



Science Today!

Rediscover the importance of
teaching science.

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REDM  ND

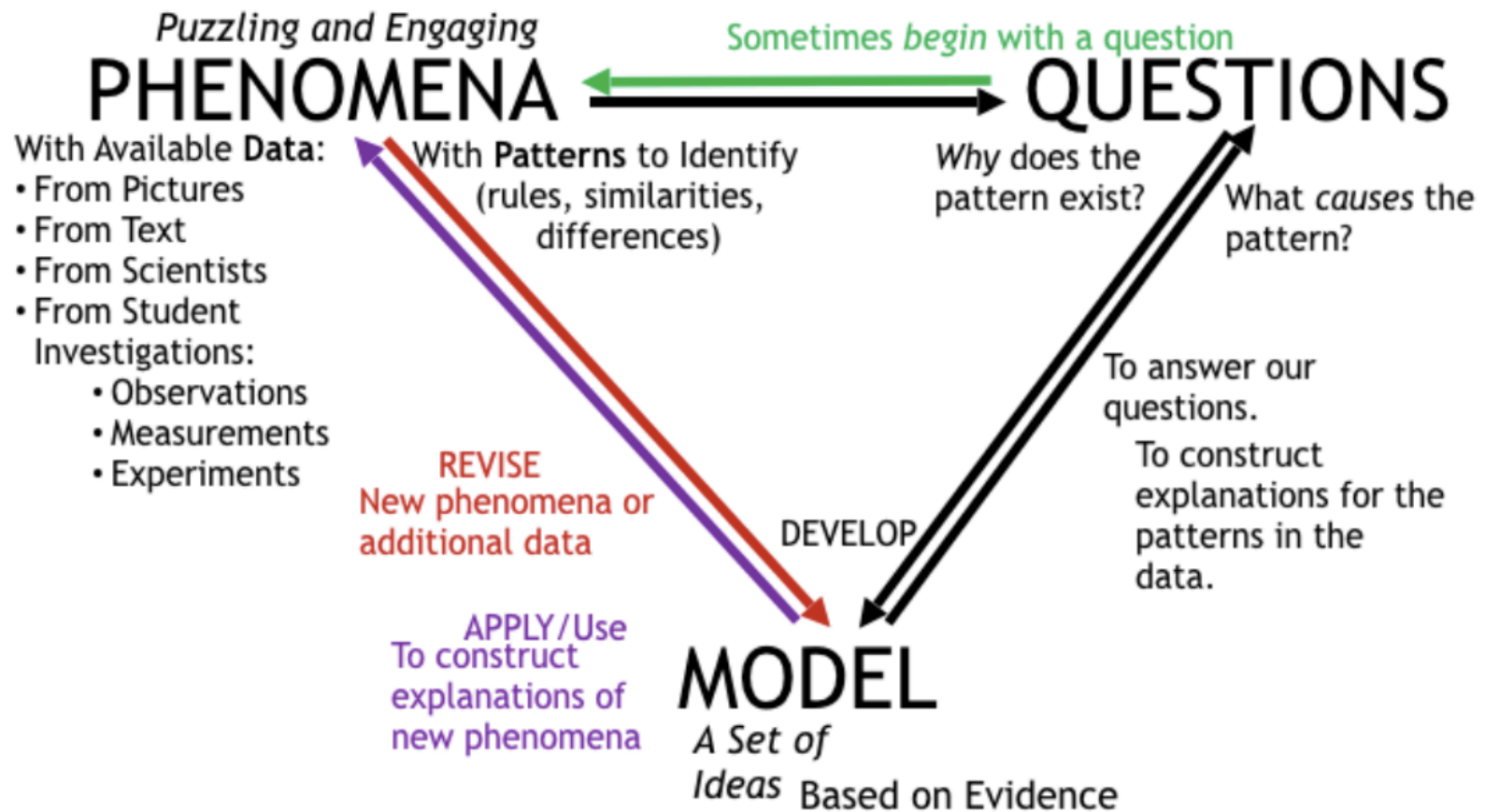


EARLY LEARNING CENTER
at Hugh Hartman

Using PHENOMENA IN NGSS-Designed Lessons and Units

- What are phenomena in science and engineering?
- Why are phenomena such a big deal?
- How are phenomena related to the NGSS and three dimensional learning?
- How do we use phenomena to drive teaching and learning?
- What makes phenomena effective for use in instruction?
- Prior Thinking / Thinking About Phenomena Through the NGSS

Reasoning Triangle



Next Generation Science Standards (NGSS)

New science standards were developed to change the way science is taught in K–12 classrooms. Students learn the ideas of science through actually doing science.

The three dimensions of NGSS are:

Science and Engineering Practices are the skills and behaviors that students will need to learn in order to “do” science and engineering as scientists and engineers, i.e. asking questions, developing models, analyzing data, etc.

Disciplinary Core Ideas focus the K–12 science curriculum and assessments on the most important aspects of science. Between 2-4 core ideas are organized into each of the four science domains.

physical sciences | life sciences | earth and space sciences | engineering, technology, and applications of science

Crosscutting Concepts are the themes or lenses for students to use as they explore a particular topic. The concepts have applications across all domains of science, i.e. patterns, cause and effect, scale, etc.

How is NGSS new and different from existing science standards?

There are six conceptual shifts in NGSS.

1

K–12 science education should reflect the interconnected nature of science as practiced and experienced in the real world.

2

The standards are student performance expectations — NOT curriculum.

3

The science concepts build coherently across K–12.

4

The standards focus on deeper understanding of content and application of content.

5

Science, engineering, and technology are integrated.

6

NGSS and Common Core State Standards are aligned.

Practice, Practice, Practice!

Science and Engineering Practices

Eight practices are considered essential in the K-12 science and engineering curriculum. Students can use these practices separately or in combination, to demonstrate their understanding of science and engineering. No one practice is more important than the others. By engaging in these practices, students understand how scientists and engineers work.



Resources

- learnforests.org
ie.- programs & resources folder *Free transportation
- onrep.forestry.oregonstate.edu
- www.plt.org
- www.projectwild.org
- www.oregonforests.org
- oelp.oregonstate.edu
- oregonaitc.or Oregon Agriculture in the Classroom Foundation

Questions:

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