## SSUP: Winter Institute - PD Leader Guide Day 2

| Grade Level | 4 | Day | 2 | STeLLA Strategies Focus | STL 8 + focal STeLLA Strategies for Lessons 5-6 | Subject Matter Focus | Earth’s Changing Surface |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Teacher Learning Goals | * The goals of the STeLLA PL program are to deepen knowledge of teaching and learning, increase ability to analyze and reflect on teaching and learning, increase ability to use content knowledge and knowledge of teaching and learning to transform classroom practice, deepen teacher content knowledge, and increase student learning in science.
* Earth’s Changing Surface Lessons 5-6
	+ (L5) As rock and soil interact with water (rain, waves, ice), wind, or plants, they break apart. This process is called weathering and it changes the Earth’s surface by causing rock to fragment, crack, and crumble into smaller pieces over time. Weathering and erosion are ongoing processes.
	+ (L6) At any given point in time, Earth’s surface is both building up and wearing down. Some processes build up Earth’s surface, while other processes wear down Earth’s surface. These processes include weathering, erosion, and deposition and cause Earth’s surface to look different in different places.
* Based on Communicating in Scientific Ways, teachers can distinguish observation and inference; data and evidence; claim, evidence, and reasoning; reasoning with data/evidence, ideas, and models; and eventually, explanation and argumentation.
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| Focus Questions | * Where does the soil and rock in a delta come from and where does it go? Does the rock and soil ever change? (L5 FQ)
* What can cause the surface of the Earth to look the way it does? (L6 FQ)
* How can we build coherence within and across lessons to help students craft a storyline of key science ideas?
* How can we be intentional about how we move student thinking forward?
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| Ideal Teacher Response | * Where does the soil and rock in a delta come from and where does it go? Does the rock and soil ever change? (L5 FQ)

Smaller rocks were once part of bigger rocks. Rock breaks down all over the land because of rain, ice, vegetations, and wind. Weathering is a set of processes that cause rock to break into smaller and smaller pieces. Rocks that are carried away due to erosion previously came from bigger rocks. Rock and other weathered materials are transported between different land and water features. As rocks continue to be carried away (erosion) by gravity, water and/or wind, the rocks continue to break down into smaller pieces (weathering). These smaller pieces can be deposited in different places building up the surface of the Earth.* What can cause the surface of the Earth to look the way it does? (L6 FQ)

The Earth’s surface looks different in different places because different processes shape the land. Some processes build up the Earth’s surface, while other processes wear down Earth’s surface. We can use the ongoing earth’s processes of weathering, erosion, and deposition to explain some changes to landforms, but not all. * How can we build coherence within and across lessons to help students craft a storyline of key science ideas?

Lessons with a strong science content storyline include a connected thread of content-related talk and activities leading from the focus question through a flow of events and science ideas to the summary of the lesson. For students to construct a coherent science content storyline, activities should have a purposeful set up, be designed to require links between the activity and science ideas, and a follow-up that focuses attention on how the activity contributed to the storyline.  * How can we be intentional about how we move student thinking forward?

Science ideas should be explicitly linked to other science ideas, both within the lesson and between lessons so that students can construct a coherent science content storyline and develop an explanation of phenomena and/or design solutions to problems, Further, the key science ideas and focus question should be highlighted throughout the lesson. Teacher’s intentional use of elicit, probe, and challenge questions help students make links and progress toward a more accurate understanding of science. |

| Preparation | Materials | Videos and Transcripts |
| --- | --- | --- |
| **Planning/Preparation Tasks:*** Study PDLG, PPTs, video clips, and handouts. Make changes to PPTs, if needed.
* Link clips
* Content Deepening Prep
	+ Prepare Stream Table Setups for Lessons 2-4
	+ Lesson 2 = 1 whole-group stream table
	+ Lesson 3 = 5 stream tables for the 5 conditions
	+ Lesson 4 = 1 whole-group stream table with dam
	+ Set up Lesson 5 weathering stations for reference

