

RESPECT Study-Group Sessions

Study-Group Session 5

Focus Question


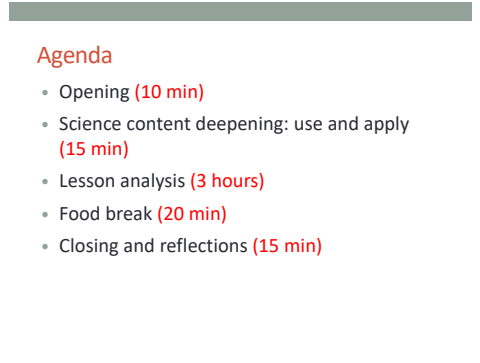
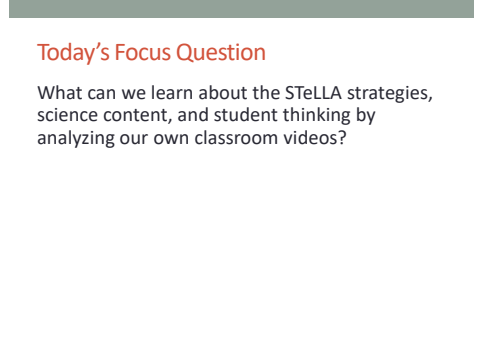
- What can we learn about the STeLLA strategies, science content, and student thinking by analyzing our own classroom videos?

Overarching Learning Goals for All RESPECT Study-Group Sessions:

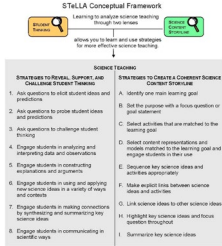
- Deepen teachers' science-content knowledge and knowledge of effective science teaching.
- Develop teachers' analytical skills to improve lesson-plan development and the teaching of science.
- Support teachers in the practical use of new knowledge and analytical skills in their own classrooms.
- Improve students' science learning.
- Achieve sustainability by eventually reaching all K–6 teachers.

Preparation	Materials	Videos																														
<p>Ahead of Time</p> <ul style="list-style-type: none"> • Review the PDLG and PowerPoints (PPTs) to plan the session. Modify text highlighted in light-blue font on slides and/or in PDLG to make it specific for your group. • Select classroom video clips and identify specific teacher learning goals for this session related to the STeLLA strategies and science content. Be sure to address any science-content confusion you notice while reviewing the lesson videos. • Create lesson analysis protocols (LAPs) for each video to be analyzed. (Add identification and analysis questions to each LAP template.) • Identify a good use-and-apply question, scenario, data set, or phenomenon that will challenge participants to use and apply content area 2 science ideas to explain a new situation. Consult with CPP faculty if you need suggestions. • Prepare charts (agenda, focus question, lesson sequence overview) and make copies of handouts. <p>On Meeting Day</p> <ul style="list-style-type: none"> • Check audiovisual equipment and have video clips ready to go. 	<p>Posters and Charts</p> <ul style="list-style-type: none"> • STeLLA Framework and Strategies poster • Agenda (chart) • Focus Question (chart) • Lesson Sequence Overview Chart (from Study Group 4) • Norms for Working Together (chart) • Parking Lot poster <p>Handouts</p> <ul style="list-style-type: none"> • Transcript for each video clip • Lesson analysis protocol (LAP) for each clip • Sample features analysis chart (FAC) (Sun's effect on climate) • Features analysis chart for one question in content area 2 (2 copies for each participant) • Reflection sheet <p>Supplies</p> <ul style="list-style-type: none"> • Science-lesson materials kit (content area 2) • Chart paper and markers • Food <p>Resources</p> <ul style="list-style-type: none"> • STeLLA strategies booklet • RESPECT PD program binder • RESPECT lesson plans binder • Content background document (content) 	<ul style="list-style-type: none"> • Video clips of classroom teaching selected for analysis <p>Structure of the Lesson Sequence Overview Chart</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: left; padding: 2px;">Unit central question(s):</th> </tr> <tr> <th style="width: 33%; padding: 2px;">Lesson Number</th> <th style="width: 33%; padding: 2px;">Focus Question(s)</th> <th style="width: 33%; padding: 2px;">Main Activity (Brief Phrase)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 2px;">1a</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">1b</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">2a</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">2b</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">3a</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">3b</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">Etc.</td> <td></td> <td></td> </tr> <tr> <td style="padding: 2px;"></td> <td></td> <td></td> </tr> </tbody> </table>	Unit central question(s):			Lesson Number	Focus Question(s)	Main Activity (Brief Phrase)	1a			1b			2a			2b			3a			3b			Etc.					
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<ul style="list-style-type: none">• Arrange furniture and food.• Put up posters and charts.	area 2)	

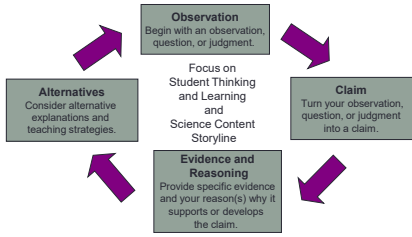
PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
10 min Setting the Stage for the Study-Group Session Slides 1–8	<p>Purpose</p> <ul style="list-style-type: none"> To clarify today's focus question and learning goals <p>Content</p> <ul style="list-style-type: none"> RESPeCT video-based lesson analysis is always organized around the STeLLA conceptual framework, which focuses teachers' attention on the Student Thinking Lens, the Science Content Storyline Lens, and a set of teaching strategies to support each lens. Teacher learning goals and norms for working together help keep the analysis focused on improving students' science learning. <p>What Participants Do</p> <ul style="list-style-type: none"> Review today's agenda, focus question, RESPeCT PD program goals, and norms for working together. Reflect individually on ways they will contribute to applying the norms at the heart of STeLLA. 		<p>Display Slide 1. RESPeCT Study-Group Session 5 (Less than 1 min)</p> <ol style="list-style-type: none"> Insert the correct date on the slide. Greet participants as they enter the room.
			<p>Display Slide 2. Agenda (1 min)</p> <ol style="list-style-type: none"> Modify the slide to reflect the science-content area in focus. Share the agenda with the group. Remind participants that the majority of this study-group session will be devoted to lesson analysis. Ask participants if they have any questions about the agenda.
			<p>Display Slide 3. Today's Focus Question (Less than 1 min)</p> <ol style="list-style-type: none"> Share the focus question on the slide. Emphasize: "Video-based lesson analysis is a context in which we can deepen our science-content understandings, learn more about the STeLLA strategies and how to use them effectively in our teaching, and develop our ability to analyze our students' thinking and learning."

