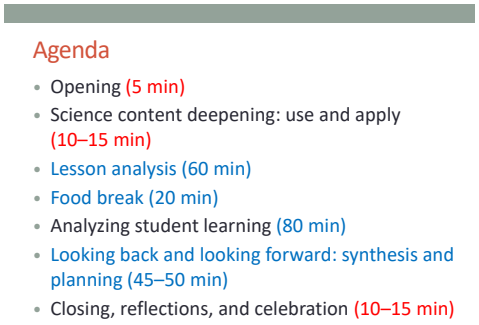
RESPeCT Study-Group Sessions
Study-Group Session 6

Focus Questions
- What can we learn about the STeLLA strategies, science content, and student thinking by analyzing our own classroom videos?
- How can analyzing student pre- and posttests help us identify strengths and weaknesses in student learning and improve our science teaching?
- What have we learned about the STeLLA strategies, and how can we use this knowledge in lesson planning for new science-content areas?

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
Ahead of Time • 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. **Note:** This session is likely to require more changes to the PDLG and PPTs than previous sessions because you may have one or two remaining classroom video clips to analyze. Be sure to make the necessary timing changes to fit the needs of your group. To refresh your memory, review any classroom video clips you'll be analyzing in this session (carried over from Study Group 5). • Identify specific teacher learning goals for this session related to STeLLA strategies and science content. Make sure to address any science-content confusion you noticed while reviewing the lesson videos. • Create lesson analysis protocols 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 questions,	**Posters and Charts** • STeLLA Framework and Strategies poster • Communicating in Scientific Ways (CSW) poster • Agenda (chart) • Focus Questions (chart) • Learning Goals for Today (chart) • Next Steps for Improving Student Learning (chart created during pre- and posttest analysis) • Norms for Working Together (chart) • Parking Lot poster **Handouts** • Transcript for each video clip • Lesson analysis protocol (LAP) for each clip • Looking Back/Looking Forward • PD leader resource: Looking Back/Looking Forward (Answer Key) • Reflection sheet **Supplies** • Science-lesson materials kit (content area 2) • Chart paper and markers • Food **Resources** • STeLLA strategies booklet • RESPeCT PD program binder • RESPeCT lesson plans binder	• Unanalyzed video clip(s) carried over from Study Group 5

Preparation	Materials	Videos
learning goals) and make copies of handouts. **On Meeting Day** • Check audiovisual equipment and have video clip(s) ready to go. • Arrange furniture and food. • Put up posters and charts.	• Content background document (content area 2) • Common Student Ideas document (content area 2)	

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
5 min **Setting the Stage for the Study-Group Session** Slides 1–4	**Purpose** • To clarify today's focus questions and learning goals **What Participants Do** • Review today's agenda, focus questions, and learning goals.		**Display Slide 1.** RESPeCT Study-Group Session 6 (Less than 1 min) a. Insert the correct date on the slide. b. Greet participants as they enter the room.
			**Display Slide 2.** Agenda (2 min) a. Modify the slide to reflect your plans for the session. (Some groups will have one or more video clips from Study Group 5 that still need to be analyzed; others will have no lesson analysis work.) b. Share the agenda with the group. c. Ask participants if they have any questions. **Notes on lesson analysis:** • The time estimates for this session are based on the assumption that **one** video clip will be carried over from Study Group 5 for analysis. If you follow the low time estimates on the agenda slide, you'll come in 10 minutes under the allotted 240 minutes. If you follow the high time estimates, you'll come in 10 minutes over the allotted time. **Keep this in mind as you're planning the session.** • If you have **no** lesson analysis catch-up work, you can allow more time for other activities—and will feel less rushed! You can also add an activity you think would be beneficial for the group. • If you have **two** video clips to analyze, you'll have to drop the Looking Back/Looking Forward synthesis activity and watch your time very carefully.

