The Bootcamp – One Year On: Setting G&T students up for success in a mixed ability classroom.

Applying the practice of Teaching for Thinking in the Classroom

What you can do when you can’t do anything.

Why Teaching for Thinking Matters

Gifted Learners in Mixed-Ability Classrooms

Inclusive Mixed-Ability Classrooms

Gifted learners are taught alongside peers, promoting equity and social benefits but posing cognitive challenge needs.

Need for Cognitive Challenge

Gifted students require higher-order thinking and intellectual struggle beyond simple task completion or extensions.

Teaching for Thinking Dispositions

Teachers may assume that gifted students already possess good learning dispositions essential for all

Teaching for Thinking Pedagogy

TfT emphasizes inquiry, reasoning, metacognition, and dialogic learning to create rich learning experiences for all.

Benefits for All Learners

Thinking-rich environments reduce distinctions between gifted and non-gifted, fostering creativity and engagement.

Cognitive, Emotional, and Learning Needs of Gifted Students

Cognitive Challenges

Gifted students need complex, abstract tasks that encourage advanced reasoning and multiple solution approaches.

Emotional Support

Emotional validation for effort over speed helps gifted learners avoid fear of failure and stay engaged.

Autonomy and Metacognition

Providing autonomy and opportunities for reflection fosters gifted students' intellectual risks and self-awareness.

Inclusive Benefits

Thinking-focused teaching benefits all learners by promoting engagement, creativity, and resilience.

What Contemporary Research Says About Gifted Learners

Enrichment-Based Pedagogies

Enrichment methods like project-based learning boost gifted students' higher-order thinking and creativity.

Differentiated Instruction

Flexible pacing, open-ended tasks, and tailored questioning meet diverse learner needs effectively.

Social-Constructivist Benefits

Gifted learners thrive with dialogue, collaboration, and diverse perspectives in inclusive classrooms.

Inquiry-Based Learning Impact

Inquiry fosters reasoning, metacognition, and knowledge transfer essential for gifted students.

What Contemporary Research Says About Gifted Learners

1. Inquiry and Social Learning Benefit Gifted Students

(Milakis, 2025; Hunaepi et al., 2024)

- Gifted learners show stronger engagement and deeper understanding when learning is **inquiry-based** (problem-solving, questioning, investigation).
- **Social interaction** (discussion, collaboration, peer learning) enhances thinking by exposing students to multiple perspectives.
- Moves learning beyond individual acceleration to **co-constructed knowledge**.

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2. Differentiation Is More Effective Than Streaming

(Ardenlid et al., 2025; Ardenlid, 2025)

- Mixed-ability classrooms can support gifted students effectively when teachers use **targeted differentiation** (content, process, product).
- Streaming or ability grouping is less effective and can create inequity or limit development.
- Emphasis is on **inclusive classroom practices** that stretch all learners without segregation.

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3. Enrichment and Complexity Drive Cognitive Growth

(Gül & Ayık, 2025)

- Gifted students benefit from **enriched tasks**, not just faster work or more of the same.
- Tasks should involve **complex thinking**—analysis, synthesis, evaluation, and creativity.
- Cognitive growth is maximised when students engage in **depth, ambiguity, and challenge**, rather than repetition.

