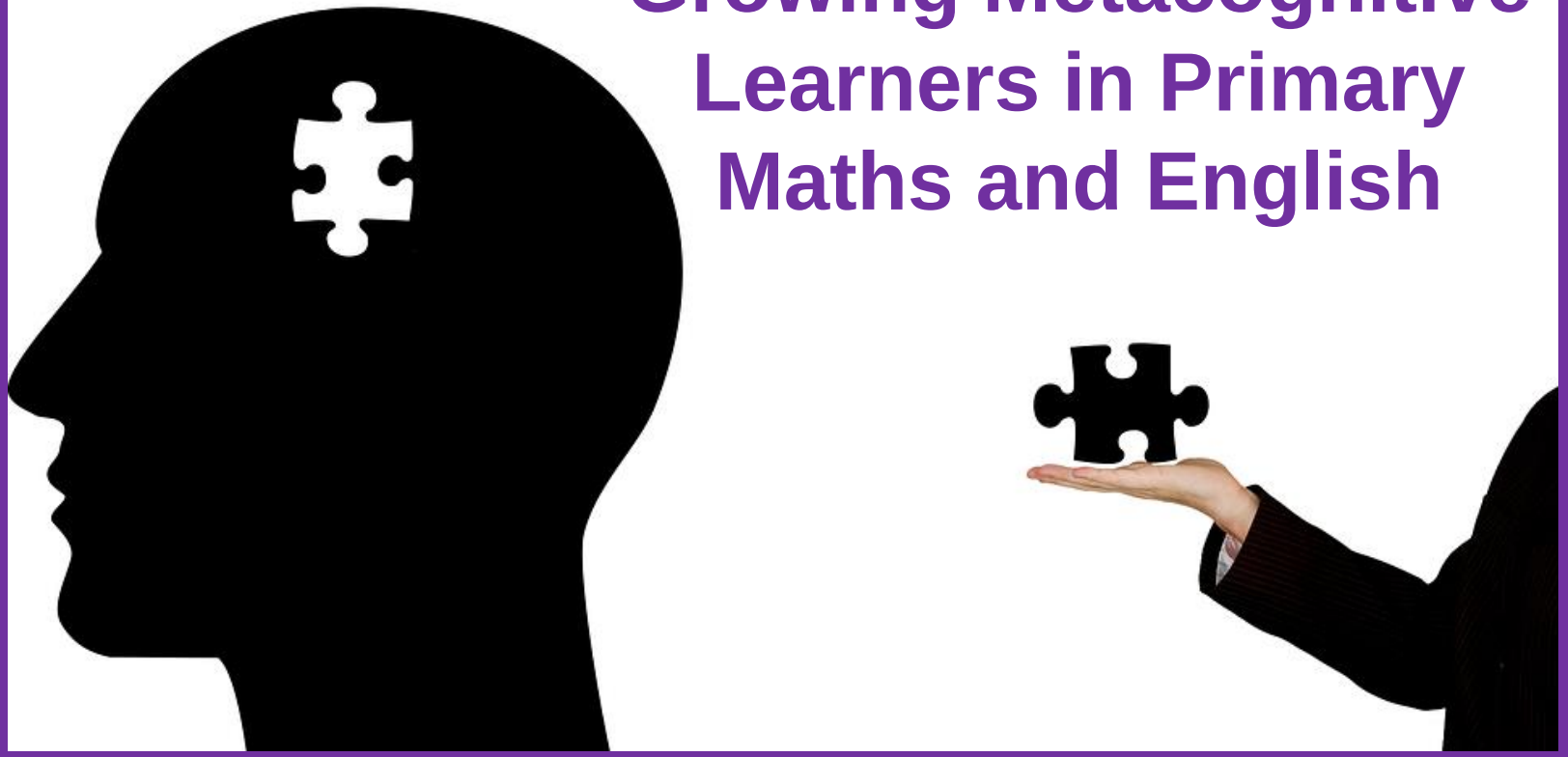
Growing Metacognitive Learners in Primary Maths and English



Adi Ahmet

Improvement Adviser

Primary Assessment

Sarah Carpenter

Improvement Adviser

Primary English & Maths

THE EDUCATION PEOPLE

Aims:

Session 1: Understanding Metacognition

- Understand the term metacognition and consider what this entails in the classroom.
- Recognise the ‘toolkit’ that we need to support our pupils to construct to enable them to work metacognitively.

Session 2: Applying it in Practice in Maths

- Explore a range of Maths tasks and consider the tools pupils will need to use and apply to be successful.

Session 3: Applying it in Practice in English

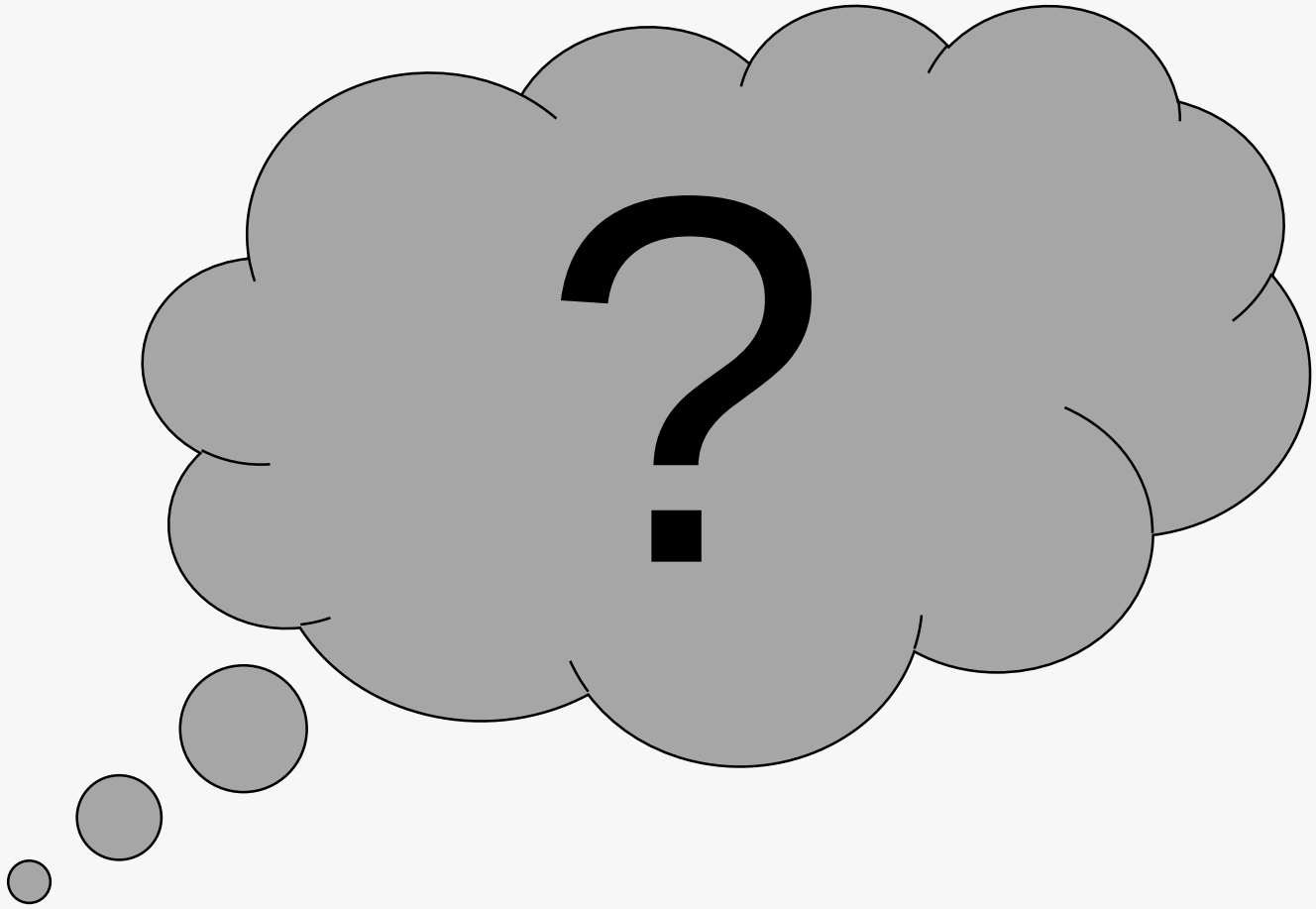
- Explore a range of English tasks and consider the tools pupils will need to use and apply to be successful.

Session 1: Understanding Metacognition

- Understand the term metacognition and consider what this entails in the classroom.
- Recognise the ‘toolkit’ that we need to support our pupils to construct to enable them to work metacognitively.

THE EDUCATION PEOPLE

What is ‘Metacognition’?



What Does Metacognition Look Like?

THE EDUCATION PEOPLE

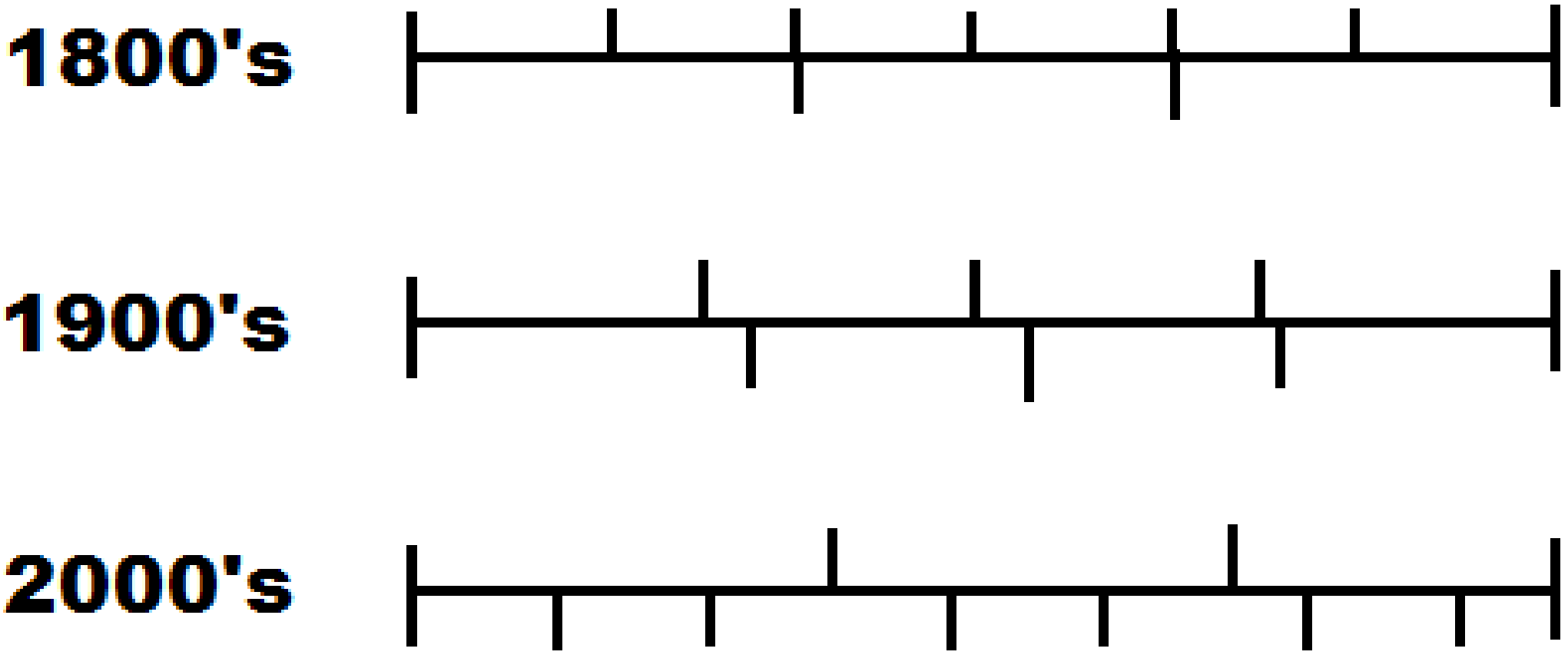
Why Metacognition and Self-regulation?

'There is a strong body of research from psychology and education demonstrating the importance of metacognition and self-regulation to effective pupil learning. Metacognition and self-regulation' is a high impact, low cost approach to improving the attainment of disadvantaged learners.'

The Sutton Trust - EEF Teaching and Learning Toolkit

Top timeline -

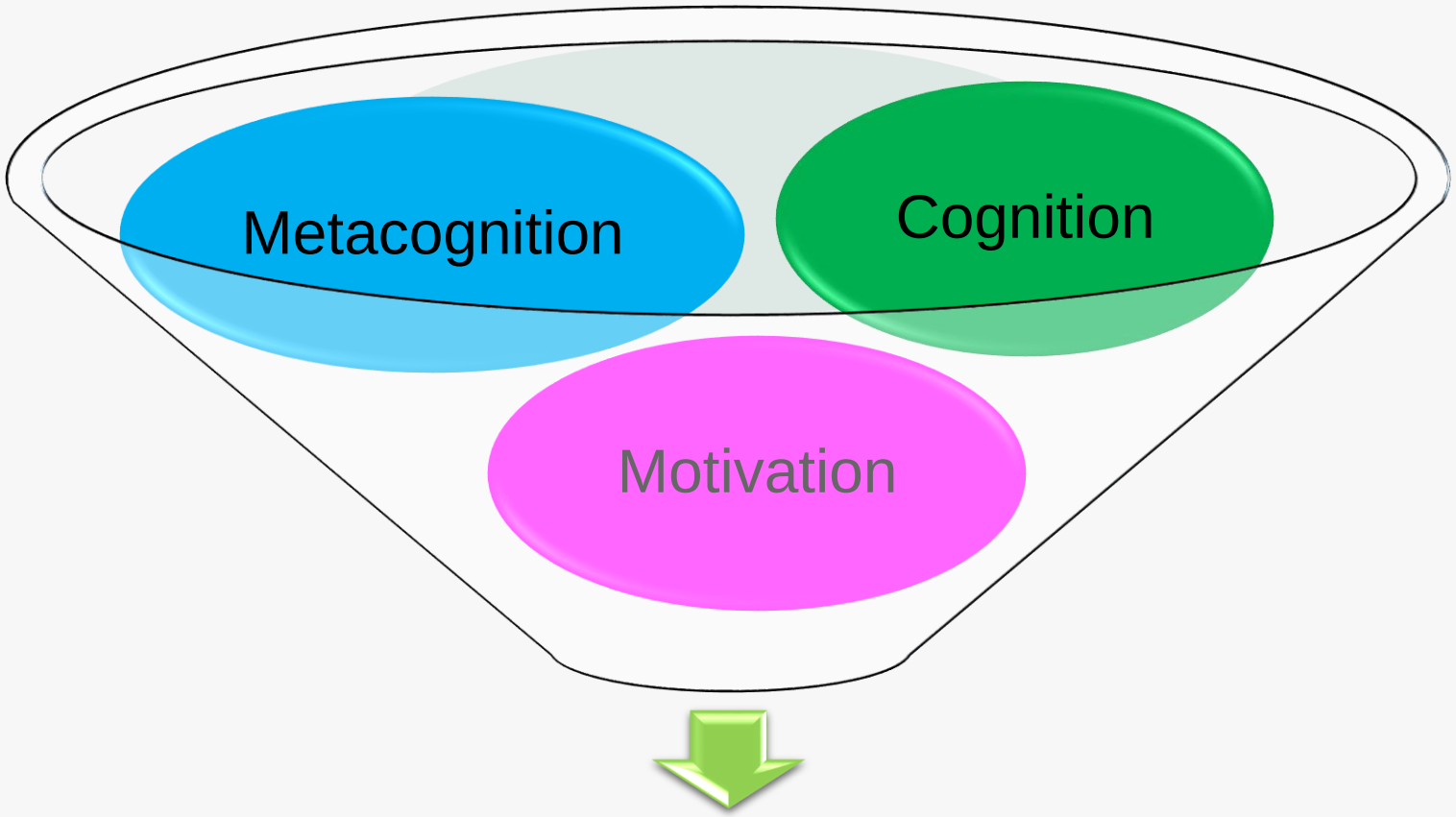
Bottom timeline -



Why Metacognition and Self-regulation?

Pupils with good metacognitive skills are flexible in their approaches to learning. They possess a number of strategies to best cope with the information they need to interact with and can assess which ones to use at the most appropriate times. Engagement with metacognitive learning techniques encourages pupils to see learning as a process, and one in which they can have input. **The learner is at the centre of the activity, directing it, rather than standing on the sidelines. Ideally in this way, pupils begin to see how they can take control of their own learning and be agents of their own success.**

The Three Keys to Self-regulated Learning



Self-regulated learning

Cognition…

…the mental process involved in knowing, understanding, and learning.

