Grounding in Standards, Planting SEAD in Mathematics

Kentucky Summer Professional Learning Workshop – Day 2

IES Institute of Education Sciences

Kentucky Department of EDUCATION

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REL Appalachia

Welcome

In what ways did Day 1 reflect our group values?

3 MIN

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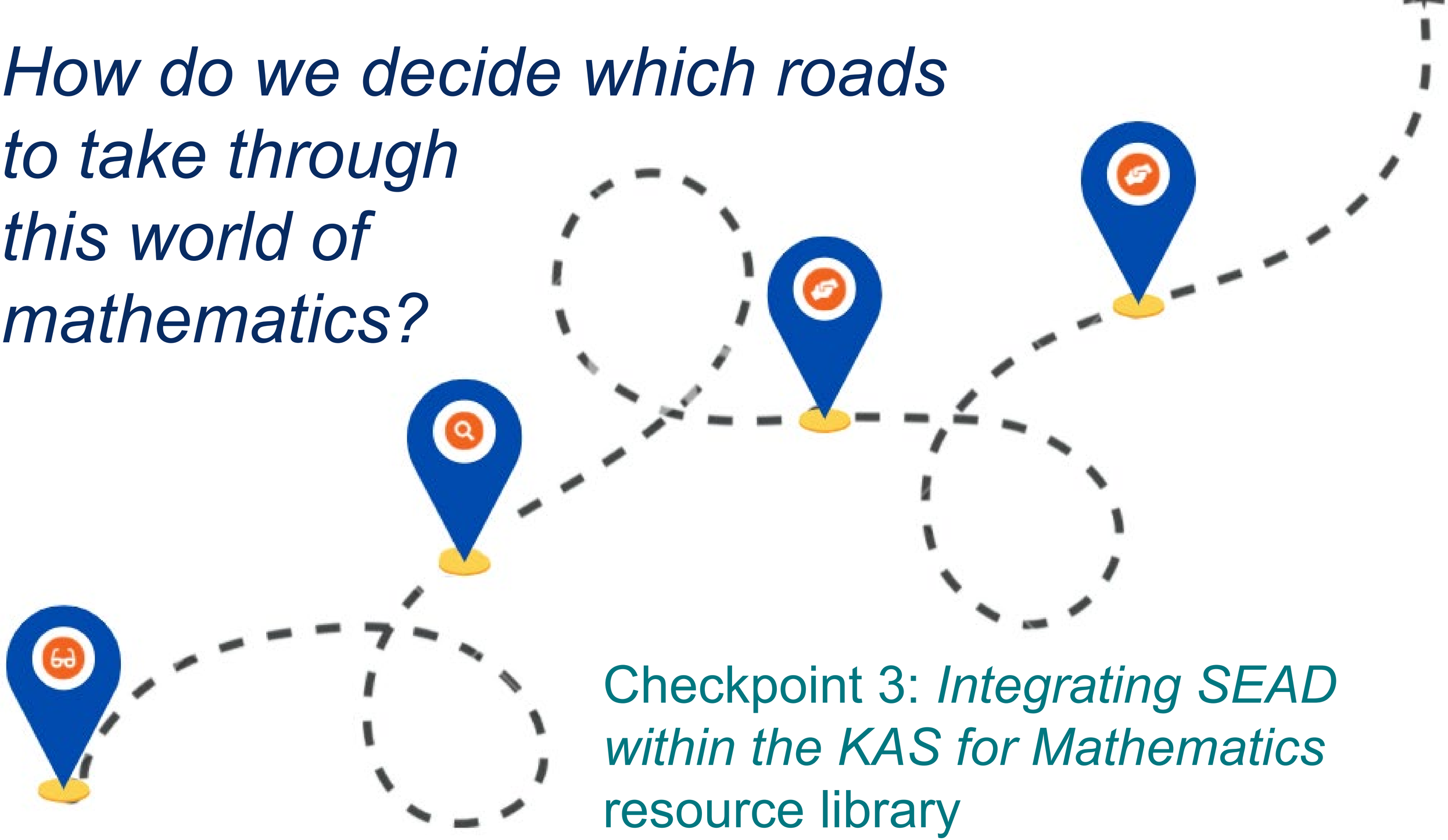
Day 2 Agenda

