SEL + Math = Integrated Instruction for the Whole Child

Virginia ASCD Annual Conference

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December 1, 2022

IES Institute of Education Sciences

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REL Appalachia

SEL + Math = Integrated Instruction for the Whole Child

Dr. Laura Kassner
REL Appalachia at SRI International

2022 Annual Conference

VIRGINIA ASCD

LEVEL UP
Learn Love Lead

This session supports the following conference strand(s):

- LEARN
- LOVE
- LEAD

Welcome and introductions

Your facilitator – and contributors

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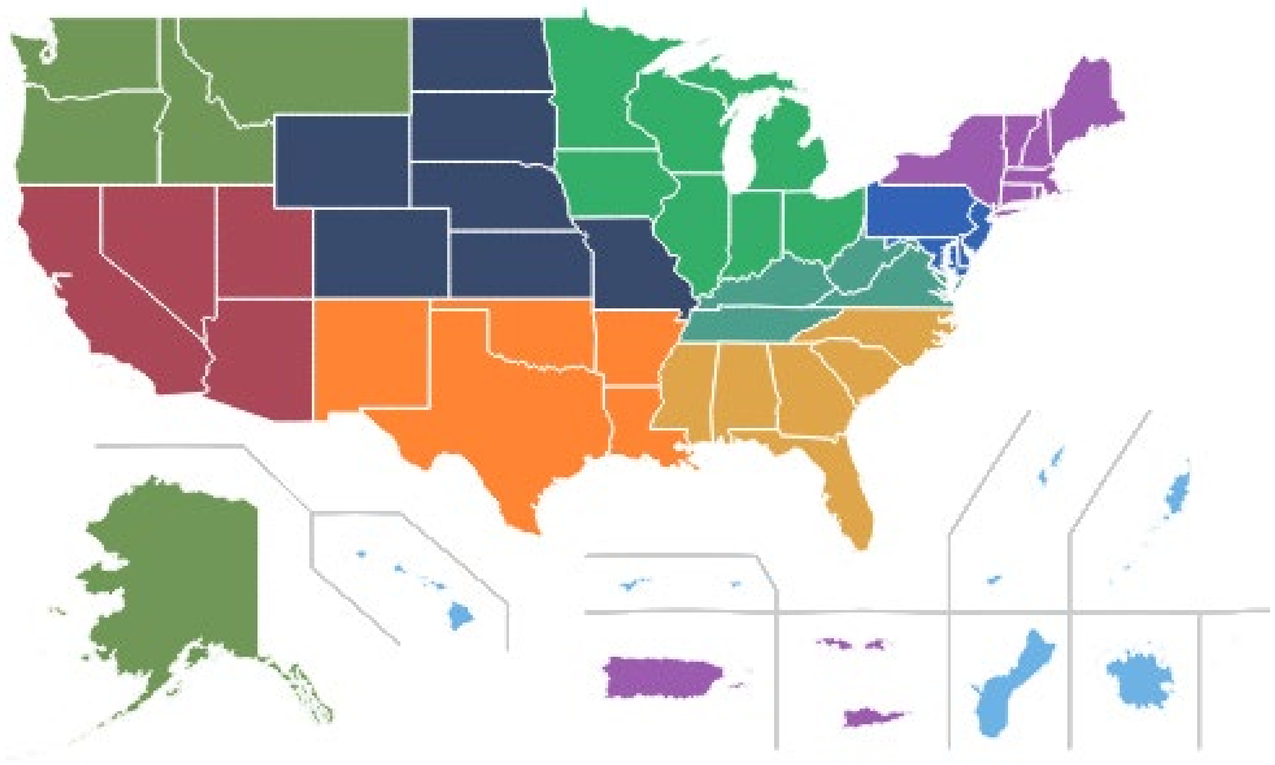
REL Appalachia
SRI International

Regional Educational Laboratories



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Find us on the web! https://ies.ed.gov/ncee/rel/region/appalachia

Regional Educational Laboratory activities

Applied Research

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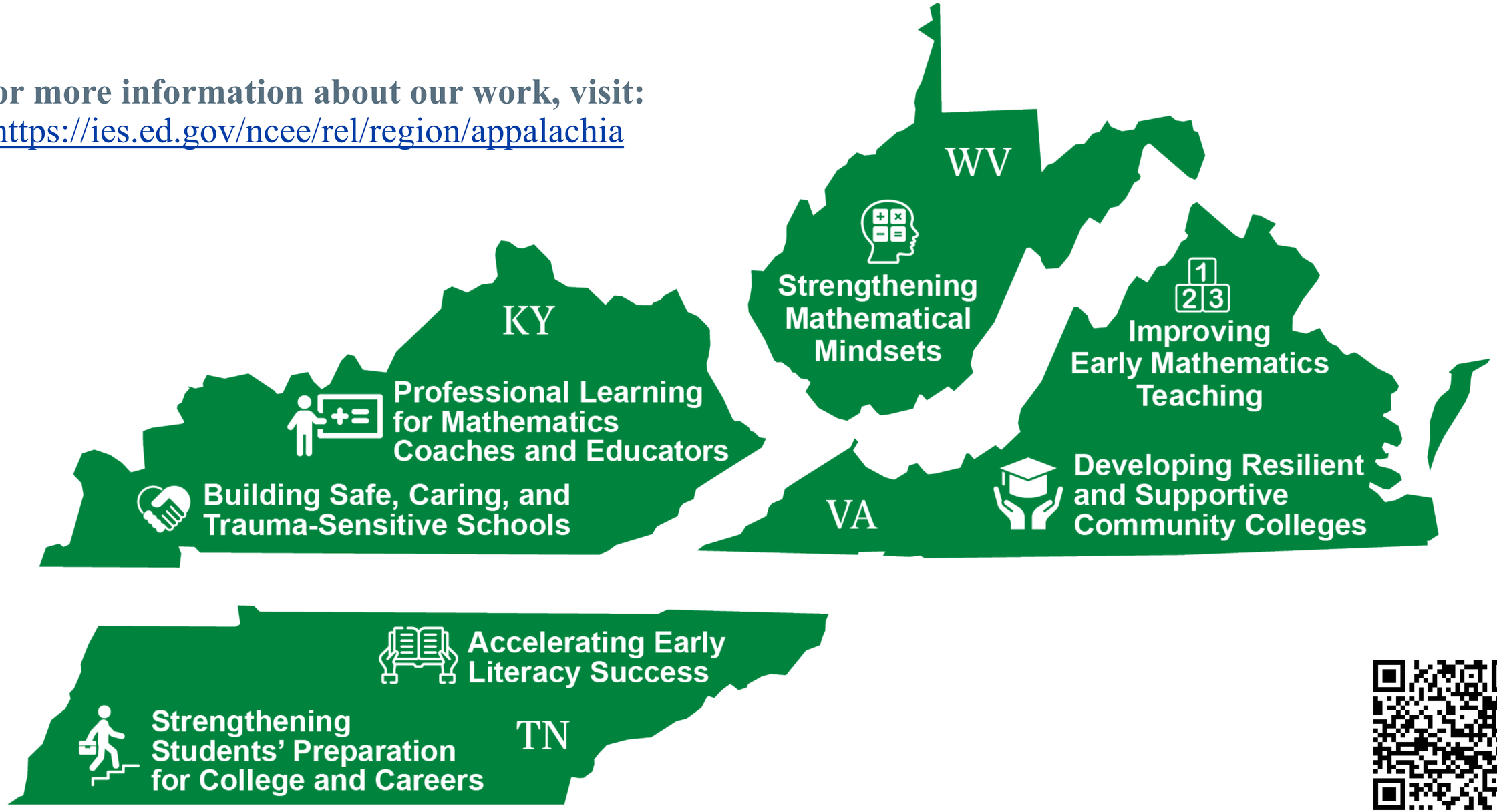
Dissemination

To improve student outcomes through use of evidence-based practices

For more information about our work, visit:
https://ies.ed.gov/ncee/rel/region/appalachia



Agenda

- Welcome and introductions
- Warm-up and connection
- SEL + math: Painting the picture
- Reflecting on research, identities, and equity implications
- Digging into the CASEL competencies
- Choose your own adventure, resource-sharing, and needs-sensing
- Session reflection and wrap-up

From this session you will gain:

- An understanding of how social-emotional learning (SEL) can look, sound, and feel when integrated into mathematics
- An understanding of the research behind as well as the importance and role of integrated SEL in effective and equity-focused math instruction
- An understanding of the CASEL competencies and their connections to math
- Resources to support SEL integration (SEAD approach)
- An opportunity to share your thoughts on what resources you'd like to see next!

