Template for Developing GRC Lessons Aligned to Three-Dimensional Science Standards

This is a general template - make a copy, move it to your own google drive and rename the template with the lesson you are writing. Take this header off your lesson. If you have questions email Brett at mouldingb@ogdensd.org Title your email - "Questions about GRC Template"

3D-Student Science Performance *Author(s):*	
Grade **Lesson Topic**	**Lesson Title**

Performance Expectations (Standard) from State Standards or NGSS:
Standards that this lesson aligns to go here.

Lesson Performance Expectations: - *Complete this section after the lesson is written. Select 2 central performances.*

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Powerful Instructional Practices	**Student Science Performance**
Engage Students in Making Sense of Phenomena	***Phenomenon:*** *(Teaching Suggestions: Place suggestions for how to present and engage students in the phenomenon.)*
Developing questions to plan and carry out investigations, design solutions, and/or obtain information *Gathering data and information to use in developing evidence*	***Gather*** *(In this section students will generally be asking questions, obtaining information, planning and carrying out an investigation, using mathematical and computational thinking, or using models to gather and organize data and/or information.)* 1. Students ……. 2. Students ……. *(Teaching Suggestions: This section should contain a brief overview of information teachers will need to facilitate the lesson - this may include links to video clips, links to readings, crosscutting concepts, and core ideas to emphasize. Safety advise and other insights about the gathering portion of the lesson. When materials for the investigation are needed we recommend that you include them in the appendices.)*
Reasoning how the evidence supports an explanation for the cause of phenomena	***Reason*** *(In this section students are generally: evaluating information, analyzing data, using mathematical/computational thinking, constructing explanations, developing arguments, and/or using models to reason, predict, and develop evidence.)* 3. Students ……... 4. Students ……...
Engaging in Academic Discourse *Presenting Evidence of Learning*	***Class Discussion:*** *Questions to initiate Discussion:* *Q: How does …..* *Q: What caused changes in the system …...* *Q: Why does the input of energy cause …...* *(Teaching Suggestions: In this section provide insights into the focus of the class discussion. The questions are typically how, why, or what causes. This is a good place to prompt with crosscutting concepts.)* 5. Students …….. (if needed)
Communicating Reasoning Through Individual 3D Performance	***Communicate Reasoning*** *(In this section students will be communicating information, communicating arguments (written and oral for how their evidence supports or refutes an explanation, and using models to communicate their reasoning and make their thinking visible.)* 6. Students …...

Gather Reason Communicate

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Applying Science Learning Beyond the Classroom	*(Teaching Suggestions: if needed)* ***Beyond the Classroom*** *Invite students to investigate other animals and develop models of the nervous systems of these animals. Challenge students to find animals that have different types of nervous systems. (e.g., octopus, nematodes, microorganisms).)*

Formative Assessment for Student Learning

Elicit Evidence of Learning: *This box is the individual communication performance from the student prompts in appendix A*

Evidence of Student Proficiency	Range of Typical Student Responses	Acting on Evidence of Learning
Description of the evidence of learning expected for three-dimensional performance.	*This section provides a range of typical student responses. Often using a three-point scale.* *Descriptors of grade-level-appropriate student responses:* • ***Full understanding*** *-* • ***Partial understanding*** *-* • ***Limited understanding*** *-*	*This is a brief description of the instructional actions to take based on the students' performance. When the action includes extensive descriptors and/or materials you may wish to use* ***Appendix C.*** *Description of instruction action and response to support student learning.* • *action for students who display partial or limited understanding -* • *extensions of learning for students who display full understanding -*

SEP, CCC, DCI Featured in Lesson	**Science Essentials** *(Student Performance Expectations From Appendix C, D, E)*
Science Practices *List two or three featured practices*	*In this space describe the general outcome of 2 or 3 featured practices in the investigation. These are practices that the teacher focuses some instruction on to develop a deeper understanding of the practice.*
Crosscutting Concepts *List two featured crosscutting concept*	*In this space describe the general outcome of 2 practices that are featured in the investigation. These practices provide the focus of the investigation and the teacher should describe how they are used by the students.*
Disciplinary Core Ideas	*In this space describe the core idea or ideas from the Framework that students apply to make sense of the phenomenon. This statement is taken from the Framework or NGSS.*

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Appendices:

Appendix A - Student Prompts for the Lesson - *This section contains the lesson performances students will see during the investigation.*

Phenomenon: …..

Group Performances:

1. Ask questions to plan an investigation…... for the causes of changes in the system …
2. Plan and an investigation to gather evidence for…. causes of changes in the system …
3. Construct an explanation …… for the causes of changes in the system ……
4. Use a model to ……...

Class Discussion

Individual Performances:

5. Develop an argument for how the evidence you collected supports or refutes your explanation for the causes of the phenomenon.

The student prompt can be used to engage students in science performances and typically have 3-7 group performances and one individual performance. The individual performance typically lies within the communicate reasoning part of the sequence and often serves as a formal formative assessment.

Appendix B-1 *Typically a Reading, web search, or another tool to help students obtain information are put into this appendix.*

Appendix B-2 *This is a useful place to include examples of data tables. This is a good place for pictures of models (diagrams or charts students use) or pictures of students engaged in the performances.*

Appendix C- 1 *This is a good place to put descriptions and resources for "acting on evidence of learning" from the Formative "Assessment for Student Learning". Typically this is an additional reading for the class discussion or other resources students use to meet the learning expectation.*

Appendix C- 2 *This is the best place for an assessment scaffold.*

Here is an example of a develop an argument scaffold

An explanation -
Lines of Evidence - *Evidence from the experiment -* *Evidence from Reading -* *Evidence from Class Discussion -*
An argument for how the evidence supports or refutes the explanation -