachers/educators and parents from the community to identify what the specific needs are with respect to playful learning resources in the community/preschool etc:

- What additional learning materials are needed to support the learning goals that have been defined, and the different activities in the daily routine?
- Produced toys/materials should be prioritized, because:
  - ✓ They support the development of a range of skills - cognitive, social and emotional, physical and language;
  - ✓ They can be used for different purposes in the classroom;
  - ✓ They reflect the local culture,
  - ✓ Can be adapted for children with a disability
  - ✓ Will be safe and fun for young children to use

## Plan how you will produce the toys/learning materials

The next section of this guide explains the materials needed and the process to produce a range of playful learning materials.

If you are designing a new toy/game, you will need to:

- Draw what the toy/game will look like.
- Identify what materials will be needed – including arts and crafts materials.
- Describe the steps you will need to take to produce the toy and identify whether you will need help from anyone with particular skills (carpentry, sewing etc).

Think about what you will do to make the toy attractive to, and safe for, children. Be patient – and creative! Sometimes your original idea might not work as you had hoped! Can you change it to make something different? Can you make it in a different way?

## A note on arts and crafts materials

Try and ensure that you have enough budget to purchase and replenish arts and crafts materials as these will make toy production a lot easier.

Ideally you will need a good supply of crayons, markers, pencils, erasers, glue, sticky tape, coloured paper and card, non-toxic paint, string, wool. Plus scissors or a Stanley knife, rulers, staplers and staples.

If these materials are not available - or there is insufficient budget – check with the community whether they have alternative ways of making these different items.

## HOW TO MAKE NON-TOXIC PAINT

All paint used in toy production MUST be non-toxic! If you cannot purchase non-toxic paint, then there are some ways to make it:

**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** – 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.



## Collecting “found materials” or “beautiful junk”:

Start collecting raw, found and discarded materials well in advance of starting toy production – and encourage educators and parents to continue to collect these after the trainings, for later use. You could create a ‘beautiful junk’ box in which the raw and recycled materials could be stored; and share a list of what is needed to be collected. As community members collect items for the box, make sure you keep an eye on what is still needed. Check all collected materials to ensure they are safe (non-toxic, no sharp edges) and clean. Below is an example message/poster you could create.

## HELP US TO COLLECT MATERIALS FOR OUR ‘BEAUTIFUL JUNK’ BOX

Please help us by collecting and depositing raw and recycled materials in this ‘beautiful junk’ box. We will use these materials during toy making workshops to create fun and safe learning toys for children in the community.

**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. Please make sure that these are washed clean before leaving them in the box!

**Please DO NOT leave:** anything unsafe, smelly, unwashed or rotten. Thank you!

## Producing and Testing the toys you produce

Production will be informed by all the previous steps. Before production starts, consider if the toy design needs to be refined further, considering things like safety, what skills it will promote children to develop, if there are sufficient raw and recycled materials available.

Once completed, toys/games will usually need to be tested before being used in ECCE centres: this is especially the case for board games that are challenging and have complex rules. Different ways for testing 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. Before using it with children, assess carefully if the resource will be unsafe in any way. If you cannot fix the safety issue, then abandon the toy and start something else. However, most learning toys can be fixed/improved with additional thinking, development and testing.

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.





## 1.5 LEARNING TOYS FOR CORNER PLAY

Corner play can be the most important part of the daily routine in preschools/ECCE centres. It is a time for free play - when children choose what they want to do and direct their learning, rather than the educator. When children make plans about what they will do during corner play, this helps them also develop higher level thinking skills - skills to make decisions, regulate their own behaviour, and take responsibility for their actions. The educator can still help the children to learn through play, by moving between the corners, showing interest in what the children are doing, asking questions, and encouraging them to explore further. Educators should also work to ensure that corner play does not reinforce gender stereotypes, for instance by ensuring that girls have the same opportunities to decide what they will play as boys; by encouraging girls to play with materials such as trucks, soccer balls and cars and boys to play with dolls and dress-ups.

Corner play can be set up in the four corners of the classroom space with an additional 'corner' outside for sand and water play.<sup>3</sup> 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.

<sup>3</sup> If classes are 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 corner has a bag to store the materials that is clearly marked with the name of the corner.

### Corner names:

- Blocks and building
- Imagination
- Books and pictures
- Games and puzzles
- Sand and water play

The learning toys for each corner included in this guide can be made at low-cost. They have been selected because they are “open-ended” – they can be played with in different ways. This means that children are less likely to become bored with them, even if they are used repeatedly. Educators can create novelty by bringing in new materials from the local environment and by rotating the materials to be used. They can also introduce new ways to use old materials, such as a new game using the picture cards.

## 1.5.1 BLOCKS AND BUILDING

**In this section:** Wooden blocks; Wooden cubes; Bamboo sticks; Small figures of animals, people and vehicles; Cardboard shapes for sculptures; Additional materials for building

### *Why is blocks and building play important?*

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

#### Cognitive:

- ✓ Building thinking, creativity, problem-solving and imagination skills (e.g. which items should I use, and with what other blocks and construction items? How do I stop my tower falling over?);
- ✓ Spatial reasoning;
- ✓ Planning - deciding what to build and planning how to construct it;
- ✓ Maths concepts - sorting things that are alike and different, ordering things by size, colour, shape and counting.

#### Social and emotional:

- ✓ collaborating with playmates to carry out a plan, build something together and make up a story about what you have built;
- ✓ sharing blocks, cubes and other building items;
- ✓ respecting other people’s buildings by not breaking them;
- ✓ respecting each person’s turn to play with specific items.

#### Physical:

- ✓ fine motor skills and hand-eye coordination (skills that will help them read and write);

#### Language:

- ✓ talking about what they have built and the purpose of the construction;
- ✓ telling a story about the imaginary scenario they have built – a zoo, an airport, a shop.



## Blocks

**Suggested quantities per classroom:** 50-100 blocks of different shapes and a bag/box for storage.

**Materials needed:**

- Wood (any type but ideally good quality, to ensure it is longer-lasting)
- Tools to cut and shape the wood and sandpaper
- Non-toxic paint

**Steps:**

1. Cut blocks into geometric shapes — 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. Cubes should be 5cm square; rectangles 5cm x 10cm.
2. Sand the edges to ensure they are smooth, and paint in different colours with non-toxic paint

## Wooden cubes

**Suggested quantities per classroom:** 600 cubes in different colours and a bag/box for storage

**Materials needed:**

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

**Steps:**

1. Cut the cubes: they should be 2.5 cm square. You should make 600 for each classroom.
2. Sand the edges to ensure they are smooth, and paint in different colours with non-toxic paint (red, yellow, orange, blue, green, purple – 100 of each)

**Tips for production and use!**

- People with rudimentary carpentry skills can produce cubes, triangles and rectangles. More advanced carpenters can produce curved shapes and columns.
- Make sure that girls have the same opportunities as the boys to play in the blocks and building corner

## Bamboo sticks

**Suggested quantities per classroom:** 40 bamboo sticks in different sizes, and a bag for storage

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

**Materials needed:**

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





### Steps:

1. Cut 40 bamboo sticks, 10 of each size (shortest about 8cm, longest about 25cm long)
2. Paint the sticks in four different colours - one for each size - with non-toxic paint.

### Tips for production and use!

- If no bamboo is available, another type of wood can be used.
- Polish/sand the sticks so they are safe for children to use.
- If needed, demonstrate how these can be used in the blocks and building corner - for instance, to mark out roads, fences, make bridges
- Make sure that girls have the same opportunities as the boys to play in the blocks and building corner

## Small figures of animals, people and vehicles<sup>4</sup>

**Suggested quantities per classroom:** about 20 different small figures of animals, people and vehicles, and a bag for storage.

### Materials needed:

- Cardboard and Paper
- Scissors and glue
- Pencil, crayons/coloured pencils, markers
- 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, cut out all the figures so that each one is on a separate piece of cardboard. 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. Store all of the figures in a bag or box when not in use.

### Tips for production and use:

- Draw people from a range of cultures.
- Ensure that your drawings do NOT depict boys and girls, men and women in stereotypical roles or with stereotypical behaviours – for instance women cleaning/ caring for a child, man working or driving a truck, boy playing football, girl playing with a doll. Instead challenge gendered ideas about what they should do!
- The animals, vehicles and people should be in proportion to each other (i.e. animals should not be larger than people).



4 This is a locally made alternative, if you cannot access plastic figures

## Cardboard shapes for sculptures

Suggested quantities per classroom: 50 – 60 pieces of cardboard cut into different shapes (Circles/triangles/squares) and bag/box for storage

### Materials needed:

- Cardboard
- Scissors
- Pencil, eraser
- Non-toxic paint

### Steps:

1. On thick cardboard, draw a number of shapes that are around the same size, about 5 – 8 cm: (e.g. triangle, circle, square).
2. Cut out the shapes.
3. On each side of each shape, make a little notch with the scissors so the shapes can be connected together in a sculpture.

If possible, paint the shapes in different colours.

### Tips for production and use:

- Make sure the cardboard is thick and sturdy enough to create a sculpture
- Ensure notches are small enough so that the different pieces will stay 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)

Suggested quantities per classroom: 30 - 40 other items that could be used for building, such as tin cans, corn cobs and large seedpods painted in bright colours and bag/box for storage.

### Materials needed:

- Found/discarded and clean items: tin cans, corn cobs, large seedpods, sticks, stones, plastic pots
- Non-toxic paint

### Steps:

1. Clean all items collected, making sure there are no sharp edges
2. Paint the items with non-toxic paint

### Tips for production and use:

- Make sure all of the natural items such as corn cobs are dry enough to apply paint on them.
- Make sure that girls have the same opportunities as the boys to play in the blocks and building corner





## 1.5.2 GAMES AND PUZZLES

**In this section:** Making dice; Making a Spinner; Shape Person Game; Race to the stars; Picking Papayas; Empty the bowl; All the way home; Pattern shapes race; Geoboard games; Going fishing; Animal hunt; Spin and spell; Picture and tangram puzzles; Memory game: symbols; Memory game: letters; Stack the blocks; Dominoes; Colour bingo.

### INTRODUCTION

Board games and puzzles can help children:

- Develop logical thinking – learning how to pose problems and find solutions
- Learn how to follow rules,
- Develop fine motor skills (as they move objects with fingers)
- Strengthen maths and literacy skills.
- Puzzles help children see how parts of something become a whole. They include:
- Self-correcting puzzles - these have a cue card that shows an outline of the shapes and how the shapes fit together.
- Puzzles 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.
- Geoboards and pattern blocks – these are useful for developing skills 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.

Maths and literacy board games can support learning of all of the following skills:

- maths skills – recognising numbers and counting; recognising shapes and sizes; learning to match, sequence, order and sort;



- literacy skills – recognising and understanding letters, syllables, simple words; how words are formed and what their meanings are. (for instance memory and lotto games)
- thinking and reasoning skills
- focus, attention, persistence and motivation to learn;
- following directions and the game's rules correctly
- recognising and managing feelings when losing or winning the game – and expressing their feelings with words
- following the game's rules correctly;
- playing the game fairly (no cheating), respecting other children's turn to play, managing conflict with classmates with respect
- coordinating hand-eye movements and using small muscles of the hands when moving token from one square to another;
- asking questions (to classmates and/or educators during the game and actively participating in the conversation held with classmates during the game.

There are several characteristics to consider when producing board games. They should be:

- exciting – with rules, spinners, dice – and create a sense of competition or achievement
- attractive – with colourful pictures and clear lettering;
- challenging to the right degree - not too easy OR too complex

### Making cardboard dice

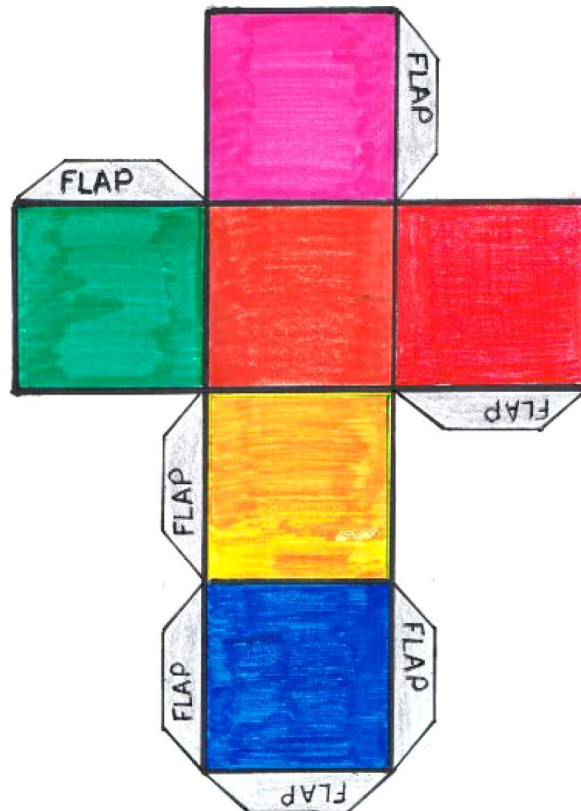
Cardboard dice are easy to make and a great way to add a challenge and fun to children's games. They can be used to help children: develop fine motor skills and hand-eye coordination; learn how to count and recognise numbers; learn and recognise alphabet letters. They can be made out of a variety of discarded and raw materials and in different ways. Below is just one example.

#### Materials needed:

- Two large pieces of thin cardboard with a stiff and smooth surface (e.g. cereal boxes)
- One dice design template (see below)
- One pair of scissors/cutter
- One black marker
- Non-toxic glue

#### Steps:

1. Use the template below and glue it neatly on to a piece of cardboard, without creases. Leave to dry and then cut out the cardboard, using the template as the guide. Colour in the different sides if you wish.
2. Fold at right-angles along the lines between the sides of the cube, and the tabs. Put glue on the tabs and stick together.
3. Once dry, draw in the markings on each side you need for the game (this may be numbers, dots, letters etc)



### 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
- You can 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.

## Making Cardboard spinners

Cardboard spinners are easy to make and a great way to add a challenge and fun to children's games. They can be used to help children: develop fine motor skills and hand-eye coordination; learn how to count and recognise numbers; learn and recognise alphabet letters. They can be made out of a variety of discarded and raw materials and in different ways. Below is just one example.

### Materials needed:

- Two large cardboard pieces
- One paperclip
- One pencil, eraser and ruler
- Colour pencils, crayons, 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. Colour each side of the square and put to one side.
2. 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: these will be used later on.
3. With a pencil and a ruler, divide the circle into sections. The number of sections differs from one game to another, as does what you need to write in each section – SO CHECK THIS FIRST!
4. Once the circle is divided into sections, labelled and decorated, turn it over and apply glue around the edges of the reverse side. Then stick the circle, decorated side up, in the middle of the cardboard square (you may need to put a heavy book on top for a few minutes to ensure it stick well. Apply a layer of sticky tape all around the spinner base to make it sturdy and long lasting.
5. Out of the remaining scraps, draw and colour an arrow: this should be slightly smaller than the circle's diameter. Apply a layer of sticky tape all around the arrow too. Cut two very small squares also out of the scraps.
6. Place the tip of one of the scissor's blades onto the centre of the circle and punch a hole with it. Be accurate!
7. Grab a paper clip and unfold one end so it is bent up at a 90-degree angle. Insert the paper clip's bent pointed end through the whole, from underneath. Stick the unbent, flat piece of the paper clip to the bottom side of the spinner base.
8. Using a ruler and pencil, mark the arrow halfway along its length, at its centre. Poke a hole through this point with the sharp end of the scissors, and a hole through the centre of the two very small squares in the same way.
9. Put the two small squares on the spinner base, poking the pointed end of the paper clip through the hole in the centre. Finish by putting the arrow on top in the same way and finally wrap a small amount of sticky tape around the pointed end, to make it safe.
10. The spinner should now spin and be ready to use

### Hints and tips:

- The arrow and square's holes might need to be enlarged to make the arrow spin well.

## Shape person game

**What will children learn?:** shape recognition, number recognition, counting

**Suggested quantities per classroom:** one game

**Each game includes:**

- Two dice (one with dots and one with numbers)
- 24 shapes made of thin cardboard (i.e., four circles, four squares, eight rectangles, eight triangles)
- One board
- Four tokens (different colours)
- A small bag or plastic folder to store all of the game's items

**Materials needed:**

- One cardboard folder or a big piece of cardboard
- Four plastic bottle caps (four different colours)
- Medium pieces of light cardboard
- Large sheet of paper
- Crayons/coloured pencils, markers (including one black marker)
- Ruler, 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

**Steps:**

1. To make the board: use the folder or a large piece of cardboard and glue a sheet of paper which is the same size on to it. Use pencil and ruler to draw a border on each side of the board which will be wide enough to draw medium-sized shapes within.
2. Divide the border on each side into squares: these are going to be the spaces to that players will land on. Be sure to measure the board's length and width before doing this: each space along the edges should be equal in size.
3. In each square, draw and colour either a triangle, rectangle, circle or square shape and colour them in different colours. Write 'lose your turn' in one or two squares.
4. Use the light cardboard to cut 24 medium-sized shapes (eight triangles, four circles, four squares and eight rectangles). Colour the shapes and neatly apply a layer of sticky tape around them to make them sturdier.
5. In the centre of the board, draw a shape person, using the shape pieces as your outline. As shown in the photo, the person is made of one circle, one square, two triangles, two rectangles.
6. Neatly apply a layer of sticky tape around the board game so it is sturdy and long-lasting.
7. 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 can be made out of wood or cardboard – see above)
8. Cut a piece of fabric the same size as the board and staple it onto the backside as protection.
9. Put all the board pieces, together with four plastic bottle caps which will be used as tokens for the game, into a plastic folder or bag.





## How to play the Shape Person Game

Number of players: Two to four

Rules:

- Share the shape pieces between the players, giving at least one circle, one square, two triangles, two rectangles to each.
- Each player takes a token of a different colour and places it on any space they want.
- Players take it in turns to roll the dice and move their token around the board game, landing on a space. If they land on a space with a shape, they should look to see if they have a matching shape in their pile. Following the example of the shape person in the middle of the board, they use the shape to start building their own shape person next to the board. The turn then passes to the next player.
- If a player lands on a shape that they already have used in their shape person, or a shape which is no longer available in the player's pile, the player can do nothing and passes their turn to the next
- If a player lands on space that says 'lose your turn', the player stays on this space and passes their turn to the next player.
- The first player to build a shape person identical to the one in the middle of the game, with all of the shapes in their pile, wins the game.

## Race to the stars

What will children learn?: number recognition, counting, basic addition and subtraction

Suggested quantities per classroom: one game

Each game includes:

- One board
- Six tokens with orange stars
- Six tokens with pink stars
- One die (with dots or numbers)
- One little bag for tokens and die, plus plastic folder to store the board

Materials needed:

- One large cardboard folder or piece of cardboard – big enough to fit two pieces of A4 paper side by side.
- 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, pencil, eraser
- One piece of fabric to make the board game cover
- Stapler and staples
- One 2.5cm wooden or cardboard die (see the beginning of this section)
- One large roll of sticky tape
- Scissors/cutter
- Glue



### Steps:

1. To make the base, use the big piece of cardboard and glue the large paper sheet on it. On one side, glue two pieces of A4 paper side by side, with the long sides meeting in the middle of the board.
2. Use the pencil and ruler to draw a grid of 24 squares, six along the long side and four along the short side, on each piece of A4 paper. Use crayons/coloured pencils or markers to colour the squares. Write numbers 1 – 6, left to right, along the squares of the long side as shown in the picture.
3. In the middle, between the two grids, draw and colour a row of six stars.
4. Finish decorating the front of the game with crayons, coloured pencils and markers.
5. Neatly apply sticky tape around the edges of the board game so it is sturdy and long-lasting.
6. Draw, colour and cut 12 small stars on the remaining A4-sized paper sheets (six pink and six orange). Stick each to the top of a bottle cap with sticky tape.
7. Cut a piece of fabric so it is the same size as the board and staple to back of the board.

### Hints and tips:

For older children, you could make a grid with 12 spaces along the long side, and use two dice. Children can play the game to practice counting and adding numbers two to 12.

### *How to play Race to the Stars:*

**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.
- Players sit on opposite sides of the short side of the board, with the row of numbers 1 – 6 facing them. One player uses the six orange star tokens and the other the pink star tokens.
- Each player starts by rolling the die and putting the first token on that number on the first row of the grid.
- Players then take turns at rolling the die. Each time, they can either: put a token on the grid on the right number in the first row or move a token already on the grid by the right number of spaces, towards the stars. If they like they can choose to move more than one token, as long as the total number of spaces moved is correct (for example, if the player rolls a six, they can move one token two spaces and the other token four spaces)
- Players 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. Once they reach the star, they leave the token there. The first player who places all of their tokens on their stars is the winner.

