Peer Collaboration NGSS Lesson Tool

How to use:

This tool was designed to support peer-to-peer classroom visitations and facilitate discussions between the visiting teacher and the visited teacher, focused around Next Generation Science Standards. Teachers should review the NGSS Lesson Checklist and Peer Collaboration protocol to plan for cross grade level collaboration visits. Complete the "planning for the visit" section of this peer collaboration tool.

Planning for the Visit

Describe the learning focus area, as determined by student data. Under which dimension does the focus align?
Explain the assessments (formative and/or summative) utilized in this lesson. How do these assessments connect to the focus?

Pre-Visit: What strategies will the teacher use to support learners in the focus area?	**During Visit:** What is the **teacher** saying and doing related to the focus area?	**During Visit:** What are **students** saying and doing related to the focus area?

Post- Visit Guided Conversation:

Praise: List strategies, techniques, resources, or tools from this lesson that inspired you.	
Question: How well did students master the desired objectives of the lesson? How do you know?	
Polish: What aspect of your instructional practice are you going to work on growing? How will you apply the Peer Collaboration learning to your instructional practice?	

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*This tool is meant to help develop, design, and facilitate high-quality NGSS lessons. These lists serve as a guide, but is not meant to cover all possible lesson components. Every lesson may not incorporate all criteria from this tool. (*Units and curricula should make efforts to integrate as many components described below as possible.)*

This tool is adapted from the "NGSS Lesson Screener," published December 2016 by Next Generation Science Standards.

Criterion A. Explaining Phenomena or Designing Solutions

- ☐ The purpose and focus of the lesson are to support students in making sense of phenomena and/or designing solutions to problems; Student sense-making of phenomena or designing of solutions is used as a window into student understanding of all three dimensions of the NGSS.
- ☐ Lessons work together in a coherent storyline to help students make sense of phenomena.
- ☐ Students get experience with a phenomenon/problem that is relevant and developmentally appropriate.
- ☐ The development of science ideas is anchored in explaining phenomena or designing solutions to problems.

Comments:

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Criterion B. Three Dimensions

- ☐ The lesson helps students use multiple (e.g., 2–4) elements as appropriate in their learning.
- ☐ Lessons on engineering require students to acquire and use elements of DCIs from physical, life, or Earth and space sciences together with elements of DCIs from engineering design (ETS) to solve design problems.
- ☐ Students explicitly use grade appropriate SEP and CCC elements to make sense of the phenomenon or to solve a problem. (*see below for details on SEPs and CCCs)

Science and Engineering Practices (SEPs)

- ☐ Asking questions and defining problems
- ☐ Developing and using models
- ☐ Planning and carrying out investigations
- ☐ Analyzing and interpreting data
- ☐ Using mathematics and computational thinking
- ☐ Constructing explanations and designing solutions
- ☐ Engaging in argument from evidence
- ☐ Obtaining, evaluating, and communicating information

Crosscutting Concepts (CCCs)

- ☐ Patterns
- ☐ Cause and effect
- ☐ Scale, proportion, and quantity
- ☐ Systems and system models
- ☐ Energy and matter
- ☐ Structure and function
- ☐ Stability and change

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Criterion C. Integrating the Three Dimensions for Instruction and Assessment

- ☐ The lesson builds student proficiency in at least one grade-appropriate element from each dimension.
- ☐ The three dimensions intentionally work together to help students explain a phenomenon or design solutions to a problem.
- ☐ Teachers deliberately seek out student artifacts that show direct, observable evidence of learning.
- ☐ Teachers use tasks that ask students to explain phenomena or design solutions to problems, and that reveal the level of student proficiency in all three dimensions.

Comments:

Criterion D. Relevance and Authenticity

- ☐ The lesson motivates student sense-making or problem-solving.
- ☐ The lesson provides support to teachers for making connections to the lives of every student in the class.
- ☐ Student questions, prior experiences, and diverse backgrounds related to the phenomenon or problem are used to drive the lesson and the sense-making or problem-solving.
- ☐ The lesson provides support for connecting students' own questions to the targeted materials.