By *cognitive strategies*, we mean skills like **memorisation techniques** or **subject-specific strategies** like making different marks with a brush or using different methods to solve equations in maths. This is the bread and butter of good teaching; cognitive strategies are fundamental to acquiring knowledge and completing learning tasks.

Metacognition…

…is about **the ways learners monitor and purposefully direct their learning**. For example, having decided that a particular cognitive strategy for memorisation is likely to be successful, a pupil then monitors whether it has indeed been successful and then deliberately changes (or not) their memorisation method based on that evidence.

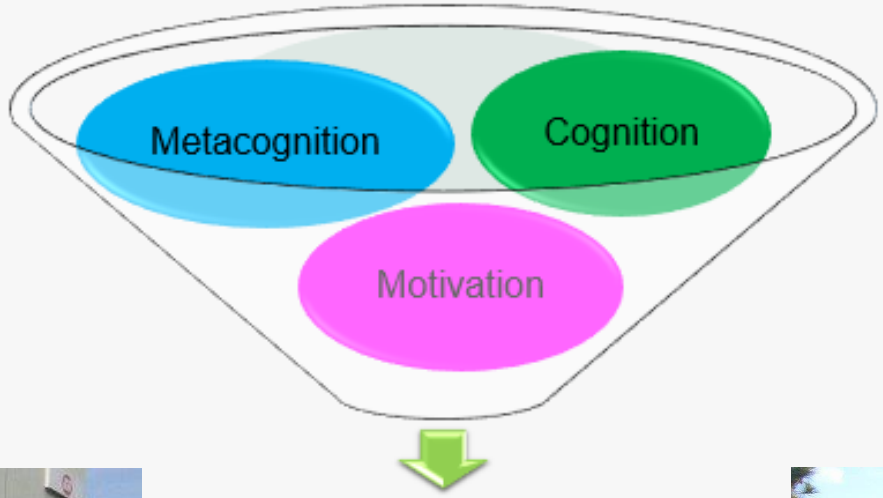
By *metacognitive strategies*, we mean **the strategies we use to monitor or control our cognition**, such as checking that our memorisation technique was accurate or selecting the most appropriate cognitive strategy for the task we are undertaking.

Motivation…

…is about our **willingness to engage our metacognitive and cognitive skills and apply them to learning**.

Motivational strategies will include convincing oneself to undertake a tricky revision task now—affecting our current well-being—as a way of improving our future well-being in the test tomorrow.

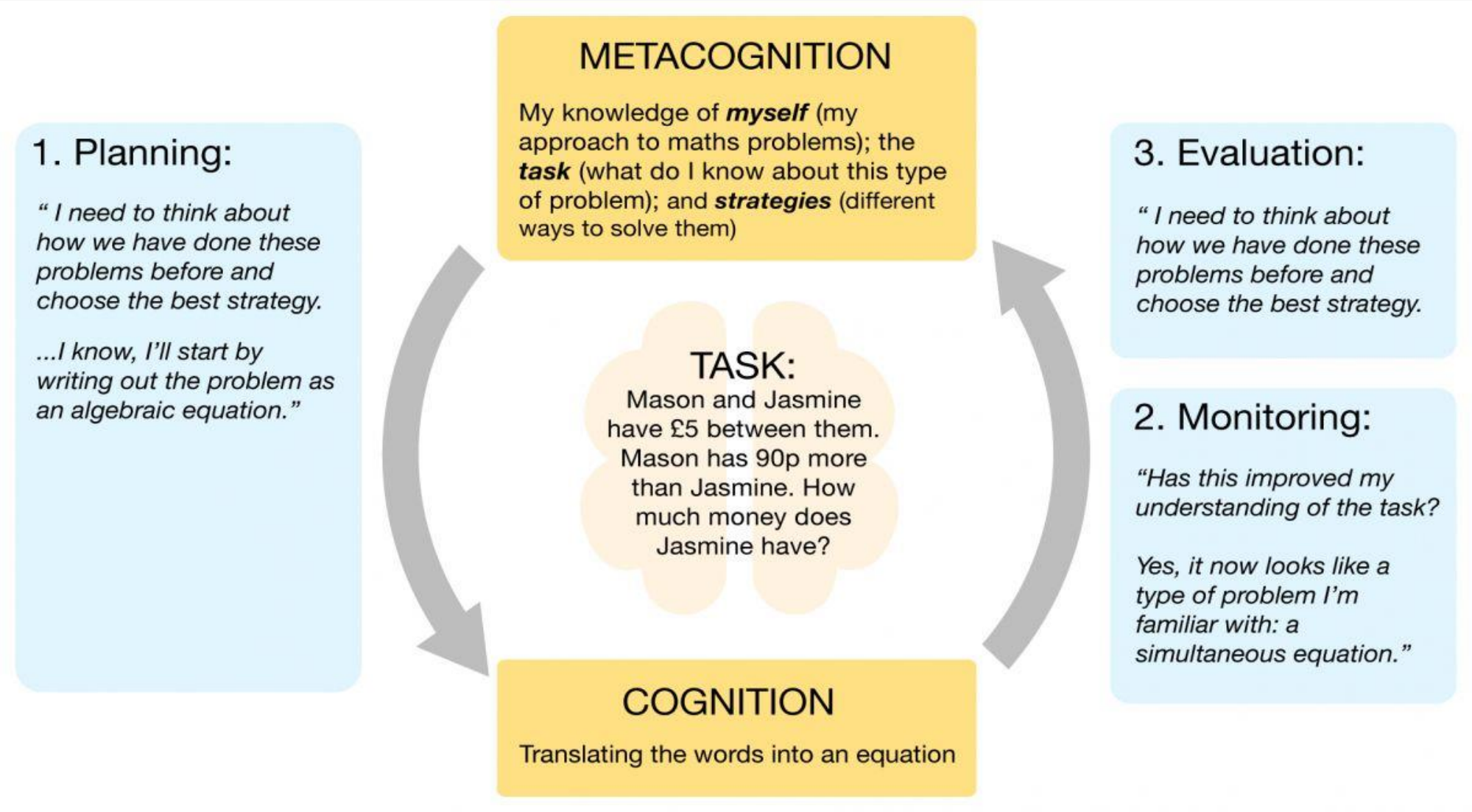
Experiencing Self-regulated Learning



Self-regulated learning

THE EDUCATION PEOPLE

Metacognition in Action



Adapted from Nelson and Narens, 1990

THE EDUCATION PEOPLE

Metacognition in Action

Mason and Jasmine have £5 between them. Mason has 90p more than Jasmine. How much money does Jasmine have?

Have a go at the task.

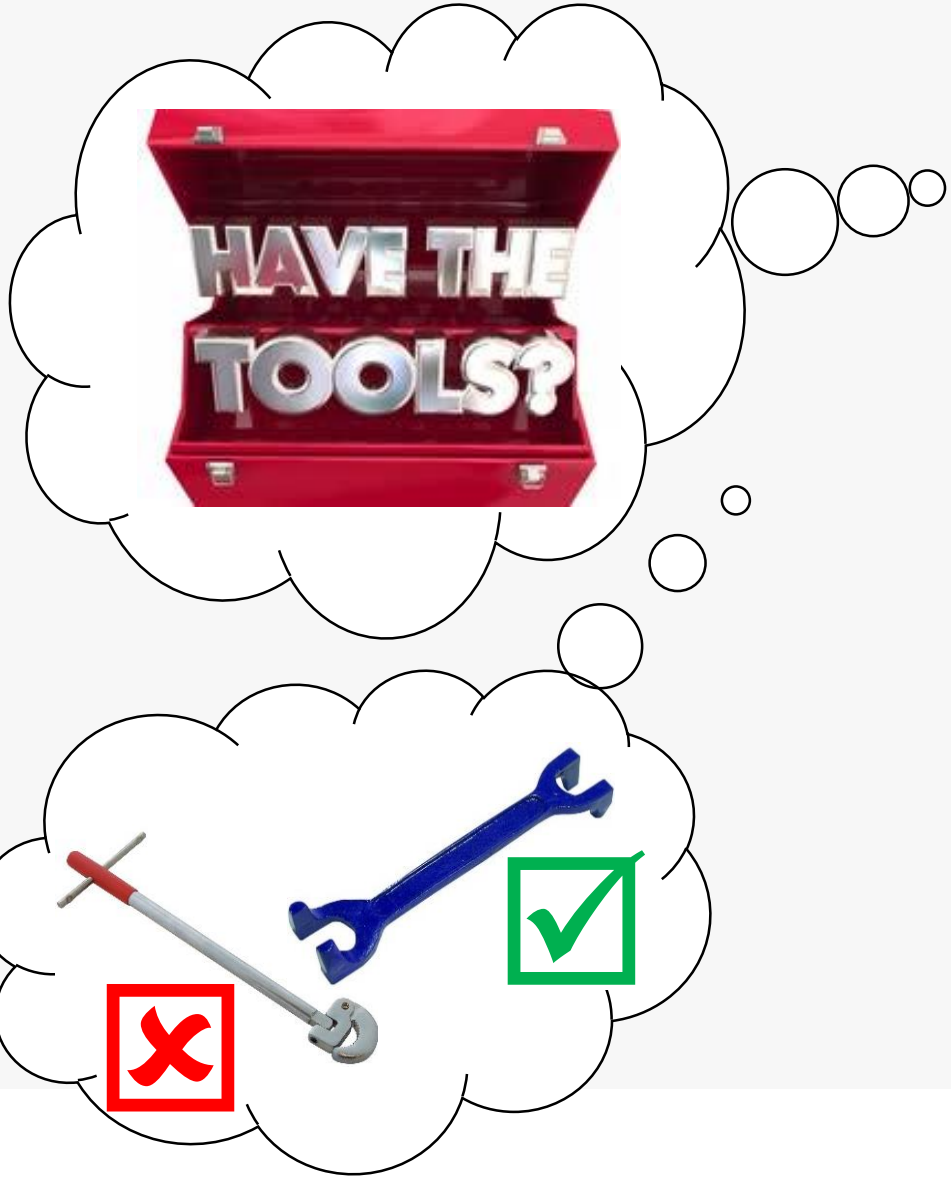
- What knowledge do you start out with?
- What strategies could you use?
- What methods could you employ?

THE EDUCATION PEOPLE

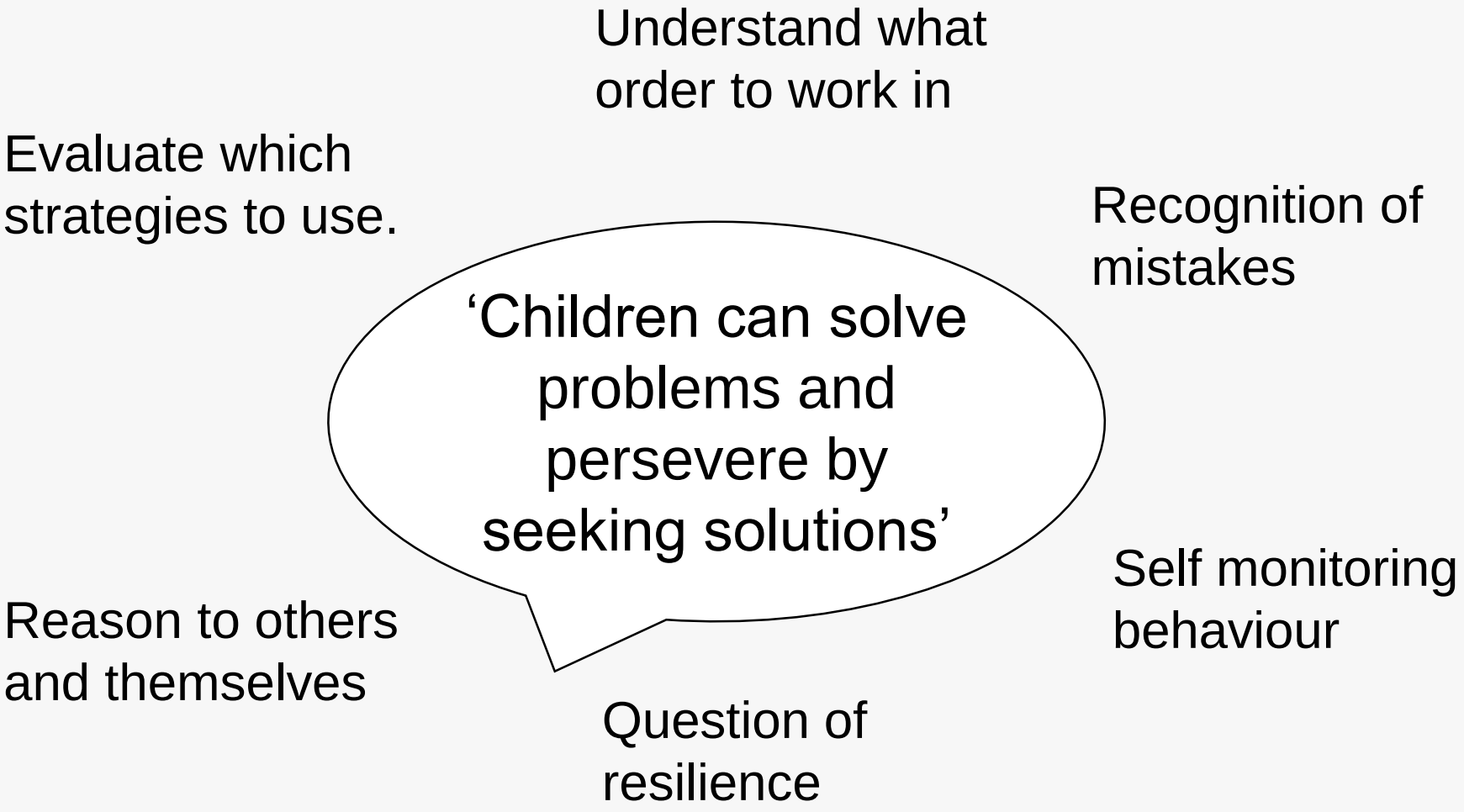
The Journey, not the Vehicle

THE EDUCATION PEOPLE

The Metacognition ‘Toolkit’



THE EDUCATION PEOPLE

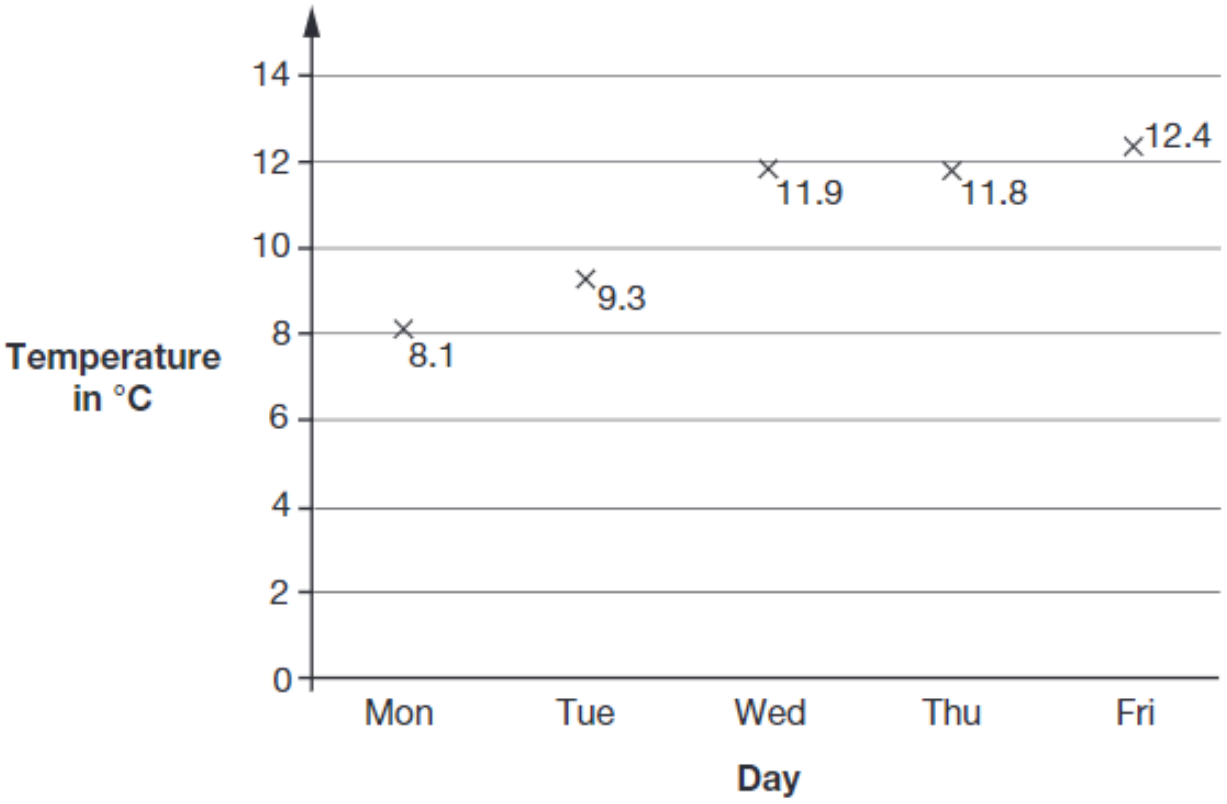


So **how** would a child meet this aim?

