Step 1: Unit Unpacking — Time Estimate: 60 minutes

Question: As students engage with phenomena, how will they use the science and engineering practices, apply the crosscutting concepts, and develop understanding of the disciplinary core ideas?

Purpose: Team members analyze the unit performance expectation(s) to deepen understanding of what students should know and be able to do according to the Louisiana Student Standards for Science. Examine the K–12 Louisiana Student Standards for Science, Appendix A—Learning Progressions to understand content from previous grades or courses. Respond to the questions below after you unpack and annotate a unit of study.

What does it mean to annotate my curriculum?	What does annotation look like?
• Interacting with the instructional materials • Showing your thinking while you read and study • Noting questions you need to answer • Marking ideas you want to revisit • Creating exemplar student responses • Identifying places where students may struggle	• Highlighting, underlining, or adding stars to emphasize important ideas • Writing questions or comments in the margins • Bracketing or circling content you want to revisit • Using ??? or !!! to indicate questions or critical ideas • Noting instructional strategies to implement • Indicating supports to address student struggles • Indicating accommodations to meet the needs of diverse learners

Annotation and PLC Focus

- What will students learn about the phenomenon by the end of the unit?
- What science concepts will students learn by the end of the unit?
- How will you assess and support students' understanding of the three dimensions?
- What incremental checkpoints will you use throughout the unit to assess students' knowledge of the phenomenon and science knowledge?
- How will students deepen their understanding of the three dimensions (science and engineering practices, crosscutting concepts, and disciplinary core ideas) by building on previously learned content?

Step 2: Unit Launch Deep Dive — Time Estimate: 60 minutes

Question: How will students engage in phenomenon-based instruction?

Purpose: Team members build an understanding of the unit launch experience by exploring the unit overview and the elements of the Anchoring Phenomenon Routine from the student's perspective.

Anchoring Phenomenon Routine Elements	Annotation Discussion Questions
Explore Phenomena	What activities will students complete during initial and consensus discussions about the phenomenon?
	How will the investigations help students develop an understanding of the phenomenon?
Make Sense of Phenomena	Highlight or note relevant data, models, images, and texts—that represent the language and style used and produced by scientists—that students will engage with to generate initial explanations about the anchoring phenomenon.
	Create sample anchor charts (e.g. notice and wonder charts, initial models, etc.) for the unit's launch.
	Identify places in the unit launch where students may struggle and determine appropriate supports.
Identify Related Phenomena	Identify local or culturally relevant phenomena that students may identify during the unit's launch.
	How might students connect to the identified examples?
	How will you support access to the content for students who have unfinished learning?
Develop Questions About the Phenomena	Develop evidence-based questions students may pose that can be used to navigate future lessons and investigations that advance the storyline.
	How will you use the driving question board from the anchor phenomenon launch throughout the unit of study?

Step 3: Lesson Set Annotation — Time Estimate: 60 minutes

Question: How will students incrementally develop an understanding of the anchoring phenomenon and science concepts?

Purpose: Team members annotate sequences of lessons to determine where incremental sense-making occurs in the unit of study, to make instructional decisions that best meet the intent of the standards and the needs of all students.

Choose a lesson set from the current unit of study	Annotation Discussion Questions
Critically read the lesson-set performance expectation(s).	What Science and Engineering Practice(s) will students use?
	Where are the conceptual checkpoints for the Disciplinary Core Idea(s)?
	How will students apply the Crosscutting Concept(s)?
Identify competing ideas that students may have about phenomena.	How will you leverage these ideas during student sense-making and argumentation?
Identify instructional routines you'll use throughout the unit of study (e.g. Science Instructional Model)	What strategies, routines, and discussion protocols will you use for each lesson set?
	What tools and resources will you use to plan facilitation?
Determine how student understanding will be assessed after the lessons set.	Identify 2-3 of the critical tasks in the lesson set. Create or review exemplar student responses.
	Note key understandings you will look for or listen for in each task.
	Identify places students may have competing ideas. What strategies will you use to support student sense-making?

Step 4: Student Work Analysis **Time Estimate: 40 minutes**

Question: How do you use three-dimensional assessments to evaluate students' understanding?

Purpose: Team members establish norms for evaluating student work, analyze student work to formatively assess students' understanding, and from that analysis determine the implications for instructional practice and effectiveness.

Student Work Analysis Protocol

- Step 1: Identify criteria for analyzing student work using the performance expectation(s) and task
- Step 2: Identify exemplar student responses.
- Step 3: Analyze student work.
- Step 4: Identify and discuss trends.
- Step 5: Plan for future instruction.

Choose a formative assessment	Annotation Discussion questions
Analyze Student Work	Where do you see evidence of students using the Science and Engineering Practices?
	Where are students applying content knowledge?
	How are students connecting ideas using crosscutting concepts?
	What are patterns and trends in what students know and can do?
Plan for Future Instruction	Based on this student work analysis, what are the implications for future instruction?
	What is the plan for responding to students' needs for just in time support and enrichment?