

Five Skills That Would Make Teaching Easier

July 2019

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Today – Five Skills

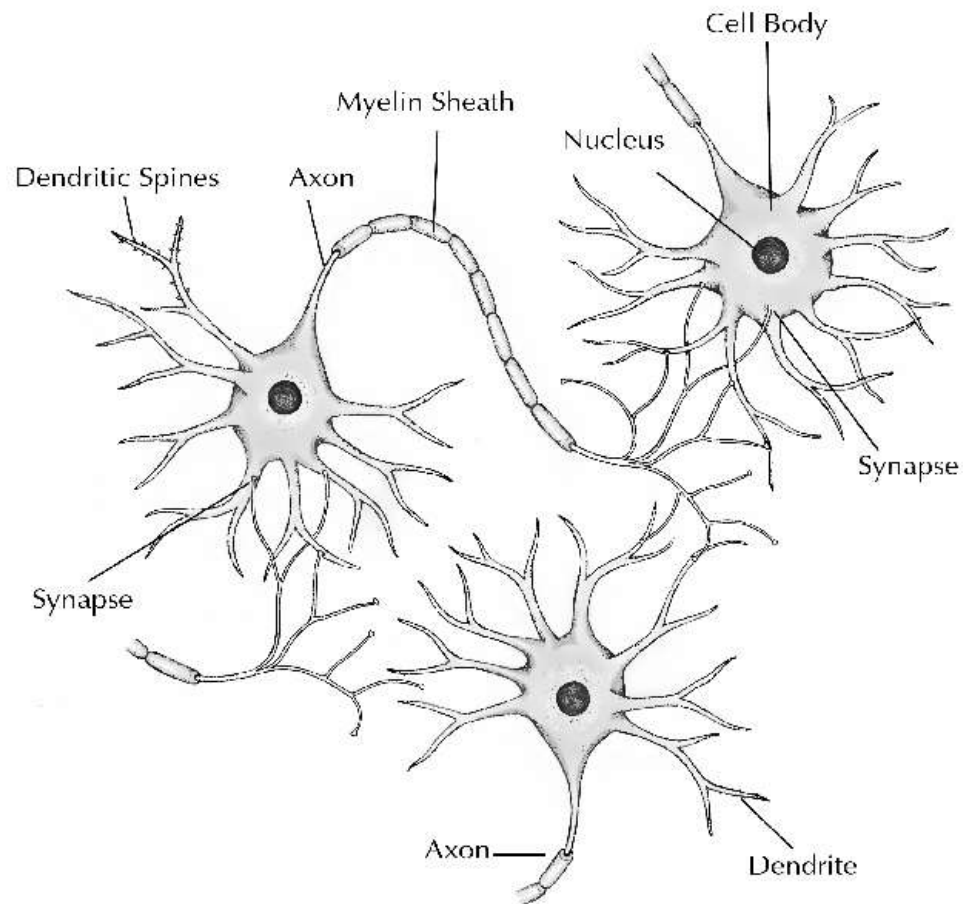
1. What is learning?
2. Using data
3. Personalizing/differentiating instruction
4. Grading
5. Optimize their own learning

Skill 1: What is Learning?

