

# Effective Learning Strategies

## Retrieval Practice

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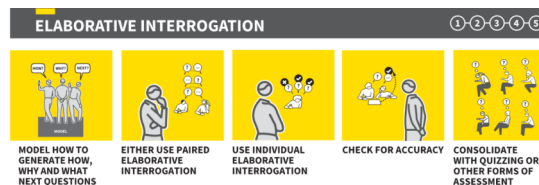


The Learning Scientists are cognitive psychologists interested in research on education. Their main research focus is on the science of learning (hence, "The Learning Scientists"!)

**Retrieval Practice** is a highly effective learning tool (not assessment) that is supported by vast amounts of research. It refers to the act of recalling learned information from memory (with no or little support) as every time that information is retrieved, or an answer is generated, it changes that original memory to make it stronger. It cements information into the long-term memory, which should enable that information to become easier to retrieve in the future.

### Retrieval Strategy 1 – Elaborative Interrogation

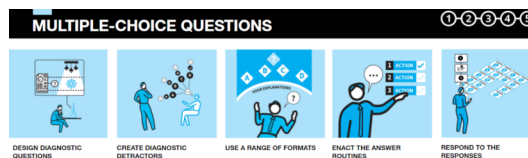
#### Walkthru: Elaborative Interrogation



- The aim with this strategy is for pupils to explore connections within their long term memory by asking ‘how’, ‘why’ and ‘what happens next’?. This requires them to clarify and link their knowledge of key ideas.
- This process strengthens a pupil’s **understanding and retention** of the information that they are trying to learn.
- Engaging in elaborative interrogation also encourages us to think about relationships between different ideas, understanding how they are both similar to one another and how they are different from one another.
- This strategy works best if pupils are having to think hard from memory, rather than having resources (e.g. notes, a knowledge organiser) to refer to.

### Retrieval Strategy 2 – Multiple Choice Questions

#### Walkthru: Multiple Choice Questions



- Multi-choice questions (MCQs) are often under-rated but these can be really valuable. This can be particularly useful for an Exit Ticket or a retrieval starter, but can be used anywhere.
- A benefit of multiple choice questions is that you can check specific bits of knowledge and understanding, but also help you to address misconceptions by putting in **plausible distractors** as alternative answers.
- Anticipating student misconceptions and putting them in as plausible distractors can be very powerful at understanding where a student has gone wrong, but also makes your inferences around a student’s understanding more valid.

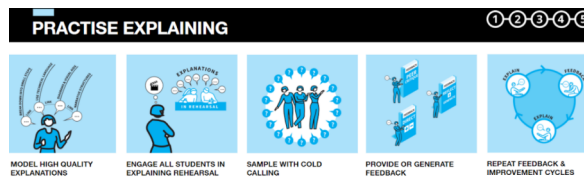


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### Retrieval Strategy 3 – Practise Explaining

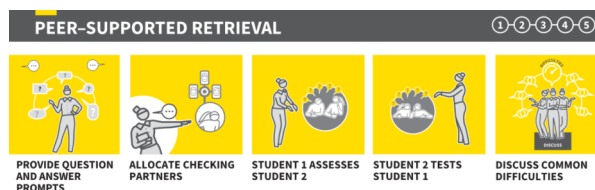
#### Walkthru: Practice Explaining



- A powerful way for pupils to develop their understanding of a concept is to formulate and communicate a cohort explanation.
- Pupils need practice and scaffolds to do this—verbalising our thought process can be hard.
- Allowing pupils to write down their explanation and rehearse with a peer can be beneficial for building confidence
- Scaffolds to help pupils with this process might include: sentence stems; key vocabulary; a modelled example from the teacher.

### Retrieval Strategy 4 – Peer-Supported Retrieval

#### Walkthru: Peer-Supported Retrieval



- Dylan Wiliam suggests that a powerful formative assessment strategy is to ‘activate learners as resources for one another’
- However, you cannot expect pupils to master the art of effective peer feedback without first understanding how to meaningfully respond to feedback themselves and to provide it to a peer.
- Therefore, the process needs to be carefully modelled and scaffolded for pupils, providing them with clear success criteria to check their peer’s understanding against.
- Peer-supported retrieval is also a great strategy for developing **metacognition**.

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### Retrieval Strategy 5 – Knowledge Organisers

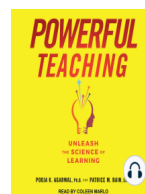
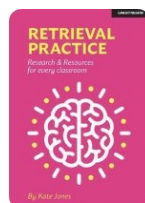
#### Walkthru: Using a Knowledge Organiser



- The purpose of a knowledge organiser is to give pupils an accessible summary of knowledge they need to know about a particular topic or concept.
- As Mary Myatt explains, *“the real power of knowledge organisers is that they make us think hard about what we are going to teach”*
- Pupils should have regular opportunities to practice retrieving information from the knowledge organiser; they should be not be able to see the knowledge organiser whilst they do this.
- Knowledge organisers only provide a summary—the body of knowledge that pupils gain at the end of a topic should be deeper and wider than what is outlined on the knowledge organiser.’