Warm-up and connection

Tell me about you! Who's in the room?

What is your role?

- Classroom teacher
- Instructional coach
- Curriculum specialist
- Building-level leader
- Division-level leader
- Other

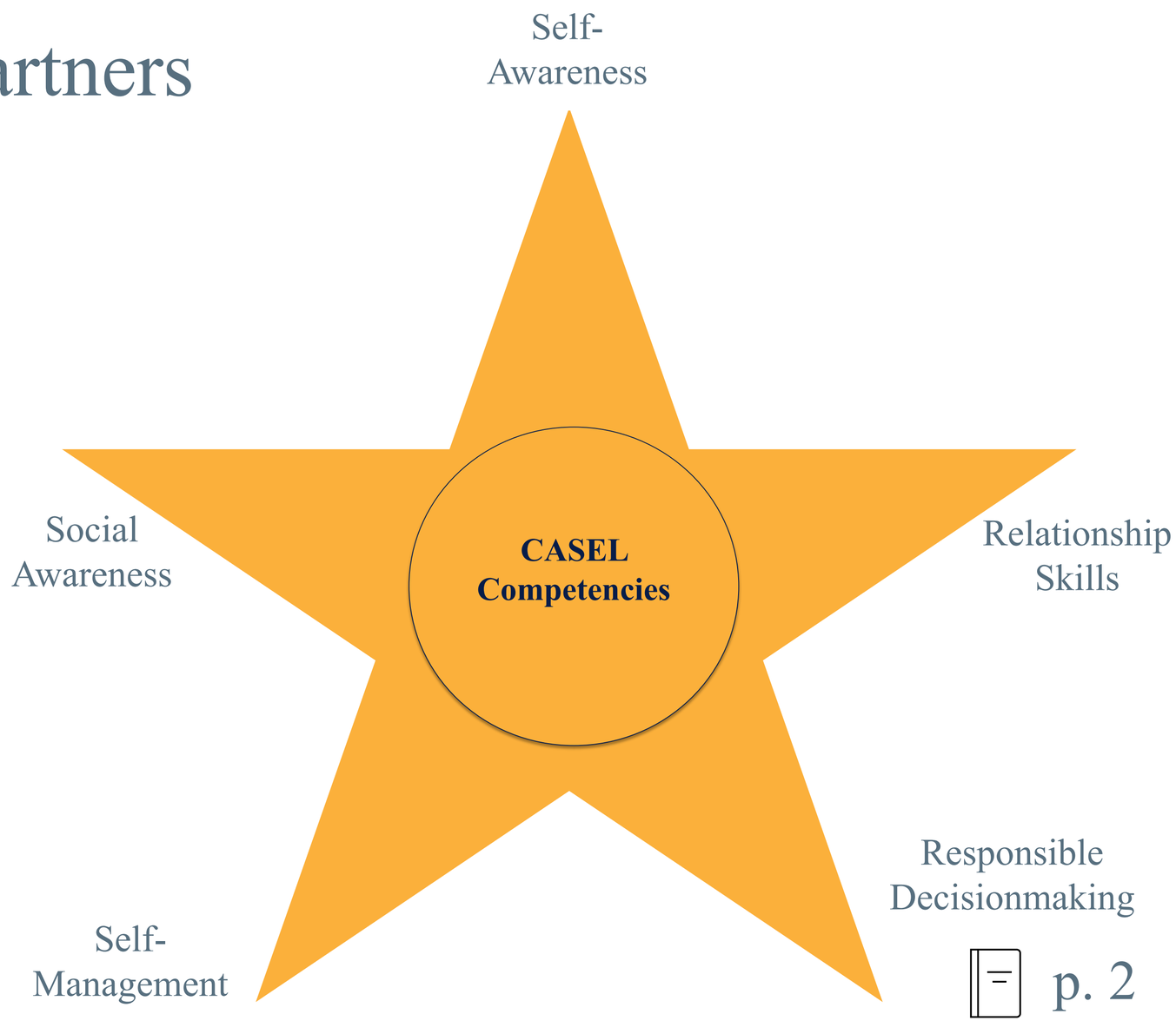
How much do you know about SEL?

- My colleagues call me Dr. CASEL *(4 - I know a lot!)*
- Live it, love it, but I want to learn more *(3)*
- We're acquaintances, and I like what I know *(2)*
- Perfect strangers *(1 - This is brand new)*

CASEL Competency Star Partners

Find your CASEL competency star partners!

- Walk around the room and introduce yourself to five different people.
- Write ***their name*** on a line next to a CASEL competency.



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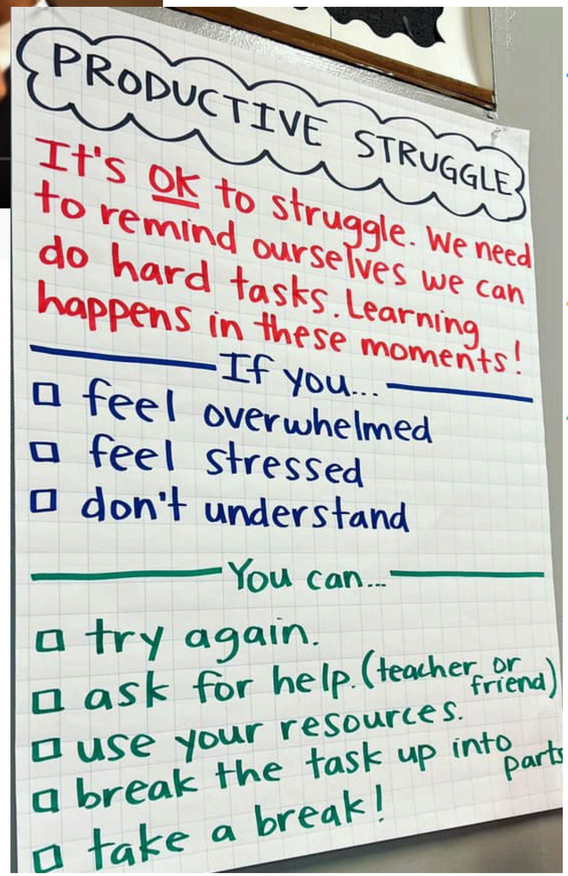
SEL + math: Painting the picture

What could this look, sound, feel like?

Sesame Street: Janelle Monae - Power of Yet



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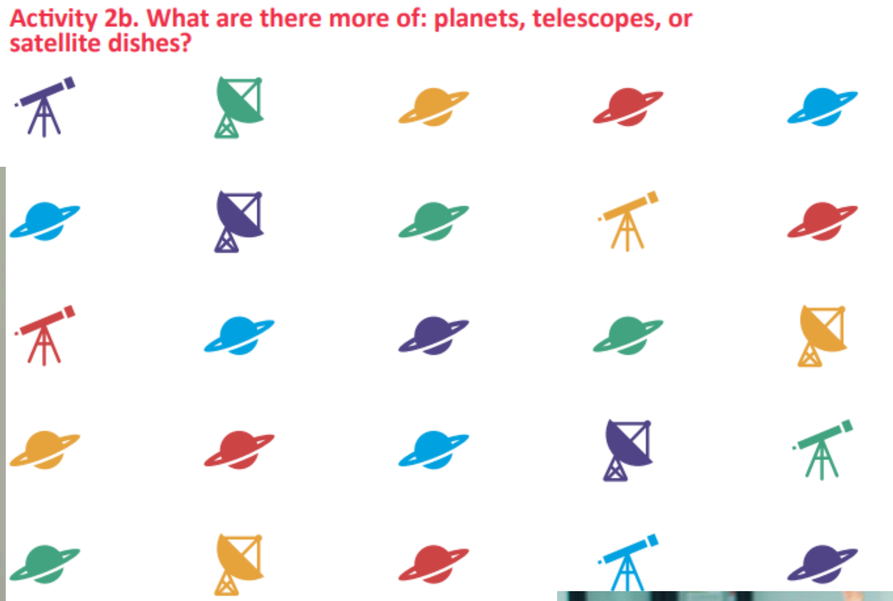

Students In Classroom with masks_AdobeStock_454204497_6in

What could this look, sound, feel like?

