

The Superpower of Metacognition !!

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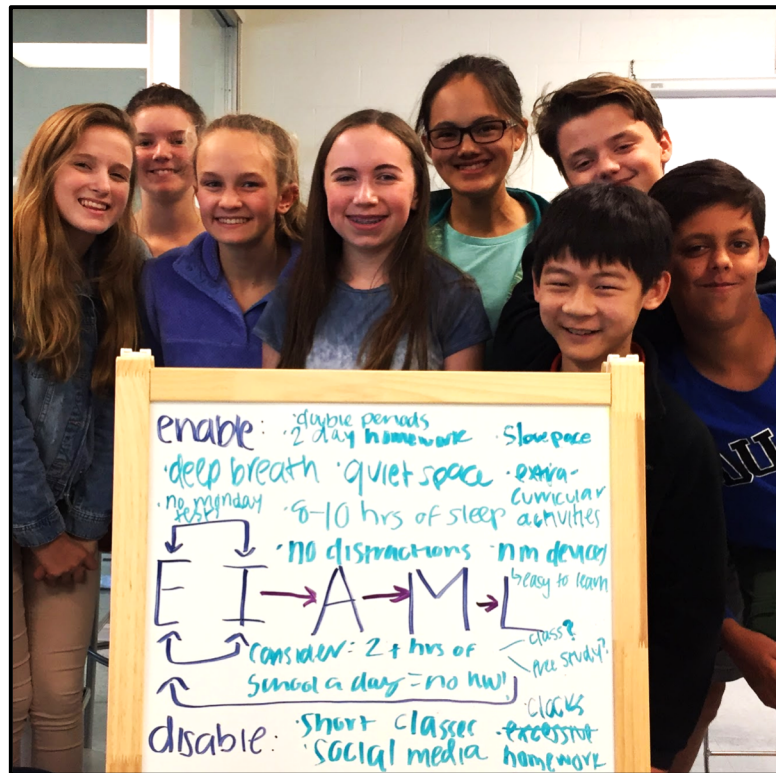
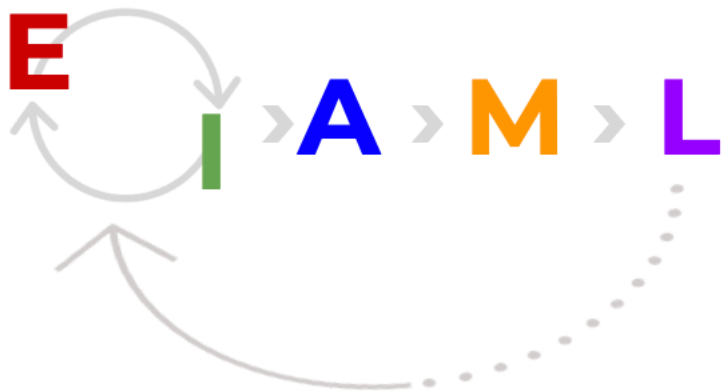


Kim Schafer, M.S.
Grade 4 Instructor
Faculty Fellow

Who is here?

CONTEXT enables or disables
LEARNING more than any
learner is abled or disabled.









