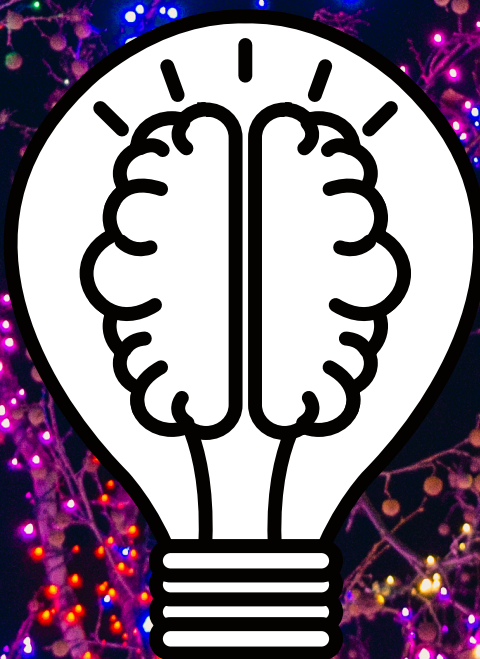


Memory

A lesson plan

Designed for children
aged 10-12 years



Memory



Learning intention:

This lesson aims to introduce the concept of memory. It explores two aspects of memory in more detail:

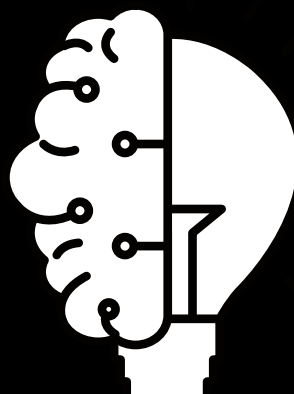
The difference between short- and long-term memory

The malleability of memory and how this can be manipulated

Extension material encourages children to think about how the malleability of memory applies to real-world issues such as the accuracy of eyewitness testimony and autobiographical memory recall

Aimed at: children 10-12 years

Length: approximately 30 minutes



Resources and information

Provided resources:

Two printable question sheets, link to a YouTube clip, printable memory information sheet

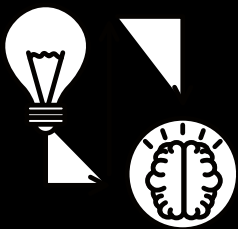
Required resources:

6 small household items (pencil, spoon etc), a towel and a tray

Link:

<https://www.youtube.com/watch?v=kVXEw7pJrEg>





Background information for teachers:

Memory is the faculty used by our brains to store information. Humans have different types of memory faculties which have different features – the most important of which are long (LTM) and short-term memory (STM).

STM is for the immediate recall of information initially presented. It is only able to hold a limited amount (around 7 'chunks') of information in a very accessible state temporarily. In order to remain in the STM, information must be rehearsed (either verbally or mentally repeated – for example: repeating a set of numbers you've been told to recall over and over).

LTM is our more permanent memory store. Once information enters the LTM, it remains there much more durably (without the need for rehearsal). The capacity of the LTM is not fully known – though some researchers believe it to be almost unlimited.

Another key feature of memory is its malleability. Memory is not, as is often believed, a 'recording-type' device that encodes everything we see with perfect accuracy. Instead, our memories are representations created by the brain. These representations can be easily influenced.

This lesson will demonstrate to children this concept using leading questions (questions which lead respondents to a premediated reply) which aim to plant a false memory – perhaps we are not the excellent memory detectives we often believe ourselves to be!



Method



Present the child(ren) with question sheet A, allowing them to read the instructions

Ensure children understand what it is they must do – watch the clip and write brief answers to the questions on the sheet about what they have just seen. Remind children they are detectives – they must pay close attention to the clip!

Play clip

Allow children a few minutes to answer the questions on question sheet A and then take it from them and place it face down

It is now time for the distractor task: arrange the items on a tray and tell children you are going to give them 40 seconds to memorise what they see

Once the time has elapsed, cover the items and tell children to look away. Rearrange the position of two of the items and take one away

Uncover the items and encourage children to tell you the differences they can see between this and how the items were placed originally – this should be an easy task!



Discussion point:



Ask them about the differences between the two tasks they've done – did one seem much easier?

Why do they think that is?

Encourage them to reflect on what they think this could mean for how easy it is to remember real-life scenarios (which are much richer and more complex) accurately for real life detectives

Method 2:



Present the child with question sheet B, allowing them to read the instructions

Ensure they understand what they need to do – they now have to answer questions on the clip again, but the questions are different

Once the questions have been answered, gather both question sheets



Discussion Point:



Encourage children to reflect on how difficult they found the task the second time: why do they think it was harder?

