

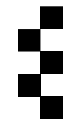
# Metacognition

Pre-16

Created by the Outreach Team at the  
University of Essex

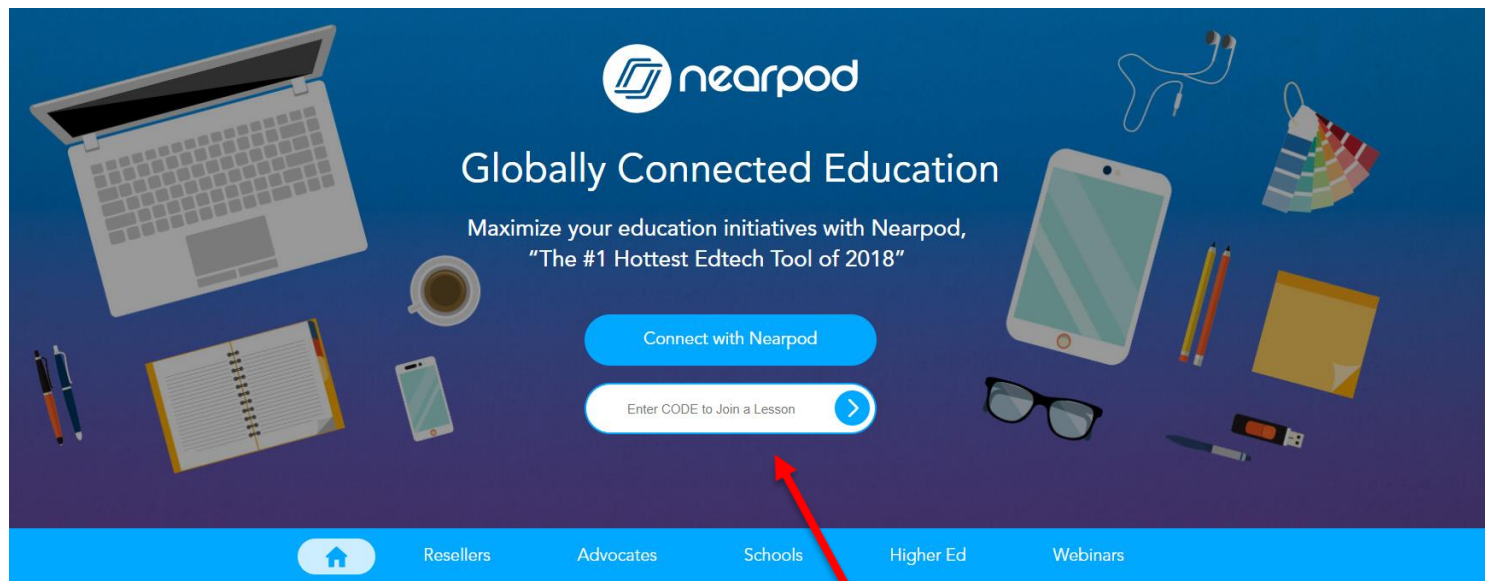
# Metacognition

- Try different strategies to complete activities/games
- Evaluate your strategy and recognise which strategies are more successful
- Learn what metacognition is, the benefits of it and how it can be used!



# The Memory Test

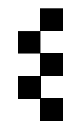
Go to [www.nearpod.com](http://www.nearpod.com)



Have a go at matching the items in as few moves as you can.

You will have two minutes!

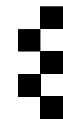
CODE: BTJZS



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# The Memory Test

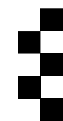
- How did you manage to match the items?
- Did you do it in less than 30 moves?
- How did you achieve this?

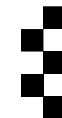
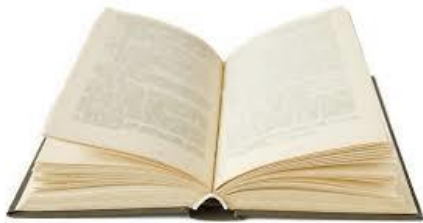


# The Memory Game!

On the next slide you will see lots of items and you need to try and remember as many as you can, in your head!

You will have two minutes... go!

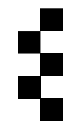




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# How did you memorise them?

- Based on how many you got correct, do you think your strategy was effective or not?
- Write down your strategy and other methods for remembering that you can think of.



# Strategies

- Looking
- Looking away and testing yourself
- Stories (The goldfish brushed its hair whilst in the tent- the weirder the story, the better)
- Repetition

Did you use any of these strategies?

Can you think of anymore?

How effective are they?

