YOUR WEBINAR WILL BEGIN SHORTLY!

GETTING QUESTIONS RIGHT

WEBINAR 3

An Introduction to Metacognition
24 June

Developing your understanding of why metacognition matters and exactly what it is

Improving Feedback and Evaluation
15 July

Explore approaches to ensure that feedback is effective and is utilised

Developing Your Modelling
1 July

Understand different approaches to effective modelling in the classroom

Developing Independent Learners
17 July

Explore ways that we can develop more resilient and independent learners

Getting Questions Right
8 July

Explore exactly what makes effective metacognitive questioning

Ensuring Effective Revision
22 July

Develop your understanding of what makes effective revision

A Little Ask...

Share comments and photos across social media!

X: @MrMetacognition

BlueSky: mrmetacognition.bsky.social

LinkedIn: Nathan Burns

Pay as you feel/can

Mr Metacognition

Contracting Sessions

- Note down questions so that you don't forget them.
- Opportunity to record them on the post-session survey.
- Reach out to me through my SM channels
- Email me: nathan@mrmetacognition.com OR mrmetacognition@gmail.com

Mr Metacognition

Session Aims

- To explore why questioning is so important.
- To understand what does, and does not, make questioning effective.
- Consider a range of approaches to develop metacognitive questioning in the classroom

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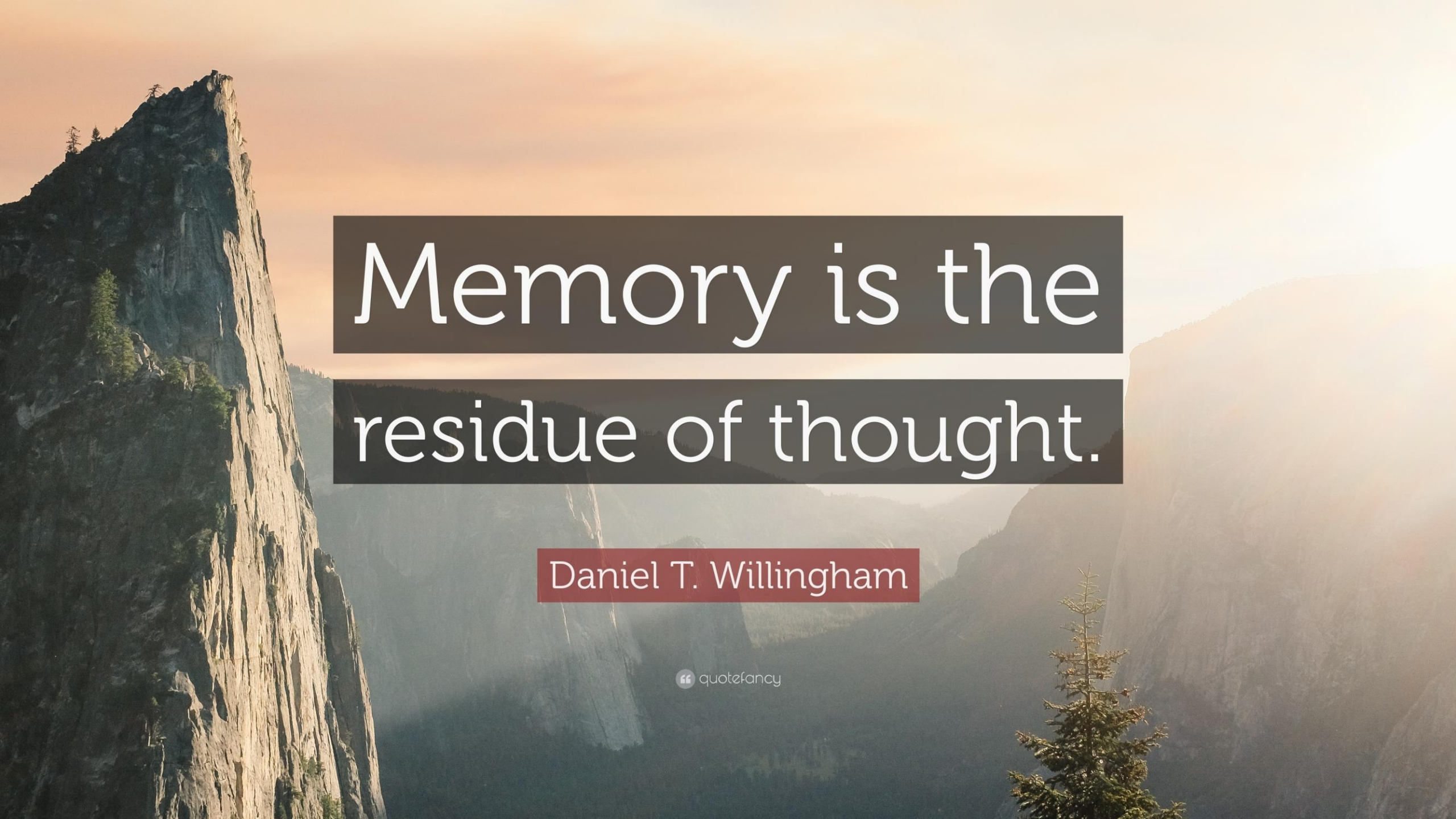
Memory is the
residue of thought.
Daniel T. Willingham
quotefancy