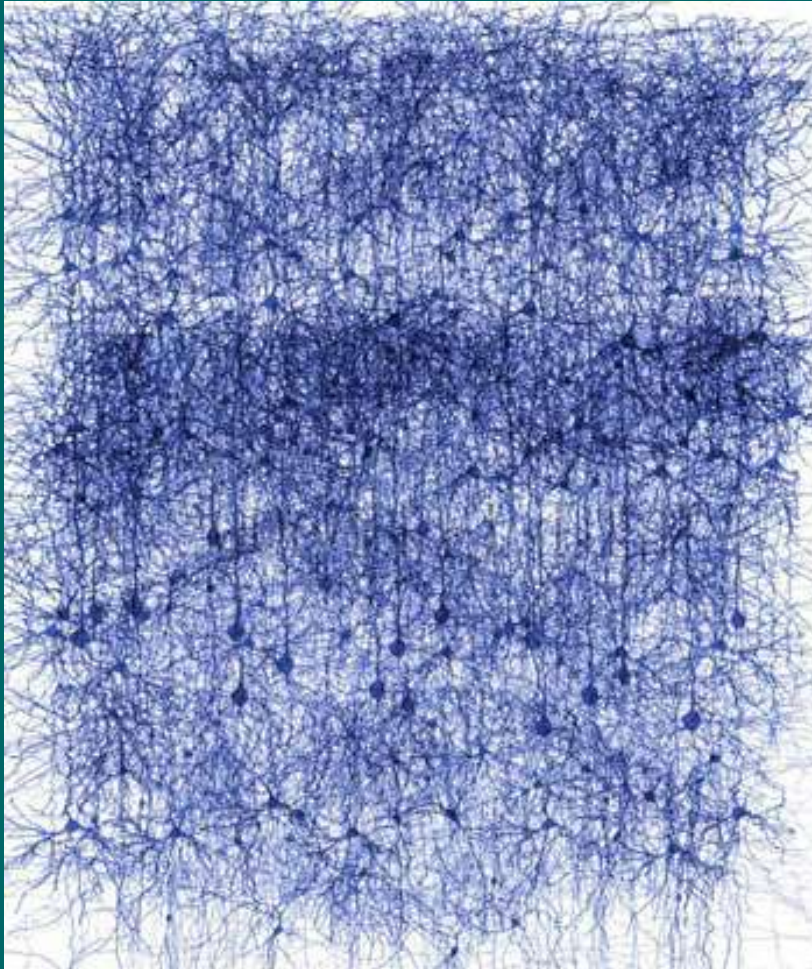
Learning Is a Biological Process

- Learning is the act of making and strengthening connections between thousand of neurons forming neural networks or maps.
- Memory is the ability to reconstruct or reactivate the previously-made connections.
- Neurons that fire together, wire together!

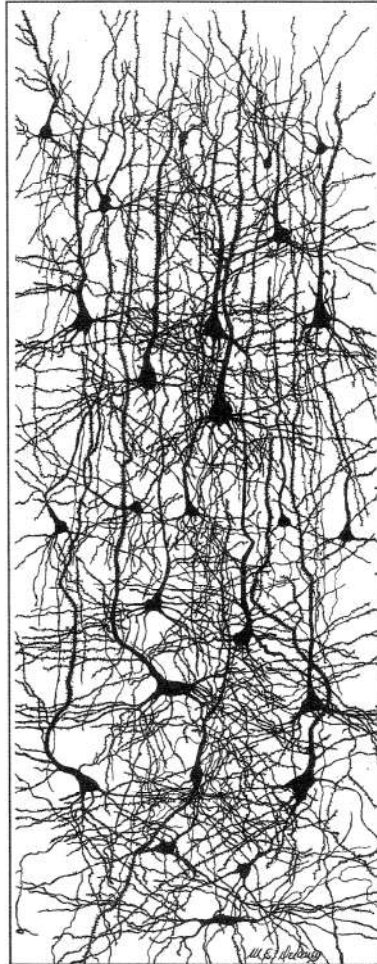
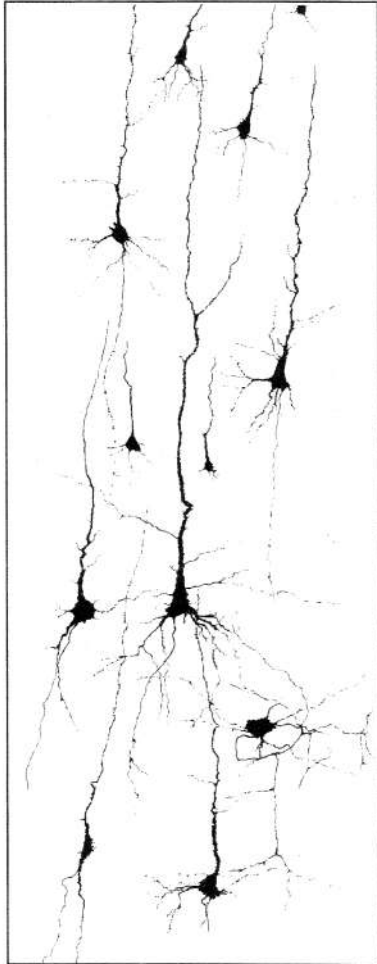
Neurons



The brain is composed of about 85 billion brain cells (neurons) which communicate at junctures called synapses.



What neurons
actually look like in
your brain.