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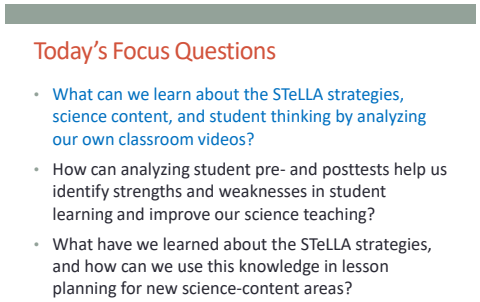
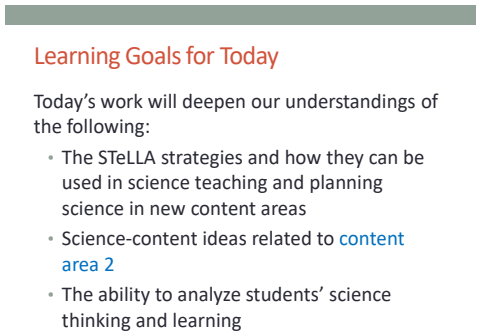
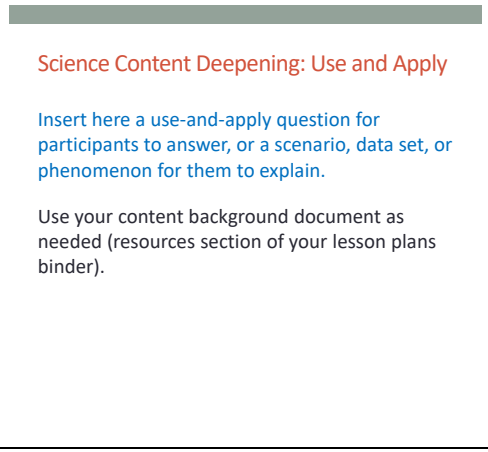
			**Display Slide 3.** Today's Focus Questions (2 min) a. Remove the first focus question from the slide if you aren't analyzing lesson video clips during this session. b. Share the focus questions with the group and discuss how they match up with the day's agenda.
			**Display Slide 4.** Learning Goals for Today (Less than 1 min) a. Modify the slide to reflect the STeLLA strategies and science-ideas from content area 2 that you've identified for today's work. b. Share the learning goals with the group.
10–15 min **Science Content Deepening: Use and Apply** Slide 5	**Purpose** • To deepen participants' science-content understandings **Content** • List the specific science ideas that will be needed to answer the use-and-apply question or explain the scenario, data, or phenomenon described on the slide. **What Participants Do**		**Display Slide 5.** Science Content Deepening: Use and Apply (10–15 min) **Note:** Make sure science-lesson materials are available from the lesson kit. 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. "When analyzing lesson videos and students' written work, it's important to pay careful attention to the science-content ideas. To prepare for this, we'll work first on clarifying and deepening

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	• 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.		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. Think about it for a moment and then write your explanation in your notebooks." e. **Pairs:** "Share your ideas with a partner." f. **Whole group:** Let participants drive this discussion. Encourage them to ask one another probe and challenge questions. Limit your role to listening and asking probe and challenge questions. g. **Synthesize/summarize:** If participants come up with a strong response for the use-and-apply question or scenario, have one of them summarize it. If they haven't formulated a strong response, provide a complete explanation as a model.
60 min (Includes 20-min food break) **Lesson Analysis** Slides 6–14	**Purpose** • To deepen participants' understandings of the selected STeLLA strategies • To deepen participants' science-content understandings • To deepen participants' ability to analyze students' science thinking **Content** • The STeLLA lesson video analysis process includes identifying the selected strategies (or missed		**Display Slide 6.** Video-based Lesson Analysis (Less than 1 min) a. **Transition slide:** "Now we'll begin analyzing the video clip(s) carried over from the previous session." **Timing Notes:** • Approximately 60 minutes have been allotted for analyzing one video clip: 5 minutes for setting the context and reviewing the STeLLA strategies involved, 20 minutes for watching the video and identifying the strategies in use, 30 minutes for the analysis phase, and 5 minutes for reflection. • If you have no video clips to analyze today, delete slides 6–11. If you're analyzing two video clips, duplicate slides 6–11 for the second lesson analysis. Adjust timing accordingly.

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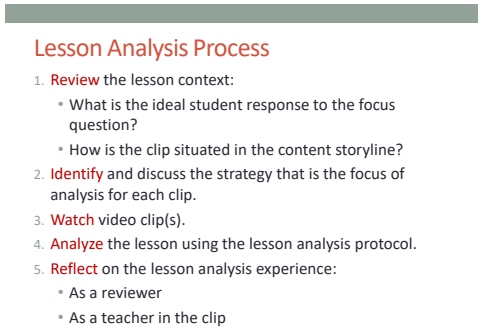
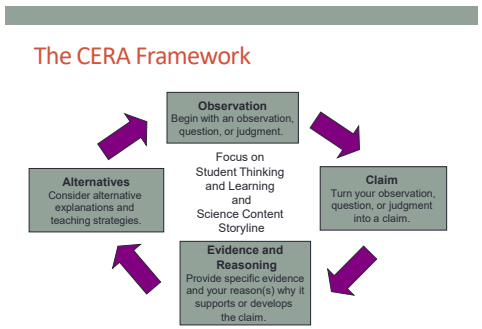
	opportunities) in the video clip and then analyzing the clip by making a claim, providing evidence and reasoning to support the claim, and proposing an alternative claim or alternative teaching approach. • Analyzing video clips provides opportunities to deepen participants' understandings of the selected STeLLA strategies. • Analyzing video clips provides opportunities to deepen participants' understandings of science-content ideas featured in the selected clips. **What Participants Do** • Use the lesson analysis process and lesson analysis protocol (LAP) to support their analyses of classroom science teaching and learning in the remaining video clip(s). **Videos/Transcripts** • Video clip(s) carried over from Study Group 5 • Transcript(s) and LAP(s) for video clip(s)		**Display Slide 7.** Lesson Analysis Process (Less than 1 min) a. Review the lesson analysis process participants be using when they view the video clip(s). b. Emphasize that the video analysis will focus on student thinking and a specific STeLLA strategy. c. Remind participants that they'll be looking at only 5–7 minutes of teaching, and that students in the video clip(s) 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.
			**Display Slide 8.** The CERA Framework (Less than 1 min) a. 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. b. 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: • "My claim is …" • "My evidence is … because …" • "This is important because …" 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).

