

About thinking and learning

Cognitive development

Cognitive development refers to growth in a range of thinking and learning skills, including language, attention, planning, problem-solving and memory. This overview outlines some of the key developments in children's skills for thinking and learning and suggests ways that parents and carers can support children's growth in these areas. One of the best ways for parents and carers to support primary school children's thinking and learning is through taking an active interest in their learning at school so that they can support and build on it at home. International research has found that the involvement of parents and carers with their children's schooling contributes to children's achievement at school and has positive effects on their mental health and wellbeing.

How children learn

Although children are born with some inherited tendencies, an environment that stimulates learning and development is necessary to ensure children reach their learning potential. Adults play a vital role in providing stimulation and support for children's learning. Parents and carers can nurture children's development through understanding the importance of what children experience in the world around them, and providing experiences that arouse their curiosity and interest. Opportunities for children to be actively involved in learning from their experiences are especially important for their development.

Children's knowledge grows over time as they build on earlier understandings. When they encounter new experiences, children look for information that they can use to confirm, add to, or change their ideas. For example, when a child experiences a new event, he or she first tries to understand the new experience by matching it to pre-existing ideas. If, however, the new experience doesn't fit with what the child already knows, it stimulates the child to come up with new ideas or ways of understanding. By adding or adapting old ideas and putting ideas together children build knowledge.



Developmental patterns in children's thinking and learning

Most children tend to develop skills for thinking and learning in a predictable sequence (eg children start to tell stories by looking at pictures in a book before they learn to recognise words). However, it is important to remember that each child develops at a different rate and that individual differences are common. Differences may be due to children's inherited tendencies, the experiences and opportunities they are exposed to, or a combination of both. As children learn to use language in increasingly complex ways it supports further learning and development. Language helps to organise children's thinking. It allows them to use basic logic and gradually develops their capacities for thinking through situations, solving problems and developing their own ideas.

The following table shows some common examples of how children's thinking and language develop over time.

From 5 years of age, most children...	From 8 years of age, most children...	From 12 years of age, most children...	Skills developed
<ul style="list-style-type: none"> can picture and think about objects and events in their minds, such as using realistic objects and/or reasonable substitutes during pretend play (eg they might use a banana as a telephone) 	<ul style="list-style-type: none"> can think logically about real objects and events that can be seen (eg can easily learn how to use the washing machine when you show them, but may not get it right if you just try telling them) think in 'black and white' terms about what is fair, right or wrong learn best through hands-on experiences 	<ul style="list-style-type: none"> are beginning to think in more hypothetical, creative and abstract ways can understand ideas without having hands-on experience 	Thinking
<ul style="list-style-type: none"> have a vocabulary of 2,000 words or more, learning as many as 5–10 new words each day use several words in a sentence 	<ul style="list-style-type: none"> understand and carry out instructions with multiple steps like to describe personal experiences in great detail 	<ul style="list-style-type: none"> use longer and more complex sentences understand different ways of using language to communicate with others 	Language
<ul style="list-style-type: none"> have a short attention span of approximately 15 minutes 	<ul style="list-style-type: none"> have an increased ability to focus on one thing at a time are better at ignoring distractions are proud to complete tasks 	<ul style="list-style-type: none"> have a longer attention span can stay focused on completing a task (eg school assignments) 	Attention
<ul style="list-style-type: none"> can make simple decisions on their own, (eg deciding what shoes to wear) can memorise basic information (eg address and phone number). 	<ul style="list-style-type: none"> have increased problem-solving ability, (eg they may be systematic in looking for a misplaced toy). 	<ul style="list-style-type: none"> like to solve complex problems have an expanded memory ability which improves their long-term recall. 	Problem-solving and memory

What if you have concerns about your child's development?

The examples provided are a general guide only. It is important to remember that children develop at different rates and in different ways. Often children's learning and development occur in bursts, with new skills appearing almost overnight. If you are concerned about your child's development talk with your child's classroom teacher, a psychologist or counsellor at your child's school, and/or contact your family doctor to be referred for an assessment by a paediatrician.

