SSUP Virtual PL Kick-off Summer 2022: Local PDLs and Cohort 2 Teachers

Program Goals

- Deepen knowledge of teaching and learning
- Increase ability to analyze and reflect on teaching and learning
- Increase ability to use content knowledge and knowledge of teaching and learning to transform classroom practice
- Deepen teacher content knowledge
- Increase student learning in science

Session Goals

- Increase understanding of STeLLA and the SSUP PL program
- Increase understanding of Pilot Teacher roles and responsibilities in the SSUP research study and evaluation
- · Increase understanding of what the STeLLA experience will be like including work in small learning communities and logistics

Session Outcomes

• Develop a first draft of the Effective Science Teaching and Learning Charts by study group and set the stage for continued work on the charts before the summer institute

Session Focus Questions

- What is STeLLA and what will this experience be like?
- What is the STeLLA Scale-up and Sustainability Study and what will be my role/responsibilities?
- What are the benefits of joining the second cohort of teachers?

Session Preparation

Well Before

- Become familiar with slides and PDLG, think through the goals/purpose for each section, consider possible participant responses (What do you expect to hear? Hope to hear? What ideas might you want to probe if they surface?)
- Look through slides and pace out timing
- Specify Zoom roles with co-leader (who is running slides, who is leading which parts, who is "tech support" for which parts)
- Reach out to BSCS Leaders for support and questions!

Before

Make copies of Jamboard, Effective Science Teaching and Learning Google Docs, update/customize details in red

Right Before

- Double check links and permissions
- Make both PDLs co-hosts

Session Outline and Storyline: Look for opportunities for participation.

11:00 a.m. - 2:00 p.m.

Time & Slides	Purpose and Content	Activities
50 min	Opening	Slide 2 Introductions
Slides 1-6	Build community and set the stage for learning throughout the summer institute and	Slide 3 Focus questions
11:00 - 11:50	academic year	Slide 4-5 Norms: Jamboard
Eastern		Slide 6 Program Goals: Chat
25 min	Effective Science Teaching and Learning	Slide 7 Effective T&L: Google doc
Slide 7	A key feature of the program is for us to work together to strengthen our	
11:50 - 12:15	understanding of effective science teaching and learning. We know you bring to the	
Eastern	table a wealth of knowledge and experience. Let's make that visible.	
10 min	Break	
12:15 – 12:25 ET		
10 min	STeLLA Program Overview: PL	Slides 8-11 Program Overview
Slides 8-11	STeLLA is an intensive videocase-based approach to professional learning that focuses	
12:25 – 12:35	teachers' attention on key features of effective science instruction. Program goals are	
Eastern	achieved as we work in small learning communities that begins in the summer with	
	teachers analyzing the practice of other teachers as they teach the two model STeLLA	
	unit and continues in virtual academic year study group sessions and asynchronous	
	work to analyze our own practice teaching the same units.	
20 min	STeLLA Program Overview: Research Results	Slide 12 Theory of Change
Slides 12-14	STeLLA has positively impacted teacher learning, teacher practice, and student learning.	Slides 13-14 Results
12:35 – 12:55		
20 min	SSUP Program Overview: PL & Research/Eval Responsibilities	Slide 15-19 SSUP
Slides 15-19	The impact of the STeLLA PL program makes it worthy of scaling and sustaining! The	
12:55 – 1:20	SSUP program will focus on all the same elements that make STeLLA a powerful PL	
	program and incorporate some additional elements to make it more accessible—a 1-	
	week summer institute plus a 2-day winter Insititute in place of a 2-week summer	
	institute and some additional asynchronous learning opportunities. The "same	
	elements" include content deepening in the context of curriculum immersion	
	experiences and analysis of practice.	
20 min	Closing	Slide 20 Focus Questions Elevator speech
Slides 20-23		Slide 21 Closing: Excitements/Wonderings
1:20 - 1:40		Jam Frame
		Slide 22 Homework
		Slide 23 Lingering Questions

Slide & Tech Notes

BSCS

STella Scale Up and Sustainability Study (SSUP)