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p>Overall Goals of the RESPeCT PD Program</p> <ul style="list-style-type: none"> • Deepen teachers’ science-content knowledge and knowledge of effective science teaching. • Develop teachers’ analytical skills to improve lesson-plan development and the teaching of science. • Support teachers in the practical use of new knowledge and analytical skills in their own classrooms. • Improve students’ science learning. • Achieve sustainability by eventually reaching all K–6 teachers. 	<p>Display Slide 4. Overall Goals of the RESPeCT PD Program (1 min)</p> <ol style="list-style-type: none"> Remind participants of the RESPeCT PD program goals. Emphasize the goal of improving students’ science-content learning.
		<p>Learning Goals for Today</p> <p>Today’s work will deepen your understanding of the following:</p> <ul style="list-style-type: none"> • STeLLA strategies and how they can be used in science teaching List here the STeLLA strategies that will be examined in the lesson analysis work. • Science-content ideas List here 1–3 science-content ideas that will be addressed during the video-clip analyses and/or during the use-and-apply activity at the end of the session. <p>It will also strengthen your ability to analyze student thinking, the STeLLA strategies, and science content in science teaching.</p>	<p>Display Slide 5. Learning Goals for Today (1 min)</p> <ol style="list-style-type: none"> Modify the slide to reflect the specific STeLLA strategies and science-content ideas you’ve identified for today’s work. Share the learning goals with the group.

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process		
		<p style="text-align: center;">STeLLA Strategies for Effective Science Teaching: The Student Thinking and Science Content Storyline Lenses</p>  <p style="text-align: center;">STeLLA Conceptual Framework</p> <p style="text-align: center;">Learning to engage in science learning through our lenses</p> <p style="text-align: center;">Without you to teach and use strategies for more effective science teaching</p> <p style="text-align: center;">SCIENCE TEACHING</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> <p>STRUCTURES TO RECALL, SUMMARIZE, and CHALLENGE EXISTENT THINKING</p> <ol style="list-style-type: none"> 1. Ask questions to elicit student ideas and predictions. 2. Ask questions to probe student ideas and predictions. 3. Ask questions to challenge student thinking. 4. Engage students in analyzing and explaining gaps and inconsistencies. 5. Engage students in constructing explanations and arguments. 6. Engage students in using and applying core science ideas in a variety of ways and contexts. 7. Engage students in making connections by synthesizing and summarizing key science ideas. 8. Engage students in communicating in scientific ways. </td> <td style="width: 50%; padding: 5px;"> <p>STRUCTURES TO CREATE a COHERENT SCIENCE CONTENT STORYLINE</p> <ol style="list-style-type: none"> A. Identify your main learning goal. B. Set the purpose with a focus question or goal statement. C. Select activities that are matched to the learning goal. D. Select content representations and models matched to the learning goal and engage students in their use. E. Sequence key science ideas and address misconceptions. F. Make explicit links between science ideas and activities. G. Link science ideas to other science ideas. H. Highlight key science ideas and focus student thought. I. Summarize key science ideas. </td> </tr> </table>	<p>STRUCTURES TO RECALL, SUMMARIZE, and CHALLENGE EXISTENT THINKING</p> <ol style="list-style-type: none"> 1. Ask questions to elicit student ideas and predictions. 2. Ask questions to probe student ideas and predictions. 3. Ask questions to challenge student thinking. 4. Engage students in analyzing and explaining gaps and inconsistencies. 5. Engage students in constructing explanations and arguments. 6. Engage students in using and applying core science ideas in a variety of ways and contexts. 7. Engage students in making connections by synthesizing and summarizing key science ideas. 8. Engage students in communicating in scientific ways. 	<p>STRUCTURES TO CREATE a COHERENT SCIENCE CONTENT STORYLINE</p> <ol style="list-style-type: none"> A. Identify your main learning goal. B. Set the purpose with a focus question or goal statement. C. Select activities that are matched to the learning goal. D. Select content representations and models matched to the learning goal and engage students in their use. E. Sequence key science ideas and address misconceptions. F. Make explicit links between science ideas and activities. G. Link science ideas to other science ideas. H. Highlight key science ideas and focus student thought. I. Summarize key science ideas. 	<p>Display Slide 6. The STeLLA Conceptual Framework (1 min)</p> <ol style="list-style-type: none"> a. Highlight the STeLLA strategies that will be the focus of today’s analysis. b. Encourage participants to think about how other strategies might be relevant to the video clips. c. Remind participants to refer to their STeLLA strategies booklet during the video analysis to <ol style="list-style-type: none"> 1. help them remember the purpose(s) and key features of the strategies, and 2. double-check their understandings of the target strategy for each video clip.
<p>STRUCTURES TO RECALL, SUMMARIZE, and CHALLENGE EXISTENT THINKING</p> <ol style="list-style-type: none"> 1. Ask questions to elicit student ideas and predictions. 2. Ask questions to probe student ideas and predictions. 3. Ask questions to challenge student thinking. 4. Engage students in analyzing and explaining gaps and inconsistencies. 5. Engage students in constructing explanations and arguments. 6. Engage students in using and applying core science ideas in a variety of ways and contexts. 7. Engage students in making connections by synthesizing and summarizing key science ideas. 8. Engage students in communicating in scientific ways. 	<p>STRUCTURES TO CREATE a COHERENT SCIENCE CONTENT STORYLINE</p> <ol style="list-style-type: none"> A. Identify your main learning goal. B. Set the purpose with a focus question or goal statement. C. Select activities that are matched to the learning goal. D. Select content representations and models matched to the learning goal and engage students in their use. E. Sequence key science ideas and address misconceptions. F. Make explicit links between science ideas and activities. G. Link science ideas to other science ideas. H. Highlight key science ideas and focus student thought. I. Summarize key science ideas. 				
		<p style="text-align: center;">Norms for Working Together: The Heart</p> <p>Purpose: Build trust and develop a productive study group for all participants.</p> <p>The Heart of RESPeCT Lesson Analysis and Content Deepening</p> <ul style="list-style-type: none"> • Keep the goal in mind: analysis of teaching to improve student learning. • Share your ideas, uncertainties, confusion, disagreements, questions, and good humor. All points of view are welcome. • Expect and ask questions to deepen everyone’s learning; be constructively challenging. • Listen carefully; seek to understand other participants’ points of view. 	<p>Display Slide 7. Norms for Working Together: The Heart (4 min)</p> <ol style="list-style-type: none"> a. Read through the norms at the heart of the RESPeCT PD program, highlighting bullet points 3 and 4. b. Individuals: “What can you do today to apply the two norms highlighted in red on the slide? Jot down some specific ideas.” 		

