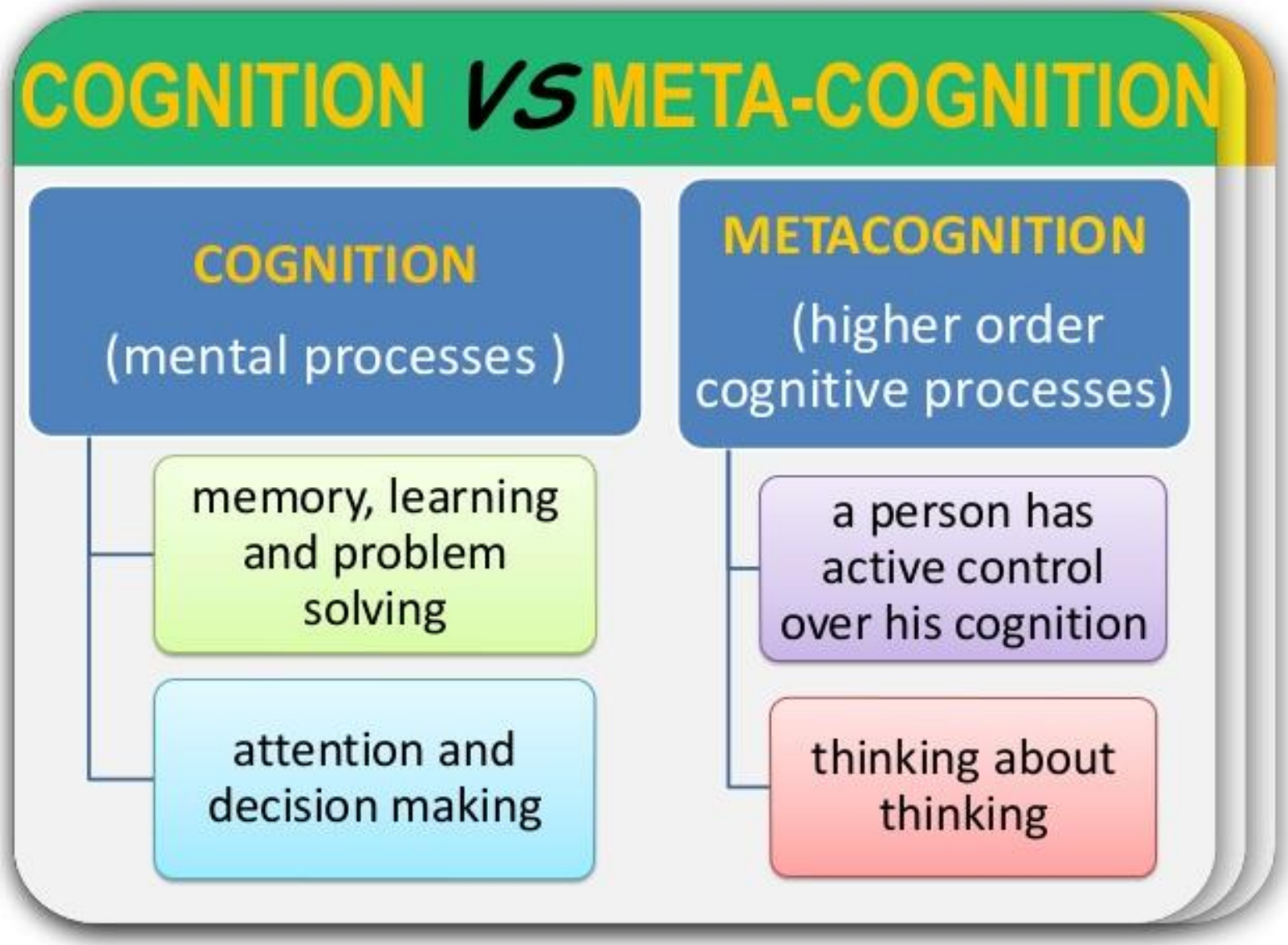
Metacognition


COGNITION VS META-COGNITION
COGNITION
(mental processes)
memory, learning and problem solving
attention and decision making
METACOGNITION
(higher order cognitive processes)
a person has active control over his cognition
thinking about thinking