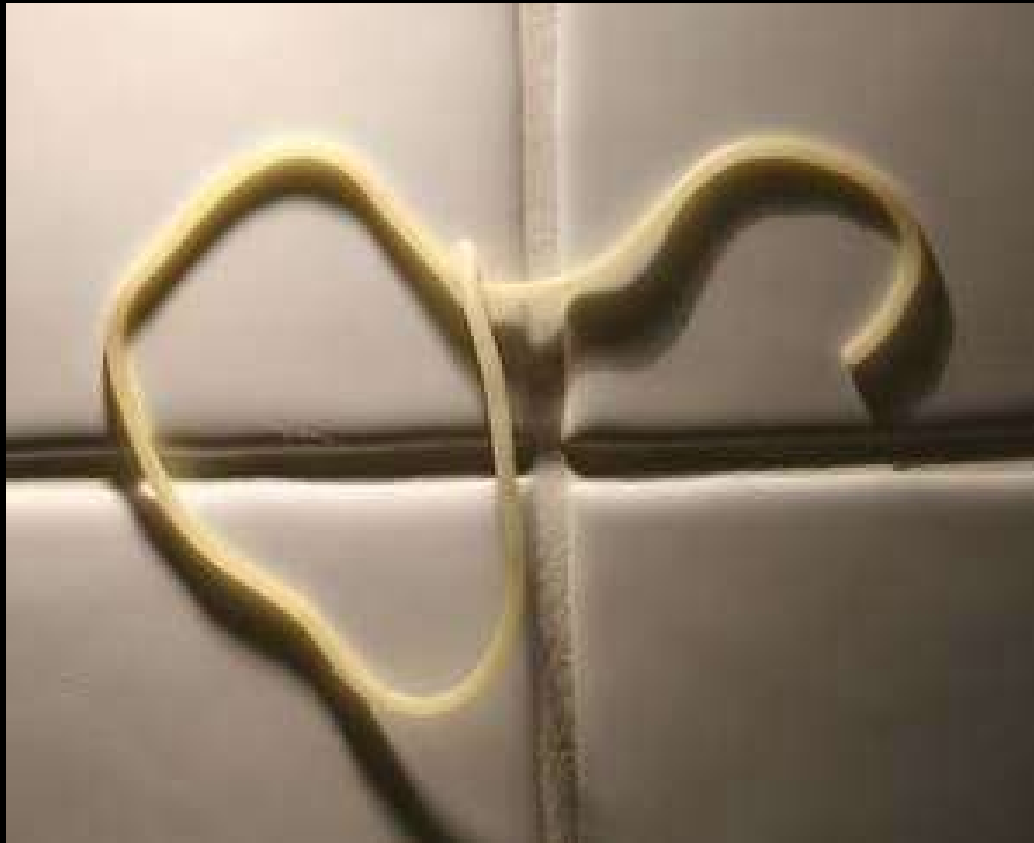
Cerebral cortex
neurons in a
newborn and a
two-year-old.

This is a picture
of learning.