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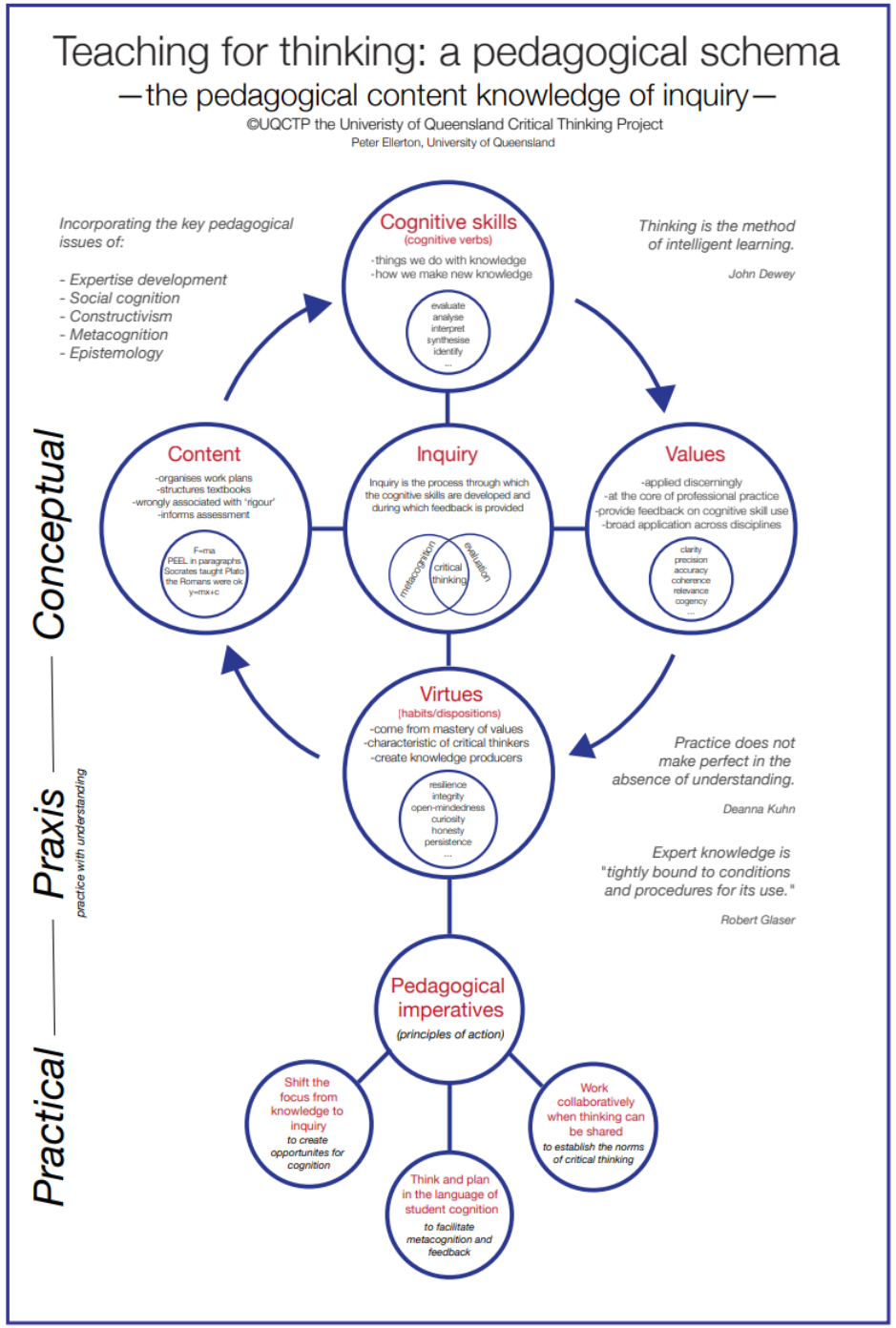
4. Critical Thinking and Metacognition Improve Outcomes

(Hunaepi et al., 2024)

- Teaching students to **think about their thinking (metacognition)** improves achievement and independence.
- Explicit focus on **critical thinking skills** (reasoning, evaluating evidence, making judgments) boosts both academic success and engagement.
- Learners become more **self-regulated and reflective**, which is especially important for high-potential students.

Teaching for Thinking Framework

Dr Peter Ellerton's Pedagogical Schema



Differentiation That Supports Gifted Learners Without Streaming

Effective Differentiation Focus

Effective differentiation prioritizes cognitive demand over quantity, focusing on depth, complexity, and learner independence.

Flexible Learning Approaches

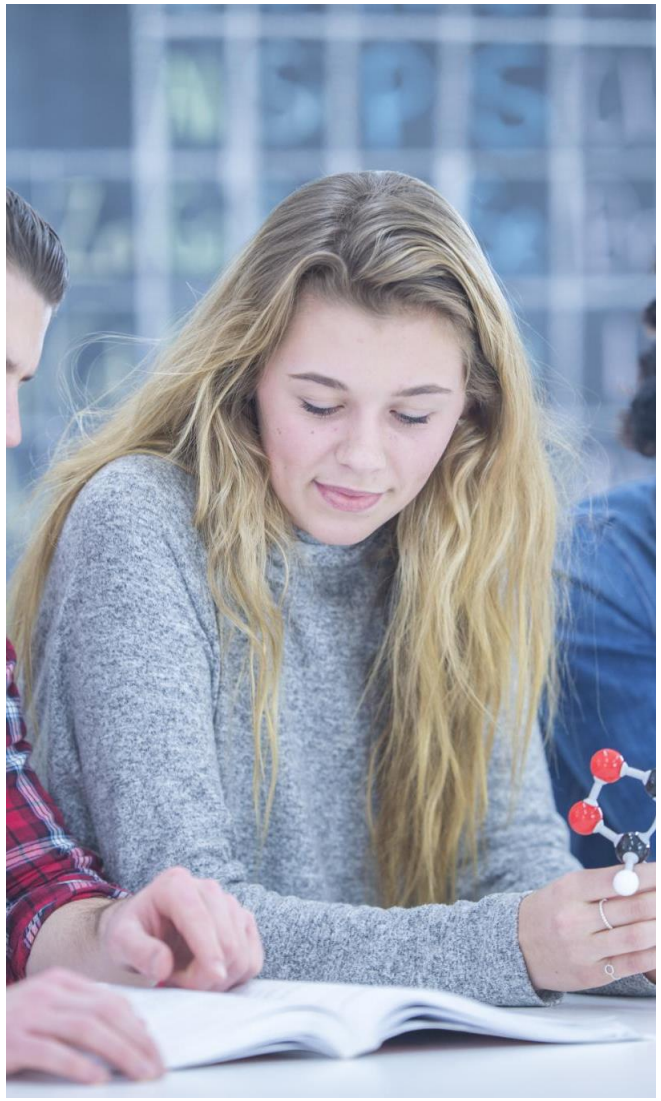
Open-ended tasks, flexible timeframes, and choice in process or product extend gifted learners' thinking meaningfully.