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Criterion E. Student Ideas

- ☐ Classroom discourse focuses on explicitly expressing and clarifying student reasoning.
- ☐ Students have opportunities to share ideas and feedback with each other directly.
- ☐ Student artifacts include elaborations (which may be written, oral, pictorial, and kinesthetic) of reasoning behind their answers, and show how students' thinking has changed over time.
- ☐ The lesson provides supports to teachers for eliciting student ideas.

Comments:

Criterion F. Building on Students' Prior Knowledge

- ☐ The lesson content builds on students' prior learning in all three dimensions.
- ☐ The lesson provides explicit support to teachers for identifying students' prior learning and accommodating different entry points, and describes how the lesson will build on the prior learning.
- ☐ The lesson explicitly works with students' foundational knowledge/practice from prior grade levels.

Comments:

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Terminology

Assessment, Formative:

Assessments that evaluate how a student is learning throughout the course.

Assessment, Summative:

Assessments that evaluate how much a student has learned throughout the course.

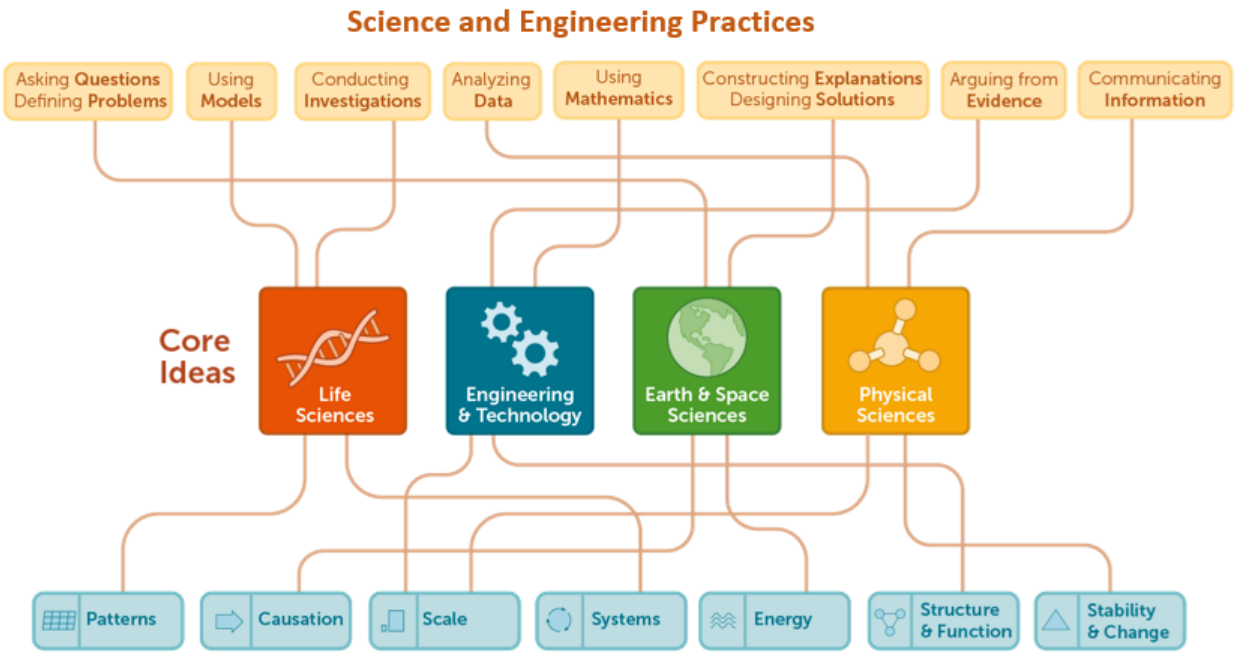
Phenomena:

Natural phenomena are observable events that occur in the universe and that we can use our science knowledge to explain or predict.

Three Dimensions:

In the Next Generation Science Standards (NGSS), the Three Dimensions refers to the Disciplinary Core Ideas (DCIs), Science and Engineering Practices (SEPs), and Crosscutting Concepts (CCCs).

The diagram below shows examples of how the four Core Ideas of Next Generation Science Standards connect to Science and Engineering Practices and Crosscutting Concepts.
**The diagram does not show all possible connections.*



The Concord Consortium. 2015. Retrieved from https://concord.org/wp-content/uploads/2016/12/pdf/ngss-pathfinder-with-paths.pdf