## Picking papayas

What will children learn?: Number recognition, counting

Suggested quantities per classroom: one game

Each game includes:

- One board
- One spinner
- 10 “papayas” made of paper
- One small bag for papaya pieces and large bag/folder for the board



Materials needed:

- One medium-sized piece of cardboard (for spinner)
- One A4-sized piece of thick cardboard for board
- One large piece of thinner cardboard (for papayas)
- Optional: One long and thin strip of heavy but foldable cardboard you can use to make a support to stand the board up nearly vertical.
- Crayons/coloured pencils, markers
- One box of paperclips
- Ruler, pencil, eraser
- Sticky tape
- One big piece of fabric
- Staplers and staples
- Scissors/cutter

Steps:

1. Make a spinner following the instructions at the start of this section. Divide the spinner into twelve sections and colour the sections. Draw a different number of dots, from one to 10, in ten of these. In one section, draw a big papaya or a basket of papayas all dumped out on the ground. In the last section, write ‘spin again!’ (see the picture)
2. Neatly apply sticky tape around the spinner so it is sturdy and long-lasting.
3. To make the board, draw and colour a papaya tree on the A4-sized piece of cardboard. Neatly apply sticky tape around the board so that it is long-lasting and sturdy. One layer of sticky tape should be enough.
4. Use the sharp point of the scissors to make 10 small holes in the papaya tree. These should be spread out just like the picture.
5. Take 10 paperclips. Unfold one end so it is pointing straight, keeping the other end of the clip flat. Flip the board over and insert the pointing end of each paperclip through one of the holes so that it is sticking out. Use sticky tape to stick the flat end of the paperclip to the back of the board. At this stage, the papaya tree should have the pointing ends of the paperclips sticking out of each of its holes
6. To cover the back of the board, cut a piece of fabric to the same dimensions and staple it to the back.
7. Use the other big piece of cardboard to draw, colour and cut 10 medium-sized papayas. Make sure that these are small enough to all be able to fit on the tree at once. Colour them in and write on each a different number, 1 – 10. Apply sticky tape to protect them. Then, use a Stanley knife or scissors to make one small hole at the top of each papaya, so that they can hang from pointed ends of the paper clips that are sticking out of the tree.



- Optional: make a stand for the board using the strip of thick cardboard. Fold one end into the middle two inches from the top. Fold the other end into the middle four inches from the bottom. Turn the board over and, using a Stanley knife or scissors, make a horizontal incision through the fabric, two inches down from the top of the board (where the branches are). Insert the short segment of the strip through the incision pointing downwards, and staple it to the board. Straighten the long segment and fold the last segment flat and towards the game. This should have created a stand – just like a photo frame, that will allow the game to stand vertically on a flat surface.

#### Hints and tips:

- If you don't make the stand, you can put the game on the floor and prop it against a wall to play.
- If no cardboard is available, cloth papayas can be produced.
- To make the game more exciting, make or purchase small baskets for each player to put the papayas in. Children will love being able to pick the pretend papaya from a tree and keep it in their own little basket!

### How to play Picking papayas:

Number of players: Two

#### Rules:

- To begin, the children place all the papayas on the tree.
- Each child takes it in turn to spin the spinner:
  - If they spin a number, they should count the number of dots and then take the papaya with that number off the tree (and put it in their basket). If that papaya has already been removed, the turn moves to the other player.
  - If the spinner lands on the basket of papayas all dumped out on the ground or a picture of a big papaya, the child has put all the papayas they already have in their basket back on the tree.
  - If the spinner lands on the words 'spin again', then the child spins again!
- Once there are no more papayas on the tree, each child counts the number of papayas they have: the child with the largest number of papayas is the winner!

### Empty the bowl

What will children learn?: Number recognition, counting, subtraction

Suggested quantities per classroom: one game

#### Each game includes:

- Plastic bowl or dish
- 10 tokens (two different colours)
- Spinner with numbers 1 - 8
- Die
- Big bag for the bowl or dish and spinner and medium-sized bag for die and tokens



### Materials needed:

- Large folder or big piece of cardboard for spinner
- Ruler, pencil, eraser
- Crayons/coloured pencils, markers
- Sticky tape
- Bowl and ten bottle caps

### Steps

Make a spinner as described above. Divide into 8 sections, and draw and colour numbers one to eight on each. Neatly apply sticky tape around the spinner so it is sturdy and long-lasting.

### How to play Empty the Bowl:

Number of players: Two

### Rules:

- The objective of the game is to see who can empty the bowl of the ten tokens with the least number of rolls?
- One child rolls the die and takes out that many tops/tokens. They continue to roll the die, taking out the right number of tops/tokens each time until the bowl is emptied. To keep score of how many times each child has to roll the die, they use the spinner – moving it up by one each time.
- The other player watches while the first plays, then it is their turn to empty the bowl.
- After both have played, the winner is the child who emptied the bowl with the least number of rolls of the die – and who has the smallest number on the spinner.
- Children are practicing subtraction without realising it during this game. As they get better at this game, they can play with more tokens in the bowl.

### All the way home

What will children learn?: Counting 1 - 10

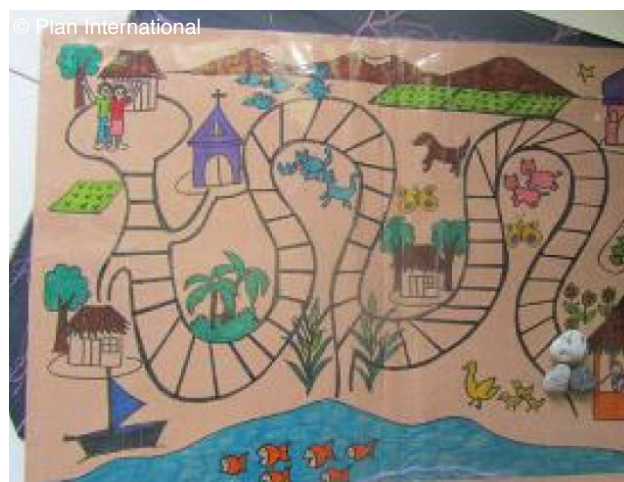
Suggested quantities per classroom: one game

Each game includes:

- Board
- Two to four rocks to act as tokens
- Twenty picture cards
- Medium-sized bag for tokens and cards

### Materials needed

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



## Steps:

1. Cut the large piece of paper so it is the same size as the folder or cardboard that you will use as the board, and glue it to the board.
2. On the board, draw a village with lots of interesting things in it (e.g. pigs, ducks, volcanoes, corn fields, people, etc.) and colour it in. On the bottom right of the picture, draw a centre containing children and educators. On the top left of the picture, draw a little house with family members greeting and waving. Draw a road with divided by different spaces between these (see the photo for inspiration!). Neatly apply sticky tape around the board, so it will be sturdy and long-lasting. Cut fabric the same size as the board and staple it to the back.
3. Using the thin cardboard, cut out twenty picture cards and draw on these the 'things' that are on your board: in different numbers. You need two cards for each number – for instance two cards with one pig, two cards with two volcanoes, two cards with three corn cobs, all the way up to two cards with 10 fish). Neatly apply sticky tape around the cards too.

**Hints and tips:** Ensure the picture you draw on the board detailed, colourful and attractive, and is relevant to the country's culture and landscape .

## How to play *All the way home*:

**Number of players:** Two to four

### Rules:

- Turn all the cards face down.
- Each player picks a rock as a token and places it at the start of the game – the preschool.
- Children take turns to turn over a card. They then count the number of objects in the picture and move their rock 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 to be greeted by family members is the winner.

## Pattern shapes race

**What will children learn?:** Shape and pattern recognition

**Suggested quantities per classroom:** one game

### Each game includes:

- One board
- Two to four different colour tokens (blue, orange, white, green)
- Many picture cards with different shape patterns drawn on them
- One medium-sized bag for cards and a small bag for tokens

### Materials needed:

- Large folder or one big piece of cardboard
- Large piece of paper
- Ruler, pencil, eraser
- Crayons/coloured pencils, markers
- Four plastic bottle caps (different colours)





- Cardboard paper
- Sticky tape
- Glue
- Piece of fabric, the same size as the board
- Stapler and staples

#### Steps:

1. To make the base game, cut the large piece of paper so it is the same size as the folder or cardboard and then glue it onto the folder or cardboard.
2. Using a pencil and ruler draw the board game's base as illustrated in the picture. You need to draw several rows of different shapes (e.g. triangles, circles and squares). The number of shapes drawn must be the same in each row and there must be space between rows and each shape on a row.
3. Connect each shape to the next by drawing a line between them. The line starts at the top right-hand corner of the board and finishes at the last shape situated in the bottom right-hand corner of the board.
4. Use crayons/coloured pencils or markers to colour the shapes of the game. Then select a few and add either a frowning face or a smiling face on these. The first shape in the top right corner of the game should have the word 'start' on it. The last shape on the bottom right corner should have the word 'finish' on it.
5. Neatly apply a layer of sticky tape around the game so it is sturdy and long-lasting.
6. Use cardboard paper to cut out around 30 cards. On each of these draw a shape sequence/ pattern – some more challenging than others. 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?*
7. Draw, colour and cut out "risk" cards: cards with an arrow and a specific shape (triangle, circle or square), 2 – 3 cards with each of the colours on the board, 2 – 3 with a plain cross and the same number with a plain tick.
8. Apply a layer of sticky tape around the cards so they are sturdy and long-lasting.
9. Cut the fabric the same size as the board and staple it to the back.
10. The four plastic bottle caps are used as tokens for the game.

#### Hints and tips:

- The more shapes and rows drawn on the board game, the more challenging and exciting the game is!
- Remember that, to make a pattern on cards, you have to have at least two sequences (e.g. Square, circle, square, circle).

#### **How to play Patterns shape race:**

**Number of players:** Two to four

#### Rules:

- Each player chooses one token and places it on the shape that has the word 'start'. All the cards should be shuffled together and placed face down in a stack.
- The first player turns over the top card and reads the shape pattern on the card. They have to guess the next shape that would be found. For example, if the picture card shows a pattern such as Circle, triangle, circle, triangle, circle \_\_\_\_\_, the next shape would be a triangle. If the picture card shows a pattern such as Square, square, triangle, square, square, triangle \_\_\_\_\_, the next shape would be a square.
- If the player successfully guesses the shape that will follow, they move to the first example of that shape on the board (after the starting shape) and place their token on it. The turn then moves to the next player.

- Children must do the following if they pick up any of the “risk” cards:
  - Arrow plus specific shape (i.e. square, triangle or circle): the child moves their token forward to the nearest example of that shape on the board.
  - Plain cross: the child misses a turn
  - Tick: the child picks up another card
- If the child lands on a smiling face, then they are allowed to move their token forward to the nearest similar shape. If they land on a shape with a frowning face, then they must move their token backwards to the nearest similar shape.
- The winner of the game can either be the child who manages to correctly guess all of the shape patterns on the cards that they pick OR the first child to reach the ‘finish’ shape.

**Note:** Educators may want to use only easier patterns/sequence cards at the beginning, adding in more challenging patterns as children master the game.

## Geoboard: ‘Square it up!’ and ‘Funny shape challenge’ games

**What will children learn?:** number recognition, counting, shapes

**Suggested quantities per classroom:** 4 geoboards per classroom

**Each game includes:**

- Geoboards
- Large number of rubber bands

**For the Square it up game:**

Eight to ten coloured cubes (in two colours)

**For the Funny Shape challenge:**

- Small bag of tokens
- Set of number cards with multiple cards of each of the following numbers: 3,4,5,6,7 and 8

**Materials needed:**

**To make each Geoboard:**

- Wooden board (approximately 25cm x 25cm)
- Wooden or bamboo sticks
- Pencil and ruler
- Rubber bands
- Non-toxic paint
- Carpentry tools to cut wood and make holes (e.g. chainsaw, small-sized drill etc.)
- Glue or other adhesive for wood

**Steps to make the geoboard:**

1. Cut and sand a piece of wood to make a 25 x 25 cm square board. Use a pencil and ruler to mark out a 10 x 10 grid on the board. Using a drill or other carpentry tools, make holes at each of the points in the grid (you should have 100 holes in total).



2. Cut and polish 100 bamboo or wooden sticks, each 5cm long. If you use less holes in the board, then you will need less sticks! Make sure that the width of the sticks matches the width of the holes.
3. Use non-toxic paint to paint the board and bamboo sticks in bright colours.
4. Apply a small drop of glue at one end of each stick and insert the stick in each hole. Allow time for the geoboard to dry, ensuring all sticks are well attached to the board.

## The Square it up game

**Number of players:** Two

**Rules:**

- The two players sit on each side of a geoboard. Each starts by picking two to three cubes of the same colour from the game box, plus elastic bands.
- Each player takes it in turns to stretch one elastic band in a straight line between the pegs of the geoboard. Their aim is to create a square on the geoboard, with no rubber band lines in the middle of the square.
- If one player manages to form a square during their turn, they get to place one of their coloured cubes in the square.
- When no more squares can be formed on the geoboard, the game is over. Each player collects their coloured cubes from the geoboard and builds a tower with them. The player who has the tallest tower is the winner.

## Funny shape game

**Number of players:** Two to Four.

**Rules:**

- Two to four children can play: each has their own geoboard and some rubber bands.
- Place the number cards in a stack, face-down.
- One child turns the top card over, and all children quickly try to build a shape with that number of sides. They can make any shape they want as long as it has the correct number of sides. The first to finish making a shape with the correct number of sides wins a cube or token.
- All children then remove the rubber bands, turn over another card and play again!

## Going fishing

**What will children learn?:** Letter recognition

**Suggested quantities per classroom:** one game

**Each game includes:**

One bag of fish with alphabet letters (two sets)

- One bag of picture cards
- Two boats
- One box to store all items

**Materials needed:**

- Thick cardboard paper
- Thick cardboard





- Sticky tape
- Crayons/coloured pencils, markers
- Pencil, eraser
- Two cardboard insides of rolls of sticky tape
- One small cardboard box
- Stapler and staples
- Scissors

### Steps:

1. On thick cardboard paper, draw 52 fish, cut them out and then use crayons and/or coloured pencils to colour them in and write one letter of the alphabet on each. There should be two fish with each letter of the alphabet. Neatly apply sticky tape around the fish so they are sturdy and long-lasting.
2. On the thick cardboard, draw two boats. Cut the boats out, colour them on both sides, each in a different colour and apply sticky tape around each. Prop each of them inside the inner roll of the sticky tape and staple them in place so they stand up straight (see the photo)
3. Using the cardboard paper, cut out picture cards and draw pictures on these the children will easily recognise (e.g. cat, dog, motorcycle, corn, etc.).
4. Decorate the cardboard box. It will be used to store all of the items for the game.

### How to play Going fishing

Number of players: Two

#### Rules:

- Children sit on the floor or at a table, imagining that the area between them is a big pond. All the fish are placed in the pond face up. Each player chooses one of the boats. The picture cards should be placed between them.
- Each child takes it in turns to pick a picture card. If the child can find a fish with a letter that makes the same sound as first letter of 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, the player puts 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.

### Animal hunt

What will children learn?: Letters and syllables

Suggested quantities per classroom: one game

#### Each game includes:

- Board
- Two or three tokens
- Set of cards with animals drawn on them

#### Materials needed:

- Big piece of thick cardboard
- Thinner cardboard to make the animal cards
- Plastic bottles



- Die
- 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 in a path of stepping-stones winding through a forest. Try and draw at least 50 stones. Apply sticky tape around the board so it is sturdy and long-lasting. Cut a piece of fabric to the same size as the board and staple it to the back.
2. Cut out a set of small cards. On one side draw a picture of an animal you would find in a forest (or cut out a picture from a magazine and glue it on). On the other side of each card, write the number of syllables that the name of the animal has (so for instance rabbit would be two syllables). Again, you could apply sticky tape to these to make them more sturdy.
3. Make a die from cardboard (see the beginning of this section)

### How to play Animal hunt:

**Number of players:** Two to three

#### Rules:

- Each player picks one token and places it on the 'start' stepping-stone. Together they pick 10 – 15 cards with different animals and place them randomly on the board, close to a stepping-stone
- Each player takes it in turns to roll the die and move their token along the stepping-stones by the same number of place.
- If the player lands on a stepping-stone with no animal picture, they do nothing, and the turn moves to the next player.
- If a 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. If they get this right, the player gets to keep the animal picture. Players can check the correct number of syllables by checking the back of the card
- If the player gives the wrong name for the animal on the picture, OR the wrong number of syllables in the name, they must go back to the 'start' stepping-stone.
- The game ends 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.

### Spin and spell

**What will children learn:** Letter recognition and basic spelling

**Suggested quantities per classroom:** one game

#### Each game includes:

- Spinner
- Picture cards with names or words for pictures
- Bag of dry beans



### Materials needed:

- Picture word cards
- Medium-sized piece of cardboard and paper clip for the spinner
- Light cardboard for the picture cards
- Crayons/coloured pencils, markers
- Sticky tape

### Steps:

1. Cut the light cardboard to make picture cards. On each of these, draw and colour in a picture of something that has a simple name with a small number of letters. Write the name below. Pick names of things that have the same number of letters (three to four letters). Try to think also of words that have the same letters (e.g. cat, hat, bat, pat, mat, rat etc.). Neatly apply a layer of sticky tape around the picture word cards so they are long-lasting.
2. Make a spinner as explained at the beginning of this section. Divide the spinner into the same number of sections as there are letters in your words PLUS one. For instance, for the example above (cat, hat, bat, mat, rat) you would have seven sections, one for each of the letters C, A, T, H, B, M, R). In the last section, write the words 'spin again'. Neatly apply sticky tape around the spinner so it is sturdy and long-lasting.

### How to play Spin and spell:

Number of players: Two to four

### Rules:

- Turn the picture cards face down. Each player picks up three to four picture word cards and a collection of beans
- Each player takes turns spinning the spinner. If the spinner lands on a letter that is used in one or more of their word cards, they cover this letter up with a dry bean – on as many cards in which it features.
- The winner is the first one to cover all of the letters of their four words.

## Picture, shape and tangram puzzles

**What will children learn:** Shape and pattern recognition and how parts of something make a whole.

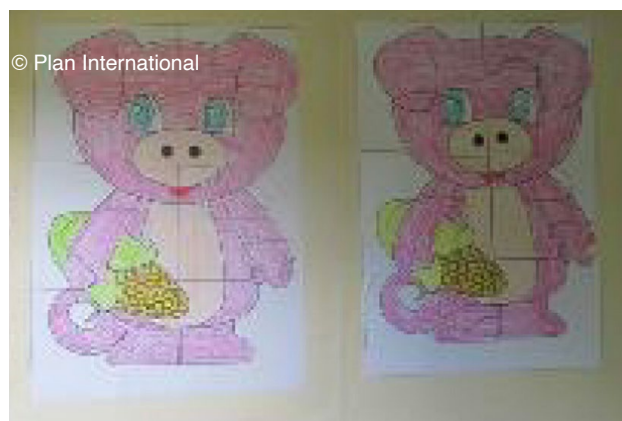
**Suggested quantities per classroom:**

10 different puzzles

### Simple self-correcting puzzle

### Materials needed:

- Cardboard Folder
- Envelope
- A4-sized white paper – two pieces
- Pencil, eraser, crayons/coloured pencils, markers
- Glue
- Scissors/cutter
- Sticky tape





### Steps:

1. Draw and colour in an interesting picture with details (e.g. animal, village, vehicle etc.) on one piece of A4 paper. Create a copy of the picture on the other piece of A4 (for instance by tracing the outline)
2. Cut the cardboard folder into two halves. Stick one picture onto each half.
3. Stick an envelope on the reverse side of one of the folder halves, using sticky tape.
4. Take the other picture and with a thin marker, draw lines and curves on the picture to make six – nine puzzle pieces. Carefully apply a layer of sticky tape over the picture, and then cut along the lines of the puzzle pieces.
5. Put the different puzzle pieces into the envelope.

**Hints and tips:** Pictures can be left in black and white so children can colour them in.

### Using the puzzle:

Children can complete the puzzle, by placing the pieces on top of the cue card. For more of a challenge, they can try to make the puzzle without using the cue card.