Time	Agenda item
9:00 – 9:20 a.m.	Welcome
9:20 – 11:00 a.m.	Integrating SEAD and *KAS for Mathematics* roadmap
11:00 – 11:15 a.m.	Break
11:15 – 12:15 p.m.	Co-designing SEAD in mathematics lessons: Part 1
12:15 – 1:15 p.m.	Lunch
1:15 – 2:15 p.m.	Co-designing SEAD in mathematics lessons: Part 2
2:15 – 2:30 p.m.	Break
2:30 – 3:30 p.m.	Supportive colleagues review and feedback
3:30 – 4:00 p.m.	Wrap-up

Reminder - Overall Learning Arc

- Facilitate deeper learning around high-quality instruction aligned to the *Kentucky Academic Standards (KAS) for Mathematics*.
- Build educator understanding of the importance and role of social, emotional, and academic development (SEAD) in effective and equity-focused mathematics instruction.
- Expand awareness of resources that support SEAD integration.
- Strengthen capacity for planning instruction that aligns with the content and practices within the *KAS for Mathematics.*

How do we decide which roads to take through this world of mathematics?



Checkpoint 3: *Integrating SEAD within the KAS for Mathematics* resource library

Day 1 Reflection

- **30 seconds:** Find your star partner from yesterday and welcome them back.
- **1 Minute:** Skim the Teacher Self-Reflection Questions to promote the competency
- **45 seconds:** Partner A shares one of the questions that stood out to them and why.

  A strength? An area of improvement? An opportunity to learn? Something on your mind? Something on your heart?

- **45 seconds:** Partner B shares.

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How do we decide which roads to take through this world of mathematics?

Checkpoint 4: Roadmap to Integrating SEAD within the *KAS for Mathematics*

Roadmap to Implementing High Quality Mathematics Instruction

- Ground instruction in the *KAS for Mathematics*, thus reaffirming a commitment to equitable learning opportunities for all students in Kentucky
- Support intentional integration of evidence-based instructional practices
- Expand educator familiarity with strategies to interweave the development of social emotional competencies with the development of mathematics content.

Roadmap to Integrating SEAD within the *KAS for Mathematics* – *as part of* the PLANNING process

- What is your goal for this learning experience? In what ways will this learning experience advance student access to and mastery of the standards? What are your success indicators? What might be some pieces of evidence you can collect? What might you see/hear that will let you know you've reached the goal?

Roadmap to Integrating SEAD within the *KAS for Mathematics* – *as part of* the PLANNING process

- What evidence-based instructional practices will be prioritized throughout facilitation? What might be some strategies or approaches you are considering? How will you decide which strategies or approaches to take?

Roadmap to Integrating SEAD within the *KAS for Mathematics* – *as part of* the PLANNING process

- Are there authentic opportunities to interweave support for student social and emotional growth with the development of the mathematics content and practices? If so, what design considerations might you choose? How will SEAD connections be interwoven through instruction around the specific task/lesson?

Roadmap to Implementing High Quality Mathematics Instruction

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Grounding instruction in the *KAS for Mathematics*

Grade Level:	Area:	Lesson/Task:

Identify the Content Standard	Identify the Target of the Standard:
Standard from *KAS for Mathematics*:	☐ Conceptual Understanding ☐ Procedural Skill/Fluency ☐ Application

Identify the Practice Standard:

- ☐ 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.

Notes on Key Lesson Components

Consider:

- Content Standard
- Target of the Standard
- Standards for Mathematical Practice

Helpful resources from kystandards.org:

- Standards document
- Breaking Down a Standard
- Assignment Review Protocol

Engaging the SMPs: Look fors And Question Stems

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Sample Task: Girl Scout Cookies

3 Act Task - Video

Act 1: Video

How many boxes of girl scout cookies will fit into that trunk?

