

**Gather – Reason – Communicate (GRC) LESSON COACHING TEMPLATE - INSTRUCTIONAL ALIGNMENT TO THREE DIMENSIONS**

<b>Target Grade:</b>	<b>Lesson Title:</b>
<b>Course:</b>	<b>Developed by:</b>
	<b>School:</b>
<b>Performance Expectation(s) (Standard) from State Standards or NGSS:</b> <i>PASTE LANGUAGE FROM STANDARD HERE</i>	
<b>Lesson Performance Expectations</b> <i>What will the students be learning as a result of this lesson? List up to three expectations.</i>	
<b>Materials:</b> <i>What would teachers need in the classroom to support this lesson (i.e. materials, equipment, Internet access, organizers, websites, etc)</i>	
<b>Investigative Phenomenon</b> <i>What is the phenomenon or problem the students will be working to explain or solve?</i>	
<b><u>Gather Phase</u></b>	
<b>What is the Teacher Doing?</b> <i>Provide a brief description of what you, as the teacher is doing to prepare students to investigate the phenomenon.</i>	<b>What are the Students Doing?</b> <i>Provide a brief summary of how the students are introduced to the lesson. (i.e. Do they watch a video? Are they engaged in a demonstration?). In other words, how are the students engaged initially with a phenomenon.</i>

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<p><b><i>In the Classroom</i></b> List the <a href="#">practices</a> that the students will be using in the Gather phase. Use the following</p> <p>Teachers should “look for” evidence of the following when students are using the practice of _____</p> <p><b>Evidence Bullets (Look Fors):</b></p> <p>Below the evidence bullets list potential evidence that the student would exhibit (see Secondary Practices Matrix for PESTL for detail)</p>	<p><b><i>In the Classroom</i></b></p> <ul style="list-style-type: none"> <li>Sequentially list out what the students are doing and what <a href="#">practices</a> they would be using to <a href="#">gather information</a>. NOTE: Highlight the practice in <b>blue</b> for easy reference.</li> <li>For each practice that the students are using you need to list a set of evidence bullets in the Teacher Column.</li> </ul>
<p><b><u>Reason Phase</u></b></p>	
<p><b><i>In the Classroom</i></b> List the <a href="#">practices</a> that the students will be using during the <a href="#">Reason phase</a>. Use the following</p> <p>Teachers should “look for” evidence of the following when students are using the practice of _____</p> <p><b>Evidence Bullets (Look Fors):</b></p> <p>Below the evidence bullets list potential evidence that the student would exhibit (see Secondary Practices Matrix for PESTL for detail)</p> <ul style="list-style-type: none"> <li></li> </ul>	<p><b><i>In the Classroom</i></b></p> <ul style="list-style-type: none"> <li>Sequentially list out what the students are doing and what <a href="#">practices</a> they would be using to <a href="#">reason with data and information</a>. NOTE: Highlight the practice in <b>blue</b> for easy reference.</li> <li>For each practice that the students are using you need to list a set of evidence bullets in the Teacher Column.</li> </ul>
<p><b><u>Communicate Phase</u></b></p>	

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***In the Classroom***

List the [practices](#) that the students will be using during the [Communicate phase](#). Use the following

Teachers should “look for” evidence of the following when students are using the practice of \_\_\_\_\_

**Evidence Bullets (Look Fors):**

Below the evidence bullets list potential evidence that the student would exhibit (see *Secondary Practices Matrix for PESTL* for detail)

***In the Classroom***

- Sequentially list out what the students are doing and what [practices](#) they would be using to [communicate their reasoning](#). NOTE: Highlight the practice in **blue** for easy reference.
- For each practice that the students are using you need to list a set of evidence bullets in the Teacher Column.

***Suggested Prompts Using Crosscutting Concepts to Structure Student Thinking:***

As a teacher decide what aspects of the phenomenon or problem do you want students to focus upon. Use the crosscutting concepts embedded as prompts or questions to structure student thinking. Go to page 20 of the document “[Using Crosscutting Concepts to Prompt Student Responses](#)” to help you create these prompts. You should plan for various prompts when students are engaged in specific practice at various phases of the lesson. For instance, if students are analyzing a graph a prompt might be:

- “What patterns are you observing in the data?”
- “What could be possible causes for the patterns?”

***Assessment of Student Learning***

How would the teacher assess student learning? This could be a formative assessment or a summative assessment.

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**The Gather, Reason, and Communicate Performance Sequence (Moulding & Bybee, 2017)**

<b>Gather</b>	Students are provided with a relevant phenomenon or problem that acts as the launching point for them to (1) obtain information by asking questions and defining problems for causes of the phenomenon within and among systems; (2) investigate the interactions of components of systems to determine the changes in terms of flow of energy and cycling of matter; and (3) determine the proportion of components in systems and interactions/feedback among systems. Gathering may include reading, listening, investigating, and using models.
<b>Reason</b>	Students use information they gathered to make sense of phenomena. Reasoning includes analyzing data and information, constructing explanations for the causes(s) of the phenomenon, engineering solutions to problems, and developing arguments for how the evidence supports or refutes explanations or solutions. Reasoning occurs in our brains, but may utilize models, speaking, and writing to organize the relationship between the causes of phenomena and the evidence supporting the explanations.
<b>Communicate</b>	Students communicate their reasoning by developing arguments for how evidence supports explanations. Communicating includes speaking, writing, and/or models to present explanations and arguments to themselves and others.

Moulding, B. & Bybee, R. (2017). *Teaching Science is Phenomenal*. ELM Tree Publishing: Washington, UT. ISBN:978-0-8890674-0-6



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Science and Engineering Practices Using the GRC Instructional Sequence

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