**Daily Set Up Tasks:** 1. Check that video clips are correctly linked to PPT
* Set up PowerPoint and speakers
* Check video & sound
* Arrange furniture, food (include social distancing protocols in set up)
* Arrange posters/charts

**Day 1 Set Up Task:** Arrange teacher materials on tables:* Tabletop name cards
* Table boxes (small red, green, yellow dots; black permanent fine-tipped markers)

**Daily Follow-up Tasks:*** Archive final PPT
* Collect and turn in daily feedback
* Disinfect common materials, tables, and common areas per protocol
 | **Posters/Charts:** * STeLLA Conceptual Framework poster
* Communicating in Scientific Ways poster
* Program Goals chart
* Day 1 Agenda chart
* Norms poster
* Day 1 Focus Questions chart
* Effective Science Teaching chart
* Parking Lot chart

**Handouts in PD binder front pocket or in Pre-Tab:**  * Earth’s Changing Surface Lesson Placemats

**Handouts in SSUP PD binder, WI Day 1:*** [HO 1.1 CSW (in PD Binder from Unit 1 ET)]
* HO5.2
* Evidence Cards Handout Sheets
* HO 6.1: Earth’s Changing Surface
* Locations 1-4 cards
* Transcript and LAP: SSUP\_ECS\_GR4\_WI\_L5\_Potter\_C4-6
* ESC Lesson 5 Placemat
* ESC Lesson 6 Placemat

**Supplies:** * Chart paper and markers
* Sticky notes
* Red, green, and yellow dots for the Mash Up

**Resources:*** STeLLA Strategies booklet
* BSCS Journal (norms pasted into the journal)
* Content Deepening Notebook
 | **Videos** * + L5\_Potter\_C1-3
	+ L5\_Potter\_C4-6
* Internet Connection to stream The Changing Delta Video clip: <http://www.watchthedeltagrow.com/mississippi-river-paths>

**Transcripts*** SSUP\_ECS\_GR4\_WI\_L5\_Potter\_C4-6
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**DAY 2 SESSION OUTLINE: Friday 8:00 p.m. - 4:30 p.m.**