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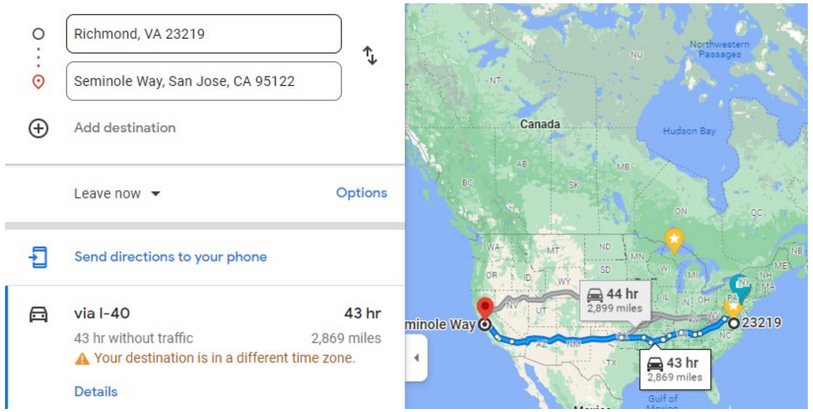

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Reflecting on research, identities, and equity implications

Social-emotional learning

Social-Emotional Learning (SEL) is "the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to:

- Develop healthy identities
- Manage emotions and achieve personal and collective goals
- Feel and show empathy for others
- Establish and maintain supportive relationships
- Make responsible and caring decisions."

(Collaborative for Academic, Social, and Emotional Learning, 2022)

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SEL and student outcomes

SEL

- Fewer behavioral problems
- Lower levels of emotional distress
- Improved academic outcomes

(Durlak et al., 2011)

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"Is this one more thing?"

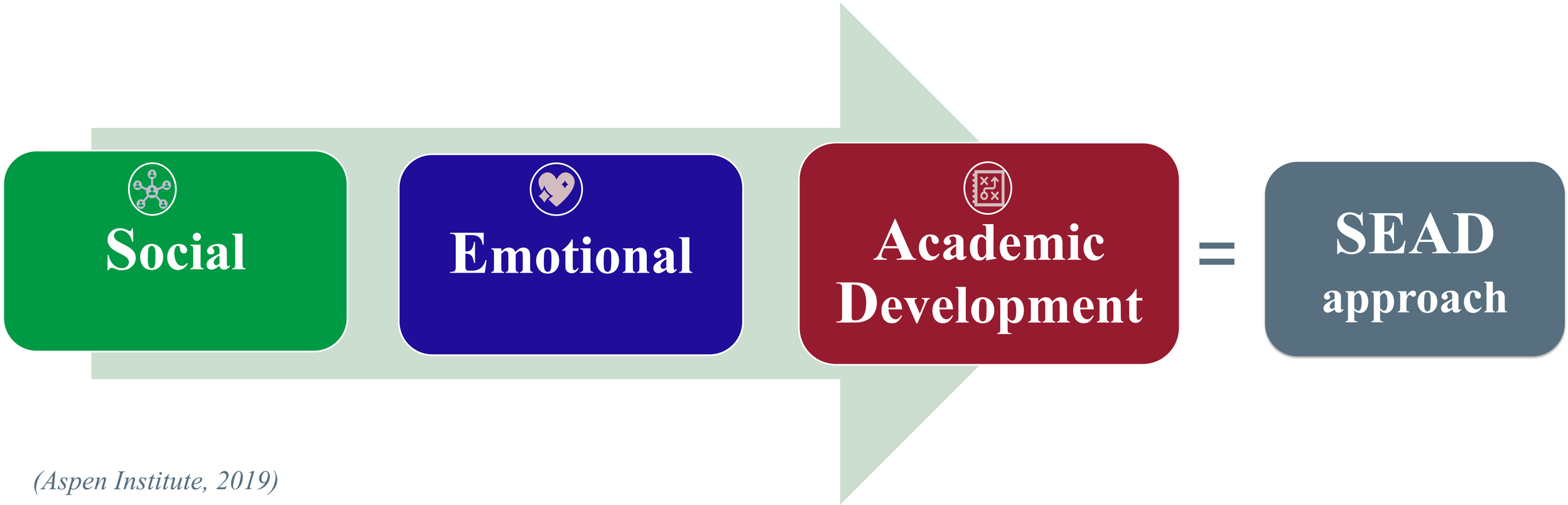
Standards for Mathematical Practice (SMP) 1 —
Make sense of problems and persevere in solving them

- Stay calm, manage time and energy toward a goal (self-management)
- Be aware of their strengths and what they know (self-awareness)
- Solicit help from others (relationship skills)
- Take on others' perspectives (social awareness)

(Charles A. Dana Center at the University of Texas at Austin and CASEL, n.d.)

Integrating **s**ocial, **e**motional, and **a**cademic **d**evelopment (SEAD)

- Academic learning requires the integration of these skills:



(Aspen Institute, 2019)

How to integrate SEAD

1. Create learning environments that are physically and emotionally safe.
2. Intentionally teach social, emotional, and cognitive skills.
3. Have students practice these skills as they learn academic content and in their interactions.

(Aspen Institute, 2019; Darling-Hammond et al., 2020; Jones et al., 2017)

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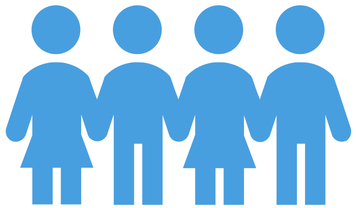
Role of SEAD in educational equity

- SEAD benefits all students by supporting students' ability to cope with stress and trauma.
- While students from all backgrounds may experience stress and trauma, research indicates that students from low-income families and students of color are more likely to experience repeated exposures to stress and trauma, due to systemic inequities and injustice.
- While SEAD is well positioned to support educational equity, educators must be intentional about teaching it in culturally responsive ways that counter privilege, prejudice, and structural inequality.



(Aspen Institute, 2019; Gregory & Fergus, 2017; Jagers et al., 2018; Jones et al., 2021)

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Stop and jot

- What personal identities do I bring to math learning (now, and over time)?
- How might my identities influence how I support SEAD?