# What is Metacognition?

“metacognition

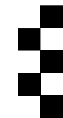
knowledge and understanding of your own thinking:

*Metacognition is considered one of humans  
most sophisticated cognitive capacities”*

From the Online Cambridge Dictionary

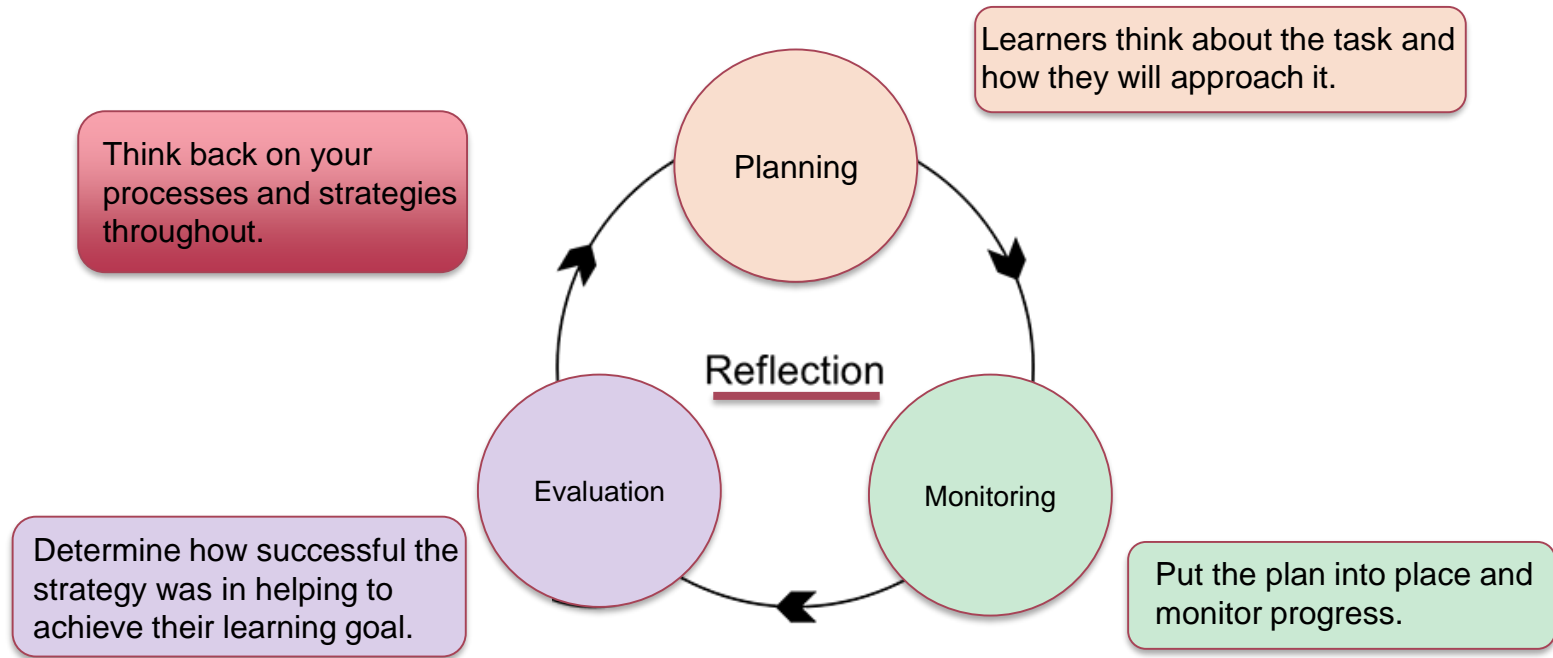
(<https://dictionary.cambridge.org/dictionary/english/metacognition> March 2020)

- Thinking about the ways you think
- Monitoring what you're doing to see if it works
- Changing your strategy if you need to



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# Metacognition Phases



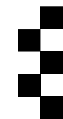
Example: Revising for an exam!



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# Metacognition is a life hack!

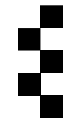
- Research shows that metacognition is really effective at boosting your grades
- Metacognition is a transferrable skill
- This skill helps you to develop your independent learning skills.
- Its not just about *what* you learn but how you learn it, that will really make a difference.



# Murder!



Harry was an international celebrity and singer, but he made a lot of enemies. When he realised how much trouble he was in, he disguised himself and headed for sunny Spain, hoping to make a new life... One week later he was found dead on the floor of his hotel room.



# Who did it?

The police have drawn up a list of suspects. What they don't know is which one of them did it. Harry had a hunch about which one person in particular might be on his trail, so he made clues that would help the police find the killer in the event that he was murdered. Now it's up to you to solve the case.



The ex-friend



The brother



The grandma



# The Memory Game

- Think about the strategy you're going to use to memorise the items– which strategy will help you to remember as many as possible?
- You can use the same strategy you have used beforehand or another one from the notes you have made, or a completely new one!
- Strategies:
  - Looking
  - Looking away and testing yourself
  - Stories (The goldfish brushed its hair whilst in the tent- the weirder the story, the better)
  - Repetition

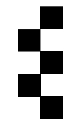


# The Memory Game



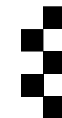
# How did you memorise them?