| **Time** | **Purpose** | **Content** | **Activities** |
| --- | --- | --- | --- |
| **8:00**  | **Coffee and fruit available**  |
| **8:00 – 8:15****15 min****Study Group Teams** | **Purpose:** Link to previous day’s CD session | **Content:** Focus Questions* What can cause the surface of the Earth to look the way it does?
* How can we build coherence within and across lessons to help students craft a storyline of key science ideas
* How can we be intentional about how we move student thinking forward?
 | **Opening*** Welcome
* Goals, Agenda, and Norms
* Focus Questions
 |
| **8:15 – 11:25****180 min + 10 min break****Study Group Teams** | **Purpose:** Model effective STeLLA-based science teaching and learning through a common experience that is grounded in a 3D, phenomena/problem driven unit and designed for adult learners. The Teacher Set-up and Follow-up are reflective of STeLLA Strategy F (Activity Set-up, Activity, and Activity Follow-up) with an eye toward teachers as science learners. PDLs use the teacher follow-up to uncover teacher ideas about their experience and then leverage those ideas throughout analysis of practice. | **Content:** STeLLA model lessons/units attend to the characteristics of effective science teaching and learning (e.g., 3D phenomenon/problem-driven, student-centered, make student thinking visible and support sense making, coherent, and access/engage prior knowledge and develop metacognitive abilities).Lesson 5: Smaller rocks were once part of bigger rocks. Rock breaks down all over the land because of rain, ice, vegetations, and wind. Weathering is a set of processes that cause rock to break into smaller and smaller pieces. Rocks that are carried away due to erosion previously came from bigger rocks. Rock and other weathered materials are transported between different land and water features. As rocks continue to be carried away (erosion) by gravity, water and/or wind, the rocks continue to break down into smaller pieces (weathering). These smaller pieces can be deposited in different places building up the surface of the Earth.Lesson 6: The Earth’s surface looks different in different places because different processes shape the land. Some processes build up the Earth’s surface, while other processes wear down Earth’s surface. We can use the ongoing earth’s processes of weathering, erosion, and deposition to explain some changes to landforms, but not all. | **Content Deepening: ECS Lesson 5 and 6** * Teacher Set-up (15 min)
* Common Experience for Adult Science Learners
	+ Lesson 5 (90 min + 10 min Break)
	+ Lesson 6 (60 min)
* Teacher Follow-up (20 min)
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| **11:25 – 12:00****35 min****Study Group Teams** | **Purpose:** To develop a shared understanding of the structure and content of the lesson planning documents and prepare to teach the lessons in the spring. | **Content:** STeLLA lesson plans are designed based on the STeLLA approach and structured to make explicit the integration of the STL and SCSL strategies and support teachers in enacting the strategies. Three dimensional, phenomena/problem-driven learning is highlighted throughout the lessons. | **Analysis of Practice: Curriculum Analysis*** Curriculum Binder Lessons 1-6 (35 min)
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| **12:00 – 12:30****30 min** | **Lunch** |
| **12:30 – 1:30****60 min** **Study Group Teams** | **Purpose:** To develop a shared understanding of the structure and content of the lesson planning documents and prepare to teach the lessons in the spring. | **Content:** STeLLA lesson plans are designed based on the STeLLA approach and structured to make explicit the integration of the STL and SCSL strategies and support teachers in enacting the strategies. Three dimensional, phenomena/problem-driven learning is highlighted throughout the lessons. | **Analysis of Practice: Curriculum Analysis*** Curriculum Binder Lessons 1-6 (60 min)
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| **1:30 – 3:00****80 min + 10 min break****Study Group Teams** | **Purpose:** To develop a shared understanding of STeLLA Strategies are enacted and the science ideas developed throughout the lessons and prepare to teach the lessons in the fall. | **Content:** STeLLA lesson plans are structured to make explicit the integration of STL and SCSL strategies and support teachers in enacting the strategies. Three dimensional, phenomena/problem-driven learning is highlighted throughout the lessons. The ability to identify and articulate what students are learning, as opposed to what students are doing, is important to successfully enacting the STeLLA lessons. | **Analysis of Practice: Unit Storyline*** Articulate coherence across lessons (scope and sequence)
* Tell the story across the unit
 |
| **3:00 – 3:30****30 min****Study Group Teams** | **Purpose:** To plan for ongoing program activities.Transformative professional learning experiences require sustained, collaborative work. It is important to reflect on and celebrate the work together and prepare for continued learning and reflection. Celebration of the work and learning of the week provides closure to the institute. | **Content:** A strong culture of ideas and trust contributes to the development of a community of teacher learners where we can learn while deprivatizing our practice. Analysis of practice based on a conceptual framework and done through video, student work, and common units of instruction provide a powerful focus for PLCs/study groups. | **Study Group Planning and Closing** |

### DAY 2 – Friday 8:00 – 4:30

| **Time and Focus** | **Purpose and Content &** **What Participants Do** | **Slides****Add slides from customized PPT**  | **Process** |
| --- | --- | --- | --- |
| 8:00 – 8:15 15 minSlides 1-7 | **Opening****Purpose:** The purpose of the opening is to continue to build community and set the stage for today’s learning**Content:** Teachers reflect on how participating in the STeLLA program so far has contributed to their professional growth and student learning/understanding.**Resources*** Name Tags
* Journals
* Norms Poster
* PD Binder
* STeLLA Strategies Booklet
* STeLLA Conceptual Framework poster
* Charts
 |   | 1. **SSUP Title Slide (0 min)**
	1. Greet participants as they enter the room. Help them pick up their materials and find their seats.
 |
|  | 1. **SSUP Title Slide (0 min)**
	1. Briefly review the Gots and Needs from Day 1.
 |
|  | 1. **STeLLA Program Goals (5 min)**
	1. Briefly share the Program Goals (p X)
	2. Forecast that we will work toward these goals together throughout the winter institute and the remainder of the academic year.
	3. Ask participants to consider how these goals resonate with their expectations for the week. Invite participants to record some ideas in their notebook.