Summer Kick-off

June-July, 2021



Share in the chat:

Science Teachers Learning from Lesson Analysis (STeLLA)

Make a copy of the template Opening/Closing Jamboard below. Copy and paste new link here to share in chat during session:

Template:

https://jamboard.google.com/d/1fG7IDzdCh75sEGVuWLBFJAhPu793AE3g9oo3RBHWyP4/viewer?f=0

Display Slide 1. STeLLA/SSUP (5 min)

Process

- a. Welcome participants as they join Zoom.
- b. We are here together today to kick-off an intensive year of professional learning as part of the STella Scale-up and Sustainability Study. STella stands for Science Teachers Learning from Lesson Analysis. And occasionally, you'll hear us refer to SSUP. SSUP is our acronym for the study we are doing with partners, and leaders, and teachers across KY and TN.

Tech directions: Chat Science Teachers Learning from Lesson Analysis (STeLLA)

- c. We'll use a variety of strategies today, so feel free to use your reactions button and plan to periodically unmute so you can respond to questions and comments in our whole group and in break out rooms!
- d. Please feel free to chat or simply ASK questions throughout the session. We'll either respond directly or let you know that "it's coming later!"
- e. We will be Tweeting today, so please add your twitter handle to Frame 1 of the Jamboard.

Tech directions: Chat link to opening/closing jamboard

f. We'll talk several times today about the importance of community and learning together.

To do that, we need to start to get to know one another!

Welcome & Introductions

Introductions in Break-out Rooms

- · Name, role, school/district, & state
 - 1. What will bring/is bringing you joy this summer?
 - 2.1 am here because...

Next Steps

- · Listen for patterns in your small group responses
- ALL be prepared to share your name, role, and organization
- ALL be prepared to share ONE pattern in your response in the main room



TOTAL: 15 min

Display Slide 2. Welcome & Introductions (15 min)

- a. Lay a foundation for the work to come; building community as we work together to understand and implement the STeLLA approach.
- b. Provide directions for the task:
 - i. Share your name, role, school/district, & state
 - ii. Share your response to these questions:
 - 1. What will bring/is bringing you joy this summer?
 - 2. I am here because...
 - iii. Listen for patterns in your responses.

Tech directions: Copy and paste directions into chat.

- c. Direct participants to think about these prompts
- d. Ask participants to:

Slide & Tech Notes	Process
5 min instructions 10 min introductions Share in the chat: Copy and paste directions into main chat - so teams can still see directions in breakout room (1) Share your name, role, school, & district (2) Respond to these questions:What will bring/is bringing you joy this summer?I am here because (3) Listen for patterns in your responses.	 i. Share your name, role, school, & district ii. Share your response to these questions: 1. What will bring/is bringing you joy this summer? 2. I am here because iii. Listen for patterns in your responses. e. Ask participants to share patterns they noted. f. Highlight commonalities across groups. Transition: [Use some of the "why they are here" commonalities to transition into the work]let's dive into the work and take a look at our focus questions for today. Focus questions are a hallmark of the STella program. Focus questions help us set the purpose for the session. The focus questions that will guide our work today are
 Focus Questions What is STeLLA and what will this experience be like? What is the STeLLA Scale-up and Sustainability Study and what will be my role/responsibilities? What are the benefits of joining the STeLLA professional learning program? 	 Display Slide 3. Focus Questions (5 min) a. Share the focus questions for this session. b. Highlight that our purpose is to learn more about what is STeLLA and what can we expect the work ahead of us to look like. c. Share that we will be returning to these questions at the end of our session. Invite them to consider these questions as we move through our time together today. Transition: Another important feature of this program is working together in community. We will be working together a lot over the course of the next year! We've found that agreeing to norms can help us learn together.