THE EDUCATION PEOPLE

The Benefits of a Metacognitive Approach

22 This graph shows the maximum temperature for five days.



For what fraction of the five days was the maximum temperature below 10 °C?

THE EDUCATION PEOPLE

Metacognition in Action

Try this:

- 155 x 3

What knowledge are you using to tackle this task?

Now try this:

- 145,343,233 x 3

What about this one?

What we learn is that cognitive processes are controlled and adapted constantly. We are always making decisions about our learning in the moment. These decisions happen intuitively but, with explicit teaching and scaffolding, they can be better and more habitually enacted by pupils.

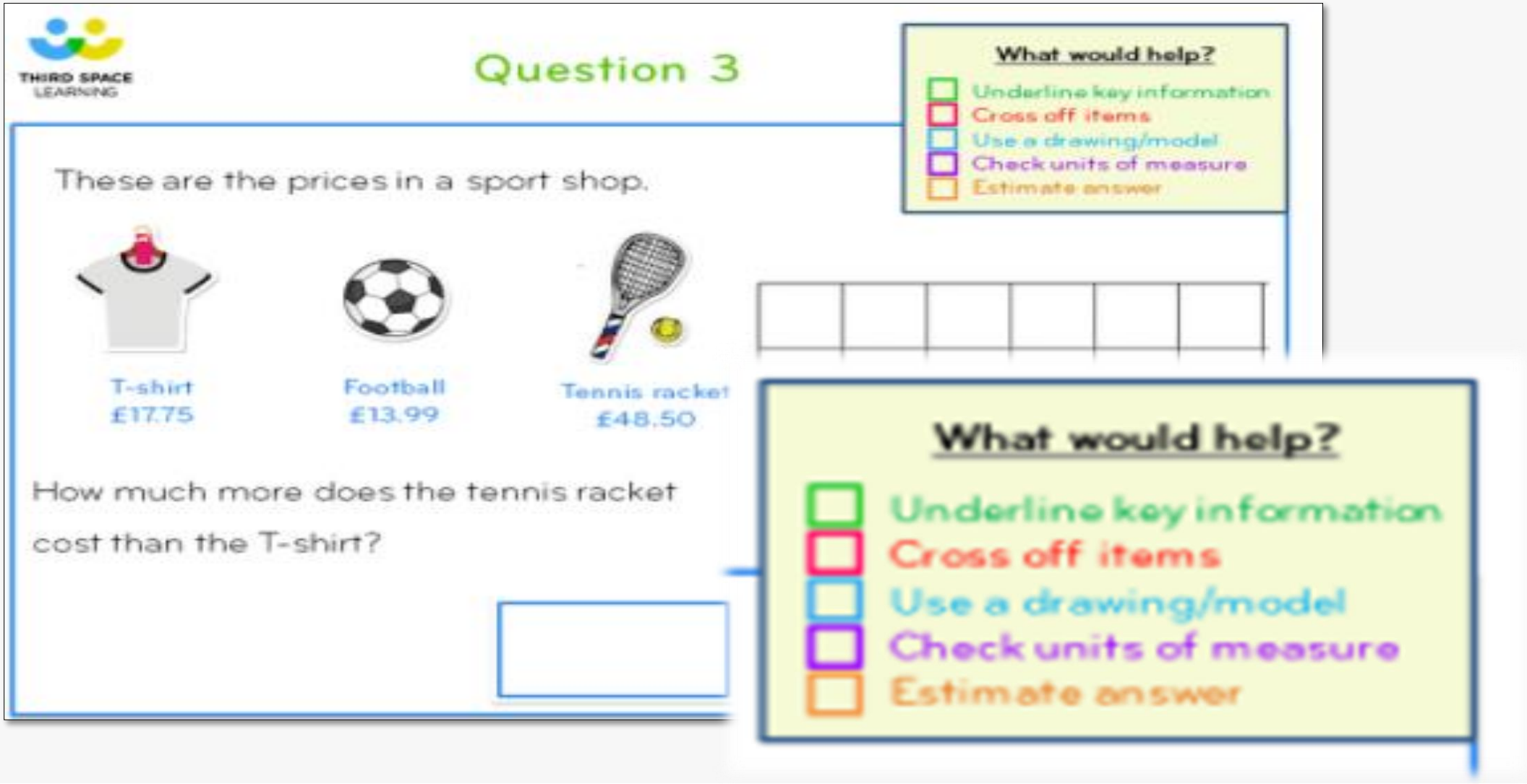
THE EDUCATION PEOPLE

Questions to Encourage Metacognition

What did I do?	➢ Reflection on the task
How did I do it?	➢ Analysis of the chosen approach
Why did I do it like that?	➢ Strategy preference
How did it help me?	➢ Evaluating the strategy/ies chosen
When can I use it again?	➢ Application

THE EDUCATION PEOPLE

Metacognition in Action!



Example taken from Third Space Learning:
https://thirdspacelearning.com/

THE EDUCATION PEOPLE

Reflection

What did I do?

How did I do it?

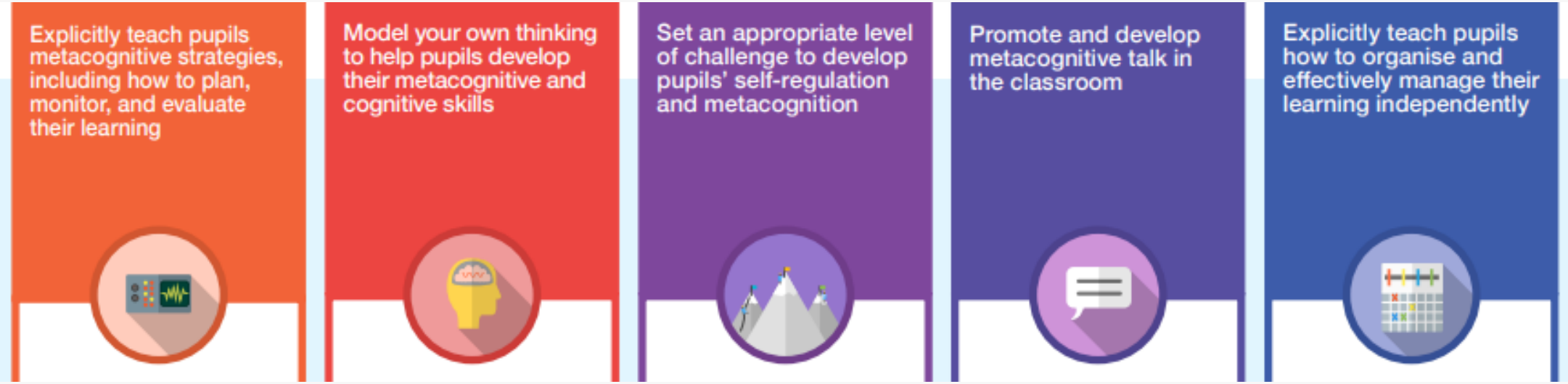
Why did I do it like that?

How did it help me?

When can I use it again?

Teaching Metacognition and Self-regulated Learning

The Education Endowment Foundations report on Metacognition and self-regulated learning explores seven key recommendations for introducing this approach to pupils. Over the following slides, we will explore five of these recommendations:



Education Endowment Foundation

THE EDUCATION PEOPLE

Explicitly teach pupils metacognitive strategies, including how to plan, monitor, and evaluate their learning

This is the seven-step model for explicitly teaching metacognitive strategies as recommended by the EEF report:

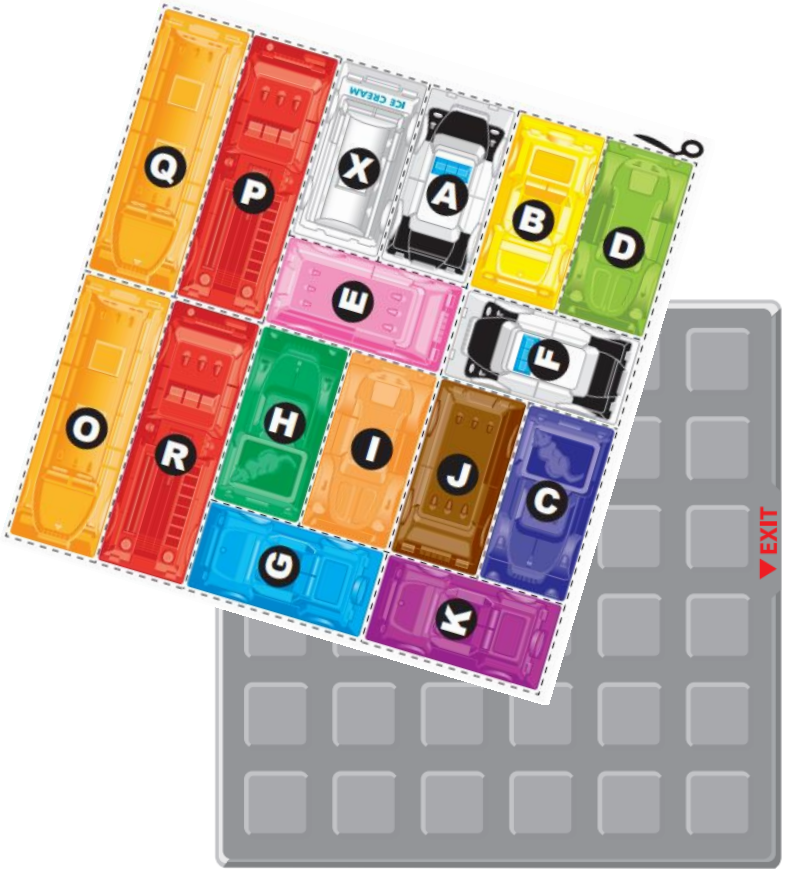
1. Activating prior knowledge;
2. Explicit strategy instruction;
3. Modelling of learned strategy;
4. Memorisation of strategy;
5. Guided practice;
6. Independent practice; and
7. Structured reflection.

THE EDUCATION PEOPLE

Learning From Experience: Rush Hour

This is an activity which engages the player in the process of learning and learning from experience. You are literally forced to be meta-cognitive.

As you work through think – what is going well? What did I do last time? What should I do this time?



Game boards and instructions can be found here: https://www.thinkfun.com/teachers/rush-hour/

THE EDUCATION PEOPLE

Adopting a Whole School Approach

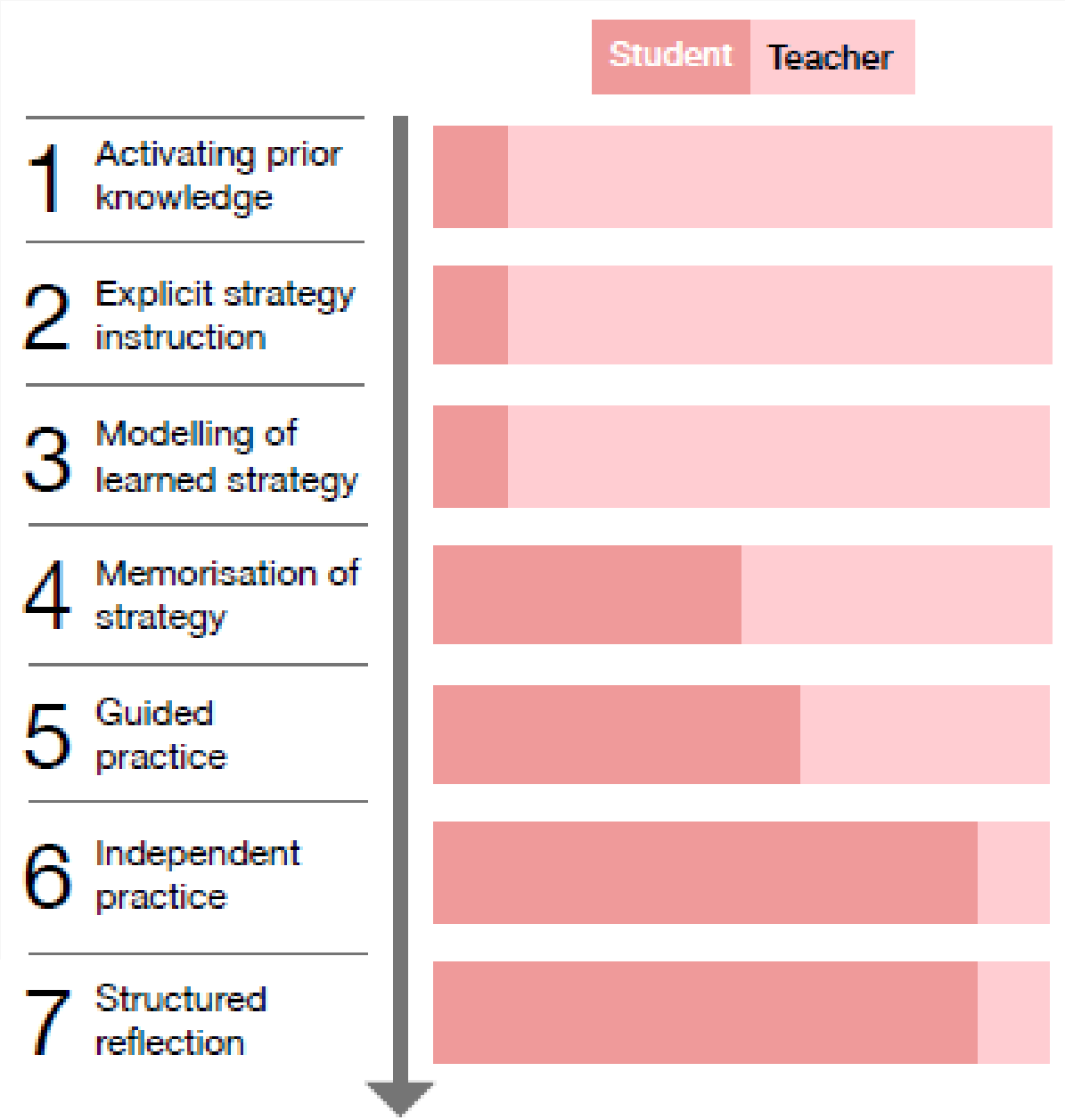
Each ‘Thinking Skill’ needs to be explicitly taught using the Gradual Release model.