META-COGNITION

Meta-cognition is often defined as thinking about thinking. It allows us to complete a given task well through planning, monitoring, evaluating and comprehending. This means while cognitive processes allow normal functioning of individuals, **meta-cognition** *takes it a level higher making a person more aware of his/her cognitive processes*.

https://www.youtube.com/watch?v=8B3PnOjlgM0

1

Knowing the different types of cognitive strategies

We use cognitive strategies to help us learn.
There are 4 main ways

ORGANISING

SUMMARISING

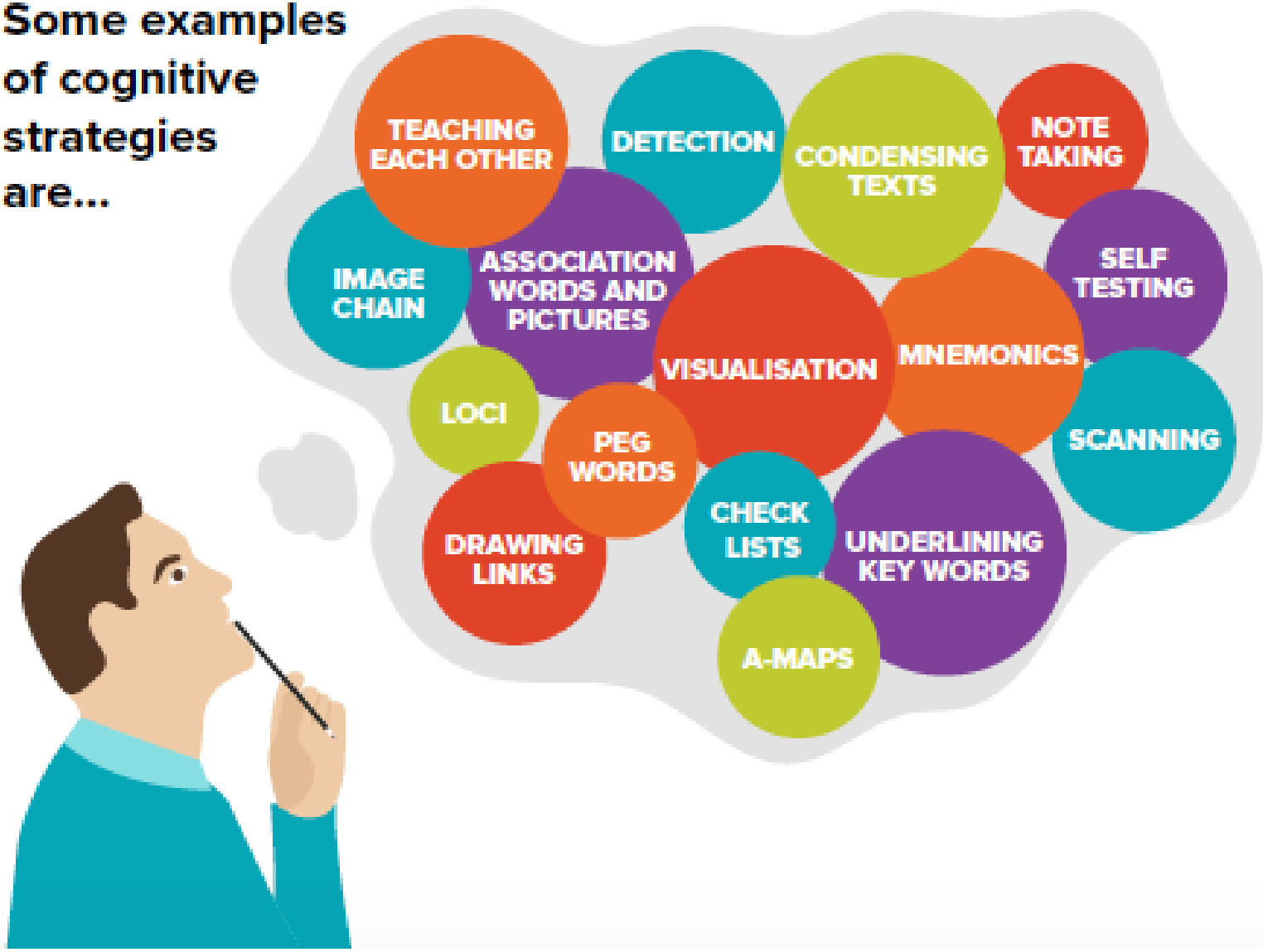
REPETITION

IMAGERY

2

Knowing what strategy to use and when

Some examples of cognitive strategies are...



Education
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METACOGNITION AND SELF-REGULATED LEARNING

Summary of recommendations

1

Teachers should acquire the professional understanding and skills to develop their pupils' metacognitive knowledge

- Self-regulated learners are aware of their strengths and weaknesses, and can motivate themselves to engage in, and improve, their learning.
- Developing pupils' metacognitive knowledge of how they learn—their knowledge of **themselves as a learner**, of strategies, and of **tasks**—is an effective way of improving pupil outcomes.
- Teachers should support pupils to **plan, monitor,** and **evaluate** their learning.

2

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

- Explicit instruction in cognitive and metacognitive strategies can improve pupils' learning.
- While concepts like 'plan, monitor, evaluate' can be introduced generically, the strategies are mostly applied in relation to specific content and tasks, and are therefore best taught this way.
- A series of steps—beginning with **activating prior knowledge** and leading to **independent practice** before ending in **structured reflection**—can be applied to different subjects, ages and contents.

3

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

- Modelling by the teacher is a cornerstone of effective teaching: revealing the thought processes of an expert learner helps to develop pupils' metacognitive skills.
- Teachers should verbalise their metacognitive thinking (*'What do I know about problems like this? What ways of solving them have I used before?'*) as they approach and work through a task.
- Scaffolded tasks, like worked examples, allow pupils to develop their metacognitive and cognitive skills without placing too many demands on their mental resources.