## 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.

**Suggested quantities per classroom:** 2 - 3

### Each puzzle includes:

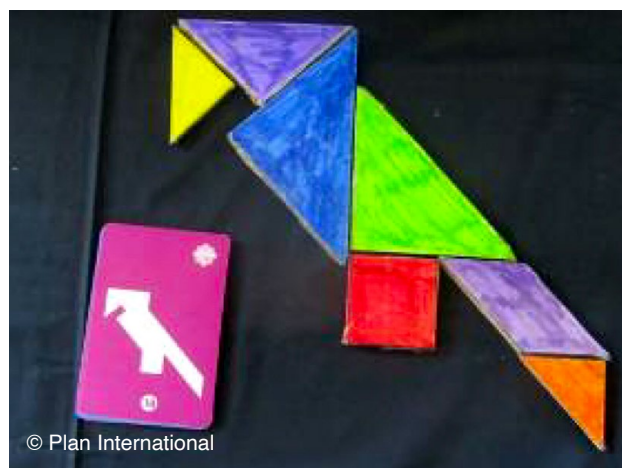
- One small yellow triangle shape
- One medium-sized dark blue triangle shape
- One large light blue triangle shape
- One large light green triangle shape
- One small-sized red square shape
- One small-sized light orange triangle shape
- One medium-sized light purple parallelogram shape
- One bag of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

### Materials needed:

- One big piece of thick cardboard
- One large piece of thinner cardboard to make model picture cards.
- One big white piece of paper
- Ruler, pencil, eraser
- Crayons/coloured pencils, markers
- Sticky tape
- Cardboard paper
- Scissors/cutter

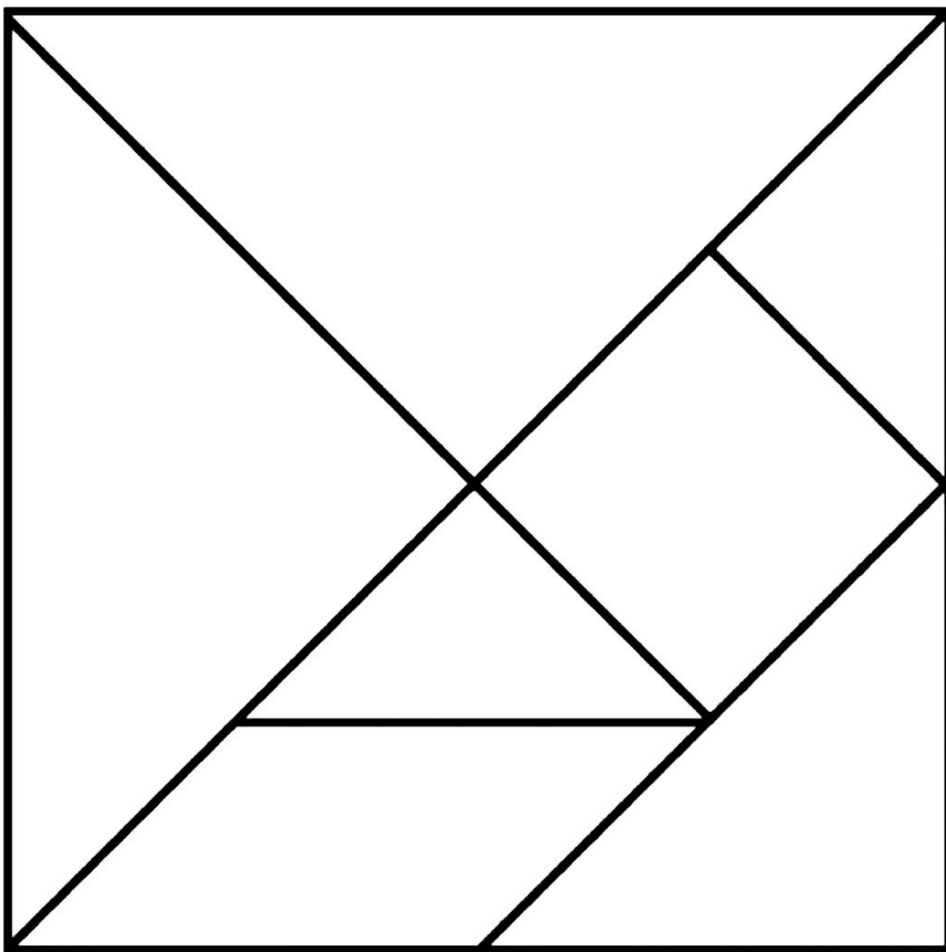
### Steps:

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 large 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. You can use the pattern below.



2. Neatly apply a layer of sticky tape around the cardboard so it is sturdy and long-lasting. Use scissors/cutter to cut all of the shapes.
3. To make the tangram's model picture cards, divide a cardboard paper sheet or two into medium-sized rectangles.
4. Cut model picture cards from the thinner card. One side, draw a shape that could be made with the pieces - such as a parrot, a boat, a house etc. (see the photo on the previous page). On the other side, draw how the different pieces would fit together to make the shape. Neatly apply a layer of sticky tape around each card so they are sturdy and long-lasting.

**Hints and tips:** You can trace or print out the template below to make the tangram shapes. You will need to create a series of shapes yourselves that can then be used for the players cards – or look online (tangram printables) for ideas. See Appendix 5. Usually one tangram set is used at a time, but if you want to create more elaborate pictures, you can use more than one set.



### ***How to play with Tangram:***

**Number of players:** One or more.

**Rules:**

- To start more easily, players pick the cards and use the “clue” slide to put together the same shape.
- For a more difficult alternative, turn the cards. Each player takes it in turn to pick a card: using the seven coloured pieces provided, they try to replicate the shape that they see on the card. Once completed, they can check the clue picture on the other side to see if they have used the same way of putting the shapes together.

## Memory game: symbols

**What will children learn?:** symbols recognition and memorising

**Suggested quantities per classroom:** one game

The game includes:

- One board with 30 squares
- 30 bottle caps with 15 different symbols (two caps with each symbol)
- Folder to store all of the board game items

**Materials needed:**

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

**Steps:**

1. Cut the piece of cardboard into a medium square. Cover the cardboard square by gluing paper on it. Draw a grid on the paper with six squares along one side and five squares along the other: each square should be big enough for the cap to sit comfortably within it.
2. Colour the grid squares in different colours and neatly apply a layer of sticky tape around the board so it is sturdy and long-lasting.
3. To make the tokens, use paper to draw 30 little circles (the same size as the inside of the bottle caps, so they can fit in).
4. Draw 15 different symbols on these circles: two of each. Cut them out and use glue/sticky tape to glue them to the inside of each bottle cap. Let them dry for 30 minutes.

**Hints and tips:** 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.

### **How to play the 'symbols' memory game:**

**Number of players:** Two

**Rules:**

- The two players pick caps with six different symbols and their pair and turn them over. They put them on the board, move them around to muddle them up, and place each cap on one of the board game squares.
- The first player turns over one cap and then a second. If they match, the player gets to keep them both. If they don't match, they turn the caps back over and play passes to the other player.
- The second player has a turn and the same rules apply for them. Players continue trying to remember where the pairs are of each symbol.
- 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.
- As children master the game, they can gradually increase the number of symbols used, until they are using all 15 pairs. 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.





## Memory game: alphabet

**What will children learn:** Letter recognition and memorising

**Suggested quantities per classroom:** one game

**The game includes:**

- 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

**Materials needed:**

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

**Steps:**

1. Draw 130 cards on cardboard paper. Ensure each card will be large enough to draw an alphabet letter and a small picture that matches the letter sound on it.
2. Use 52 cards to draw two sets of cards, each with a lower-case letter from A to Z and a picture that represents the sound of the alphabet letter (i.e. there should be a pair of identical cards for each letter of the alphabet).
3. Use 52 cards to draw two sets of cards, each with an Upper-case letter from A to Z and a picture that represents the sound of the alphabet letter (i.e. there should be a pair of identical cards for each letter of the alphabet).
4. Use 26 cards to make the picture cards: each card should have an object that starts with and has the sound of a different letter of the alphabet (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.). Ideally you should use different pictures to the ones on the letter cards.
5. Once all of the cards are made, neatly apply a layer of sticky tape around them so they are sturdy and long-lasting.

**Hints and tips:** Make sure you write the letters clearly and using the script that is taught in schools.

### ***How to play the 'alphabets' memory game:***

**Number of players:** Two

**Rules:**

- The two players start with eight alphabet cards and their duplicates. They turn them over so they cannot see the letters and lay them out in four lines of four cards.
- The first player turns over a 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.
- The game stops when there are no more cards left. The two players count the number of cards that they have. The one with the most number of cards is the winner.

**Note:** You shouldn't expect children to play with all the cards on their own – there are too many! Educators should help children to set up the game, selecting letters that children have already encountered, for instance during literacy circle). New letters can be gradually introduced in following weeks, and as children master the game, the number of pairs can be increased). Once all 26 alphabet cards have been introduced, children can play by matching alphabet letter cards with picture cards.

## Stack the blocks

**What will children learn:** Letter recognition.

This is a fun game where children are beginning to know some letters, but not all of them!

**Suggested quantities per classroom:** one game

**Each game includes:**

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

**Materials needed:**

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

**Steps:**

1. Produce 52 wooden cubes (ask a carpenter to help if needed). Approx. 2.5 cm in size.
2. With one coloured marker, write one alphabet letter (upper case) A - Z on one side of 26 cubes. Make sure you write the letters clearly and using the script that is taught in schools.
3. With a different coloured marker, write one alphabet letter (lower case) A - Z on one side of 26 cubes.

### **How to play Stack the blocks:**

**Number of players:** Two

**Rules:**

- Each player collects a set of 26 cubes of one colour.
- Using the wooden letter blocks, the first player makes a tower as high as they can name the letters.
- The second child does the same. The one with the highest tower wins a token.



## Dominoes

**What will children learn:** Number recognition

**Suggested quantities per classroom:** one game

**Each game includes:**

- Around 28 domino blocks
- One bag to store dominoes

**Materials needed:**

- Big piece of cardboard (for instance discarded cardboard box)
- Markers
- Ruler, pencil, eraser
- Scissors/cutter



### Steps:

1. Draw a grid of small rectangles on the cardboard: all rectangles must have the same dimensions (for instance 4 by 8 cm, or 6 by 12 cm)
2. Draw a line down the middle of each rectangle and then dots on each side, using different number combinations (e.g. one dot on one half and two dots on the other, one dot on one half and three dots on the other, one dot on one half and four dots on the other etc.). Each half should be either blank or have 1,2,3,4,5, or 6 dots.
3. Neatly apply a layer of sticky tape around the cardboard so it is sturdy and long-lasting. Cut all of the cardboard domino pieces out with scissors or a cutter.

**Hints and tips:** Dominoes can also be produced on thin pieces of wood if you have someone with carpentry skills and tools who can help.

### *How to play Dominoes:*

**Number of players:** Two to four

#### Rules:

- The players sit in a circle and place all the dominoes face down (on the floor or table) before shuffling them around.
- If there are two players, each player picks seven dominoes per player; if there are four players, each player takes five dominoes – leaving them face down. The remaining dominoes are left facing down in a pile called ‘the yard’.
- 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 face up.
- The next player picks a 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. A domino with one blank half can be matched to another domino with any other half. The player places the half of their domino alongside the half with the number that matches on the domino that is already laid down. Dominoes are played end to end only.
- If a player does not have a domino with a half matching any of the dominoes on the table, they take 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 and have the first turn in the next round.

**Note:** To make the game easier for children, all players can have their dominoes facing up at the beginning, and can choose a domino that matches.

## Colour bingo

What will children learn: Shape recognition

Suggested quantities per classroom: one game

Each game includes:

- Two boards
- 32 bottle caps of two colours (16 of each colour)
- One pack of coloured shape cards
- A bag to hold the cards and a folder for the boards



Materials needed:

- One big piece of cardboard
- Two paper sheets (A4-sized)
- Thin Cardboard sheets
- Glue
- Ruler, pencil, eraser
- Crayons/coloured pencils, markers
- Sticky tape
- Scissors/cutter
- Plastic bottle caps (16 each of two colours)

Steps:

1. To make the two boards, glue the two pieces of A4 paper onto the large piece of cardboard and cut around these, using scissors/cutter.
2. Use a pencil and ruler to draw a grid of 16 rectangles on each board. In each rectangle, draw a different shape and write its name inside (e.g. rectangle, triangle, square, circle etc.). Colour the grid's rectangles with a different colour each time (e.g. blue, red, green, yellow etc.). Make sure that the two boards are NOT the same!
3. Neatly apply sticky tape around each board.
4. To make the cards, draw and cut out 32 rectangular cards from the thin cardboard sheets. On each card, draw a different shape and write its name inside (e.g. rectangle, triangle, square, circle etc.). You MUST ensure that you make sixteen cards which match the 16 shapes on one board game, and 16 cards which match the 16 shapes on the other board.
5. Colour the front of each card with a different colour each time (e.g. blue, red, green, yellow etc.). Apply sticky tape around them so they are sturdy and long-lasting.

### How to play colour bingo:

Number of players: two

- Each player takes a board and bottle caps of one colour. One person is the caller. They place the cards in the bag, shake them up, pull one out and call out what is on the card (for instance red triangle, blue square). The player(s) who has this coloured shape cover it with a cap.
- The first player to cover all the shapes on their board calls out 'Bingo!' and wins the game. They get to be the caller for the next game.





### 1.5.3 BOOKS AND PICTURES

**In this section:** Lace-ups; Alphabet, number and picture cards; Books/stories; Alphabet banner.

The books and pictures corner supports children's language development, such as writing, speaking, listening to and understanding the meaning of words and sentences. In it, you will typically find story and picture books, games for literacy, and art activities for making pictures

All art is exciting to children. Drawing pictures helps children develop the fine motor skills needed for writing, encourages creativity, strengthens visual reasoning and helps children to understand representation – 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. Children enjoy talking about their pictures, so art motivates language development. While art materials can be costly and hard to find in remote rural villages, interesting art materials can be made available at no or little cost. Mud and water can be used for moulding. Collages can be made with leaves and bits of paper, and glue can be made from a flour and water paste. Children can practice weaving with string and a notched piece of cardboard. Children also enjoy sewing as an art activity – and this develops reasoning and fine motor skills.

Lace-up puzzles, which are usually kept in the books and pictures corner, support children to develop motor and visual coordination skills, which are essential tools to succeed in writing.

Meanwhile, reading to and with children is one of the most important things educators can do to help children develop their literacy skills. The books and pictures corner creates a place for the educator to sit with a small group of children to 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.

All materials in this corner must be in the mother tongue language: 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.

Also, almost all cultures have materials that promote literacy and can help young children learn. Local stories, songs and fables are ideal to teach early literacy to children: also because they support children to about their family's and community's culture and can also be shared by parents. 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:** through looking at books, posters 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 (or reverse depending on the language).

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

**Physical:** strengthening fine motor skills and control of small muscles in hands through drawing, practicing writing, using pocket charts etc; 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.

## Lace-ups

**What will children learn:** hand-eye coordination and fine motor skills, skills needed for writing.

**Suggested quantities per classroom:** one set

Each set includes

- Cardboard shapes with three to four holes
- Cardboard shaped like animals, people or objects with more than four holes
- Shoelaces

**Suggested materials:**

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

**Steps:**

1. Draw medium-sized shapes, people and animals onto cardboard. Colour/paint these in so they are bright and attractive. Cut out each shape, and apply a layer of sticky tape around the shape to make it sturdy and long-lasting.
2. Using a hole puncher or cutter, make holes at different points around the edge of each shape.



3. Insert a shoelace into one of the holes of each lace-up shape. Make a knot so it is permanently attached to it.

#### Hints and tips:

- 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.

#### How to play lace-ups

Children thread the shoelace through the holes of the lace-up shape - from one hole to another or connecting one shape to another.

#### Alphabet, number and picture cards

**What will children learn:** 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.

**Suggested quantities per classroom:** six sets

#### Each set includes:

Two sets of 26 alphabet cards

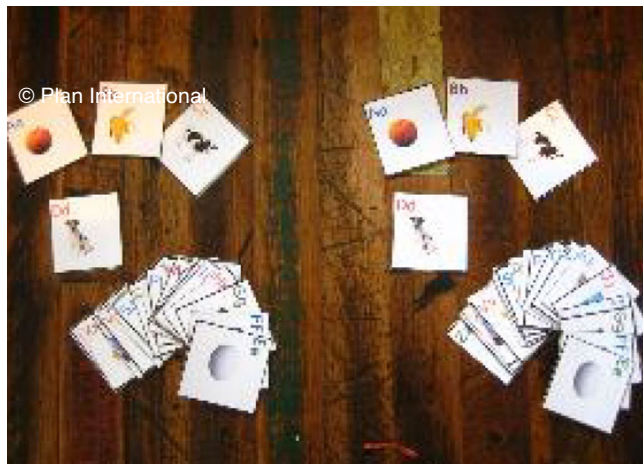
Two sets of 26 picture cards

Two sets of 20 number cards

#### Materials needed:

- Big pieces of cardboard or thick cardboard paper
- Scissors/cutter
- Glue
- Ruler, pencil, eraser, sharpener
- Crayons/coloured pencils, markers, non-toxic paint
- Sticky tape
- Images printed from the internet or drawn on white paper

#### Steps:





### For Alphabet cards

1. Using a pencil and ruler, draw 52 squares, each of 7cm square, on the cardboard. Cut them out.
2. With a pencil, carefully write one alphabet letter in both upper and lower case (i.e. Aa, Bb, Cc etc.) on the top section of two cards (one for each set). Use markers, crayons and/or coloured pencils or paint to colour each letter in different colours.
3. 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.).
4. Neatly apply a layer of sticky tape around them to make them sturdy and long-lasting.

### For Picture cards

1. Using a pencil and ruler, draw 52 squares, each of 7cm square, on the cardboard. Cut them out.
2. Draw the same colourful pictures on a pair of cards 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.). i.e. there should be two cards the same.
3. Neatly apply a layer of sticky tape around the cards.

### For Number cards

1. Using a pencil and ruler, draw 40 squares, each of 7cm square, on the cardboard. Cut them out.
2. Draw and colour in the number one to 20 at the bottom of 20 cards, and repeat this for the other 20 cards. Above each number, 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.
3. Apply a layer of sticky tape around the cards.

### Hints and tips:

If you have access to internet and a colour printer, you can download and print pictures from the internet which are attractive and fun for young children. Alternatively, you can use pictures from magazines – but will need to have enough pictures of the same thing.

These can be used in many ways: for a memory, sorting or guessing game, to make up a story, play 'school' with their friends, or match letters to words.

## Books/stories

### Suggested quantities per classroom:

Classroom libraries should contain about 25 books. Ideally, preschool classrooms should try to add a dozen new books each year.

Children can look at the books during free-play/corner time or the books can be used during story time with the educator.



### Suggested criteria for selecting and buying books:



- Books should have an exciting story line, with a variety of themes, character development, informative pictures and half pages of writing. They should be 12–15 pages long.
- They should include universal themes that connect children to the wider world beyond their village. Where possible select books detailed pictures of children from different countries/ religions doing different and similar things.
- They should challenge – rather than repeat - gender attitudes and expectations about girls and women, boys and men – and how they should behave, and what their roles are. Read all books before purchasing any and make sure that neither the pictures or the storyline reflects gender stereotypes.
- They should expand children's vocabulary by introducing new words; strengthen concept formation, and understanding of why things happen, by introducing new concepts; and arouse emotions!. 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. Ideally two new books per week should be added to the corner, and one familiar book can be repeated.

## Alphabet banner

**What will children learn:** The alphabet, through recognising, sorting and matching letters.

**Suggested quantities per classroom:** one banner

Each resource includes; one alphabet banner (pocket chart) and one or two sets of picture/ word cards

### Materials needed:

- Grain sack
- Scissors
- Ruler, pencil, eraser
- Markers (different colours)
- Transparent plastic tablecloth or sheet
- Lighter or candle and matches
- Fabric to cover the edges
- Sewing materials (needle, thread or machine)

### Steps:

1. Cut the grain sack on one long side and at the bottom to open it into a large rectangle. Use a lighter to burn the edges of the banner to prevent it fraying.
2. Use a pencil and ruler to draw 26 medium-sized rectangles onto the blank inside of the sack, and then to divide each rectangle in half (horizontally). Then draw an alphabet letter in the top half of the rectangle (i.e. A, B, C, etc.). Colour the letters in with markers.
3. Cut a clear plastic tablecloth or equivalent to create plastic pockets across each row and below each alphabet letter. Sew these on to the grain sack: making sure that they are big enough to hold any alphabet/picture/word cards you have (see above).



### Hints and tips:

- 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 or cotton tape to make them sturdier.

### Using the alphabet banner:

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.



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## 1.5.4 SAND AND WATER PLAY

**In this section:** sand and water play learning toys

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 fun, high-energy, language-rich corner - you will find that children talk a lot and cooperate as they play here.

Water and sand play supports the four areas of child development and the following skills:

- Observation, problem solving about scientific concepts, reasoning and analytical skills;
- Comparing/sorting by size/shape/number;
- Counting and arranging items (e.g. big to small) and measuring quantities
- Social skills and the ability to negotiate/cooperate/resolve conflict with other peers;
- Fine motor skills and hand-eye coordination

- 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.

## Sand and water play learning toys

Sand and water play will typically be conducted outside where possible.

### Sand play

- Cups of different sizes, measuring cups, coconut shells
- Spoons
- Wooden sticks for drawing/making designs
- 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

### Hints and tips:

- If some of the resources suggested above are not available or too costly, use local resources. For example, small and large bamboo tubes can be used as an alternative to rubber tubes
- Create novelty by adding plastic bottles of different sizes, new materials, squeeze bottles for squirting, things to float, spoons etc.
- Educators should allow children to add water to the sand so they can mould houses and tunnels. They should always ensure that the area with sand is fenced and protected from animals, and that children wash their hands with soap and water, after sand play.



## 1.5.5 IMAGINATION CORNER

**In this section:** Balance scale, Mat, vehicles, people and animals; Dolls; Other role-play materials; Dress me up paper dolls.

The imagination corner encourages creativity and socialisation. Children learn and play with objects that reflect everyday life, such as dolls or farm animals. They can pretend to be a mother, a shopkeeper, a doctor, 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. However, putting these figures in the imagination corner also, draws interest to this area on the part of children who might not otherwise choose it. The figures don't need to be expensive: drawings of people or vehicles glued to scrap blocks of wood or cardboard will work.

Imaginative play supports all four areas of child development and teaches the following skills:

- Creativity and imagination skills (e.g. creating a pretend story or replicating a familiar experience like being in the kitchen cooking with members of the family);
- Using items as symbols to represent things;
- Assigning and taking on roles in pretend play;
- New vocabulary;
- Using words to express feelings;
- Asking and answering questions about the pretend play and describing the materials which are being used;
- Engaging in the complex conversation required in role plays.



