



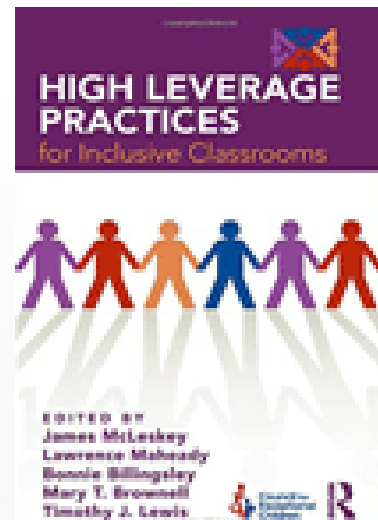
Educator Content Series: Productive Struggle

November 2020 |

Introduce yourself in chat.
Please type your name and
your role in mathematics
education.

OSSE and the Division of Teaching & Learning

Builds the capacity of educators, from pre-service to in-service, through targeted, sustained, high-quality supports so educators can be effective in empowering each and every pre-K-12 DC learner to succeed in school and life.



High-leverage practices will be called out in yellow boxes throughout the session.

Your Facilitators

- Gabriel Cartagena
 - DCPS, Director of Secondary Math
- Tanaga Rodgers
 - OSSE, Math Content Specialist



Norms

Agreements

- Choose to be present and engaged
- Share your experience and ideas
- Assume positive intent as others share
- Be solution-minded

Online Engagement

- Please use video when speaking
- Participate in chats and polls
- Keep mic on mute unless speaking to the group

Agenda & Outcomes

Understanding the Struggle

Research & Recommendations

Classroom Examples

Reflection & Action

1. Share instructional strategies that support productive struggle
2. Facilitate networking and resource sharing between educators
3. Provide space to discuss challenges and potential solutions.

Series Overview

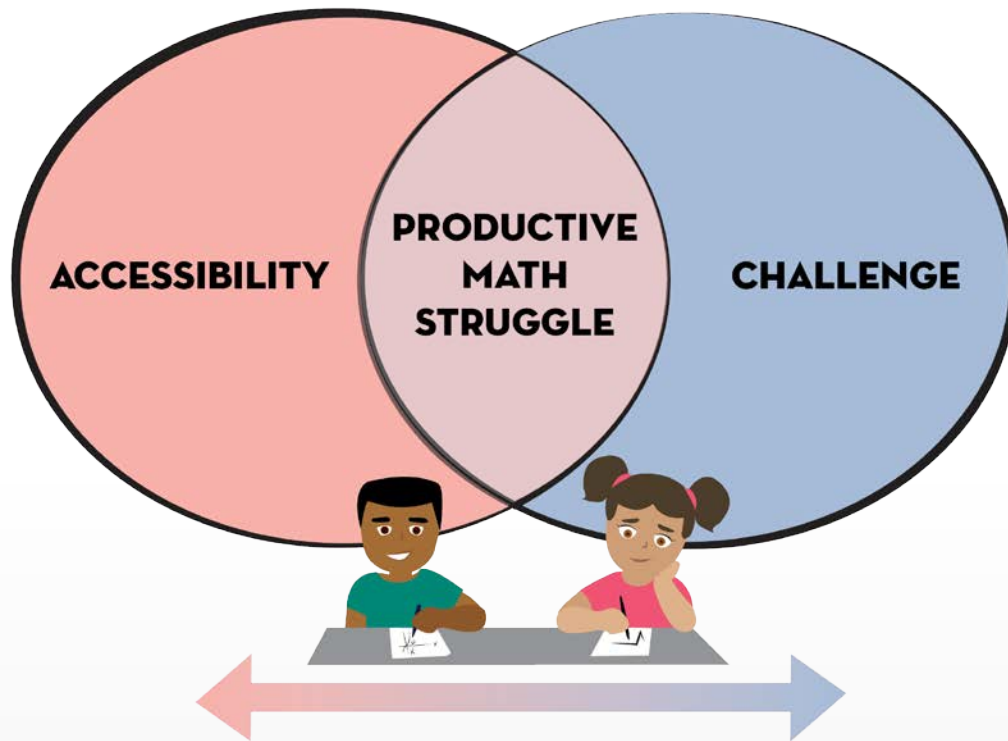




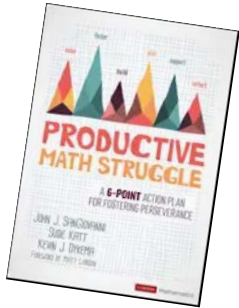
Understanding the Struggle

How does productive struggle manifest itself during the lesson?