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Principles of equitable SEAD

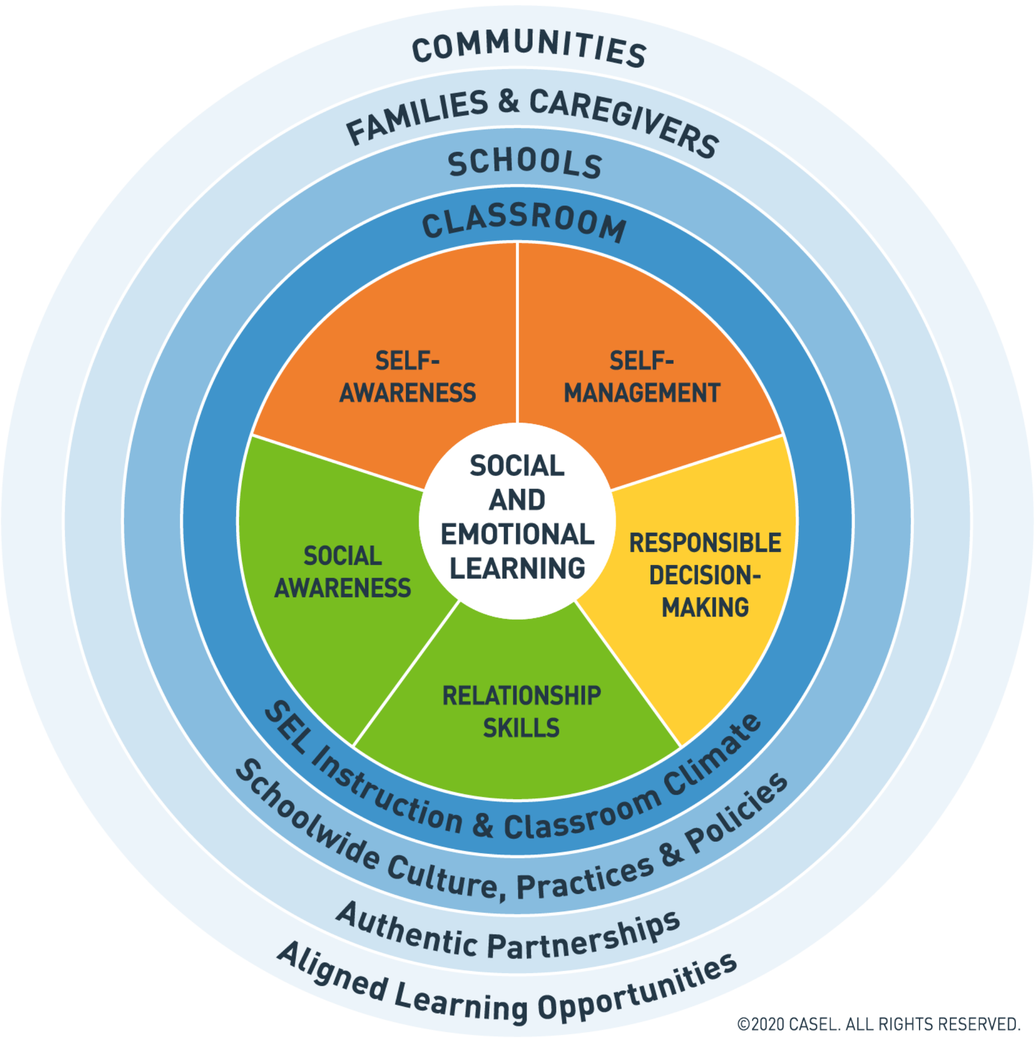
1. Ensure safe and inclusive learning environments that are respectful and affirming of diverse identities.
2. Recognize and incorporate student cultural values, practices, and assets.
3. Foster positive identity development.
4. Promote student agency and voice.
5. Explicitly acknowledge issues of bias, power, and inequality, and work to address them.

(Jones et al., 2017)

Digging into the CASEL competencies

CASEL Framework for SEAD

- What is the CASEL Framework and where does it come from?
- How does the Framework help our work toward connecting SEAD to math?



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Protocol: Unpacking the CASEL competencies

Draw: What are my initial conceptions of the competency?

Read: How is it defined, and how can teachers promote it?

Self-Reflect: What are my assets and growth areas? How is this competency already embedded in my practices?

Apply: How might this look, specifically in math instruction?

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CASEL Competency: **Self-Awareness**

Draw: What are my initial conceptions of this competency?

Draw images that represent what **self-awareness** means to you.

Image:

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Read: How is it defined, and how can teachers promote it?

Self-awareness is the ability to understand one's own emotions, thoughts, and values and how they influence behavior across contexts. Examples of how teachers can promote and students can demonstrate self-awareness include:

- Integrating personal and social identities
- Identifying personal, cultural, and linguistic assets
- Identifying one's emotions
- Demonstrating honesty and integrity
- Linking feelings, values, and thoughts
- Examining prejudices and biases
- Experiencing self-efficacy
- Having a growth mindset
- Developing interests and a sense of purpose

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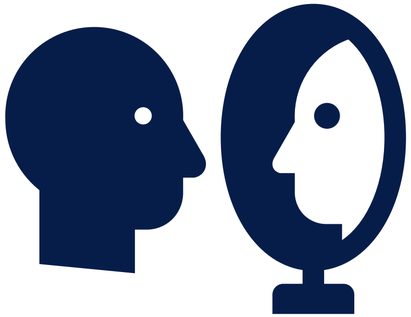
Self-reflect: What are my assets and areas of opportunity?



- How fully have I integrated this definition into my understanding?
- How do my dispositions and experiences with this competency impact how I support my students?
- What are my strengths and assets in relation to this competency?
- What am I missing?

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Self-reflect: How is this competency already embedded in my practices?

Self-awareness is the ability to understand one's own emotions, thoughts, and values and how they influence behavior across contexts. Examples of how teachers can promote and students can demonstrate self-awareness include :

- Integrating personal and social identities
- Identifying personal, cultural, and linguistic assets
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- Experiencing self-efficacy
- Having a growth mindset
- Developing interests and a sense of purpose

Which examples of self-awareness are already part of my practice?

Which example practices challenge me to think differently about self-awareness?

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Application: How might this look specifically in math instruction?

Use the design considerations, questions, and your own experiences to brainstorm specific strategies you already use — or might try — for developing students' self-awareness. Connect these strategies to specific example practices (or add a practice of your own!)

Self-awareness example practices	Strategies to continue in math	Strategies to try in math
Integrating personal and social identities		
Identifying personal, cultural, and linguistic assets		
Identifying one's emotions		
Demonstrating honesty and integrity		
Linking feelings, values, and thoughts		
Examining prejudices and biases		
Experiencing self-efficacy		
Having a growth mindset		
Developing interests and a sense of purpose		
Other:		

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Application: How might this look specifically in math instruction?

Example practice	Strategies I will continue to use in math	Strategies I might try in math
Identifying personal, cultural, and linguistic assets	Giving a student survey at the start of the year. Add questions that ask about their personal, cultural, and linguistic assets	Bringing students' identities and assets into the unit (e.g., kick off a unit learning about mathematicians of color, ancient math practices in Africa and Latin America)
Identifying one's emotions		Connecting feeling words to math (e.g., "I know you might feel frustrated/nervous/scared to get the wrong answer")
Experiencing self-efficacy	Providing opportunities for students to work on open-ended tasks with multiple strategies	Asking students, "Can you explain how you did that?" when they solve a problem
Having a growth mindset		Teaching a lesson about growth mindset at the start of the year, then praising growth on student assessments

Populate your application table!

You may use the examples from CASEL to help you!

Examples of Social and Emotional Learning in Elementary Mathematics Instruction

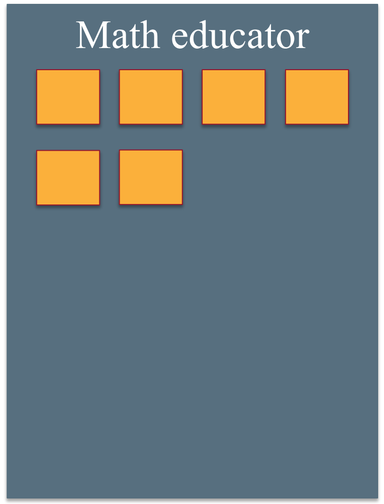
Acknowledgments

Introduction

Self-awareness example practices	Strategies to continue in math	Strategies to try in math
Integrating personal and social identities		
Identifying personal, cultural, and linguistic assets		
Identifying one's emotions		
Demonstrating honesty and integrity		
Linking feelings, values, and thoughts		
Examining prejudices and biases		
Experiencing self-efficacy		
Having a growth mindset		
Developing interests and a sense of purpose		
Other:		

Think-pair-share

- Find a **partner** and share your reflections on the process.
  - *How did you feel about going through the protocol? What did you learn?*
- Share your strategies from your application table. As a pair, decide on your top two favorite strategies. Write each on a sticky and post them in our parking lot.
- ***Be specific!***



Growth mindset
Start math class with a song about the "power of yet."

