



Thinking Skills

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What are thinking skills and why are they important?

Our thinking skills help us to solve problems, make decisions, and create plans and ideas. If we develop the ability to think critically we can evaluate information to decide whether it is right or wrong. To think critically about an issue or a problem means to be open-minded and consider alternative ways of looking at solutions. As children grow up, their critical thinking skills will help them make judgments on their own without adults.

Children develop these skills whilst they are:

- ◆ Problem solving
- ◆ Watching and copying others
- ◆ Sustaining their attention and concentration
- ◆ Remembering information and skills
- ◆ Making connections with experiences
- ◆ Transferring prior learning to new situations
- ◆ Creating ideas and using imagination
- ◆ Expressing opinions
- ◆ Reflecting and trying to make sense
- ◆ Categorising and comparing
- ◆ Analysing information

When children have well developed thinking skills they can find answers to their questions and to make decisions effectively. This ability is crucial for supporting children to become independent flexible thinkers, a skill necessary and beneficial as a teenager and adult.

Children learn thinking skills over time and the good news is we can help them by:

- ⇒ Thinking about the types of questions we ask
- ⇒ Modelling and talking out loud when we are using thinking skills
- ⇒ Giving specific praise and encouragement
 - [Refer to Growth Mindset leaflet](#) 
- ⇒ Providing a safe base from which they can explore the world but also providing support when needed
- ⇒ Interacting: talking, playing, giving them our full attention and sharing in their interests

For ideas look at [Playtalkread 30 things to do before you are 3](#)  and [Child's Play](#): all parents want the best for their children and one of the best things is play. All children can play no matter their ability. Here are ten tips to get you started.



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As we continue to move into a technology-driven world, critical thinking will be one of a handful of skills that will determine our children's future.

Ways to help develop your child's thinking skills

In everyday life, you would normally only ask a question when you want to know the answer. If you already know the answer, you wouldn't ask the question.
(Ian Smith, 2007)

Good Morning Routine!



	Get Dressed
	Make Bed & Tidy Room
	Eat Breakfast
	Fix Hair
	Brush Teeth
	Shoes On
	Get Bag, Lunch, etc.

Have a great day!

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To encourage children to think more deeply ask:

What do you think?

Why do you think that?

How do you know?

Do you have a reason?

Can you be sure?

Is there another way?

Day to day conversation– Engage in meaningful conversations, asking them open ended questions and encouraging their imagination.

Spend time reading – You can use questions to support your child to analyse, predict, compare and give opinions on topics/situations in books. For example there may be a picture in a story of an outdoor scene where the sun is shining. If you ask your child whether it is day or night they may not find the answer in the words but they can look at the picture for clues. This is called inference and is a great skill for developing critical thinking. Ask these questions:

What might happen next?

What bit did you like/ dislike & why?

Does the book cover give us any clues to what might happen?



[Scottish Book Trust](#) has lots of ideas

[Read this article](#) for more ideas of questions to ask.

Encourage your child to ask questions– To foster curiosity, if something does not make sense to them encourage them to say so and find out answers. Model yourself asking questions when you are unsure or curious of what to do in a situation. E.g. *'I am not sure if we are going in the right direction, I am going to ask this lady for some directions'*.

Test hypotheses: Ask children to consider alternative explanations or solutions, this can support their flexible thinking skills and help develop the ability to see things from others point of view E.g. *Will items float or sink in the water? What behaviours make you think this character is not to be trusted? What would happen if?*

Systematic planning– Make a plan so children know what to do when faced with a task e.g. following instructions for a new toy/model to build. *What do we need to do first? What will we do next? How will we know when we are finished?*

Balance support vs challenge- encourage children to try new unfamiliar tasks, remind them it is ok to make mistakes, help them to ask for help when required and help them to identify when they have overcome challenges. *Say: Well done for sticking with that. When you asked for some help I reminded you of the last time we had a similar problem, you remembered what you did last time, used it in this task and it worked'.*

Encourage play which involves sustained attention and organisation-

- * look at lists when shopping and tick off items
- * help them get organised for school with a morning routine e.g. first get dressed, next breakfast, then brush teeth. A visual reminder might be helpful
- * follow steps required to making a cake
- * complete a jigsaw, where they must focus and use problem solving skills

Ask big questions. Research has shown that even very young children are capable of reflecting on really big questions such as:

What is a good person?

What is a friend?

What is magic?

What is a bully?

What is a good thinker?

What is a good story?

What is happiness?

Should animals be killed?

Make links with what they have learned before - What has been learned before can be applied to new situations, and children can build on earlier experiences to plan and predict. You might be looking in a fish tank at a pet shop. You could speak about what your child learned about the sea in school, what other animals/fish live in the sea. How do the fish swim so fast, what fish you saw when you were on holiday last year etc?