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p>Reflection Questions</p> <ol style="list-style-type: none"> 1. What have you learned about the STeLLA strategies, science content, and/or student thinking by analyzing our own classroom videos? 2. How did you contribute today to applying the following STeLLA norms? <ul style="list-style-type: none"> • Share your ideas, uncertainties, confusion, disagreements, questions, and good humor. All points of view are welcome. • Expect and ask questions to deepen everyone's learning; be constructively challenging. 	<p>Display Slide 8. Reflection Questions (1 min)</p> <ol style="list-style-type: none"> a. “These are the questions we’ll reflect on at the end of today’s session.” b. Emphasize that participants will be asked to reflect on how they did with applying the norms they just wrote about.
<p>15 min</p> <p>Science Content Deepening: Use and Apply</p> <p>Slide 9</p>	<p>Purpose</p> <ul style="list-style-type: none"> • To deepen participants’ science-content understandings <p>Content</p> <ul style="list-style-type: none"> • List the specific science ideas that will be needed to answer this use-and-apply question or explain the scenario, data, or phenomenon described on the slide. <p>What Participants Do</p> <ul style="list-style-type: none"> • Work individually and then as a group on a use-and-apply question, scenario, data set, or phenomenon using content area 2 science ideas. Write the question or scenario here and on the PPT slide. 	<p>Science Content Deepening: Use and Apply</p> <p>Insert here a use-and-apply question for participants to answer, or a scenario, data set, or phenomenon for them to explain.</p> <p>Use your content background document as needed (resources section of your lesson plans binder).</p>	<p>Display Slide 9. Science Content Deepening: Use and Apply (15 min)</p> <p>Note: Make sure science-lesson materials are available from the lesson kit.</p> <ol style="list-style-type: none"> a. Insert on the slide the use-and-apply question, scenario, data set, or phenomenon for participants to explain. Ensure you have any materials you need if you want participants to observe a phenomenon. b. “In video-based lesson analysis, it’s important to pay careful attention to the science-content ideas. To prepare for this, we’ll work first on clarifying and deepening our own understandings of the science content by wrestling with a use-and-apply question or scenario.” c. Present the question, scenario, data set, or phenomenon described on the slide. d. Individuals: “Using your resources (such as the content background document and lesson plans), tackle the question or scenario on the slide. Spend a moment thinking about the question or scenario and then write down your explanation.”

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			<p>e. Pairs: “Share your ideas with a partner.”</p> <p>f. Whole group: Let participants drive the discussion. Encourage them to ask one another probe and challenge questions. Limit your role to listening and asking probe and challenge questions.</p> <p>g. Synthesize/summarize: If participants come up with a strong response for the use-and-apply question or scenario, have one of them provide a summary. If they haven’t formulated a strong response, give them a complete explanation as a model.</p>
<p>3 hours, 20 min (Includes 20-min food break)</p> <p>Lesson Analysis</p> <p>Slides 10–31</p>	<p>Purpose</p> <ul style="list-style-type: none"> To deepen participants’ understandings of the selected STeLLA strategies To deepen participants’ science-content understandings To deepen participants’ ability to analyze students’ science thinking <p>Content</p> <ul style="list-style-type: none"> The STeLLA video-based lesson analysis process includes identifying the selected teaching strategies (or missed opportunities) in the video clip and then analyzing the clip by making a claim, providing evidence and reasoning to support the claim, and proposing an alternative claim or alternative teaching approach. Analyzing video clips provides 	<hr/> <p>Today’s Focus Question</p> <p>What can we learn about the STeLLA strategies, science content, and student thinking by analyzing our own classroom videos?</p> <hr/> <p>Lesson Analysis, Video Clip 1</p> <p>Now we’ll begin the lesson analysis process for video clip 1.</p>	<p>Display Slide 10. Today’s Focus Question (Less than 1 min)</p> <p>a. Transition: This slide marks the transition to video-based lesson analysis.</p> <p>b. Read the focus question.</p> <p>c. Remind participants that the goal of lesson analysis is to deepen participants’ understandings of the STeLLA strategies, the science content, and student thinking.</p> <hr/> <p>Display Slide 11. Lesson Analysis, Video Clip 1 (Less than 1 min)</p> <p>a. “Now we’ll begin the lesson analysis process for video clip 1.”</p> <p>Timing note: We’ve allotted approximately 60 minutes for each video analysis: 4 minutes for setting the context and reviewing the STeLLA strategy involved, 20 minutes for watching the video and identifying the strategy being used, 30 minutes for the analysis phase, and 5 minutes for reflection. But don’t feel rushed. If you find you are running out of time, you can do the Identify phase of the third video clip and postpone the Analysis phase until Study Group 6. Alternatively, you could postpone</p>

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	<p>opportunities to deepen participants' understandings of the selected STeLLA strategies.</p> <ul style="list-style-type: none"> Analyzing video clips provides opportunities to deepen participants' understandings of science-content ideas featured in the selected clips. <p>What Participants Do</p> <ul style="list-style-type: none"> Use the lesson analysis process and lesson analysis protocol (LAP) to support their analyses of classroom science teaching and learning in three video clips (from three different lessons). <p>Videos/Transcripts</p> <ul style="list-style-type: none"> Three video clips to be analyzed during this session A transcript and LAP for each video clip 		<p>lesson analysis 3 entirely until Study Group 6. We've allowed some catch-up time in Study Group 6 to accommodate 1 hour of video analysis.</p>
		<p>Lesson Analysis Process</p> <ol style="list-style-type: none"> Review the lesson context: <ul style="list-style-type: none"> What is the ideal student response to the focus question? How is the clip situated in the content storyline? Identify and discuss the strategy that is the focus of analysis for each clip. Watch video clip(s). Analyze the lesson using the lesson analysis protocol. Reflect on the lesson analysis experience: <ul style="list-style-type: none"> As a reviewer As a teacher in the clip 	<p>Display Slide 12. Lesson Analysis Process (Less than 1 min)</p> <ol style="list-style-type: none"> Review the lesson analysis process participants will be using when they view the video clips. Emphasize that each video analysis will focus on student thinking and a specific STeLLA strategy. Remind participants that they'll be looking at only 5–7 minutes of teaching, and that students in the video clips are wrestling with difficult science ideas. The goal is to understand how the appropriate use of the STeLLA strategies will support students in learning challenging science ideas and scientific ways of thinking.
		<p>The CERA Framework</p> 	<p>Display Slide 13. The CERA Framework (1 min)</p> <ol style="list-style-type: none"> Remind participants that they will be using the CERA framework during lesson analysis, which involves (1) making a claim based on an observation, (2) providing evidence and reasoning to support the claim, and (3) considering alternative interpretations or teaching strategies to address missed opportunities. Reasoning should address why the claim and evidence are significant. For example, what does the claim reveal about student difficulties with the science content or the importance of the strategy being implemented? Participants might use these sentence starters when formulating claim, evidence, and reasoning statements: <ul style="list-style-type: none"> “My claim is ...”

