Metacognition and Revision Strategies

'dedicated to learning as the foundation for life'

What is metacognition?

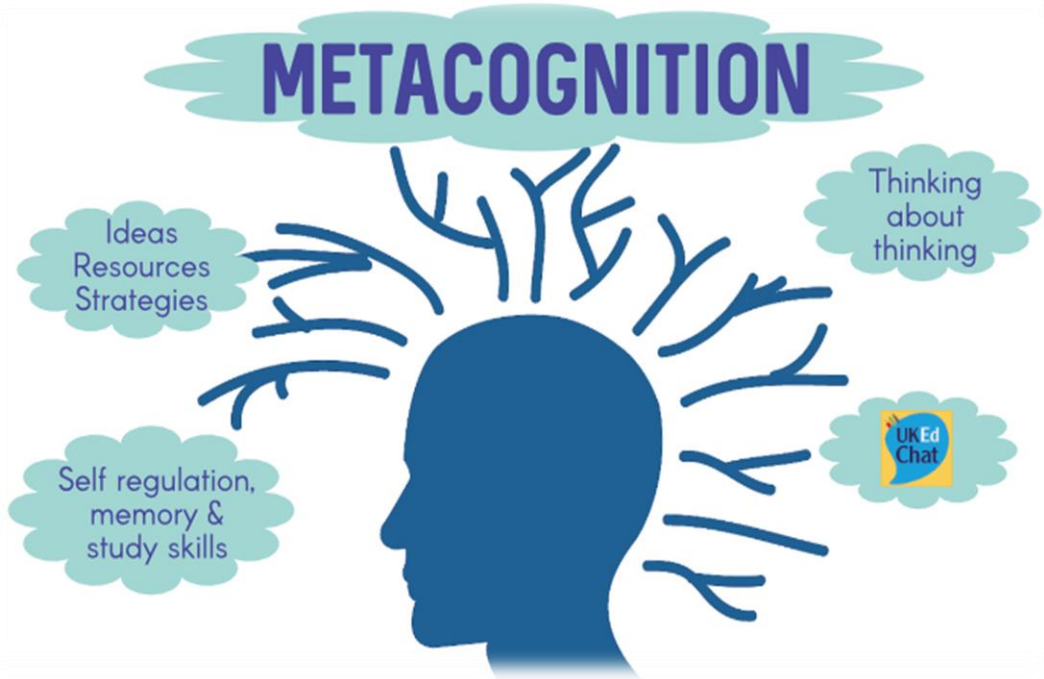
- Understood most simply as ‘learning to learn’ or ‘thinking about thinking’

- Explicitly teaching children different strategies for planning, monitoring and evaluating elements of their learning

- Pupils need to know a range of strategies so that they can select the best one to use in a specific context. For example, one self-assessment strategy might be needed in Maths and another in History