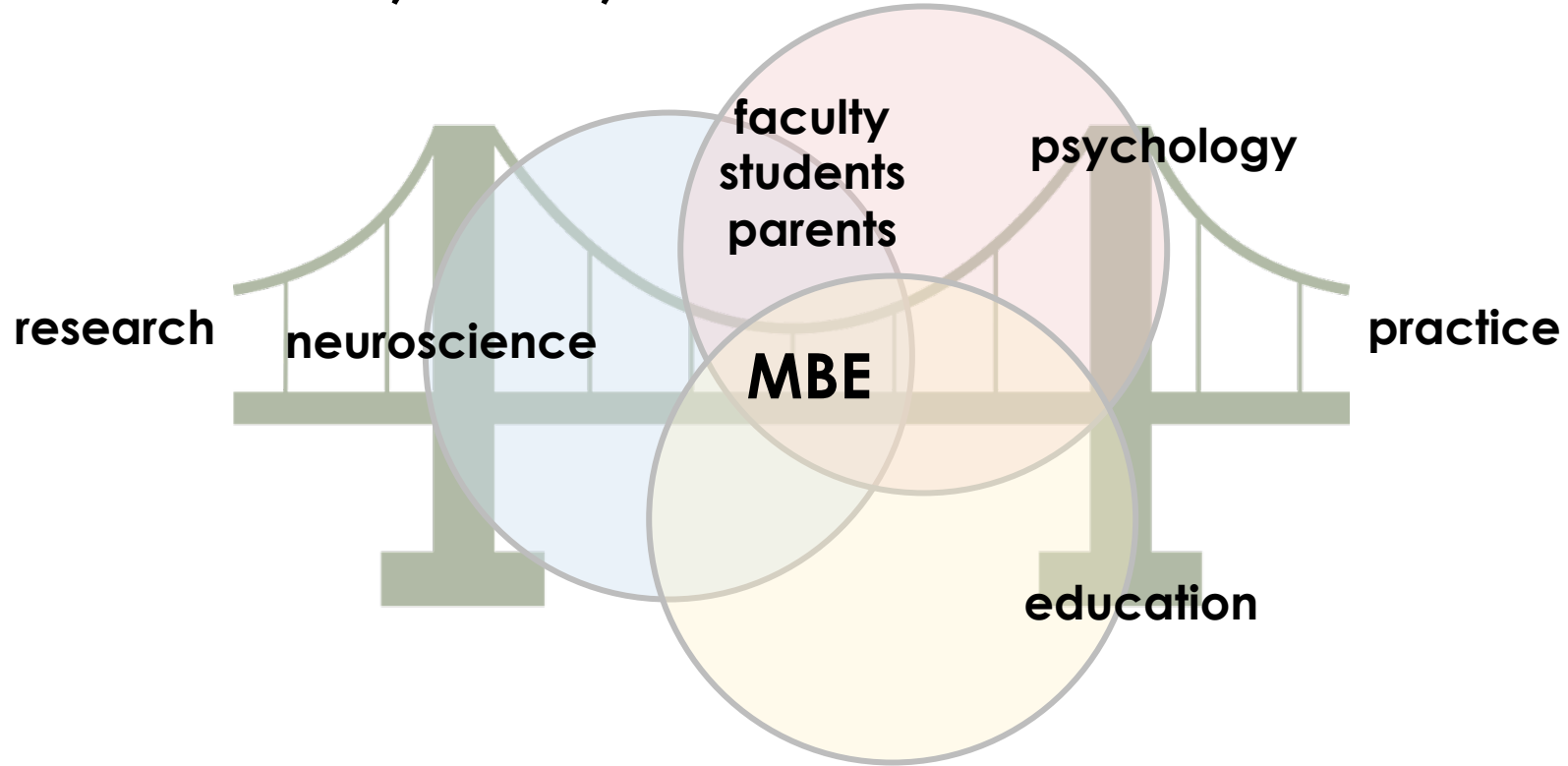
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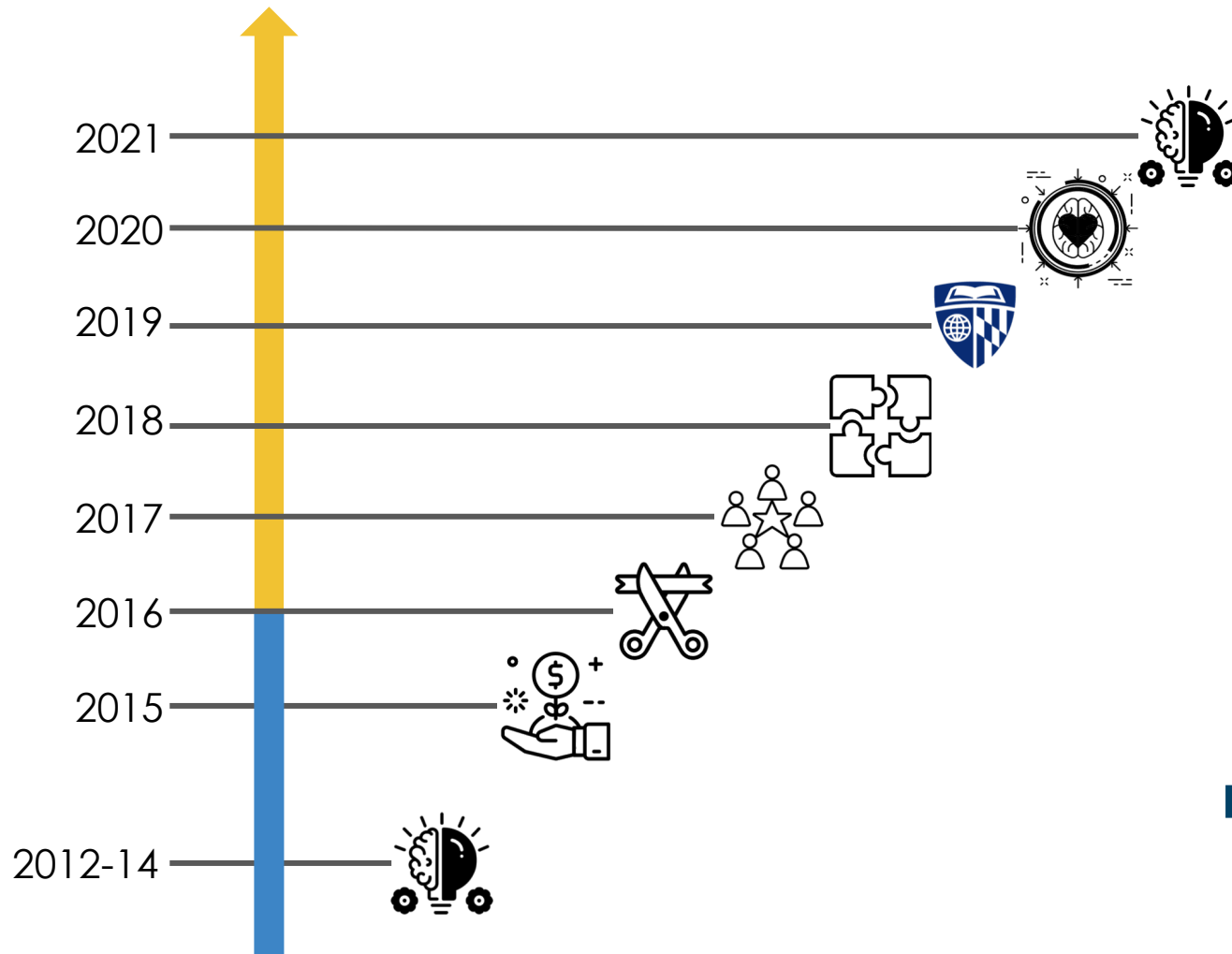
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Creating confident learners for life.

What is Mind, Brain, and Education?