**PDL Note:** Be sure to link what we will do during the winter institute to work toward these goals. |
|  | 1. **Winter Institute-at-a Glance (5 min)**
2. Provide an overview of the institute.
3. Point to the Day 2 agenda chart.
4. Remind participants how we will work.
	1. Parking lot
	2. Breaks/take care of your own needs
	3. COVID safety protocols
 |
|  | 1. **Agenda (0 min)**
	1. Point to the Friday agenda chart and link the agenda to the program goals.
 |
|  | 1. **Norms (5 min)**
	1. Remind participants of the importance of community and how the STeLLA norms support our work together. Note that we’ll continue to attend to the spirit of the norms in our work today.
	2. Prompt participants to select a norm that helped to push their thinking during the content deepening opportunities and study groups last semester. Have a few participants share out which norm they selected and why.
 |
|  | 1. **Focus Questions (5 min)**
	1. Share the focus questions for the day.
 |
| **8:15 – 11:25****180 min + 10 min break****Slides 8 - 30** | **Purpose:** The purpose of this session is to model effective STeLLA-based science teaching and learning through a common experience that is grounded in a 3D, phenomena/problem driven unit and designed for adult learners.**Content:** STeLLA model lessons/units attend to the characteristics of effective science teaching and learning (e.g., 3D, phenomenon/problem-driven, student-centered, make student thinking visible and support sense-making, coherent, and access/engage PK and develop metacognitive abilities).  The content deepening experience will include explicit modeling and use of elicit, probe, and challenge questions as well as focal STeLLA strategies for lesson 5: STL 7 and SCSL F  **Science Content:** Smaller rocks were once part of bigger rocks. Rock breaks down all over the land because of rain, ice, vegetations, and wind. Weathering is a set of processes that cause rock to break into smaller and smaller pieces. Rocks that are carried away due to erosion previously came from bigger rocks. Rock and other weathered materials are transported between different land and water features. As rocks continue to be carried away (erosion) by gravity, water and/or wind, the rocks continue to break down into smaller pieces (weathering). These smaller pieces can be deposited in different places building up the surface of the Earth. **What participants do****Resources*** Journals
* STeLLA Strategies Booklet
* PD Binder
* Changing Delta Video Link: <http://www.watchthedeltagrow.com/mississippi-river-paths>
* Evidence Cards
* Lesson 5 Placemat
* Content Deepening materials: see Curriculum Binder
 |  | 1. **Content Deepening: Teacher Set-up (Slides 8-9 = 5 min)**
	1. Invite participants to turn and talk with an elbow partner about the prompts on the slide. Ask several pairs to share their ideas with the whole group.
 |
|  | 1. **Content Deepening Teacher Set Up (0 min)**
	1. Briefly describe the three stations. Use the physical set ups using kit materials in the room to reference.
	2. Note the transition back from the Teacher lens to the Learner lens
 |
|  | 1. **Station Commonalities (5 min for slides 9-10)**
2. Welcome participants back in Learner lens.
3. Ask what do these stations have in common? (Possible response: rocks break into smaller pieces at each station. Probe: In what ways are these rocks broken apart and worn down?)
4. We call this process of rock getting broken down into smaller pieces weathering. Weathering causes rock to crack, crumble, and break down into smaller and smaller pieces.
 |
|  | 1. **Weathering (0 min)**
2. Invite participants to write this definition and sketches of weathering in their science notebooks.

Transition: *Using the three images of weathering on this slide, let’s add these processes to the last column of our analogy chart.* |
|  | 1. **Analogy Chart (5 min)**
2. Invite participants to describe the weathering process they observed at each station. For sample language, see HO5.2 Analogy Chart Key.