Experiencing self-efficacy
Fill hundreds grid to show how strong you feel at this skill.

Fist-to-five

I'll read a few and you respond based on fit for your context:

Fist – “I don't think I’ll use it.”
1 finger
2 fingers
3 fingers
4 fingers
5 fingers “I love it and want to use it!”

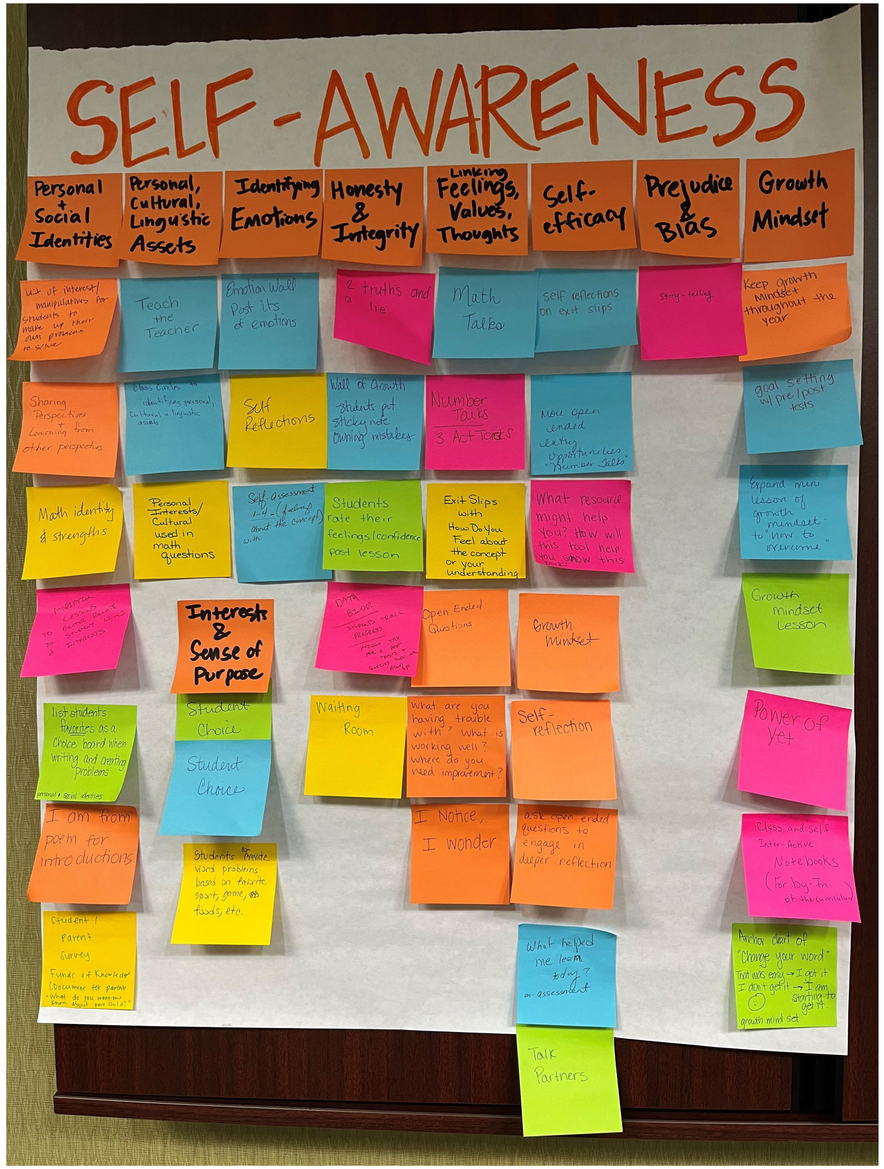
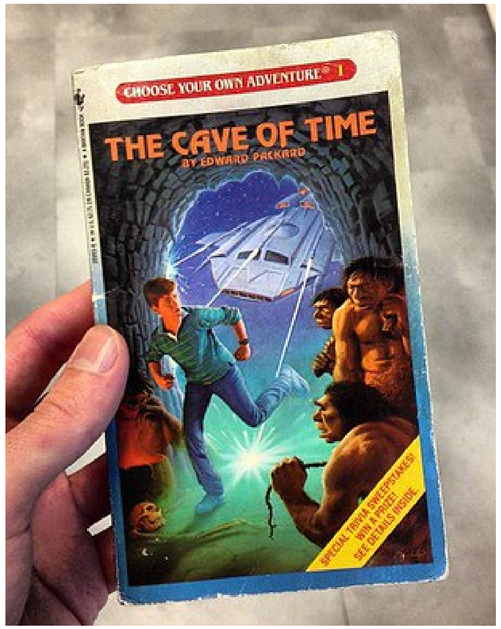


Photo provided by Laura Kassner

Choose your own adventure, resource-sharing, and needs-sensing

Choose your own SEAD adventure!



flickr.com/photos/kaeru/8184505361

Teachers/coaches

- Look for natural connections between CASEL competencies and your standards.
- Start with one lesson, one unit – or find a point of inspiration, like Girl Scout Cookies!
- Start with one routine, practice, instructional strategy.
- Start with one CASEL competency.
- Find a friend to try it with, reflect, retool, and share.

Building-level leaders

- Consider alignment with other programming (counseling, SEL lessons, morning meetings, math coaching).
- Find one team, one grade level, one teacher, one period.
- Share ideas at faculty meetings, on bulletin boards in the lounge.
- Highlight ideas and resources in newsletter or emails.
- Share with families and educate them on research behind the approach.

Division/state leaders

- Consider alignment with other initiatives and goals.
- Allocate resources (time, funds), build resource libraries.
- Recognize and reward excellence.

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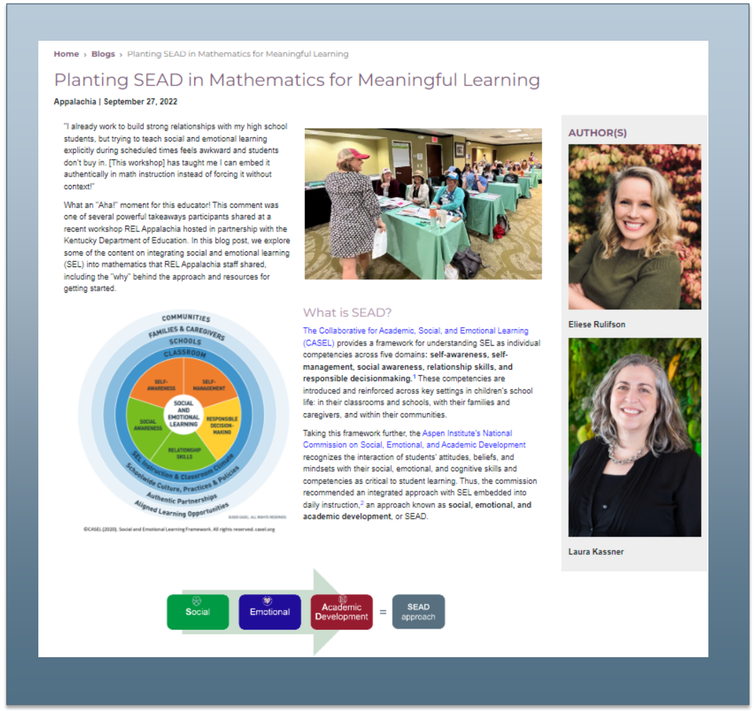
Resources available today:



Home › Blogs › Planting SEAD in Mathematics for Meaningful Learning

Planting SEAD in Mathematics for Meaningful Learning

Appalachia | September 27, 2022

"I already work to build strong relationships with my high school students, but trying to teach social and emotional learning explicitly during scheduled times feels awkward and students don't buy in. [This workshop] has taught me I can embed it authentically in math instruction instead of forcing it without context!"