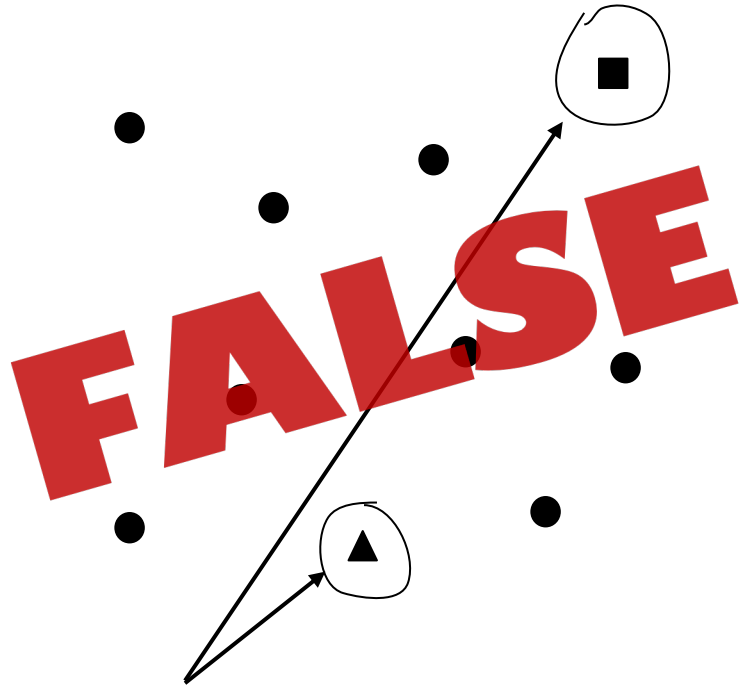


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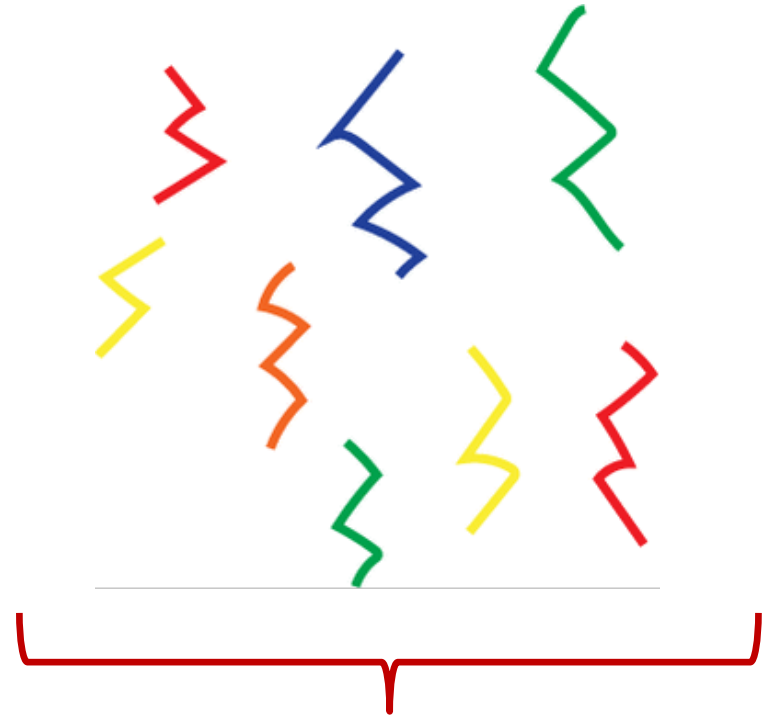
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How do we see learners and learning?



Disables by labeling as an "other."

How should we see learners and learning?



Enables dynamic pathways to learning.



Neuroplasticity=
What fires together,
wires together.



Neuroplasticity=
Blooming and
Pruning

Newborn

3 months

15 months

2 years

NEUROPLASTICITY

The Ability of our Brain to Change and Reorganize its Structure and its Function. The Reason for a Growth Mindset.



NEUROGENESIS

Brains are always creating new neurons.



NEW SYNAPSES (PATHWAYS)

Thinking and doing create new connections between existing neurons.



BETTER PATHWAYS

Practice and working through struggle make neural pathways stronger and faster.



PRUNING PATHWAYS

Pathways we don't use become weak and disconnected.



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for Mind, Brain, and Education
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Understanding neuroplasticity helps us ask the right questions to encourage our children to develop a growth mindset.

When students believe that they can change their brains through their thoughts and actions, they begin to understand that **effort makes them better at learning**. As a result, they are more likely to put in extra time and effort leading to higher achievement.

"Pocket Sentences" for parents to use to encourage reflection, leverage neuroplasticity and promote a growth mindset:

- How did that (assignment, test, etc) go for you?
- What strategies could you use next time for a better outcome/the same outcome?
- Tell me about your process on this?
- How has your thinking changed since...?
- What do you say to yourself when you are stuck?
- What strategies did you use to figure that out?
- How is your approach similar to how you've worked in the past? Did it work for you before?



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“To become self-directed learners, students must learn to assess the demand of the task, evaluate their own knowledge and skills, plan their approach, monitor their progress, and adjust their strategies as need.”

-Ambrose, S. How We Learn



What is metacognition?

Why does it matter?

met•a•cog•ni•tion

,medə,käg'niʃH(ə)n/

noun

PSYCHOLOGY

1. awareness and understanding of one's own thought processes.



metacognition

regulate my thinking

know my thinking

monitor
plan
evaluate

emotion
attention
memory

strategies



Pocket Sentences



Monitoring

Do I have what I need to complete my task?

Do I understand what the task is asking?

Does what I'm doing make sense?

Planning

What is the purpose of what I'm doing?

What order makes the most sense?