Pause & wait. Don't help them immediately. Watch and give them enough time to think for themselves – try to avoid completing or doing the task for your child. Allow them to attempt problem solving for themselves first before providing prompts, without doing it all for them. Encourage persistence but also recognise when they will benefit from some direction to overcome challenges.

Ways to help develop your child's thinking skills

Talk about different ways to look at situations – How we *think* about situations that happen to us determines how we feel and what we do. That is why thinking skills play a big part in our ability to regulate our emotions and behaviour. The more flexible we can be in our thinking, the more we can stretch ourselves to come up with solutions to problems.

It is very helpful to pause and take a step back so that we can look at problems from a different perspective. Stop yourself and catch your thoughts. Take three deep breaths and re-think the situation. Ask yourself —“*How else can I look at this?*”. While some situations are beyond our control, it is important to figure out what parts we can control, too.

We can also encourage children's *flexible* thinking by gently challenging their assumptions or the times they use *always* or *everything*. Then we can help them come up with new ways to look at difficulties they face. For example 'Jack is playing with Alex right now. That doesn't mean he doesn't like you anymore. It just means he will play with you later'. Or 'Sarah is having her turn on the bike just now, while we are waiting we can play in the sand pit or go on the slide'.

Click here for [Moodjuice teenage guide to challenging unhelpful thoughts](#)



Categorisation and comparison— use for day to day tasks to help children to identify different forms of categories e.g. through colours—can you show me all the red balls in the ball pit? Or help with the putting away of laundry, lets find all the socks and put them in one pile and t-shirts in another pile. To help develop comparisons you might say can you separate big socks from your smaller socks. Outdoor play also provides lots of opportunity to compare different types of leaves and trees.

Why are thinking skills important?

Thinking skills are important because being good at literacy, maths, science etc, is not enough to fulfil human potential, or to meet the demands of the labour market or of active citizenship. Countries across the world are recognising that a broad range of competencies are needed to prepare children for an unpredictable future. These '**higher order**' thinking skills are required because individuals cannot 'store' sufficient knowledge in their memories for future use. Information is expanding at such a rate that individuals require **transferrable skills** to enable them to address different problems in different contexts at different times throughout their lives. A 'thinking skills' approach suggests that learners must develop awareness of themselves as thinkers and learners and practice strategies for effective thinking. **"We need to think better if we are going to become better people."**

What does research tell us about thinking?

Research in cognitive science and psychology is providing a clearer picture of the brain and the processes associated with thinking. We now know that:

- ◆ most of the growth in the human brain occurs in early childhood
- ◆ by the age of 6 years old, the brain in most children is approximately 90% of its adult size

Therefore offering support, while the brain is still growing, may be more effective than waiting until the brain is fully developed. **Cognitive challenge is important at all stages, but especially in the early years of education.**

Claxton (2002) describes dispositions, such as attention and motivation, commonly associated with thinking and a model called Building Learner Power—see p.4 for links.

Thinking is now known to be totally connected to emotions and our habits, including 'emotional intelligence', which is our ability to understand our own emotions and the emotions of others (Goleman, 1995).

The research into **Metacognition** is also growing and has shown that lower attaining students can also benefit as much, if not more, than higher attaining students from using such strategies. Metacognition is commonly called Learning to Learn or Thinking About Thinking. It is the thinking behind our strategies, including understanding 'which strategy should I choose and why', or 'I need to change strategy because'.

Find out more by watching, [What is metacognition and questions you can to ask to help develop it](#)

Help kids to teach

others...WHY?

Research tells us

that we remember:

5% of what we hear

10% of what we

read

30% of what we see

50% of what we

both see and hear

70% of what is

discussed with

others

80% of what we

experience

personally

95% of what we

teach others

Critical thinking skills

The table below provides examples of the critical thinking skills at different levels of thought, and the questions you can use which encourage children to develop their thinking processes.

CRITICAL THINKING SKILLS

1 Knowledge Identification and recall of information	define fill in the blank list identify	label locate match memorize	name recall spell	state tell underline
	Who _____? What _____? Where _____? When _____?		How _____? Describe _____? What is _____?	
2 Comprehension Organization and selection of facts and ideas	convert describe explain	interpret paraphrase put in order	restate retell in your own words rewrite	summarize trace translate
	Re-tell _____ in your own words. What is the main idea of _____?		What differences exist between _____? Can you write a brief outline?	
3 Application Use of facts, rules, and principles	apply compute conclude construct	demonstrate determine draw find out	give an example illustrate make operate	show solve state a rule or principle use
	How is _____ an example of _____? How is _____ related to _____? Why is _____ significant?		Do you know of another instance where _____? Could this have happened in _____?	
4 Analysis Separating a whole into component parts	analyze categorize classify compare	contrast debate deduct determine the factors	diagram differentiate dissect distinguish	examine infer specify
	What are the parts or features of _____? Classify _____ according to _____. Outline/diagram/web/map _____.		How does _____ compare/contrast with _____? What evidence can you present for _____?	
5 Synthesis Combining ideas to form a new whole	change combine compose construct create design	find an unusual way formulate generate invent originate plan	predict pretend produce rearrange reconstruct reorganize	revise suggest suppose visualize write
	What would you predict/infer from _____? What ideas can you add to _____? How would you create/design a new _____?		What solutions would you suggest for _____? What might happen if you combined _____ with _____?	
6 Evaluation Developing opinions, judgements, or decisions	appraise choose compare conclude	decide defend evaluate give your opinion	judge justify prioritize rank	rate select support value
	Do you agree that _____? Explain. What do you think about _____? What is most important?		Prioritize _____ according to _____? How would you decide about _____? What criteria would you use to assess _____?	