What an "Aha!" moment for this educator! This comment was one of several powerful takeaways participants shared at a recent workshop REL Appalachia hosted in partnership with the Kentucky Department of Education. In this blog post, we explore some of the content on integrating social and emotional learning (SEL) into mathematics that REL Appalachia staff shared, including the "why" behind the approach and resources for getting started.

What is SEAD?

The Collaborative for Academic, Social, and Emotional Learning (CASEL) provides a framework for understanding SEL as individual competencies across five domains: **self-awareness, self-management, social awareness, relationship skills, and responsible decisionmaking.**[1] These competencies are introduced and reinforced across key settings in children's school life: in their classrooms and schools, with their families and caregivers, and within their communities.

Taking this framework further, the Aspen Institute's National Commission on Social, Emotional, and Academic Development recognizes the interaction of students' attitudes, beliefs, and mindsets with their social, emotional, and cognitive skills and competencies as critical to student learning. Thus, the commission recommended an integrated approach with SEL embedded into daily instruction,[2] an approach known as **social, emotional, and academic development**, or SEAD.

AUTHOR(S)

Eliese Rulifson

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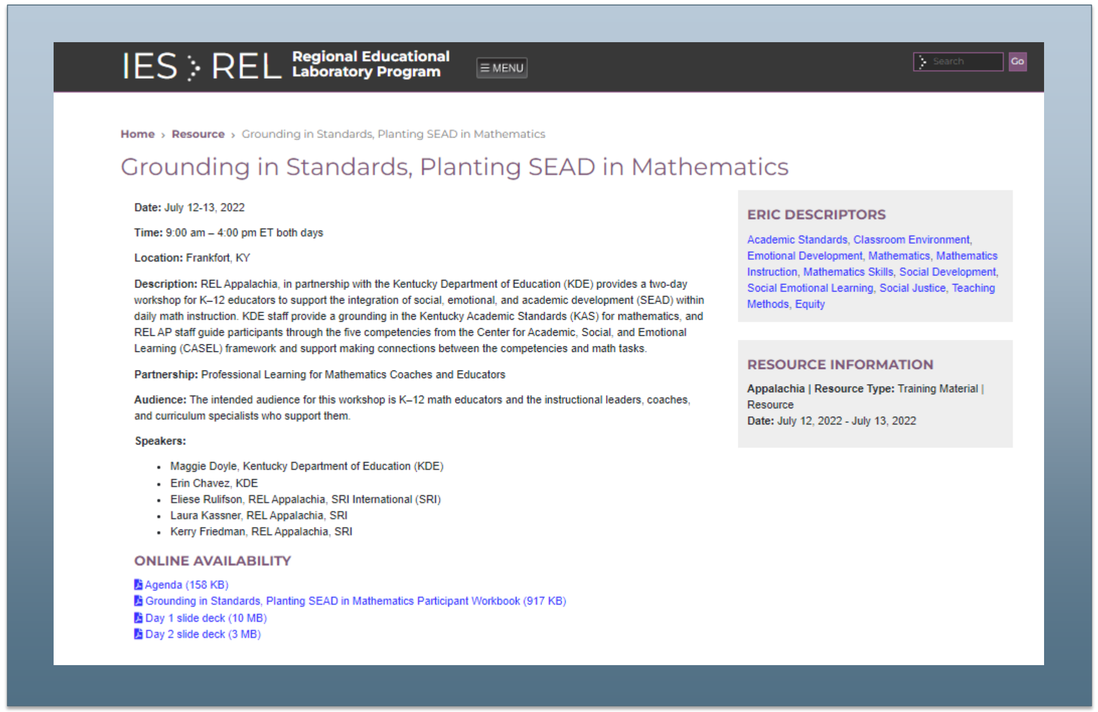
Social + Emotional + Academic Development = SEAD approach



IES REL Regional Educational Laboratory Program

Home › Resource › Grounding in Standards, Planting SEAD in Mathematics

Grounding in Standards, Planting SEAD in Mathematics

Date: July 12-13, 2022

Time: 9:00 am – 4:00 pm ET both days

Location: Frankfort, KY

Description: REL Appalachia, in partnership with the Kentucky Department of Education (KDE) provides a two-day workshop for K–12 educators to support the integration of social, emotional, and academic development (SEAD) within daily math instruction. KDE staff provide a grounding in the Kentucky Academic Standards (KAS) for mathematics, and REL AP staff guide participants through the five competencies from the Center for Academic, Social, and Emotional Learning (CASEL) framework and support making connections between the competencies and math tasks.

Partnership: Professional Learning for Mathematics Coaches and Educators

Audience: The intended audience for this workshop is K–12 math educators and the instructional leaders, coaches, and curriculum specialists who support them.

Speakers:

- Maggie Doyle, Kentucky Department of Education (KDE)
- Erin Chavez, KDE
- Eliese Rulifson, REL Appalachia, SRI International (SRI)
- Laura Kassner, REL Appalachia, SRI
- Kerry Friedman, REL Appalachia, SRI

ERIC DESCRIPTORS

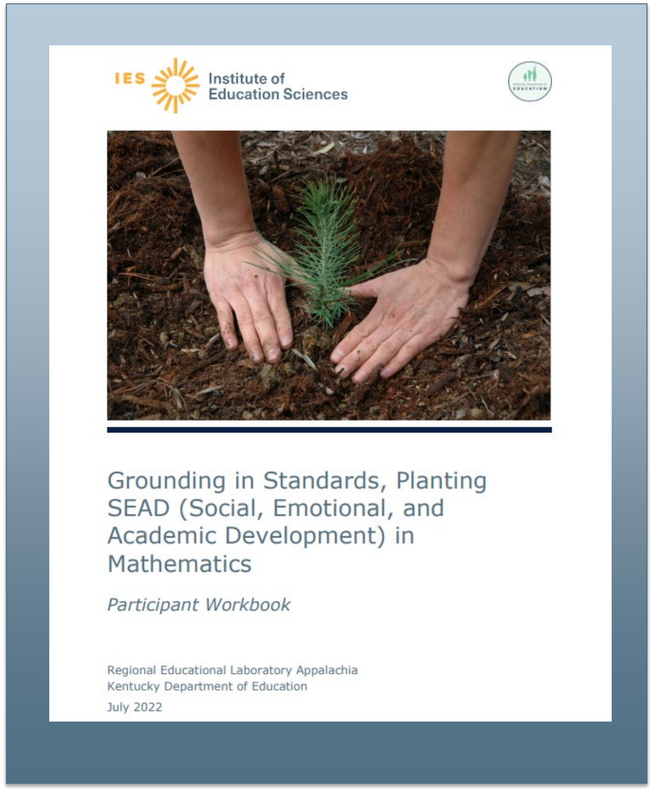
Academic Standards, Classroom Environment, Emotional Development, Mathematics, Mathematics Instruction, Mathematics Skills, Social Development, Social Emotional Learning, Social Justice, Teaching Methods, Equity

RESOURCE INFORMATION

Appalachia | Resource Type: Training Material | Resource
Date: July 12, 2022 - July 13, 2022

ONLINE AVAILABILITY

- Agenda (158 KB)
- Grounding in Standards, Planting SEAD in Mathematics Participant Workbook (917 KB)
- Day 1 slide deck (10 MB)
- Day 2 slide deck (3 MB)



IES Institute of Education Sciences

Grounding in Standards, Planting SEAD (Social, Emotional, and Academic Development) in Mathematics

Participant Workbook

Regional Educational Laboratory Appalachia
Kentucky Department of Education
July 2022

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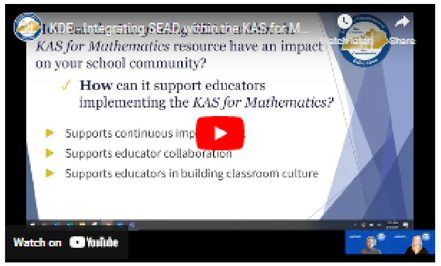
KYStandards

Home | KY Academic Standards | Standards Resources

Integrating Social, Emotional and Academic Development (SEAD) within the KAS for Mathematics