**Transition**: *So, let’s turn our attention back to the focus questions, Where does the soil and rock in a delta come from and where does it go? Does the rock and soil ever change? These stations helped us understanding that weathering is why the delta has tiny grains of sand, but where does the material come from and where does it go? Let’s look back at our map that we used in our first lesson to see if we can get some ideas of where this rock is coming from and where it is going.* |
|  | 1. **Revisit the map (10 min)**
2. With a partner, invite participants to look back at the map from Lesson 1 and point to places where they think rock and soil might be coming from or going. Encourage participants to explain why you think rock and soil might be coming from or going to these places and how you think it is coming or going from those places.
3. After time to talk, give a few minutes to individually record their ideas in their science notebooks.
4. Invite a whole group discussion where participants can share and respond to others’ ideas.
 |
|  | 1. **Link Back to Anchor (5 min)**
2. Share that now that we have had a chance to think about the rock and soil as it moves through different land and water features, they will have the chance to revise their initial explanations of what is happening in a specific location: *what causes the Mississippi Delta to look the way it does. How did new land form? Why did it begin to disappear?*
3. To do this, rewatch the animation of the Mississippi Delta growing and shrinking. <http://www.watchthedeltagrow.com/mississippi-river-paths> before giving participants time to write.
 |
|  | 1. **Construct an explanation (10 min)**
2. Give participants time to construct their explanation and draw in their science notebook.
3. Remind participants to use evidence from our investigation and explain their reasoning.

**Transition**: *Now that you have had a chance to record your explanation of what causes the Mississippi Delta to grow and shrink, let’s take a look our initial drawings and explanation on our Lesson 1 handout” (HO1.3)* |
|  | 1. **How have your ideas changed? (15 min)**
2. Invite participants to consider how their ideas have changed compared to their previous model.
3. Give time to turn to a partner to describe what they now know and how they know it. Prompt participants to use stems from CSW row 11.
4. Return to Driving Question Board. What questions are we now able to answer? How has your thinking changed since our first lesson?
5. Place check marks on sticky note(s) that we are now able to answer.
6. Summarize what we now know about the Unit Central Question (summarize the key ideas shared when revisiting the DQB.)
 |
|  | 1. **Link to next lesson (0 min)**
2. Share that in the next lesson, we are going to use these ideas to think about how weathering, erosion, and deposition can help us explain other landforms we can observe on the Earth’s surface.
3. Mark that this is the end of Lesson 5 and that we will now return to Teacher lens.
 |
|  | 1. **Earth’s Changing Surface: Lesson 6 (0 min)**
2. Share that this is the last lesson in the Earth’s Changing Surface unit.

**Transition:** *Yesterday, in Lesson 5 we rewatched the Mississippi Delta video timelapse from beginning to end and used the ideas of weathering, deposition, and erosion to explain our observations To get started, reread the explanation you wrote in their science notebook.* |
|  | 1. **Thinking Back to Lesson 5 (5 min)**

**PDL Note:** This activity highlights SCSL G: Link science ideas to other science ideas. Be sure to explicitly model this strategy as you elicit, probe, and challenge participants’ ideas.1. Invite participants to share the science ideas they used in their explanation.

**PDL Note:**  As participants share their ideas, chart key science ideas to create a public record. Key ideas should include:1. Weathering breaks down rocks and other materials.
2. Erosion is the process of moving away weathered earth materials. It is often caused by moving water but can also be caused by wind.
3. Deposition occurs when the earth materials are left or deposited in a new location.
4. Weathering and erosion cause the land to wear down in one area, while deposition builds up land in another area.
5. Rock and soil that has been deposited can be eroded again. Weathering, erosion, and deposition are ongoing processes.
 |
|  | 1. **Lesson 6 Focus/Unit Central Question (5 min)**
2. Highlight that the focus question for today’s lesson is the Unit Central Question: *What can cause the Earth’s surface to look the way it does?*
3. Share that today we will pull together all our ideas as we look at maps and land features of the Earth’s surface.

