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Social Emotional Academic Development in Math Classrooms

Part 2: Planning to incorporate social and emotional learning into math lessons

Core Advocate Webinar September 14, 2021

STUDENT ACHIEVEMENT PARTNERS



Poll:

How many Core Advocate Webinars have you attended?

Join Our Network!

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National Core Advocate Network

College- and career-ready standards, including the CCSS, give educators an opportunity to work together and support each other— across districts, states, and content areas. The goal of the Core Advocates Network is to engage educators with the content knowledge and resources they need to support teachers and students in the transition towards a college- and careerready education.

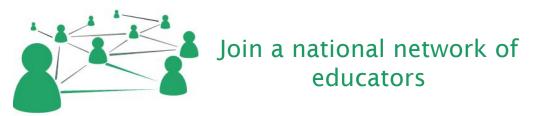
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Interested in joining the Core Advocate network? Start by taking the

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Keep up to date on free resources, upcoming webinars and other professional learning opportunities, job postings and more!



Be a part of creating new tools and resources in partnership with SAP

FALL 2019 | ISSUE NO.

Learn More About Us!

- Contact Jennie Beltramini (jbeltramini@studentsachieve.net)
 Joy Delizo-Osborne (jdelizo-osborne@studentsachieve.net)
- Complete this survey to join our database (and mailing list): <u>www.achievethecore.org/ca-signup</u>
- Visit our website: <u>www.achievethecore.org</u>

EXCELLENCE AND EQUITY IN THE CLASSROOM							
A QUARTERLY MAGAZINE FOR EDUCATORS							

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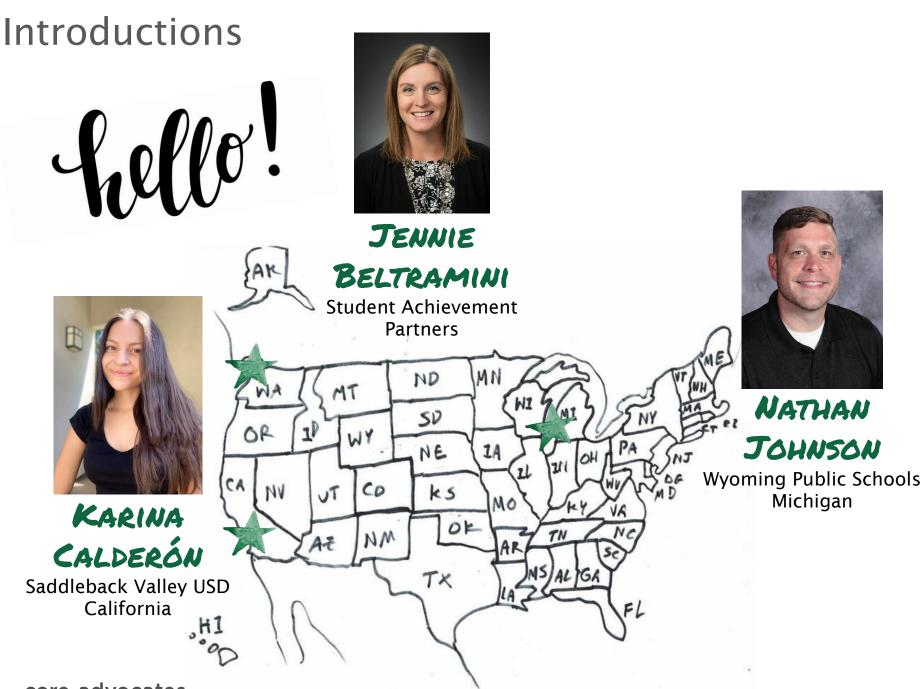
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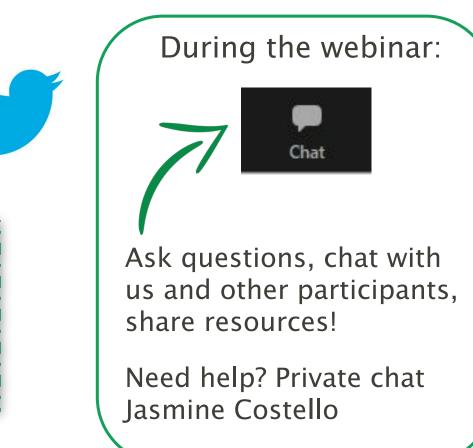
Engage with Us!

Please feel free to tweet during and after the webinar using #coreadvocates

- @achievethecore
- @JennieBeltro
- @srta_kcalderon

After the webinar:

→ Access to the recording and resources will be emailed to you.



Professional Learning Certificate Will Be Provided

We value your feedback!