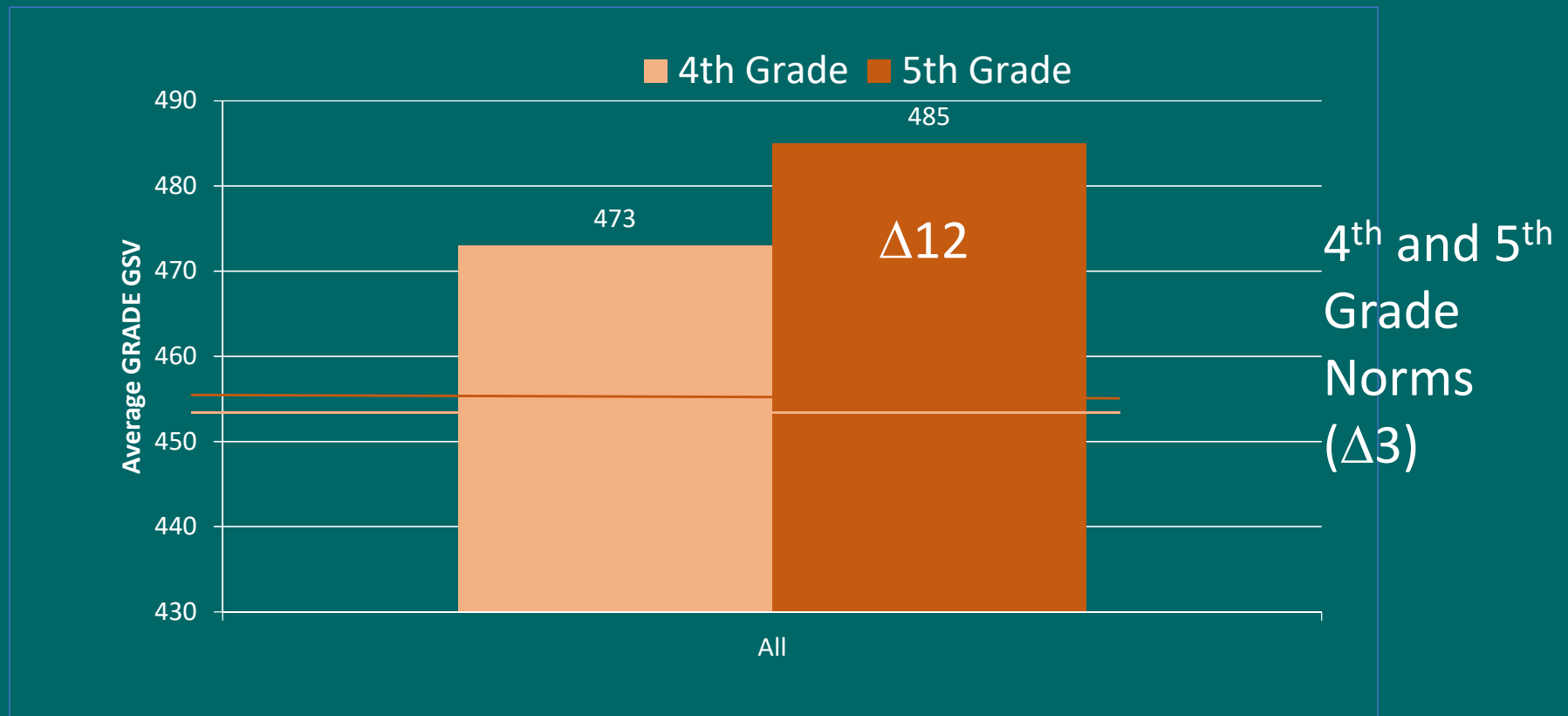
Why is this important for teachers?

- Teachers and parents don't transmit knowledge and understanding to students.
- Each student's brain must construct knowledge and understanding from the experiences they have.
- The experiences that parents and teachers create for their students physically change their brains.