**PDL Note:** Point to the focus question chart and refer to the focus question throughout the common experience.**Transition:** *We will examine three different locations on the Earth’s surface. Your task will be to think about what is causing the Earth’s surface to change in these locations. You will use and apply your new ideas of* *weathering, erosion, and deposition to explain what is happening to the land in these locations.***PDL Note:** The activity focuses on STL 8: Engage students in using and applying new science ideas in a variety of ways. Explicitly model this strategy as participants engage in the activity.1. Give each participant a copy of the Earth’s Changing Surface handout and distribute a set of location cards to each group.
2. Invite participants to individually examine the three locations and record their ideas and wonderings in the “Cause” column of the handout. Foreground that they will share their ideas about *how* weathering, erosion, and/or deposition causes the land to change with others.
 |
|  | 1. **Use CSW as you discuss your ideas (15 min)**
2. Invite participants to share their thinking in their small group. Encourage participants to use the CSW stems on the slide to share their ideas with others, ask questions about someone else’s ideas and comment on ideas that are shared. Remind students that communicating in scientific ways is an important part of being a scientist.

**Transition:** *As I show each location, I’ll invite you to share your group’s ideas about how the land is changing in each location. As you share, use these CSW stems to continue the discussion as a class.* |
|  | 1. **Sea Arch (5 min)**
2. Invite several participants to share their group’s ideas about how the sea arch formed with the whole group. As participants share, encourage others to agree, disagree, and add on to ideas shared using CSW stems.

**PDL Note:** Weathering, erosion, and deposition are ongoing processes that occur together across the surface of the Earth. All three processes occur in the locations depicted. |
|  | 1. **Sand Dunes (5 min)**
2. Invite several participants to share their group’s ideas about how the sand dunes formed with the whole group. As participants share, encourage others to agree, disagree, and add on to ideas shared using CSW stems.
3. As participants share, invite participants to consider how the process of dune formation is similar to/different from the formation of the Mississippi River delta.
 |
|  | 1. **Mountains became shorter and rounder (5 min)**
2. Invite several participants to share their group’s ideas about how mountains get shorter and rounder with the whole group. As participants share, encourage others to agree, disagree, and add on to ideas shared using CSW stems.

**Transition:** *Weathering, erosion and deposition are only some of the processes that cause the Earth’s surface to change.* *We will now add a fourth location card for us to consider. Looking at the map and landforms in this location, what do you notice and wonder? Can we use weathering, erosion, and deposition to explain why the land is shaped this way? Why or why not?* |
|  | 1. **Mountain range and ocean trench (5 min)**
2. Invite participants to examine the landforms on the slide. Ask if we can use the science ideas of weathering, erosion, and deposition to explain why the land is shaped this way.

**PDL Note:** This slide is hidden in the lesson. Participants should be able to explain both landforms after reading the Content Background document from the prior day’s homework.**Transition:** *Let’s summarize what we’ve learned by thinking about our Unit Central Question.* |
|  | 1. **Lesson 6 Focus/Unit Central Question (10 min)**
2. Share that, to synthesize and summarize what we have learned throughout the unit, we’ll return to our Unit Central Question.
3. Invite participants to return to their initial ideas about the Unit Central Question and revise their ideas using a different color pen/pencil. Remind them to draw a single line through any ideas they want to remove.
4. Provide several minutes of individual time to complete the task.
5. Ask several participants to share how their ideas changed and grew over the course of the unit.
 |
|  | 1. **Meta Moment (5 min)**
2. Remind participants that throughout the unit, we used evidence to develop and support our explanations. Invite participants to consider the prompt and provide a few moments of individual think time.
3. Invite several participants to share their ideas with the whole group.