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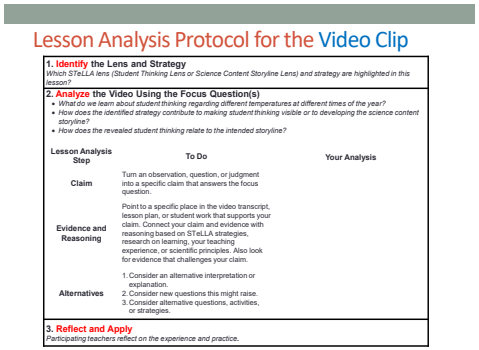
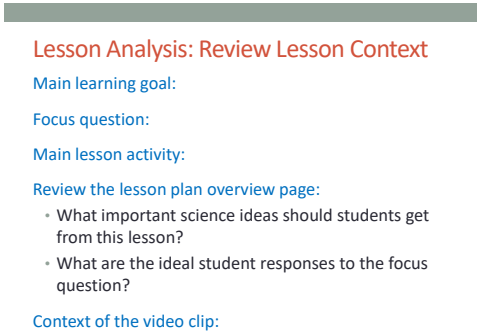
			**Display Slide 9.** Lesson Analysis Protocol for the Video Clip (Less than 1 min) a. Replace the LAP image on the slide with an image of the LAP you will be using for this session. If more than one video clip will be analyzed, modify the slide title accordingly ("for Video Clip 1"). b. Have participants locate the LAP they will be using for this video clip.
			**Display Slide 10.** Lesson Analysis: Review Lesson Context (3 min) a. Modify the slide for this video clip. All of the information may not fit on one slide. b. Review the context of 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 the video clip 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.

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		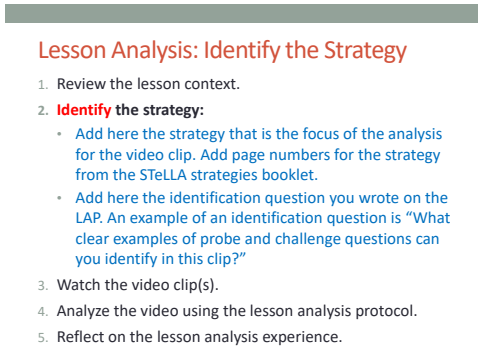	**Display Slide 11.** Lesson Analysis: Identify the Strategy (15 min) **Note:** Focus only on the Identify step (highlighted in red on the slide). a. Modify the slide to match your lesson analysis plans for this video clip. b. Highlight step 1 on the LAP (Identify the strategy) and emphasize the strategy participants will be focusing on during this analysis. **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: • "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?" **Note 1:** Encourage the teacher who is featured in the video to listen to and observe this discussion, not to participate. **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?

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		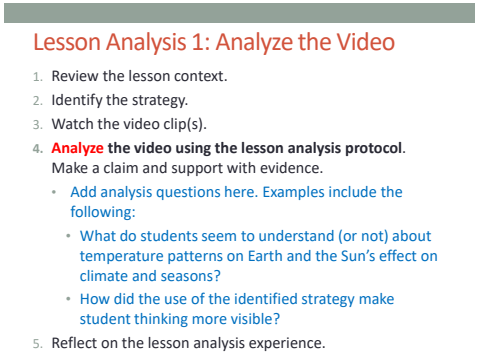	**Display Slide 12.** Lesson Analysis: Analyze the Video (15 min) **Note:** Focus only on the Analyze step. a. Add analysis questions to the slide. b. Direct participants to step 2 of the LAP (Analyze the video). **Note:** Remind participants that step 2 of the LAP is step 4 of the lesson analysis process 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. **Note 1:** Encourage the teacher who was featured in the video to listen to and observe this analysis discussion, not to participate. **Note 2:** Be sure to listen to participants as they share their understandings of the STeLLA strategies and science content. Ask probe questions that will encourage them to express 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).