### Retrieval Practice – Reading and Resources

#### Books



#### Blogs and Articles

[Optimising Learning Using Retrieval Practice](#) (CCT)

[Does Research into Retrieval Practice Translate into Classroom Practice?](#) (Rob Coe)

[Elaboration as Self-Interrogation](#) (Learning Scientists)

#### Podcasts and Videos

[Retrieval Practice](#) (Learning Scientists)

[Unlocking the Benefits of Retrieval Practice](#) (Pooja Agarwal)

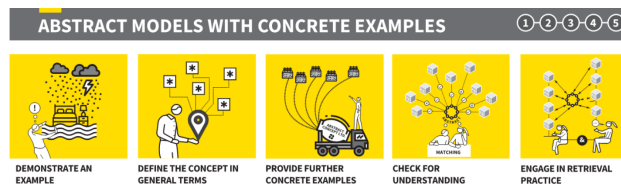


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Other strategies for building and strengthening memory include the use of **concrete examples, analogies, exemplars and success criteria.**

### Key Principle – Concrete Examples

#### Walkthru: Abstract Models with Concrete Examples



- Abstract ideas, particularly when pupils have **limited prior knowledge**, can be vague and hard to grasp.
- Moreover, human memory is designed to remember **concrete information better than abstract information** – we are always more comfortable when we can relate information to something we already know and therefore already have a mental model of.
- To help pupils to understand an abstract idea, we need to **solidify it and give it meaning in our pupil’s mind**. In other words, the concrete examples we use should help pupils to make links with their own experiences.
- When using concrete examples it’s important to ensure we are **making explicit** to pupils how that examples links to the underlying concept or idea. We can’t assume pupils will automatically make that connection

### Key Principle—Analogies

#### Walkthru: Analogies



- We only really learn new material by attaching it (or hooking it) onto what we already know. Prior **knowledge determines new learning**.
- New abstract ideas can sometimes best be understood by **constructing an analogy**, which helps us to relate the new idea to something concrete we already possess in our long-term memory.
- Analogies help pupils to see **common structures or patterns**, but is important to be explicit in helping pupils to draw out the things they have in common.

# Effective Learning Strategies

## *Other Strategies to Build Memory*

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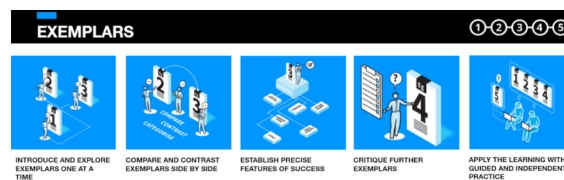


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### Key Principle – Exemplars

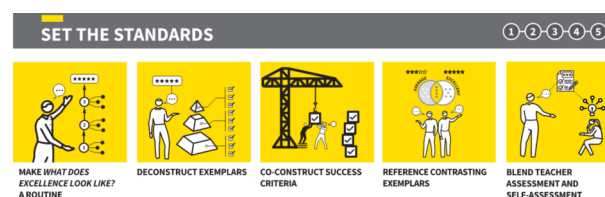
#### Walkthru: Exemplars



- It can be helpful for pupils to be able to **compare their own work against examples** similar to what you want them to produce.
- As well as comparing their own work to an **exemplar**, it can also be useful for pupils to compare two exemplars side by side.
- Providing opportunities to **compare and contrast** exemplars can help pupil distinguish between stronger and weaker examples. This can be particularly useful when pupils have **success criteria** to judge the exemplar against (see below).
- Sometimes it can be hard to define the requirements of a task in prose; exemplars can communicate the requirements far more effectively than using descriptors or rubrics.

### Key Principle—Share Success Criteria

#### Walkthru: Set the Standard



- In order to be successful, pupils need to understand what 'success' looks like. **Success criteria** help pupils understand what they need to include in their work to be successful.
- Where pupils have sufficient knowledge, the teacher may involve them in the co-construction of the success criteria.
- Effective teachers also help pupils understand what the **successful application** of the success criteria looks like. One way to do this is to **make them explicit when modelling**. Modelled examples need to show pupils what an effective standard of application looks like.
- As well as being useful for your pupils, they are also useful for you as the basis for your **formative assessment** i.e. how you will know if the children have achieved the learning objective.