- Planning
- Systematic Working
- Questioning
- Reasoning
- Empathy
- Classification
- Evaluation

Each Thinking Skill could be personified as a character, eg

THE EDUCATION PEOPLE

Model your own thinking to help pupils develop their metacognitive and cognitive skills

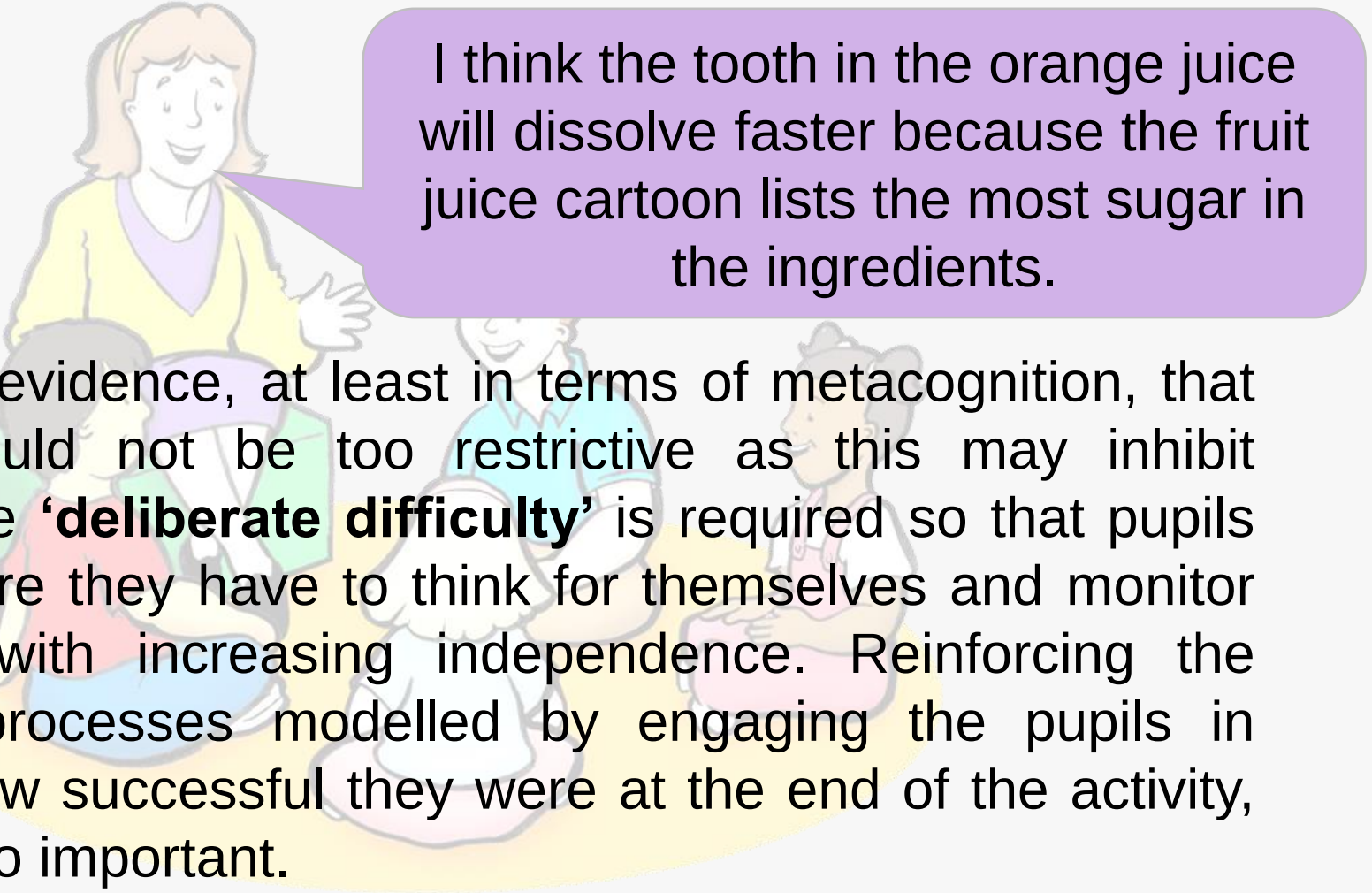


The 'Gradual release of responsibility' model

This model is responsive to each pupil's needs. If progress slows, the level of teacher support increases again. When new learning is introduced, the process starts from the beginning.

THE EDUCATION PEOPLE

Model your own thinking to help pupils develop their metacognitive and cognitive skills



There is some evidence, at least in terms of metacognition, that scaffolding should not be too restrictive as this may inhibit reflection. Some **'deliberate difficulty'** is required so that pupils have gaps where they have to think for themselves and monitor their learning with increasing independence. Reinforcing the value of the processes modelled by engaging the pupils in reflecting on how successful they were at the end of the activity, or lesson, is also important.

Set an appropriate level of challenge to develop pupils' self-regulation and metacognition

- ✓ **Challenge is crucial** to allow pupils to develop and progress their knowledge of tasks, strategies, and of themselves as learners.
- ✓ However, challenge needs to be **at an appropriate level**.
- ✓ Pupils must have the **motivation** to accept the challenge.
- ✓ Tasks **should not overload pupils' cognitive processes**, particularly when they are expected to apply new strategies.

Set an appropriate level of challenge to develop pupils' self-regulation and metacognition

I told you how to do your homework!

This 'how to' video that we made in class really helps me with my homework!

THE EDUCATION PEOPLE

Set an appropriate level of challenge to develop pupils' self-regulation and metacognition

If pupils have to undertake a task that makes them struggle (remember 'deliberate difficulties'), **they are more likely** (in the future) **to recall information from such tasks from their long-term memory.**

Where learners are being challenged it is important to **ensure they feel emotionally supported as well as being motivated to persevere**. Metacognition, then, is of special importance when pupils make decisions about how to study and how to maintain effort and motivation until the task is complete.

In motivating pupils to persevere at challenging tasks, it is important to reward effort rather than levels of achievement; to give feedback about personal progress, and to avoid social comparison.

Promote and develop metacognitive talk in the classroom

- ✓ As well as explicit instruction and modelling, classroom dialogue can be used to develop metacognitive skills.
- ✓ Pupil-to-pupil and pupil-teacher talk can help to build knowledge and understanding of cognitive and metacognitive strategies.
- ✓ However, dialogue needs to be purposeful, with teachers guiding and supporting the conversation to ensure it is challenging and builds on prior subject knowledge.

Promote and develop metacognitive talk in the classroom

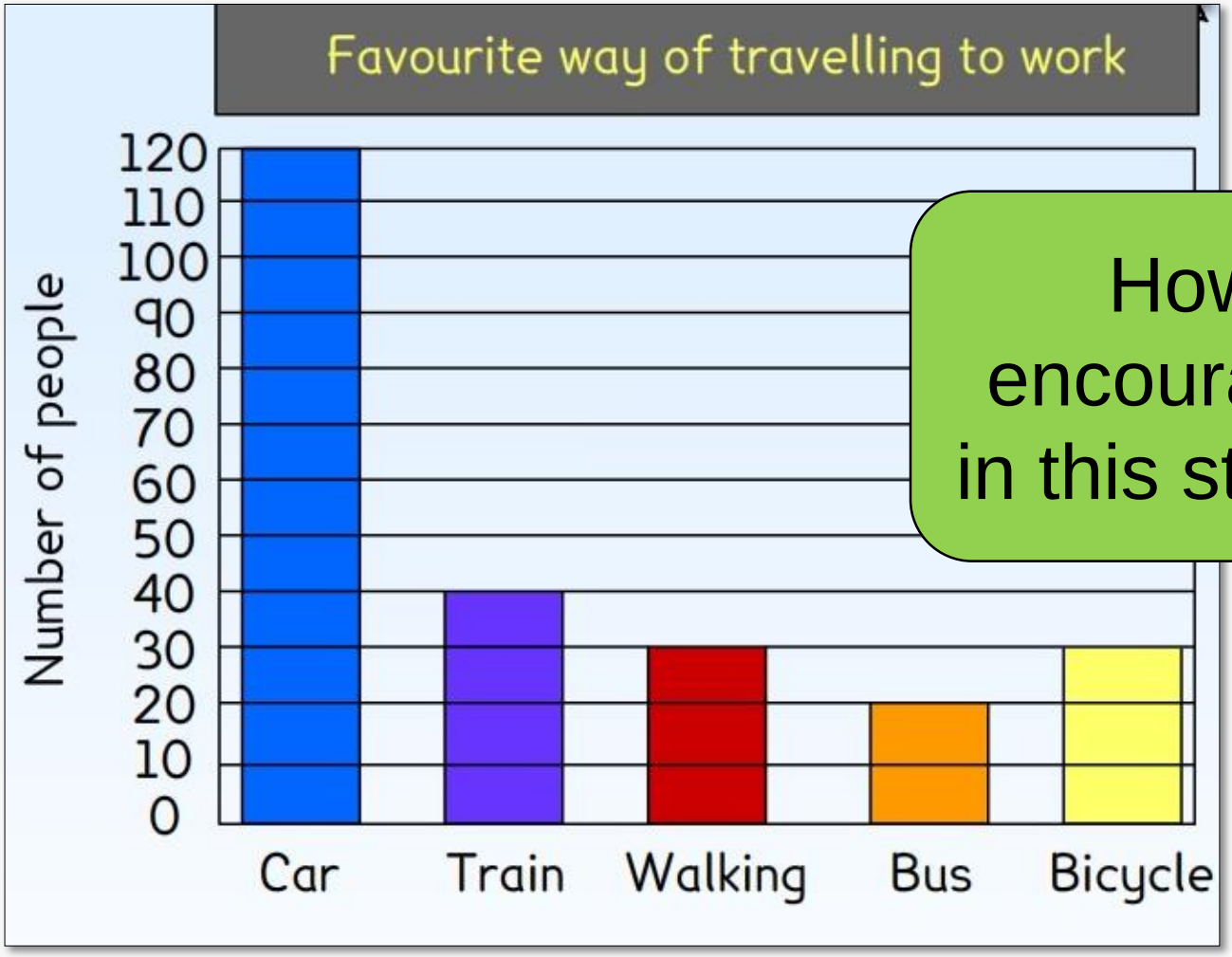
I want my money back because it was rubbish!

I think you should say: *'I am writing to ask for a refund because the supersonic water pistol you sent me did not work.'* It sounds more formal so they are more likely to listen to your complaint.

Or how about *'was faulty'*?
That makes you sound like an expert!

THE EDUCATION PEOPLE

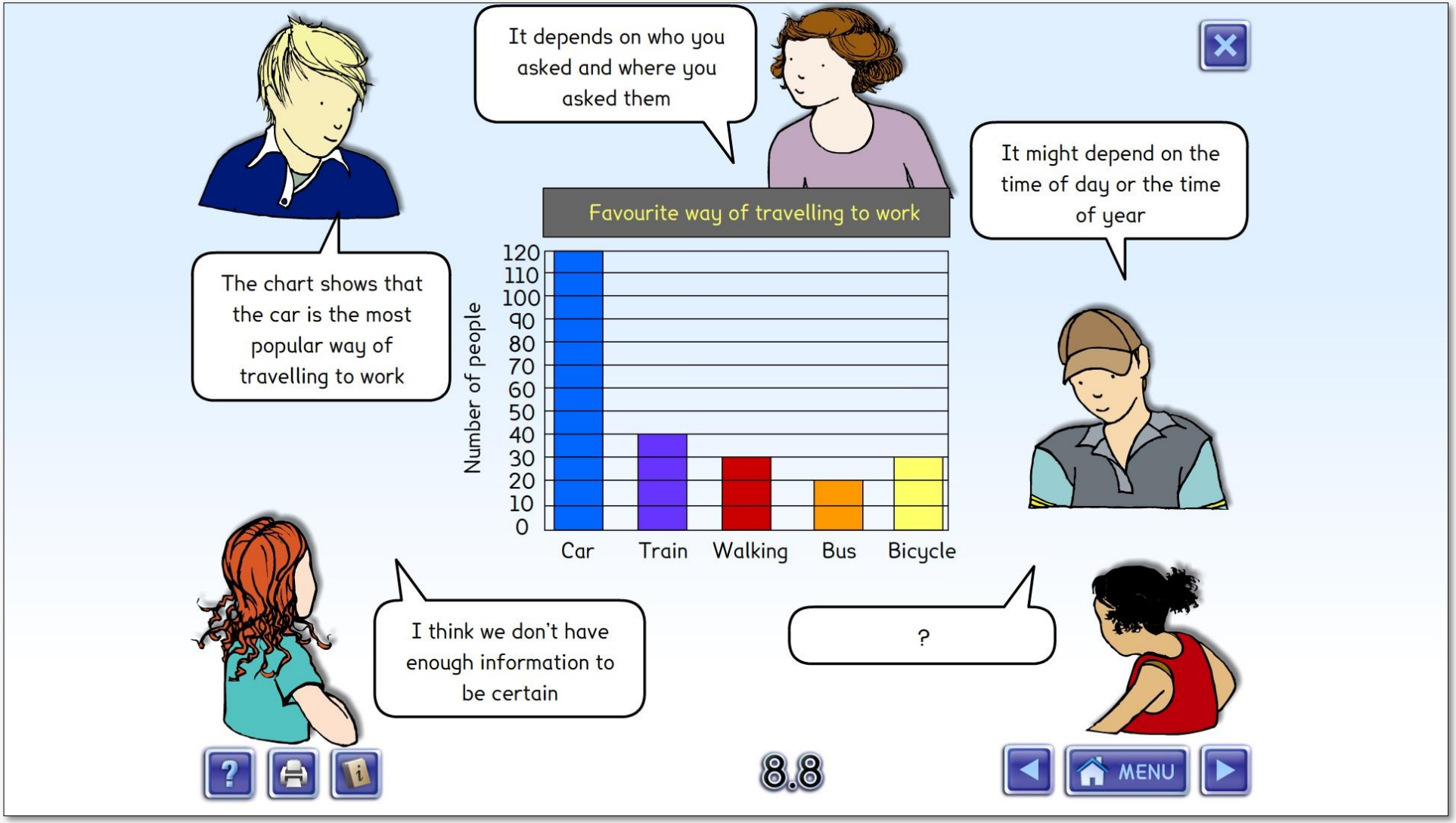
Promote and develop metacognitive talk in the classroom



How could you encourage discussion in this statistics lesson?

THE EDUCATION PEOPLE

Promote and develop metacognitive talk in the classroom



Taken from [Concept cartoons in maths education]

THE EDUCATION PEOPLE

Explicitly teach pupils how to organise and effectively manage their learning independently

Teachers should explicitly **support pupils to develop independent learning skills**.

Carefully designed **guided practice**, with **support gradually withdrawn** as the pupil becomes proficient, can allow pupils to develop skills and strategies before applying them in independent practice.

Pupils will need **timely, effective feedback** and strategies to be able to **judge accurately how effectively they are learning**.

Teachers should also **support pupils' motivation** to undertake the learning tasks.

Explicitly teach pupils how to organise and effectively manage their learning independently

Every Friday, Freya would experience a quiet dread when facing the weekly spelling test. This week, though, she felt more confident than before. After a couple of weeks characterised by annoying mistakes, she had worked hard in readiness for this week's test. She had devised two of her own mnemonics and she had practised her '-le' ending words, as well as 'surprise' with an 'r', repeatedly.

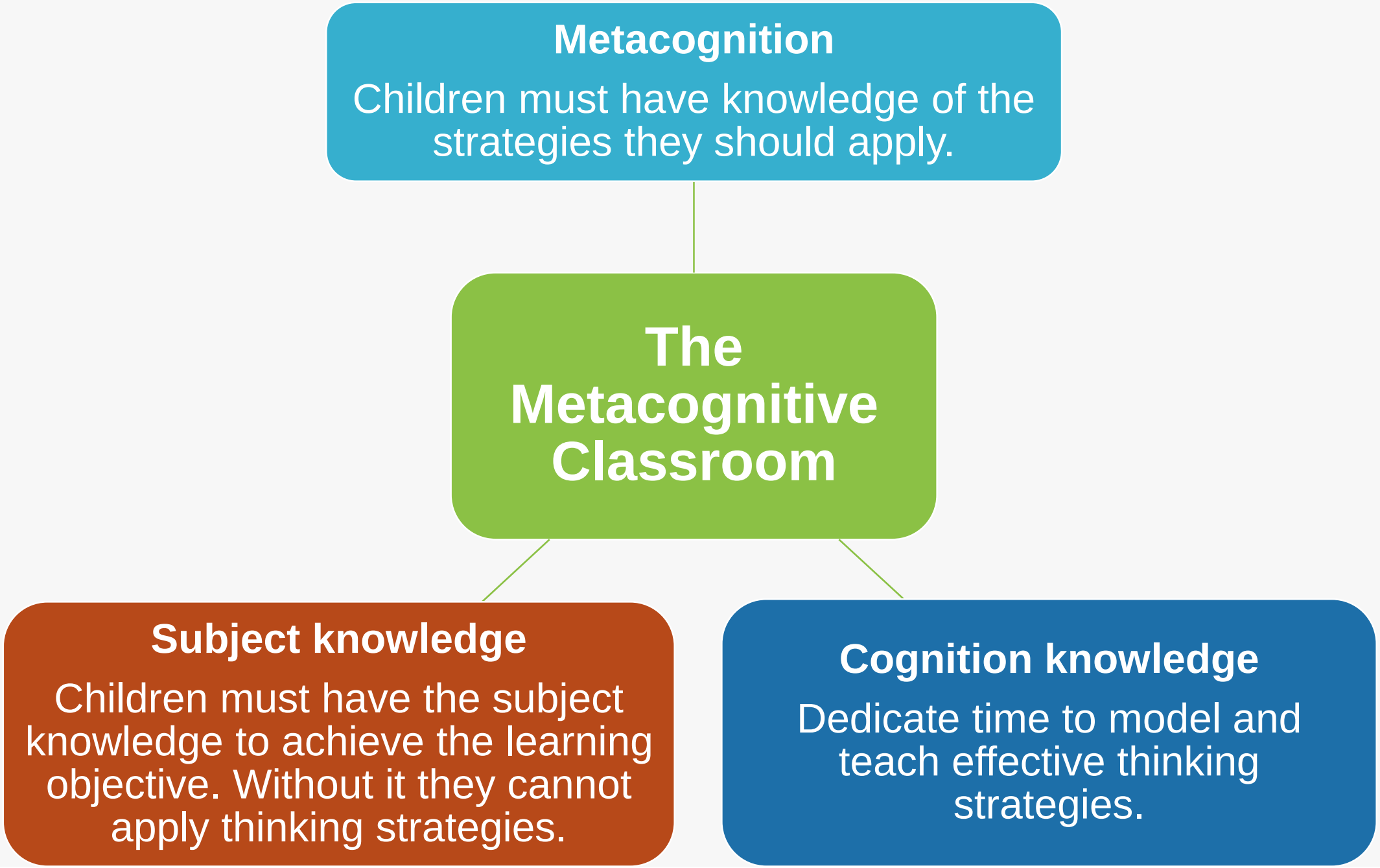
As Mr Thomas began the spelling test, Freya listened hard. She knew she just needed to listen carefully and remember what she had practised.