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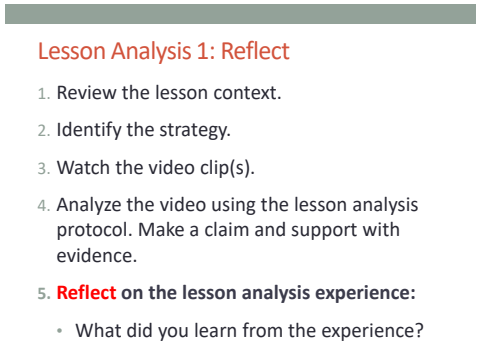
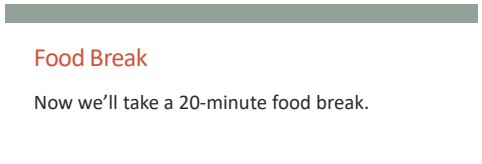
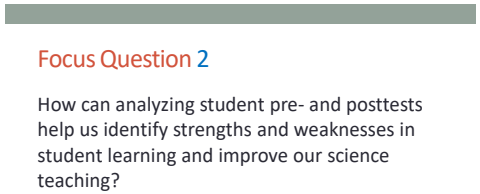
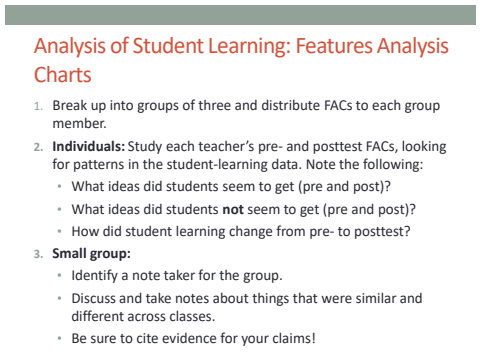
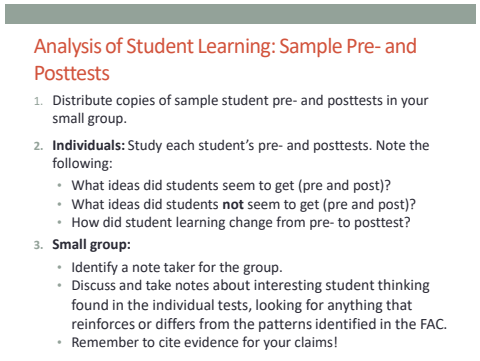
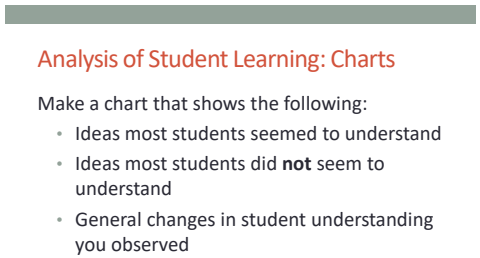
			**Display Slide 13.** Lesson Analysis: Reflect (4 min) **Note:** Focus only on the Reflect step. a. **Individuals:** Give participants time to reflect on and write about (if time allows) what they've learned through this analysis process. b. **Whole group:** Ask participants to share what they've learned, 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. **Note:** If time is running short, ask only the teacher whose video was analyzed to share her or his reflection.
			**Display Slide 14.** Food Break (20 min) a. Decide when you want to schedule the food break and rearrange the slides accordingly. **Note:** Keep the break to 20 minutes. If necessary, participants can continue eating as you dig into the next segment of the session.

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
80 min **Analyzing Student Learning** Slides 15–22	**Purpose** • To analyze student science learning from teacher-administered lesson pre- and posttests • To deepen participants' understanding of the science content featured in the assessment task **Content** • The features analysis chart (FAC) supports analysis of students' responses to open-ended assessment items by identifying which specific science ideas and misconceptions are present in each student's response. • Comparing pre- and posttest FACs enables teachers to identify areas of growth and areas needing further attention. • Using the features analysis chart to analyze students' written responses to open-ended assessment items provides opportunities for deepening participants' understandings of science-content ideas featured in the assessment task. **What Participants Do** • Assess student learning by studying and comparing lesson pre- and posttests.		**Display Slide 15.** Focus Question 2 (Less than 1 min) a. Modify the slide title if this is your first focus question of the day. b. **Transition:** Use this slide to mark the transition to the analysis of student pre- and posttests. c. Read the focus question.
			**Display Slide 16.** Analysis of Student Learning: Features Analysis Charts (15 min) a. Have participants break up into groups of three. (1 min) b. Go over the directions on the slide. Emphasize the importance of evidence-based reasoning. Participants should challenge one another to give evidence for their claims. (2 min) c. "Within your group, distribute copies of the pre- and posttest FAQs." (2 min) d. **Individuals (5 min):** "Study each teacher's pre- and posttest FACs, looking for patterns in the student-learning data." e. **Small groups (5 min):** • "Identify a note taker for the group." • "Discuss and take notes about things that were similar and different across classes." • "Be sure to cite evidence for your claims!" **Note:** If needed to balance out group sizes, join one group as a participant. Otherwise, join a group of three mainly as an observer, but feel free to ask questions that challenge participants to dig deeper and more specifically into the data and cite evidence for claims.