Skill 2: Using Data



5th Grade – GRADE Growth Scale Value

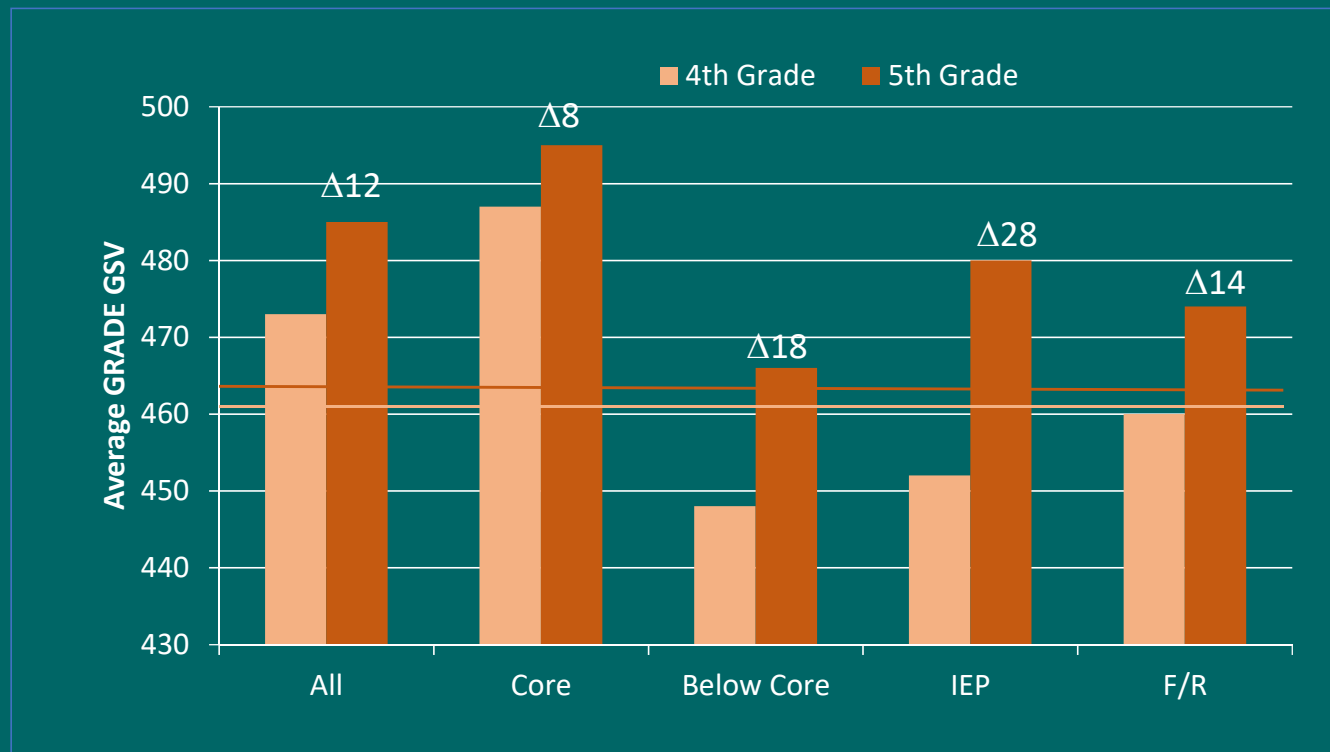


What questions would you want to ask?

“Cognitive Skills Development Helps Close the Gap for Students Performing Below Grade Level” – www.mybrainware.com/safari/research



5th Grade – GRADE Growth Scale Value



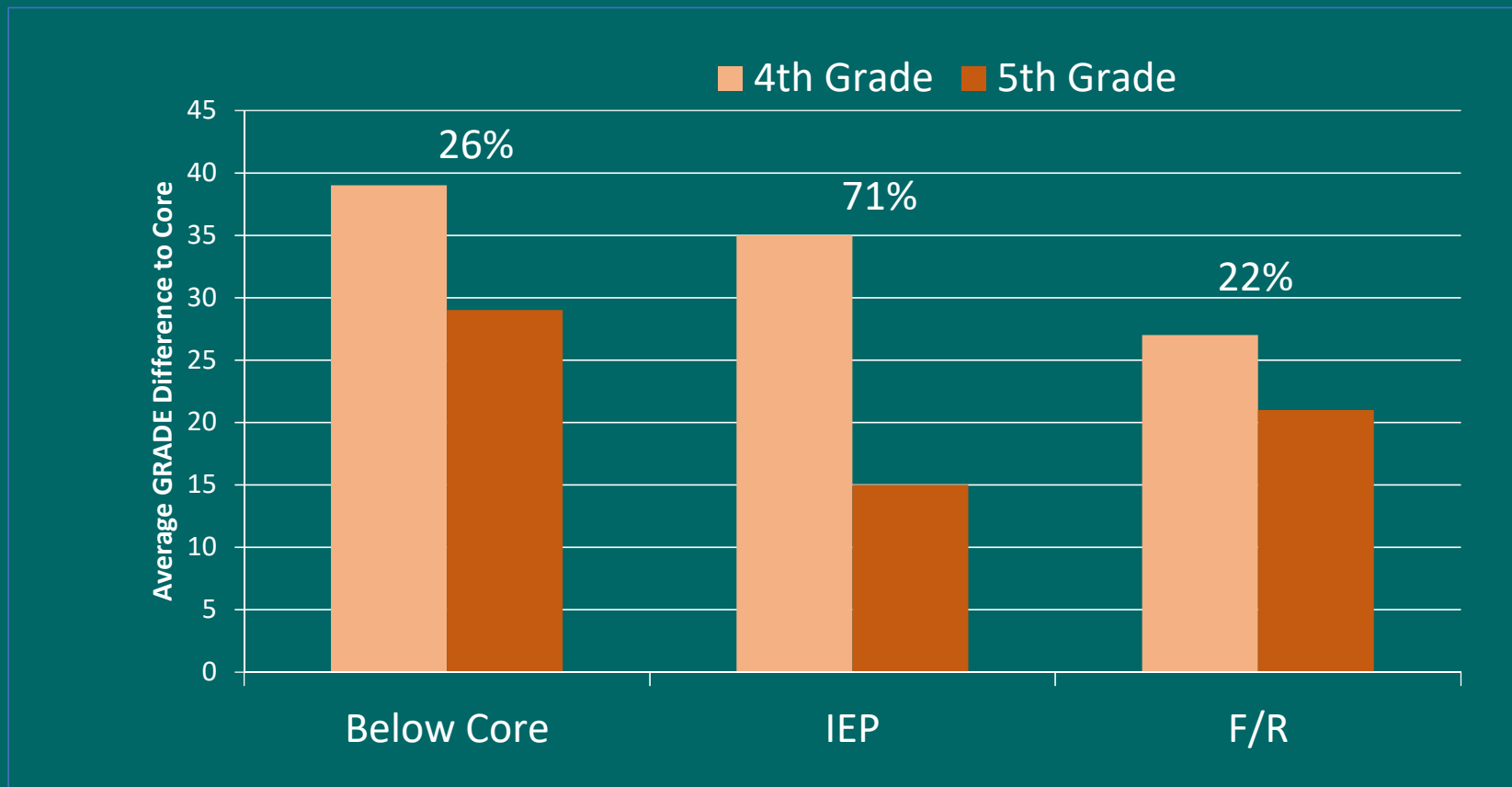
4th and 5th
Grade Norms
(Δ3)