- What's a number of boxes you know is too high?
- What's a number of boxes you know is too low?
- What's your best guess?

Act 2:

What information would be helpful to know here?
Estimate the capacity of the trunk and the dimensions of the cookie box.

Act 3: Video

Sample Task: Girl Scout Cookies

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Consider:

- Standard
- Target of the Standard
- Standards for Mathematical Practice

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Sample Task: Girl Scout Cookies

PART ONE: Mathematical Content[1]: Does this assignment align with the expectations defined by grade-appropriate standards?

Does the assignment focus on one or more grade-appropriate mathematics standards?	Yes / Partially / No Standard(s): KY.6.G.2
Do all questions and/or tasks reach the depth of grade-appropriate standard(s)? Use the following criteria to guide your thinking.	Yes / No Evidence: KY.6.G.2 is an Application standard. Task provides a context for learning & problem solving in a meaningful way. Students are asked to select an efficient method to find a solution & determine whether a solution makes sense. Specifically addressed in the sequel.

- **Section 1: Target of the Standard:**
  Does the task match the target of the standard (conceptual understanding, procedural skill & fluency, and/or application)? Do the numbers/number types and types of representations (area model, shapes, graphs, functions, etc.) match those called for by the targeted standard(s)? For example,
  - If the standard is **conceptual understanding**, does the task require more than knowing isolated facts and methods? Are students asked to make sense of why a mathematical idea is important and the kinds of contexts in which it is useful?
  - If the standard is **procedural skill/fluency**, does the task require students to apply procedures accurately, efficiently, flexibly and appropriately? Does the task focus students' attention on the use of procedures for the purpose of developing a deeper level of understanding of mathematical concepts or ideas? If general procedures may be followed, can they be followed mindlessly or are students asked to engage with the conceptual ideas that underlie the procedures to complete the task successfully?
  - If the standard is **application**, does the task offer students the opportunity to solve problems in a relevant and meaningful way? Are students asked to select an efficient method to find a solution and develop critical thinking skills? Are students asked to actively examine task constraints that may limit possible solutions and strategies?

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KY.6.G.2

Sample Task: Girl Scout Cookies

Note: I review the SMP descriptions on p. 12-15 and look at which descriptions have the most in common with the questions/student expectations on the assignment.

TNTP reimagine teaching

Assignment Review Protocol: Math

PART TWO: Mathematical Practice: Does the assignment provide meaningful opportunities for students to engage in the standards for mathematical practices?

Does the assignment require students to engage with one or more mathematical practices while working on grade-appropriate content?

- Does the target standard(s) explicitly call for use of a specific mathematical practice? If so, does the task provide opportunity for students to engage in the mathematical practice named by the standard?

  It may be useful to utilize the front matter of the KAS for Mathematics (p. 12-15) and the Engaging the SMPs: Look fors and Questions Stems document from the *Getting to Know the KAS for Mathematics* module.

Note: MP 2, MP 5 and MP 6 are tagged within KY.6.G.2 BUT that doesn't mean students automatically engage with those practices.

Yes	No

Evidence:

MP 2: Make sense of quantities & their relationships in problem situations. Attend to the meaning of quantities, not just how to compute them.

MP 4: Students can apply the mathematics they know to solve problems that arise in everyday life. Students interpret their results in context & reflect on whether the results make sense.

MP 6: Students communicate precisely & are careful about specifying units of measure.

Overall Practice Rating

Overall, to what extent does the assignment provide meaningful practice opportunities with the standards for mathematical practices?

0 – Weakly Aligned	1 – Partially Aligned	2 – Strongly Aligned
The assignment does not have students engage with critical mathematical practices while working on grade-appropriate content.	The assignment gives students an opportunity to engage with at least one math practice, but not at the level of depth required by the standard.	The assignment gives students the opportunity to engage with at least one mathematical practice at the appropriate level of depth required by the standard.