The imagination corner is also where you might see girls and boys pretend playing at being adults, basing their behaviours on what they see from the adults around them – and on the expected behaviours and roles of men and women in their communities. This can provide an opportunity for the educator to talk about this, for instance asking “*why is it daddies that do this? Do you think mummies could do this also? Why don't you swap around and see how this works?*”

## Balance scale

**What will children learn:** concepts of measurement and size (big, small, light, heavy)

**Suggested quantities per classroom:** one balance scale and materials for weighing

**Each resource includes:**

- Balance scale
- Small rocks or other objects which are safe for children to use
- Hook to attach the scale on a wall or flat surface

**Materials needed:**

- One long piece of wood, 50 cm long and 4cm to 5cm wide
- Two large plastic bottles
- Three medium-sized pieces of thick string
- Tools to make holes
- Scissors/cutter

**Steps:**

1. Taking the piece of wood, use a tool (drill or other) to make one hole in the centre, and two holes 1cm away from each end.
2. Use scissors/cutter to cut off the bottom part of two large plastic bottles at an identical height (around 6cm to 7cm). Make sure that the cut edges are smooth and not sharp.
3. Make two holes at the top of the plastic bottle bases: these should be opposite each other and about 1cm from the top. Thread a piece of string through one hole and tie a knot on the outside. Then thread this through the hole at the end of the wooden rod, and back down to the second hole of the plastic base, again tying a knot to secure it there.
4. Use the third piece of string for the hole in the centre of the wooden piece. Make a loop above the rod so it can be hung up (for instance on the wall), and tie knots with the pieces of string below to secure the loop. Hang the balance scale at a height that can be reached by the children. You may need to use a hook or a nail in the wall.

## Mat, vehicles, people and animals

**What will children learn?:** Creativity and language - children can use the mat, vehicles, people and animals to ‘pretend play’ and create stories with or without other children

**Suggested quantities per classroom:** one mat and accessories

**Each resource includes:**

- Grain mat with drawing of typical landscape
- Plastic or wooden vehicles, people and animals
- Bamboo sticks



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### Suggested resources:

- Large grain sack. As an alternative, use a piece of fabric (at least 90 cm x 120cm)
- Pieces of fabric/fabric tape
- Ruler, pencil, eraser, scissors
- Tools to make holes
- Markers and/or paint
- Bamboo sticks
- Plastic vehicles, people and animals (or home-made alternatives if these cannot be found at low cost)
- A small basic sewing kit (needle and thread)
- Soft bag for items

### Steps:

1. Use scissors to cut along one side and the base of the grain sack, so it can be unfolded as a rectangle.
2. Leaving a little bit of space around the edges, draw and colour in a local landscape – including roads, rivers, forests, a village etc. onto the blank side of the sack.
3. Sew pieces of fabric or cotton tape around the edges to create a neat frame for the mat which will not fray.
4. Cut and polish a number of small to medium-sized bamboo sticks.
5. Display the vehicles, people and animals on the mat when setting up the imagination corner.
6. 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 light, 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).
- Show how the bamboo sticks can be used to create little spaces on the mat or pretend buildings and then leave the children to get creative.

## Dolls

**What will children learn:** Creativity and language - Children can use the dolls for role-play/pretend play with dolls representing different people (e.g. mother, baby, nurse) and to create stories with or without other children

**Suggested quantities per classroom:** 4 - 5 dolls

### Materials needed:

- Large piece of fabric (preferably thick and sturdy)
- Two to four sheets of paper
- Sticky tape
- Pins



- Scissors
- Ruler, pencil or marker
- Sewing kit (including 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:

1. Draw a stencil of the basic body parts on the paper: a large circle for the head, a large rectangle for the trunk, a medium-sized rectangle for the arms and a long rectangle for the legs. Make sure that your pattern pieces are the right size for the fabric, remembering you will need to cut out two heads, two trunks, four arms and four legs. Cut them out.
2. Pin the pattern to the fabric and cut out the different pieces of fabric. This will give you a doll with arms/legs that move: for a simpler version, just draw out the shape of the doll in one piece and cut out two versions of this)
3. Sew the head pieces of the fabric together, leaving a small gap big enough to introduce the beans that will be used as stuffing. Pour in the beans and sew the gap closed. Do the same for the trunk and each arm and leg (or for the one-piece doll if this is the route which you take!). Do not overfill the doll's body with beans as it might stretch the fabric too much and potentially break the stitches.
4. Sew the buttons on firmly onto the face to make eyes: use red thread to sew a curvy mouth that darker thread to sew the eyebrows.
5. To make the doll's hair, cut pieces of wool or thick thread/cord – two times as long as you want the hair to be (long or short). Fold it in half and stitch to the head in the middle.

### Hints and tips:

- Try to make dolls of all sizes, shapes, colours and genders and with different facial and body features, as well as clothing of different types. Creating a variety of them will support children in their imaginative play and build understanding of the world outside their community.
- If you cannot access fabric to make the dolls, then use locally available materials such as corn husks.
- Educators should encourage both girls AND boys to play with dolls in the imagination corner, stressing that they are NOT just for girls. This includes looking after dolls as if they were a baby or a younger sibling – something that in many cultures is considered women's work.

### Other role-play materials

Dramatic and imaginative play is enhanced when children have additional items to play with. Consider adding the following materials to your imagination corner:

#### Each classroom set should ideally include:

- Small dishes, spoon, coconut shells, small baskets, plastic bottles, tins and other recycled materials
- Small clothing for dolls (e.g. baby cloth)
- 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



### Hints and tips:

- Make sure all recycled materials are clean and safe.
- Consider creating a recycling box in the community where things like clothes for dress-ups can be donated.
- Educators should encourage children to pretend play in roles which challenge rather than reflect gender stereotypes about what girls and boys, men and women do.

## Dress me up paper dolls

**What will children learn:** Dress me up paper dolls can be used in the dramatic/imaginative play corner. They can support the learning of different skills:

- Ordering/comparing – for instance by ordering the different dress-up items from large to small
- Counting: for instance counting the number of clothing items
- Naming of body parts and what these do
- Understanding language and spacial concepts such as 'Place the shirt below the doll's head'
- Exploring emotions (i.e. sad, happy, angry etc.)
- 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)



### Suggested quantities per classroom:

- 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

### Materials needed:

- Thick paper or cardboard paper (different colours)
- Fabric
- Scissors
- Sticky tape
- Thread
- Markers/crayons (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 and cut them out.
2. Write a few emotion words (e.g. happy, sad, angry etc.) clearly on the coloured paper and cut these out.
3. Cut out pieces of colourful fabric for each of the paper clothing items you have cut out above and stick these to the paper with glue. Remove any surplus to make sure each fabric piece is the right shape.
4. Apply a small layer of sticky tape around each item.



### Hints and tips:

- Make sure you make enough different clothing items so that children can get creative dressing the doll up.
- Use simple emotion words that young children can understand (e.g. happy, sad, angry, excited etc.).



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## 1.6 LEARNING TOYS FOR STRUCTURED PLAY

### INTRODUCTION

Structured play is a part of the day during which children are given a set of play activities with specific rules, materials and length of time. During structured play, educators are often the ones who organise the activity, providing instructions for children to follow either individually or in groups. Structured play activities can take many forms, ranging from games with rules to a group discussion.

Structured play activities also support children to develop useful skills across all four areas of development. Children learn how to cooperate with others and effective ways to work as a team. Structured play helps children learn how to listen carefully, take turns, answer questions, share their ideas, and think of an effective strategy to solve a problem. Structured play can be used to develop skills in specific areas, such as maths, literacy, science, music, and sports.

While structured play activities benefit children significantly, they should not replace free play. Both free play and structured play are elements of quality early learning programs: the daily routine should include both, with one third of the daily routine allocated to free play. Too many structured play activities in one day can result in children feeling stressed and unproductive. Children respond well to an environment with structure, a clear routine and boundaries. However, if they are not offered free playtime, they might miss out on the opportunity to discover themselves, and to develop their own identity, talents and abilities. Mixing free play with structured play is essential to help children regulate their emotions and develop self-confidence.

In the next section, structured play activities are described which focus on two competencies:

- Literacy activities which support the development of listening, speaking, reading and writing skills
- Maths activities which support children to become good observers and problem solvers, and gain logical thinking and maths skills.

Just like free play activities, an ample supply of materials is needed for structured play that will capture children's attention and create a sense of novelty. The latter can be achieved by rotating and using different toys for each structured activity. Some structured play activities require specific materials, such as story books for story time: if the specific materials aren't available, they can be replaced by substitutes wherever possible (for instance slates instead of paper for drawing/writing activities). Other structured activities only need materials which can be used for multiple purposes: 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).

## 1.6.1 LEARNING TOYS FOR BUILDING LITERACY SKILLS

**In this section:** News sharing and journal writing; Story books; Big Books; Pocket chart; Word cards; Rhymes and songs; Alphabet activities and games.

In preschools/ECCE centres, language development is emphasised in every activity throughout the day. In addition, a period (of about an hour) is usually set aside for structured literacy activities, focusing on speaking, reading and writing. Activities include: News sharing/journals; dialogic reading and storytelling/Big Books; rhymes, songs and finger play; and alphabet activities. Creating materials for these is described in this section.

Reading aloud to children has been called the single most important activity for building knowledge required for success in reading. Children's literature is the most valuable tool for educators 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. Educator should set aside time each day to read an interesting story with the children. While and after reading the story, they should ask the children questions, letting them discuss their answers together or with a partner. Afterwards, they could draw a picture of something that happened in the story, or of a favourite character, and then present their picture to the class.

To become skilled and confident readers over time, children need opportunities to acquire skills in the areas mentioned below. Each of these skill areas can be 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. Some quick illustrative activities are described on the next page:

CONCEPT	ILLUSTRATIVE ACTIVITIES
<p><b>1) Talking and listening</b></p> <p>Children develop important pre-reading skills by listening to interesting conversations and talking about their ideas.</p>	<p><b>'Show and tell/class news':</b> The educator selects a different child each day to 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.</p>
<p><b>2) Print and books</b></p> <p>Children learn the correct way to hold books and turn the pages. They need to see printed words around them and realise that the words they speak, hear and read are related.</p>	<p>Educators can support the following: 1) Provide time each day for children to look at picture/story books. 2) Word hunt: give each child a page of an old newspaper to circle words they know. 3) Morning message: write a short greeting or some news on the board while they say the words aloud. 3) Label familiar objects in the classroom. 4) Make a class-book: children dictate the words to the educator and draw pictures for the story.</p>
<p><b>3) Sounds in language</b></p> <p>Children learn 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.</p>	<p>Educators can use the following activities: 1) Clap syllables in a word and find other words with the same number of claps (syllables). How many children have the same number of claps in their name? 2) Let children change a familiar rhyme or song by adding new rhyming words. 3) Say 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.</p>
<p><b>4) Alphabet</b></p> <p>Children know the names of letters and how to write them.</p>	<p>Educators can use the following activities: 1) Make a letter out of mud or bits of string. 2) Jigsaw ducks: Draw a duck shape on 12 pieces of paper. Divide it into three pieces: on one write a letter of the alphabet and on the other two, draw or stick on pictures that match the letter (same sound/first letter). Cut each puzzle in a different way (so that they are self-correcting) and mix them up. Ask the children to put the pieces together properly to make 12 ducks. 3) Tic-Tac-Toe letter toss (with beanbags): divide class in two teams – 'X' and 'O'. Use string or chalk on the ground to make the cross hatch. Chalk letters in each of the nine squares. Each team takes turns to throw the beanbag onto a letter: if they name the letter right, they put an 'X' or 'O' in that space. The first team to get three in a row wins!</p>
<p><b>5) Code-focused skills</b></p> <p>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. Rapid word recognition means they will struggle less and have more time to get meaning from what they read.</p>	<p>Preschool and early grade educators and teachers can use the following activities, always introducing just a few new words at a time: 1) The children's names can be written on individual cards and then sorted by the first letter: this can 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 a set of word cards with high-frequency words and place them in a stack, upside down. Each child spins a spinner or rolls a die to see how many cards to pick up. Each children gets one point for every word they can read. Words they cannot read are placed back at the bottom of the pile.</p>

CONCEPT	ILLUSTRATIVE ACTIVITIES
<p><b>6) Spelling and writing</b></p> <p>Children need a chance to spell and write, 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 instruction begins.</p>	<p>Preschool and early grade educators and teachers can use the following activities: 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 educator can write a short sentence for the children to copy and then they can try and write others by themselves e.g. <i>This is my grandmother.</i> 2) Lacing cards: see above. 3) Dictionary: give each child a notebook so they can make their own dictionary. For each new letter learned, the child could add pictures (or words) whose first letter matches. 4) Print a word on an envelope. Put the letters on individual pieces of paper inside. Let the children practice putting the letters together to make the word, while looking at the envelope. Now turn it over and try to spell the word from memory.</p>
<p><b>7) Fluency</b></p> <p>Children need to learn to read smoothly and with expression and understanding of meaning.</p>	<p>Preschool and early grade educators and teachers can use the following activities: 1) Big Books: these 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. Smaller take-home copies of Big Books allow children to practice at home. 2) Word card games: have pairs of cards with frequently used words and use these for memory or matching games. Two identical sets of cards will be needed.</p>
<p><b>8) Vocabulary</b></p> <p>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 they need to get meaning from what they read.</p>	<p>Preschool and early grade educators and teachers can use the following activities: 1) Short walking field trips - these 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 names and descriptions of animals etc. 3) Object guessing game: educator picks a theme such as objects in a house, animals, children in the class etc. The child makes up a riddle, e.g. <i>I am thinking of something with four legs and you eat on it.</i> 4) Story-books: there is no better way to build vocabulary! Children can be exposed to things outside their everyday experience.</p>
<p><b>9) Comprehension</b></p> <p>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 educators when they: ask questions about words and concepts during the story; evaluate child understanding; expand the child's understanding; and review what was learned.</p>	<p>Preschool and early grade educators and teachers can use the following activities: 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.</p>



The learning toys for literacy 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 movements to hold a book the 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 educator; building social skills and skills to negotiate/cooperate/resolve conflict with other classmates when playing in groups.

## News sharing and journal writing

In many preschools that implemented the CLAC project, educators have used 20 minutes of the literacy circle for journals and news sharing: News sharing is conducted on two days (talking and listening, no writing); Journals for two days (drawing pictures about an experience first and talking about the drawing) and Theme journals are used on the last day (all children discuss the same topic, draw a picture and write a dictated sentence). News sharing and journal writing use the children's experiences as a starting point for developing skills in language, writing and reading. They support the development of the following skills:

**Cognitive:** using symbols to represent experience; using creativity and imagination to write 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 (or vice versa), letter formation; punctuation and capitalisation etc.

They also support the development of 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 educators;
- Increasing interest in the lives of others.



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### Through creating picture journals, 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!

### Materials needed:

- For journals each child needs crayons or coloured pencils and a notebook. If you are making journals especially out of blank paper, then:
- Leave a blank space at the top for children to draw pictures and lines at the bottom for children to write words. Space for about eight to 10 words and a smaller number of pictures per page should be enough
- Create pages for a dictionary at the back with one page for each letter of the alphabet and a small picture of something that begins with that letter. Leave space for children to write their own words or make pictures of other things that begin with that letter.

### Steps:

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

### Day one:

1. The educator 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. After giving them time to think quietly, the educator asks the children to draw a picture of what they were thinking about, with as much detail as possible.
2. While the children are drawing, the educator should move around the room, looking at the pictures, showing interest in the drawings, and asking the children questions in a very quiet voice.
3. At the end, the educator tells the children that tomorrow they will get to show their picture to a friend and tell them about it. They can end the session by writing a morning message on the blackboard. The educator writes it while saying the words. It should be a short sentence. Sometimes the educator might write something funny or tell about a surprise: this helps to make the children anticipate and look forward to the morning message!

### Day two:

1. Children are given five minutes to finish their picture in their journal and add more details. If they can, they can try to write a word or two below the picture or 'scribble write' (five minutes).
2. The educator asks the children to form pairs. Child One shows their picture to Child Two and talks about it. Then child two shows their picture to child one. This should take about five minutes.
3. 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. This second child can pick a third, and so on, as time allows.
4. Educator ends the activity by writing and speaking aloud a morning message on the blackboard again, as on Day one.

### Hints and Tips:

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 educator 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 educator might ask, *Tell me something you would like to happen that would make you happy. This is what I want you to draw a picture of. The picture is about your life.*

At first the drawings will be very simple, but the children will recognise exactly what their drawings mean.

## News sharing

Materials needed: none

Steps:

1. Group the children to work in pairs: if there is an uneven number, one group can have three children.
2. Child One talks about something that they saw or did since yesterday, or anything of interest. Child Two must sit very quietly and listen. When the educator calls time after three minutes, Child Two repeats back what Child One said. Child One gets to say whether Child Two was a good listener. Then the children swap over, with Child One listening to Child Two.
3. For the remainder of the time, a few children get to tell their news to the entire class. The child of the day shares first, and then selects another child to share – and so on until time is up.
4. After the children have shared, the educator can use the game 'Three Questions': here other children can ask questions to those that have shared, to get more information. For example, one child might have shared that they rode in a rickshaw to the market. Their friends might ask *Did you buy anything there? What did you see along the way? How much did the rickshaw puller charge?* The child who shared can pick only three questions to answer. This game keeps children actively involved with news sharing.
5. The educator finishes by sharing their morning message – this might be about a personal event in their life or news around the village.

## Story books

Story-telling, sharing and story book reading supports all four areas of child development:

**Cognitive:** developing a left to right orientation for reading (or vice versa, where for instance for Arabic); building an understanding of ideas from books and pictures; communicating ideas and things that have meaning, understanding concepts; developing understanding of the elements of a story (e.g. plot, character, setting, sequence, conflict resolution etc.); a broadened understanding of the world through exposure to things and events that are outside everyday experience.

**Language:** building a child's interest in books and reading; strengthening oral language skills as children talk about what they have read and heard; becoming familiar with print; developing connections between spoken and written words; expanding vocabulary; developing knowledge about alphabet letters and syllables; recognising sounds that are alike or different; developing knowledge of the high-frequency words typically learnt in primary school.

It also helps in the development of the following skills:

- Understanding of social roles and of emotions;
- Ability to stay calm and focused while reading books.

Materials Needed:

- 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.



### Hints and tips: Effective reading methodology

- Aim to use one commercial story book, one oral folk story and one home-made Big Book each week with the class.
- 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 as you go.
- Read slowly and clearly, with expression and fluency.
- After the story is complete, encourage children to discuss the story. *Who were the characters and how were they different? Were they sad or happy, why? What happened – and why did it happen?* These are all open-ended questions with many 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, the educator should pause and 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?*
- Make sure not to lose the flow: if you interrupt the story too often with too many questions, the children will lose the meaning of the story and this will reduce 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?*

### Characteristics of texts that support beginner readers:

- Placement of text: books with text in the same place on each page 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.



## Big Books, pocket chart and word cards

A Big Book is a child-friendly, fun story especially designed for beginner readers and the younger children. 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.

Big books can be used together with word cards that contain key words from the Big Book, and pocket charts: children can place the cards into the pockets to form sentences.



### Suggested quantities per classroom:

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

### Materials needed:

#### Arts and craft materials for all

- Scissors
- Glue
- Pencil, eraser, ruler
- Coloured pencils, crayons, markers
- Sticky tape

#### Big Books

- Flipchart paper or two pieces of A2-sized paper or normal size newspaper
- 16 A4-sized paper sheets
- Photocopier (if produced centrally)
- One nylon string or stapler and staples (optional)

#### Pocket chart

- Grain sack (or large heavy rectangular piece of cloth)
- One big piece of plastic tablecloth (transparent) or similar material
- Fabric or cotton binding to cover the pocket chart edges
- Needle and thread

### Steps:

#### Big Books

1. Select a topic and draft your story on a little piece of paper. Think about what kind of sentences and images will be used.
2. Use the large pieces of paper/newspaper that you have to make an eight-page book (counting the front and back of each piece of paper).
3. Draw a picture that represents one sentence in the story on each of the eight pieces of A4-sized paper. Glue each picture on the top half of each Big Book page, ensuring they are in the right order of the story. Make the first page the title with an illustration.

4. Glue the other eight A4-sized paper sheets on each page below each picture. Write one short, basic sentence on each piece, that represents the picture and helps to tell the story. Use BIG neat letters.
5. Bind the book using a nylon string or by stapling the book on its left side.

### Pocket chart

1. Use the grain sack or a large piece of fabric to create the pocket chart, which will hang vertically like a portrait (see photo). Ensure that the base you use is large enough to hold a large number of cards.
2. To create the pockets, cut thin strips of the plastic table cloth and place these horizontally on the base, under each other, and leaving space between them. Using a ruler and a pencil, mark each strip into a number of rectangles.
3. Sew the plastic strip to the base along the bottom and then vertically to create the different pockets.
4. To create a frame and prevent fraying, sew discarded fabric or cotton tape around the edges of the pocket chart.



### Word cards

1. On cardboard paper, draw and cut a number of cards that will fit in 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

### Hints and tips:

- Ensure that your Big Books address gender attitudes and stereotypes and feature children with disability in positive ways. For example, if the story involves a nurse, make the nurse a man and the doctor a woman. Have a boy playing with dolls and a girl with a football. Make a story about a child with a disability going to preschool and having a lot of fun there.
- Think up games and activities, including using the word cards, to go with each Big Book.
- Remember that children enjoy a story that is funny or solves a small mystery (e.g. *where is the boy hiding?*).
- Try and prepare a different Big Book to use each month, to keep it interesting for children. Over a period of four weeks, the children and educator 'read' the same big book together: educators can use the effective story-sharing/dialogic reading tips described above. The educator 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. After reading the Big Book, the educator 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. In this way, week by week, children will increase their understanding about words and sentences in the big book.

- The Big Book and follow-on activity would typically be used one day a week, instead of reading an ordinary story-book.

## Rhymes and songs

Using rhymes and songs in preschools/ECCE centres supports child development:

**Cognitive:** pretending to be a character from the song (e.g. Humpty Dumpty); recognising clap patterns and being capable of repeating them (e.g. clap, clap, clap... clap), learning math's concepts (numbers, counting).