- If you used a new strategy, did it work?
- Would you use your new strategy again? Or change back to something you did before? Or something completely different?!
- This is metacognition: thinking about what works and adjusting accordingly and this will help you learn anything you want to learn, whether that's school work or something else!



# Harry's Suitcase – any clues?

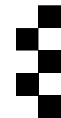
Identify the items you think will help us and then click on the image to see if you are correct.



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# The Notepad

Harry knew that if he just wrote down who the killer was, they would see it and destroy it. So he did something clever. He wrote the name of the killer in code in his red notebook and if we can crack this code, then we'll know who it was who did it.



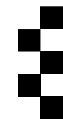
# Crack the Code

Look at the alphabet and you will see,  
how the letters sit next to who they would rather be!

**LX AQNSGDQ  
JHKKDC LD**

If you need a clue,  
please click here!

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

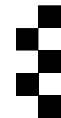


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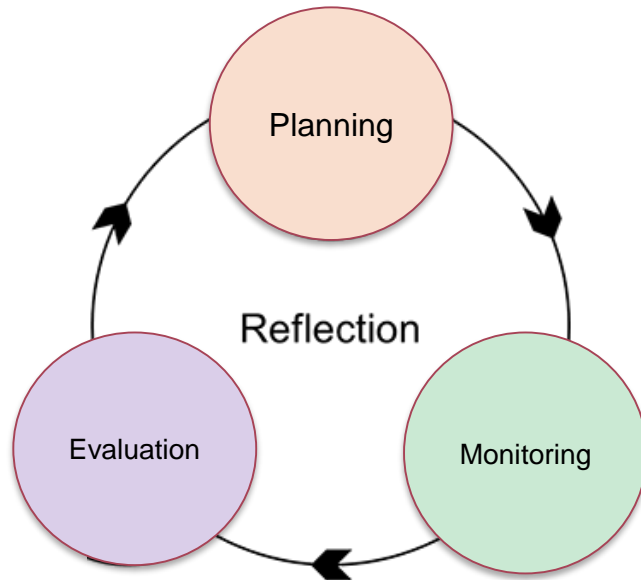
# The code is...

Click here to reveal the code...

- Well done if you managed to crack the code successfully!
- If you didn't quite manage to get it, think about what you tried? What have you realised?
- Talk about it out loud- this is an important part of metacognition.



# Metacognition

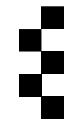


Plan: To crack the code

Monitor: Looked at whether your strategy to crack the code was working

Evaluation: If your strategy didn't work you adjusted it to try and solve it

The act of thinking about what you did and being really aware of it makes you more likely to succeed next time! You can apply these ideas to things outside of cracking this code.



# Strategies

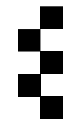
Table 1: Effectiveness of ten learning techniques, from Dunlosky et al (2013) <sup>39</sup>

High utility	<b>Practice testing</b>	Self-testing or taking practice tests on material to be learned.
	<b>Distributed ('spaced') practice</b>	Implementing a schedule of practice that spreads out activities over time.
	<b>Elaborative interrogation</b>	Generating an explanation for why an explicitly stated fact or concept is true.
	<b>Self-explanation</b>	Explaining how new information is related to known information, or explaining steps taken during problem solving.
Moderate utility	<b>Interleaved practice</b>	Implementing a schedule of practice that mixes different kinds of problems, or a schedule of study that mixes different kinds of material, within a single study session.
	<b>Summarization</b>	Writing summaries (of various lengths) of to-be-learned texts.
	<b>Highlighting</b>	Marking potentially important portions of to-be-learned materials while reading.
	<b>Keyword mnemonic</b>	Using keywords and mental imagery to associate verbal materials.
Low utility	<b>Imagery use for text learning</b>	Attempting to form mental images of text materials while reading or listening.
	<b>Rereading</b>	Restudying text material again after an initial reading.



# In Conclusion

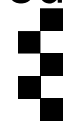
- Metacognition is about thinking about how you're learning and changing your strategy if you need to in order to be a really effective learner.
- This will help you to achieve better in exams and will also be helpful in the long-term.
- This skill will develop your independent learning.
- Metacognition isn't about whether you get the right answer, it's about working out how you can learn best.





**Great work!**

If you have any questions please send them to [www.sli.do](http://www.sli.do) and enter #Metacognition and one of the team will get back to you as soon as they can. Alternatively, you can email [outreach@essex.ac.uk](mailto:outreach@essex.ac.uk)



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