4

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.

5

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.

6

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.

7

Schools should support teachers to develop knowledge of these approaches and expect them to be applied appropriately

- Develop teachers' knowledge and understanding through high quality professional development and resources.
- Senior leaders should provide teachers with time and support to make sure approaches are implemented consistently.
- Teachers can use tools such as 'traces' and observation to assess pupils' use of self-regulated learning skills.
- Metacognition shouldn't be an 'extra' task for teachers to do but should be built into their teaching activities.

Testing is good!!!!!

- If it's used as a tool to develop cognitive understanding and we use it to fill the gaps….where we haven't gained knowledge and understanding.

- Testing becomes about what has 'sunk in' and what hasn't. Everyone can do it but some of us may not have found the right cognitive approach for this particular activity…..YET (therefore what do we need to do differently?)

- Formative assessment **during the learning process** informs us of the gaps and developing cognitive strategies with our pupils will be the most effective way of developing learning

Metacognition

Know what cognitive strategies are **IMPLEMENTATION**

Bullet Points
Mnemonics
Chanting
Pegging
Chunking
Visualisation
Association
Mind maps
Repetition

What works best for me in what situation?

Knowing what the best retrieval strategies are **IMPACT**

Quizzes
Tests
Sites of application
Teaching someone else
Brain dump – mind map

Self- regulation
Knowing how my beliefs and actions affect my learning

Self-efficacy I believe I can be effective in learning		I am confident with most things but if something hard comes up I doubt myself When I get things wrong I am going to make an effort not to give up and try harder
Self-handicapping I put obstacles in the way of my learning		I am not going to get out of my seat and I am going to just focus on the task
Self-motivation I am keen to work well because I love learning		
Self-dependence How much support I need from others		
Self-perfectionism I have high standards but I know things don't always go right first time		

I work well with Jane
I need to avoid John
I struggle to do homework after school on Friday
I need it to be quiet