

Mental models

When the mind is presented with new information, it searches the long-term memory for any prior knowledge that will support with the understanding and processing of the concept. If the mind finds some useful knowledge to support the working memory, then the newly acquired knowledge is added to an ever-growing web of information around this topic. We refer to these interconnected webs as ‘mental models’, or you may hear them referred to as ‘schemata’.

The diagrams below represent two mental models. The dots represent pieces of information and the lines represent links between the pieces of knowledge.

A well-developed mental model

Diagram 1 shows a well-developed, organised mental model of a topic. When a new piece of information is added, it will be processed and understood in relation to the existing information and links.

Diagram 1



A less-developed mental model

Where the mental model is less developed (diagram 2), the knowledge may exist in isolation. Where this is the case, the information is less embedded into memory, meaning that it is weaker and more likely to be forgotten. It is also much more likely to be misunderstood, and in turn, it is likely that misconceptions will develop around the information.

DIAGRAM 2



How does this relate to the classroom?

The information organised into diagram 1 will be more securely stored in the long-term memory, and pupils will be able to recall it more quickly when needed. Not only will this help with a pupil’s ability to process new information, but secure subject knowledge will support with the levels of engagement and motivation experienced by the pupil. When a pupil can understand what is being taught and experiences success, it is likely to lead to an increase in confidence, motivation and enjoyment in the learning. It is therefore important to think carefully about the key knowledge and foundational concepts that you want pupils to master before moving on, ensuring that pupils have secure prior knowledge to which they can link their learning.

So, what can you do as a teacher to help pupils develop an organised mental model around a topic, and ensure that the knowledge held within them is not forgotten? The next section looks at ways of strengthening the recall of knowledge.