A 'Good' Question

Provides us with information that we didn't otherwise have around student understanding...

AND

Provides a student with new information to help them more forward...

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Getting Questioning Spot On!

- Questioning is just like playing darts...
- So...
  - We need to plan out our questions
  - We need them to build (appropriately) in difficulty (GOLDILOCKS!)
  - **They need to illuminate new information (for us, or student)**

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Getting Cold Call Right

- Teacher-led cold call rather than lollipop sticks/random name generators etc.
- Choose questions to suit the current attainment of students
- No-opt out (come back to students)
- Consider process/metacognitive questions to aid engagement
- Pose, pause, pounce, bounce to increase participation ratio
- Develop a culture of error

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Getting Think-Pair-Share Right

- Clear questions, that require discussion
- Provide individual thinking time first
- Then allow for writing time
- Then provide talk time
- Consider:
  - Modelling the process
  - Providing scaffolds for the conversation
  - The feedback method
  - Positioning in classroom
  - Student feedback on process

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Getting MWB Use Right

- Ensure that a consistent routine is used.
- Ensure that all MWBs are raised at the same time
- Find a suitable viewing spot to allow quick skimming
- Consider the balance between method/longer form answers and answer selection (a/b/c/d)

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Getting MCQs Right

- Need (3 or) 4 reasonable choices.
- Ideally the 3 incorrect answers draw upon common misconceptions
- Students ought not just be able to guess the correct answer.
    - *But they may be able to deduce the correct answer, and hence:*
        - *You may wish to ask for justification for an answer choice*
- Consider if the topic is suitable for an MCQ

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Metacognition, Not Cognition

- Typically, we ask 'cognitive' questions
  - What do I do next?
  - What is the answer?
  - How much do you need to write?
- Instead, we need to direct *some* attention to metacognitive questions

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Connections

What?

- Utilise questioning to draw connections with previous tasks
  - Conceptual variation... 'What is the same'; 'what is different?'
- Can become embedded in every lesson

Why?

- Learn from previous experiences
  - (Both positive and negative)
- Develop student schema; draw links between ideas and learning episodes

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Example

$3 + 4 - 5$

$3 - 4 + 5$

$3 \times 4 + 5$

$3 + 4 \times 5$

What varies between each question?

How does this impact the resulting answer?

What mistakes may be made?

What could we do to make sure our answers are correct?