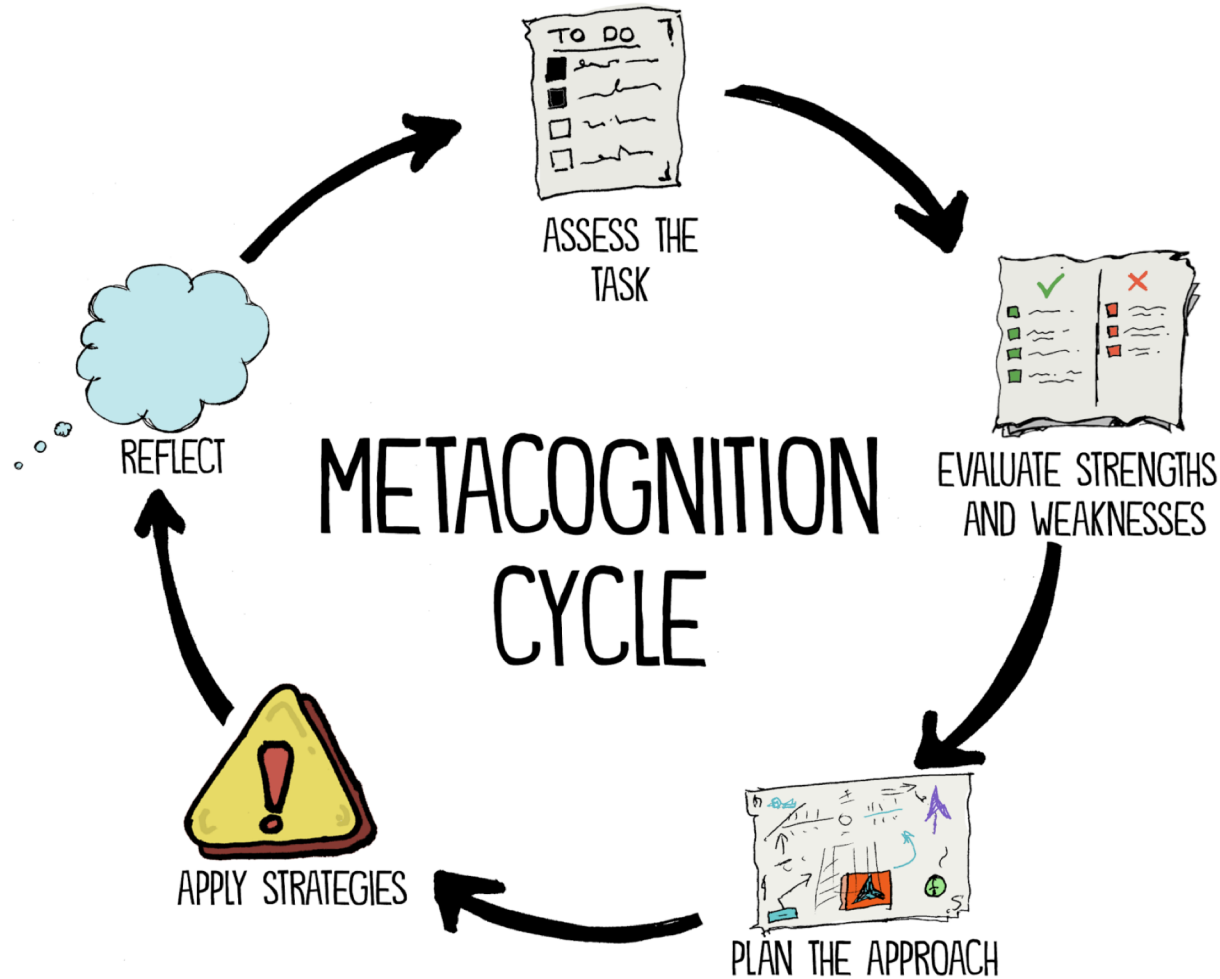
When and where will I do this task?

How long will it take?

Evaluating

What strategies can I use?

What resources can I use to check my understanding?



Pocket Sentences

Reflection

How did I know I accomplished my task?

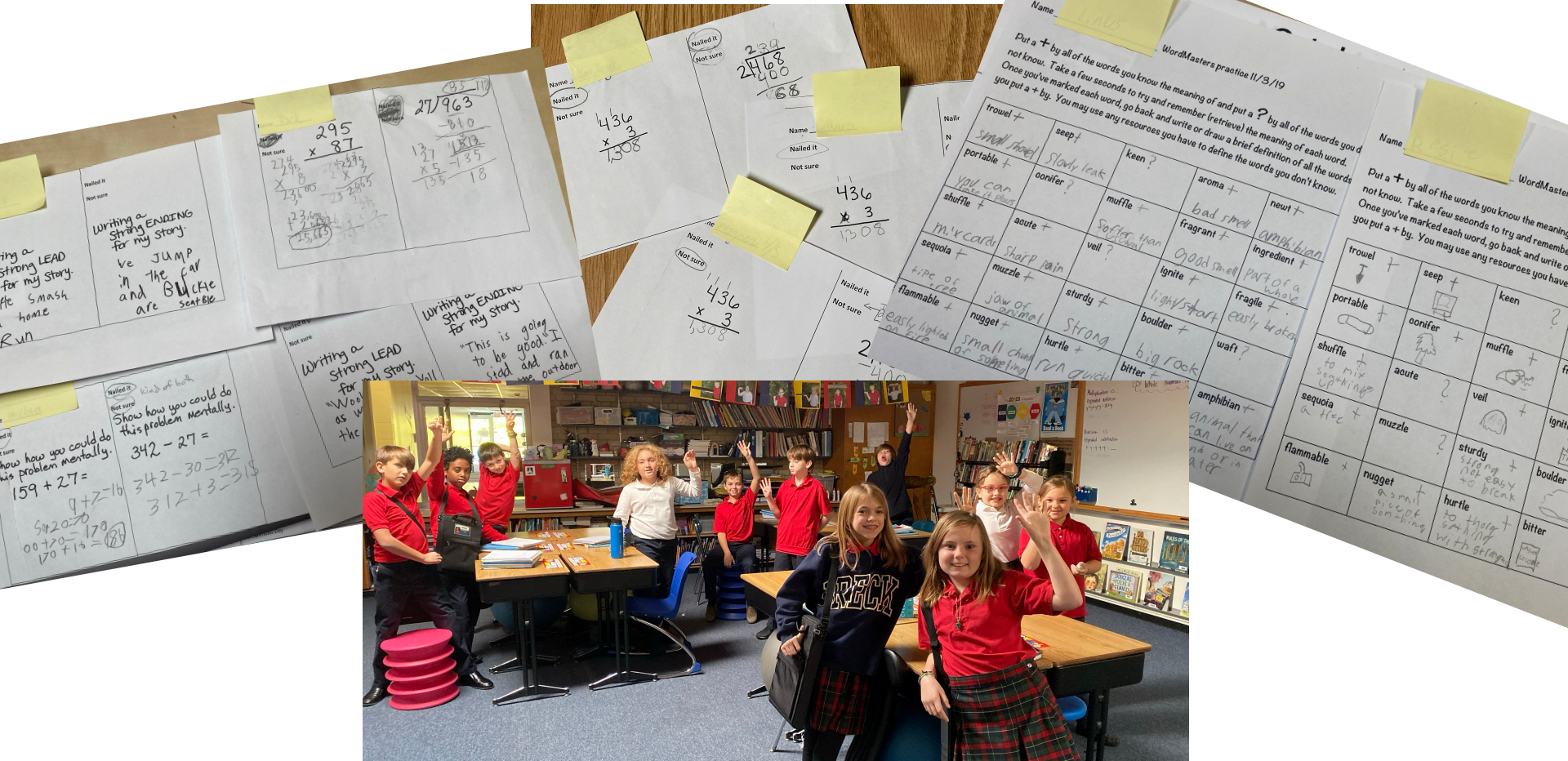
How do I know I did it well?