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			<ul style="list-style-type: none"> • “My evidence is ... because ...” • “This is important because ...” <p>c. Emphasize that in addition to using the CERA framework to analyze their own science teaching in these study-group sessions, they will use it in the classroom as a tool for teaching students how to develop scientific explanations and arguments (STeLLA strategy 5).</p>																					
		<p>Lesson Analysis Protocol for Video Clip 1</p> <table border="1"> <tr> <td colspan="3">1. Identify the Lens and Strategy <small>(Which STeLLA lens (Student Thinking Lens or Science Content Storyline Lens) and strategy are highlighted in this lesson?)</small></td> </tr> <tr> <td colspan="3">2. Analyze the Video Using the Focus Question(s) <small>• What do we learn about student thinking regarding different temperatures at different times of the year? • How does the identified strategy contribute to making student thinking visible or to developing the science content storyline? • How does the revealed student thinking relate to the intended storyline?</small></td> </tr> <tr> <td>Lesson Analysis Step</td> <td>To Do</td> <td>Your Analysis</td> </tr> <tr> <td>Claim</td> <td>Turn an observation, question, or judgment into a specific claim that answers the focus question.</td> <td></td> </tr> <tr> <td>Evidence and Reasoning</td> <td>Point to a specific place in the video transcript, lesson plan, or student work that supports your claim. Connect your claim and evidence with reasoning based on STeLLA strategies, research on learning, your teaching experience, or scientific principles. Also look for evidence that challenges your claim.</td> <td></td> </tr> <tr> <td>Alternatives</td> <td>1. Consider an alternative interpretation or explanation. 2. Consider new questions this might raise. 3. Consider alternative questions, activities, or strategies.</td> <td></td> </tr> <tr> <td colspan="3">3. Reflect and Apply <small>(Encouraging teachers reflect on the experience and practice.)</small></td> </tr> </table>	1. Identify the Lens and Strategy <small>(Which STeLLA lens (Student Thinking Lens or Science Content Storyline Lens) and strategy are highlighted in this lesson?)</small>			2. Analyze the Video Using the Focus Question(s) <small>• What do we learn about student thinking regarding different temperatures at different times of the year? • How does the identified strategy contribute to making student thinking visible or to developing the science content storyline? • How does the revealed student thinking relate to the intended storyline?</small>			Lesson Analysis Step	To Do	Your Analysis	Claim	Turn an observation, question, or judgment into a specific claim that answers the focus question.		Evidence and Reasoning	Point to a specific place in the video transcript, lesson plan, or student work that supports your claim. Connect your claim and evidence with reasoning based on STeLLA strategies, research on learning, your teaching experience, or scientific principles. Also look for evidence that challenges your claim.		Alternatives	1. Consider an alternative interpretation or explanation. 2. Consider new questions this might raise. 3. Consider alternative questions, activities, or strategies.		3. Reflect and Apply <small>(Encouraging teachers reflect on the experience and practice.)</small>			<p>Display Slide 14. Lesson Analysis Protocol for Video Clip 1 (Less than 1 min)</p> <p>a. Replace the LAP image on the slide with an image of the first LAP you will be using for this session.</p> <p>b. Have participants locate the LAP they will be using for the video clip.</p>
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		<p>Lesson Analysis 1: Review Lesson Context</p> <p>Main learning goal:</p> <p>Focus question:</p> <p>Main lesson activity:</p> <p>Review the lesson plan overview page:</p> <ul style="list-style-type: none"> - What important science ideas should students get from this lesson? - What are the ideal student responses to the focus question? <p>Context of the video clip:</p>	<p>Display Slide 15. Lesson Analysis 1: Review Lesson Context (4 min)</p> <p>a. Modify the slide for this video clip. All of the information may not fit on one slide.</p> <p>b. Review the context for the video clip that will be analyzed.</p> <p>c. Remind participants of the main learning goal, the focus question, and the main activity in this lesson.</p> <p>d. Optional: Direct participants to look at the overview page of the lesson plan to identify important science ideas and an ideal student response to the focus question.</p> <p>e. Orient participants to where video clip 1 appears in the</p>																					

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			<p>lesson.</p> <p>f. Ask the teacher whose clip you will be analyzing to add other contextual factors that may be pertinent to the upcoming analysis.</p>
		<p>Lesson Analysis 1: Identify the Strategy</p> <ol style="list-style-type: none"> 1. Review the lesson context. 2. Identify the strategy: <ul style="list-style-type: none"> • Add here the strategy that is the focus of the analysis for the video clip. Add page numbers for the strategy from the STeLLA strategies booklet. • Add here the identification question you wrote on the LAP. An example of an identification question is “What clear examples of probe and challenge questions can you identify in this clip?” 3. Watch the video clip(s). 4. Analyze the video using the lesson analysis protocol. 5. Reflect on the lesson analysis experience. 	<p>Display Slide 16. Lesson Analysis 1: Identify the Strategy (20 min)</p> <p>Note: Focus only on the Identify step at this point (highlighted in red on the slide).</p> <ol style="list-style-type: none"> a. Modify the slide to match your lesson analysis plan for video clip 1. b. Highlight step 1 on the LAP (Identify the strategy) and emphasize the strategy participants will be focusing on during the first analysis. <ul style="list-style-type: none"> Note: Remind participants that step 1 of the LAP is step 2 of the lesson analysis process on the slide. c. Review the purpose(s) and key features of the selected strategy: Have participants skim the relevant content in their STeLLA strategies booklet and/or refer to their Z-fold summary charts. d. Show the video clip. e. Individuals: Have participants study the video transcript to identify clear examples of the selected strategy. f. Whole group: “What examples of the strategy did you find?” Ask challenge questions to make sure participants understand the strategy: <ul style="list-style-type: none"> • “What makes this an example of strategy X?” • “Can you point to text in the strategies booklet that clarifies why this is an example of strategy X?”