5th Graders – Range of Abilities, GRADE Formative Test

“Cognitive Skills Development Helps Close the Gap for Students Performing Below Grade Level” – www.mybrainware.com/safari/research



5th Grade – GRADE Gap Between Core and Non-Core, IEP, F/R



“Cognitive Skills Development Helps Close the Gap for Students Performing Below Grade Level” – www.mybrainware.com/safari/research



Skill 3: Differentiation

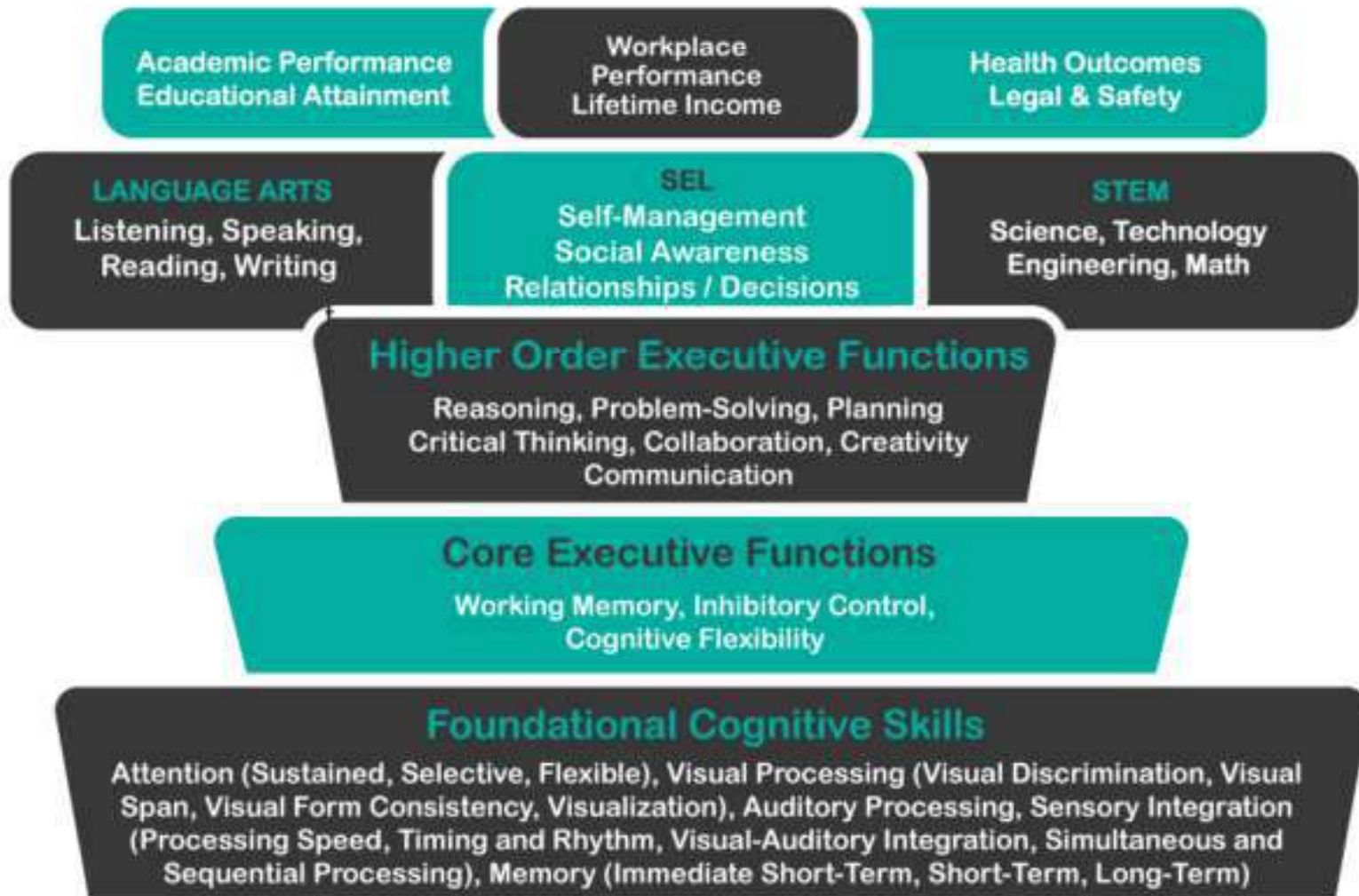
How do you and the teachers you know differentiate?