**Transition:** *This marks the end of the common learner experience. We’ll now debrief the experience as educators.* |
|  | 1. **Content Deepening: Teacher Follow-up (5 min slides 20 - 21)**
2. Direct participants to the Mashup handout in their binder and provide instructions for the task.
3. Review ideas where there is disagreement. Help participants make links between ideas and lessons/activities.
 |
|  | 1. **Common Student Ideas (10 min)**
2. Remind participants that they can find the Common Student Ideas along with the Content Background document in their Classroom Curriculum Binder.
 |
|  | 1. **Content Deepening: STeLLA Strategies (10 min)**

**PDL Note:** This slide is animated.1. Show the first prompt and provide a few minutes of individual think time.
2. Invite participants to work with an elbow partner to record their ideas on the Lesson 6 placemat. Encourage pairs to use their STeLLA Strategy book as needed to support their thinking.
3. Invite groups to share their ideas with the whole group.
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| **11:25 – 12:00****35 min****12:00 – 12:30** **Lunch****12:30 – 1:35** **65 min****Slides 30-31** | **Curriculum Binders****Purpose:** The purpose of this session is to develop a shared understanding of the structure and content of the lesson planning documents and prepare to teach the lessons in the spring.**Content:**  STeLLA Lesson plans are designed based on the STeLLA approach and structured to make explicit the integration of STL and SCSL strategies and support teachers in enacting the strategies. Three dimensional, phenomena/problem-driven learning is highlighted throughout the lessons.**What participants do:*** Jigsaw Lessons 1-5 to identify STeLLA Strategies in the Lesson Guide

**Resources*** STeLLA Strategies Booklet
* Lesson 1-5 Placemats
* Curriculum Binder
 |  | 1. **Curriculum Binders (5 min)**
2. Share that to help us form this vision, we have detailed Lesson Guides that can help us form ideas of what these strategies might look like and sound like in practice.
3. Ask: In the Energy Transfer Unit, what was in the Lesson Guides that could help us do this? (Use probe and challenge questions to help participants think beyond the STeLLA Strategy column. Other possible answers: “teacher talk and questions” column as well as “possible teacher/student dialogue” column.)
4. Remind participants that one of the STeLLA Program goals is to increase ability to use knowledge of teaching and learning to transform classroom practice. Share that in this second STeLLA unit, we will use and apply our knowledge of the STeLLA Strategies to deepen our understanding and practice of effective science teaching and learning. Therefore, participants have an important task in this second unit: identifying where key STeLLA Strategies are occurring and planning for their intentional use during instruction. Reveal that when they receive their curriculum binders in a moment, the STeLLA Strategy column will be blank.
5. Pass out Curriculum Binders. Share that study groups will jigsaw lessons 1-5 to identify where key STeLLA Strategies are happening in the Lesson Guide. Participants will have time now during the session and as homework to complete before tomorrow’s session, where they will share out to the rest of their study group. Suggest that they start with the focal strateg(ies) they identified on the lesson placemat and then fill in supporting strategies as they identify them. Remind them that they should use their STeLLA Strategies Booklet to check their understanding of focal strategies. Encourage participants to highlight key text in the teacher talk and dialogue columns that led them to identify a particular strategy. You might say something like: Where are those magic mome*nts where you will leverage that strategy? Where can you find Teacher/Student dialogue that captures what this strategy might look like in practice? – Label the strategy next to the places where they are really happening. Highlight the text that led you to do so.*
6. Share who will be doing what lesson and give participants time to work.

**PDL NOTE**: Consider lesson assignments. The placemat for Lesson 1 was done in whole group and therefore may be easier to identify STeLLA Strategies.  |
|  | 1. **Effective Science Teaching and Learning (5 min)**
2. Remind participants that we began our work together in the summer institute by charting our ideas about effective science teaching and learning. Direct participants’ attention to their chart.
3. Invite participants to individually reflect on their experiences and learning since we began our work in the summer institute and consider what they would add, revise, or delete on their chart. Provide a few moments of individual think time.
4. Provide time for participants to work as a group to make any changes to their chart with a different color marker.
5. Invite groups to share key ideas from their conversation with the whole group.