Productive struggle is...



It's easy to dismiss struggle as being simply the result of their not knowing what they're doing or imagining that they don't care about the task or mathematics in general. . . .[I]t's important to think more deeply about what struggle is categorically and how it manifests in the classroom."
(SanGiovanni, K., Katt, S. & Dykema, K., 113)



Collaborate Board

How do you know when students are struggling in your math class? What might you see them do or hear them say?

Classifying Types of Struggle

Unable to
get started

Difficulty
using a
process

Trouble
calculating

Unable to
stay with a
task

Uncertain
explanations

Connections

Planning
for Struggle



Support the
Struggle

Poll

Have you ever collected data (formally or informally) about the kinds of struggle and student responses?

- Yes (formally)
- Yes (informally)
- No



Research & Recommendations

What teacher actions can you take to support students when they struggle?

Set the stage.

Prep students in advance so that they may experience struggle in the task.

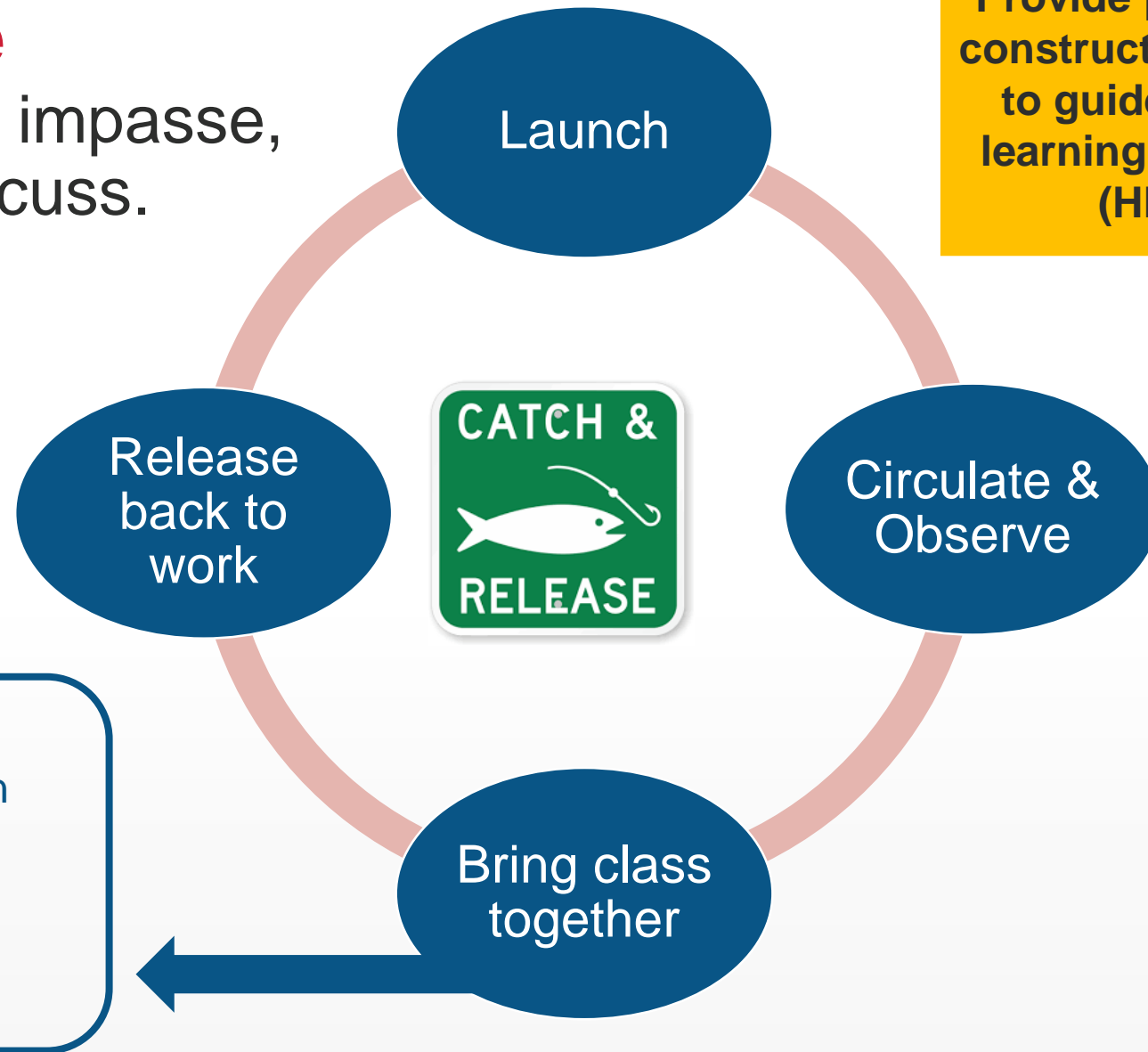
Teach cognitive and metacognitive strategies to support learning and independence.
(HLP 14)