Slide & Tech Notes	Process
Working in Community: Using Norms • Why are norms important? • How have you used norms in the past?	 Display Slide 4. Using Norms (10 min) a. Share questions. Provide a minute of think/write time. Tech directions: Chat link to Opening/Closing Jamboard – Frame 2 b. Share Jamboard Frame 2 on screen and show the instruction frame and how to mark up the group frame. Note when you see new "people" entering the Jamboard. c. Ask participants to unmute to comment on how they've used norms in the past. Transition: [Build on participant comments to introduce the STeLLA norms.]
Copy and paste new link for your Opening/Closing Jamboard (frame 2) here to share in chat after think time: [insert your new link here]	
How we'll work: STeLLA Norms The Basics 1. Arrive prepared and on time; stay for the duration. 2. Remain attentive, thoughtful, and mindful of our community; eliminate interruptions. 3. Make room for participation from all and monitor your talk time. The Heart 1. Keep the goal in mind: We are analyzing teaching to improve student learning. 2. Share your ideas, uncertainties, disagreements, and questions. 3. Expect and ask questions to deepen everyone's learning!	 Display Slide 5. Norms (10 min) Tech directions: Continue screen share and move to Jamboard frame 3. a. We invite you to take a moment to read through these norms. These are the norms that will guide our work together. b. Consider how we can attend to these normsfor example, what can they do to "remain attentive". c. On the Jamboard, model how to add a sticky note and add links (arrows) to particular norms. Consider showing how to zoom into to better read the norms. d. Provide a few minutes for participants to add sticky notes and arrows. e. Ask for comments and if anyone has a question to clarify any ideas. f. Highlight responses that link to the STeLLA Program goals. Tech directions: Stop sharing the Jamboard and return to PPT.
	g. Share that during the upcoming summer institute, we'll revisit and have the opportunity to customize these norms. Transition: Several of your comments about the norms reflect the goal of the STella program. Let's take a look at the program goals.

Slide & Tech Notes **Process** Display Slide 6. Goals (5 min) **STeLLA Program Goals** • Deepen knowledge of teaching and learning

- Increase ability to analyze and reflect on teaching and learning
- Increase ability to use content knowledge and knowledge of teaching and learning to transform classroom practice
- Deepen teacher content knowledge
- Increase student learning in science



Share in chat:

In the chat, share a word, phrase, or idea that resonates with you.

- a. Share that these are the STeLLA Program Goals that will drive our time together.
- b. Invite participants to take a minute to read over the goals. Invite them to share in the chat, a word, phrase, or idea that resonates with them. Note that we'll ask them to explain why it resonates with them.

Tech direction: Place prompt in chat

c. Ask probe questions and call on 2-3 people to share. Highlight any trends across the group.

Transition: Improving teaching and learning is a theme in our program goals. We know you bring to the table a wealth of knowledge and experience. Let's make that visible.

Quickwrite: What does effective science teaching and learning look like? What are teachers doing? What are students doing? What is the classroom like? Be prepared to share your ideas

BSCS

Make a copy of the Effective Science Teaching and Learning template below. Share in Chat after individual work time:

Template:

https://docs.google.com/document/d/1gjO_2EKCOZHnkbfqb MRk6sD7HyaGfv2dSBy6eptReBY/edit?usp=sharing

Display Slide 7. Effective T&L (25 min)

- a. Invite participants to create a chart like the one on the slide in their notebook. Have participants take 5 minutes to write down their thoughts in all three of these sections of the "box and T" chart.
- b. After individual work time, let participants know that this is their study group chart and they will work together to create one chart that reflects the group's ideas.

Tech direction: Chat link to study group's Effective Science Teaching and Learning chart