At the end of the webinar you will be given a link to take a brief feedback survey. Those who complete the survey will be emailed a certificate for 1-hour of professional learning!

Webinar Professional Learning
The information collected by Student Achievement Partners is used to help us to better support educators and the students they serve. All information provided will be kept confidential. When used, it will be considered only in aggregate (without personally identifiable information), and not for purposes of evaluation. Please complete all required questions to receive a certificate for your professional learning time. * Required
First Name *
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Webinar Series and Community of Practice Social, Emotional, and Academic Development in Math Classrooms



Introducing SEAD themes and connections for equitable math instruction

Available on-demand. One hour professional learning credit

- Understand the need for SEAD in math
- Make connections between SEAD and equitable math practice
- Learn about new resources

Planning to incorporate social and emotional learning into math lessons

WEBINAR

2

Available on-demand. One hour professional learning credit

- Understand the connection between the SMPs, SEL, and gradelevel instruction
- Learn to use the SEAD planning template from Pathways to Equitable Math Instruction

COMMUNITY OF PRACTICE

Collaborative, Participant-Driven Discussion and Planning

Must have attended both webinars 1&2 prior to September 24 to join 4 hours professional learning credit

- Share and reflect on best practices for implement SEAD
- Design and discuss lessons
- Opportunity to contribute lessons with compensation

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Missed Part 1?



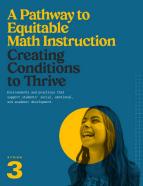
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You can watch it on-demand! <u>https://bit.ly/SEADwebinarPart1</u>

Goals of the Webinar

- ✓ Understand how the Standards for Mathematical Practice (SMPs) intersect with the four SEL themes in Stride 3
- ✓ Learn about a planning process for math lessons that incorporate SEL themes
- ✓ Hear from educators about the lesson planning process and how they used it

Resource Sheet: https://bit.ly/SEADresources (page 2)





https://bit.ly/equitablemathSEAD

Nathan Johnson Instructional Coach Wyoming Public Schools, Oriole Park Elementary School



Poll: Did you attend or watch Part 1 of this webinar series on SEAD in the math classroom? (Introducing SEAD themes and connections for equitable math instruction)

Section 1: How do the Standards for Mathematical Practice (SMPs) intersect with the four SEL themes in Stride 3?

The Standards for Mathematical Practices (SMPs)

- \rightarrow Varieties of expertise
- → Content standards are the what
- → Practice standards are the **how**
- \rightarrow What students are doing

Mathematics | Standards for Mathematical Practice

Standards for Mathematical De

The samplards for mannematical infactice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practical rest on important "processes and proficiencies" with longstand sportance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, n vd connections. The second are the strands of mathematical p in the National Research Council's report Adding It Up: adaptive reaso petence, conceptual understanding (comprementerhal confruences and relations), procedural fluency (skill in carrying out procedures ng, strateok flexibly, accurately, efficiently and appropriately), and productive disp natical con habitual inclination to see mathematics as sensible, useful, and worthwhile, co with a belief in diligence and one's own efficacy).

1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the mean of a problem and looking for entry points to its solution. They analyze givens, a province and advantaging for early powers to its advantage, riney energy to give to, instraints, relationships, and goals. They make conjectures about the form and saning of the solution and plan a solution pathway rather than simply jumping into ion attempt. They consider analogous problems, and try special cases and southain attempt. They cutrater antarquite problem, and it is appetent cases and impler forms of the original problem in order to gain insight into its solution. They anguer nume or use organize process and change course if necessary. Older students monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions o might, depending on the context of the problem, transform any more an change the viewing window on their graphing calculator to get the informat change the recently without on these graphing tomber to get one in need. Mathematically proficient students can explain correspondence need. Mathematicality promotions students Lan explaint conversion and a second structure of the students of important equations, verbal descriptions, tables, and graphs or draw diagrams of important equations. tion the repursors, versus decompones, tables, and graphs or draw diagnams of timportant. Beatives and realisticativities, graphs, and starsh for regularity or stinds. Younge students might rely on using control detects or pictures to help contexplaulate and solve a problem. Mathematically proficent students check their arisense to and solve a problem. Natheinaucany proncens students oneurs to the ensaters so problems using a different method, and they continually ask themselves. "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches

2 Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relatio Mathematicany protections students make sense or quantities and their reinstrumm-pa-in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships the ability to decontentualize-to abstract. involving quantitative relationships: the ability to deconcentration eco-a given situation and represent it symbolically and manipulate the represe ymbols as if they have a life of their own, without necessarily attending to their referents-and the ability to contextualize, to pause as needed during the their reterrist—and the ability to contextuance, to justue as networks during one manipulation process in order to probe into the referents for the symbols involved. Quantitative neasoning entails habits of creating a coherent representation of the symbols and the symbols of the symbols and the symbols involved. Guancies/verifies/oning enties neuros or creating a current representation or the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