When You Are Stuck	
What To Do....	What Not To Do....
<div>Think about what's worked before. (Work backwards, Guess & Check)</div> <div>Think of a different idea to try.</div> <div>Think of a question you want to ask.</div> <div>Remind yourself that everyone gets stuck.</div> <div>Take a short break.</div> <div>Break it apart into smaller chunks.</div>	<div>Let someone else do all the work.</div> <div>Give up.</div> <div>Only trying one idea and then quitting.</div> <div>Distract others from their work.</div>

Catch & Release

When you notice an impasse, stop the class to discuss.

Provide positive and constructive feedback to guide students' learning & behavior. (HLP 22)



Quiz

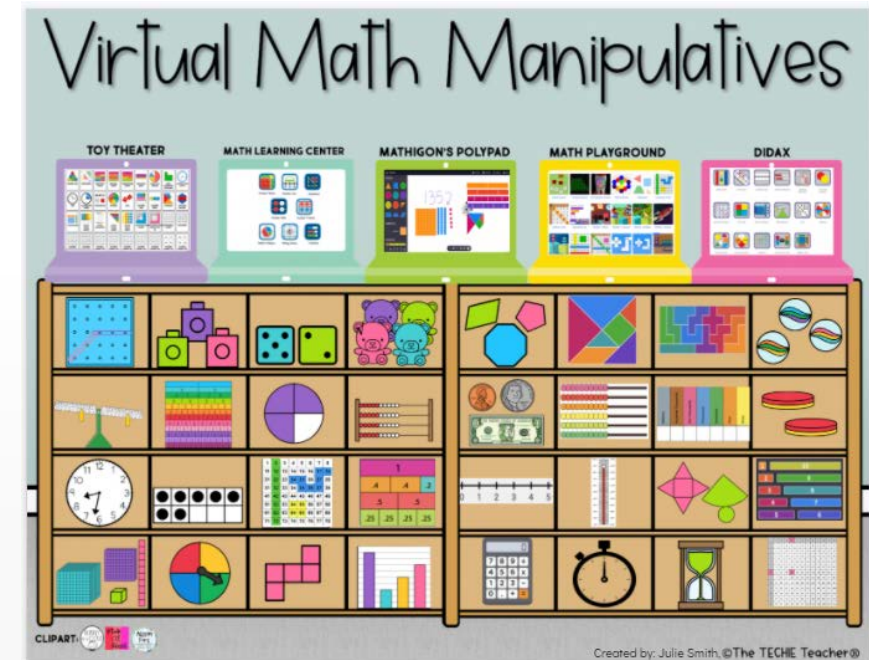
Which questions are better suited for catch & release?