Pupil fails a test

They think the reason is low ability or lack of effort

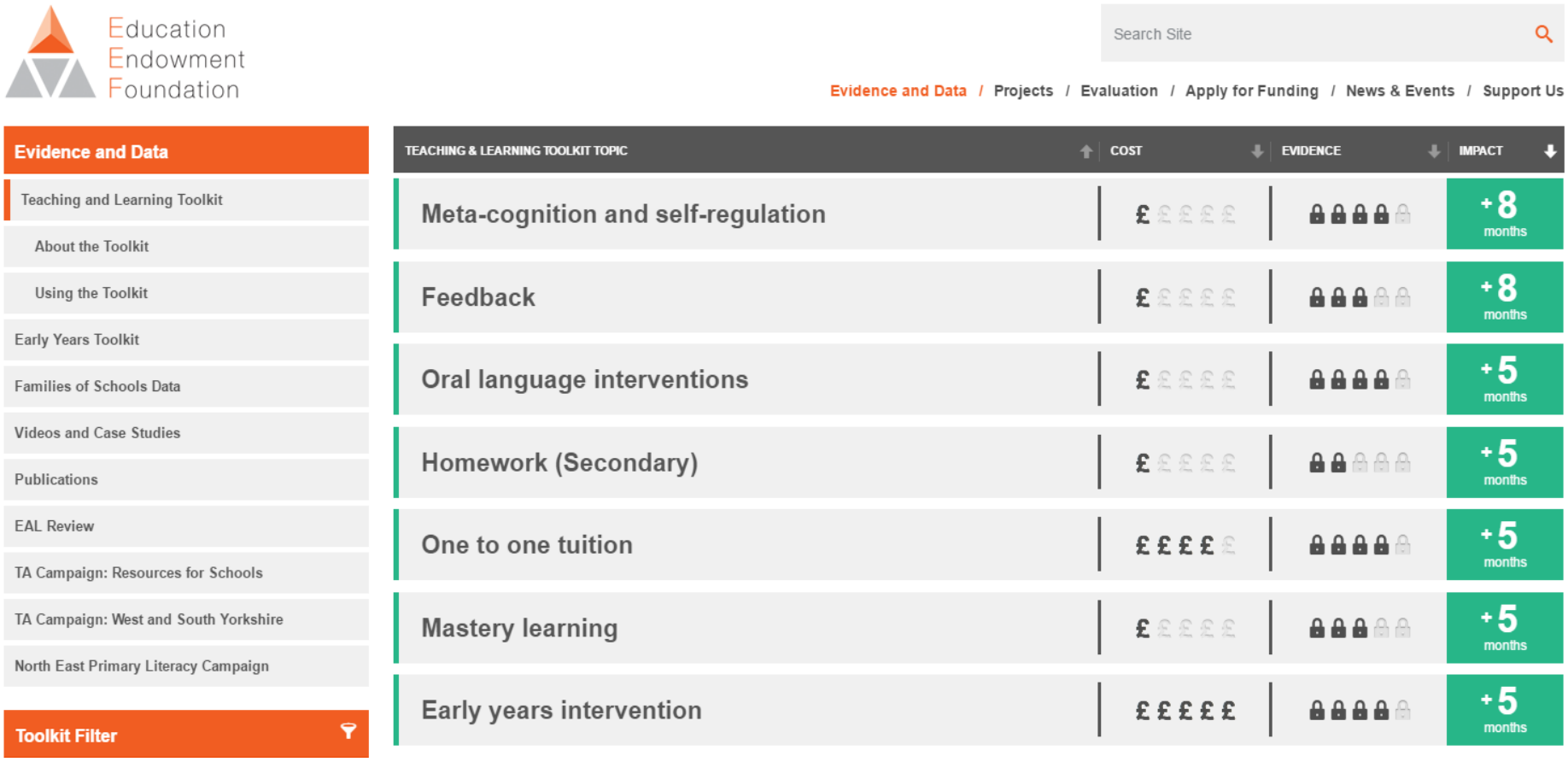


Metacognitive research says that pupils should develop the capacity to identify that they can improve their results through using more effective learning strategies

Why use metacognition?

- Explicitly teaching study strategies improves outcomes for pupils
- When pupils monitor their own learning they can become aware of potential problems and how they can overcome them
- It enables pupils to take greater responsibility for their learning and what they need to do in order to succeed

Why use metacognition?



Source: [Sutton Trust-Education Endowment Foundation Teaching and Learning Toolkit (2015)]