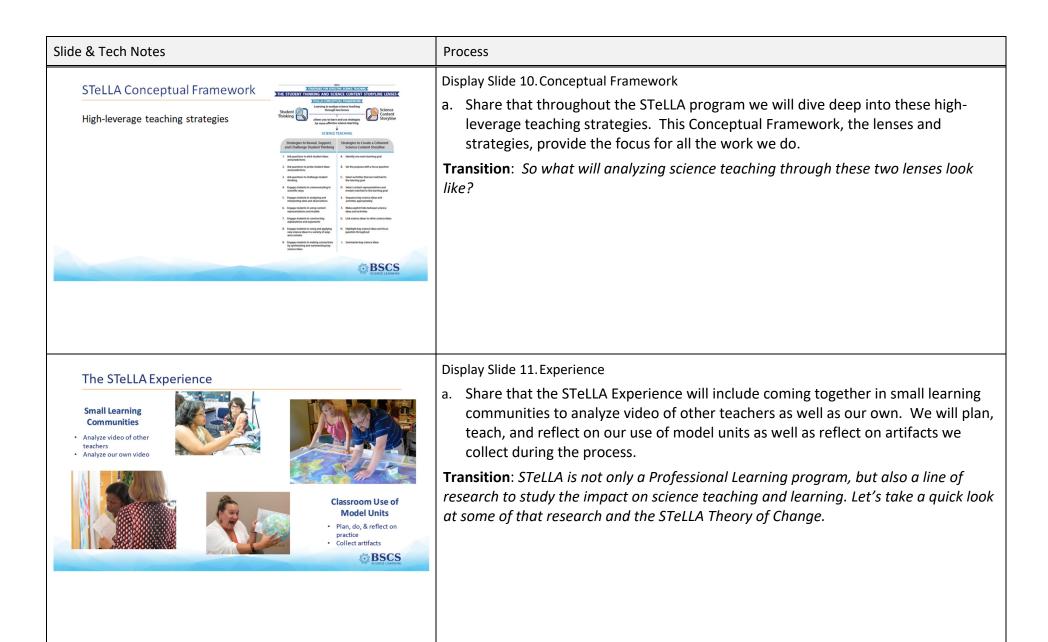
c. Ask for a volunteer to be the recorder. As people share out, they will type into the different sections of the box and T chart. Ask that people who shared the idea should double check and support the recorder to make sure their idea is captured fully.

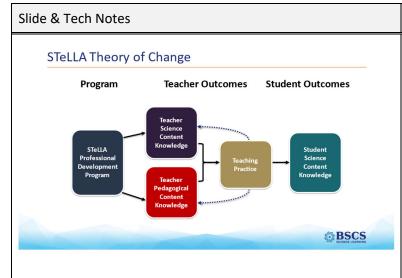
PDL Note: At this point, step back and let the study group create their initial Effective Science Teaching and Learning chart.

d. Once the group has finished putting their ideas on the chart, share we'll revisit these charts at our summer institute and throughout our work together.

Transition: Now that we've considered our ideas around effective science teaching and learning, we'll talk more about what our work together this year will look like.

Slide & Tech Notes	Process
Break (10 min)	
A Little Background: Science Teachers Learning from Lesson Analysis STELLA is: A video-based approach to professional learning that focuses teachers' attention on key features of effective science instruction.	 Display Slide 8. Background (5 min) a. Note that we said what STeLLA stands for at the beginning, but that the slide says it again. b. Share that STeLLA is an intensive videocase-based approach to professional learning that focuses our attention on key features of effective science teaching and learning. c. Make a link back to participants' effective science teaching and learning charts/conversations. Transition: One way that we develop a shared understanding effective science teaching and learning and one way that we use video is by using the STeLLA Conceptual Framework.
Student Thinking Science Content Storyline	Display Slide 9. Conceptual Framework (5 min for slides 10-12) a. Share that the STeLLA Conceptual Framework has two lenses. The two lenses are: The Student Thinking Lens and the Science Content Storyline Lens. b. During our next session, we'll dig into where each of these lenses comes from. Transition: Each lens frames a group of high-leverage teaching strategies, which we will see on the next slide.





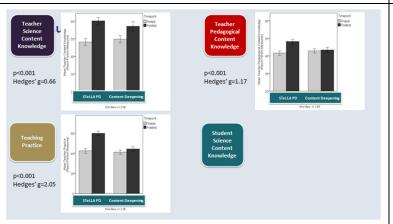
Process

Display Slide 12. Theory of Change (5 min)

- a. Invite participants to silently review the graphic/theory of change on the slide.
- b. Ask what they notice. Highlight the following ideas:
 - i. There are teacher outcomes and student outcomes.
 - ii. The teacher outcomes are broken into three categories: T Sci Content Knowledge; T Pedagogical Content Knowledge; T Practice. There are arrows showing the relationship between these three components.
 - iii. Teacher outcomes lead to student outcomes

A unique feature of the STeLLA experience is that it supports teachers in improving not only their teaching practice, but their science and pedagogical content knowledge as well. As shown in the graphic, these teacher outcomes are what impact the student science content knowledge.