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

Songs/rhymes also help children to develop a sense of cultural identity and spiritual values. Finally, songs and rhymes are fun – particularly when accompanied by movement and finger play.

### Recommendations for using rhymes and songs:

- introduce one or two new rhymes or songs each week;
- repeat a familiar rhyme or song on other days;
- increase novelty by adding body movements, finger puppets or changing rhyming words; and
- put a few favourite rhymes or songs on posters and let the children illustrate them
- use traditional rhymes and songs wherever possible. BUT don't forget that some old rhymes and songs reflect and reinforce gender expectations for girls and women, men and boys – in terms of how they should be and behave and what they will be in the future. Try to either avoid using these, or change the words so that they challenge these stereotypes!

## Alphabet activities

Educators can promote learning about the alphabet by organizing a short, fun alphabet activity for a few minutes each day (for instance as part of the literacy circle) by helping children to create letter books/dictionaries with pictures of objects beginning with the particular letter and sound as part of their journals (above); by pointing out alphabet letters throughout the day – for instance as they share story books with children; during art activities. Letter matching or memory games and other board games are also great ways to help children learn



the letters of the alphabet: see the earlier section for many ideas. Educators typically start by teaching consonants as these are easier to learn: helping children to learn the sound of the letter and connect that to the beginning sound of a common word. Once children learn consonant sounds a vowel can be added. In many early learning programs supported by the CLAC project, educators were encouraged to teach two alphabet letters a week, with a review of the two letters on Friday; and to focus on making words from the letters learned at points along the way.

**These alphabet activities will teach children how to:**

- Understand that different letters have different shapes, and recognise letters that have meaning for them first (for instance letters of their own name);
- Recognise other letters of the alphabet;
- Understand that there is a relationship between letters and sounds
- Know the sounds of each letter and connect that to the beginning sound of common words;
- Be able to write each letter;
- Learn that words are made of letters and recognise some key words.

**Suggested quantities per classroom:** a set of resources as follows:

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

**Materials needed:**

**Art and craft materials:** Crayons/coloured pencils, markers or non-toxic paint

- Scissors/cutter
- Glue, Sticky tape
- Ruler, pencil, eraser

**For dictionaries/letter books for each child:** see the description for making journals above

**For Name card:** Big pieces of cardboard or thick cardboard paper

**For large alphabet cards:** 26 medium-sized cardboard pieces or one large piece of cardboard and different colour cardboard paper

**Steps:**

*Name cards*

1. Using the cardboard, draw and cut out medium-sized rectangles: the number of rectangles should match the number of children in the class.
2. Write each child's name on one card in large letters and then colour in. To make them long-lasting, neatly apply a layer of sticky tape around each card.
3. The name cards can be used for alphabet activities as well as to record the attendance at the beginning of the day.

*Letter and alphabet cards*

1. Using the cardboard, draw and cut out 26 squares, each 20X20cm square.
2. On 26 pieces of paper of same size (20cm square), draw one letter of the alphabet (A-Z) and a colourful picture of something that has a name that starts with the letter (i.e. A for Apple, B for Bee, C for Car etc.).
3. Neatly apply a layer of sticky tape around the squares.



## Classroom activities for learning the alphabet

### Name recognition

A good way to start learning the alphabet is name recognition. Below are some activities to help children notice the letters in their name. Each activity should be used on different days. While the activities below refer to the first letter of the child's name, many can be repeated to learn other letters.

#### Using name cards from the attendance chart.

- Divide the class into four groups. Give each group a bowl of uncooked dry beans and each child their name card. Ask the children to count how many letters are in their name. Put a bean on each letter. Ask them to look for other names that have the same number of letters or beans. Put the cards into a group if they have the same number of beans. Now divide the class into two groups and try the activity again. *What did we find out?*
- Divide the class into two groups and give each child their name card. Each child looks at the first letter of their name, and then should look to see if they can find other names that begin with the same letter. The educator helps them say the letter. They lay the cards on the floor in groups. They practice saying the first letter. Finally, the groups show each other their work. *What did we find out?*
- The educator takes the children outside, each with their name card. Each is given a stick and they have time to try to draw the letters of their name in the dirt with a stick.
- Each child holds their name card and says the first letter of their name so everyone can hear. The educator gives them small pieces of straw and string and asks them to try and make the letter shape on the table or floor.
- Children sit in a circle. They put their name cards on the floor. They practice clapping the letters in their name – one clap for each letter. 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.
- The educator gives one sheet of newspaper to each child, with the name of the child written at 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/crayon. The educator keeps the newspaper page to use on other days.
- Children can be encouraged to write the letters of their name on a page in their journal book. The educator moves from one child to another and helps them say the names of the letters.



#### Print in the environment

Labelling familiar objects in the classroom helps children see the connection between learning the alphabet, learning to read and words and objects:

1. In the beginning, label only five or six objects, such as 'door', 'blackboard', and 'clock'.
2. After the first month the educator can add a new word each week, and ask the children if they found it. Alternatively, the class can select the object to be labelled. The educator will make the word card as the children watch, noticing each letter and the sound.
3. The educator can encourage the children to become 'word finders', looking for familiar words on advertisements, cans and boxes, and signs around the community. They can share these during news-sharing.

## Introducing clusters of alphabet letters

Once children have been helped to recognise letters in their own names, educators can begin to introduce clusters of letters from the alphabet. Below are some recommendations:

1. Teach alphabet letters in clusters of about four to five letters, introducing new letters each day. One of the letters in each cluster should be a vowel, so that the letters in a cluster can be put together to make words. Use alphabet cards with pictures: in this way children learn to associate the letter with a sound. The letters that are being learned should be displayed on the wall each day.
2. Inventing a character for each letter can also help children to learn: it can be an object or person that begins with the sound of that letter. The educator and children can make up stories about the letter people. Children can also be encouraged to write the letters in their journals and pictures of words that start with the same sound.
3. After all of the letters in the group or cluster have been introduced, the educator brings them all out and tells a story that uses all the letters. The children can also make up stories. The educator shows the children how to put letters together to make words. The children try it.

## Additional alphabet games<sup>5</sup>

Many of these can be used by educators and later moved to the books and reading corner.

- **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.
- **Buzz:** Use a set of 26 alphabet cards. Mix in five cards, each with a drawing of a bee, and make a stack with the cards face down. The children sit in a circle. The first child turns over the top card and – if they can! – names the letter and the sound, and puts the card at the bottom of the stack (if they cannot, see if another child can help). The stack is passed to the second child, and so on. 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 educator 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. Tip the beans out of the can and see how fast a small group of children can place the beans on the letters. Other children can slowly clap and count together.
- **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 stack of cards, face down so they cannot see the word yet. When the educator 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 educator mixes up the words, passes them out again and repeats the activity three or four times.
- **Wall Word Riddles:** This is a guessing game using the words from the Word Wall Hunt that are already up on the wall (see above). Each child is given one word card from the matching set. The educator chooses one child (this could be the child of the day) and asks them to choose one of the wall words and make up a riddle about it, without saying what it is. For instance, *I am thinking of something that has a square shape and begins with the \_\_\_\_\_ sound.* The child with the card with that word holds it up. All the children pass their word cards to the child to the right. The child who “won” the last word now makes up a riddle about another word on the wall.
- **Clothes Line Words:** The educator makes three stacks of alphabet cards, with consonants in the stacks on the left and right, and 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.

5 Drawn from 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

- **Letter Hunt:** Children work in pairs. Each pair is given one storybook and piece of paper and pencil for keeping score. Child one says the first letter of the alphabet and searches for it on page one of the story book. 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 on page two. 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, and so on until the last page, at which point the children go back to the first page, to look for the next letter of the alphabet. At the end of time, the children count the points to see who is the winner.



## 1.6.2 TOYS FOR STRUCTURED LEARNING ACTIVITIES ABOUT MATHS

**In this section:** Number banner; Calendar and number pocket chart; Maths bags (including Number cards one to 20; Square tiles).

### INTRODUCTION

It is in the early years that children learn the skills that are important for maths throughout childhood. Young children learn maths concepts and skills best through everyday activities and when they have interesting problems to solve. They need to have 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. They must hear and use maths language and trust their ability to solve and explain a problem. If they enjoy maths, and have a positive attitude towards mathematics right from the start, this sets strong foundations for understanding maths all the way through school.



## THE IMPORTANCE OF MANIPULATIVES

If young children are asked to solve problems abstractly with no concrete objects, they will often memorise answers instead of thinking through problems. Over time they may rely too much on their memory – rather than their ability to problem solve. They may seem to be doing well in maths at this stage, but will struggle when maths problems become more complex, because they haven't developed a basic understanding of the concepts. Using maths manipulatives, can help all children be successful at maths, not just those few who have an innate aptitude.

## SKILLS CHILDREN NEED FOR MATHEMATICS

Foundational skills for mathematics that children can learn in early childhood include the following

### 1) Sorting and classifying

Sorting means putting things in groups according to one or more properties (i.e. objects that are red and large). Organising objects according to their properties (size, colour, shape, texture etc.) helps children think logically and develop the language of mathematics. Educators can:

- 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 of objects has more and which has less items.
- Ask questions to help children understand sorting: who likes this type of food and who doesn't? which children have a name which begins with a certain letter and which don't?
- 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.
- Teach Matching – which refers to grouping things according to a rule: *Two shoes to one child. How many shoes will four children need?*

### 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. Educators can:

- Clap or snap their fingers in different “patterns” (number of claps, rhythm) and ask the children to repeat –or create a new pattern.
- Use objects, such as buttons, bottle caps, rocks or large seeds, squares of cloth and leaves, to 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.
- 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 understanding is an important problem-solving tool in mathematics. To write numerals, children



must have the necessary fine motor skills and hand-eye 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. Educators can:

- Add counting activities to daily attendance and other daily routines (for instance as children line up to go home or outside). 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?*
- 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.
- Play the Circle game. Ask six to eight children to stand 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.
- 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.*

#### 4) Comparing

The skill of making comparisons is important in mathematics. Children start by counting the numbers of objects or things they can see in the class, such as shoes of different colours by the door, or girls and boys – and then compare one number to another. They must first understand the concept of equal numbers, 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?* Educators can:

- Give each child a piece of 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.
- Using the water play container, have children sort objects to predict which will float and sink. How many are heavier, how many are lighter?
- Put children into pairs to play a 'more' and 'less' game. Each child 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 which of the two stacks is the winner.

#### 5) Understanding numbers at the concept level

When developing an understanding of numbers as concepts, 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 problems. Relating maths to classroom routines helps children apply maths in a real setting and see the usefulness of maths. Educators can:

- Count out a given number of a small object (buttons, seeds), and ask children to explore and describe the possible patterns, ways that the objects can be arranged. Or use toothpicks/ small sticks and ask children to think of all the different designs that could be made with a certain number of sticks
- 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.
- 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

This means that 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?* Activities in which children write symbolic numbers should only start once children have a strong concept of numbers from working with concrete objects. Educators can:

- Give the children a piece of string and ask them to make a shape. They should then draw the shape in their notebook and write down the number of sides.
- Repeat the addition and subtraction story above, but this time asking the children to write down addition or subtraction problems. Or alternatively give each child a card with an addition or subtraction problem and ask the child to make up a story to fit the problem.
- Play the Circles and Stars game: Put the children into pairs. One child rolls a die and draws the same number of circles on a piece of paper. The second child rolls a die and again draws the same number of circles as the number on the die. The first child rolls the die again, and this time draws the same number of stars in each of the circles. The second child does the same. They each count the stars and write it as an addition or multiplication problem. The largest number wins each round.

## 7) Shapes and space

By playing with and building shapes, children can learn how shapes fit together, can investigate patterns and structures of shapes, and develop spatial reasoning, which is one of the most important skills for being good at maths. Children should be able to describe the characteristics of a shape, draw the shape, find the shape in the environment and make pictures from shapes. Educators can:

- 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
- Ask children to put together paper or block shapes to make a design. Children can then 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?*
- Play the Shape hunt game: the educator draws a shape on a large poster paper and talks about the shape (what is it called, how many sides?). He/she asks the children to look for that shape - in their homes, community, the preschool. In subsequent days, children can share what they found and draw a picture of it on the poster. After several weeks looking for different shapes, the children can count and compare which shape is most common in the environment.
- Give children a piece of string and ask them to find things that are the same length, or longer or shorter. They can then use the string or 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?*
- Give children a number of small sticks, and ask them *Can you build a large triangle using small triangles? Can you build a large square from small squares? How many different shapes can you make using four triangles?*

While this section describes different activities educator can use, it's important to remember that young children do not think about and understand the world as if it were divided into subjects such as maths, language or science. This means that effective activities for learning about maths

shouldn't be limited to just one part of the daily routine: effective educators use maths language and can introduce maths ideas throughout the day and across the curriculum. For instance:

- Make sure each classroom has calendar and a number pocket chart and use this during the daily routine.
- Ask the children to count how many children are present at the morning circle, and how many children are absent
- Check to make sure that each corner has objects to count and encourage counting as part of free 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?*
- Make sure that the puzzles and games corner has maths board games and encourage children to play with these alone or together.
- Make a point of using 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.
- Use maths concepts during story time as they discuss the order of events, make comparisons between characters, and count number of objects etc in the story
- Introduce maths concepts into their questions and conversations with children during corner playtime, making the most of opportunities for meaningful learning on an individual basis, which is the way children learn best.
- Use number songs and rhymes. Check the internet website, "Dr Jean" for maths song lyrics (see [www.drjean.org](http://www.drjean.org)) and google "kindergarten maths songs".
- At all times, they focus on teaching maths through problem solving and play using manipulatives/concrete materials.

Just like the resources in the other sections, the toys for structured learning activities on maths support children's development across all four areas:

- **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?*
- **Physical:** fine motor skills and hand-eye coordination for instance during use of maths bags items
- **Social and emotional:** respecting and caring for group and individual learning toys for maths; following rules, taking turns, sharing and helping classmates
- **Language:** understanding and following instructions during structured maths activities; asking and answering questions;

## Number banner

**What will children learn:** number recognition, knowledge that numbers represent quantity, knowing that numbers can be said and written

**Suggested quantities per classroom:** one banner (1 – 20)

**Materials needed:**

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

**Steps:**

1. Cut the grain sack along one long side and the base, to open it up as a large rectangle. Use a lighter to burn the edges of the banner to stop it from fraying.



2. Using a marker and ruler, draw 20 medium-sized squares/rectangles on the blank side of the sack.
3. Draw a number on the left side of each square/rectangle from 1 – 20. On the right side of each square/rectangle, draw a picture that represents the number (e.g. draw six flowers in the square to represent the number six). Use markers to colour in the numbers and pictures.

## Calendar and number pocket chart

The pocket chart can be used during corner play. For instance, 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 structured learning activities, educators can use the chart as teaching aid for numbers/symbols, calendar days, months and years and at the start of the maths activity (see below).

**What will children learn:** number recognition, organising skills (organizing cards by categories (e.g. months, years and numbers); series and sequencing (for instance by arranging cards in a series - months, years or numbers); the calendar (e.g. knowing that one year has 12 months, one month has 30/31 days); concepts of time: today, yesterday, next week; before and after

**Suggested quantities per classroom:** One set per classroom containing

One Pocket chart

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

### Materials needed:

- One large grain sack (or large rectangular piece of heavy cloth)
- One large piece of transparent plastic tablecloth or similar material
- Fabric/cotton binding to frame to the pocket chart edges
- Big pieces of cardboard or thick cardboard paper and coloured/white paper
- Scissors/cutter
- Ruler, pencil, crayons/coloured pencils, markers or non-toxic paint
- Sticky tape





## Steps:

**Pocket chart:** Follow the instructions for a pocket chart under the Big Book section above. 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.

**Days/months/years cards:** Using a pencil and ruler, draw 21 medium-sized rectangles on the cardboard (or thick cardboard paper). Cut them out. Create days/months/years cards by writing the seven days of the week (on 7 cards), the months of the year (on 12 cards) and write the current year on two cards. Colour these in and apply a layer of sticky tape around each card.

**Number cards:** Using a pencil and ruler, draw 100 rectangles or squares of the same size on the cardboard/cardboard paper. Cut them out and, using coloured crayons, pencils, markers draw and colour numbers from one to 100 on different cards. Apply a layer of sticky tape around each card.

## Conducting 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 educator 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.

## Maths Bags

Maths bags can be used for many different maths time activities, often together with the coloured cubes in the blocks and building corner. Maths bags provide children a set of concrete objects they can use to solve maths problems and develop understanding about maths concepts and numbers. They can be drawn 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 educators have to scramble for materials. Materials for maths bags cost about US\$1 per bag in many countries.



It prevents loss of productive learning time that occurs when educators have to scramble for materials. Materials for maths bags cost about US\$1 per bag in many countries.

**What will children learn:** Aside from the skills in the four domains described above, maths bags can be used to teach specific skills and maths concepts: Practicing sorting objects into groups; identifying shapes; making patterns and finding comparisons; learning how to write numerals.

**Suggested quantities per classroom:** ideally one maths bag per child containing:

- Two strings, each one metre long
- Objects to count and sort, such as buttons, shells, seeds, small stones, small wooden cubes of multiple colours, or 2.5 cm 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). Each bag should contain two sets of objects, each with about 15 to 25 pieces. For example, 15 seashells and 20 large seedpods painted in four colours using non-toxic paint).

- 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); or set of 20 small sticks
- One wooden die with dots, 2.5 cm in size. If it is possible to include two dice per child, make one with dots and one with numbers
- Number cards, one to 20
- Ten square tiles each 2.5 cm in size, made of wood or laminated paper. The front side should be coloured: five white and five red. On the reverse, each tile should be coloured half and half red and white (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 tool for sorting or grouping children. For example, everyone with red mats is in one group etc. These mats help 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 (fabric, woven from banana leaves etc.)

#### Hints and tips:

- Both the educator and children should re-check the contents of maths bags regularly to make sure they still have the right numbers of all of the materials and that there is nothing that needs repairing or replacement. Every few months, educators should try to add a few new items to increase interest in maths: novelty is one of the key ingredients for learning! For instance, they can
- Cut the strings into half-metre lengths. Children can use these to form circles for sorting and comparing objects or to form geometric shapes.
- Add + and – and = cards to the number cards.
- Increase the number of soda bottle caps. These are great for sorting and patterns.
- Increase the number of plastic water bottle caps. These are useful to show addition and subtraction problems by stacking.

### Maths bags: number cards one to 20

Each maths bag should contain a set of number cards one to 20 which can be used in maths challenges and in many of the activities described below.

**What will children learn:** counting and writing numerals; understanding numbers at a concept level; and recording numbers at a symbolic level.

#### Materials needed:

- Big piece of cardboard or thick cardboard paper (and white paper if needed)
- Scissors/cutter and Sticky tape
- Ruler, pencil, crayons/coloured pencils, markers or non-toxic paint



#### Steps:

1. Draw 20 rectangles or squares of the same size on the cardboard/cardboard paper.
2. Cut them out.
3. Use coloured pencils/markers etc to draw and colour numbers from one to 20 on each card. Apply a layer of sticky tape around each card.

**Hints and tips:** Ensure the cards are the small enough to fit into the maths bag, leaving space for the other items, but not so small that the children cannot manipulate them.

## Maths bags: square tiles

Each maths bag should contain 10 tiles (2.5cm square) which can be used in maths challenges and in many of the activities described below.

**What will children learn:** recognising patterns, counting, understanding the concept of numbers, understanding shape and space (i.e. ability to reason in a spatial context and developing spatial reasoning).

### Materials needed:

- Wood OR thick cardboard paper
- Non-toxic paint OR markers/ crayons
- Scissors, Glue, Sticky tape if making of cardboard

### Steps:

1. Ask for a carpenter to cut and sand tiles that are 2.5cm square. Alternatively cut 2.5 cm squares out of thick cardboard.
2. Paint the tiles so that each maths bag will have 10 tiles painted as follows:

**On the front:** five in white, five in red

**On the back:** on each tile, draw a diagonal to form two triangles, then colour one triangle in white and the other in red.

3. If using cardboard tiles, you could also stick on pieces of red/white coloured paper. Finish by applying a layer of sticky tape to make these long-lasting.

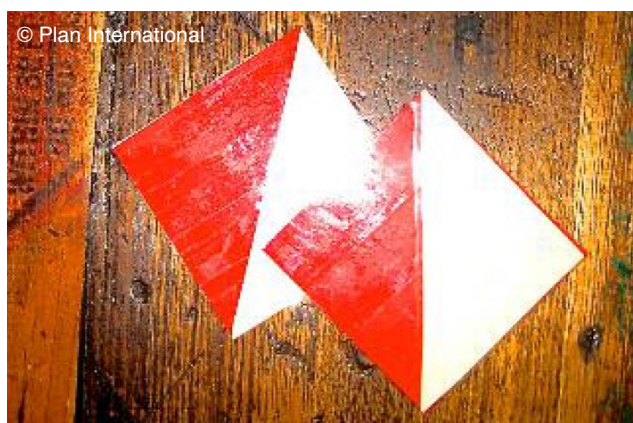
**Hints and tips:** While both options are effective, the wooden option is strongly recommended because it will last longer.

## MATHS BAG ACTIVITIES

In many early learning programs supported by Plan, maths bags have been used as part of a daily structured activity to teach a maths concept, lasting about 20 minutes. The children then have ten minutes to explore and play with maths bags materials any way they like. At this time, the educator observes what the children do with the materials and asks maths-related questions. Some sample activities are explained below.