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
	• Study and compare completed features analysis charts and sample student tests in small groups and construct a summary chart of strengths and weaknesses in student learning. • Look at each other's charts and discuss general conclusions about student learning. • Consider how changes to the lesson plans or additional lessons might address weaknesses in student learning.		**Display Slide 17.** Analysis of Student Learning: Sample Pre- and Posttests (25 min) **Note:** If time is short, have participants analyze only the posttests. a. In the same small groups, have participants distribute copies of the sample student pre- and posttests. (3 min) b. **Individuals (10 min):** Have participants review tests from other teachers, studying how each student did on the pretest and posttest. c. **Small groups (12 min):** • "Identify a note taker." • "Discuss and take notes about interesting student thinking found in the individual tests, looking for anything that reinforces or differs from patterns identified in the FAC." **Note:** If needed to balance out group sizes, join one group as a participant. Otherwise, join a new group, mainly as an observer, but feel free to ask questions that challenge participants to dig deeper and more specifically into the data and cite evidence for claims.
			**Display Slide 18.** Analysis of Student Learning: Charts (15 min) a. Direct each of the small groups to use what they've learned from their analyses of the FACs and the sample student work to construct a chart showing strengths, weaknesses, and changes in student learning. b. The next slide shows the chart structure they should use. c. Wander around the room and observe the groups working on their charts. d. Encourage participants to be specific about the ideas students seemed to understand or didn't seem to understand.

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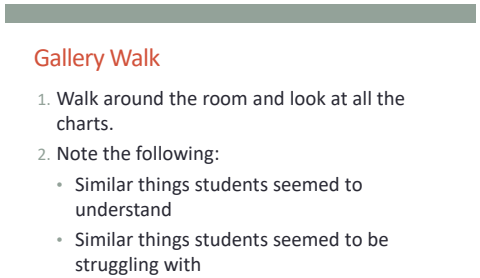
			e. Time this analysis work and give small groups a 5-minute warning before the end of the activity.
			**Display Slide 19.** Analysis Chart Structure (Time combined with slide 16) a. Highlight the chart structure on the slide that participants will use to create their charts.
			**Display Slide 20.** Gallery Walk (5 min) a. Have participants walk around the room and look at one another's charts, noting similarities in what students seemed to understand and what they seemed to be struggling with. Coordinate the gallery walk so that participants don't gather around the same chart at the same time. b. Review all the charts and identify clarification questions you want to ask during the whole-group discussion. If participants start discussing the charts while they're walking around, decide whether you'll join in or ask them to wait until the group discussion. (If you decide to join in the discussion, you may want to switch quickly to the next slide to provide focus.)

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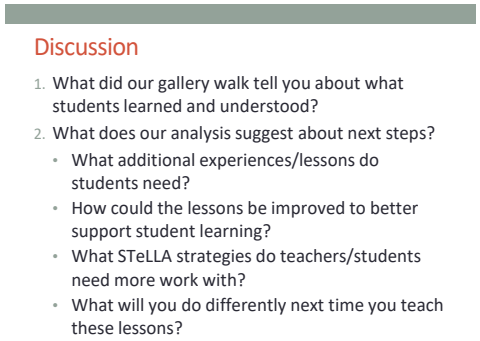
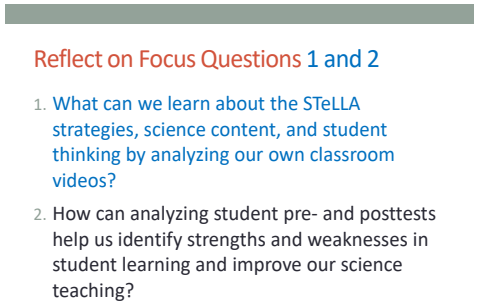
			**Display Slide 21.** Discussion (15 min) a. Reveal only the first question on the slide and follow this pattern as you lead the discussion: • **Clarification questions:** Model asking clarification questions and encourage participants to ask about anything they saw on the charts that wasn't clear. • **Individual think time:** "What do you think students generally understood?" • **Whole-group share-out.** • **Individual think time:** "What do you think students generally struggled with?" • **Whole-group share-out.** b. Reveal the second set of questions on the slide. c. "Now let's think about how we can address the weaknesses and gaps in student learning that we've identified." d. **Individuals:** "Read and think about these four next-steps questions. Take notes to help you remember the ideas you generate." e. **Whole group:** Discuss the ideas participants have generated. **Note:** Create a chart titled Next Steps for Improving Student Learning and take notes as participants share their ideas.
			**Display Slide 22.** Reflect on Focus Questions 1 and 2 (5 min) **Note:** If time is short, skip this slide. a. Modify the slide to reflect the session agenda. If you didn't analyze any video clips today, delete the first focus question on the slide, adjust the slide title, and reflect on the second question. b. **Individuals:** Have participants jot down one or two lessons they've learned related to one of the focus questions (or the focus question if the first question is omitted).