What will I do differently next time?

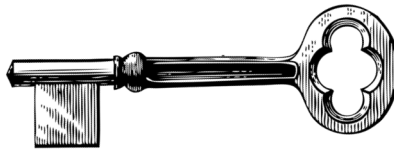


In practice...

Nailed it! Or Not Sure?



Reflection is the



Winter Exam Reflection

Calculate Your Category Percentages: It's important to look at you at you know areas of strength and areas for growth.

20: Vocabulary: $\frac{20}{20} = 100\%$

1-30: Short Story Elements and The Book Thief: $\frac{9}{10} = 90\%$

1-53: Close Reading and The Book Thief: $\frac{14}{23} = 60.8\%$

4-65: Signal Phrases & Grammar: $\frac{9}{12} = 75\%$

Grammar Sentence Writing: $\frac{4}{4} = 100\%$

say: $\frac{23}{25} = 92\%$

connect	extend	challenge
How are the ideas and information presented CONNECTED to what you already know?	What new ideas did you get that EXTENDED or pushed your thinking in new directions?	What is still CHALLENGING or confusing for you to get your mind around? What questions, wonderings or puzzles do you now have?
Put name to obscurity weren't doing good w/ trash TV ads on	How environment being negatively affected How companies created consumer's mindset Corporations > Govt	If govt is govt, why won't it overrule corporations How can the "linear system" handle impact of globalization

Exit Ticket

Connect:

- At first I thought this family was going to the beach for the day, but now I believe they are fleeing genocide. Several of the warning signs that we looked at during the Holocaust unit are here too - power imbalance, violence toward one ethnic/religious group, and perceived national crisis.

Extend:

- Today I realized that genocides are still happening and the international community is slow to respond. It seems like all this stuff happened in the past and that we learned from it and can't believe it's happening again.

Challenge:

- I thought after Rwanda countries would step up and help, not sit by and let it happen again. We said "never again" but who is responsible for stopping it? Is it the US? The UN? We can't have our soldiers all over the world, yet if we don't stand up who will? Also where else is this happening in the world?

Unit 1 Assessment Reflection 2019

Preparation: Spacing (spacing out retrieving information over several days)

1. Plan: Look in your planner and write your study plan below: (minutes/day)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30 minutes	10 minutes	Review Sheet	Review Sheet	Review Sheet	10 minutes	20 minutes
*	*	test	*	*	Conferences	*

2. Follow Through: put a star on the days you stuck with your study plan

3. What did you notice about spacing out your studying?
It helps me understand the information and it helped to stay concentrated.

Sweet Spot: What felt like the perfect amount of time to stay focused on studying for you?
10 - 15 minutes

Strategies - check all that apply and add others that you used

- ☒ printed two-column sheet
- ☒ made flashcards
- ☒ created Quizlet
- ☒ made sure you had a snack and were mentally prepared
- ☒ practiced writing answers
- ☒ quizzed yourself aloud
- ☒ had someone else quiz you
- ☒ worked in quiet space away from distractions
- ☒ added info to the two-column sheet
- ☒ created mnemonic devices
- ☒ created a story map of concepts
- ☒ reviewed previous quizzes
- ☐ set timer for length of study session
- ☐ worked without music or music w/out lyrics
- ☐ chunking: broke review sheet into sections to review