Encourage children to think about the impact of the distractor task and the greater elapsed time on their ability to accurately remember details of the clip.

Do they think overall that they're a pretty good detective?



Method 3 and Extension



Give children the long term vs short term memory resource, which will also reveal to children that they have been asked leading questions.

Draw children's attention to the overall message of the lesson: our memories are not recording devices – they reconstruct the things we remember, and not always very accurately!



Extension task:

The real-world implications of today's learning (especially the impact of forgetting and leading questions) could be discussed.

Children could be asked to think of ideas for how the malleability of memory could affect the work of real-world detectives

Example Prompts:

Eyewitness accuracy may be poor (because eyewitnesses are often asked questions a long time after the event)

Interviewers could distort the memories of eyewitnesses by asking leading questions

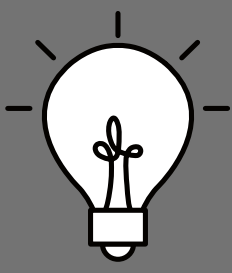
References:

Cowan, N. (2008). What are the differences between long-term, short-term and working memory? *Progress in Brain Research*, 169: 323-338.

Loftus, E.F. (1975). Leading questions and the eyewitness report. *Cognitive Psychology*, 7(4): 560-572.

Photo credits:

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The science of remembering

PRINTABLE RESOURCE

Our memory is used by our brain to store information we have learned – this is essential for remembering clues!

Our memory is incredibly complicated – and we have two main different types:

Short Term Memory (STM)

This is where your brain holds information you have just learned. So this is where the details of the clip were in your memory when you first watched it!

STM is very useful for remembering things straight after we've learned them, but it can only hold a small amount of information – usually about seven things. In order to keep information in the STM, we have to do something called '**rehearsal**' which means repeating the information over and over – which gets pretty boring after a while!

Long Term Memory (LTM)

This is where information goes after it has been '**encoded**' (which means moved from STM to LTM). LTM is our permanent memory store, which has loads more room than STM – you'd be pretty forgetful if you could only keep seven things in your LTM!

Information in the LTM doesn't have to be rehearsed to be remembered – if you can think of a memory you can remember (such as your first day of school), you're accessing your LTM! You were accessing your LTM when you answered the second set of questions on the clip because you were remembering with delay and without rehearsal

Memory Detectives

Now – how good of a memory detective do you think you were? Which set of questions was harder to answer?

The second set? That's because the information had to pass into your LTM so you had to work harder to remember it!

When information passes into the LTM it also becomes vulnerable to change – because our brains aren't recording devices – we don't remember everything we see perfectly! Human memory is actually very '**malleable**' (which means easily changed!)

Did we manage to change your memory? Have a look at the clip again while looking at question sheet B – do you notice anything?

The questions on sheet B are something called '**leading questions**' – which mean the questions themselves tries to give you a false memory! Could you remember the colour of the woman's glasses in the video? Look again – and you'll see she is never wearing any!

This shows that asking a particular question can sometimes change your memory of an event – so maybe we aren't always the brilliant memory detectives we think we are!



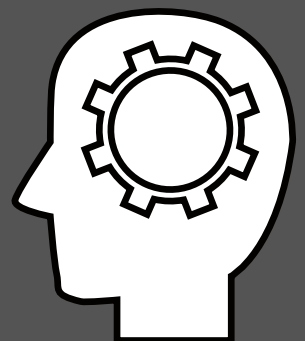
Question Sheet A

Today you're going to be a memory detective! Watch the clip as carefully as you can - afterwards there will be some questions to see how well you have remembered what you've seen - keep an eye out for clues!

1. What did Hitchcock and Scully do when the police concluded it wasn't them who stole the pie?
2. What animal was in the picture the police gave to the woman in the interrogation?
3. What kind of vehicle was the woman planning to use on thanksgiving for her ride?
4. What was the alibi of the last man to be interrogated?

Top Tip!

Alibi means a story to explain where you were at the time of a crime



Question Sheet B

Here are some more questions to answer on the clip you saw earlier – try and remember as much as you can – let's do some more memory detective work!

1. What colour were the glasses the woman was wearing?
2. What was the name of the final man's son? (whose birthday he was attending rather than stealing the pie!)
3. What colour was the slice of cake shown at the beginning of the clip?
4. What reason did the first man give for being at the mechanic when the pie was stolen?

Are you finding it
harder this time?
Why do you think
that is?