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p style="text-align: center;">Lesson Analysis 1: Analyze the Video</p> <ol style="list-style-type: none"> 1. Review the lesson context. 2. Identify the strategy. 3. Watch the video clip(s). 4. Analyze the video using the lesson analysis protocol. Make a claim and support with evidence. <ul style="list-style-type: none"> • Add analysis questions here. Examples include the following: <ul style="list-style-type: none"> • What do students seem to understand (or not) about temperature patterns on Earth and the Sun's effect on climate and seasons? • How did the use of the identified strategy make student thinking more visible? 5. Reflect on the lesson analysis experience. 	<p>Note 1: Encourage the teacher who was featured in the video to listen to and observe this discussion, not to participate.</p> <p>Note 2: In assessing participants' understandings of the strategy, pay attention to their reasoning. Are they clear about the purpose(s) of the strategy and how it is different from other strategies?</p> <hr/> <p>Display Slide 17. Lesson Analysis 1: Analyze the Video (30 min)</p> <p>Note: Focus only on the Analyze step here.</p> <ol style="list-style-type: none"> a. Add analysis questions to the slide. b. Direct participants to step 2 of the LAP (Analyze the video). <ul style="list-style-type: none"> Note: Remind participants that step 2 of the LAP is step 4 of the lesson analysis process on the slide. c. If relevant: Notice that there are two analysis questions on the slide. You may choose which one you want to address. d. If time allows, have participants watch the video clip a second time. e. Individuals: Give participants time to study the transcript; generate their claim, evidence, and reasoning; and come up with alternatives (CERA) after watching the video. f. Whole group: Have participants share their CERAs with the group, noting similarities and differences that ensure a rich and fruitful dialogue regarding student thinking, the use of the STeLLA strategies, and science content. <p>Note 1: Encourage the teacher who was featured in the video to listen to and observe this analysis discussion, not to participate.</p> <p>Note 2: Be sure to listen to participants as they share their ideas and reveal strengths and weaknesses in their</p>

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p data-bbox="766 521 1018 545">Lesson Analysis 1: Reflect</p> <ol data-bbox="766 561 1144 813" style="list-style-type: none"> 1. Review the lesson context. 2. Identify the strategy. 3. Watch the video clip(s). 4. Analyze the video using the lesson analysis protocol. Make a claim and support with evidence. 5. Reflect on the lesson analysis experience: <ul data-bbox="787 789 1144 813" style="list-style-type: none"> • What did you learn from the experience? 	<p data-bbox="1224 245 1976 456">understandings of the STeLLA strategies and science content. Ask questions that will probe and challenge participants to elaborate and articulate their ideas more clearly and precisely. When confusion arises, point them back to the STeLLA resources (e.g., the video transcript, the content background document, the STeLLA strategies booklet, and the lesson plans binder).</p> <p data-bbox="1224 488 1860 521">Display Slide 18. Lesson Analysis 1: Reflect (5 min)</p> <p data-bbox="1224 581 1728 613">Note: Focus only on the Reflect step here.</p> <p data-bbox="1224 630 1927 719">a. Individuals: Give participants time to reflect on and write about (if time allows) what they've learned through this analysis process.</p> <p data-bbox="1224 735 1976 889">b. Whole group: Ask participants to share what they've learned, starting with the teacher whose video was analyzed. Keep them focused on what they learned about the target strategy, the science content, or students' challenges in understanding the content, not on what they did wrong.</p> <p data-bbox="1224 906 1976 963">Note: If time is running short, ask only the teacher whose video was analyzed to share her or his reflection.</p>

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p>Food Break</p> <p>Now we'll take a 20-minute food break.</p>	<p>Display Slide 19. Food Break (20 min)</p> <p>a. Decide when you want to schedule the food break and rearrange the slides accordingly.</p> <p>Note: Keep the break to 20 minutes. If necessary, participants can continue eating as you dig into the next lesson analysis.</p>
		<p>Lesson Analysis Continued</p> <p>Next we'll analyze video clip 2 using the same process.</p>	<p>Display Slide 20. Lesson Analysis Continued (Less than 1 min)</p> <p>a. Transition: "Next we'll continue the same lesson analysis process for video clip 2."</p>