### Sample maths lessons to teach educators

The following lessons focus on moving beyond teaching children to rote count. Instead, they aim to help children develop the competencies below. They recognise that children need lots of time to explore a number to really understand quantity and what each number means.



## 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 and understands the properties of numbers to 20 - able to count objects and compare groups of things with numbers up to 20. Potentially some skills in counting 50–100; and by fives and tens.
5. Matches quantities of 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 verifies 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

Each of the sample maths lessons can be repeated, to teach numbers two to 12. Number six is used as an example.

ACTIVITY	COMPETENCIES
Materials: Body Blackboard <b>1. Introduce number 6 using these steps:</b> <ul style="list-style-type: none"> <li>• Write number 6 on the blackboard. Children write the number 6 in the air and on the back of a friend.</li> <li>• Invite children to clap, stamp, snap, etc. 6 times each.</li> <li>• Play a circle counting game where children count 1 to 6. The person who counts number 6 squats. Continue until everyone is squatting.</li> <li>• Play the game again starting in a different place. Ask children to predict who will be the last person standing.</li> </ul>	#4
Materials: Sticks, notebook, pencil <b>2. Designs with number 6</b> <ul style="list-style-type: none"> <li>• Take 6 sticks from the maths bag and make a design of the number 6.</li> <li>• Reproduce the design in your maths notebook and write the number 6.</li> </ul>	#4 and #9
Materials: Dice <b>3. “6” counting race</b> <ul style="list-style-type: none"> <li>• Children stand side by side in the garden. Each child has a dice from the maths bag.</li> <li>• Demonstrate how to play: each child will roll a die and take that many jumps. The other children all count together as the first child jumps toward a finish line. Then the next child rolls and jumps with everyone counting.</li> <li>• Now you are ready for the race! Educator calls out <i>roll your dice!</i>: each child rolls their own die and takes the right number of jumps ahead. Once everyone has finished jumping, the educator calls <i>roll again!</i> and each child rolls and jumps according to the number on the die.</li> <li>• The first child to reach the finish line is the winner.</li> </ul>	#4



ACTIVITY	COMPETENCIES
<p><b>4. Recognising numerals and order</b></p> <ul style="list-style-type: none"> <li>Educator writes numbers 1, 2, 3, 4, 5 and 6 on blackboard.</li> <li>Take out your number cards 1,2,3,4, 5 and 6. Put them in a row in front of you.</li> <li>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?</li> <li>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.</li> <li>Check your partner's work and help them if they are having difficulty.</li> </ul>	#4 and #5
<p><b>5. Recognising numerals and order</b></p> <ul style="list-style-type: none"> <li>Select number cards 1 to 6.</li> <li>Put these in order.</li> <li>Above each number put beans or bottle caps to show the number.</li> <li>Form the beans in a way that they form stairs going higher to the number six.</li> <li>Ask children to now form the staircase down the other side using 5-4-3-2-1 beans.</li> </ul>	#3 and #4
<p><b>6. Patterns</b></p> <ul style="list-style-type: none"> <li>Take out 6 each of three objects such as stones, shells, and seeds from the bag.</li> <li>Make a pattern of 3 things, using the materials.</li> </ul>	#2 and #4
<p><b>7. Shapes</b></p> <ul style="list-style-type: none"> <li>For numbers that are multiples of 3, children can form different size triangles. For multiples of 4, children can form squares.</li> <li>The educator says to the children <i>Take out six sticks. How many triangles can you make with your six sticks? Can you use the sticks to make a big triangle?</i></li> <li>Draw a picture of your work in the notebook. Write the number 6.</li> </ul>	#9 and #4
<p>Materials: Number cards 1 - 6 from maths bag</p> <p><b>8. Memory game</b></p> <ul style="list-style-type: none"> <li>Children work in pairs. Each child takes out their number cards 1 to 6. They shuffle the cards and lie them face down in two rows so the order and location of the cards is not known.</li> <li>The educator shows them how to play the memory game, if needed. Each child takes turns to turn over a card and then a second card. If these 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. At the end of the game, the child with the most cards wins. They sort out the number cards and put 1 to 5 back in their maths bag.</li> </ul>	#4 and #5
<p><b>9. Addition and subtraction stories</b></p> <ul style="list-style-type: none"> <li>The educator makes up a story that includes with the number six. Different things happen in the story that requires the children to add or subtract. As the educator tells the story, the children show it with their beans or caps.</li> <li>Example. One little girl was walking to school. She was lonely. But soon she saw two friends. She said, <i>Walk with me. How many children are walking to school? How would we write this? <math>1 + 2 = 3</math>.</i> The story can continue with more 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.</li> <li>The story maths is more fun if the children produce a simple drawing for the picture – or the educator can make one on the board.</li> </ul>	#7

ACTIVITY	COMPETENCIES
<p><b>10. Sorting 6 objects</b></p> <ul style="list-style-type: none"> <li>The educator lines up six children in the front of the class. The educator sorts them according to some property (tall versus short; girls versus boy; colour of clothing). The educator asks the children to guess how they were sorted. Then the educator re-sorts the children and they guess how they were sorted.</li> <li>Children sit in groups of 6. They each take out one bottle cap or seashell from their maths bag. (Or, if they have been on a nature walk, they may have collected objects such as leaves, flowers or stones which could be used now.)</li> <li>Each child puts their selected object into the middle of the group. The children then take turns to find a way to sort the objects into groups according to their properties.</li> </ul>	#1
<p><b>11. Addition and subtraction trains</b></p> <ul style="list-style-type: none"> <li>Take out 6 paper clips and hook them together like a train.</li> <li>Now make different length trains that add up to six. For example, a 4 car train + 2 car train.</li> <li>Can you think of different arrangements?</li> <li>Record these in your notebook or on a slate.</li> </ul>	#7
<p>Materials: Body</p> <p><b>12. Review dance</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>Now children slowly rise from their seat counting forward 1 to 6, and then slowly sit counting backward, 6, 5, 4, 3, 2, 1.</li> <li>Finally, they try to increase the counting speed with claps, snaps, rising and sitting, without losing their balance as they stand and sit.</li> <li>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.</li> </ul>	#2, 3 and 4



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# PART 2: LEARNING TOYS PRODUCTION GUIDE FOR HOME PLAY AND COMMUNITY PLAYGROUPS

## 2.1 INTRODUCTION

Welcome to [Part 2](#) of the [Learning Toys Production Guide](#). This section of the Guide focuses on play and learning materials for young children under six years that can be developed by parents/ caregivers and other community volunteers from low-cost, local and recycled materials. It covers play/learning resources that can be used for:

- Home play and community playgroups

It was developed recognising that parents, families and early learning programmes in many low- and middle-income countries, including in humanitarian settings, do not have enough safe, developmentally appropriate learning resources for young children that support learning through play. It also helps people to understand the importance of play for child development and how children can learn through play.

It is recommended that the overall Guide be used as part of preschool teacher/ caregiver/ educator or parent/volunteer training on ECD, play and play-based learning. Training of Trainers (ToT) workshop guides on play and toymaking are also available from Plan International.

*Disclaimer: All the toys in this section of the 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 toys for children.*

Important background information on early childhood development, play and learning relevant to [Part 2](#) of this Guide can be found in [Part 1, Learning Toys Production Guide for Early Childhood Care and Education \(ECCE\) Centres and Preschools](#). This includes an introduction to:

- ✓ Early childhood development, how young children learn, and what supports their learning;
- ✓ Importance of play for children's learning and wellbeing
- ✓ How adults can support children's play and learning and why the use of developmentally appropriate toys is important

Please ensure you read these sections in [Part 1](#).

## 2.2 LEARNING TOYS FOR HOME PLAY AND COMMUNITY PLAYGROUPS – A BACKGROUND

The importance of children's play is explained [Part 1, Learning Toys Production Guide for ECCE Centres and Preschools](#). 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 achievement of child development milestones. This includes parents from poor socio-economic backgrounds and with basic levels of education. Parents can support their children to develop and master skills by allowing time for play and by ensuring that 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 pictorial child development cards and toy stimulation cards (see [Appendix 2](#) and [Appendix 3](#)) so they can:

- 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 of children from each group;
- create toys that are age appropriate and;
- learn about the ways an effective toy can support child development.

[Play is best supported by parents when they understand:](#)

- ✓ how play promotes child development in all domains;
- ✓ what makes a toy safe; and
- ✓ what toys and games are appropriate for their children's age and development stage.

[Parents support child development and learning through play when they:](#)

- ✓ provide a variety of play materials that can be used in many ways;
- ✓ encourage imagination and creativity;
- ✓ interact frequently with their children; and
- ✓ provide time for play



### Parent support is effective when they:

- ✓ observe their children as they play;
- ✓ interact verbally with their children during play (e.g. asking questions to encourage thinking);
- ✓ join and support play as appropriate in ways that extend rather than interrupt play
- ✓ use the opportunity to reinforce academic skills (e.g. maths and science) and;
- ✓ encourage children to develop friendships and cooperative social values.

This section shows 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. When they produce toys, parents and caregivers can increase their understanding of child development, and improve their relationship and joyful interactions with children.

### Some key things to remember when reading and using this Guide:

- 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 intellectual disabilities need toys that are stimulating for their developmental level only, not age.
- Regardless of the kind of toys, girls and boys should have equal opportunities to play with toys. Care should be taken to ensure that toys produced are not used in ways that reinforce limiting gender roles and stereotypes about girls and boys roles, value, interests and skills.

## Child development milestones

Child development milestones are identified as skills that children gain within a specific period of time. Children master skills that follow a logical order and build on each other. 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.

As seen on the charts for each age group (see Appendix 4) there are a 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 so at the beginning. Parents can support children in the process by using the child development indicator 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 common for children to use all 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 a developmental delay. It is then recommended that parents seek advice from a health professional.

## Toy cards

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

Examples of these cards (see Appendix 3) were created by Plan International Indonesia and Plan International Vietnam, 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 skills at a particular age. They also show how different toys made locally and with available materials can support the different phases of development. Parents can start replicating the toys shown on the cards. When they gain enough confidence and the necessary skills, they can design and produce their own toys for their children.

### 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 ECD professionals to develop skills and knowledge to select and make the right toys for the right age, and to use the toys to stimulate development.

During a parenting program, parents discuss and learn about child development. They understand they are the most important influence on their children's development and early learning. Parents can be given a copy of the toy stimulation cards so they can see examples of toys that can be used for different areas of child development. They can also explore how to make toys that are age and developmentally appropriate for their children using the cards for ideas and guidance.<sup>6</sup>

Interesting and challenging toys do not need to be bought, instead, they can be made from materials that are commonly found as cast-off items and raw materials in any community. For example:

- Fabric can be 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 can be used for musical instruments.
- Paper can be used to make 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.

The following section shows examples of toys that are taken from the toy stimulation cards in Appendix 3 and provides step-by-step instructions on how to make them. Instructions are also provided for toys not found in the cards.

## 2.3 EXAMPLE LEARNING TOYS FOR HOME PLAY AND COMMUNITY PLAYGROUPS

### 2.3.1 EXAMPLES OF TOYS FOR 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 movement; geometric shapes; sounds and colours; 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.

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6 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.

**Physical:** reaching for the toy; holding, grasping, exploring toy with hands and mouth; transferring from one hand to another; squeezing, stroking, pushing, picking up and playing with toy;

**Language:** listening to adult describing 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

### Materials Needed:

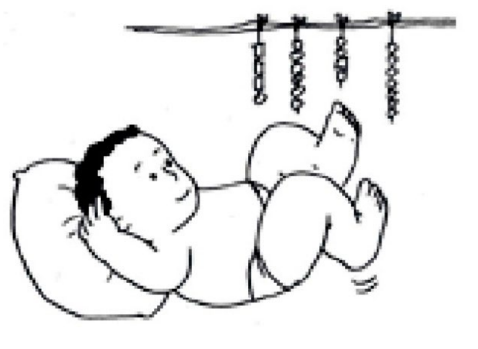
- Three medium-sized wooden sticks
- Roll of string
- Around 15 to 20 small, light and round natural objects (e.g. seed pods)
- Different coloured wool, thread or non-toxic paint to decorate

### Steps:

1. Use a piece of string to join the three wooden sticks together from their centre. It should look like a cross.
2. Cut pieces of string in different sizes.
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.
6. Form a loop with a piece of string and attach it at the centre of the wooden stick's cross so the mobile can be hung from something.

### Tips for production and use!

- The cross can be made with one or two wooden sticks.
- Different objects can be used for the mobile's string e.g. nutshells, seashells, seed pods, buttons. These should be well spaced out.
- Ensure the objects are large enough and attached well so the mobile is safe for very young children.



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

## Bottle instrument

### Materials Needed:

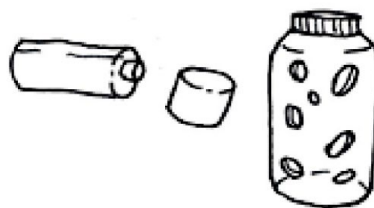
- One medium-sized transparent plastic bottle and cap
- A small collection of medium-sized objects e.g. rocks, seed pods, wooden sticks, coloured pieces of string
- Non-toxic paint
- One long piece of string
- Markers

### Steps:

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

### Tips for production and use!

- Paint the objects for inside the bottle in bright colours to attract young children's attention.
- Close the bottle cap tightly for safety.
- 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

### Materials Needed:

- Stuffing e.g. material like cotton or wool for a soft snake or non-toxic seeds or newspaper for a rough snake
- Pair of tights
- Fabric with different patterns
- Plain coloured piece of fabric
- Two large buttons
- Needle and thread
- One red marker

### Steps:

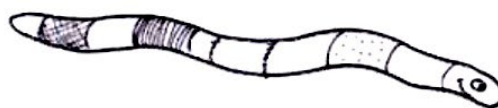
1. Cut one leg from a pair of tights and fill it with stuffing.
2. Close up the open end of the tight to make the snake's body.
3. Sew fabric around the snake's body, including to make a pointy tail.



4. Sew the big buttons, side by side, to make the face.
5. Sew a mouth on the face with a coloured thread.
6. Draw a snake's tongue on a plain coloured piece of fabric, colour it in red, cut it out and sew it on the snake's mouth.

#### Tips for production and use!

- Fabric for the snake's body should have different colours and patterns to attract children's attention and interest in the shapes and colours.
- Ensure the big buttons are sewn on well for safety. Alternatively, draw the eyes with a black or green marker.



*A soft snake can be made out of discarded fabric.*

## Rattles

### Materials Needed – Rattle Design 1:

- One medium-sized cardboard tube
- One medium-sized empty container and lid
- Colourful fabric
- A collection of small objects such as buttons
- Sticky tape
- 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 attach it.
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. Attach with 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. Attach with sticky tape around the edge of the tube.
6. Use coloured wool and string and tighten them around the rattle for decoration.

### Materials Needed – Rattle Design 2:

- 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 and put the lid on tightly.
2. Cut a large piece of fabric, cover the container with it, and attach by sewing together, leaving extra fabric at each end.
3. To create a handle, twist the extra fabric at each end and join together by tying a knot.
4. Cut a long strip of fabric and apply it firmly all around the handle.
5. Cut two small pieces of fabric and use them to tie a knot at each base of the rattle's handle, to make the rattle more attractive.

#### Tips for production and use!

- Ensure all lids are secured tightly.
- Fabric should cover the entire rattle to keep all of the pieces connected and to make it attractive.
- Other objects can be used for rattles such as tins, boxes, etc., as long as they are safe.
- If buttons are not available, they can be replaced by small rocks, non-toxic seeds etc.



*Babies and infant love the sound of rattles. They can be made in different shapes and colours.*

## Picture cards

#### Materials Needed:

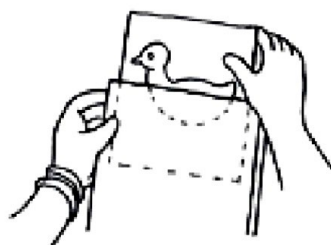
- Different colour cardboard or paper
- A collection of colourful and interesting pictures showing different things e.g. animals, people, vehicles, shapes, etc.
- Scissors
- Glue
- Ruler, pencil, eraser
- Plastic folders
- Sticky tape

#### Steps:

1. Draw 10 to 20 medium-sized rectangles on the cardboard or paper and cut out.
2. Glue one picture on each card.
3. Wrap each card in plastic folder pieces and with sticky tape.

### Tips for production and use!

- Use thick cardboard or paper.
- If plastic folders are not available, use sticky tape on the cards to make them sturdy and long-lasting.
- Pictures can be drawn, collected from newspapers and magazines, or printed from the internet (e.g. Mr Printables).<sup>7</sup>



Picture cards can be either drawn or printed from the internet. These pictures were printed from a website called [www.mrprintables.com](http://www.mrprintables.com)

## 2.3.2 EXAMPLES OF TOYS FOR 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 adult play behaviour; starting to recognise colours; starting to count the numbers of things 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 movement of the toy.

**Social and emotional:** playing alongside other children; developing own choices and preferences; 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; 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; listening to 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.

<sup>7</sup> Mr Printables, Printable Vocabulary Flashcards, Fruit and Vegetables Card, 2012, accessible from [www.mrprintables.com](http://www.mrprintables.com)

## Streamer

### Materials Needed:

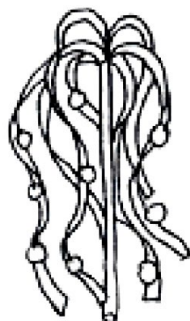
- One long wooden stick
- Fabric with different patterns, or old clothes
- String or wool

### Steps:

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

### Hints and tips:

- Ensure the wooden stick is safe for children to use. Cover both edges of the stick with wool or other soft materials. Remove any sharp edges.
- Use fabric, string/wool with different colours and patterns to make the streamer attractive.



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

## Box kebab

### Materials Needed:

- Six small rectangle-shaped boxes (or square ones)
- 1 long wooden stick
- Non-toxic paint
- Scissors
- Sticky tape

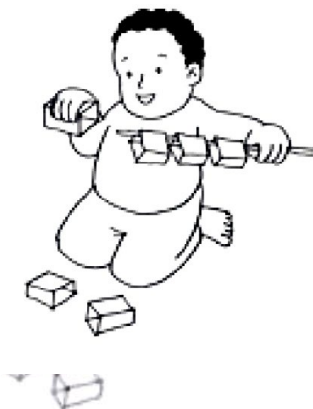


### Steps:

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. Thread onto the stick for use.

### Tips for production and use!

- Ensure the wooden stick has no sharp ends so it is safe for children to use.



*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)

#### Suggested resources:

- One medium-sized box
- Sticky tape
- Non-toxic paint
- Scissors
- Fabric
- String or wool
- Hole puncher
- A small collection of medium-sized objects (e.g. bottle caps, rocks, seedpods, etc.)

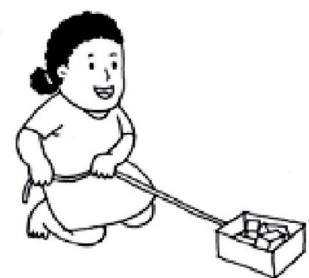
### Steps:

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 and apply a layer of sticky tape around the outside so it is sturdy and long-lasting.
3. Make a small hole on one of the sides, but not the base.
4. Cut long pieces of string or wool.
5. Join and plait them to form a long and sturdy lace and tie a medium sized loop at one end
6. Insert the other end of the lace in the box's hole and secure it with a knot
7. Cut a piece of fabric that is the same size as the box's base and put inside the box.

8. Take all collected objects and insert them in the trailer.

### Tips for production and use!

- Collected objects can be painted with non-toxic paint to make them more attractive.
- Make the lace long enough for children to be able to drag it while standing up and walking.



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

## 2.3.3 EXAMPLES OF TOYS FOR CHILDREN AGED FROM TWO TO FOUR YEARS

The examples of toys for children aged two to four years support child development in the following ways:

**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/dramatic play with the toy/game; asking or responding to questions about the toy/game.

**Social and emotional:** smiling when playing with toy/game and praised by an adult; showing understanding of toy's/game's instructions and rules; being able to play with the toy/game alone or with others; learning how to share; expressing feelings; developing preferences and confidence.

**Physical:** using fine and gross motor skills; using hand-eye coordination; coordinating two actions simultaneously (e.g. walking and talking with a phone).

**Language:** following simple directions and instructions; saying a few words and small sentences about the toy/game, including asking questions and having pretend play conversations; pointing at the toy/game when named; naming shapes and colours.

### Windflower

#### Materials Needed:

- Two different coloured sheets of A4 paper
- One small pipe cleaner
- Scissors
- Sticky tape
- Stapler and staples
- Ruler, pencil and eraser

#### Steps:

1. Apply a layer of sticky tape around the two A4-sized paper sheets to make them sturdy and long-lasting.
2. Roll one piece of paper on its long side and staple both edges to form a tube.
3. Cut the other paper sheet into a big square.
4. Draw diagonal lines to divide the square into eight triangles of the same size.
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.
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.

#### Tips for production and use!

- When cutting the triangles in the square, don't 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 so the flower can spin.



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

### Walking rope

#### Materials needed:

- 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 the string.
4. Once finished plaiting, tie a knot at the other end.

#### Tips for production and use!

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



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

## Bead string

Suggested resources:

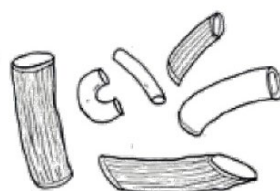
- Medium-sized piece of string
- Tube shape pasta (10 to 15 pieces)
- Non-toxic paint
- Different colourmarkers

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. Once the paint is dry, draw different patterns on the pasta e.g. stars, hearts, dots, waves etc.
4. Thread the pasta beads on to the string to make the bead string.