- What did you do when....?
- What is the opposite of division?
- Do you understand how Mason solved the problem?
- What might be another way to show...?

Referrals

Offer a tool to help them advance when their thinking is stuck.

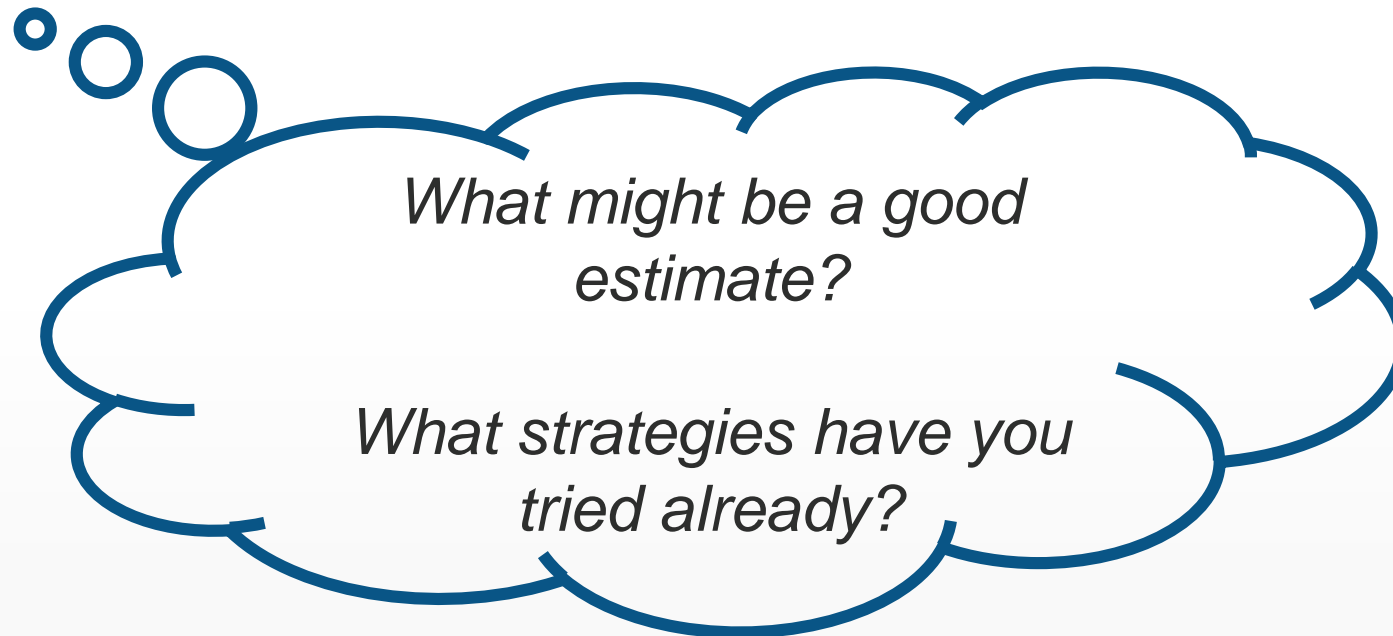
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2						12	14	16	18	
3						18	21	24	27	
4						24	28	32	36	
5						30	35	40	45	
6	6	12	18	24	30	36	42	48	54	
7	7	14	21	28	35	42	49	56	63	
8	8	16	24	32	40	48	56	64	72	
9	9	18	27	36	45	54	63	72	81	
10										



Metacognitive Questions

Teach cognitive and metacognitive strategies to support learning and independence.
(HLP 14)

Ask the questions you would ask yourself!



Remove the Numbers

Filter out the noise of numbers and focus on the problem.

- Three Reads Strategy

1

- What is the situation about?

2

- What are the quantities in the situation?

3

- What are the possible mathematical questions?



Classroom Examples

*What does it look like in a
secondary math classroom?*

Catch & Release




Referrals


K	W	S
What do you KNOW about this problem?	WHAT am I trying to find out?	How can I SOLVE the problem?