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process												
		<p style="text-align: center;">Lesson Analysis Protocol for Video Clip 2</p> <p>1. Identify the Lens and Strategy Which STE/LA lens (Student Thinking Lens or Science Content Storyline Lens) and strategy are highlighted in this lesson?</p> <p>2. Analyze the Video Using the Focus Question(s)</p> <ul style="list-style-type: none"> • What do we learn about student thinking regarding different temperatures at different times of the year? • How does the identified strategy contribute to making student thinking visible or to developing the science content storyline? • How does the revealed student thinking relate to the intended storyline? <table border="1" data-bbox="772 391 1152 583"> <thead> <tr> <th>Lesson Analysis Step</th> <th>To Do</th> <th>Your Analysis</th> </tr> </thead> <tbody> <tr> <td>Claim</td> <td>Turn an observation, question, or judgment into a specific claim that answers the focus question.</td> <td></td> </tr> <tr> <td>Evidence and Reasoning</td> <td>Point to a specific place in the video transcript, lesson plan, or student work that supports your claim. Connect your claim and evidence with reasoning based on STE/LA strategies, research on learning, your teaching experience, or scientific principles. Also look for evidence that challenges your claim.</td> <td></td> </tr> <tr> <td>Alternatives</td> <td>1. Consider an alternative interpretation or explanation. 2. Consider new questions this might raise. 3. Consider alternative questions, activities, or strategies.</td> <td></td> </tr> </tbody> </table> <p>3. Reflect and Apply Participating teachers reflect on the experience and practice.</p> <hr/> <p style="text-align: center;">Lesson Analysis 2: Review Lesson Context</p> <p>Main learning goal:</p> <p>Focus question:</p> <p>Main lesson activity:</p> <p>Review the lesson plan overview page:</p> <ul style="list-style-type: none"> • What important science ideas should students get from this lesson? • What are the ideal student responses to the focus question? <p>Context of the video clip:</p>	Lesson Analysis Step	To Do	Your Analysis	Claim	Turn an observation, question, or judgment into a specific claim that answers the focus question.		Evidence and Reasoning	Point to a specific place in the video transcript, lesson plan, or student work that supports your claim. Connect your claim and evidence with reasoning based on STE/LA strategies, research on learning, your teaching experience, or scientific principles. Also look for evidence that challenges your claim.		Alternatives	1. Consider an alternative interpretation or explanation. 2. Consider new questions this might raise. 3. Consider alternative questions, activities, or strategies.		<p>Display Slide 21. Lesson Analysis Protocol for Video Clip 2 (Less than 1 min)</p> <p>a. Replace the LAP image on the slide with an image of the LAP participants will be using for this session.</p> <p>b. Have participants locate the LAP.</p> <hr/> <p>Display Slide 22. Lesson Analysis 2: Review Lesson Context (4 min)</p> <p>a. Modify the slide for this video clip. All of the information may not fit on one slide.</p> <p>b. Review the context for the video clip that will be analyzed.</p> <p>c. Remind participants of the main learning goal, the focus question, and the main activity in this lesson.</p> <p>d. Optional: Direct participants to look at the overview page of the lesson plan to identify important science ideas and an ideal student response to the focus question.</p> <p>e. Orient participants to where the video clip appears in the lesson.</p> <p>f. Ask the teacher whose clip you will be analyzing to add other contextual factors that may be pertinent to the upcoming analysis.</p>
Lesson Analysis Step	To Do	Your Analysis													
Claim	Turn an observation, question, or judgment into a specific claim that answers the focus question.														
Evidence and Reasoning	Point to a specific place in the video transcript, lesson plan, or student work that supports your claim. Connect your claim and evidence with reasoning based on STE/LA strategies, research on learning, your teaching experience, or scientific principles. Also look for evidence that challenges your claim.														
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PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p>Lesson Analysis 2: Identify the Strategy</p> <ol style="list-style-type: none"> 1. Review the lesson context. 2. Identify the strategy: <ul style="list-style-type: none"> • Add here the strategy that is the focus of the analysis for the video clip. Add page numbers for the strategy from the STeLLA strategies booklet. • Add here the identification question you wrote on the LAP. An example of an identification question is “What clear examples of probe and challenge questions can you identify in this clip?” 3. Watch the video clip(s). 4. Analyze the video using the lesson analysis protocol. 5. Reflect on the lesson analysis experience. 	<p>Display Slide 23. Lesson Analysis 2: Identify the Strategy (20 min)</p> <ol style="list-style-type: none"> a. Modify the slide to match your lesson analysis plan for video clip 2. b. Highlight step 1 on the LAP (Identify the strategy) and emphasize the strategy participants will be focusing on while analyzing the video clip. c. If the selected strategy for video clip 2 is different from the focal strategy in video clip 1, review the purpose(s) and key features of the new selected strategy. Have participants skim the relevant content in the STeLLA strategies booklet and/or refer to their Z-fold summary charts. Then have participants share the purpose(s) and key features of the selected strategy. d. Show the video clip. e. Individuals: Have participants study the video transcript to identify clear examples of the selected strategy. f. Whole group: “What examples of the strategy did you find?” Ask challenge questions to make sure participants understand the strategy: <ul style="list-style-type: none"> • “What makes this an example of strategy X?” • “Can you point to text in the strategies booklet that clarifies why this is an example of strategy X?” <p>Note 1: Encourage the teacher who was featured in the video to listen to and observe this analysis discussion, not to participate.</p> <p>Note 2: In assessing participants’ understandings of the strategy, pay attention to their reasoning. Are they clear about the purpose(s) of the strategy and how it is different from other strategies?</p>

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p>Lesson Analysis 2: Analyze the Video</p> <ol style="list-style-type: none"> 1. Review the lesson context. 2. Identify the strategy. 3. Watch the video clip(s). 4. Analyze the video using the lesson analysis protocol. Make a claim and support with evidence. <ul style="list-style-type: none"> • Add analysis questions here. Examples include the following: <ul style="list-style-type: none"> • What do students seem to understand (or not) about temperature patterns on Earth and the Sun's effect on climate and seasons? • How did the use of the identified strategy make student thinking more visible? 5. Reflect on the lesson analysis experience. 	<p>Display Slide 24. Lesson Analysis 2: Analyze the Video (30 min)</p> <ol style="list-style-type: none"> a. Add analysis questions to the slide. b. Direct participants to step 2 of the LAP (Analyze the video). c. If relevant: Notice that there are two analysis questions on the slide. You may choose which one you want to address. d. You may want to review the process involved in step 2 of the LAP. Encourage participants to ask clarification questions about what is involved in generating a claim, identifying evidence, providing reasoning, and suggesting alternatives (CERA). e. If time allows, have participants watch the video clip a second time. f. Individuals: Give participants time to study the video transcript; generate their claim, evidence, and reasoning; and come up with alternatives (CERA) after watching the video. g. Whole group: Have participants share their CERAs with the group, noting similarities and differences that ensure a rich and fruitful dialogue regarding student thinking, the use of the STeLLA strategies, and science content. Don't forget to allow time for some science-content-deepening work! <p>Note 1: Encourage the teacher who was featured in the video clip to listen to and observe this analysis discussion, not to participate.</p> <p>Note 2: Listen to participants as they share their understandings of the STeLLA strategies and science content. Ask questions that will probe and challenge participants' ideas. If confusion emerges, point participants back to the STeLLA resources (e.g., the video transcript, the content background document, the STeLLA strategies booklet, and the lesson plans binder).</p>

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p>Lesson Analysis 2: Reflect</p> <ol style="list-style-type: none"> 1. Review the lesson context. 2. Identify the strategy. 3. Watch the video clip(s). 4. Analyze the video using the lesson analysis protocol. Make a claim and support with evidence. 5. Reflect on the lesson analysis experience: <ul style="list-style-type: none"> • What did you learn from the experience? 	<p>Display Slide 25. Lesson Analysis 2: Reflect (5 min)</p> <ol style="list-style-type: none"> a. Individuals: Give participants time to reflect on and write about (if time allows) what they've learned through this analysis process. b. Whole group: Ask participants to share what they've learned, starting with the teacher whose video was analyzed. Keep them focused on what they learned about the target strategy, the science content, or students' challenges in understanding the content, not on what they did wrong. <p>Note: If time is running short, ask only the teacher whose video was analyzed to share her or his reflection.</p>
		<p>Lesson Analysis Continued</p> <p>Next we'll analyze video clip 3.</p>	<p>Display Slide 26. Lesson Analysis Continued (Less than 1 min)</p> <ol style="list-style-type: none"> a. Transition: Continue the same analysis process with video clip 3. <p>Timing note: If you find you are running out of time, you can do the Identify phase of the third video clip and postpone the Analyze phase until Study Group 6. Alternatively, you could postpone lesson analysis 3 until Study Group 6. We've allowed some catch-up time in Study Group 6 to accommodate this possibility.</p>