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Let’s Discuss

Access the Draft Roadmap for your team and consider:

- Standard
- Target of the Standard
- Standards for Mathematical Practice

What “souvenirs” can we take from this part of the Roadmap?

- Importance of clarity around the standards
- Learning experiences should reflect the target of the standard
- Intentional engagement with the SMPs

Support intentional integration of evidence-based instructional practices,

National Council of Teachers of Mathematics (NCTM) Effective Mathematics Teaching Practices

Identify Evidence-based Instructional Practice(s)	
☐ EMTP 1: Establish mathematics goals to focus learning.	☐ EMTP 5: Pose purposeful questions.
☐ EMTP 2: Implement tasks that promote reasoning and problem solving.	☐ EMTP 6: Build procedural fluency from conceptual understanding.
☐ EMTP 3: Use and connect mathematical representations.	☐ EMTP 7: Support productive struggle in learning mathematics.
☐ EMTP 4: Facilitate meaningful mathematical discourse.	☐ EMTP 8: Elicit and use evidence of student thinking.

Teacher Actions:	Student Actions:

Explore with a group- 15 minutes

Delve and Dialogue - Round Robin

- PURPOSE AND INTENTIONS Deepen understanding of concepts and others through a structured dialogue.
- PROCESS Read a selection of text and make connections to some aspect of your work. In groups, share some of your connections. Honor the spirit of inquiry with pausing, paraphrasing, and posing questions.
- As you “delve”, use the blue and/or green highlighters from Day 1 to highlight strong connections to your grade level task.

Rest Area

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Sample Task: Girl Scout Cookies

Consider:

- We can take different routes and still arrive at the same destination. Do what feels authentic for you in planning for the content, practices and competencies within this lesson/task.
- Less is more! Choose a manageable amount to really focus on. If you try to focus on everything, you'll likely end up not focusing on anything.
- Make note of specific strategies and approaches as having those captured may be useful when you prioritize what you most want students to gain from the learning experience.

Let’s Discuss

Consider:

- Which effective teaching practice might we elevate throughout this learning experience?

- Do you have ideas about what that might look like in your classroom with your students? Capture these ideas to come back to.

What “souvenirs” can we take from this part of the Roadmap?

- Do what feels authentic for you in planning for the content, practices and competencies within this lesson/task.
- You don't have to demonstrate every practice and every competency in every lesson. It is more about ensuring that the holistic experience of your classroom reflects a balance.
- This is a work in progress. We will revisit these practices after the next section.

Expand educator familiarity with strategies to interweave the development of SE competencies with the AD of mathematics content

Use your grade level Integrating SEAD within the KAS for Mathematics Consider:

- Which CASEL competency do you feel there is an opportunity to elevate within this lesson?
- Which parts of the design consideration do you want to focus on in your lesson? Consider adding additional ideas to the Teacher and Student Actions. Are there resources from the SEAD resource you want to link?

Expand educator familiarity with strategies to interweave the development of SE competencies with the AD of mathematics content

Identify the CASEL Competency:				
☐ SELF-AWARENESS	☐ SELF-MANAGEMENT	☐ SOCIAL AWARENESS	☐ RELATIONSHIP SKILLS	☐ RESPONSIBLE DECISION-MAKING

Specific Design Considerations from *Integrating SEAD within the KAS for Mathematics* Grade Level Resource

Teacher Reflection Questions from *Integrating SEAD within the KAS for Mathematics* Grade Level Resource

Additional Notes:

Sample Task: Girl Scout Cookies

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Let’s Discuss

Use your grade level Integrating SEAD within the KAS for Mathematics Consider:

- Which CASEL competency do you feel there is an opportunity to elevate within this lesson?
- Which parts of the design consideration do you want to focus on in your lesson?

Consider adding additional ideas to the Teacher and Student Actions.

Are there resources from the SEAD you want to link?

Self-Reflection

Consider:

- How can I ensure my strengths are evident?
- How can I ensure opportunities for improvement are evident?
- How can I ensure my curiosity is evident?