One or two words were tricky, but Freya had weighed up her options each time and she was utterly confident of her success. She had already thought about her new spelling routine and how she would stick to it next week too.

Session 2: Applying it in Practice in Maths

- Explore a range of Maths tasks and consider the tools pupils will need to use and apply to be successful.

THE EDUCATION PEOPLE



Using Cognitive Knowledge to Solve Problems

Can you find all 16 combinations? What strategies do you employ?

Aunt Jane had been to a jumble sale and bought a whole lot of cups and saucers. There are four sets: a set of white, a set of red, a set of blue and a set of green. In each set there are four cups and four saucers. So there are sixteen cups and sixteen saucers altogether. You decide to mix them around a bit so that there are sixteen different-looking cup/saucer combinations. So, for example:
a) there is a red cup on a green saucer but not another the same, although there is a green cup on a red saucer;
b) there is a red cup on a red saucer but that's the only one like it

Problem: https://nrich.maths.org/32
Interactive version: https://nrich.maths.org/32/note

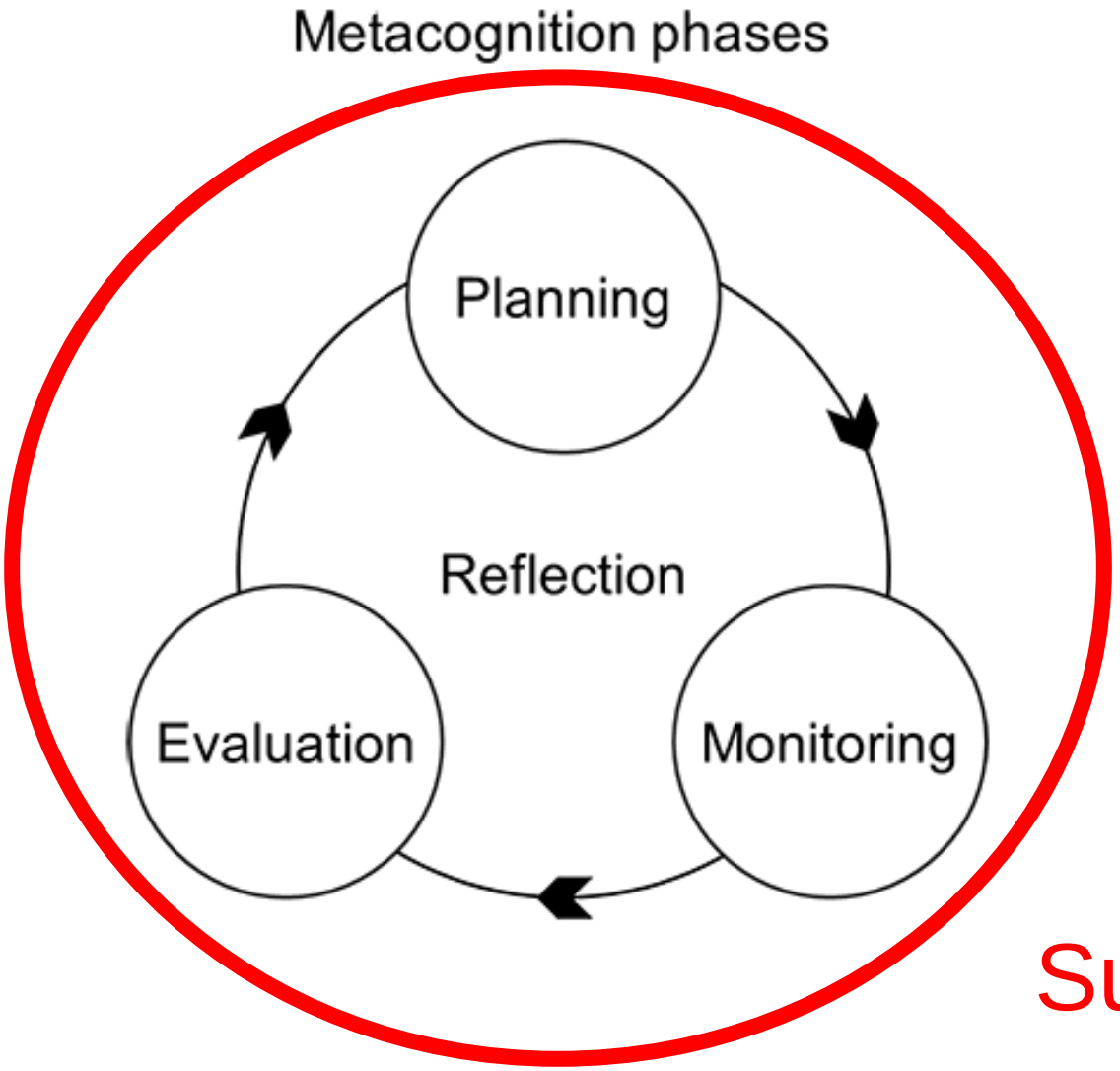
THE EDUCATION PEOPLE

Teaching the Cognitive Knowledge

The Singapore Model Method for Learning Mathematics they define a set of ***Heuristics for Problem Solving*** that I think offer a starting point for categorising the various skills we use to solve problems:

- ✓ Act it out
- ✓ Make a systematic list
- ✓ Work backwards
- ✓ Use guess and check
- ✓ Make hypotheses
- ✓ Solve part of the problem
- ✓ Use equations
- ✓ Use a diagram or model
- ✓ Look for patterns
- ✓ Use before/ after concept
- ✓ Restate the problem in another way
- ✓ Simplify part of the problem
- ✓ Thinking of a related problem

The Foundation for Metacognitive Learning



The cycle of metacognition is key for progress in Maths.

However, there is a key barrier which prevents children from entering the cycle…

Subject Knowledge

THE EDUCATION PEOPLE

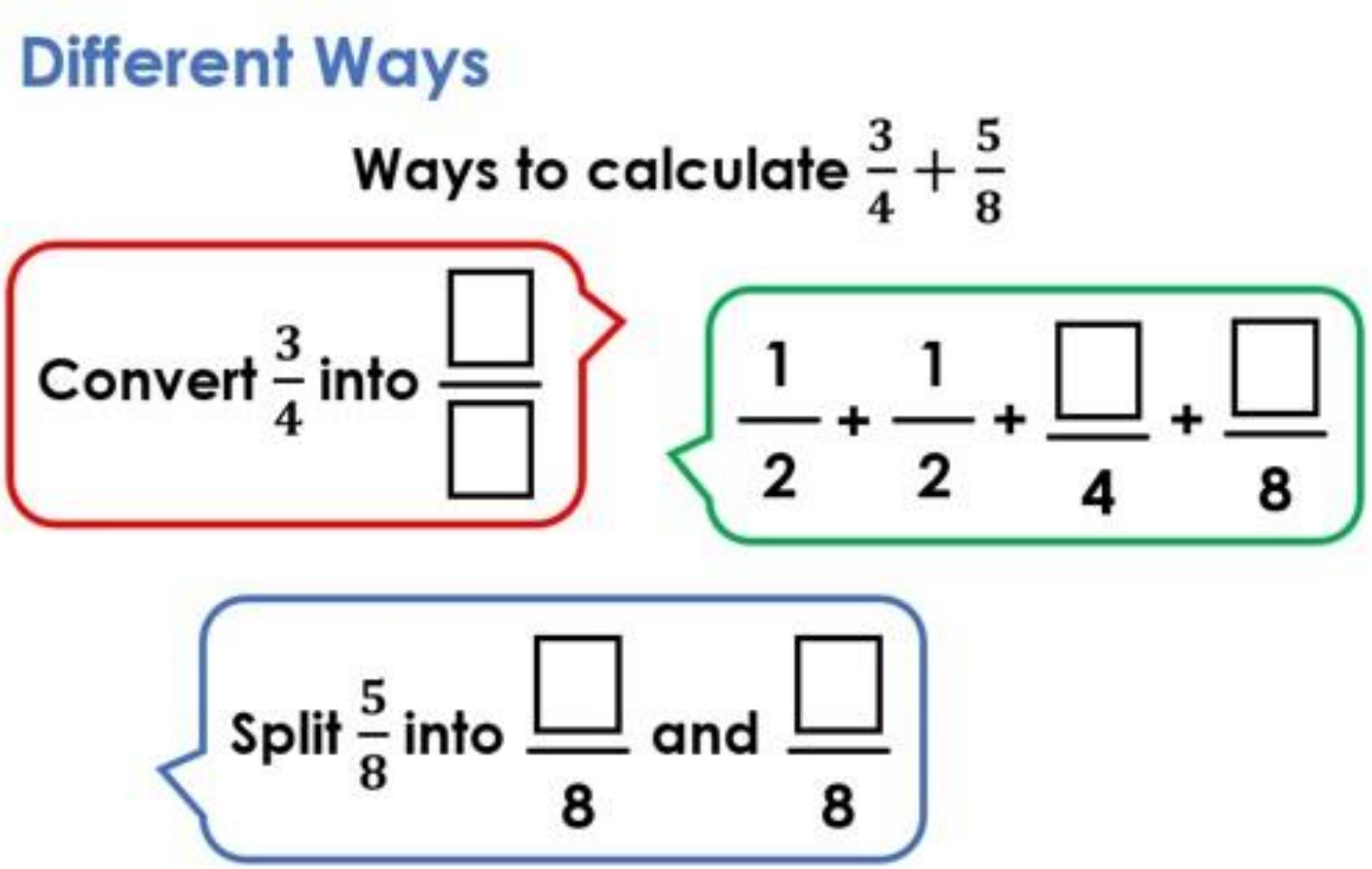
Subject Knowledge Underpins Cognitive Knowledge and Strategy Choice

Let’s take this calculation:

$$23 - 8$$

THE EDUCATION PEOPLE

Subject Knowledge Underpins Cognitive Knowledge and Strategy Choice



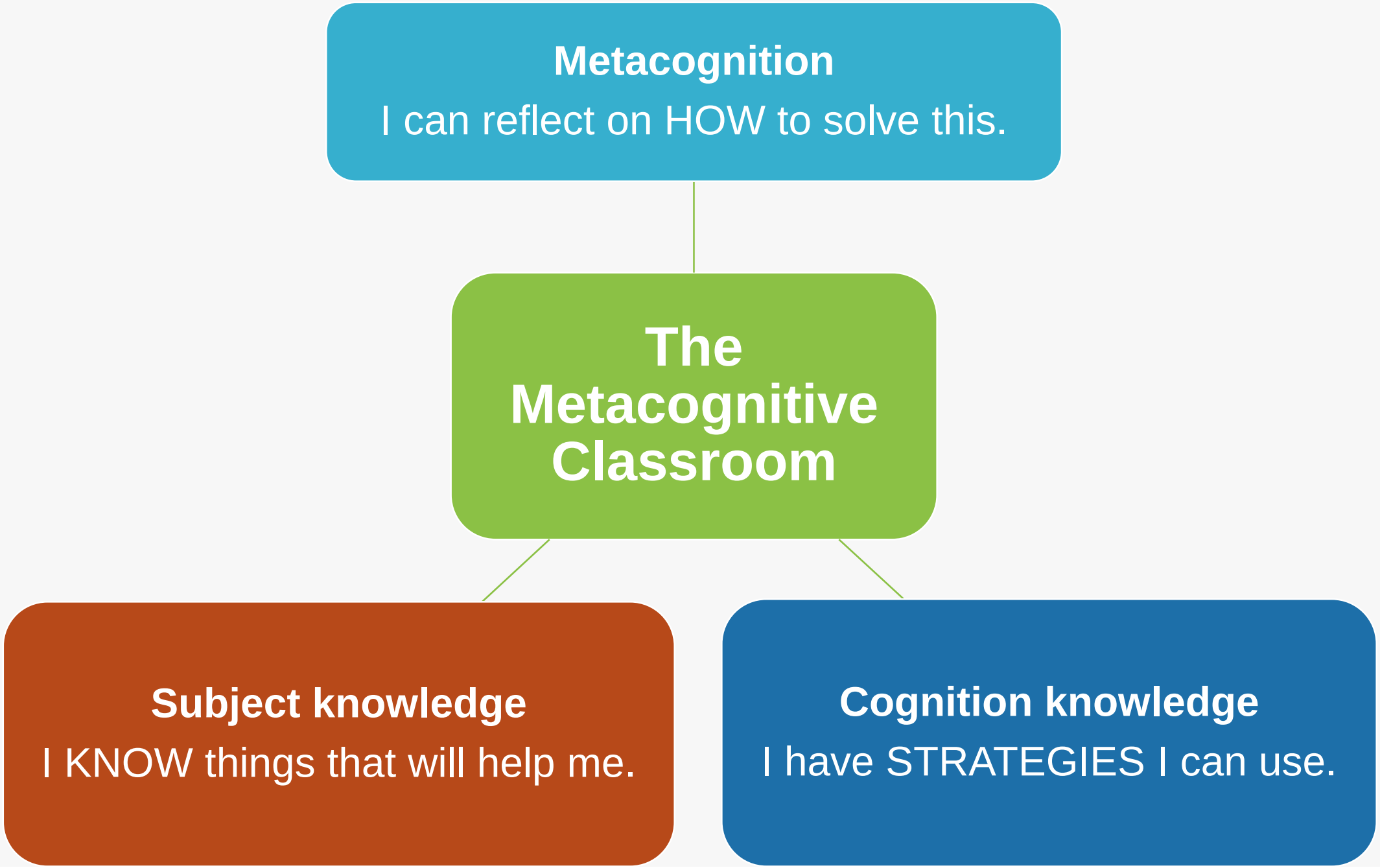
Example taken from http://www.iseemaths.com/

THE EDUCATION PEOPLE

Metacognition in Action

One pear weighs 10 cubes.
How much does one pineapple weigh?
Explain how you know.

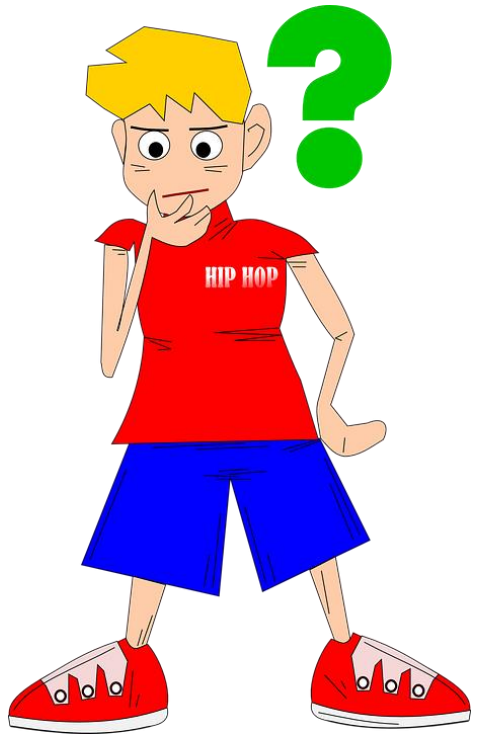
THE EDUCATION PEOPLE



Metacognition in Action?

Objective: Find out how much one pineapple weighs**.**

One pear weighs 10 cubes.
How much does one pineapple weigh?
Explain how you know.