Two key elements of metacognition

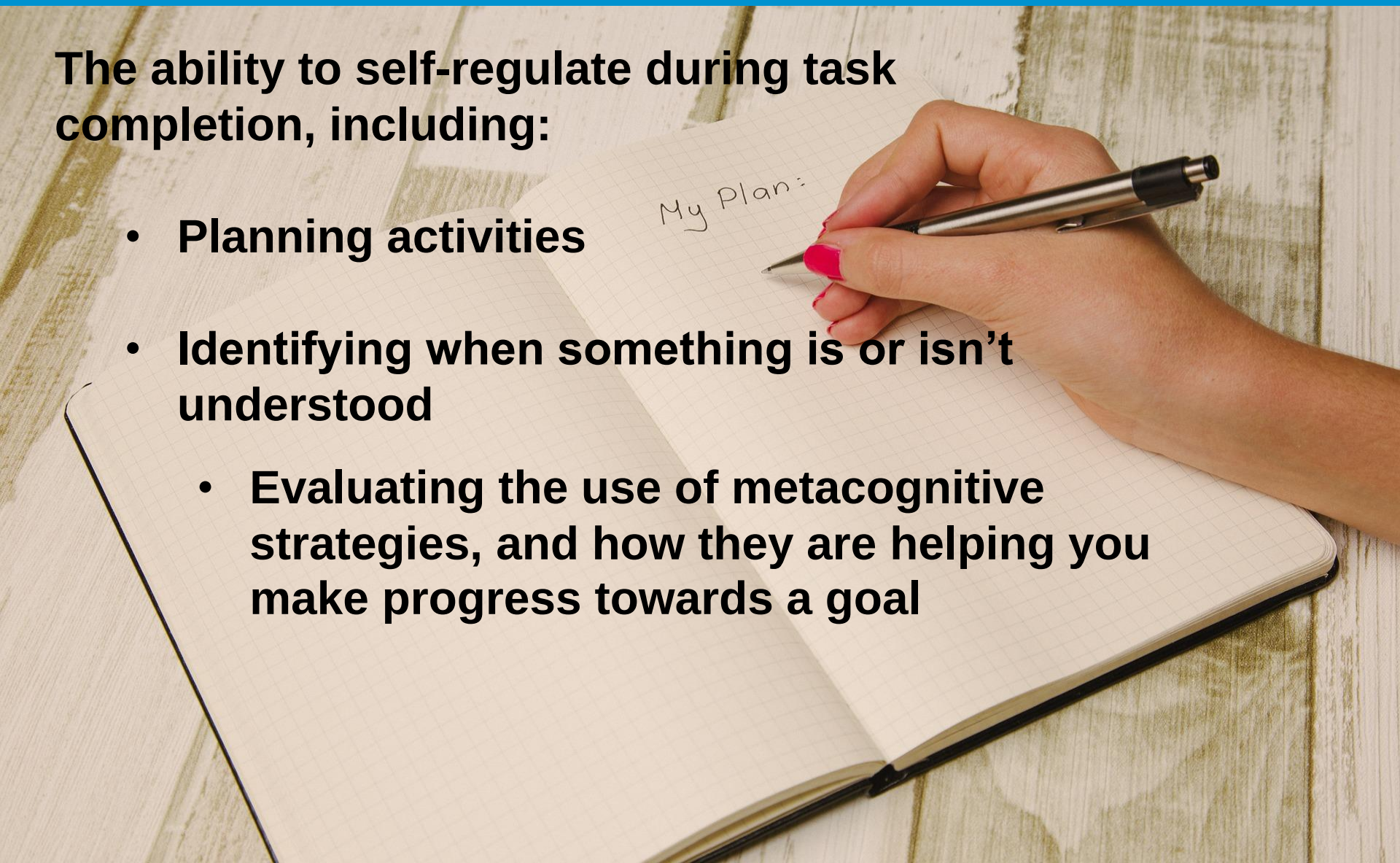
1. Metacognitive knowledge

2. Metacognitive regulation

Metacognitive knowledge

- **Me:** self-awareness – knowing oneself and what might enhance or limit our performance
- **The task:** knowledge of the nature of a task
- **The strategies:** knowledge of the steps and strategies that will enable task completion