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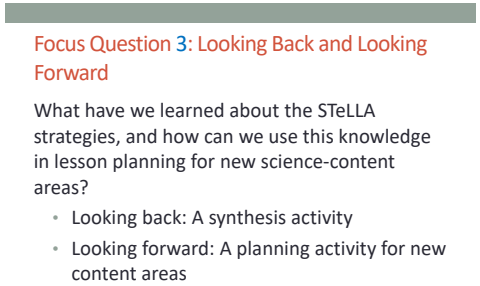
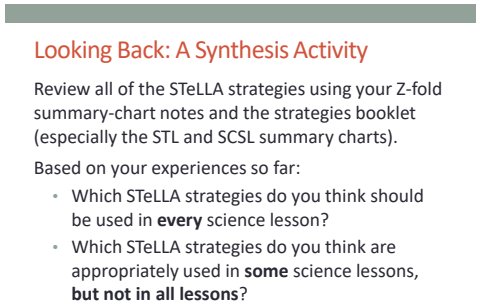
			c. **Whole group:** Ask participants to share their thoughts in a round-robin.
45–50 min **Looking Back and Looking Forward: Synthesis and Planning** Slides 23–28	**Purpose** • To synthesize what participants have learned about the STeLLA strategies • To understand how the STeLLA strategies might be used in planning lessons in a new science-content area **Content** • The STeLLA planning and teaching strategies work together to support productive student thinking, create a coherent science content storyline, and improve student learning. • STeLLA strategies need to be used thoughtfully across a sequence of lessons. Some strategies are appropriately used in planning, some at the beginning of a lesson sequence, some at the end of a lesson sequence, and some should appear in all lessons. **What Participants Do** • Look back at the STeLLA strategies to consider which should be used in *every* lesson, and which should be used in *some* lessons, only where appropriate. • Look forward to consider how to use the STeLLA strategies in planning lessons in a new		**Display Slide 23.** Focus Question 3: Looking Back and Looking Forward (Less than 1 min) a. Change the slide title to "Focus Question 2" if you didn't analyze any video clips during today's session. b. "To address this focus question, we'll first look back and reflect on what we've learned about the STeLLA lenses and strategies during the RESPeCT PD program." c. "Then we'll look forward and consider how we can use the STeLLA strategies to plan lessons in new science-content areas not addressed in the RESPeCT PD program."
			**Display Slide 24.** Looking Back: A Synthesis Activity (15–17 min) a. Have participants locate the Looking Back/Looking Forward handout in their binders. b. Review the instructions on the slide and remind participants to be ready to give reasons for their responses. c. Emphasize that participants should **not** use all the strategies in every lesson. d. **Individuals:** Have participants complete the Looking Back section on the handout (chart on page 1). e. **Whole group:** Discuss participants' responses. Probe their reasoning and challenge them to use the STeLLA strategies booklet to support their responses. **Notes:** • The goal of this synthesis activity is encouraging participants to reflect on and synthesize what they've learned about the STeLLA strategies. "Right" answers are less important than participants' reasoning.

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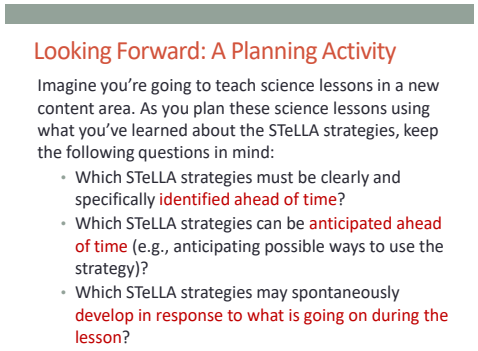
	science-content area.
	• Consider which STeLLA strategies need to be specifically identified during the planning process, which can be anticipated during the planning process, and which are used spontaneously in response to what is going on during the lesson.
	• Share or discuss a STeLLA planning process that starts with the end goal in mind (main learning goal) and identifies common student ideas.
			• **Do not distribute the handout answer key to participants.** It's for your reference only.
			• The answer key provides appropriate responses to the activity; however, some disagreement is OK as long as participants' reasoning is solid.
			• Make sure participants understand the following:
			  • Elicit and probe questions (strategies 1 and 2) should be the focus at the beginning of a lesson sequence (initial lessons).
			  • Later lessons should focus on use-and-apply questions or scenarios (strategy 6).
			  • Intermediate lessons should engage students in analyzing and interpreting data and observations (strategy 4), as well as constructing explanations and arguments (strategy 5). It's OK if one lesson focuses on analysis and interpretation, and a separate lesson focuses on constructing explanations and arguments.
			• Participants should reach an agreement that probe questions and most of the Science Content Storyline Lens (SCSL) strategies should be included in **all** lessons. Every lesson should also include either an activity or a content representation, but they don't need to include both. Strategy F (linking science ideas to other science ideas) should only occur later in a lesson sequence.