Customised Higher-Order Questioning

Higher-order questions requiring justification, synthesis, and evaluation deepen gifted learners' understanding effectively.

Embedded Differentiation in Design

Differentiation should be embedded in lesson design to support inclusion and maintain high expectations.



OLC Way

(Previously “The Vibe”
aka – Year 7 and 8 Bootcamp

Gifted Children

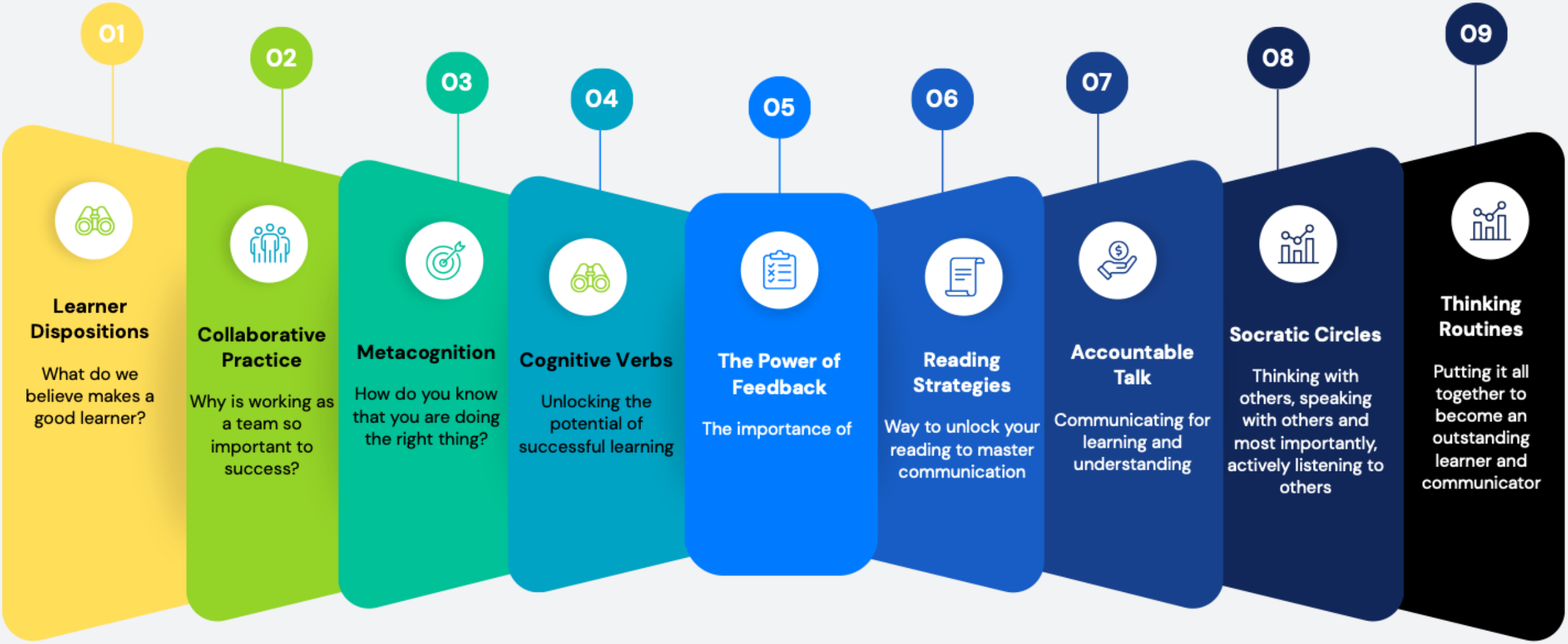
Gifted children often exhibit a strong attraction to facts due to several key characteristics and traits:

1. Rapid Information Absorption
2. Curiosity and Enthusiasm
3. Advanced Cognitive Abilities
4. Efficiency in Learning
5. Preference for Complexity