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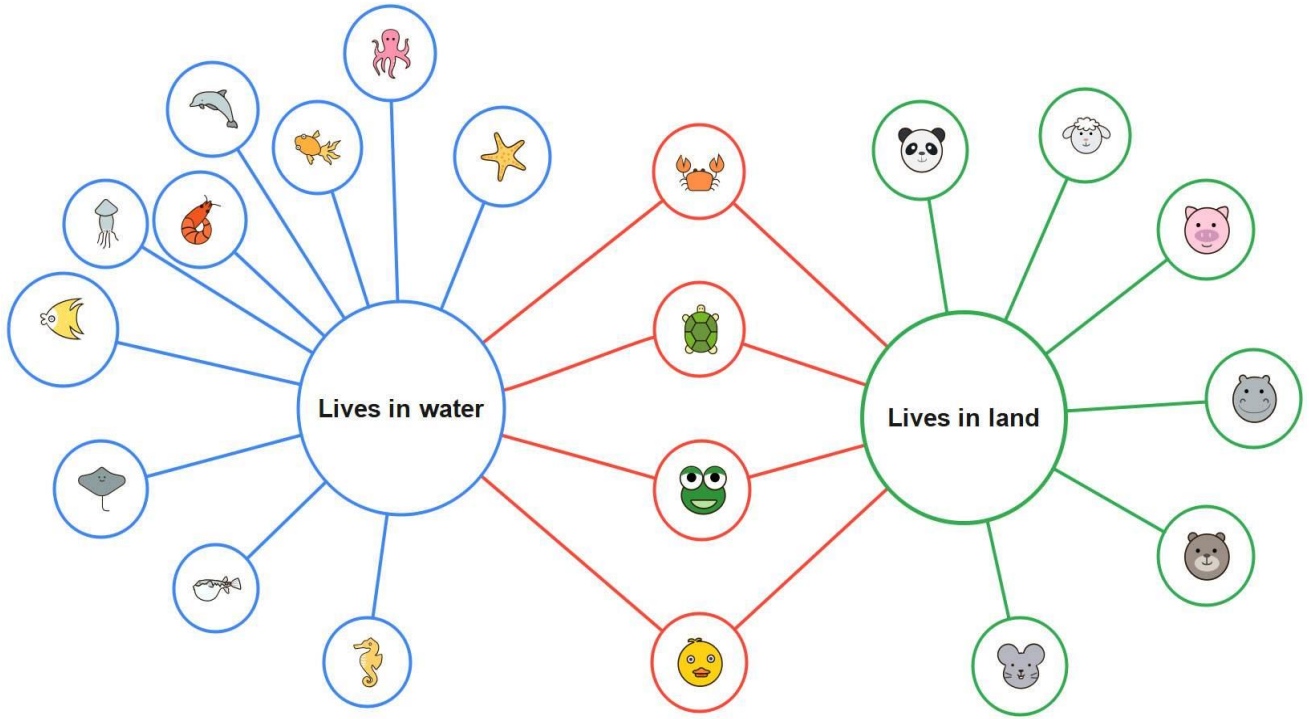
Example



Edraw Mind

What animals fit into both categories?

What links the animals in both categories?

What is the same and what is different?

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Example

Explain the formation of an ox-bow lake

as compared to...

Explain the formation of a waterfall

What is similar with these two questions?

How would your responses vary?

What did you learn from your previous response that must be included in your next response?

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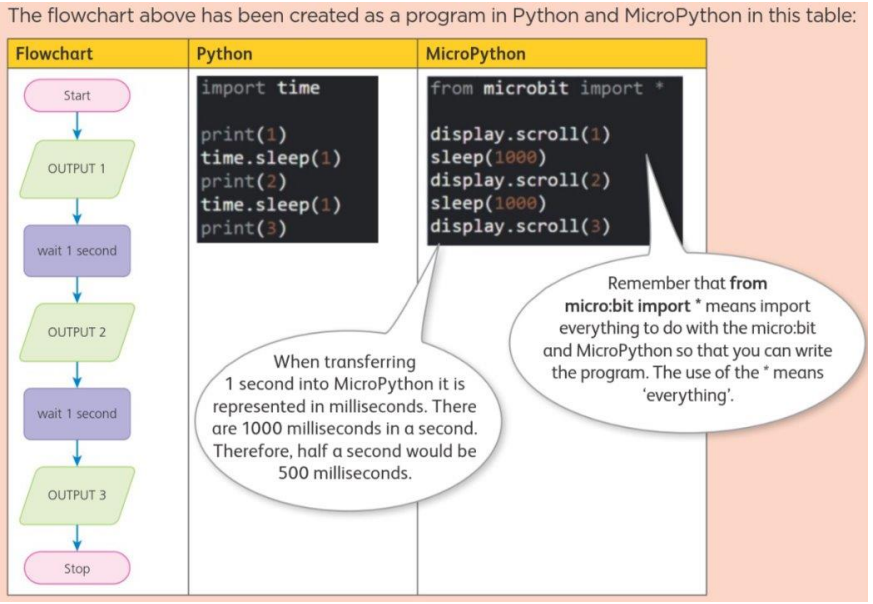
Example

The flowchart above has been created as a program in Python and MicroPython in this table:



Hodder – Cambridge International
Year 7 Computing Book

When might you use Python over MicroPython?

