Thinking Hard

What is Thinking Hard?

Thinking critically and creatively is more challenging than rote learning. If we want to teach pupils to think creatively, we need to teach them to think hard.

We use the term Thinking Hard to describe activities that require pupils to think deeply, apply their learning to new contexts and solve problems. Thinking Hard tasks are those that push pupils to reach beyond what we have taught them, to think for themselves, but also to think intelligently and rigorously.

Thinking Hard might involve analysing a challenging poem, conducting a sustained investigation around a scientific artefact, or evaluating the wider impact of a historical event.

Where can it go wrong?

Thinking Hard can go wrong when pupils are not properly equipped or supported to do it. Think about the knowledge and understanding that children need to engage in the task and whether your pupils have mastered it yet. Thinking Hard is hard work, and some pupils might not want to do it straight off the bat. Think about how you can teach your class to think hard, such that they become less dependent on you providing all the answers. If you are not explicit that this a Thinking Hard activity, to which they are not expected to know the answer, pupils may become demoralised and struggle to engage.

How can it be done well?

Thinking Hard tasks must be well structured, supporting pupils in Thinking Hard and linking to prior learning that has been well understood. Thinking Hard tasks should hold pupils accountable for their learning and effort. Tasks should be engaging and stimulating, granting pupils appropriate autonomy to support their motivation through sustained hard thinking.

Investigating an artefact

Pupils are presented with an artefact and investigate a research question through a practical experiment.

What you could do:

- Structure a sequence of lessons around a research project based on an artefact.
- Encourage scientific enquiry by allowing pupils to have autonomy over which artefact they pick to investigate.
- The teacher begins by allowing pupils time to explore each artefact before they decide which artefact they will create a science project on.
- Allow for an environment where pupils can explore and investigate in small groups – this may involve selecting the groups.
- Create a success criteria for each learning episode so that pupils still follow the expectations of work set. The key skill within this learning is that pupils understand the research process and how to verbalise, and in turn, write their thoughts down; therefore developing research skills and promoting inquisitive thought.

What pupils need to do:

- Decide which artefact to explore and create a research question based on this.
- Take on specific roles to solve a problem in their investigation.
- Pupils then create a poster and presentation to share with others.
- Pupils peer assess each presentation using a success criteria.

When to try it:

- At the start of a learning journey or scheme of work.
- When pupils do not have any misconceptions about a new topic of learning.

What to avoid:

- Pupils not being given clear success criteria.
- The outcome not being modelled.
- Group roles not being distributed out evenly and pupils not following the expectations of their roles.

How do I know that it has worked?

- Pupils successfully follow the roles of the groups.
- Pupils successfully adhere to all the success criteria.
- Pupils can produce a presentation based on their research question.

Evaluating outcomes and wider ideas

Summarising learning before evaluating the outcomes and their effect on the bigger picture and wider learning.

What you could do:

- Create a starter worksheet where pupils are asked to recall key information before then evaluating in terms of importance. Pupils should then justify why they have made those decisions.
- Explore what "importance" means in this context and how it can be assessed, revisiting and refining this meaning periodically.
- Circulate the room. If all pupils cannot recall an event/key piece of information, then the teacher will need to respond to this and reteach.
- Carefully select questions that will allow pupils to recall and evaluate.

What pupils need to do:

- Ask pupils to recall each event by creating an event summary.
- Then, pupils are asked to evaluate each event, using question for each summary, to highlight the consequences of them.
- Pupils are then asked to evaluate their effect on society and justify their reasoning.

When to try it:

- When asking pupils to not only apply their learning but evaluate already learnt key concepts.

What to avoid:

- Pupils lacking prior knowledge and clear understanding of all the events to be able to then evaluate their effectiveness.
- Pupils not understanding what effectiveness in society means.
- The task becoming too prescriptive, so pupils do not have the freedom to think about it creatively.

How do I know that it has worked?

- Pupils can successfully recall all events.
- Pupils can evaluate the importance of the event and be able to confidently justify their reasoning behind their evaluation.
- Pupils can justify why they have ordered the information in the way they have.

Goal-free tasks

Pupils are exploring based on a question with no agenda.

What you could do:

- Pre-plan a question linked to the topics that pupils have been learning.
- Do not push in any direction in terms of answer. This is to keep the task exploratory.
- After pupils answer the question, ask pupils to link this to the sorts of questions they feel could be asked in an exam.
- Circulate the room and share good examples.

What pupils need to do:

- In a maths classroom, pupils should suggest an idea inspired by the diagram.
- Be working in silence for an explicit amount of time.
- Pupils can develop their thinking further, with their partner, after a certain time.

When to try it:

- Towards the end of a topic when pupils have gained prior knowledge of the task.

What to avoid:

- Pupils struggling to know how to get started.
- Pupils finding it hard to make explicit links if unfamiliar with exam questions.
- Not exploring the problem first – the subject knowledge is key here.

How do I know that it has worked?

- Pupils show more confidence with answering problems over time.
- Pupils can answer 'prove that' or 'show that' questions.
- Valuable conversations take place with pupils about the topic.