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Further information & resources



For younger children watch [What's the Big Idea?](#)
CBeebies

[James Nottingham Learning Pit, to think about how to extend children's thinking](#)

[Strategies to encourage critical thinking skills in children](#)



BBC Bitesize [guide to critical thinking and problem solving](#) for secondary pupils

[Guy Claxton: Building learner power, parent ideas](#)

[Philosophy for children \(P4C\)](#)

[Critical skills programme \(CSP\) TES Scotland](#)



Games for Thinking (Stories for thinking) by Robert Fisher, 1997

The Little Book of Thinks (260 questions to make your brain go ouch) by Ian Gilbert, 2007

Bloom's Taxonomy

Bloom's Taxonomy was developed as a pyramid and can be used to think about different levels of thinking. It addresses the increasing level of cognitive thought and understanding needed by different tasks.

The six levels show how knowledge can be expanded and deepened. The lower levels are needed before students can reach the higher-level concepts in a topic, but it should be noted that things in learning or in life are rarely that clearly divided! The cycle opposite shows the thinking processes are all linked.

If we think about Goldilocks and the Three Bears story, examples of questions at each level are:

Knowledge: What happened in the story of Goldilocks and the Three Bears?

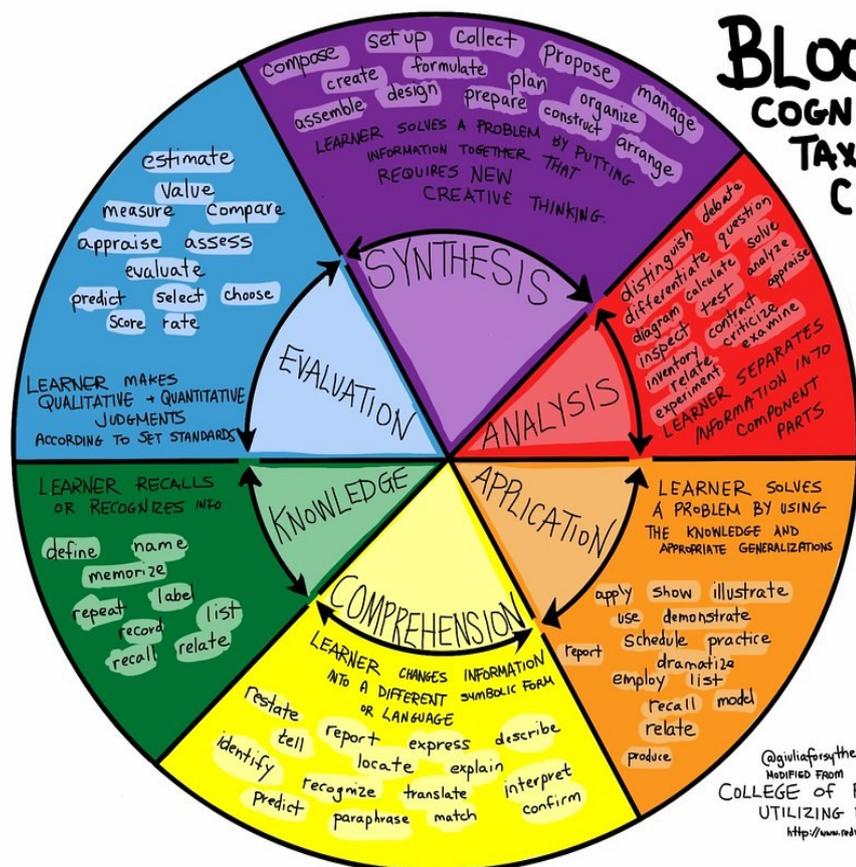
Comprehension: Why did Goldilocks like the little bear's bed best?

Application: What would you have done if you were Goldilocks?

Analysis: Was Goldilocks a good or bad girl?

Synthesis: Which part of the story of Goldilocks did you like best?

Evaluation: Do you think the bears treated Goldilocks well?



You can use this framework to reflect on the questions which you ask your children and to think about ways to deepen their learning and thinking.