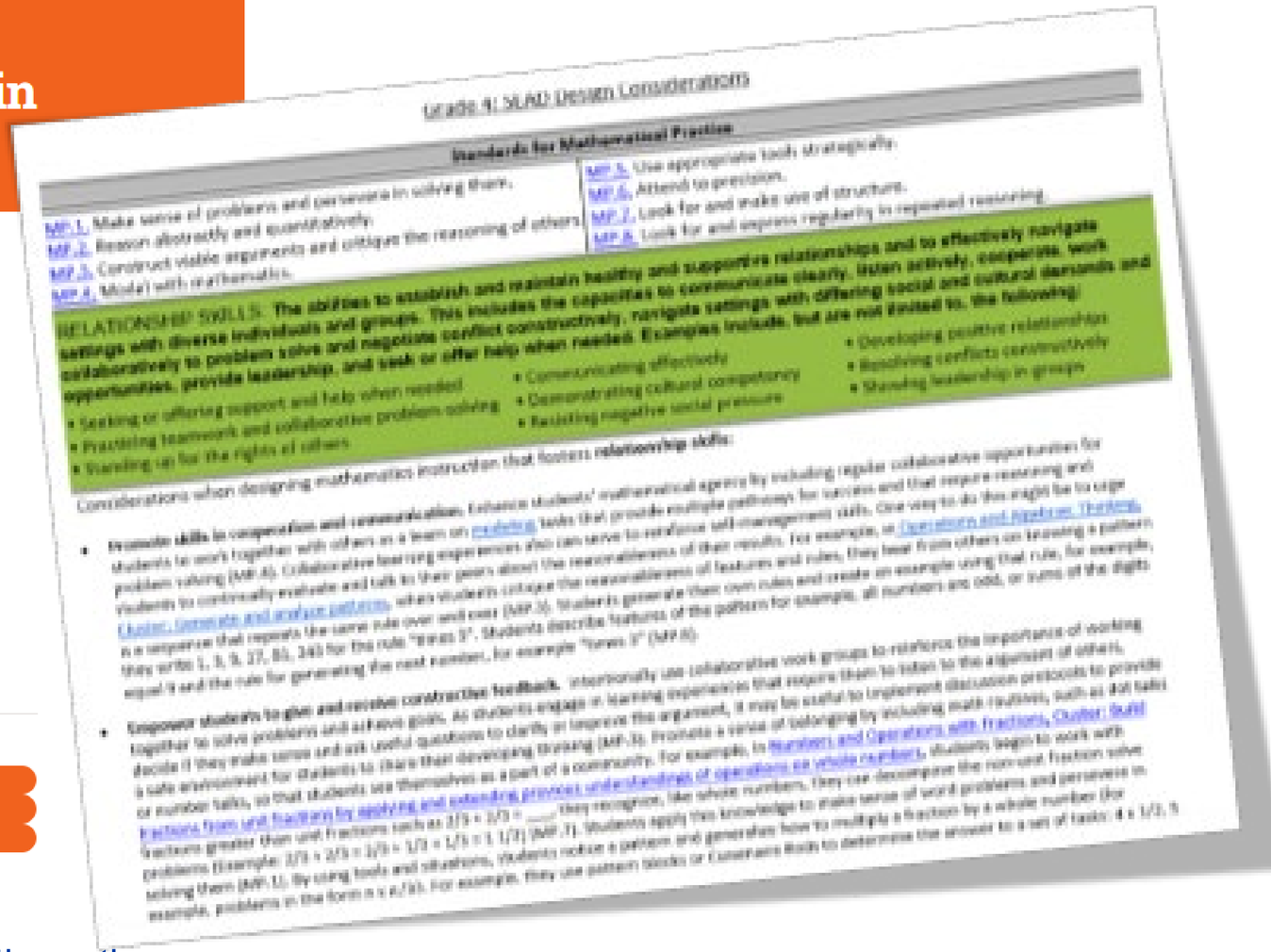


Reflection Sheet

Facilitation Considerations

Integrating SEAD within the KAS for Mathematics Grade Level Library

- Kindergarten
- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Grade 6
- Grade 7
- Grade 8
- High School


Grade 9: SEAD Design Considerations

Standards for Mathematical Practice

MP.1. Make sense of problems and persevere in solving them.
MP.2. Reason abstractly and quantitatively.
MP.3. Construct viable arguments and critique the reasoning of others.
MP.4. Model with mathematics.
MP.5. Use appropriate tools strategically.
MP.6. Attend to precision.
MP.7. Look for and make use of structure.
MP.8. Look for and express regularity in repeated reasoning.

RELATIONSHIP SKILLS: The abilities to establish and maintain healthy and supportive relationships and to effectively navigate settings with diverse individuals and groups. This includes the capacities to communicate clearly, listen actively, cooperate, work collaboratively to problem solve and negotiate conflict constructively, navigate settings with differing social and cultural demands and opportunities, provide leadership, and seek or offer help when needed. Examples include, but are not limited to, the following:

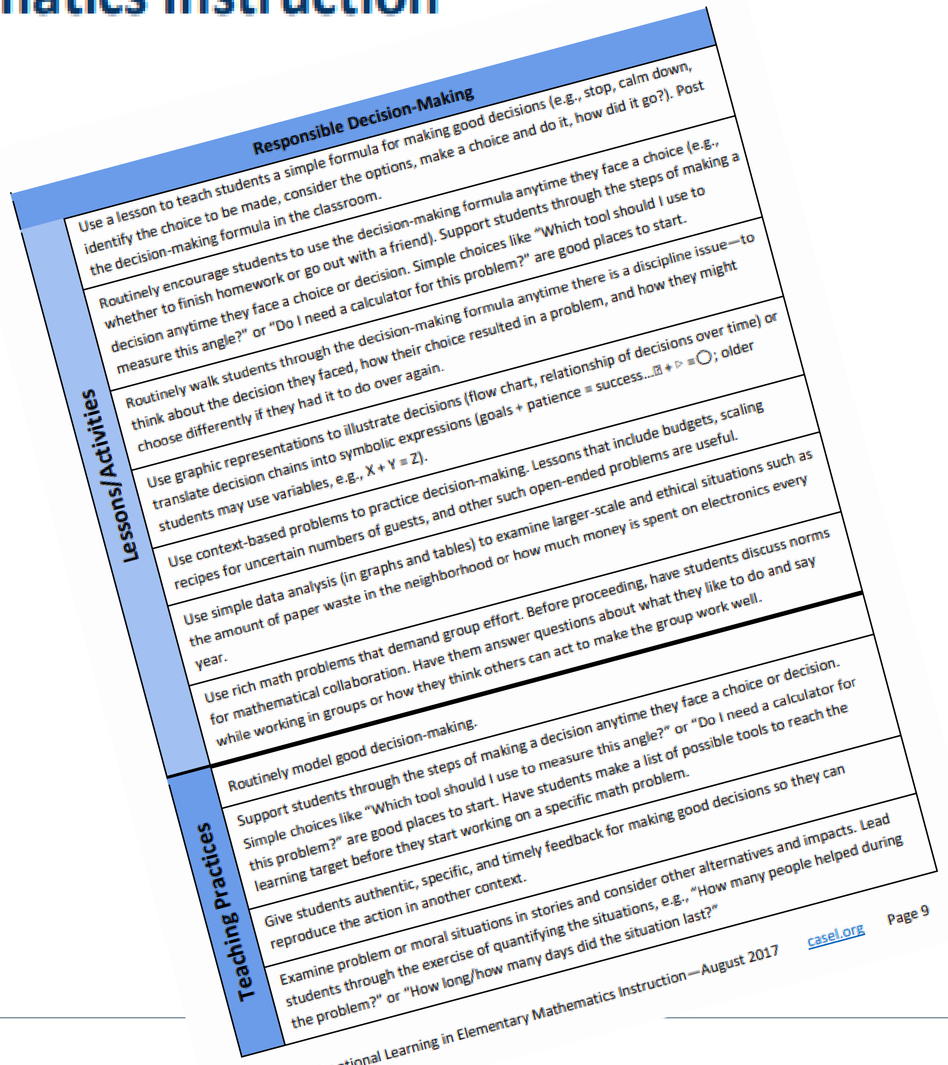
- Seeking or offering support and help when needed
- Practicing teamwork and collaborative problem-solving
- Standing up for the rights of others
- Communicating effectively
- Demonstrating cultural competency
- Resisting negative social pressure
- Developing positive relationships
- Resolving conflicts constructively
- Showing leadership in groups