Reflection

Scoring: fill in the point in the following categories

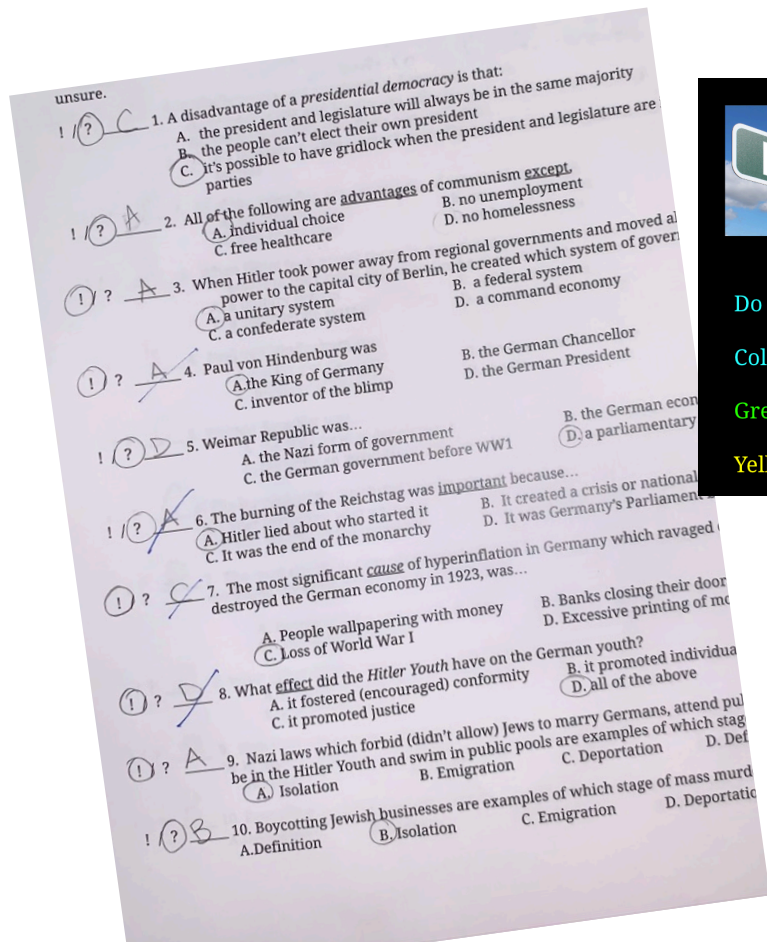
$\frac{15}{20}$ recalling content
 $\frac{9}{15}$ critical and creative thinking
 $\frac{12}{20}$ writing

Look at comments and scores:
which areas did you do well?
The recalling content

In which areas are there room for improvement?
Writing and critical/creative thinking

Overall, do you feel that your scores match the p
I feel my score accurately re
The sections I spent the
the sections

Metacognitive Feedback

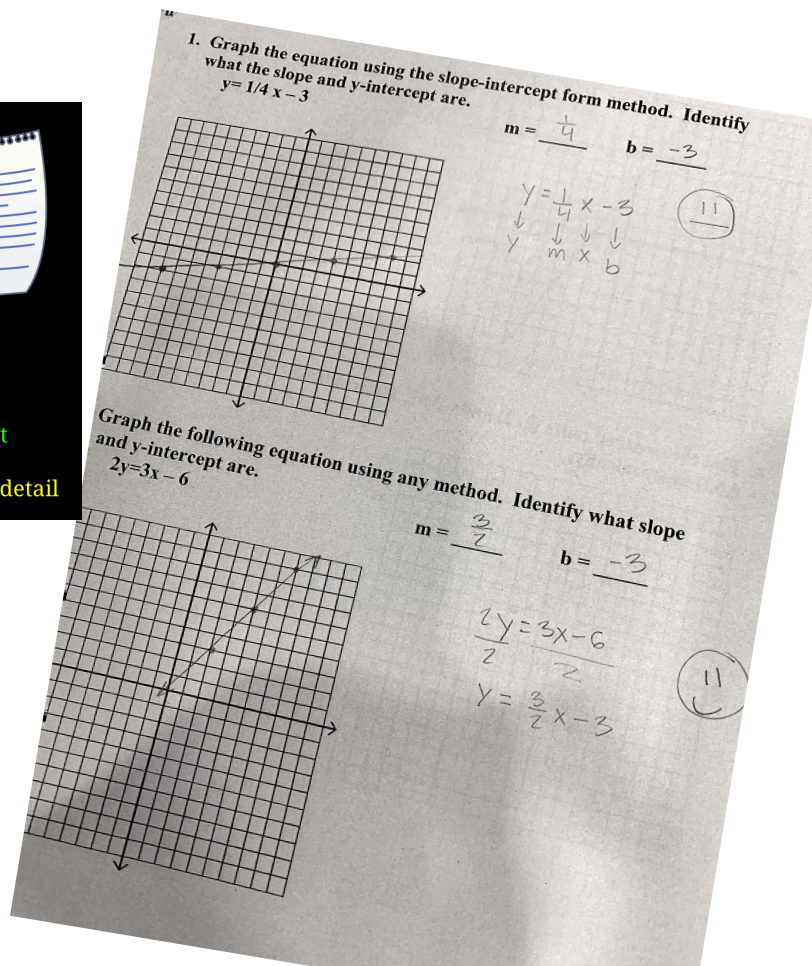


Do Now...

Color code Review Sheet

Green = confident info is correct

Yellow = unsure or needs more detail



Error Analysis

Essay Reflection

As a means of becoming more aware of our common mistakes throughout the year, make a hash-mark next to mistakes you made in your essay. If you made a mistake more than five times in the essay, mark it like this: **|||||** +

Areas for Growth	How Often I'm Missing the Mark
CONTENT	
Thesis statement writing:	
Preview statement in intro lists topic in order of appearance	
Signal phrase provides ample amount of context for excerpt	
Choosing relevant quotes	
Explaining quotes (analysis) and showing how they prove thesis (2-3 sentences)	
Avoid summarizing too much	
GRAMMAR	
Quote punctuation (uses guide)	
Italicize book titles	
Comma usage	+
Apostrophe usage	
Using present tense verbs in analytical writing	
Spelling: specific word?	
Formatting	
SENTENCE FLUENCY	
Sentence fragments	
Run-on sentences	
Quote lead-in or signal phrase (uses template)	
Varied sentence structure: using the phrases	
ORGANIZATION/OUTLINE USAGE	
Intro: paragraph follows format and smoothly draws reader in	
Topic sentences: clearly preview topic of paragraph and relate back to thesis	
Stating/naming two clear reasons (sub-topics) within body paragraph	
Using transitions between ideas (first, second, also, another)	
Concluding paragraph follows format and feels resolved	
VOICE/WORD CHOICE	
Words are easy to understand; used correctly	
Formal tone used for analytical writing	
Avoids personal pronouns in analytical writing	

Silenced Essay

- What went well?
Writing and complex thinking
- What helped me on this essay?
Getting friends and family to look at it all the sheets
- What did I find challenging?
Explaining my points more
- What strategies might I use next time to help overcome those challenges?
Work on explaining sentences and quote usage.