Tips for production and use!

- Ensure the string is longer than the child's neck to avoid choking.
- If pasta is not available, other objects can be used if they can be threaded onto string and are safe for children.



*A bead string helps children to develop their fine motor skills.*

## Playing phones

Materials needed:

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

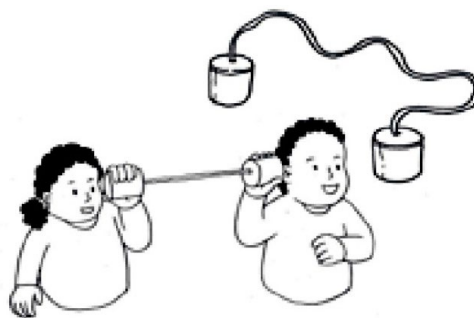
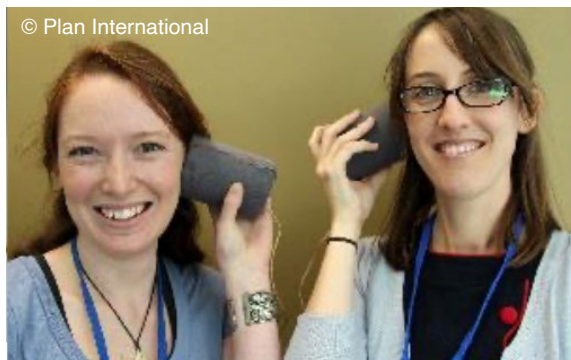
Steps:

1. Cut the bases of the two tins or boxes.
2. Insert the end of the piece of string into the inside of each of the tins or boxes to connect the boxes together.
3. Cut two long and large strips of fabric; wrap each one of them around the outside of the tins or boxes and secure by sewing together, leaving surplus fabric at the end
4. To close each end of the tins or boxes, sew the surplus fabric together tightly and tuck inside each tin or box to create phone receivers for children's ears.



### Tips for production and use!

- Make sure the edges of the tin are not sharp, for safety. Cover with masking tape if needed.
- If fabric is not available for the outside, paint the tins or boxes with homemade and non-toxic paint.



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

## Horse puppet

### Materials Needed:

- Large brown sock
- Soft materials to stuff the horse head (e.g. pieces of fabric, stuffing or cotton)
- Pieces of string, wool or strips of fabric (ideally black, white, grey or brown)
- Fabric (ideally black, white, grey 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 draw two dots inside to make eyes, sew them side by side at the bottom of the sock.
3. Draw two oval-shaped dots (nostrils) and a small upward curve (mouth) on the tip at the bottom of the sock to finish the horse's face.
4. To make the mane, cut short pieces of wool/string/fabric strips and sew them in a row on top of the horse's head.

### Tips for production and use!

- Stuff the sock as much as possible.
- Sew the horse's mane on 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 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.*

## Colour sorting game

### Materials Needed:

- One empty egg carton (for six eggs). If egg cartons are not available, use a collection of small baskets or boxes for sorting
- Six 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 and use the side with the egg holders.
2. Paint each egg holder in a different colour.
3. Paint each of the six corks with the same colours. One 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 fabric at both ends with two pieces of ribbon.

### Tips for Production and Use!

- 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.
- If corks are not available, use similar type of items (e.g. stones).
- Ensure the paint is non-toxic.
- To make the game more challenging, use different sized objects.



*A colour sorting game can be made with an egg carton, non-toxic paint and corks.*

## Dolls and mushrooms

### Suggested resources:

- Four medium-sized wooden sticks
- Wool or string
- One button
- Fabric
- Ribbon
- Two seedpods (one round and one flat)
- Glue
- Scissors
- Thread and needle
- Corks

### Steps:

1. Form a cross with two wooden sticks and glue them together to make a doll's body.
2. Wrap wool or string around the cross.
3. Make miniature clothing using fabric, thread and a needle, including a jacket with a button so doll can be dressed and undressed.
4. Use one seedpod and cover it with fabric to form the doll's head, use thread to sew eyes, nose and mouth and attach to one end with ribbon.
5. Put clothing on the doll to finish it.
6. Mushrooms can be made by putting some stuffing inside a cut out circle of fabric, and attaching it to the top of the cork by wrapping string or wool around the outside

### Tips for production and use!

- Ensure buttons are securely fastened for safety.
- Ensure the wooden parts have no sharp bits.
- Dolls can be made in different ways with a variety of materials.



## 2.3.4 EXAMPLES OF TOYS FOR 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; knowing colours, patterns and shapes; knowing concepts like large/medium/small, more than/less than; counting; knowing and understanding rules; using for pretend play; asking questions in relation to the toy/game.

**Social and emotional:** playing with the toy/game alongside and with other children; being able to share/take turns; looking after the toy; playing cooperatively; knowing and understanding rules; asking for help when needed; supporting imaginative play.

**Physical:** using fine and gross motor skills; using hand-eye coordination.

**Language:** asking questions about the toy/game and for help when needed; using language to express feelings; speaking clearly in sentences and using many words when playing with and describing the toy/game; being able to name the colours/shapes of the toy/game; counting items.

### Puzzle

#### Materials Needed:

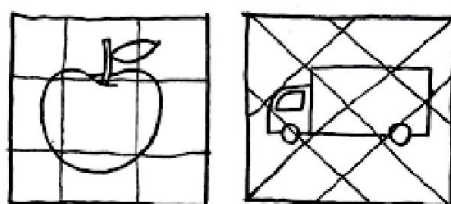
- Square or rectangle shaped piece of cardboard
- Coloured pencils, paints or markers
- Ruler, pencil, eraser
- Sticky tape
- Scissors

#### Steps:

1. Draw a picture on the cardboard piece.
2. Colour the picture with a variety of bright colours.
3. 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 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.

#### Tips for production and use!

- 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 square or other different shapes.



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



## Bowling set

### Materials Needed:

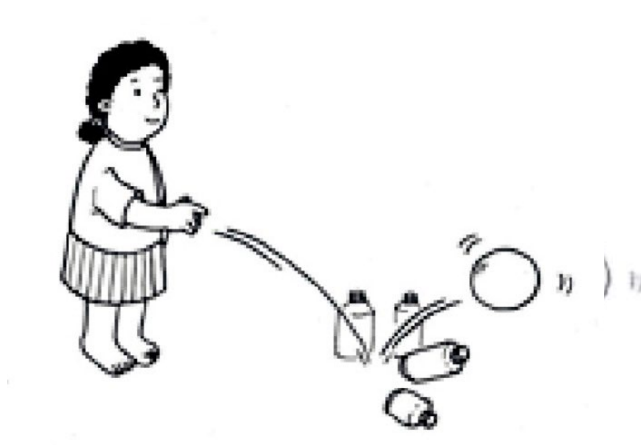
- Six plastic bottles
- Different coloured fabric with different patterns
- Needle and thread
- Soft materials for stuffing e.g. small pieces of fabric, cotton or stuffing
- Large sock
- Scissors

### Steps:

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

### Tips for production and use!

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



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

## Differently sized numbered boxes

### Materials Needed:

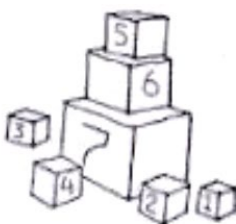
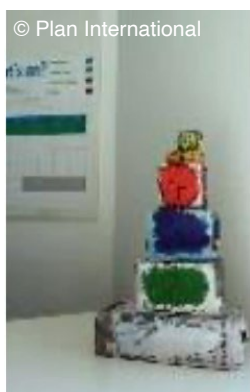
- Six different-sized boxes
- Recycled paper such as newspaper
- Non-toxic paint (different colours)
- Marker
- Sticky tape

### Steps:

1. Collect six different-sized boxes.
2. Wrap them with recycled paper.
3. Paint each side of each box with one colour
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 another box etc.).

### Tips for production and use!

1. If you can't get different-sized boxes, 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 don't get wet.



*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

Design sticks are easy to make and can be used in a variety of ways e.g.

- Counting
- Making pictures with sticks e.g. house, car
- Making patterns e.g. One small stick, one medium stick, one large stick, one small stick, one medium stick, one large stick etc.
- Making numbers with sticks e.g. 1, 2, 3...
- Recognising and naming colours of each stick
- Drawing pictures with sticks and explaining them
- Practicing writing name with sticks and other simple words
- Making shapes and copying designs

### Materials Needed:

- 20 thin wooden sticks (e.g. any type of wood such as bamboo, kebab sticks etc.)
- Scissors or something to cut with.

### Steps:

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

### Tips for production and use!

- Ensure the sticks are safe for children to use.
- Sticks can be painted with non-toxic paint.
- Store safely when not in use, in a bag or box.



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

## Lacing puzzle

### Materials Needed:

- One flat piece of thin wood or cardboard in a rectangular shape
- 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 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.

### Tips for production and use!

- Ensure paint is non-toxic and safe for children.
- If hole punchers are not available, use another tool 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.



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*Lacing puzzles support children to develop fine motor skills, also important for learning how to write.*



# APPENDIX 1: SCHOOL READINESS INDICATORS FROM FOUR TO SIX YEARS<sup>8</sup>

SOCIAL AND EMOTIONAL DEVELOPMENT	HEALTH AND PHYSICAL DEVELOPMENT	COGNITIVE DEVELOPMENT	LANGUAGE DEVELOPMENT
<p><b>Sense of self</b></p> <ol style="list-style-type: none"> <li>Likes self and feels valued.</li> <li>Adjusts easily to new situations.</li> <li>Demonstrates appropriate trust in adults.</li> <li>Recognises own feelings and manages them well.</li> <li>Confident to express needs.</li> <li>Is learning to practice cultural and spiritual values.</li> </ol> <p><b>Responsibility for self and others</b></p> <ol style="list-style-type: none"> <li>Follows through on simple tasks to take care of self.</li> <li>Helps others.</li> <li>Takes responsibility for own wellbeing without being told to do so.</li> <li>Follows routines and rules.</li> <li>Respects and cares for home, classroom and personal items.</li> </ol> <p><b>Social behaviour</b></p> <ol style="list-style-type: none"> <li>Sociable, plays well with other children, has at least one friend.</li> <li>Shows empathy for peers and stands up for what is fair.</li> <li>Able to control own behaviour and impulses.</li> <li>Uses respectful words to resolve conflicts.</li> <li>Can tell right from wrong.</li> </ol>	<p><b>Gross motor</b></p> <ol style="list-style-type: none"> <li>Demonstrates basic movements – runs, jumps hops, skips, balances.</li> <li>Uses body movements to express feelings and needs.</li> <li>Shows coordination with swings, ropes, climbing, etc.</li> <li>Can throw, kick and catch.</li> </ol> <p><b>Fine motor</b></p> <ol style="list-style-type: none"> <li>Controls small muscles in hands: pours, cuts, traces, twists, inserts, ties, pounds.</li> <li>Coordinates hand-eye movement.</li> <li>Uses tools for writing and drawing.</li> </ol> <p><b>Healthy body</b></p> <ol style="list-style-type: none"> <li>Uses toilet.</li> <li>Washes hands with soap after toilet and before eating.</li> <li>Eats three nutritious meals every day (protein and fruits and vegetables).</li> <li>Drinks safe water.</li> <li>Is immunised, takes vitamin A supplement, and is de-wormed.</li> <li>Lives/plays in clean and safe environment, protected from injury.</li> <li>Sleeps under insecticide treated nets in malaria regions.</li> <li>Can identify community health worker.</li> </ol>	<p><b>Observation and problem solving</b></p> <ol style="list-style-type: none"> <li>Observes with curiosity.</li> <li>Asks questions, <i>What? Why? How?</i> (Without fear.)</li> <li>Shows persistence in solving a problem.</li> <li>Uses creativity and imagination.</li> <li>Reflective; applies learning to new context.</li> </ol> <p><b>Logical thinking and math</b></p> <ol style="list-style-type: none"> <li>Compares, sorts and matches objects by size, shape, colour, number, amount.</li> <li>Organises by category.</li> <li>Arranges objects in series (for example, big to small).</li> <li>Recognises patterns and can repeat them.</li> <li>Shows awareness of time and sequence.</li> <li>Understands location and position words (for example, above).</li> <li>Counts objects accurately, not by rote to 10 or 20, some skills at higher level, up to 50 or 100.</li> <li>Solves puzzle-picture and geometric puzzles of up to 12 pieces.</li> </ol> <p><b>Represents with symbols</b></p> <ol style="list-style-type: none"> <li>Takes on pretend roles.</li> <li>Makes believe with objects.</li> <li>Uses a symbol to represent.</li> </ol>	<p><b>Listening and speaking</b></p> <ol style="list-style-type: none"> <li>Talks with others about personal experiences/views.</li> <li>Describes objects, events and relations.</li> <li>Expresses feelings in words.</li> <li>Actively listens to others (can repeat back and ask questions to further understanding).</li> <li>Notices differences in sounds.</li> <li>Uses new vocabulary.</li> <li>Understands and follows oral directions.</li> <li>Asks and answers questions.</li> <li>Actively participates in conversations.</li> </ol> <p><b>Reading and writing</b></p> <ol style="list-style-type: none"> <li>Draws to represent ideas and develops motor skills to write.</li> <li>Enjoys and values oral stories and storybooks.</li> <li>Comprehends what is read.</li> <li>Knows that print carries a message.</li> <li>Knows that spoken words can be written down.</li> <li>Knows letters and sounds.</li> <li>Writes name, alphabet, and some words.</li> </ol>

8 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

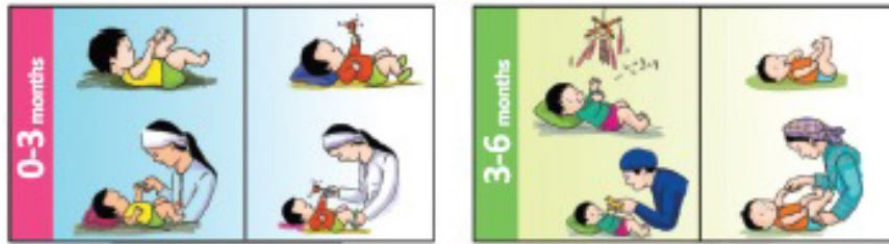
# APPENDIX 2: EXAMPLES OF PICTORIAL CHILD DEVELOPMENT CARDS<sup>9</sup>

## Gross Motor Development



9 These examples of pictorial child development cards were produced by Plan International Vietnam with the Vietnam Women's Union as part of the Gia Lai Early Childhood Development project, funded by Ministry of Foreign Affairs and Trade (MFAT) in New Zealand and with support from Australian Aid. The content was drawn from Plan International Australia's *Strengthening Families for Better Early Childhood Outcomes Curriculum Guide* by Deborah Llewellyn, 2012. Other examples of pictorial child development cards can be found in this guide, from Plan International Uganda <https://plan-international.org/publications/curriculum-guide-strengthening-families-better-early-childhood-outcomes>

# Fine Motor Development





# Cognitive Development





# Language Development

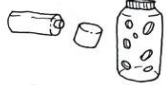
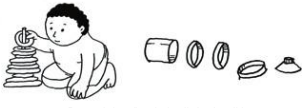







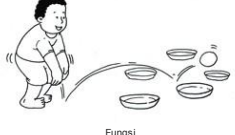





# Social and Emotional Development














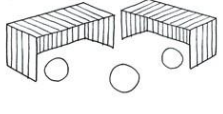





# APPENDIX 3: EXAMPLES OF PICTORIAL TOY STIMULATION CARDS (Plan International Indonesia)<sup>10</sup>

## Botol/kaleng/toples

0-1 tahun	 Tutup bagian atas dengan lem	 Potong kaleng/botol plastik dan bersihkan		
1-2 tahun	 Sediakan tutup ukuran berbeda	 Berhati-hatilah agar anak tidak memasukkan benda kedalam mulut	 Anak bisa mengisi botol/toples dengan pasir	
2-4 tahun			 Paling besar Paling kecil Ukuran	
4-6 tahun	 Fungsi	 Gunakan tutup botol untuk memainkan permainan	 Bermain telepon-teleponan	 Menanam tanaman


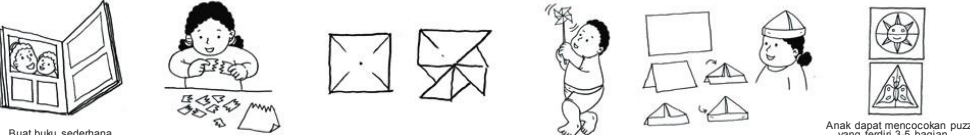
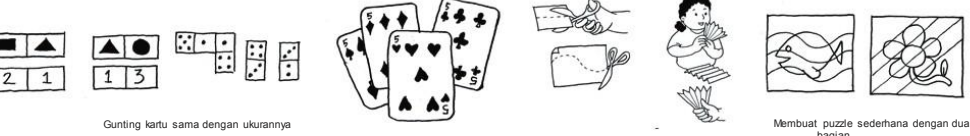
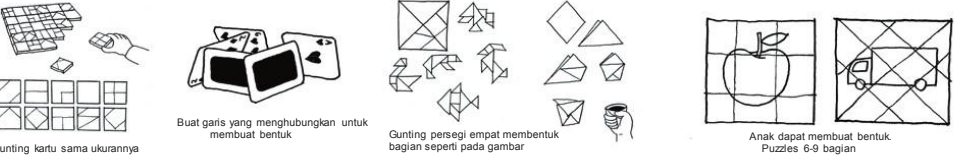
## Boks/dus

0-1 tahun		 Gunakan boks/kardus untuk menyimpan mainan anak	 Tempelkan gambarfoto di samping boks	 Gunakan boks untuk duduk sendiri	
1-2 tahun		 Buka tutup boks Masukan boks satu ke dalam boks yang lain			
2-4 tahun	 Membuat kereta atau mobil	 Gunakan dos korek api		 Gunakan boks untuk membuat mebel buatan	 Gunakan boks untuk mensortir obyek
4-6 tahun	 Membuat rumah-rumahan	 Membuat bentuk		 Memasukan obyek kedalam boks untuk membandingkan berat dan suara	




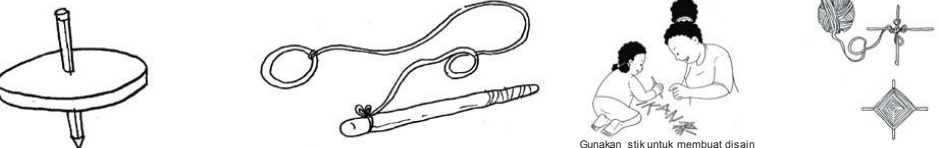
10 Pictorial toy making cards were originally developed by Carmen Velasco, Lynn Patterson and Deborah Llewellyn (Pro Mujer, 1990) and were adapted by Plan International Indonesia in 2013, as part of the Community Managed ECD project in eastern Indonesia, supported by Plan International Australia and Australian Aid. The content was drawn from Plan International Australia's *Strengthening Families for Better Early Childhood Outcomes Curriculum Guide* by Deborah Llewellyn, 2012. Other examples of pictorial toy making cards can be found in this guide, from Plan International Uganda <https://plan-international.org/publications/curriculum-guide-strengthening-families-better-early-childhood-outcomes>



## Kertas













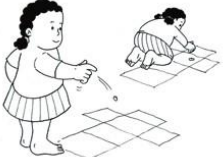
0-1 tahun	 <p>Membentuk bentuk wajah</p> <p>Bungkus gambar dengan kantong plastik</p> <p>Gantungan kertas berwarna</p> <p>Gantungan obyek yang bisa bergerak</p>
1-2 tahun	 <p>Buat buku sederhana</p> <p>Anak dapat mencocokkan puzzle yang terdiri 3-5 bagian</p>
2-4 tahun	 <p>Gunting kartu sama dengan ukurannya</p> <p>Membuat puzzle sederhana dengan dua bagian</p>
4-6 tahun	 <p>Gunting kartu sama ukurannya</p> <p>Buat garis yang menghubungkan untuk membuat bentuk</p> <p>Gunting persegi empat membentuk bagian seperti pada gambar</p> <p>Anak dapat membuat bentuk. Puzzles 6-9 bagian</p>

## Kayu



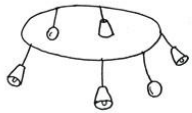






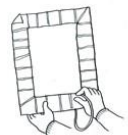


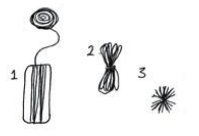



0-1 tahun	 <p>Gunakan stik untuk membuat boneka</p> <p>Ikatkan tutup botol pada sebuah kayu untuk membuat alat musik</p>
1-2 tahun	 <p>Masukan stik kedalam boks</p>
2-4 tahun	 <p>Membuat kuda-kudaan dengan stik</p> <p>Menyusun stik dari yang kecil ke ukuran yang besar</p> <p>Menggunakan stik untuk menulis di pasir</p>
4-6 tahun	 <p>Gunakan stik untuk membuat desain</p>



















## Makaroni, kancing, batu

0-1 tahun	 <p>Me panjang dan besar</p>	 <p>Kacang-kacangan di dalam toples menghasilkan suara</p>	<p>Awasi saat anak-anak bermain agar tidak memasukan obyek kecil kedalam mulut</p>
1-2 tahun	 <p>Pastikan kancing tergantung dengan baik</p>	 <p>Mengisi botol/toples dengan pasir</p>	 <p>Berjalan diatas batu</p>
2-4 tahun	 <p>Menyusun obyek sesuai ukuran</p>	 <p>Gunakan mie atau makaroni untuk membuat ikatan</p>	 <p>Yang mana yang sama? Yang mana yang beda? Lebih atau kurang?</p>  <p>Menendang obyek dengan kaki</p>
4-6 tahun	 <p>Menyusun obyek sesuai ukuran</p>	 <p>Gunakan mie atau makaroni untuk membuat ikatan</p>	 <p>Yang mana yang sama? Yang mana yang beda? Lebih atau kurang?</p>  <p>Menendang obyek dengan kaki</p>

## Benang/tali

0-1 tahun	 <p>Buat bola/boneka dari benang</p>	 <p>Buat bola/boneka dari benang</p>	 <p>Gantung bel dengan tali</p>	 <p>Gunakan benang untuk mengikat kayu</p>
1-2 tahun	 <p>Gunakan bola benang untuk melatih lemparan</p>	 <p>Buat bola/boneka dari benang</p>	 <p>Mengikat benang melalui lubang pada boks</p>	 <p>Buat bola/boneka dari benang</p>
2-4 tahun	 <p>Buat bola/boneka dari benang</p>	 <p>Buat bola/boneka dari benang</p>	 <p>Buat bola/boneka dari benang</p>	 <p>Buat bola/boneka dari benang</p>
4-6 tahun	 <p>Membuat bola dengan benang meningkatkan keterampilan motorik halus</p>	 <p>Buat bola/boneka dari benang</p>	 <p>Buat bola/boneka dari benang</p>	 <p>Buat bola/boneka dari benang</p>

## Kain

0-1 tahun				
1-2 tahun				
2-4 tahun				
4-6 tahun				

## Toy Card Translations (for use with pictorial toy guides)

### (CANS/CONTAINERS)

0-1 year	Close tops with glue; cut containers and wash well
1-2 years	Provide tops of different sizes. Be careful that children do not put objects in mouth; Child can fill containers with sand
2-4 years	Sizes – This is the biggest. This is the smallest.
5-6 years	Aim. Use Tops for games. Telephone. The child can care for plants

### (BOXES)

0-1 year	Use a box to keep child's toys. Glue pictures on side of box. Use boxes to practice sitting alone
1-2 years	Open and close the top. Put one box inside another.
2-4 years	Form a train or car. Use matchstick boxes. Use boxes to make pretend furniture. Use boxes to sort objects.
4-6 years	Make houses. Trace shapes. Put objects inside boxes to compare weights and sounds.