Method (tactics):

- 10 cubes = 1 pear
- 4 x 10 cubes = 40 cubes. 4 pears weighs the same as 40 cubes
- 4 pears weighs the same as 2 pineapples so 2 pears must weigh the same as 1 pineapple 40 ÷ 2 = 20 cubes

THE EDUCATION PEOPLE

Metacognition in Action: Objective, Strategy, Method

Objective: Find out how much one pineapple weighs

Strategies: I could use a drawing to help me or act it out. I could use an equation to help me explain the relationships.

One pear weighs 10 cubes.
How much does one pineapple weigh?
Explain how you know.

pear	pear	pear	pear
pineapple		pineapple	

10	10	10	10
pineapple		pineapple	

Method (tactics):

- 10 cubes = 1 pear
- 4 x 10 cubes = 40 cubes. 4 pears weighs the same as 40 cubes
- 4 pears weighs the same as 2 pineapples so 2 pears must weigh the same as 1 pineapple 40 ÷ 2 = 20 cubes

THE EDUCATION PEOPLE

Metacognition

I need to keep reviewing my chosen strategy to see if it helps me to understand the problem and know which calculations to perform.

One pear weighs 10 cubes.
How much does one pineapple weigh?
Explain how you know.

Subject knowledge

I need to understand equivalence and know how to multiply by 10 and how to halve numbers.

Cognition knowledge

I need to represent the information in a way that helps me to see the relationships.

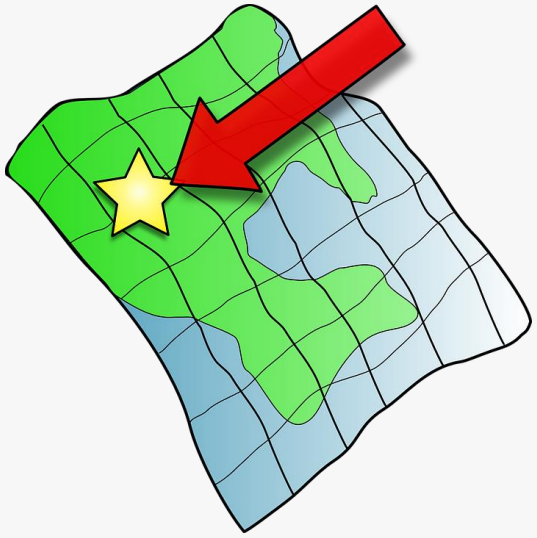
THE EDUCATION PEOPLE

Prioritising Process...Not Product

It is the deep, challenging problems in Maths that can engage children in metacognition. Problems that lead to reasoning and problem solving.

Be clear on the difference between showing the strategy and the method.

- **Objective** – What am I being asked to do? (Goal)
- **Strategy** – What tools could I use to help me solve the problem? (Game Plan)
- **Method** – What I do to solve the problem. (Tactics)



THE EDUCATION PEOPLE

Teaching Metacognitive Strategies

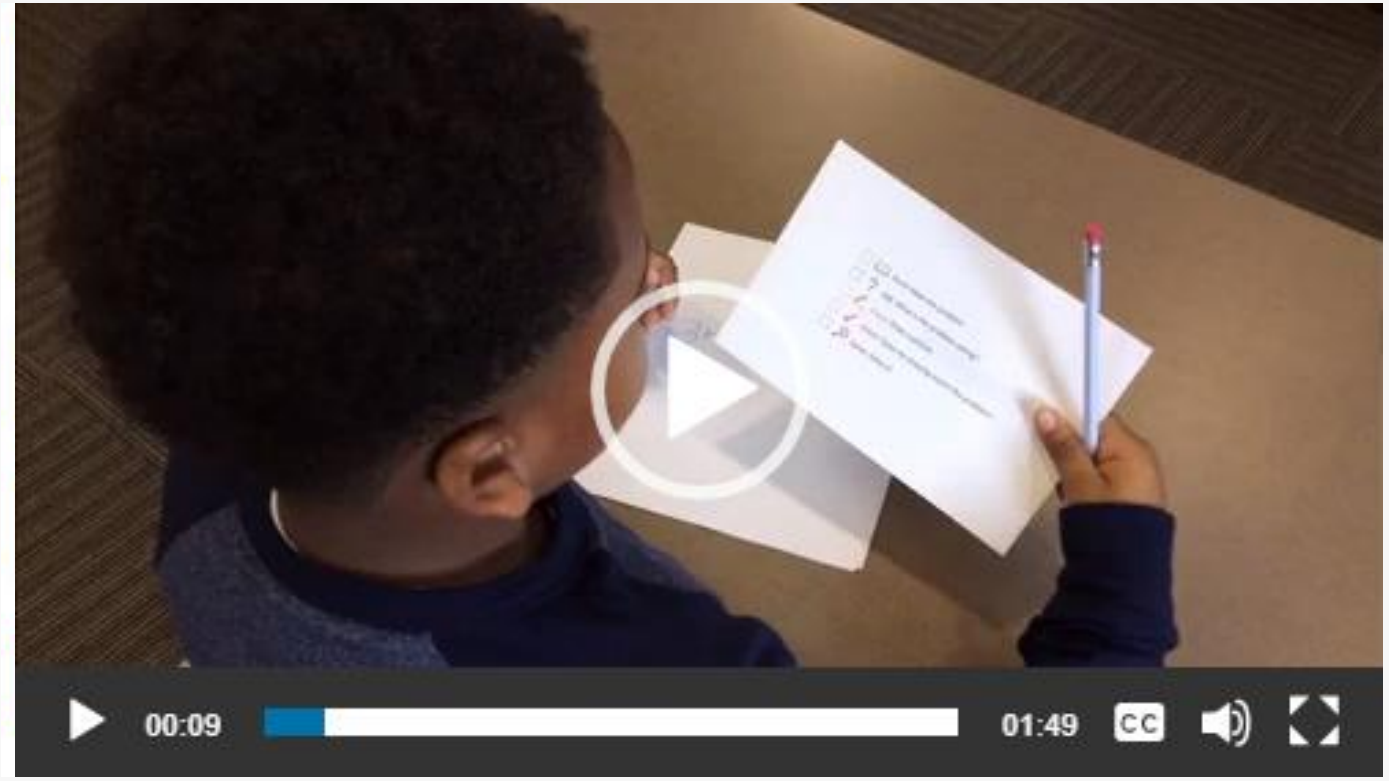
Teachers should use explicit teaching to help students understand how to use self-instruction and self-monitoring during the problem-solving process. To do this, teachers can:

- Provide students with a list of questions or prompts to ask themselves while they are engaged in the problem-solving process.
- Model working through a problem using ‘think alouds’, during which the teacher verbalizes her thoughts as she demonstrates using self-instruction and self-monitoring throughout the problem-solving process.
- Provide sufficient opportunities for students to practice these metacognitive strategies with corrective feedback.
- Encourage students to use these strategies independently, once they have achieved mastery.

Taken from ‘evidence-based mathematics practices can teachers employ’

THE EDUCATION PEOPLE

Using Self-instruction in Maths



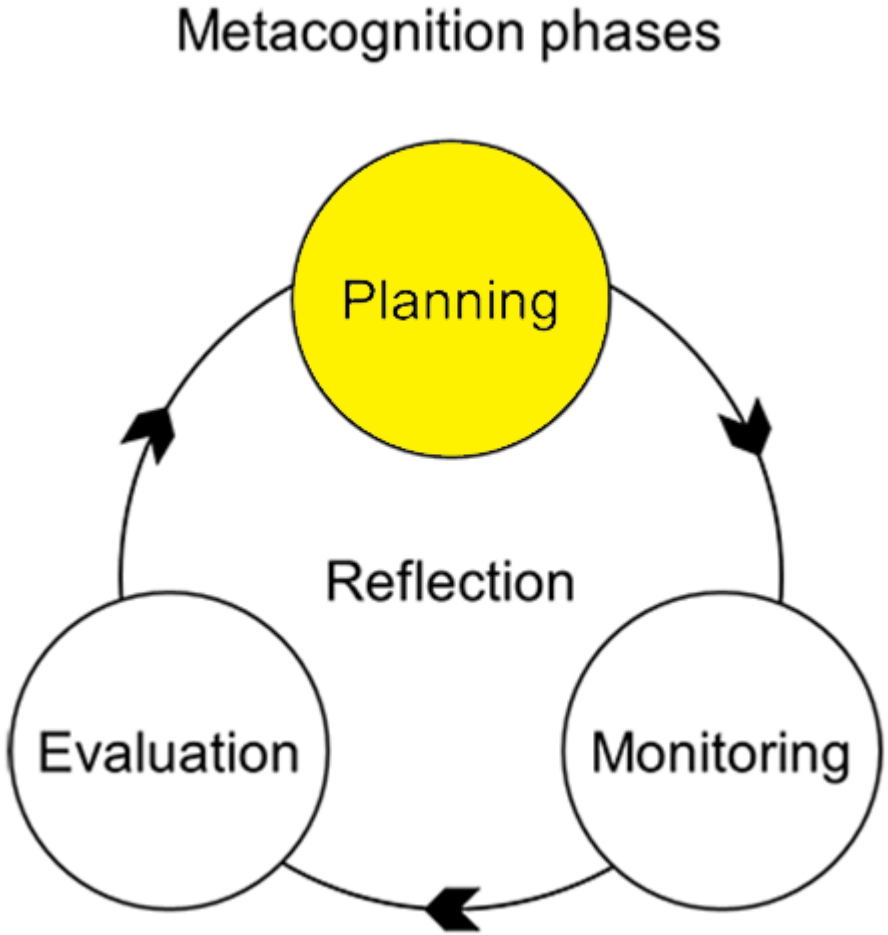
- What tools has the child been given to aid self-instruction?
- How does this help him to achieve the objective?

Video from ‘evidence-based mathematics practices can teachers employ’

THE EDUCATION PEOPLE

The Foundation for Metacognitive Learning: Strategies to Plan

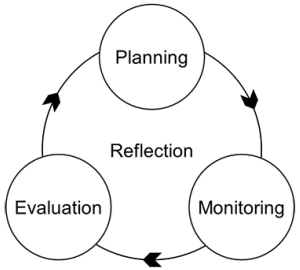
- ✓ Planning **'Golden questions'**:
  - ➢ Have you done something like this before? What did you do?
  - ➢ What are you going to do this time?
- ✓ Write out the steps as a plan / set of instructions
- ✓ Meta-cognitive talk (can be to themselves or in group)
- ✓ Learning diaries – easy access to methods allows children to focus on strategy choice



THE EDUCATION PEOPLE

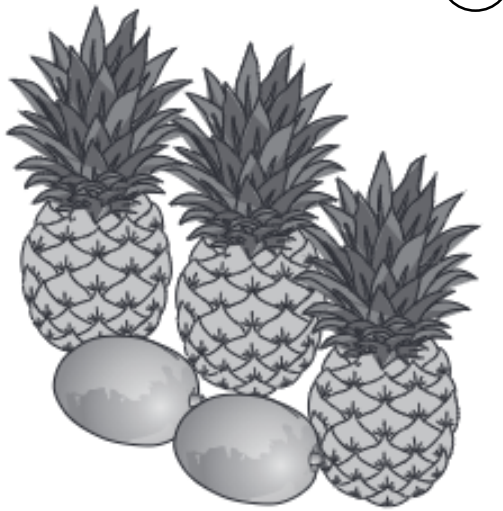
Activating Prior Knowledge

Have I done something like this before?



14 3 pineapples cost the same as 2 mangoes.

One mango costs £1.35

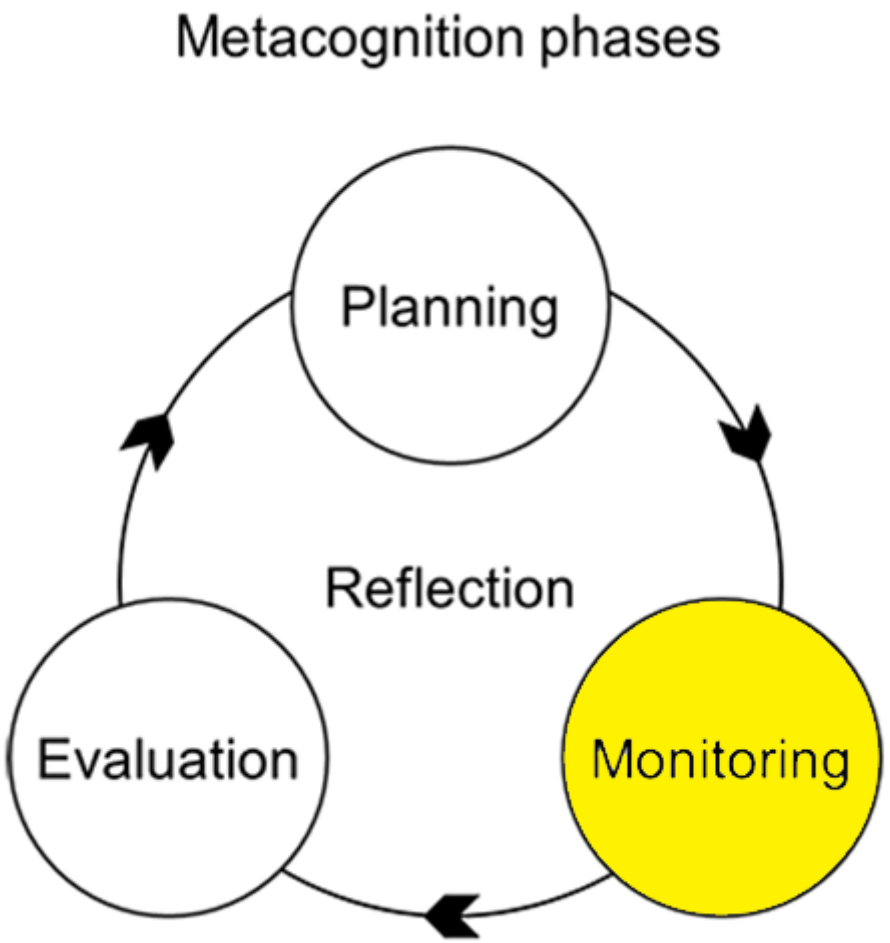


How much does **one** pineapple cost?

THE EDUCATION PEOPLE

The Foundation for Metacognitive Learning: Strategies to Monitor

- ✓ **STAR: S**top, **T**alk, **A**sk and **R**eflect
- ✓ Monitoring **'Golden questions'**:
  - ➢ Is your chosen strategy working?
  - ➢ Would another strategy be simpler / more efficient / faster / more creative?
- ✓ How can I check my work? eg return to the modelled examples, use the inverse, check against partners, etc.
- ✓ Reflecting along the journey: What is going well? What needs changing?



THE EDUCATION PEOPLE

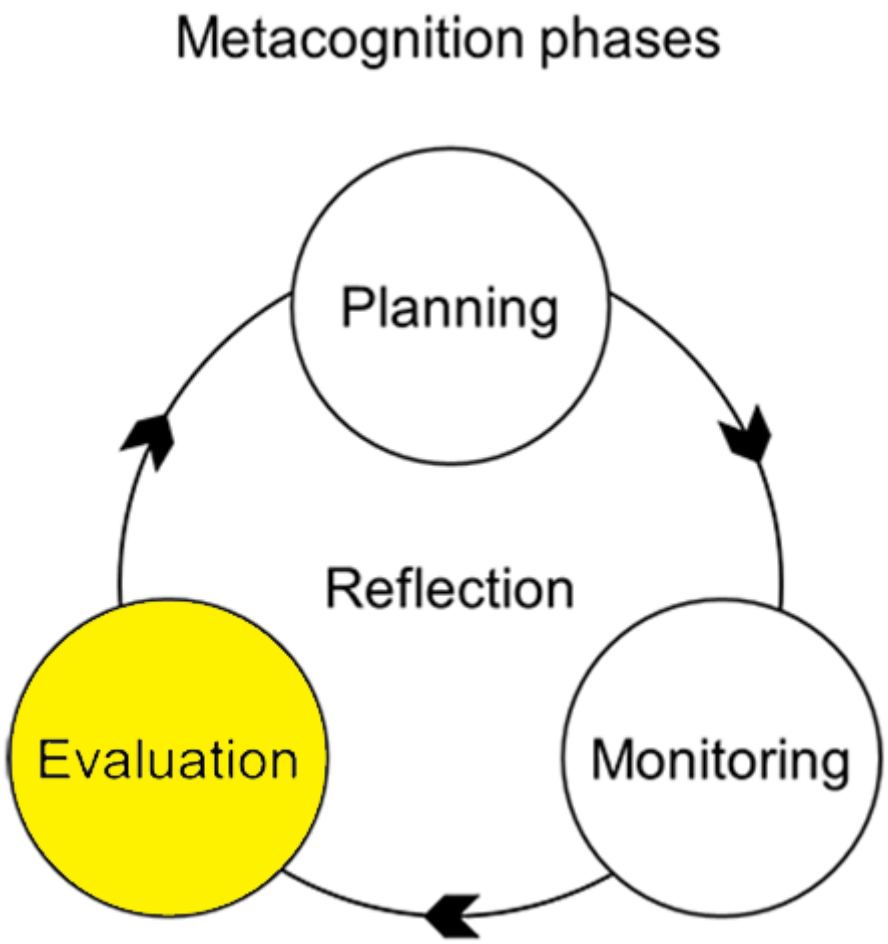
Self-questioning Metacognitively

There are four kinds of metacognitive questions the students are taught to ask:

1. Comprehension questions (eg What is this problem all about?)
2. Connection questions (eg How is this problem different from/ similar to problems that have already been solved?)
3. Strategy questions (eg What strategies are appropriate for solving this problem and why?)
4. Reflection questions (eg Does this make sense? Why am I stuck?)

