

Key Stage 3 Strategy,

Foundation Subjects strand:

key messages about teaching thinking

This leaflet provides information for teachers about the 'Knowing and learning' section of the training materials for foundation subjects. These modules focus on teaching thinking.

Why is teaching thinking important?

Teaching thinking involves the creation of challenging learning experiences which call for high level thinking, such as the development of the skills listed in the National Curriculum Orders for England under the five headings of information processing, reasoning, enquiry, creative thinking and evaluation. The main focus for teaching thinking is on developing pupils' ability as learners. Pupils need to consider not only what has been learned but also how it has been learned so that they can transfer these skills more readily to other areas and subjects. Without the right words, thinking and learning are difficult to discuss so teachers need to develop a 'thinking' vocabulary for pupils to use. The ultimate aim is for pupils to become independent thinkers, capable of planning for, checking and reflecting on their thinking across different types of tasks.

Teaching thinking involves teachers in:

- setting challenging tasks that encourage pupils to strive to think through a problem or issue which may have no single correct answer;
- planning for learning objectives which encourage pupils to gain an understanding of the patterns of thinking and principle concepts in each subject;
- encouraging pupils to use and build on what they already know in order to make sense of new information;
- planning for pupils to 'think together' through collaborative talk and active listening;
- intervening, when necessary, by asking questions which support or extend pupils' thinking;
- using the plenary to check learning against objectives and to debrief pupils on both their solutions to the task and their strategies for carrying it out;
- helping pupils to make connections between the thinking involved in the task and other contexts in order to encourage transfer of knowledge and skills.

The four 'Knowing and learning' modules each focus on some of the above aspects of teaching thinking. Each provides a description of the principles underpinning effective practice, practical examples and suggestions for trying things out in the classroom.

Which modules focus on teaching thinking?

The four modules which explicitly address teaching thinking are:

- Principles for teaching thinking;
- Thinking together;
- Reflection;
- Big concepts and skills.



INVESTOR IN PEOPLE



Standards and Effectiveness Unit

department for
education and skills

Each module can be used as 'stand alone' training and will fit into a typical session during a training day or twilight event. Alternatively the modules can be linked to address a broader range of issues and professional development needs.

Principles for teaching thinking (module 11)

This module introduces some of the principles which the subsequent modules go on to consider in greater depth and so provides a foundation for modules 12, 13 and 14.

Its key messages are listed below.

- Teaching thinking is about equipping pupils to be creative, flexible and committed learners.
- The development of thinking ability can be considered at four different levels. Teachers can plan to improve pupils':
 - general thinking ability;
 - particular types of thinking abilities;
 - metacognition (thinking about thinking);
 - disposition to think.
- Teachers value a range of types of outstanding performance which are common to most subject areas. The thinking necessary for pupils to reach these 'intelligent' responses can be taught explicitly.
- There are many teaching strategies that can help to improve pupils' thinking and can make thinking processes and strategies more explicit.

Virtual consultant

This is explored further in module 14 **Big concepts and skills**.

Virtual consultant

Module 13, **Reflection**, focuses on metacognition.

Virtual consultant

The appendix describes strategies, such as 'maps from memory', 'odd one out' and 'mysteries'. Also, the **Modelling** module video clip shows Karen modelling thinking.

This module requires only 30 minutes of initial meeting time, though a further 45 minutes would be useful to help to digest and extend ideas or to explore the application of some thinking skills strategies.

Thinking together (module 12)

The module focuses on establishing 'ground rules' for talk. It addresses how we use talk not just for sharing information but also for thinking together to make sense of the information. This type of talk has been called 'exploratory talk'.

Its key messages are listed below.

- Using the tool of language, two or more people can often solve problems more effectively than they could alone.
- In exploratory talk:
 - pupils and teachers engage critically but constructively with each other's ideas;
 - contributions build on previous comments;
 - relevant information is offered for joint consideration;
 - there is speculation;
 - pupils give reasons for their views and seek them from others.
- Research shows that very little exploratory talk naturally occurs in classrooms but teachers can plan for it to happen.

Virtual consultant

Thinking together links closely with other modules, especially **The principles for teaching thinking**, and, from LAC **The management of group talk**.