The development of thinking skills

Although children already have certain knowledge and skills by the time they start school, school encourages the development of more complex skills. At school, children have new responsibilities, such as completing their work in class and bringing the things they need each day. This requires them to learn to organise themselves and to prioritise important tasks.

During the primary school years, children continue to have many opportunities to build on and improve their cognitive skills in the following areas.

Language

Though learning to read at school is important for developing literacy skills, conversation is also an important way for children to develop language skills. Conversation directs children's attention to important details of an event or experience and so helps them learn. Parents and carers play a key role in their child's language and cognitive development during the primary school years. Language involves more than just speaking. It also includes using body language and gestures, listening, and understanding what others say.

You can help children develop these important skills by making time for regular talks with your children where you listen and respond to what they say with full attention. Be sure to remove distractions (eg turn off TV, gameboy etc) so you can both focus well.

Attention

Learning to pay attention and to concentrate on one thing at a time for an extended period is an important foundation for children's learning. Playing games like 'I Spy', 'Simon Says' and 'What's the time Mr. Wolf?' are creative and effective ways of developing attention skills in young children. As children grow older, they mostly become better at focusing their attention on a particular task and are less easily distracted. Attention also becomes more purposeful, with children gradually becoming better at selecting and focusing on the information most important to a particular task.

Parents and carers can help children learn to focus their attention by pointing out things that are especially important or interesting, or by asking children for feedback about what they have noticed. For example, asking specific questions such as, "Which was your favourite animal at the zoo today?" and then following up with, "What did you notice that was special about it?" helps to cue children to pay attention and extends their thinking skills.

Note: It is normal for many young children to have difficulty focusing their attention. This can generally be addressed with guidance and practice.

Memory

Memory is crucial for learning as children need to be able to retain previously learned ideas so they can build on them. As children get older, the amount of knowledge they can keep in their long-term memory increases, but the amount they can hold in short-term memory is limited. When there is a lot of information to remember, giving children a catchy saying or rhyme to tie it to can be very useful. For instance, when you were in primary school you probably learned a way to remember the number of days in each month. Using strategies like these make it much easier to remember certain types of information.

Planning and problem-solving

Simple planning begins early in life and becomes more effective with age. Primary school-aged children are more able than preschoolers to plan what they will do before they act. Skills for planning and problem-solving continue to develop as children are taught at school to think through and solve problems. Parents and carers can support this kind of learning by asking questions such as, "What if...?" or "How could we solve this?" and then guiding children through the steps of problem-solving.



The development of thinking skills – continued

Thinking about thinking

Children's cognitive development is boosted when they develop skills for keeping track of their own thinking processes. These skills help children to think through what to do, and know whether they are succeeding or when to ask for help. Thinking about their own thinking helps children become more independent learners. For example, if children can monitor their understanding of a story as they are reading it, they will know themselves if they need to re-read a particular section or look for clues in the surrounding text and pictures to help them understand.

Understanding the views of others

Understanding that other people have different views develops with age. Young children tend to believe that everyone thinks in the same way they do. Hearing the perspectives of others helps to stimulate children's thinking. For this reason, children often benefit from classroom activities that involve them learning together in small groups. Cooperative learning with other children also encourages positive social behaviour.



Key points for supporting children's thinking and learning

Parents and carers can support children's learning in many ways. Taking an active interest in the process of learning (and not just the product or outcome) helps children see that learning is fun. Getting to know your children's strengths and weaknesses allows you to match tasks to their level of ability and development. This also increases the likelihood that they will succeed, helping them build a belief in their own abilities and encouraging them to attempt further tasks.

Encourage children and build confidence

Praise and acknowledge children's attempts and not just their successes. Showing children you value their effort helps to give them the confidence to keep trying.

Remove distractions

Children need focused time to learn and think. Help children develop attention and concentration by making sure that quiet time is set aside for homework and other learning tasks without TV or other distractions. Encouraging and rewarding children for concentrating and persisting with learning tasks will support good study habits and effective learning.

Provide 'scaffolding' for children's learning

Extend children's learning by asking questions, giving children hints and prompts and guide them step-by-step to build their skills so they can reach the point of completing the whole task on their own.

This resource is part of a range of KidsMatter Primary information sheets for families and school staff. View them all online at www.kidsmatter.edu.au



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