Three Things Template

Three Things I Have Done



One Thing I Can Do



Share with Class



Reflection

*How does this new information
relate to my work?*

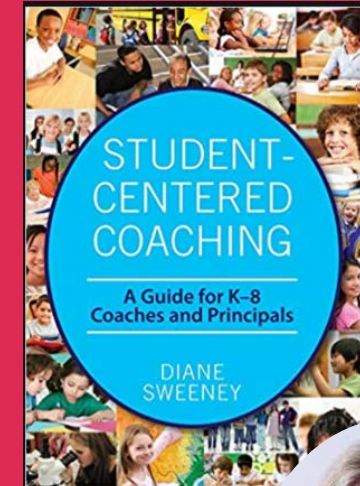
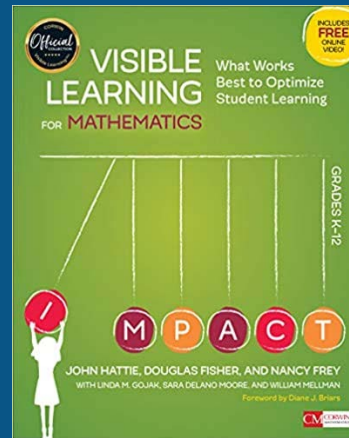
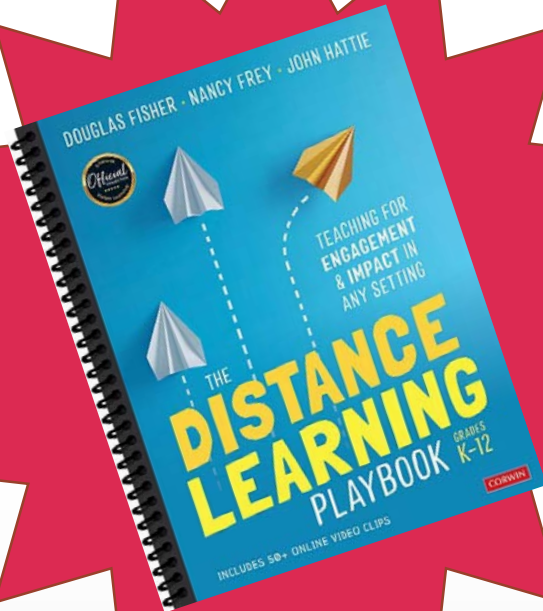
Padlet Reflection

- What instructional move resonates most with you? Why?
- Identify or share a referral that students in your course might find useful and explain why.



Closing

Upcoming Opportunities



Survey and professional learning units (PLU) certificate

Educator Self-Care and Social Emotional Learning Competencies Survey



osse.tta @ dc.gov (via Quick Base) <notify@quickbase.com>
To Thacker-Bartlett, Annette (OSSE)

The survey link will come from the TAL PD Team
OSSE.TTA@dc.gov via notify@quickbase.com. **Please ensure this email does not go to your spam/junk folder.**

OSSE's Division of Teaching and Learning thanks you for attending the Educator Self-Care and Social Emotional Learning Competencies on 06-15-2020 led by kristian.lenderman@dc.gov.

Please click the link to complete the training survey: [Add Response](#)

The survey is required if you would like to receive an OSSE Professional Learning Units (PLUs) certificate. Please note: Attendance for entire training event is also required for PLUs.

To view other upcoming training opportunities, please visit [OSSE Training Registration](#)

Click on "Add Response" to access the survey link.

Thinking Partner

- Choosing instructional materials
- Planning lessons

Individual or Group Support

- Data Dives/Learning Walks
- Customized

Student-Centered

- Driven by student work
- Focused on student outcomes



Interested in partnering with



OSSE Division of Teaching & Learning for a
series like this to dig deeper into the
7 Effective Math Teaching Practices?



LEA Partnerships & Technical Assistance Available!

Tanaga.Rodgers@dc.gov

Want more Productive Struggle Resources? Scan here!