Transition: Let's take a look at the teacher outcomes of the STeLLA program as well as the related student outcomes.

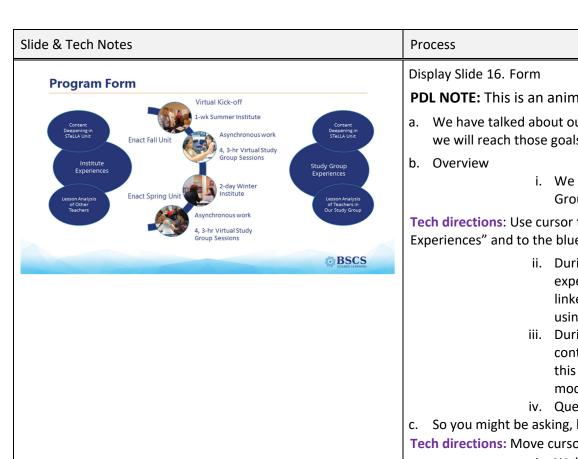


Display Slide 13. Results (10 min)

- a. Share that these three graphs are labeled with the three center "Teacher" boxes from the STeLLA Theory of Change on the last slide.
- b. Explain the two bars seen in each graph:
 - i. Gray bars represent pre-test results
 - ii. Black bars represent post-test results
 - iii. The first set of bars in each graph represent results of assessments of teachers that took part in the STeLLA PD
 - iv. The second set of bars in each graph represent results of assessments of teachers that took part in a program focused on improving science content understanding only.
- c. Ask what do they notice? Invite a few to share out. Consider using probe questions to find out what they think that might mean. Highlight the following ideas:
 - i. (What I See) The STELLA bar is higher for all three teacher outcomes; (What It Means) STELLA PD teachers showed higher

Slide & Tech Notes	Process
	levels of knowledge than participants who received only content deepening ii. (WIS) STELLA PD teachers showed higher levels of knowledge than participants who received only content deepening; (WIM) participation in a STELLA program improves teachers' science teaching ability iii. (WIS) The biggest difference between those who received content deepening vs STELLA PD is in the gold "Teacher Practice" outcome;
	Transition : Now that we've looked at the impact STeLLA has had on Teacher outcomes, let's look at the impact on students.
Student Science Content Knowledge P<0.001 Hedges' g=0.68 Stock PD Content Deepening Treatment State PD Content Deepening Treatment	Display Slide 14. Results (5 min) a. Share that where most studies of teacher professional development only show effects on the participating teachers, studies of STeLLA show major impacts on students as well. One study compared elementary teachers randomly assigned to either the STeLLA program or a program focused on improving science content. b. Looking at the student results, ask what do participants notice? c. Invite a few to share out. Consider using probe questions to find out what they think that might mean. Highlight the following ideas: i. The students of teachers in both programs scored equally well during the pretest (light blue). Also the scores of both groups improved. ii. However, there was a substantial difference in the posttest scores with students in STeLLA classroom teachers scoring significantly higher on the post test.
	PDL Note : Not on slide, but you can consider sharing that the test results also showed that STeLLA students were able to answer questions involving more complex scientific reasoning that those in the traditional group. If participants have questions about the p value or Hedges: p value is an indicator of how likely the results are due to something other than treatment so 0.001 is good; Hedges tells indicates the effect size of that difference so 0.68 means the effect was large. These were results from a