3 Construct viable arguments and critique the reasoning of others. Anthenationally provident students understand and use stated assumptions, definitions, and previously established results in constructing arguments. The durations, and previously tensionated results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them in examples. They justify their co

The Standards for Mathematical Practices

Make sense of problems and persevere in solving Attend to precision them 0

2. Reason abstractly and quantitatively

3. Construct viable arguments and critique the reasoning of others

4. Model with mathematics

5. Use appropriate tools strategically

7. Look for and make use of structure.

8. Look for and express regularity in repeated reasoning.

SEAD Themes





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SMPs and SEAD Themes



SUMMARY OF INTERSECTIONS OF SEAD THEMES WITH SMPS

SMP	IDENTITY	DISCOURSE	AGENCY	BELONGING
SMP 1 Make sense of problems and persevere in solving them.	•	•	•	
SMP 2 Reason abstractly and quantitatively.	•	0		0
SMP 3 Construct viable arguments and critique the reasoning of others.	•	•	•	0
SMP 4 Model with mathematics.	•		•	
SMP 5 Use appropriate tools strategically.	•			
SMP 6 Attend to precision.	•	•		
SMP 7 Look for and make use of structure.	•			
SMP 8 Look for and express regularity in repeated reasoning.	0			

Routines That can Strengthen SEAD Themes.



SUGGESTED ACTIONS + STRATEGIES

SUMMARY TABLE

PRIORITY INSTRUCTIONAL CONTENT IN ELA/LITERACY AND MATHEMATICS COUNCIL OF GREAT SCHOOLS

SEAD	SMP	STRATEGY
ldentity Belonging	SMP 2 Reason abstractly and quantitatively.	Build a safe community where mathematical discourse supports active listening, promotes diverse perspectives and insights, and allows students to consider others' reasoning to advance their own mathematical understanding. For example, utilize a "which one doesn't belong?" activity for groups of students to discuss and analyze correspondences between graphs, tables, and equations that represent a relationship between dependent and independent variables.
Agency	SMP 2 Reason abstractly and quantitatively.	Bring in students' existing funds of knowledge (culture, contexts, language, and experiences), such as during the study of ratios and rates, when students need to make sense of quantities and relationships in problem situations; they may bring in their understanding of measurement units to do measurement conversions and their real-life interactions with percents to solve percent problems.
Discourse	SMP 3 Construct viable arguments and critique the reasoning of others.	Position students as mathematically competent by encouraging them to construct mathematical arguments and engage in the reasoning of others, such as when they are using the properties of operations to generate equivalent expressions or working collaboratively to develop the formula for the area of a triangle through analyzing a variety of parallelograms and making an argument to generalize the relationship.
Agency	SMP 4 Model with mathematics.	Bring in students' funds of knowledge by ensuring materials and problems have a connection with learners, while also providing opportunities to learn about the broader world, such as when solving rich tasks involving geometric measurement that have a significant modeling component.
dentity	SMP 1 Make sense of problems and persevere in solving them.	Communicate that students' thinking is valued to build trust and rapport by asking questions that elicit students' thinking, such as when students are analyzing proportional relationships.
Agency Discourse	SMP 3 Construct viable arguments and critique the reasoning of others.	Position students as competent and elevate their status by valuing different contributions students make when they share representations and make connection: between these representations (for example, tables, graphs, equations, and verbal descriptions of proportional relationships).
Agency Discourse	SMP 3 Construct viable arguments and critique the reasoning of others.	Promote student engagement and identity by embedding systems and routines such as "stronger and clearer each time," or other routines that allow students to engage in productive struggle and take ownership in their progress and growth toward intended learning outcomes.
Agency	SMP 4 Model with mathematics.	Enhance students' mathematical agency by including regular collaborative opportun ties for students to work together with others as a team on modeling tasks that pro-

Routines That can Strengthen SEAD Themes.