			**Display Slide 25.** Looking Forward: A Planning Activity (15–17 min) a. Have participants review the Looking Forward section in the handout (page 2). b. Go over the instructions on the slide and remind participants to be ready to give reasons for their responses. c. **Emphasize:** "You can check more than one box for each strategy, but don't go overboard!" d. **Individuals:** Have participants complete the Looking Forward section on the handout (chart on page 2). e. **Pairs:** "Compare your responses with a partner's and identify

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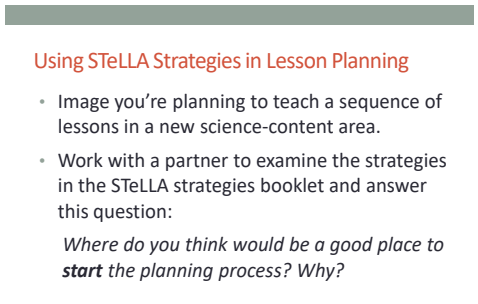
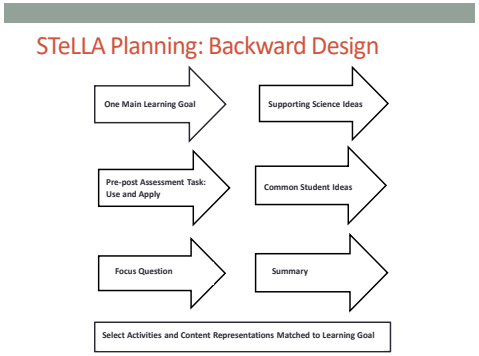
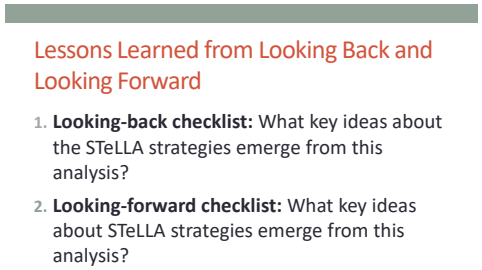
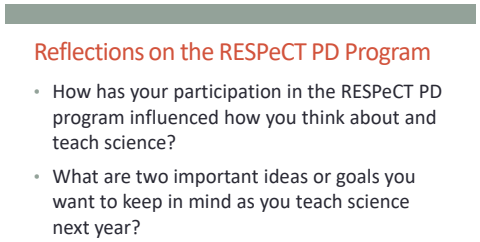
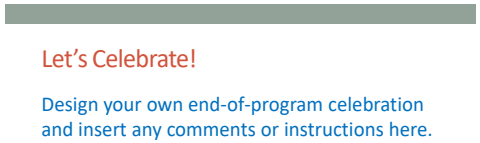
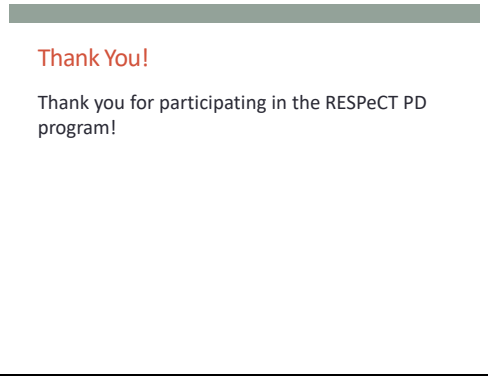
			questions you want to raise in the group discussion." f. **Whole group:** Discuss participants' responses and questions from the handout. Probe their reasoning and challenge them to use the strategies booklet to support their responses. **Notes:** • The goal of this planning activity is to get participants thinking about how to use the STeLLA strategies in their lesson planning. "Right" answers are less important than participants' ideas! • **Do not distribute the handout answer key to participants.** It's for your reference only. • The answer key provides appropriate responses to the handout activity; however, some disagreement is OK as long as the reasoning is solid. • The answer key indicates that Student Thinking Lens strategies 4, 5, 6, and 7 must be planned in advance. However, teachers may need to modify these tasks based on student engagement in these activities during the lesson. The answer key suggests the same pattern for Science Content Storyline Lens strategies D, F, G, and H.
			**Display Slide 26.** Using STeLLA Strategies in Lesson Planning (5 min) **Note:** If time is short, skip this slide. a. **Pairs:** "Work with a partner to examine the strategies in the STeLLA strategies booklet and identify good starting points for lesson planning. Make sure to provide reasoning to support your decisions." b. **Optional whole-group share-out:** Invite each pair of participants to share their ideas with the group.