- Davidson Institute

Teaching for Thinking - THE OLC WAY

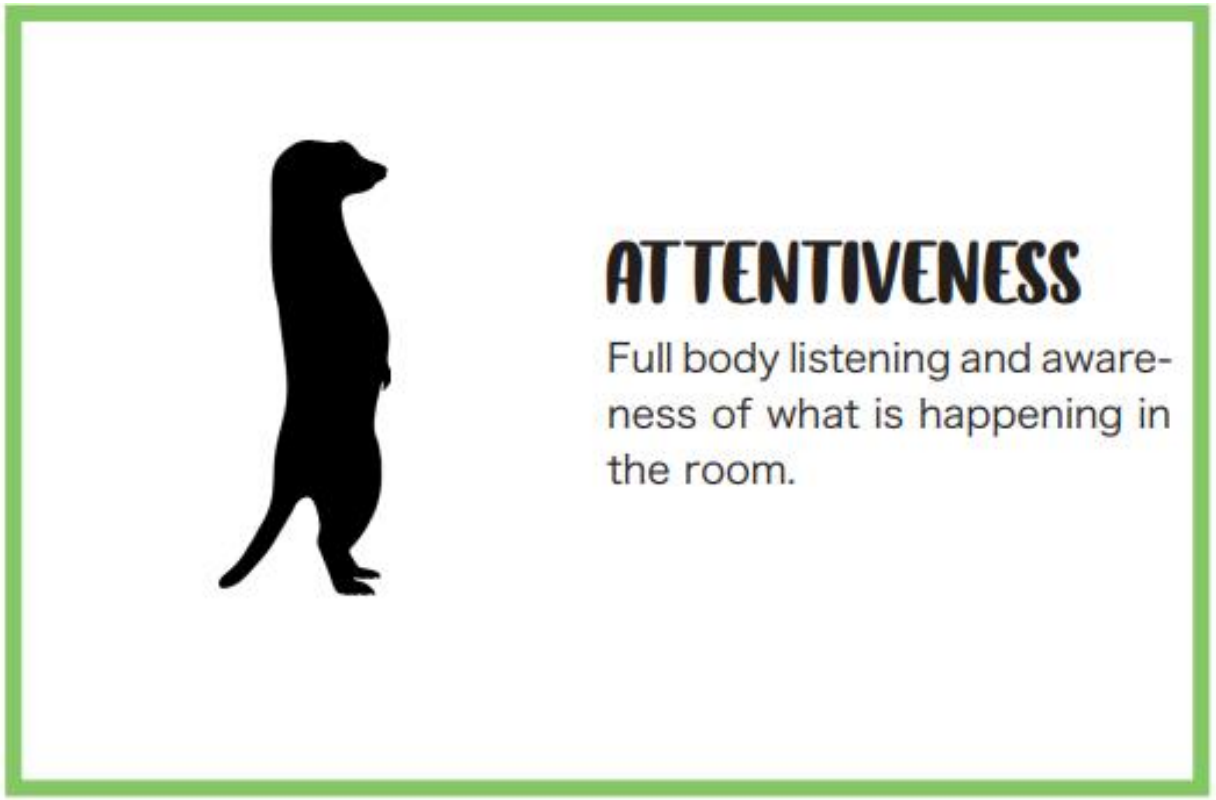
The core learning components that build a strong foundation for success!



When our teacher or another student is speaking in our classes

Full body listening means:

- ✓ We stop speaking or working
- ✓ We close the lid of the laptop or put down our equipment
- ✓ We turn our body and look at the person speaking
- ✓ We sit up straight
- ✓ We listen, think and respond



Warm up activity

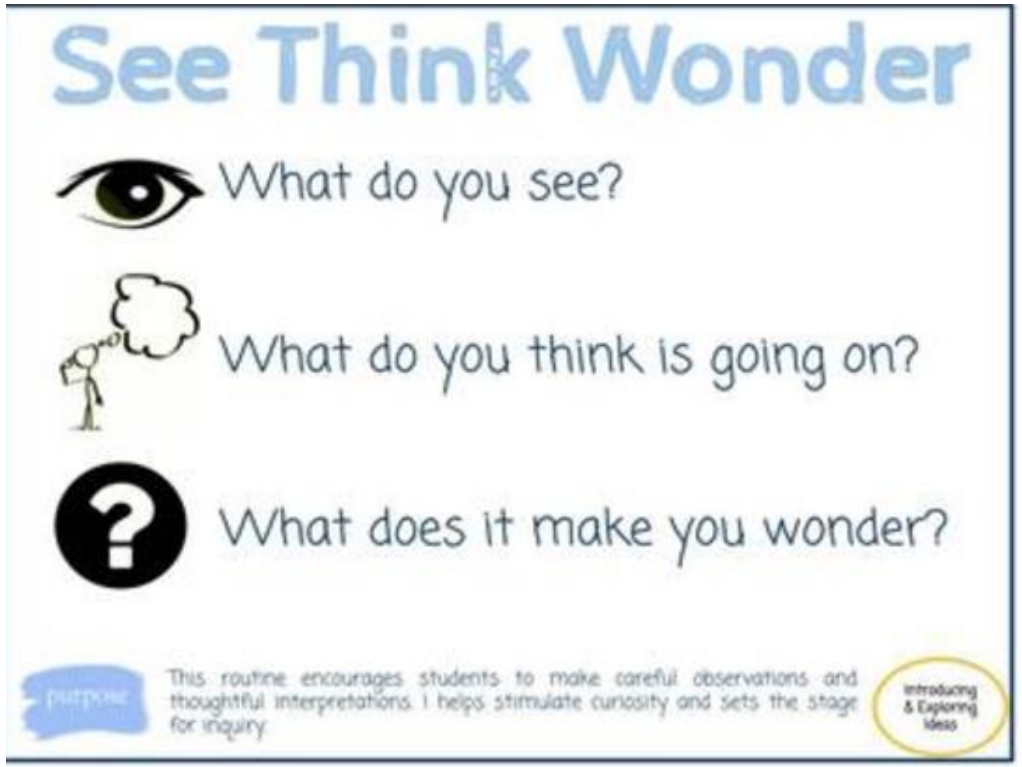
Connections:

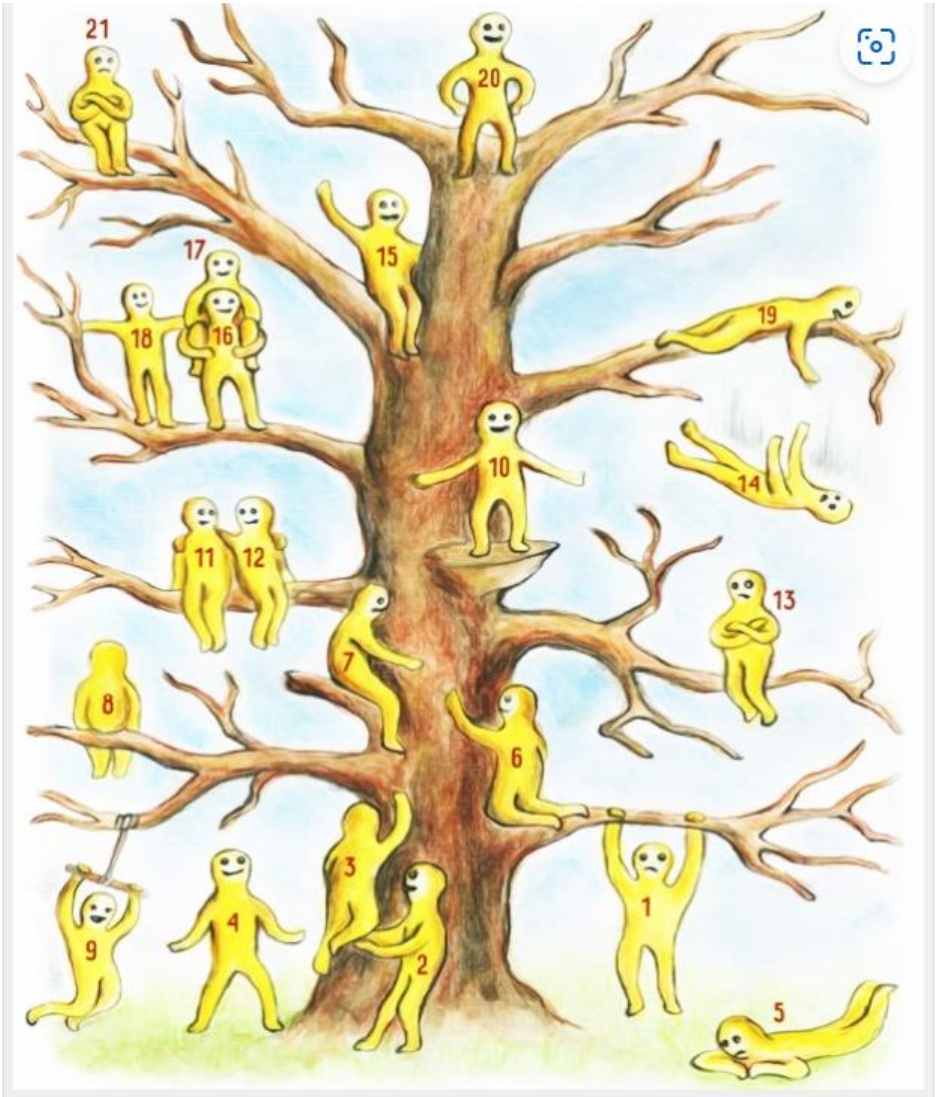
1. What makes you happy?: sport, hobby, watching tv shows from the 90s, mango frappes, animals
2. Write your thing on the side of the paper strip
3. We will make a circle with your strip and close it up with the tape - but NOT YET
4. Talk to your group and find a reason to connect your loops
5. Take your chain to the group next to you and find a reason to connect your loops in the chain
6. Goal: is to create one chain

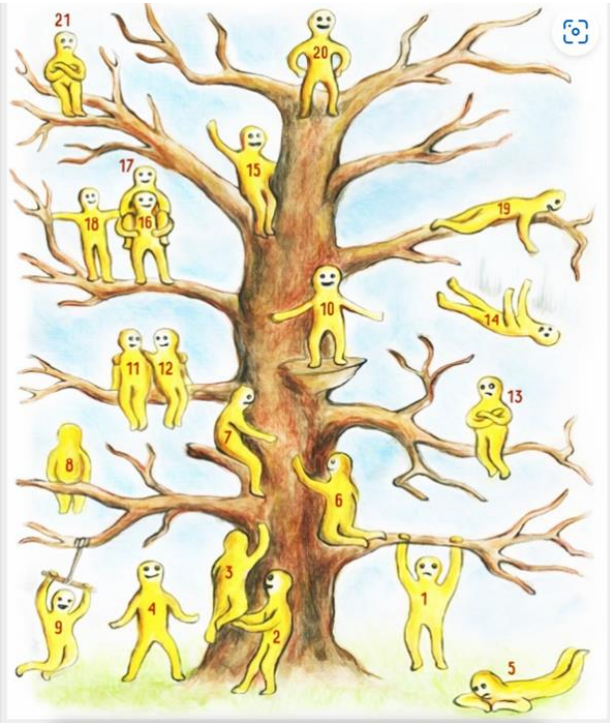
Mini whiteboards: how to use

- Answer questions
- Take notes when directed
- Summarise key points
- Practise a skill
- Draw the teacher’s instructions

See-think-wonder







HUMILITY
Allowing yourself to be taught and embracing the mindset of improvement.