Slide & Tech Notes	Process
	STella study done in Colorado with 144 4 th and 5 th grade teachers from throughout the state. Participants are welcome to read the paper that came out of this project.
	Transition: Since we have strong evidence that this program is effective the time is right to scale up this program and study its sustainability.
Key SSUP Study Objectives	Display Slide 15. SSUP (10 min for slides 16-18)
Led by Local PDLs Cohort 1 Cohort 2 STELLA & Business-as-Usual Teachers Led by Local PDLs Cohort 3 STELLA & Business-as-Usual Teachers	 a. Advance the animation to reveal the three-cohort model of SSUP. b. SSUP will include three cohorts of teachers over the course of the program. c. Cohort one included pilot teachers who implemented the program; learning with and from this group of teachers led to improvements in the program. Local PDLs were also part of Cohort 1 so that we can scale up and sustain STeLLA across KY and TN. d. Now we are excited to kick off Cohort 2 with you all. Notice that cohorts 2 and 3 include STeLLA teachers and business as usual teachers so we can collect the same type of comparative data that you saw earlier, when we discussed the research findings.
© BSCS constitutes	e. You are a Cohort 2 Teacher in SSUP. We will learn with and from you and your students.



PDL NOTE: This is an animated slide

- a. We have talked about our goals for the SSUP program. We will now take a look at how we will reach those goals by considering the year-long program. (Advance the slide)
 - i. We will be together during Institute experiences and Virtual Study Group Sessions during the Academic Year.

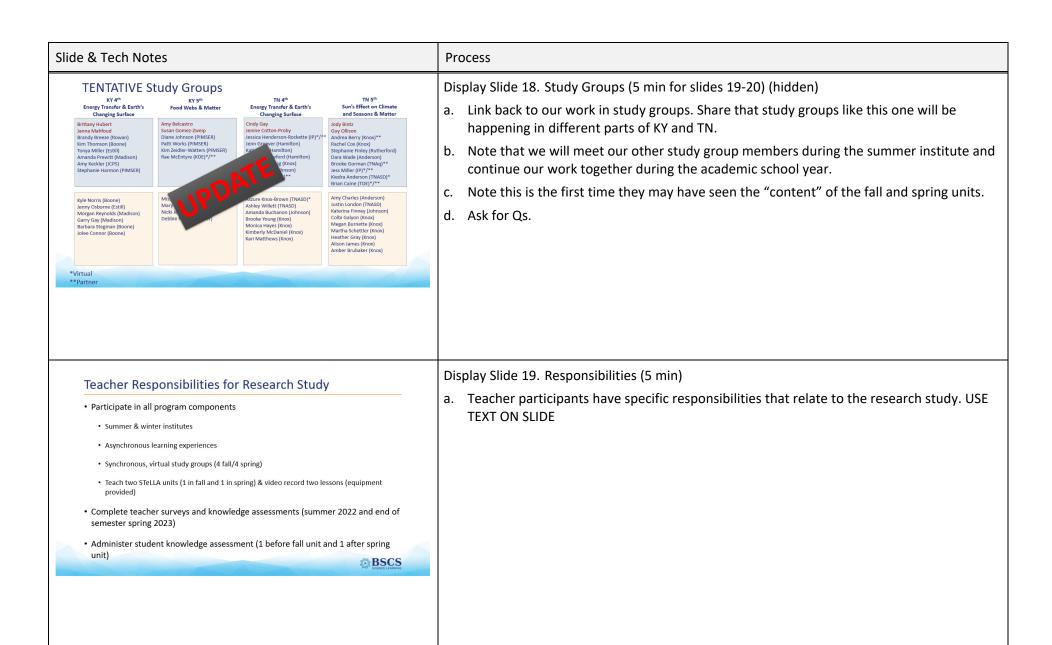
Tech directions: Use cursor to point to left blue bubbles when describing "Institute Experiences" and to the blue bubbles on the right when describing "Study Group Sessions".

- ii. During the institute, we'll organize our learning in two kinds of experiences, the first focused on deepening our science knowledge linked to the model STeLLA units and the second, Analysis of Practice using video of other teachers teaching the model STeLLA units.
- iii. During the Academic year, study group sessions will include continued content deepening opportunities and analysis of practice, this time of study group members (you) teaching a lesson from the model STeLLA units.
- iv. Questions?
- c. So you might be asking, how will these experience play out over time?