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process												
		<p style="text-align: center;">Lesson Analysis Protocol for Video Clip 3</p> <div style="border: 1px solid black; padding: 5px;"> <p>1. Identify the Lens and Strategy Which STE.LA lens (Student Thinking Lens or Science Content Storyline Lens) and strategy are highlighted in this lesson?</p> <p>2. Analyze the Video Using the Focus Question(s)</p> <ul style="list-style-type: none"> • What do we learn about student thinking regarding different temperatures at different times of the year? • How does the identified strategy contribute to making student thinking visible or to developing the science content storyline? • How does the revealed student thinking relate to the intended storyline? <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Lesson Analysis Step</th> <th style="text-align: left;">To Do</th> <th style="text-align: left;">Your Analysis</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">Claim</td> <td>Turn an observation, question, or judgment into a specific claim that answers the focus question.</td> <td></td> </tr> <tr> <td style="vertical-align: top;">Evidence and Reasoning</td> <td>Point to a specific place in the video transcript, lesson plan, or student work that supports your claim. Connect your claim and evidence with reasoning based on STE.LA strategies, research on learning, your teaching experience, or scientific principles. Also look for evidence that challenges your claim.</td> <td></td> </tr> <tr> <td style="vertical-align: top;">Alternatives</td> <td> <ol style="list-style-type: none"> 1. Consider an alternative interpretation or explanation. 2. Consider new questions this might raise. 3. Consider alternative questions, activities, or strategies. </td> <td></td> </tr> </tbody> </table> <p>3. Reflect and Apply Participating teachers reflect on the experience and practice.</p> </div>	Lesson Analysis Step	To Do	Your Analysis	Claim	Turn an observation, question, or judgment into a specific claim that answers the focus question.		Evidence and Reasoning	Point to a specific place in the video transcript, lesson plan, or student work that supports your claim. Connect your claim and evidence with reasoning based on STE.LA strategies, research on learning, your teaching experience, or scientific principles. Also look for evidence that challenges your claim.		Alternatives	<ol style="list-style-type: none"> 1. Consider an alternative interpretation or explanation. 2. Consider new questions this might raise. 3. Consider alternative questions, activities, or strategies. 		<p>Display Slide 27. Lesson Analysis Protocol for Video Clip 3 (Less than 1 min)</p> <ol style="list-style-type: none"> a. Replace the LAP image on the slide with an image of the LAP participants will be using for this session. b. Have participants locate the LAP.
Lesson Analysis Step	To Do	Your Analysis													
Claim	Turn an observation, question, or judgment into a specific claim that answers the focus question.														
Evidence and Reasoning	Point to a specific place in the video transcript, lesson plan, or student work that supports your claim. Connect your claim and evidence with reasoning based on STE.LA strategies, research on learning, your teaching experience, or scientific principles. Also look for evidence that challenges your claim.														
Alternatives	<ol style="list-style-type: none"> 1. Consider an alternative interpretation or explanation. 2. Consider new questions this might raise. 3. Consider alternative questions, activities, or strategies. 														
		<p style="text-align: center;">Lesson Analysis 3: Review Lesson Context</p> <p>Main learning goal:</p> <p>Focus question:</p> <p>Main lesson activity:</p> <p>Review the lesson plan overview page:</p> <ul style="list-style-type: none"> • What important science ideas should students get from this lesson? • What are the ideal student responses to the focus question? <p>Context of the video clip:</p>	<p>Display Slide 28. Lesson Analysis 3: Review Lesson Context (4 min)</p> <ol style="list-style-type: none"> a. Modify the slide for this video clip. All of the information may not fit on one slide. b. Review the context for the video clip that will be analyzed. c. Remind participants of the main learning goal, the focus question, and the main activity in this lesson. d. Optional: Direct participants to look at the overview page of the lesson plan to identify important science ideas and an ideal student response to the focus question. e. Orient participants to where video clip 3 appears in the lesson. f. Ask the teacher whose clip you will be analyzing to add other contextual factors that may be pertinent to the upcoming analysis. 												

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p style="text-align: center;">Lesson Analysis 3: Identify the Strategy</p> <ol style="list-style-type: none"> 1. Review the lesson context. 2. Identify the strategy: <ul style="list-style-type: none"> • Add here the strategy that is the focus of the analysis for the video clip. Add page numbers for the strategy from the STeLLA strategies booklet. • Add here the identification question you wrote on the LAP. An example of an identification question is “What clear examples of probe and challenge questions can you identify in this clip?” 3. Watch the video clip(s). 4. Analyze the video using the lesson analysis protocol. 5. Reflect on the lesson analysis experience. 	<p>Display Slide 29. Lesson Analysis 3: Identify the Strategy (20 min)</p> <ol style="list-style-type: none"> a. Modify the slide to match your lesson analysis plan for video clip 3. b. Highlight step 1 on the LAP (Identify the strategy) and emphasize the strategy participants will be focusing on during this analysis. c. If the selected strategy is different from the ones analyzed in previous clips, have participants skim the relevant content in the STeLLA strategies booklet and/or refer to their Z-fold summary charts to refresh their thinking about the target strategy. Then have participants share the purpose(s) and key features of the new strategy. d. Show the video clip. e. Individuals: Have participants study the video transcript to identify clear examples of the selected strategy. f. Whole group: “What examples of the strategy did you find?” Ask challenge questions to make sure participants understand the strategy: <ul style="list-style-type: none"> • “What makes this an example of strategy X?” • “Can you point to text in the strategies booklet that clarifies why this is an example of strategy X?” <p>Note 1: Encourage the teacher who was featured in the video clip to listen to and observe this analysis discussion, not to participate.</p> <p>Note 2: In assessing participants’ understandings of the strategy, pay attention to their reasoning. Are they clear about the purpose(s) of the strategy and how it is different from other strategies?</p>