COURAGE
Moving past what others think or say.

Sharing your motives and experiences.

TENACITY
Taking on challenges and being dedicated to the problem.

ATTENTIVENESS
Full body listening and awareness of what is happening in the room.

OPEN-MINDEDNESS
Willing to look at different ideas and perspectives.

Willing to change your mind.

THOROUGHNESS
Diving deeper to get more information.

Reflecting and evaluating.

CAREFULNESS
Checking for accuracy and suitability.

CURIOSITY
Asking questions and being interested.

AUTONOMY
Making up your own mind.

Considering the ideas of others and discussing.

Guide Questions

Planning

- What is the question I have to answer?
- What is the important information?
- Have I worked on problems like this before?
- What strategies will I use?
- How am I feeling about this problem?

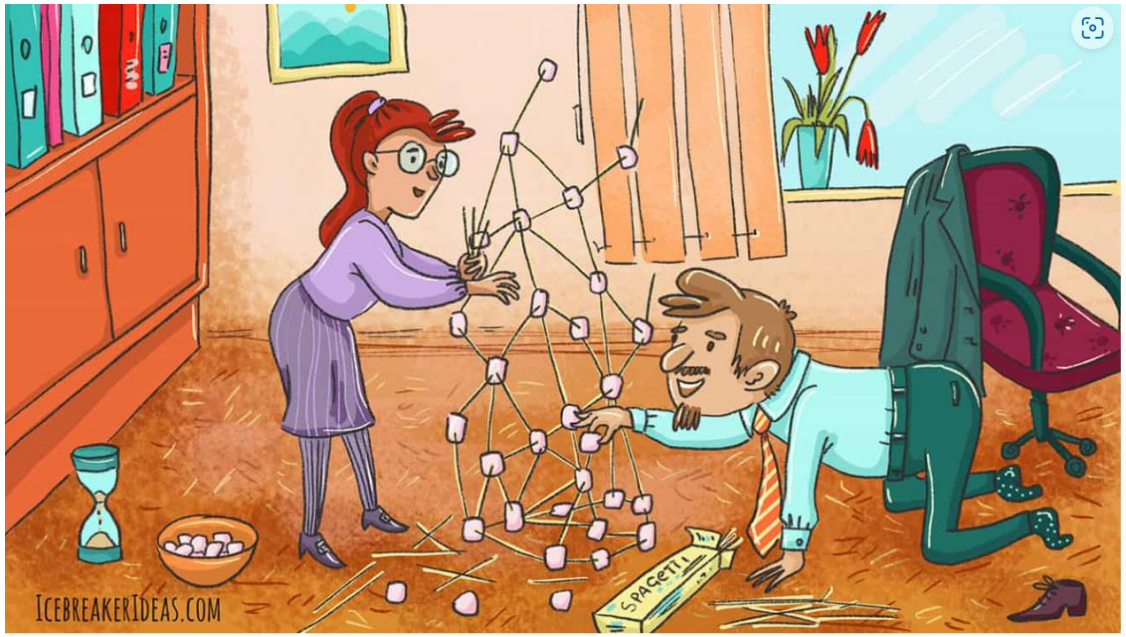
Monitoring

- Is my strategy working?
- Do I need to use a different strategy? If so, which one?

Reflection

- Does my solution seem reasonable?
- Could I have solved this another way?
- How do I feel that I managed this task?
- What is something that worked really well on this task?

- You will have 20 minutes to complete this task.
- You have two minutes (timed) to silently think about the problem and your resources.
- Three minutes to discuss your ideas with your team. (Planning)
- You will have 15 minutes to complete your task (Monitoring)
- You will have time to evaluate (Reflection)



Using the equipment provided, create the tallest tower you can make.

The marshmallow has to be at the top of the tower and remain there until the time is up

Planning to think

If we had a problem to solve, how would we know if the solution was the most effective one?

T4T mapped to 2025 OECD report on High Quality Teaching

Figure 1.3. The teaching goals and practices examined

Teaching for Thinking

Teaching for Thinking is an educational approach designed to cultivate critical thinking skills, values, and virtues in students through structured inquiry and reflective practices.

This pedagogy emphasizes the development of cognitive skills such as evaluation, analysis, interpretation, and synthesis, which are essential for intelligent learning and problem-solving.

Key components of Teaching for Thinking include:

Cognitive Skills: These are the mental processes used to understand and create new knowledge. Skills like evaluating, analysing, interpreting, and synthesising information are central to this approach.