Metacognitive regulation

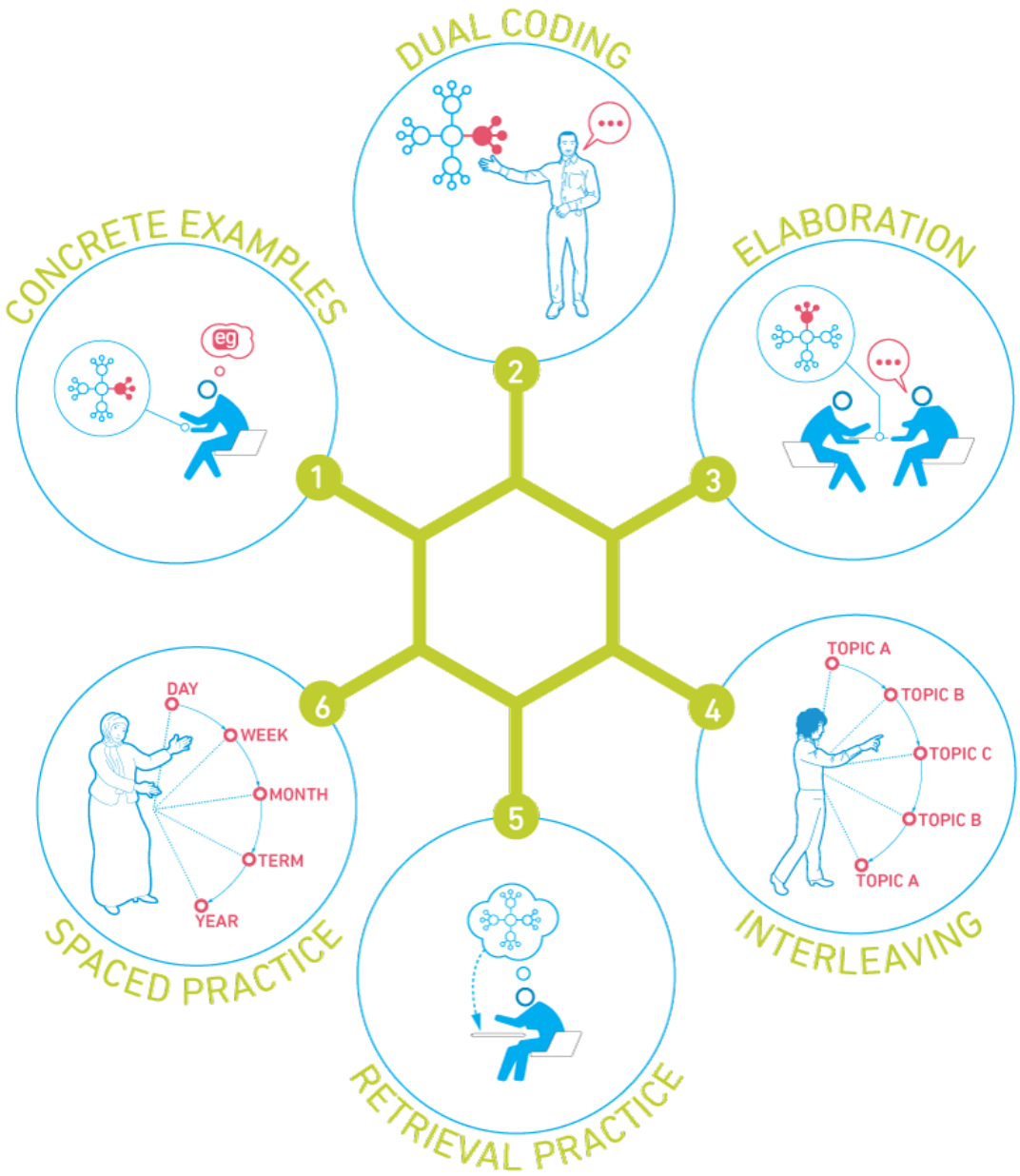


The ability to self-regulate during task completion, including:

- **Planning activities**
- **Identifying when something is or isn't understood**
  - **Evaluating the use of metacognitive strategies, and how they are helping you make progress towards a goal**

How do pupils revise at the moment?

- Writing out notes from the revision guide or textbook
- Doing past exam questions
- Writing out information from memory
- Trying to remember as much as possible 2 or 3 days before the exam (cramming)



THE LEARNING SCIENTISTS

THE 6 HABITS OF HIGHLY SUCCESSFUL STUDENTS

Retrieval Practice

Retrieval Practice

How can you do this?

- Use lists of key words or concepts that your child is revising and ask them to recall the meanings and information about the topic from memory
- Build on your child's independent revision by asking them to tell you about specific topics they have been revising
- Encourage your child to create flash cards, mind maps or practice papers from memory in their revision

Spaced Practice

Spaced Practice

How can you do this?

- Ask your child how they revise. Are they spending 2 hours on History on a Monday evening but no time the rest of the week?
- Help your child to create a revision timetable which divides subjects and topics into smaller sections, which they return to over several weeks
- If testing your child on what they've been revising, don't ask them about what they revised today. Ask them to talk to you about something they revised a week ago

Interleaving

Interleaving

How can you do this?

- When making a revision timetable, jumble up the order of the topics
- Test your child about topics in a different order, don't stick to one set order
- Create flash cards with questions or notes for different topics and then muddle them up into a different order before using them so that each time the order they are used is different

Elaboration

Elaboration

How can you do this?