Differentiation – Conventional Wisdom

Teachers are commonly told they can group by:

- Learning styles – preferred method of learning
- Ability
- Performance on formative assessments
- Students Interest (topics and outputs/products)

COGNITIVE SKILLS : THE FOUNDATION FOR LEARNING



Summary Results

EXPECTED RANGE

Verbal Memory
Visual Memory

Processing Speed
Attention
Flexible Thinking
Verbal Reasoning
Spatial Perception

None

HIGH

MEDIUM

LOW

Visual Motor Speed
Abstract Reasoning

STRENGTHS



Working Memory

WEAKNESSES

5th Grade Math iReady Mindprint Verbal Reasoning vs. Spatial Perception



5th Grade Math iReady Mindprint Verbal Reasoning vs. Spatial Perception



Skill 4: Grading

Grading Scale Based on Growth Mindset

- Reached Mastery
- Not Yet

Based on assumption that the purpose of grading is to support learning.

Rubric Example

Criteria	Minimal	Emerging	Competent	Exemplary
Situational Analysis and Problem Statement Weight 10.00%	0 to 74 % Does not summarize the situation. Does not identify the problem, is confused, or identifies a different or inappropriate problem.	75 to 83 % Provides a general situational analysis. Identifies the main problem but does not recognize or state any subsidiary, embedded or implicit aspects of the issue. General problem statement with wide applicability.	84 to 92 % Provides a clear and concise situational analysis. Clearly identifies the main problem with some subsidiary or implicit aspects of the issue. The problem is defined in relationship to case facts.	93 to 100 % Provides a clear, concise, and complete situational analysis. Identifies and clearly states not only the basics of the problem but recognizes all of the nuances. Sufficiently focused and supported by case facts to allow for executive action.
Critical Issues Weight 10.00%	0 to 74 % Does not surface the critical challenges and issues that underlie the problem.	75 to 83 % Identifies at least one of the critical challenges and/or issues that underlie the problem and presents a general argument as to why it is important.	84 to 92 % Identifies most of the critical challenges and/or issues that underlie the problem and presents case facts to support why they are important.	93 to 100 % Identifies all of the critical challenges and/or issues that underlie the problem and presents case facts to support why they are important.



Improving Grading

- How does the process I use for feedback and grading support learning?
- Do I consistently use assessments, feedback and grading to help move students from wherever they are to competency – from not yet to yet?
- Do I really understand what the critical skills are that need to be developed for each assignment I give?
- Can I use something other than a “grade?”

Skill 5: Optimize Own Learning

For Example

- What should teachers ask themselves before any professional development?
- What should teachers do the day before they will be teaching using a new technique or teaching new material?
- How could teachers best prepare for a group discussion of a book they have read?

Why Am I Learning This?

The brain's main responsibility is to help us survive.

How will this help me survive (and thrive)?

Without a rationale and emotional engagement learning doesn't happen.