Values and Virtues: These are the habits and dispositions that support critical thinking, such as clarity, precision, accuracy, coherence, relevance, and cogency. Virtues like resilience, integrity, open-mindedness, curiosity, honesty, and persistence are also emphasized.

Inquiry-Based Learning: Inquiry is the process through which cognitive skills are developed. It involves asking questions, exploring, and reflecting, which helps students engage deeply with the material and develop a critical mindset.

Metacognition: This involves thinking about one's own thinking processes. It helps students become aware of their cognitive strategies and improve their ability to regulate their learning.

Pedagogical Imperatives: These are principles of action that guide teaching practices. They include fostering expertise development, social cognition, constructivism, and epistemology (justified belief vs opinion).

Teaching for Thinking

Teaching for Thinking is a way of learning that helps students become better thinkers and problem-solvers.

Here's what it means in simpler terms:

Thinking Skills: These are the ways we use our brains to understand and create new ideas. Skills like figuring things out, understanding information, and putting ideas together are very important.

Good Habits: These are the behaviours that help us think clearly and make good decisions. Being clear, accurate, and relevant are some of these habits. It's also important to be curious, honest, and persistent.

Learning by Asking Questions: This means learning by being curious and asking lots of questions. It helps students understand things deeply and think critically about what they learn.

Thinking About Thinking: This is about being aware of how we think and learn. It helps students understand their own learning process and improve it.

Teaching Principles: These are the rules that guide how teachers help students learn. They include helping students become experts, work well with others, and understand how knowledge is built.

By focusing on these areas, Teaching for Thinking helps students become thoughtful, reflective, and independent learners. This approach is supported by the University of Queensland Critical Thinking Project, which provides resources to help teachers use these strategies effectively.

Pedagogical Imperatives

Shift the focus from knowledge to inquiry to create opportunities for cognition

Think and plan in the language of student cognition to facilitate metacognition and feedback

Work collaboratively when thinking can be shared to establish the norms of critical thinking

Feedback

Having a consistent and positive language for student feedback helps students to navigate ISMGs and Standard Elaborations. It helps them to know how to improve thinking and responding.
How do you explain the difference between at standard, effective and discerning to your students?

Feedback also involves formative assessment routines like the mini-whiteboards and whole-class responses.

Gifted and Talented Learners

Research by Hattie and Timperley (2007) identifies feedback as one of the most powerful influences on student achievement. Their study found that effective feedback can almost double the average student growth over a school year. This is particularly beneficial for gifted learners who thrive on specific, constructive feedback to guide their advanced learning processes.

Feedback

Very high impact for very low cost based on extensive evidence.

+6

OECD: Using formative assessment and feedback

EFFECT SIZE: .70/ collective teacher: 1.57

Metacognition

Metacognition and self-regulation

Very high impact for very low cost based on extensive evidence.

+7

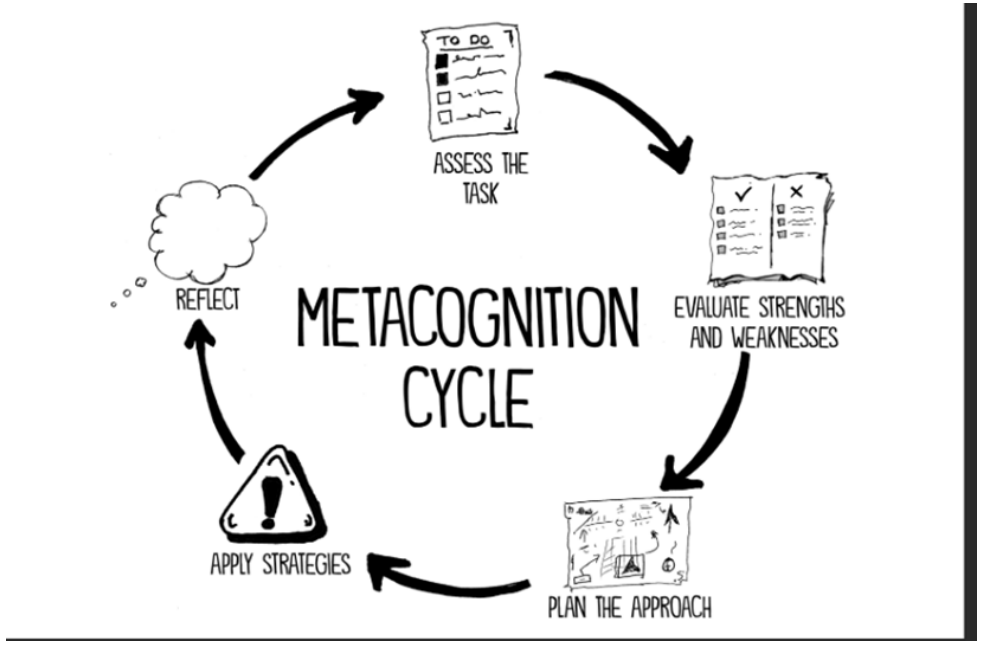
Thinking about our thinking.
Being aware of our thinking and strategic around the way we approach learning is essential for success.
Metacognition can be easily linked to intentions and success criteria:
If we are evaluating, what should we do?
If we have a complex problem- how can we approach it?
Followed by reflection and evaluation- it compliments strong lesson starts and evaluative lesson conclusions, embedding concepts from working to long-term memory at the conclusion of the lesson.