### (YARN & STRING)

0-1 year	Make balls and dolls from yarn; Hang bells on a string. Attach yarn to a stick.
1-2 years	Use yarn balls to practice throwing. String yarn through holes in a box
2-4 years	Use yarn, string for threading. Put string on ground to walk along and balance on
4-6 years	Making yarn balls develops fine motor skills

<b>(STICKS)</b>	
0-1 year	Use sticks to make a doll. Nail bottle caps on a stick to make a shaker
1-2 years	Put boxes on a stick
2-4 years	Make a stick horse. Order sticks from large to small. Use sticks to draw in the sand.
4-6 years	Use small sticks to make designs
<b>(PASTA, BUTTONS, ROCKS)</b>	
0-1 year	Noodles long and big. Peas in container make sound. Close top with glue. Be careful. Guard against infants putting small objects in mouth.
1-2 years	Secure buttons well. Passing between stones.
2-4 years	Which are alike? Which are different? More or less. Kick objects with feet.
4-6 years	Put objects in order. Use noodles or cut pipes for stringing.
<b>(PAPER)</b>	
0-1 year	Make a big face. Cover pictures with a plastic bag. Hang coloured papers. Cut out a moving object to hang.
1-2 years	Make a simple book. Puzzle with two pieces
2-4 years	Cut out cards of the same size. Put same designs on two cards. Child can match. Puzzles of 3-5 pieces
4-6 years	Cut cards of equal size. Draw lines that connect to make designs. Make a house of cards. Cut out a square with 7 pieces like this. Child can form figures. Puzzles 6-9 pieces.
<b>(FABRIC/CLOTH)</b>	
0-1 year	Can you see what is covered? Use cloth pillow as an obstacle. Use different textures and patterns. Pull cloth toy with a string
1-2 years	Cover eyes and use touch to guess what something is. Sew a doll for your child. Make a ball out of socks. Make a book out of cloth. Sew a simple picture on each page.
2-4 years	Cover eyes to identify objects of the same texture or material. Cover a table with cloth to make a small playhouse. Make sock puppets. Play dress-ups with adult clothing.
4-6 years	Children can sew simple forms. Make a theatre out of a box for cloth puppets.

# APPENDIX 4: KEY CHILD DEVELOPMENT INDICATORS BY DOMAIN<sup>11</sup>

AGE	GROSS MOTOR SKILLS	FINE MOTOR SKILLS	LANGUAGE	COGNITIVE	SOCIAL AND EMOTIONAL
<b>0 to 3 months</b>	<ul style="list-style-type: none"> <li>• Brings closed fists to mouth</li> <li>• Raises the head</li> <li>• Moves arms and legs</li> </ul>	<ul style="list-style-type: none"> <li>• Opens and closes hands</li> <li>• Grasps fingers</li> <li>• Holds small objects</li> </ul>	<ul style="list-style-type: none"> <li>• Cries when needs something</li> <li>• Stops crying when attended</li> <li>• Makes sounds</li> <li>• Looks at person speaking</li> </ul>	<ul style="list-style-type: none"> <li>• Reacts to sound, light and motion</li> <li>• Discovers hands</li> <li>• Looks at patterns</li> <li>• Prefers to look at human face and geometric shapes</li> <li>• Anticipates feeding</li> </ul>	<ul style="list-style-type: none"> <li>• Gazes at faces</li> <li>• Happy when sees mother; turns head when hears mother's voice</li> <li>• Nurses frequently</li> <li>• Social smile</li> </ul>
<b>3 to 6 months</b>	<ul style="list-style-type: none"> <li>• Lifts head and trunk</li> <li>• Rolls over</li> <li>• Reaches for objects</li> <li>• Sits with support</li> </ul>	<ul style="list-style-type: none"> <li>• Reaches for dangling objects</li> <li>• Grasps objects in both hands</li> <li>• Explores objects with hands and mouth</li> </ul>	<ul style="list-style-type: none"> <li>• Makes sounds to get attention</li> <li>• Recognizes voice of mother</li> <li>• Starts to imitate sounds</li> <li>• Listens to conversation</li> </ul>	<ul style="list-style-type: none"> <li>• Recognizes faces</li> <li>• Shows interest in small objects</li> <li>• Discovers that objects exist when out of sight</li> <li>• Explores cause and effect, drops objects, bangs</li> </ul>	<ul style="list-style-type: none"> <li>• Recognizes father and mother</li> <li>• Laughs at funny faces</li> <li>• Shows anger when toy taken away</li> <li>• Shows interest in other children</li> </ul>
<b>6 to 12 months</b>	<ul style="list-style-type: none"> <li>• Sits alone</li> <li>• Crawls</li> <li>• Pulls up and takes steps when supported</li> <li>• Rolls ball</li> <li>• Holds out arms and legs when being dressed</li> </ul>	<ul style="list-style-type: none"> <li>• Plays with small objects</li> <li>• Picks up small objects with two fingers</li> <li>• Transfers objects hand to hand</li> <li>• Hits objects together</li> <li>• Enjoys clapping</li> </ul>	<ul style="list-style-type: none"> <li>• Reaches for mother or father</li> <li>• Babbles to self</li> <li>• Says two or three words</li> <li>• Begins to respond to words</li> <li>• Points with finger when wants something</li> </ul>	<ul style="list-style-type: none"> <li>• Waves 'bye-bye'; shakes head for 'no'</li> <li>• Looks for objects that are hidden</li> <li>• Pushes and rolls toys</li> <li>• Looks in a mirror and smiles at self</li> <li>• Fascinated with small objects</li> </ul>	<ul style="list-style-type: none"> <li>• Likes people; prefers caregiver</li> <li>• May cry when caregiver leaves;</li> <li>• May cry when strangers appear</li> <li>• Plays 'peek a boo'</li> <li>• Pushes away things not wanted</li> </ul>

11 Deborah Llewellyn compiled this chart from numerous sources including the following '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](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', see <http://www.pbs.org/wholechild/abc/>



AGE	GROSS MOTOR SKILLS	FINE MOTOR SKILLS	LANGUAGE	COGNITIVE	SOCIAL AND EMOTIONAL
<b>12 to 18 months</b>	<ul style="list-style-type: none"> <li>• Takes steps</li> <li>• Climbs</li> <li>• Walks well</li> <li>• Pushes and pulls objects</li> </ul>	<ul style="list-style-type: none"> <li>• Takes objects out of containers</li> <li>• Stacks boxes</li> <li>• Takes tops off</li> <li>• Begins to feed self</li> </ul>	<ul style="list-style-type: none"> <li>• Points to objects or pictures when named</li> <li>• Obeys simple commands</li> <li>• Says few words clearly; important people/objects; and few other words such as 'my'; 'more'; 'all gone'</li> <li>• By 15 months, puts several words together; by 18 months learning nine new words a day</li> <li>• Responds when asked, "Where?"</li> </ul>	<ul style="list-style-type: none"> <li>• Recognizes name</li> <li>• Points to some body parts</li> <li>• Pulls an object to reach something</li> <li>• Interested in everything she sees</li> <li>• Knows when picture book is upside down</li> </ul>	<ul style="list-style-type: none"> <li>• Shows little understanding of rules and warnings</li> <li>• Smiles when praised; cries when scolded</li> <li>• Possessive of toys</li> <li>• Imitates gestures</li> <li>• Enjoys songs and simple picture book stories</li> </ul>
<b>18 to 24 months</b>	<ul style="list-style-type: none"> <li>• Runs without difficulty</li> <li>• Walks backward</li> <li>• Squats</li> <li>• Hops</li> <li>• Walks up and down stairs with aid</li> <li>• Moves to music</li> </ul>	<ul style="list-style-type: none"> <li>• Puts objects in and out of containers</li> <li>• Can peel peas or banana</li> <li>• Builds with blocks</li> <li>• Uses hands to drink from cup</li> <li>• Scribbles with whole arm movement</li> </ul>	<ul style="list-style-type: none"> <li>• Can say own name</li> <li>• Says two to three-word sentences</li> <li>• Can listen to short stories</li> <li>• Uses language to serve needs</li> <li>• Says hello and goodbye</li> <li>• Can follow a simple direction</li> </ul>	<ul style="list-style-type: none"> <li>• Knows/can name two to three body parts</li> <li>• Understands yes and no</li> <li>• Starts to play make believe</li> <li>• Imitates adult behavior when playing</li> <li>• Matches similar objects</li> <li>• Knows 'me' and 'you'</li> </ul>	<ul style="list-style-type: none"> <li>• Shows affection by hugging, smiling</li> <li>• Imitates what adults do</li> <li>• Washes own hands</li> <li>• Says no; asserts independence</li> <li>• Plays beside other children; difficulty sharing</li> </ul>

## 2 to 8-years-old

AGE	GROSS MOTOR SKILLS	FINE MOTOR SKILLS	LANGUAGE	COGNITIVE	SOCIAL AND EMOTIONAL
<b>2 to 3 years</b>	<ul style="list-style-type: none"> <li>• Jumps over objects</li> <li>• Walks on tiptoe</li> <li>• Throws and kicks ball</li> <li>• Likes to help dress and undress self</li> </ul>	<ul style="list-style-type: none"> <li>• Washes hands without help</li> <li>• Pours sand from one container to next</li> <li>• Draws a circle</li> <li>• Rolls clay</li> <li>• Opens jars, turns screws and objects</li> <li>• Turns book pages</li> <li>• Feeds self</li> </ul>	<ul style="list-style-type: none"> <li>• Repeats phrases</li> <li>• Points to common objects when named</li> <li>• Asks questions</li> <li>• Begins to use language to express ideas/feelings</li> <li>• Recites short poems</li> <li>• Names colors</li> </ul>	<ul style="list-style-type: none"> <li>• Knows colours</li> <li>• Knows difference between large and small</li> <li>• Loves to pretend and imitates animals</li> <li>• Grasps categories such as 'chicken' 'dog'</li> <li>• Can make simple choices</li> </ul>	<ul style="list-style-type: none"> <li>• Displays affection</li> <li>• Plays happily alone but likes audience</li> <li>• Plays beside other children, not with</li> <li>• Loves small chores</li> <li>• Understands instructions and begins to test authority</li> </ul>
<b>3 to 4 years</b>	<ul style="list-style-type: none"> <li>• Walks on toes</li> <li>• Jumps forward</li> <li>• Throws and receives ball</li> <li>• Balances on one foot</li> <li>• Begins to dress self</li> </ul>	<ul style="list-style-type: none"> <li>• Holds pencil correctly</li> <li>• Can draw recognizable figures, crosses and circles</li> <li>• Tears paper</li> <li>• Buttons</li> <li>• Builds a tower of blocks</li> <li>• Makes shapes with clay</li> </ul>	<ul style="list-style-type: none"> <li>• Converses with others; recounts events that happened during day</li> <li>• Remembers songs</li> <li>• Knows shapes and colours</li> <li>• Follows series of two related directions</li> </ul>	<ul style="list-style-type: none"> <li>• Matches like objects; sorts by colour or size</li> <li>• Knows purpose of objects</li> <li>• Understands sentences with time concept</li> <li>• Uses pretend play</li> <li>• Asks, "Why?"</li> <li>• Understands some number concepts</li> </ul>	<ul style="list-style-type: none"> <li>• Begins to play with other children</li> <li>• Learns to share</li> <li>• Shows first signs of sympathy</li> <li>• Asks for help</li> <li>• Uses toilet independently</li> <li>• Helps with small household tasks</li> </ul>
<b>4 TO 5 YEARS</b>	<ul style="list-style-type: none"> <li>• Hops on one foot</li> <li>• Walks along a line</li> <li>• Kicks ball in a direction</li> <li>• Walks up and down stairs, but brings feet together on each step</li> </ul>	<ul style="list-style-type: none"> <li>• Can string objects</li> <li>• Can copy drawings</li> <li>• Can cut along a line</li> <li>• Washes own hands</li> <li>• Prints a few letters</li> </ul>	<ul style="list-style-type: none"> <li>• Speaks in sentences; uses many words</li> <li>• Can name what s/he sees</li> <li>• Speaks clearly</li> <li>• Knows above, below, in front of</li> <li>• Counts to five</li> <li>• Likes to say poems and sing songs</li> <li>• Asks "when", "how", "why" questions</li> </ul>	<ul style="list-style-type: none"> <li>• Orders objects large to small</li> <li>• Knows first and last</li> <li>• Knows more or less</li> <li>• Understands opposites</li> <li>• Elaborates dramatic play</li> <li>• Draws pictures to represent objects</li> <li>• Can tell full names</li> <li>• Up to 15 minutes attention span</li> </ul>	<ul style="list-style-type: none"> <li>• Shows emotion</li> <li>• Puts objects away</li> <li>• Can dress with a little help</li> <li>• Plays cooperatively with peers</li> <li>• Can share and take turns</li> <li>• Identifies with own gender</li> </ul>

AGE	GROSS MOTOR SKILLS	FINE MOTOR SKILLS	LANGUAGE	COGNITIVE	SOCIAL AND EMOTIONAL
<b>5 to 6 years</b>	<ul style="list-style-type: none"> <li>• Walks backward</li> <li>• Catches ball</li> <li>• Turns somersault</li> <li>• Can hop and count</li> <li>• Can skip</li> <li>• Can walk up and down stairs alone, alternating feet</li> </ul>	<ul style="list-style-type: none"> <li>• Can draw a girl or boy</li> <li>• Makes figures from clay</li> <li>• Can draw shapes</li> <li>• Practices self-care habits independently</li> </ul>	<ul style="list-style-type: none"> <li>• Counts to 10 or 20</li> <li>• Recognizes and names colours</li> <li>• Tells stories</li> <li>• Highly verbal</li> <li>• Uses the word “because”</li> <li>• Follows three unrelated commands</li> <li>• Listens to long stories</li> <li>• Uses words to express feelings</li> </ul>	<ul style="list-style-type: none"> <li>• Can say purpose of body parts</li> <li>• Can tell where lives</li> <li>• Understands sequence of events</li> <li>• Can order objects by size</li> <li>• Draws and explains picture</li> <li>• Retells a story</li> <li>• Combines thoughts into one sentence</li> <li>• Curious about how things work</li> <li>• Reads</li> </ul>	<ul style="list-style-type: none"> <li>• Develops friendships</li> <li>• Enjoys imaginative play with friends</li> <li>• Beginning to understand some moral values: good and bad; fairness</li> <li>• Invents games</li> <li>• Dresses and undresses without any help</li> </ul>
<b>6 to 8 years</b>	<ul style="list-style-type: none"> <li>• Can run, jump, hop, skip, throw, catch and swim</li> <li>• Can balance easily</li> <li>• Uses movement to express feelings</li> <li>• Shows coordination</li> <li>• Learns concepts through physical action</li> </ul>	<ul style="list-style-type: none"> <li>• Controls hand muscles</li> <li>• Hand-eye coordination</li> <li>• Uses tools for writing and drawing</li> </ul>	<ul style="list-style-type: none"> <li>• Can describe feelings, events, objects, etc., in words</li> <li>• Sentences consist of five or more words</li> <li>• Can engage in conversation</li> <li>• Vocabulary increases</li> <li>• Can follow oral instructions</li> <li>• Can draw and write</li> <li>• Understands symbols</li> </ul>	<ul style="list-style-type: none"> <li>• Displays curiosity. Asks questions: What? Why? How?</li> <li>• Uses persistence in solving a challenging problem</li> <li>• Some understanding of cause and effect</li> <li>• Uses creativity and imagination</li> <li>• Sorts by category</li> <li>• Understands time</li> <li>• Can count accurately</li> <li>• Imagination in play</li> <li>• Can role play</li> </ul>	<ul style="list-style-type: none"> <li>• Positive self-esteem and identity</li> <li>• Can adjust to new situations</li> <li>• Manages feelings</li> <li>• Expresses needs</li> <li>• Demonstrates self-direction and independence</li> <li>• Takes responsibility, shows initiative</li> <li>• Follows routines and rules, but likes to do things own way</li> <li>• Plays well with others</li> <li>• Recognizes feelings; own and others</li> <li>• Controls emotions</li> </ul>

# APPENDIX 5: FREE TOY DOWNLOADS<sup>12</sup>

## HOMEMADE MATH TOYS

[www.teachingmama.org/15-hands-on-math-activities-preschoolers/](http://www.teachingmama.org/15-hands-on-math-activities-preschoolers/)

[www.raisingchildren.net.au/guides/activity-guides/making-and-building/stacking-and-building-games](http://www.raisingchildren.net.au/guides/activity-guides/making-and-building/stacking-and-building-games)

[www.homemade-preschool.com/preschool-math.html](http://www.homemade-preschool.com/preschool-math.html)

[www.alyssateaches.com/using-math-manipulatives-you-already-have-at-home/](http://www.alyssateaches.com/using-math-manipulatives-you-already-have-at-home/)

## HOMEMADE LEARNING TOYS – BABIES/TODDLERS/PRESCHOOLERS

[www.theimaginationtree.com/15-diy-non-toys-toddlers/](http://www.theimaginationtree.com/15-diy-non-toys-toddlers/)

[www.teachingmama.org/category/baby-activities/](http://www.teachingmama.org/category/baby-activities/)

[www.theempowerededucatoronline.com/2015/11/recycled-play-series-diy-baby-toddler-toys.html/](http://www.theempowerededucatoronline.com/2015/11/recycled-play-series-diy-baby-toddler-toys.html/)

[www.raisingchildren.net.au/toddlers/play-learning/low-cost-play-ideas/homemade-toys](http://www.raisingchildren.net.au/toddlers/play-learning/low-cost-play-ideas/homemade-toys)

[www.mcsprogram.org/wp-content/uploads/dlm\\_uploads/2019/02/Ghana-ECD-Flipchart.pdf](http://www.mcsprogram.org/wp-content/uploads/dlm_uploads/2019/02/Ghana-ECD-Flipchart.pdf)

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12 The information provided on external websites has not been vetted by Plan International and such websites are only provided as examples. The information and opinions in external websites can not be read as reflecting the views of Plan International.



## HOMEMADE LITERACY TOYS

[www.homemade-preschool.com/preschool-language.html](http://www.homemade-preschool.com/preschool-language.html)

## TANGRAMS

[www.tangram-channel.com/tangram-solutions/](http://www.tangram-channel.com/tangram-solutions/)

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[www.sugarspiceandglitter.com/wp-content/uploads/2020/07/Printable-Tangrams-Sample-8-PNG.pdf](http://www.sugarspiceandglitter.com/wp-content/uploads/2020/07/Printable-Tangrams-Sample-8-PNG.pdf)

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## ABOUT PLAN INTERNATIONAL

We strive to advance children's rights and equality for girls all over the world. We recognize the power and potential of every single child. But this is often suppressed by poverty, violence, exclusion and discrimination. And it's girls who are most affected. As an independent development and humanitarian organisation, we work alongside children, young people, our supporters and partners to tackle the root causes of the challenges facing girls and all vulnerable children. We support children's rights from birth until they reach adulthood, and enable children to prepare for and respond to crises and adversity. We drive changes in practice and policy at local, national and global levels using our reach, experience and knowledge. For over 80 years we have been building powerful partnerships for children, and we are active in over 75 countries.

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