Consider providing specific indicators when possible.

What “souvenirs” can we take from Checkpoint 4?

- Start with grade level content.
- Look for authentic places to integrate SEAD within the *KAS for Mathematics* - SEAD isn’t separate from the effective mathematics instruction we are seeking to provide already.
- Don’t forget this is a learning process. Show grace to yourself as you learn.

Co-designing SEAD in Mathematics Lessons: Part 1

Partner planning

- Connect with a partner that teaches in a similar grade band.
- Select a standard from the *Grade Level Samples of Breaking Down a Standard and Assignment Review Protocol Library*.
- Use *Integrating SEAD and KAS for Mathematics Roadmap* tool.
- Co-design a lesson that addresses at least one CASEL competency.

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Questions for teacher self-reflection when planning instruction to foster a CASEL competency

For example, below are questions for teacher self-reflection when planning instruction to foster student **self-awareness:**

- Why is it important to establish trust with my students to help develop teacher credibility? What steps am I already taking to develop trust with my students? Is there anything I might want to shift about my current approach?
- How do I offer my students ways to get to know who I am?
- How do I utilize formative assessment practices in a way that highlights student knowledge rather than deficit knowledge?
- What strategies do I teach my students to apply to assess their own work and that of their peers? What are my students' strengths and weaknesses at peer- and self-assessment? How do I support students in responding to other's use of math practices to support their ideas?
- What is my understanding of culturally responsive instruction? What steps am I taking to incorporate culturally responsive instruction deeper into my classroom and instruction? Is there anything I might want to shift about my current approach?
- How do I share the classroom's authority and autonomy with students? Is there anything I might want to shift about my current approach?
- What would it look like to include more student voice and student choice in my classroom?
- What tasks provide windows and mirrors into student noticings?
- What methods do I use to identify problem solving contexts connected to students interests and/or societal topics relevant to students (at the local or global level)?
- Utilizing multilingual resources can help students see themselves and their heritage in the learning, which promotes student agency. How do I use multilingual/multicultural resources to provide additional scaffolds for ELs? Is there anything I might want to shift about my current approach?
- How can I elevate mathematical role models from diverse cultures?


Lunch
60 min

Jumping back in

How are you **feeling** about the task ?

What **challenges** did you encounter?

Continue your co-design work.

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Co-designing SEAD in Mathematics Lessons: Part 2

Break
15 min

Supportive Colleagues' Review and Feedback

Supportive colleague review

On your own, review a lesson from a near-peer (similar grade band) and complete the feedback form. Then discuss your review with your partner and add any additional feedback or clarifications.

"I like…"

- What is strong or positive about the lesson?

"I wish…"

- What could be done differently/improved to increase standard alignment and/or integrate SEAD strategies?

"I wonder…"

- Questions that are still unanswered and other ideas.

Provide feedback

Meet with your near-peer colleagues and discuss your feedback using the review template. Pause after each section for clarifying questions and discussion.

"I like…"

- What is strong or positive about the lesson?

"I wish…"

- What could be done differently/improved to increase standard alignment and/or integrate SEAD strategies?

"I wonder…"

- Questions that are still unanswered and other ideas.

Group share-out

- What **additional strategies or ideas** did you pick up from reviewing your colleagues' lesson?
- What advice, support, or ideas did you most value **receiving** from your colleagues?

Wrap-up

Reflecting and postcard writing

What **new or deeper learning** surfaced today as you began planning?

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

What are your **first few steps** toward implementing in the fall?

With whom can you **partner** or collaborate?

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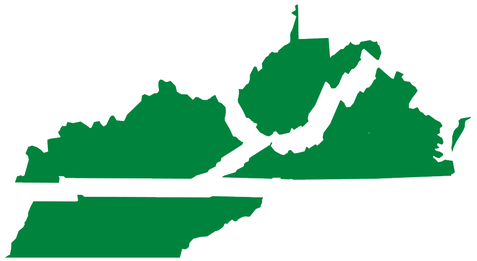
Questions?

Thank you!



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