OECD: Cognitive Engagement, Quality subject content, Social-emotional, Interaction, Formative

EFFECT SIZE: .75

Gifted and Talented Learners

Research by Dr. John Hattie shows that metacognitive strategies can have a significant impact on student achievement, with an effect size of 0.69 This means that teaching students to think about their own thinking processes can greatly enhance their learning outcomes. For gifted learners, this approach helps them become more self-aware and self-regulated in their learning.



Learner Dispositions

Learner dispositions leverage from and build on character development.
Either including the dispositions as an intentional focus or asking the students to think about what they could apply to the relevant intention of learning.
For example: In year 7 Science:
They use equipment to generate and record data with precision.
Need carefulness to create precision

Gifted and Talented Learners:
Dispositions build character- this is useful for all students. The language focus makes the connection achievable and explicit. This is a global concept that can help form a class mindset about learning new things from and with each other.

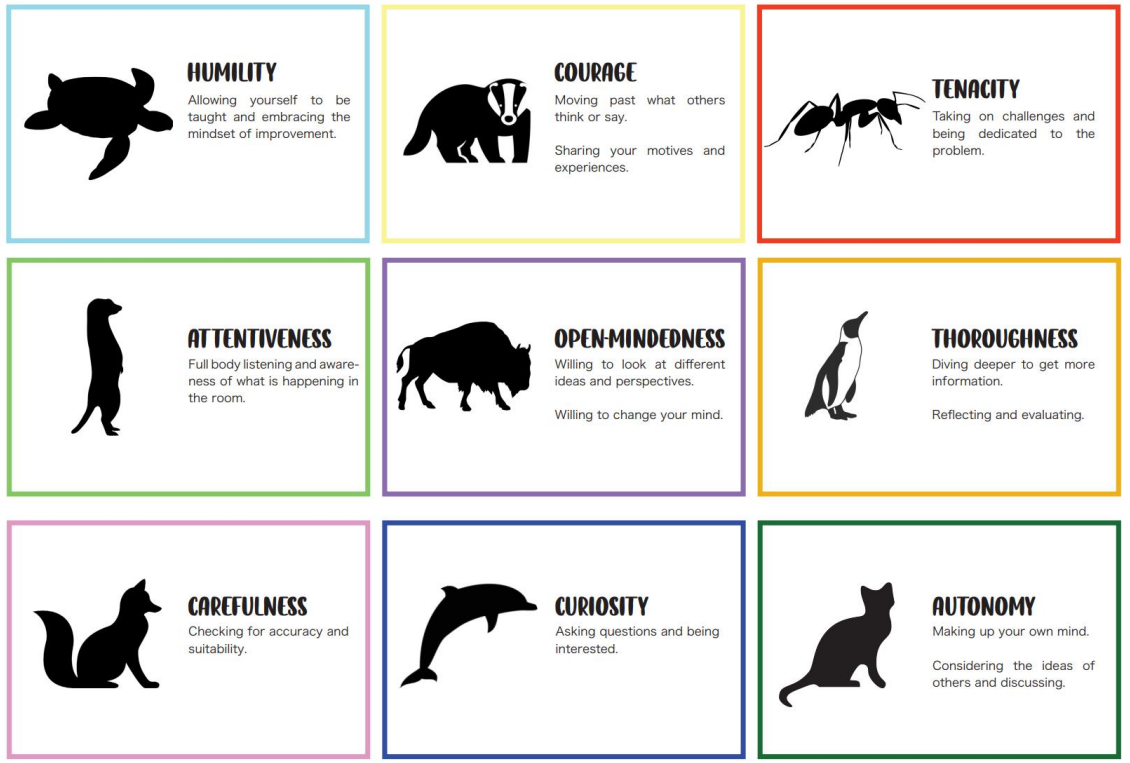
Metacognition and self-regulation

Very high impact for very low cost based on extensive evidence.

+7

OECD: Real world connections, Explicitly teaching and practicing social-emotional skills

EFFECT SIZE: 1.33 (learner beliefs)



Collaboration

Collaborative learning approaches

High impact for very low cost based on limited evidence.

+5

What do we do when we collaborate?

Intentionally teach how to optimise collaboration:
One pen- or intentional colour allocation
Shared thinking
Attentiveness to each other
Autonomous thinking (we think with others but make decisions for ourselves)
Use metacognitive strategies
Open-minded to the ideas of others
By mixing groups we learn from others and contribute to the learning of others- we are all teachers and learners in the classroom

OECD: Fostering classroom interaction: Student collaboration

EFFECT SIZE: .82/ 1.20 (Jigsaw)

Gifted and Talented Learners

Inclusive Education Policies: Studies suggest that inclusive education policies, which promote collaboration among all students, are essential for maximizing the potential of gifted learners. These policies emphasize the importance of fostering individuality and diversity among gifted learner

Questions