**PDL Note:** Provide a 10 min break after this session. |
| **1:35 – 3:05****80 min + 10 min break****Slides 33 - 35** | **Lesson Analysis****Purpose:** The purpose of this session is to develop a shared understanding of STeLLA Strategies are enacted and the science ideas developed throughout the lessons and prepare to teach the lessons in the fall.**Content:** STeLLA lesson plans are structured to make explicit the integration of STL and SCSL strategies and support teachers in enacting the strategies. Three dimensional, phenomena/problem-driven learning is highlighted throughout the lessons. The ability to identify and articulate what students are learning, as opposed to what students are doing, is important to successfully enacting the STeLLA lessons.**What Participants Do:**Participants work in small groups to tell the science story of their lesson. They consider the STeLLA Strategy storyline and reflect on how the strategies support students in constructing a coherent science content storyline. **Resources*** Lessons 1-6 placemats
* Charts
	+ Focus Questions from Lessons 1-6
	+ Driving Question Board
	+ Charts from Lessons 1-5
 |  | 1. **Lesson Plan Analysis (5 min)**
	1. Provide instructions for the task. Advance the slide to show the sentence stems participants might use as they tell the story of their lesson. (5 min)
 |
|  | 1. **Tell the Story (45 min)**

**PDL Note:** Hang the Focus Questions and other lesson charts together where participants will stand so they can use them as they tell the story of the unit.1. Provide 15 minutes for participants to work together to prepare to tell the story of their lesson. As participants work, circulate among groups asking elicit and probe questions as needed.
2. Invite participants to stand in a circle and begin telling the story of the unit from lesson 1. Encourage them to check for additions or revisions between handing off to the next group. (15 min)
3. Highlight that we will tell the story again with different lesson leads. Invite participants to regroup with their lesson team to make any adjustments to their story. (5 min)
4. Tell the story of the unit again, beginning with lesson 1. (10 min)
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|  | 1. **Lesson Plan Analysis: STeLLA Strategies (45 min)**

**PDL Note:** This slide is animated.1. Provide instructions for the task. Provide 15 minutes for participants to work together to prepare to tell the STeLLA Strategy story of their lesson. As participants work, circulate among groups asking elicit and probe questions as needed.
2. Invite participants to stand in a circle and begin telling the STeLLA Strategy story of the unit from lesson 1. Encourage them to check for additions or revisions between handing off to the next group. (15 min)
3. Advance the slide to show the second prompt. Provide a few minutes of think time and invite participants to share their ideas with the whole group. Ask probe and challenge questions to encourage participants to provide specific examples from the lessons and how the strategies supported their own construction of a coherent science content storyline. (10 min)
4. If time permits, invite participants to share something they want to take with them from this lesson analysis session.
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| **3:05 – 3:30****25 min****Slides 36-39** | **Purpose:** The purpose of this session is to plan for ongoing program activities. Transformative professional learning experiences require sustained, collaborative work. It is important to reflect on and celebrate the work together and prepare for continued learning and reflection. Celebration of the work and learning of the week provides closure to the institute.**Content:** A strong culture of ideas and trust contributes to the development of a community of teacher learners where we can learn while deprivatizing our practice. Analysis of practice based on a conceptual framework and done through video, student work, and common units of instruction provide a powerful focus for PLCs/study groups.**What Participants Do:**Participants use a working lunch to plan for implementing the unit, video a classroom lesson, and ongoing study group activities.They consider how their ideas about the day’s focus questions have changed as a result of their experiences and engage in a final reflection and celebration of their work throughout the winter institute. |  | 1. **Planning for Spring (25 min)**
2. Direct participants to lunch and allow time for a break and eating. (30 min)
3. Provide instructions for spring planning. Remind participants of the focal STeLLA Strategies for each lesson and forecast that they should be sure to video the portions of their lesson that include the focal strategies. (10 min)
4. Share that Ashley will provide logistics for scheduling videotaping, SWIVL, etc.
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|  | 1. **Focus Questions**
2. Remind participants of the focus questions for the day. Invite them to privately reflect on how their thinking has changed (or not) over the course of our work together.
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|  | 1. **Reflection**
2. Provide instructions for responding to the prompt and provide time for participants to consider their response.
3. Invite participants to share their response to the prompts in a whip around.
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|  | 1. **Closing Slide**
2. Thank participants for their thoughtful work during the winter institute.
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