The Foundation for Metacognitive Learning: Strategies to Evaluate

- ✓ Evaluating **'Golden questions'**:
  - ➢ What went well? What did not go well?
  - ➢ Was your chosen strategy the most appropriate?
  - ➢ What would you change next time? How would this be better?
- ✓ Show children <u>how</u> to answer questions. Feedback is essential for metacognition.
- ✓ Show a range of **<u>strategies</u>** they could have chosen to use and discuss the merits of each. Did other children solve it in a more efficient way?



THE EDUCATION PEOPLE

The Role of the Expert:
Model the Strategies and Thinking Process

How you could engage your children in Metacognition to solve this problem?

A scientist measures the depth of some objects below the surface of the sea. She records her measurements using negative numbers.

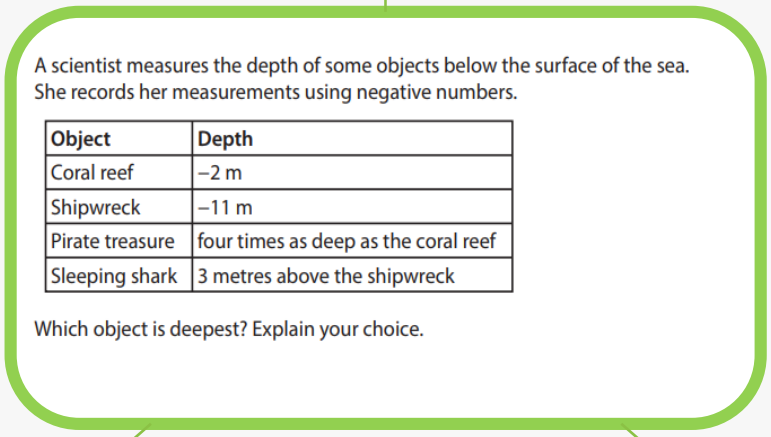
Object	Depth
Coral reef	−2 m
Shipwreck	−11 m
Pirate treasure	four times as deep as the coral reef
Sleeping shark	3 metres above the shipwreck

Which object is deepest? Explain your choice.

THE EDUCATION PEOPLE

Metacognition

I need to know what order to work in (systematic working). Some measurements rely on the others. Last time I did this, I converted the words into numbers.



A scientist measures the depth of some objects below the surface of the sea.
She records her measurements using negative numbers.

Object	Depth
Coral reef	−2 m
Shipwreck	−11 m
Pirate treasure	four times as deep as the coral reef
Sleeping shark	3 metres above the shipwreck

Which object is deepest? Explain your choice.

Subject knowledge

I need to know the place value of negative numbers and which way to move along the scale according to the information.

Cognition knowledge

I know that number lines are really helpful for sequencing information about negative numbers.

Plan

a) Draw vertical number line
b) Place those with numbers on.
c) Treasure -2 x 4
d) Shark -11 - 3

Task

Object	Depth
Coral reef	–2 m
Shipwreck	–11 m
Pirate treasure	four times as deep as the coral reef
Sleeping shark	3 metres above the shipwreck

Monitor

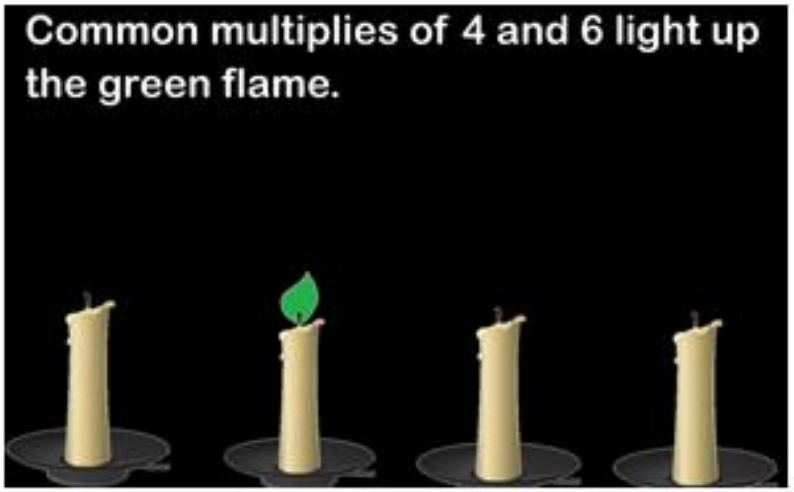
✓ Cross out plan as I work.
✓ Check back.

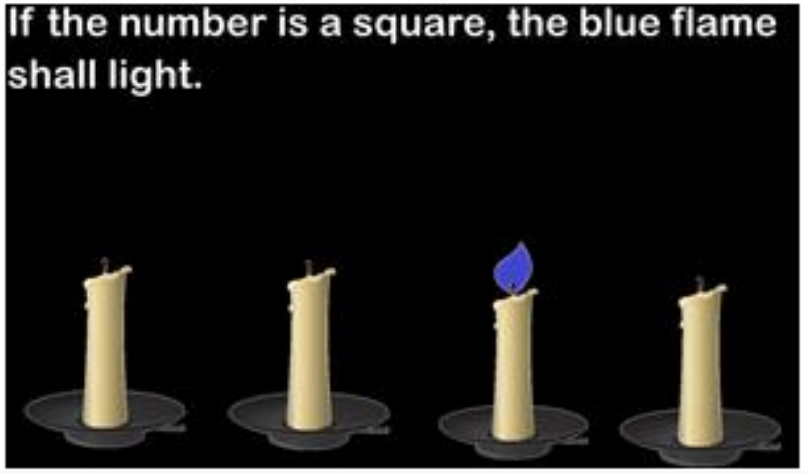
Evaluate

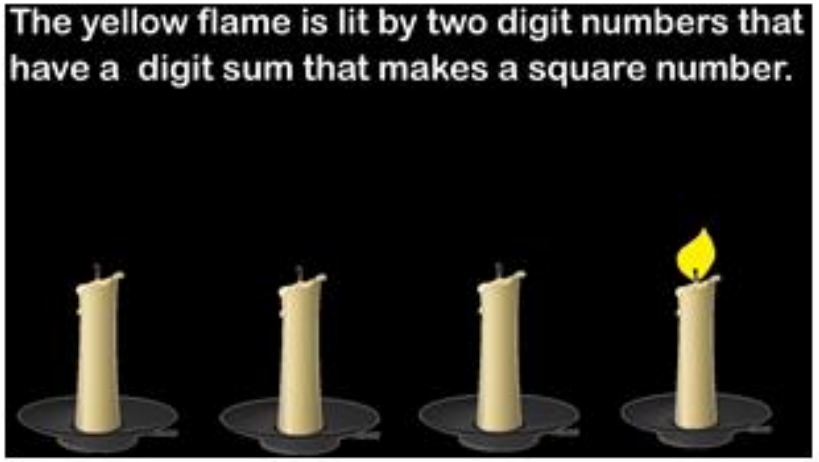
✓ What went well?
✓ What should I do again?

THE EDUCATION PEOPLE

Planning a Metacognitive Lesson







THE EDUCATION PEOPLE

Conclusion

- ✓ It will take time, especially for those children who lack confidence in Maths.
- ✓ Focus your teaching depending on the needs of your class, ie do they need work on planning? Monitoring? Evaluating?
- ✓ We must allow the subject knowledge of children to develop to ensure children can engage in metacognition.
- ✓ Maths is an interwoven subject. These links must be made explicit to children in order to engage in prior knowledge.
- ✓ Strategies and methods are different. We must teach both.
- ✓ We need to model thinking, be explicit in our teaching, give children opportunities to practice, and evaluate to see if it works.

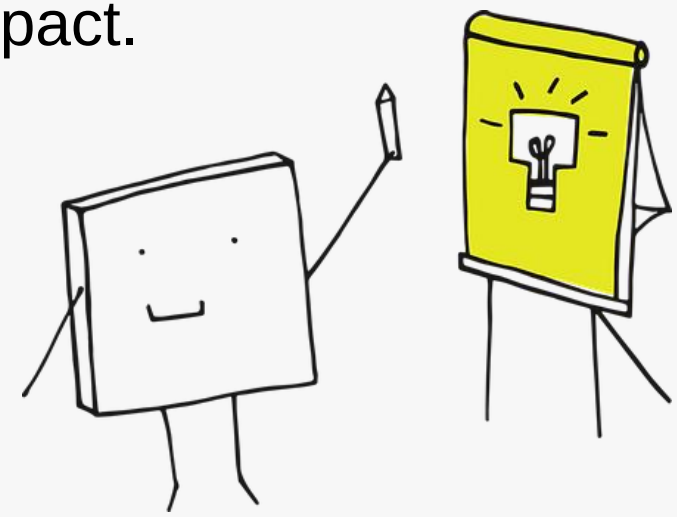
Session 3: Applying it in Practice in English

- Explore a range of English tasks and consider the tools pupils will need to use and apply to be successful.

Metacognition in Teaching English

Applying metacognition to the teaching of English (or any subject) is not about focusing on using new resources, dramatically altering your practice, or reinventing the wheel.

It is about refining your focus and making smaller adaptions and additions which will have a large impact.



THE EDUCATION PEOPLE

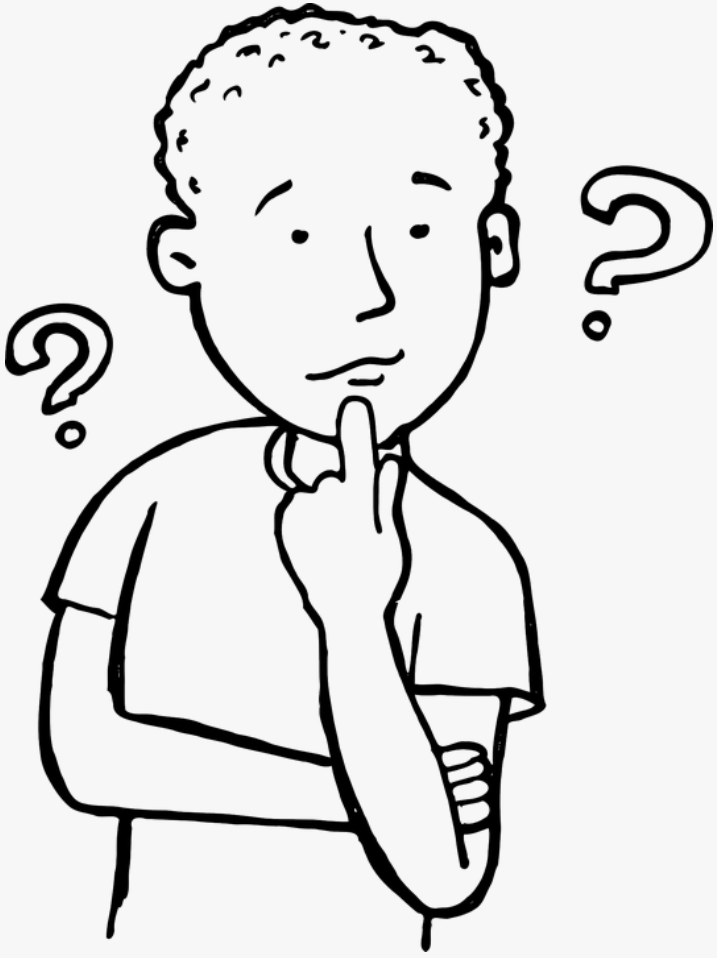
Thinking About Thinking in English

The priority before any learning task: Children must understand the target. What are they being asked to do?

Ensure the learning objective is clear and understood.

Do not see metacognition as a general skill, separate from subject knowledge.

Without cognition, there is no metacognition.

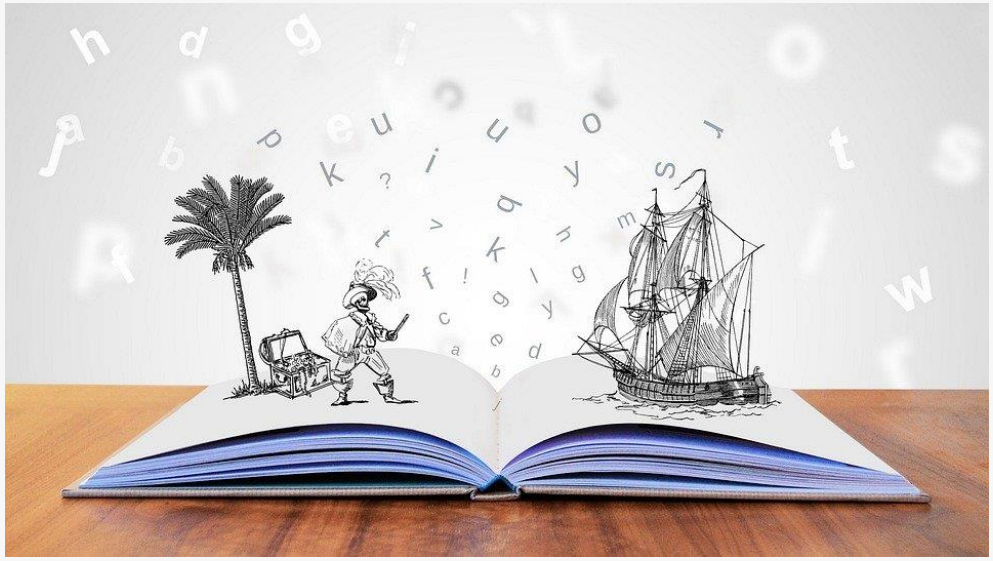


THE EDUCATION PEOPLE

Metacognitive Reading

Children must be clear on the goal. Is it comprehension? Prediction? Summarising? Do they know what these mean?

Explicitly teach the strategy that you want children to use.



THE EDUCATION PEOPLE

Metacognitive Reading

Example:

Comprehension with a focus on inference.

- Present a brief mini-lesson on inferring.
- Teach students how to make inferences:
  - ✓ what types of inferences readers can make;
  - ✓ and, when to use the strategy, and how it will lead them to deeper understanding of the text.
- Perhaps most importantly, model the process.

Teaching Metacognition in Reading

The next day, they set out into the forest again. This time, as they walked along, Hansel dropped a trail of breadcrumbs along the path. Once again, they became tired and fell asleep. When they awoke, they found themselves alone again. This time, when they looked for the breadcrumbs to follow, they found that they had vanished!

What happened to the breadcrumbs? Give a reason for your answer.

THE EDUCATION PEOPLE

The next day, they set out into the forest again. This time, as they walked along, Hansel dropped a trail of breadcrumbs along the path. Once again, they became tired and fell asleep. When they awoke, they found themselves alone again. This time, when they looked for the breadcrumbs to follow, they found that they had vanished!

Metacognitive Reading

Objective: Work out what happened to the breadcrumbs

Method:

- Read the text
- Look for words/information that I do know
- Are there any clues? – ‘into the forest’ – ‘what do I know about the forest…..?’

Strategies: Connecting/Inferring/Synthesising

Metacognition

Does my answer make sense? Is there any information I have missed? Could I use this strategy again? Are there any better strategies?

What happened to the breadcrumbs?

Subject knowledge

Decoding ability

Background knowledge – forests and animals

Cognition knowledge

Must be able to look for clues/evidence. Draw together their world-knowledge and apply to the text

Stop 	What is the learning aim of the lesson?
Think 	How is your learning going?
Ask 	Ask your partner a question about your work?
Reflect	What is your next step now?