Book Thief Essay

- What went well?
Organising the paragraph and my choice of words.
- What helped me on this essay?
Peer editing and using the packets.
- What did I find challenging?
The analysis, I thought it ~~was~~ ^{was} hard to find what to write
- What strategies might I use next time to help overcome those challenges?
Coming in to Mrs. Schere for help.

...and now, a word about metacognition...



1. Get up and find someone you don't know.
2. Pretend they are a colleague and you are getting into the elevator with them.
3. 30-second elevator pitch about why teaching metacognition matters.
4. SWITCH & repeat

MindWorks at Breck School

The Iceberg Illusion

Success
is an
iceberg



SUCCESS!

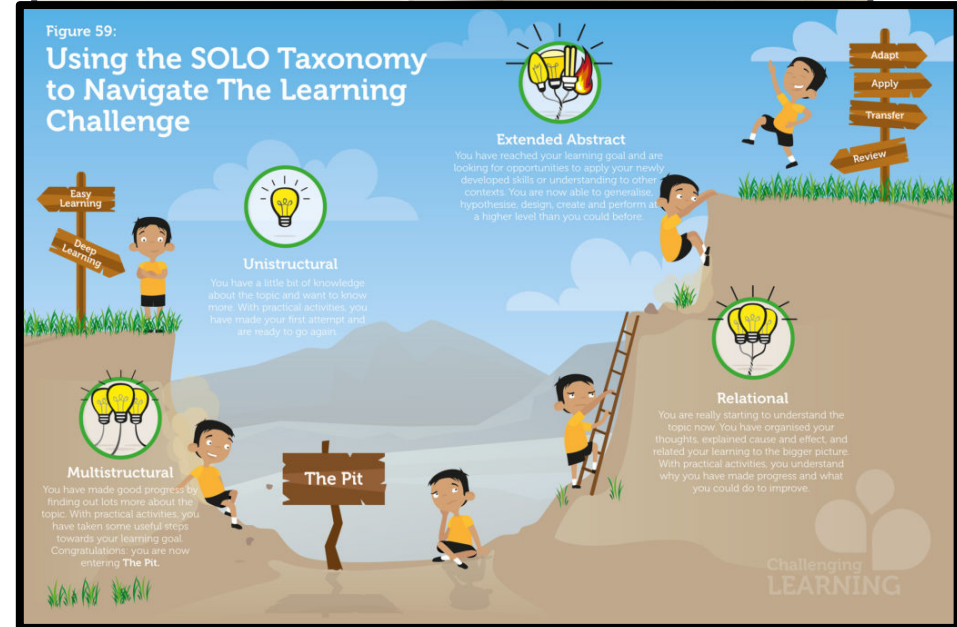
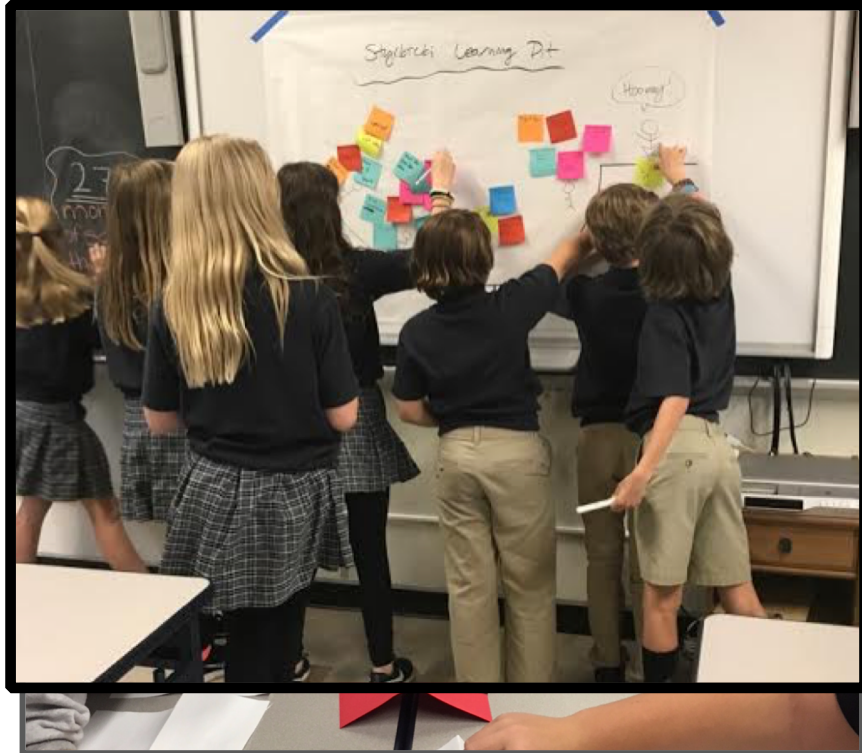
WHAT PEOPLE
SEE



MindWorks Scope & Sequence 2019-2020

Grade 5	Grade 6	Grade 7	Grade 8
Listening with Empathy	Review Brain & Learning Pit	Habits of Mind	Review & Plan and Prioritize
Growth Mindset	Strengthening the Brain	Planner & Time Management	Myth of Multitasking
Paper Structures & Learning Pit	3 Types of Memory & Memory Techniques	Metacognition & Illusion of Knowing	Cognitive Flexibility
Emotions & Learning	Applying Past Knowledge	Comfort/Discomfort Zones	Power of Feedback
Brain Basics & Building Neurons	Focused Attention	Emotions of Learning	Dynamic Learner Profile & Advocacy Plan
Neuroplasticity	Striving for Accuracy	Superpower of Sleep & Daydreaming	Upside of Stress
Perseverance	Embracing the Struggle	The Brain & Final Exams	Update DLP Letter to Future Advisor

5th Grade: Experience the Learning Pit



6th Grade: Focused Attention



List as many ways teachers
try and let you know
something is important.