How does the userability compare?

How difficult is the programming for the two different systems?

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Example

Generally, we can ask questions around:

- How questions relate to each other
- How topics relate to each other
- How prior learning can support our future learning
- What skills we have learnt previously
- What we did well (or needed to improve on) last time

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Strategy Comparison

What?

- Questioning around the relative strengths, weaknesses, appropriateness of alternative strategies.
- Potentially better once students have a better awareness of content and strategies available to them (cognitive load).
- Not appropriate where there is no reasonable alternative approach.

Why?

- Strengthen student knowledge of strategy appropriateness
- Improves problem solving and learner flexibility
- Deepens topic understanding

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Example

Calculate 8 x 0.3

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Example

Compare the life cycles on one mammal and one amphibian

Describe all stages of one, and then the other

Describe a stage and compare; describe a feature and compare

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Example

Consider the benefits and drawbacks of...

List all benefits, then all drawbacks

Interlink benefits and drawbacks for 'smoother' prose

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Comprehension

What?

- Comprehension - what is the task requirement?
    - How long do you have? What do you need to do? How do you know that? Does it matter what method you use? (etc.)

Why?

- Improved comprehension = improved planning
- Improved planning = improved outcomes
- Comprehension often the biggest barrier to task success

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Example

AC

The right-angled triangle was placed onto a coordinate grid repeatedly to form the diagram on the right. Find the coordinates of the labelled points.

What are you being asked to find? In what form?

What are the key words? What do they mean?

What are you going to have to calculate?

Why is the information you have been given important/relevant?

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Example

Which of the following achieved more in the 1960s and early 1970s:

- campaigns to improve the rights of African-Americans
- campaigns to improve the rights of women?

Explain your answer with reference to **both** bullet points.

[12 marks]

AQA Past Paper, 2023

How long do I have?

What are the key words? Why?

What is the key command word, and what does it mean?

What points must you make to hit the marking criteria?

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Example

Through the sketching and annotation of a diagram, explainthe formation of a river...

What are you being asked to do? In what format?

What are the key words? What do they mean?

Why is the information you have been given important/relevant?

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Example

In chronological order, consider eight key events in Roman history

What are you being asked to do? In what format?

What are the key words? What do they mean?

Why is the information you have been given important/relevant?

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General Metacognitive Questions

Some further questions that we could ask...

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Comprehension

- What are the key words in the question? How do you know?
- What must be included within my answer? How do you know?
- If I have been provided with a table or graph, why may this be significant?
- Why have I been provided with an image?
- How does the number of marks available for this question link to the structure of answer that I need to provide?

Connection

- When have you seen a question or task like this before?
- What did you do well on when we had the similar task? Why did it go well?
- What did you struggle with when we had a similar task? Why do you think you struggled?
- What support may you need to be more successful this time around? Why will that help?
- What strategies did you use last time, and how well did they work? How do you know?

Strategies

- What are the strategies available to us?
- When would we usually use strategy *x*?
- What are the strengths and weaknesses of this strategy?
- Will this strategy always work, or is there a safer option?
- Did you consider how effective that strategy was last time that you used it?

Evaluation

- How successful were you in that task? How do you know?
- What went well in that task? How do you know?
- Where might you need greater support next time, and how will that help?
- What will you do differently next time?
- What will you do the same next time?

Plan

- What strategies are you going to use to plan your response? Why are you going to use that strategy?
- What are the key criteria of the task you have been given? How do you know?
- Do you need any additional support before completing the task? How will that help you?

Monitor

- How will you know that you are moving in a positive direction?
- How are you going to keep yourself within the time limit?
- What are the warning signs that you might be looking out for?

Evaluate

- How will you know that you have met the task success criteria?
- How are you going to improve next time?
- What support might you need to be more successful next time, and how will this help?

Knowledge of self

- What content do you know about this area?
- How do you know that content is relevant?
- What gaps do you have in your understanding? How are you going to address those gaps?

Knowledge of task

- What is the task asking of you? How do you know?
- What are the key criteria for you to include?
- Have you seen a task like this previously, and if so, how did you tackle that task (were you successful, unsuccessful, how, why and so on)

Knowledge of strategies

- How could you go about approaching this task?
- How confident are you with each strategy?
- Which strategy is probably most suitable for this task? How do you know?

What's Next?

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Survey

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