SUGGESTED ACTIONS + STRATEGIES (continued)

SEAD	SMP	STRATEGY
dentity Jiscourse	SMP 7 Look for and make use of structure.	Contemplate then Calculate Capturing Quantities is an instructional routine designed to focus students' attention on important quantities and relationships in problem situations. The goal of the routine is to develop students' ability to reason abstractly and quantitatively, math practice 2.
dentity Viscourse	SMP 2 Reason abstractly and quantitatively.	<u>Capturing Quantities</u> is an instructional routine designed to focus students' attention on important quantities and relationships in problem situations. The goal of the routine is to develop students' ability to reason abstractly and quantitatively.
dentity Discourse	SMP 7 Look for and make use of structure.	Connecting Representations is an instructional routine that positions students to think structurally as they connect two representations by articulating the underlying mathematics. An essential goal of this routine is expanding students' repertoire of structural noticings.
dentity Discourse	SMP 8 Look for and express regularity in repeated reasoning.	Recognizing Repetition is an instructional routine that supports the difficult road to generalizing problem situations. Students enlist multiple modalities while they attend to the repetition in their counting, calculating, and constructing processes. In doing so, they leverage their repeated reasoning to make abstract generalizations.
Discourse	SMP 1 Make sense of problems and persevere in solving them.	The <u>3 Reads</u> instructional routine is designed to develop students' ability to make sense of problems by deconstructing the process of reading mathematical situations. Over time, students will internalize this process, thereby creating a heuristic for reading and making sense of mathematical story problems.
lgency Discourse	SMP 3 Construct viable arguments and critique the reasoning of others.	Decide and Defend is an instructional routine in which students make sense of another's line of mathematical reasoning, decide if they agree with that reasoning, then draft an argument defending their decision.



Karina Calderón 5th Grade Teacher Saddleback Valley USD, California

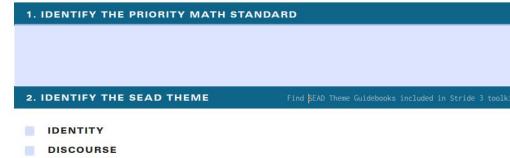


Section 2: What is a planning process for math lessons that incorporate the SEL themes?

A Pathway to Equitable Math Instruction

STRIDE 3 : Creating Conditions to Thrive

SEAD Lesson Planning Template



- AGENCY
- BELONGING

3. IDENTIFY THE <u>SMP(S)</u> TO SUPPORT THE SEAD THEME

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



2020-2021

PRIORITY INSTRUCTIONAL CONTENT IN ELA/LITERACY AND MATHEMATICS

STUDENT ACHIEVEMENT PARTNERS

SMP	IDENTITY	DISCOURSE	AGENCY	BELONGING
SMP 1 Make sense of problems and persevere in solving them.	•	•	•	
SMP 2 Reason abstractly and quantitatively.	•	0		0
SMP 3 Construct viable arguments and critique the reasoning of others.	•	•	•	0
SMP 4 Model with mathematics.	•		•	
SMP 5 Jse appropriate tools strategically.	•			
SMP 6 Attend to precision.	•	•		
SMP 7 .ook for and make .se of structure.	•			
SMP 8 .ook for and express regularity in repeated reasoning.	0			

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Create / Implement / Reflect on SEAD Strategy

Teachers can choose two ways of using the SEAD Theme Guidebooks:

- Use the template as a lesson planning process
 - Embed SEAD strategy to existing lesson plans
 - Review sample lessons
 - Consider teacher and student actions prior to the lesson
- Use the template as a reflection process
 - Reflect on evidence of the SEAD theme
 - Reflect on students' access to the math content



Identifying student and teacher actions

- Lesson planning process
 - write out the desired teacher and student actions
- Reflection process
 - write out the teacher and student actions that occurred in the lesson

Examples of Strategies:

- content accessible
- support communication
- promoting the SEAD theme



Summary of practices/ best practices / reflection

Using the SEAD Theme Guidebooks, teachers may want to:

- Write out summary of practice
- Identify best practices
- provide a reflection

How did the SEAD theme and SMP provide students' access to the math content? How can you continue to integrate the SEAD themes in your math classroom?

Question: Which part of the lesson planning template do you find most helpful?

Share your thoughts in the Zoom chat!

Section 3: How did we use the lesson planning process and how did it go?

SEAD theme: Agency, Discourse

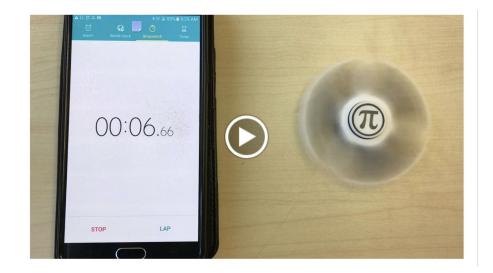
SMP1: Make sense of problems and persevere in solving them SMP3: Construct viable arguments and critique the reasoning of others

Learning Target

How can I **work together** to find a *solution* to a problem?

Success Criteria

I worked together with my classmates to make sense of a problem and persevere in solving it.