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
			**Display Slide 27.** STeLLA Planning: Backward Design (4–5 min) **Note:** If time is short, skip this slide. a. "Now let's compare our ideas with the process used to develop the RESPeCT PD program lesson plans. This activity is designed to give you some *general* ideas about how you might use the STeLLA process to guide your lesson planning in new science-content areas." b. Talk through the slide as you reveal the arrows one by one: 1. We start lesson planning with the end goal in mind: What is the specific idea we want students to understand at the end of the lesson or unit? 2. What are the key science ideas that support this main learning goal? 3. What pre-post assessment use-and-apply task can we employ to reveal what students do and do not understand about the science content? 4. How can we analyze the student pre-post assessments and other sources (e.g., Common Student Ideas document, research articles, books summarizing common student ideas) to identify common student ideas and difficulties with this specific content? 5. What focus question can we design based on common student ideas and understandings of the science content? 6. What summary statement can we come up with that answers the focus question? 7. **Wait until now to present this step:** What activity and/or content representation is matched to this learning goal and can help students construct an answer to the focus question? 8. After all this planning, it's time to sequence the lesson and plug in all the other STeLLA strategies.

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
			**Display Slide 28.** Lessons Learned from Looking Back and Looking Forward (5 min) a. **Individuals:** "Review the **Looking Back** checklist on the handout and identify key ideas that emerged from our analysis." b. **Whole group:** Discuss these key ideas as a group. **Key ideas to emphasize about the STeLLA strategies:** • It isn't appropriate to attempt to use all of the strategies in a single lesson. • Some strategies are designed for use at the beginning of a lesson sequence (e.g., eliciting ideas and predictions); some are used to develop new science ideas through investigation (e.g., analyzing and interpreting data; constructing explanations and arguments); and others are designed for use after new ideas have been developed (e.g., use-and-apply tasks). • Despite the previous points, several of these strategies should appear in all of the lessons. c. **Individuals:** "Review the **Looking Forward** checklist on the handout and identify key ideas that emerged from our analysis." d. **Whole group:** Discuss these key ideas as a group. **Key ideas to emphasize about lesson planning:** • Planning ahead is critical for using the STeLLA strategies. • Two steps are involved in planning lessons ahead of time: 1. Identifying specific uses of the strategies (e.g., identify the specific learning goal). 2. Anticipating when specific strategies might beneficial to use (e.g., anticipating common student ideas and appropriate challenge questions to address them). • Teachers also need to be prepared to use STeLLA strategies responsively during a lesson based on students' replies to questions and their engagement in lesson

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
			activities.
10–15 min **Closing, Reflections, and Celebration** Slides 29–31	**Purpose** • To reflect on and celebrate participants' experiences in the RESPeCT PD program **What Participants Do** • Write reflections about their experiences in the RESPeCT PD program. • Participate in celebrating their progress and the conclusion of the program.		**Display Slide 29.** Reflections on the RESPeCT PD Program (5 min) **Note:** Make sure to save enough time for participants to celebrate completing the RESPeCT PD program. If necessary, the reflection questions can be skipped. a. Have participants locate the reflection sheet in their binders. b. Ask participants to reflect on the questions and write their responses on the handout.
			**Display Slide 30.** Let's Celebrate! (5–10 min) a. Celebrate the end of the RESPeCT PD program any way you wish. b. **Optional:** Instructions for the Golden Nuggets celebration: 1. Have participants write on an index card one "golden nugget" about their experiences in the RESPeCT PD program. 2. Gather everyone in a circle with their index cards. 3. Pass around a bowl filled with chocolates wrapped in gold paper. 4. Have participants take a piece of chocolate and deposit their index cards as the bowl is passed around. Give them the option of sharing their nuggets with the group before placing their cards in the bowl. 5. After the bowl has been passed around, share the golden nuggets with the group.

PD Model: Time/Phase	Purpose, Content, and What Participants Do	Slides	Process
			**Display Slide 31.** Thank You! (Less than 1 min) a. Before dismissing participants, thank them for their involvement in the RESPeCT program and for making it a success.