Sleep



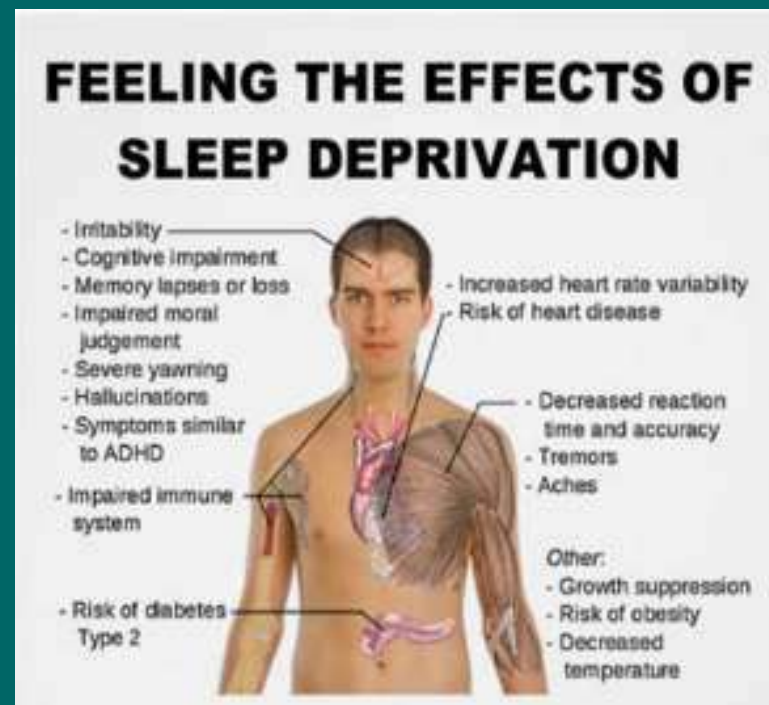
Sleep

Sleep and Brain Power

- Impact on attention and cognitive performance.
- Memory.
 - Encoding long-term memory.
 - Sustaining learning, protecting against interference.
 - Creating additional connections.
- Problem-solving: Let me sleep on it.

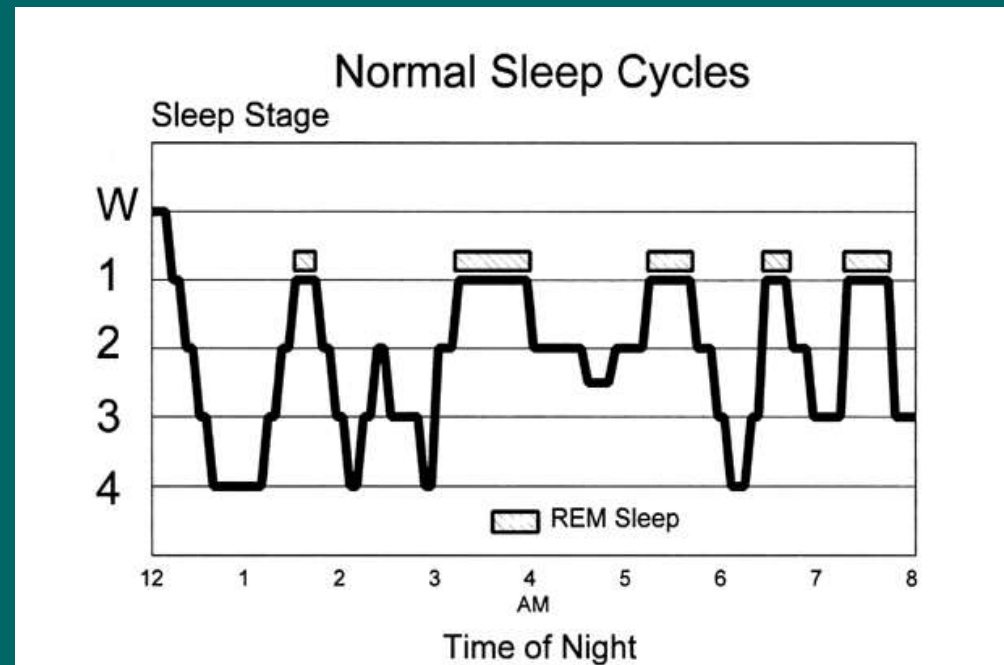
Immediate Effects of Sleep Deprivation

- Poor attention
- Irritability
- Difficulty with memory
- Increased risk taking and impulsivity
- Slowed reaction time
- Depressed immune system



Sleep

- Sleep Cycles
- Recommended sleep – highly individual, but typically:
 - Infants need 16 hours/day
 - Teenagers need 8.5 to 9.5 hours/day
 - Adults need 7 to 8 hours/day



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Questions?



Let's stay
connected!

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