Considerations when designing mathematics instruction that fosters relationship skills:

- **Promote skills in cooperation and communication.** Enhance students' mathematical agency by including regular collaborative opportunities for students to work together with others as a team on modeling tasks that provide multiple pathways for success and that require reasoning and problem solving (MP.4). Collaborative learning experiences also can serve to reinforce self-management skills. One way to do this might be to ask students to continually evaluate and talk to their peers about the reasonableness of their results. For example, in Operations and Algebraic Thinking, Cluster: Generate and analyze patterns, where students critique the reasonableness of features and rules, they hear from others on knowing a pattern is a sequence that repeats the same rule over and over (MP.3). Students generate their own rules and create an example using that rule, for example, they write 1, 3, 9, 27, 81, 243 for the rule "times 3". Students describe features of the pattern for example, all numbers are odd, or sums of the digits equal 9 and the rule for generating the next number, for example "times 3" (MP.8).
- **Empower students to give and receive constructive feedback.** Intentionally use collaborative work groups to reinforce the importance of working together to solve problems and achieve goals. As students engage in learning experiences that require them to listen to the argument of others, decide if they make sense and ask useful questions to clarify or improve the argument, it may be useful to implement discussion protocols to provide a safe environment for students to share their developing thinking (MP.3). Promote a sense of belonging by including math routines, such as dot talks or number talks, so that students see themselves as a part of a community. For example, in Numbers and Operations with Fractions, Cluster: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers, students begin to work with fractions greater than unit fractions such as 2/3 + 2/3 = ___ they recognize, like whole numbers, they can decompose the non-unit fraction solve problems. Example: 2/3 + 2/3 = 1/3 + 1/3 + 1/3 + 1/3 = 1 1/3 (MP.7). Students apply this knowledge to make sense of word problems and persevere in solving them (MP.1). By using tools and situations, students notice a pattern and generalize how to multiply a fraction by a whole number (for example, problems in the form n x n/d). For example, they use pattern blocks or Cuisenaire Rods to determine the answer to a set of tasks: 4 x 1/3, 5

https://kystandards.org/standards-resources/mathematics-resources/integrating-sead-mathematics/

Examples of Social and Emotional Learning in Elementary Mathematics Instruction



	Responsible Decision-Making
Lessons/Activities	Use a lesson to teach students a simple formula for making good decisions (e.g., stop, calm down, identify the choice to be made, consider the options, make a choice and do it, how did it go?). Post the decision-making formula in the classroom.
	Routinely encourage students to use the decision-making formula anytime they face a choice (e.g., whether to finish homework or go out with a friend). Support students through the steps of making a decision anytime they face a choice or decision. Simple choices like "Which tool should I use to measure this angle?" or "Do I need a calculator for this problem?" are good places to start.
	Routinely walk students through the decision-making formula anytime there is a discipline issue—to think about the decision they faced, how their choice resulted in a problem, and how they might choose differently if they had it to do over again.
	Use graphic representations to illustrate decisions (flow chart, relationship of decisions over time) or translate decision chains into symbolic expressions (goals + patience = success...◻ + ▷ = ◯; older students may use variables, e.g., X + Y = Z).
	Use context-based problems to practice decision-making. Lessons that include budgets, scaling recipes for uncertain numbers of guests, and other such open-ended problems are useful.
	Use simple data analysis (in graphs and tables) to examine larger-scale and ethical situations such as the amount of paper waste in the neighborhood or how much money is spent on electronics every year.
	Use rich math problems that demand group effort. Before proceeding, have students discuss norms for mathematical collaboration. Have them answer questions about what they like to do and say while working in groups or how they think others can act to make the group work well.
Teaching Practices	Routinely model good decision-making.
	Support students through the steps of making a decision anytime they face a choice or decision. Simple choices like "Which tool should I use to measure this angle?" or "Do I need a calculator for this problem?" are good places to start. Have students make a list of possible tools to reach the learning target before they start working on a specific math problem.
	Give students authentic, specific, and timely feedback for making good decisions so they can reproduce the action in another context.
	Examine problem or moral situations in stories and consider other alternatives and impacts. Lead students through the exercise of quantifying the situations, e.g., "How many people helped during the problem?" or "How long/how many days did the situation last?"

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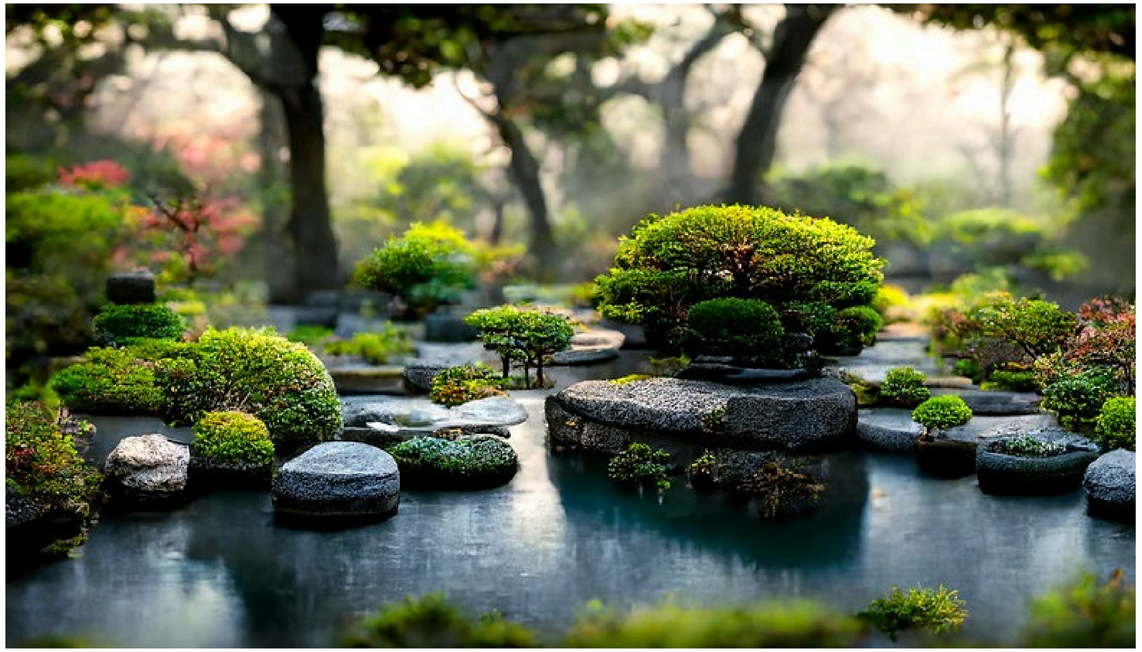
What would serve you best?

- Offer full two-day workshop with time to collaborate and plan lessons?
- Develop workbook specific to Virginia? Aligned to NCTM standards for mathematical practice?
- Convene a working group to build out graphic organizers, lesson repository, and other resources for use across the state?



https://flickr.com/photos/dennissylvesterhurd/52388969575

Session reflection and wrap-up

Global reflections

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What **new or deeper learning** surfaced today for you?

How might it **impact your practice**?

What are you **already doing** in the spirit of SEAD? How can you **build** on these efforts?

How might SEAD look in your math class/school/division? *Could be a moment, transition, activity, year-long theme. Think big or small.*

What are your **first few steps** toward implementing? With whom can you **collaborate?**

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For our growth…

We appreciate your feedback as we continue to improve our work to meet your needs!

Questions?

Thank you and please stay connected!

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