Virtual consultant

The appendix summarises the relevant research and provides background information about this module.

The timing for this module is given as 75 minutes but it could valuably be extended since many of the tasks involve collaboration and discussion.

Reflection (module 13)

This module focuses on the importance of providing opportunities for pupils to reflect on how they think and learn. It explores how, by encouraging metacognition, pupils can become more effective and independent learners. Metacognition can be described as the learner's ability to take control of their own learning by, for example, integrating prior and new knowledge, solving problems individually and in groups, acquiring and using a range of learning skills and thinking carefully about successes and failures.

Its key messages are listed below.

- Metacognition is particularly important when we are doing new or difficult tasks which are at the limits of what we can do.
- By being metacognitive we can plan for, check and regulate our thinking to see how well suited it is to the task in hand.
- Talking about thinking and learning is very difficult without words to describe the processes so teachers and pupils should develop a vocabulary for this.
- Opportunities for discussing metacognition should be planned into lessons.

Virtual consultant

Thinking about thinking is called **metacognition**. Handout 11.2 has more information about it.

Virtual consultant

This is explored in the **Plenaries** module which includes a helpful video clip from Knottingley School, Wakefield.

Big concepts and skills (module 14)

This module focuses on the importance of explicitly teaching the 'big' concepts and skills which underpin learning and provide the connecting threads within, and often across, subjects.

Its key messages are listed below.

- The ability to recognise pattern in a situation or problem allows pupils to be more independent learners. For example, if pupils can see the pattern of human decision making, they can then apply it to other contexts.
- Pupils need opportunities to develop important skills that underpin achievement across a wide range of subjects. These skills include planning, organising information, checking and evaluating.
- Metacognition can help pupils to recognise such patterns and therefore supports transfer of learning from one context to another.
- As particular 'big' concepts and skills are relevant to a number of subjects, it pays to plan their teaching across the whole Key Stage 3 curriculum.

Virtual consultant

There are strong links to module 5 **Explaining**, module 13 **Reflection** and to **Making notes** (LAC).

Virtual consultant

Handout 11.2 has more information about improving such 'specific thinking' ability.

This module is generally more appropriate for teachers and senior managers who already have experience of teaching thinking and are ready to apply their understanding to medium and long-term planning.

Where next?

How you go about using the foundation subjects training materials to help you to develop teaching thinking will depend, to a considerable extent, on your starting point, your aims and your current level of expertise. Here are some suggestions for getting started.

If your work on teaching thinking is at an early stage you could consider the following.

- Ask a teacher with some teaching thinking expertise to take you through the [Principles for teaching thinking](#) training module then collaboratively plan some activities using Appendix 11.1 for guidance.
- You could begin by planning and teaching some challenging starter activities using Bloom's taxonomy to judge the level of thinking they demand (see Appendix 7.1). Watch the [Starters](#) video clips and use Appendix 11.1 for additional guidance and ideas.

If you have already used thinking skills strategies in your teaching and want to build on or refine your practice you could consider the following.

- If you want to improve group work then use the [Thinking together](#) training module and 'The management of group talk' from Literacy across the Curriculum. If you want to see it in action, watch the video clip for [Questioning](#).
- If you want to be more effective in helping pupils to understand how they think and learn, try using the [Reflection](#) module. You could also observe the first [Plenaries](#) video clip which shows debriefing for metacognition in action.

If you are experienced in teaching thinking and it's already happening in a large proportion of lessons, you may be seeking to extend its influence.

- Consider long-term planning for progression in thinking skills and for an understanding of your subject's 'big' concepts. Use the [Principles for teaching thinking](#) and [Big concepts and skills](#) modules to help you to put theory into practice.

... and finally

There are three further foundation subjects key messages leaflets on 'Assessment for learning' (DfES 0045/2003), 'Teaching repertoire' (DfES 0047/2003) and 'Structuring learning' (DfES 0044/2003). These can be found on the website at www.standards.dfes.gov.uk/keystage3

All training modules referred to in this leaflet can be found in the 'Training materials for the foundation subjects' folder (DfES 0350/2002) unless otherwise stated. LAC refers to 'Literacy across the curriculum' (DfEE 0235/2001).