Tech directions: Move cursor to the center row and move down as the timeline is described.

- i. We're kicking off the program today with our first of two virtual sessions that we will engage in before our summer institute in July.
- ii. During the Summer Institute, we will explore the fall STeLLA model unit through content deepening and analysis of other teachers practice to better understand the science ideas and the STeLLA approach.
- iii. Our learning will continue into the school year with combinations of asynchronous work and virtual study group sessions.
- iv. During the winter institute, we'll introduce the spring model STeLLA unit which will serve as the focus of content deepening and analysis of practice—the analysis of video of other teachers using the unit in their classrooms.
- v. The spring ansynchronous and virtual study group time will offer continued opportunities to deepen our science knowledge and analyze practice.

Slide & Tech Notes	Process
	vi. Most importantly, you'll enact the model units in the fall and spring and collect video of one lesson, so that we can learn from one another as we analyze our own practice. vii. Questions?
Making the Case: Choose one date to attend Option 1 Option 2 Option 3 Option 3 Option 4 Asynchronous Work Summer Institute! Knoxville, TN Start: July 18, 10:00 am EST Daily 8:30 - 4:30 Anticipate homework each evening End: July 22, 3:00 pm Unit Study/Reson Plan However Cooling & HW Closing & HW Closi	 Display Slide 17. Summer Institute a. Note the upcoming steps for our work together You'll just choose one of the Making the Case sessions to attend There will be a small amount (30 min – 1 hr) of asynchronous work between the Making the Case session and the Summer Institute Note the times for our Summer Institute and that we'll have homework each night During the Summer Institute, we'll primarily have two types of learning experiences: content deepening and lesson analysis



Slide & Tech Notes	Process
• What is STeLLA and what will this experience be like? • What is the STeLLA Scale-up and Sustainability Study and what will be my role/responsibilities? • What are the benefits of joining the STeLLA professional learning program? Chat: What would you tell someone about what you expect to be doing in STeLLA?	 Display Slide 20. Closing (10 min) a. Let's go back to our Focus Questions and think about what you now know. b. Imagine you are passing someone in the hall or you are taking a short elevator ride. Take a moment or two and jot down what you would say. c. Let participants know they'll go into a breakout room with one other person (with one group of 3 if there are an odd number). Let participants know once they are in the breakout room, they will each share their short elevator speech. Tech directions: Put participants (not facilitators) into random breakout rooms of 2 people for 3 minutes. d. Once participants come back, ask 1-2 to share a key idea they heard from their partner.
• What is something you are excited about the STeLLA Program? • What is something that you are still wondering about the STeLLA Program? • Copy and paste new link for your Opening/Closing Jamboard	Display Slide 21. Closing (5 min) a. What is something that excites you about the STeLLA Program? b. What is something that you are still wondering about the STeLLA Program? Tech Direction: Chat link to Opening/Closing Jamboard frame 4 Transition: Now that we've taken a moment to reflect on what we learned today, let's take a look at our next steps.
(frame 4) here to share in chat: [insert your new link here]	

ide & Tech Notes	Process
Homework Before Your Making the Case Session • Read the Educational Leadership article: "What Science Teaching Looks Like: An International Perspective" by Kathleen Roth and Helen Garnier • Highlight key ideas • Be prepared to discuss the findings outlined in the article during the Making the Case session	 Display Slide 22. Homework (5 min) a. The purpose of the homework is to help us prepare for the Making the Case session. b. Share the instructions for the homework, noting that participants received this article in the materials they received.
Next Steps • Next session is the Making the Case session you selected. • The Zoom link [will be sent/can be found] • In the meantime, please get in touch with us if you have any lingering questions.	Display Slide 23. Next Steps (0 min) a. Mark what the next steps are. b. Thank everyone for their time today.

Slide & Tech Notes	Process
	Display Slide 24. BSCS
BSCS SCIENCE LEARNING # Stay connected with BSCS Science Learning!	a.
f Find us✓ Follow us	
@bscsorg Sign up for our E-communications at www.bscs.org	