Metacognitive Writing

Spelling

Handwriting

Grammar

Vocabulary

Sentence Structure

Content

Punctuation

THE EDUCATION PEOPLE

Key Principles

- Explicitly teach the metacognitive strategies.
- Explicitly model the thought processes.

1. Activating prior knowledge;
2. Explicit strategy instruction;
3. Modelling of learned strategy;
4. Memorisation of strategy;
5. Guided practice;
6. Independent practice; and
7. Structured reflection.

Metacognition in Action – Year 2/3

Objective: Use apostrophes correctly in your writing

Required knowledge:

What is an apostrophe? What does it do? Can be used to make contracted words and for (singular) possession.

How do I know where the apostrophe goes? In place of the missing letters or before the ‘s’ if something belongs to someone.

THE EDUCATION PEOPLE

What Strategies Can I Use?

Use the apostrophe mat my teacher provided?

Use a mnemonic that I have learned about apostrophes?

Just put an apostrophe before every **s** that I write?

TO RECAP

Remember that most apostrophes are used for possessive nouns.

So if a noun owns something, use an apostrophe:

Bob's *jellybean hat became sticky in the scorching sun.*

Or use it for contractions:

Bob's *going to the store to create a bacon hat instead.*

And if it's plural, don't use an apostrophe:

Bacon ***hats*** *do not melt and they smell wonderful.*

THE EDUCATION PEOPLE

Metacognition

They need to continue to review their strategy – did it work for them? Is there a better way for them to check?

Use apostrophes in your writing.

Subject knowledge

Children need to know what an apostrophe is and that it can be used in 2 main ways at this stage.

Cognition knowledge

They need to be able to decide when it is appropriate to use an apostrophe for contraction or possession.

Mnemonics as a Metacognitive Tool

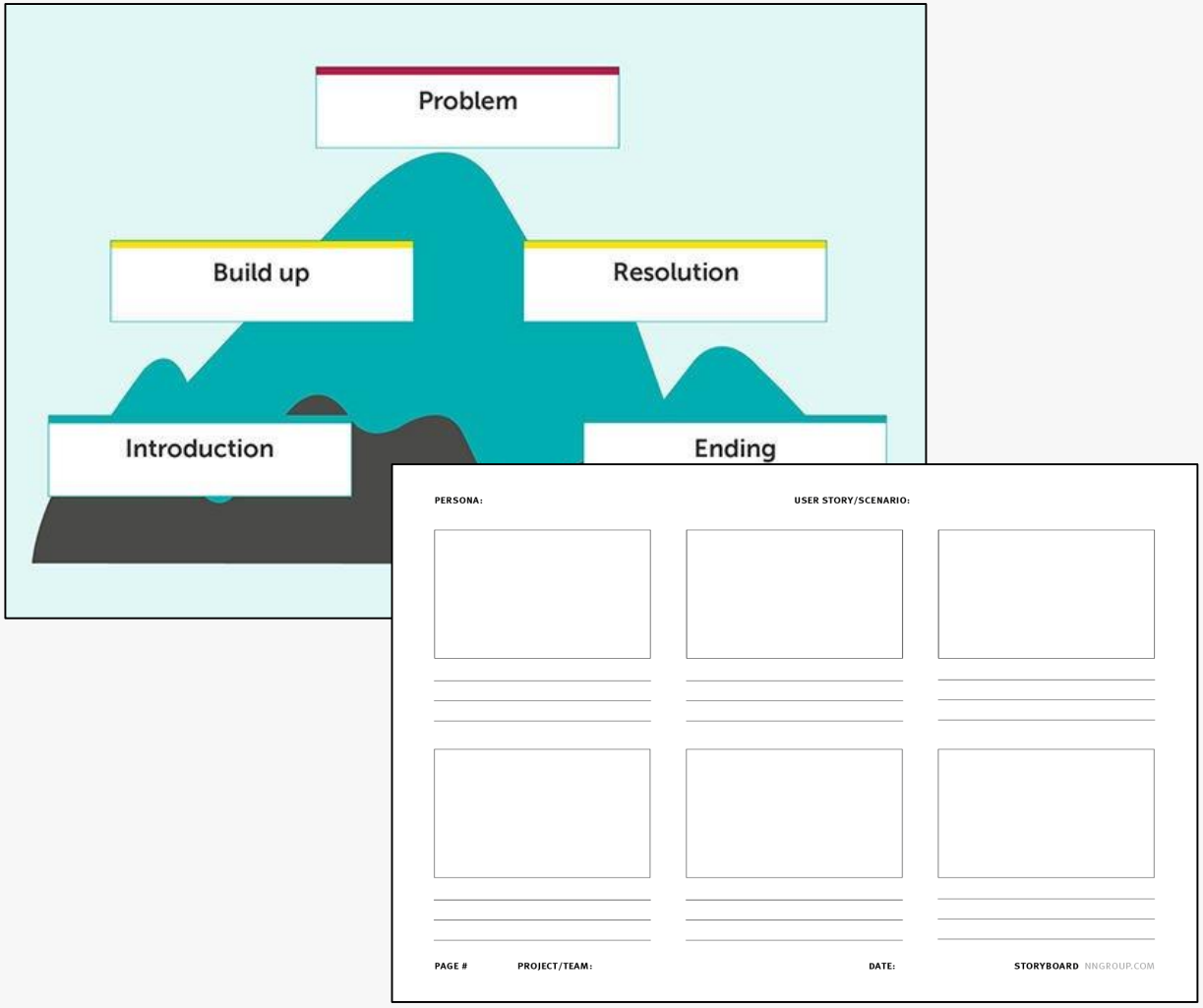
PAT

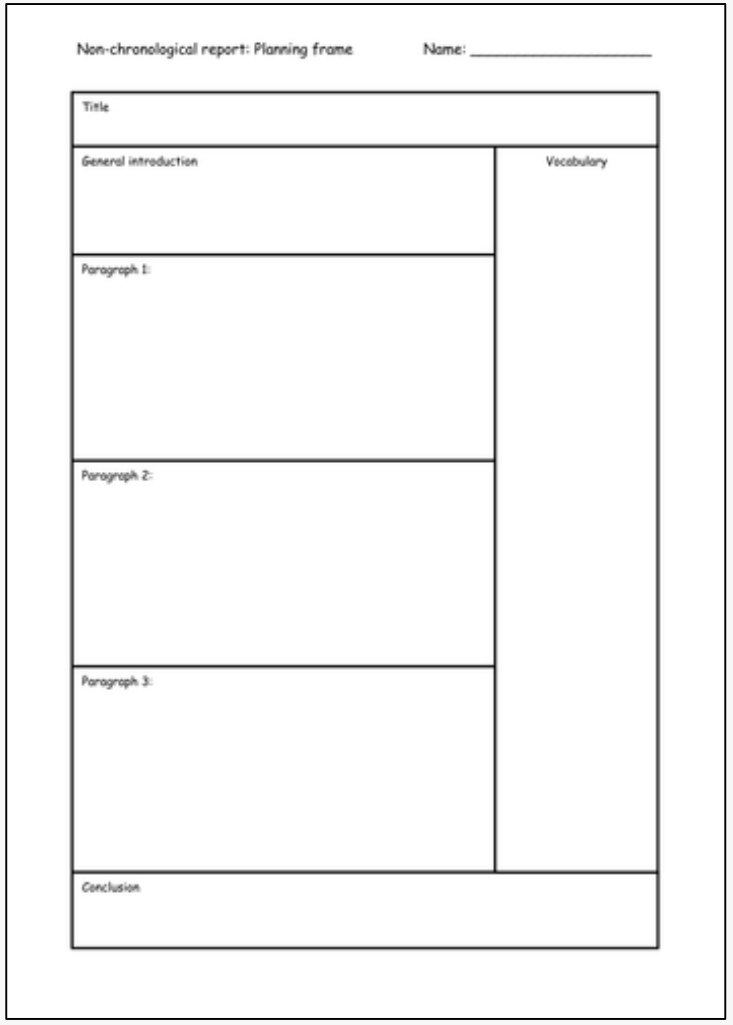
Purpose – why am I writing? What do I want to achieve?

Audience – who is going to read my writing?

Type – what is the most appropriate format to use?

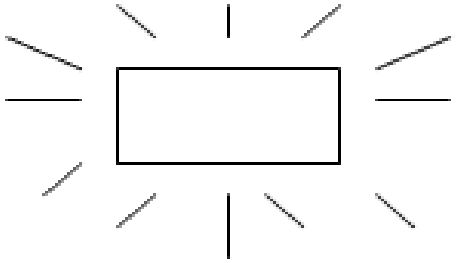
Metacognitive Writing



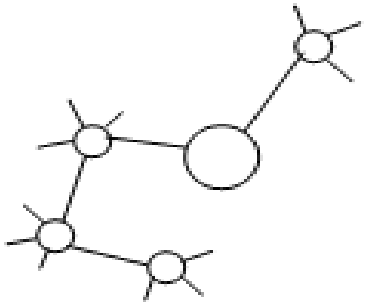


THE EDUCATION PEOPLE

You might start planning by jotting down ideas.

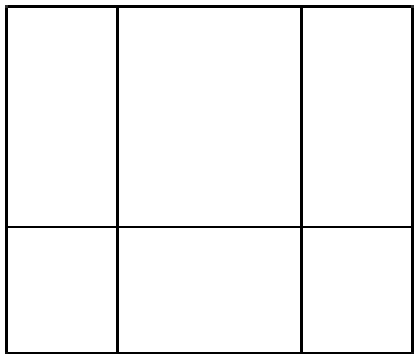


Brainstorming

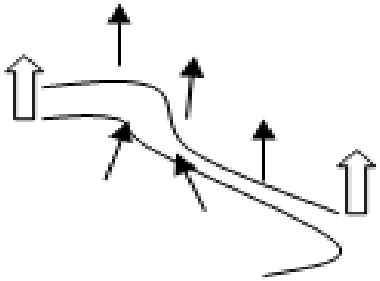


Mind map

You might plan by drawing you ideas.



Story board

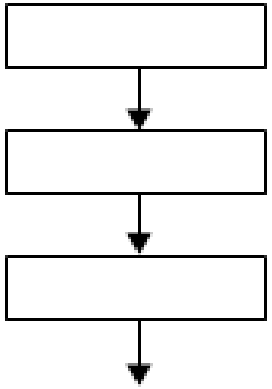


Story map

You can plan by putting events in order.

1. Tom gets a bike
2. Rides to Gran's
3. Falls off …
4.

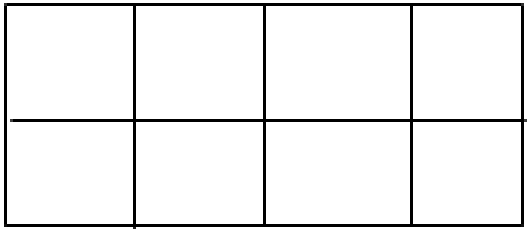
List of scenes



Flow chart

Once upon a time …
One morning …
Suddenly …

Using connectives in a frame



Paragraph grid

See the NLS Writing Fliers for further details and examples: https://dera.ioe.ac.uk//6161/

THE EDUCATION PEOPLE

Planning

Give children the choice of how to plan their writing.

Reflections/thought process (remember to model):

- Which format would work best?
- Are certain formats better suited to different types of writing?
- Do I know how to use them effectively?
- After the writing is done – how did I feel about that?
- Could I do something differently next time to improve my planning?

Self-regulation When Writing

Using success criteria for regular self-assessment (during and at the end of a task):

- What am I doing well?
- How well am I meeting the success criteria?
- What can/could I do better?
- How will I do it better next time?

THE EDUCATION PEOPLE

So What About Spelling?

Spelling has good potential for metacognition.

We must strike a balance between teaching spelling rules and teaching spelling strategies.

THE EDUCATION PEOPLE

Identify strategies to monitor together

Examples of strategies children have used:

- ✓ Editing as they go, not at the end.
- ✓ Drafting on a whiteboard first, then transferring onto the page.
- ✓ Putting stars next to words in which spelling in uncertain.
- ✓ Consistently question themselves – Is this the best? What do I need to do next?

All of the above will need to be taught first – behaviour of metacognitive practitioner.

Examples of Spelling Strategies

- Mnemonics
- Spelling mats and word mats
- Shape of words
- Editing windows
- Spelling journals

Model using these when writing.

Explicitly say what thinking strategy you are using.

Logical. Give children the opportunity to use them.

Evaluate. Is their spelling getting better?

Look Say Cover Write Check - Spelling Chart

LOOK / SAY					COVER	WRITE	CHECK	WRITE	CHECK	REVISE later	CHECK
Copy & Say the word	Count letters	What's funny?	How to remember	Word shape							

[Look Say Cover Write Check – Spelling Chart]

by Johanna Stirling

THE EDUCATION PEOPLE

Spelling Strategies

Visual

Use different handwriting styles.

- **Joined up** handwriting
- **Bubble** writing
- Each letter a different **colour**
- Different **sizes** of letters

Look, say, cover, write, check.

Do this until you are **confident** enough to spell the word **without** seeing it first.

Use a highlighter pen.

- Highlight the **tricky** bits of the word
- Look for **words within words** (e.g. get in vegetable)

Auditory

Listen to the word.

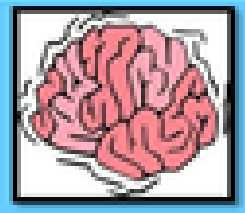
Identify the **phonemes** in each **syllable** (e.g. Sep-tem-ber).

Create a rhythm.

Give the word a **rhythm** and **repeat** it out loud several times, using that rhythm.

Exaggerate how you say the word.

When words or parts of words are silent, **sound them out** (e.g. k-nife, bus-iness).



Mind

Think of the spelling rule.

At least **80%** of English words follow **normal rules**. For example, when there is a short vowel and a single consonant, double the consonant when adding **ing**.

Make a mnemonic.

For example, for **because** you might say, "**B**ig **e**lephants **c**an **a**lways use **s**mall **e**lephants."

Use it in a sentence.

Write out the word **within a sentence**. Then put it into a completely **different** sentence.

Metacognition

I need to look at the word to help me to choose the best strategy. Are there words within the word? Would a mnemonic help me?

Learn to spell ‘diarrhoea’

Subject knowledge

The first part is phonetic: d-i-a

The last part is phonetic: e-a

The middle is the tricky part.

Cognition knowledge

I can use a mnemonic to help me remember the tricky part.

Video by Sir Linkalot www.sirlinkalot.org

THE EDUCATION PEOPLE

Moving Forward with English

- ✓ Model both your subject-specific skills and metacognitive strategies - be explicit with your thinking. Use the EEF Toolkit advice.
- ✓ Subject knowledge is still of utmost importance. Metacognitive techniques do not replace this.
- ✓ Mnemonics useful for spelling and writing processes.
- ✓ Children need time to monitor and consider their success against agreed criteria.

Further Reading and Resources

- Free and subscription resources to support teaching and learning: https://www.globalmetacognition.com/
- Third Space Learning explores what some of the metacognitive strategies look like in practice at the primary maths level, presented as a 7-step teaching model: https://thirdspacelearning.com/blog/7-steps-eef-metacognition-primary-classroom-maths/
- This blog considers how greater levels of thinking and reasoning can improve our teaching of mathematics in primary schools: https://www.focus-education.co.uk/blog/master-maths-metacognition/
- This blog explores a range of evidence-based mathematics practices can teachers employ, including metacognition: https://iris.peabody.vanderbilt.edu/module/math/cresource/q2/p07/

Further Support & Training

If you enjoyed this CPD opportunity and would like one of our trainers to deliver training at your school, please contact:

Adi Ahmet

adnan.ahmet@theeducationpeople.org

Sarah Carpenter

sarah.carpenter@theeducationpeople.org

We offer a huge range of school support at competitive prices.

THE EDUCATION PEOPLE

Course Evaluation – Don’t Forget!

- Please take 5 minutes to complete your evaluation form now. You can access the link now via your mobile phone/tablet: **https://cpdonline.theeducationpeople.org** and then log into your account.

- Click on ‘My CPD Online’ and ‘Events Due Attend & Unauthorised Bookings’. From here you will be able to locate this event and then click on 'Enter Evaluation’.

- Alternatively please log into your account, using the e-mail link which you will receive from CPD online as soon as the register of attendance has been processed.

- You will be able to download your certificate of attendance once you have completed the evaluation **and** the signed register has been processed by the Training & Development Administration team.

- **IMPORTANT** – Did you sign in? All delegates **must sign the register** and ensure that their school/setting and contact details are completed and up to date.

THE EDUCATION PEOPLE

Thank you

THE EDUCATION PEOPLE