7th Grade: **Metacognition & The Illusion of Knowing**

I'm not ready
for the test!



Do you ever worry that
you'll forget what you've
learned so you
over-prepare and study
way too much?

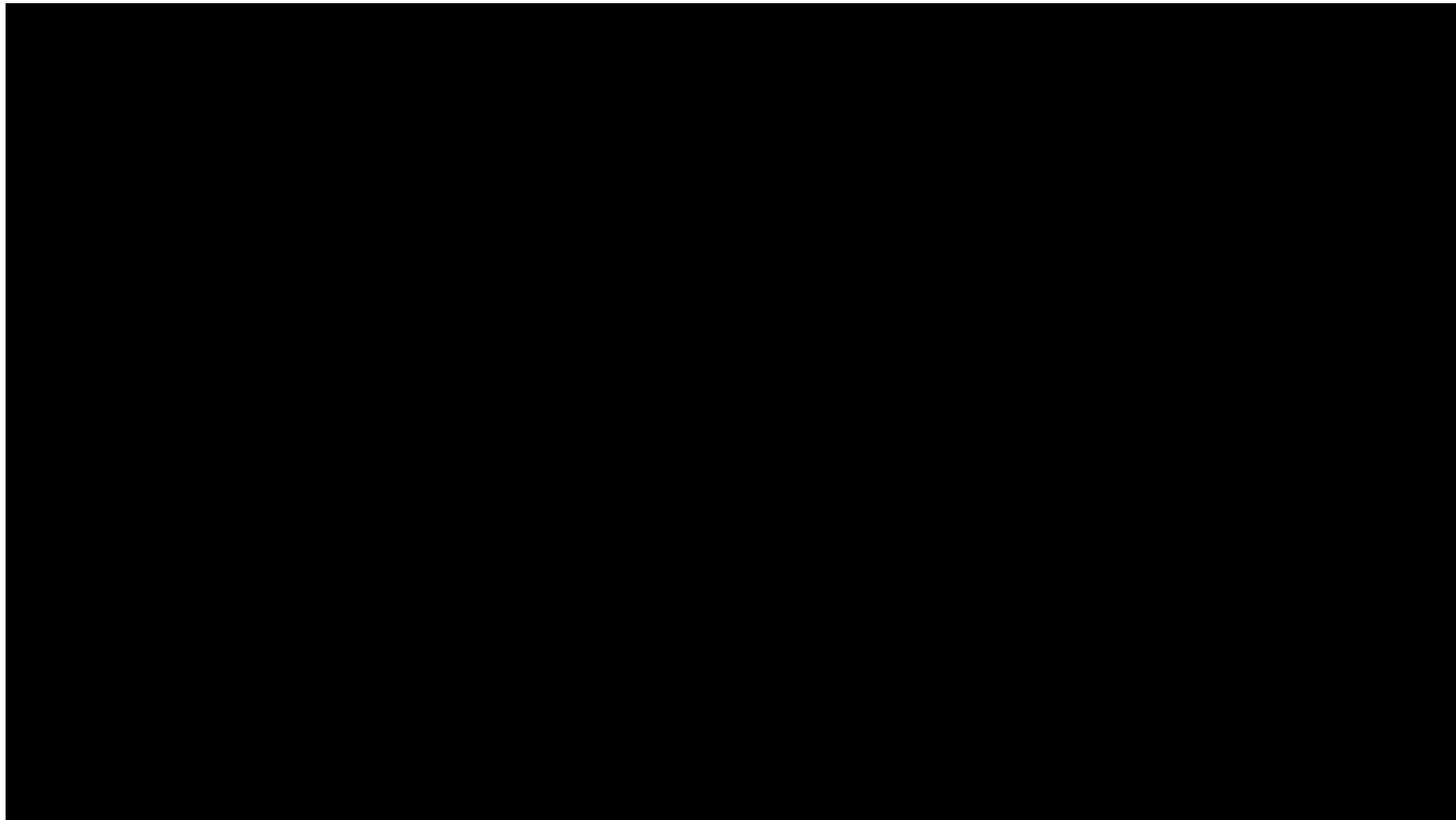
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Learn-o-meter: What's your measure?



8th Grade: **Myth of Multitasking**







- Explicitly teaching metacognition
- Importance of pretests
- Metacognitive feedback
- Planning & prioritizing
- Pocket sentences

Which of these can you
put in your luggage
and take back to your
school?

What can you use next
Monday?

Next Month?

How would you tweak it
to fit?



EVENTS

MBE & The Heart of Teaching Summer Institute 2020 June 14-16, 2020

MBE & The Heart of Teaching

Summer Institute at Breck 2020

Peter Clark Center
MIND | BRAIN | EDUCATION

June 14-16
Breck School
123 Ottawa Ave. N.
Minneapolis, MN
\$350 or \$1200 (teams of 4)
Space is Limited

REGISTER:
www.peterclarkcenter.org/summer-institute-2020

Speakers:

- Vanessa Rodriguez, Ed.D.**
Assistant Professor, Department of Population Health at NYU
- Michael Thompson, Ph.D.**
Psychologist, New York Times Bestselling Author of 8 books, School Consultant
- Marc Brackett, Ph.D.**
Author, Founding Director of the Yale Center for Emotional Intelligence, Professor in the Child Study Center, Yale School of Medicine at Yale University
- Mary Helen Immersinger Wang, Ed.D.**
Author, Professor of Education, Psychology and Neuroscience at the University of Southern California



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The Science of Teaching and School Leadership Academy July 19-22, 2020



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