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p>Lesson Analysis 3: Analyze the Video</p> <ol style="list-style-type: none"> 1. Review the lesson context. 2. Identify the strategy. 3. Watch the video clip(s). 4. Analyze the video using the lesson analysis protocol. Make a claim and support with evidence. <ul style="list-style-type: none"> • Add analysis questions here. Examples include the following: <ul style="list-style-type: none"> • What do students seem to understand (or not) about temperature patterns on Earth and the Sun's effect on climate and seasons? • How did the use of the identified strategy make student thinking more visible? 5. Reflect on the lesson analysis experience. 	<p>Display Slide 30. Lesson Analysis 3: Analyze the Video (30 min)</p> <ol style="list-style-type: none"> a. Add analysis questions to the slide. b. Direct participants to step 2 of the LAP (Analyze the video). c. If relevant: Notice that there are two analysis questions on the slide. You may choose which one you want to address. d. If time allows, have participants watch the video clip again. e. Individuals Give participants time to study the video transcript; generate their claim, evidence, and reasoning; and come up with alternatives (CERA) after watching the video. f. Whole group: Have participants share their CERAs with the group, noting similarities and differences that ensure a rich and fruitful dialogue regarding student thinking, the use of the STeLLA strategies, and science content. <p>Note 1: Encourage the teacher who was featured in the video clip to listen to and observe this analysis discussion, not to participate.</p> <p>Note 2: Continue listening to participants as they share their understandings of the STeLLA strategies and science content. Ask probe questions that will encourage them to share their ideas more clearly and precisely. If confusion or lack of understanding emerges, point participants back to the STeLLA resources (e.g., the video transcript, the content background document, the STeLLA strategies booklet, and the lesson plans binder).</p>

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p>Lesson Analysis 3: Reflect</p> <ol style="list-style-type: none"> 1. Review the lesson context. 2. Identify the strategy. 3. Watch the video clip(s). 4. Analyze the video using the lesson analysis protocol. Make a claim and support with evidence. 5. Reflect on the lesson analysis experience: <ul style="list-style-type: none"> • What did you learn from the experience? 	<p>Display Slide 31. Lesson Analysis 3: Reflect (5 min)</p> <p>a. Individuals: Give participants time to reflect on and write about (if time allows) what they've learned through this analysis process.</p> <p>b. Whole group: Ask participants to share what they've learned, starting with the teacher whose video was analyzed. Keep them focused on what they learned about the target strategy, the science content, or students' challenges in understanding the content, not on what they did wrong.</p> <p>Note: If time is running short, ask only the teacher whose video was analyzed to share her or his reflection.</p>
<p>15 min</p> <p>Closing and Reflections</p> <p>Slides 32–37</p>	<p>Purpose</p> <ul style="list-style-type: none"> • To synthesize/summarize key ideas about the focus question, discuss practical details, and reflect on today's learning <p>Content</p> <ul style="list-style-type: none"> • Video-based lesson analysis supports participants' learning about the STeLLA framework 	<p>Today's Focus Question</p> <p>What can we learn about the STeLLA strategies, science content, and student thinking by analyzing our own classroom videos?</p>	<p>Display Slide 32. Today's Focus Question (5 min)</p> <p>a. Individuals (2 min): Ask participants to reflect on today's focus question and their contributions to the STeLLA norms and be ready to share their ideas.</p> <p>b. Whole group (3 min): Invite participants to share their thoughts about the focus question with the group (round-robin style).</p>

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
	<p>and strategies, the science content, and student thinking and learning.</p> <p>What Participants Do</p> <ul style="list-style-type: none"> • Reflect in writing on the focus question and their contributions to the STeLLA norms. • Share their comments about the focus question. 	<p>Reminder: Student Pre- and Posttests</p> <ul style="list-style-type: none"> • Make sure to give your students pre and posttest before and after teaching the lesson sequence. • Save all of the pre- and posttests! We'll use them to analyze changes in student understanding from pre to post during Study Group 6. 	<p>Display Slide 33. Reminder: Student Pre- and Posttests (Less than 1 min)</p> <ol style="list-style-type: none"> Remind participants to give their students the pre- and posttest before and after teaching the lesson sequence. Emphasize that it's very important for participants to keep these tests, because they'll be analyzing changes in student understanding from pre- to posttest during Study Group 6.
		<p>Preparation for Study Group 6</p> <p>Preparation:</p> <ul style="list-style-type: none"> • Fill out separate features analysis charts (FACs) for student pretests and posttests. • Select three student pre- and posttests (one strong and two average) to share at our next meeting. (Select the same students for both pre- and posttests.) <p>Bring to Study Group 6:</p> <ul style="list-style-type: none"> • Three copies of your completed pre and post features analysis charts (FACs) • Three copies of three student pre- and posttests • STeLLA strategies booklet • Lesson plans binder 	<p>Display Slide 34. Preparation for Study Group 6 (2 min)</p> <ol style="list-style-type: none"> Make sure participants are clear that before Study Group 6, they need to analyze their students' tests, fill out the pre- and posttest features analysis charts (FACs), and select three student pre- and posttests (one strong and two average) to share with the group. Review the list of items on the slide that participants need to bring to Study Group 6.
		<p>Next Study-Group Meeting</p> <p>Date:</p> <p>Time:</p> <p>Location:</p> <p>Bring your STeLLA strategies booklet, Summer Institute binder, and lesson plans binder.</p>	<p>Display Slide 35. Next Study-Group Meeting (Less than 1 min)</p> <ol style="list-style-type: none"> Modify the details on the slide. Inform participants of the date, time, and location of the next meeting.

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
		<p style="text-align: center;">Reflection Questions</p> <ol style="list-style-type: none"> 1. What have you learned about the STeLLA strategies, science content, and/or student thinking by analyzing our own classroom videos? 2. How did you contribute today to applying the following STeLLA norms? <ul style="list-style-type: none"> • Share your ideas, uncertainties, confusion, disagreements, questions, and good humor. All points of view are welcome. • Expect and ask questions to deepen everyone's learning; be constructively challenging. 	<p>Display Slide 36. Reflection Questions (7 min)</p> <ol style="list-style-type: none"> a. Individuals: Direct participants to the reflection sheet and ask them to think about the questions. b. Pairs: Have participants share their responses with a partner before writing them on the handout.
		<p style="text-align: center;">Thank You!</p> <p>Thank you for your participation today!</p>	<p>Display Slide 37. Thank You! (Less than 1 min)</p> <ol style="list-style-type: none"> a. Before dismissing participants, thank them for their participation in the study group today.