Reflection on the SEAD lesson in a 4th grade classroom

- Plan opportunities for students to interact with one another
- Routines and practice for dialogue and discourse will help!
- I needed something to hook them.
- I planned focusing on the "how" of the lesson before the "what."
- Having guiding questions prepared beforehand helped when conversations stalled.

SEAD theme: Discourse

SMP3: Construct viable arguments and critique the reasoning of others

Five brothers are going to take turns watching their family's new puppy.



Five brothers are going to take turns watching their family's new puppy. Each brother will watch the puppy for part of the day.



Five brothers are going to take turns watching their family's new puppy. Each brother will watch the puppy for a part of the day.

If they all watch him for an equal length of time, how much time will each brother spend watching the puppy?



a. Five brothers are going to take turns watching their family's new puppy. How much time will each brother spend watching the puppy in a single day if they all watch him for an equal length of time? Write your answer

i. Using only hours,

ii. Using a whole number of hours and a whole number of minutes, and

iii. Using only minutes.

Task adopted from Illustrative Math

SEAD theme: Discourse

SMP3: Construct viable arguments and critique the reasoning of others

Construct viable arguments and critique the reasoning of others. Matematical Practice 3



I can make logical arguments and respond to the mathematical thinking of others.

l can <u>make and present</u> arguments by... l can <u>analyze the reasoning</u> of others by...

- listening
 - asking and answering questions
 - comparing strategies and arguments

using objects, drawings, diagrams and actions

- using examples and non-examples
- relating to contexts

art licensed from the Clin Art Callery on DiscoverySchov

Jordan School District 2012. Grades 4-5

Planned teacher and student actions

Teacher actions:

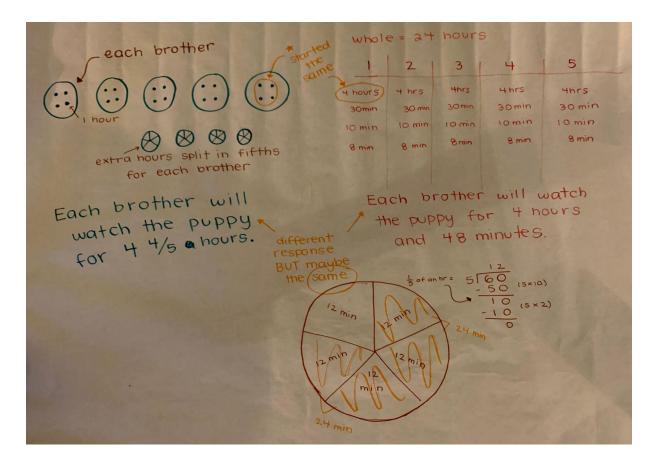
- Prompts students to participate in variation of 3 read strategy
- Asks guiding questions when launching tasks
- Monitors students working, asks clarifying questions, supports students as needed
- Selects students' strategies to share with the whole class

Student actions:

- sense making
- comparing and connecting strategies
- sharing their thinking and advancing it with the ideas of peers



Lesson outcome and reflection



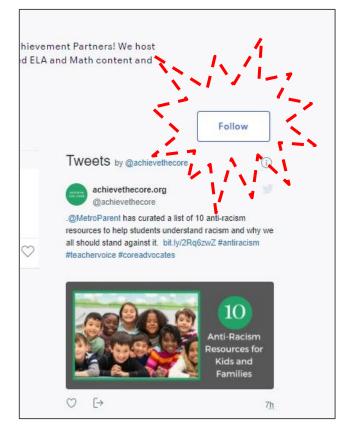


Questions for Our Guests?



Upcoming Events! All events take place at 7 p.m. ET.

Coffee & Conversation: Decolonizing Instruction with Maribel Gonzalez (@decolonizeliteracy) Wednesday, September 22



Follow us on Eventbrite! CoreAdvocates.Eventbrite.com

Professional Learning Certificate - 1 hour

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Those who complete the survey will be emailed a certificate for 1-hour of professional learning!



https://bit.ly/2ULEyW0



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Join our Community of Practice!

Tuesdays 7:00 - 8:15 p.m. ET								
Oct 5	Nov 9	Dec 7						

Ongoing collaborative space for grade-alike educators to share and reflect on strategies and best practices for implementing SEAD into their math classrooms!

Watch both webinars live or asynchronously by Sept 24 to be invited to join the Community of Practice!



https://bit.ly/3j8GBg5



Missed Part 1?



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August 2021 Webinar: Introduci SEAD Themes and Connections Equitable Math Instruction					0			pinar (no certificate available) $+$		
							Resources	+		

You can watch it on-demand! <u>https://bit.ly/SEADwebinarPart1</u>



Thank You!