- Ask children “how” and “why” about the topics they are studying to encourage them to think more deeply
- Ask your children about how different ideas they have learned are similar or different to help them to connect different topics

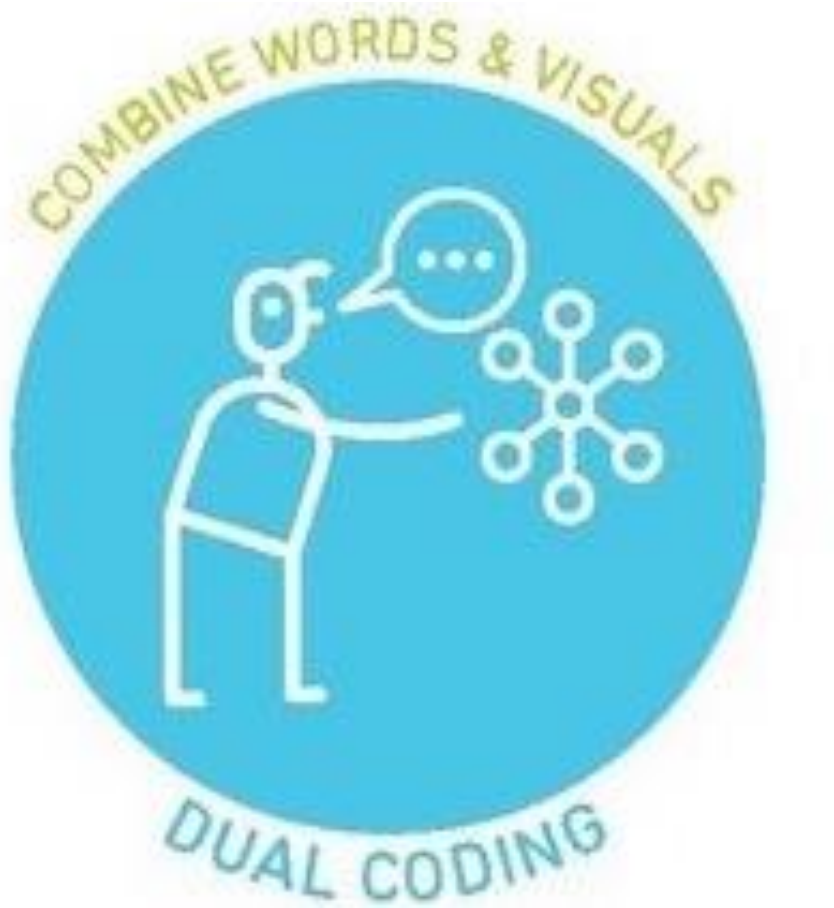
Concrete Examples

Concrete Examples

How can you do this?

- Encourage your child to look for concrete examples or to use ones taught in lessons in their own revision
- Using a list of topics for a subject, ask your child about specific examples from their everyday lives which link to their learning at school. For example: Population density. Birmingham city centre is full of people and is densely populated.

Dual Coding



Dual Coding

How can you do this?

- Encourage children to add pictures and diagrams to texts to help them to understand and memorise it
- Use cartoon strips to explain complex stories or events
- Create timelines with pictures and texts to remember key dates and events
- Use graphs or diagrams alongside text in subjects like Geography and Science

Audience Participation

Can you think of 5 practical ways in which you can help your child through exam revision?

5 Practical Tips: To help your child through exam revision

1) Know the exam timetable

2) Boost productivity with short-term rewards

3) Get somebody with exam experience to talk to them

4) Make sure they practice exam technique

5) Change things up for better results

Recommended Websites

http://www.learningscientists.org
/

Further reading and research

- https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/meta-cognition-and-self-regulation/

- **Flavell, J. H. (1979). *Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry.* American Psychologist, 34, 906-911.**

- **Flavell, J. H. (1976). *Metacognitive aspects of problem-solving.* In L.R. Resnick (Ed.), The Nature of Intelligence. Hillsdale, NJ: Lawrence Erbaum.**

- **Education Endowment Foundation (EEF) (2015). *Meta-cognition and self-regulation.* Sutton Trust-EEF Teaching and Learning Toolkit.**

- **Lai, E.R. (2011). *Metacognition: A literature review.* Pearson Research Report.**

- **Darling-Hammond et al (2003). *The learning classroom, session 9 – thinking about thinking: metacognition.* Stanford University School of Education.**

- **Metacognition: Study Strategies, Monitoring, and Motivation by William Peirce (2003)**