

Mars Rover Celebration NGSS Alignment

WEEK 1: LEARNING RESEARCH SKILLS

LESSON 2: INTRODUCTION TO MARS AND THE MARS ROVER CELEBRATION PROJECT

GRADE LEVEL: 3-5

PERFORMANCE EXPECTATIONS

In the NGSS framework, one of the important things that teachers need to do is explicitly identify when Science and Engineering Practices (SEP) and Cross Cutting Concepts (CCC) are being covered. The SEP's and CCC's are pervasive throughout the Mars Rover Celebration curriculum. The tables here are intended to assist the teacher in deciding when to mention that an SEP or CCC is part of the material being presented.

Lesson Objectives		
Students who demonstrate understanding can: <ul style="list-style-type: none">Determine the difference between astronomy and astrologyRecord detailed observations of a simulated surface and simulated interior of MarsCompare and contrast an unknown sample with the surface and interior of MarsLearn preliminary facts about Mars, its surface, and its place in the solar system		
Earth's Systems: Processes that Shape the Earth		
4-ESS1-1 Identify evidence from patterns in rock formations and fossils in rock layers to support and explanation for changes in a landscape over time.		
SCIENCE AND ENGINEERING PRACTICES (SEP)	DISCIPLINE CORE IDEAS (DCI)	CROSSCUTTING CONCEPTS (CCC)
Developing and Using Models Develop and use a model to describe phenomena.	ESS1: Earth's Place in the Universe: ESS1.B: Earth and the Solar System	Patterns Patterns can be used as evidence to support an explanation.
Analyzing and Interpreting Data Represent data in graphical displays to reveal patterns that indicate relationships.		Structures and Function Structures can be designed to serve particular functions by taking into account properties and materials and how materials can be shaped and used.

SUMMARY OF THE THREE DIMENSIONS

The 5E lesson model provides the 5 phases of learning that helps to facilitate the process of science understanding. Teachers are encouraged to use the table below to help align their teaching methods with the embedded Science and Engineering Practices (SEP), Disciplinary Core Ideas (DCI) and Cross Cutting Concepts (CCC) present in the lesson.

5E MODEL PHASE	SCIENCE AND ENGINEERING PRACTICES (SEP)	DISCIPLINE CORE IDEAS (DCI)	CROSSCUTTING CONCEPTS (CCC)
ENGAGE	Asking Questions and Defining Problems	Earth and the Solar System	Structure and Function
EXPLORE	Developing and Using Models Obtaining, Evaluating and Communicating Information	Earth and the Solar System	Structure and Function
EXPLAIN	Analyzing and Interpreting Data	Earth and the Solar System	Patterns
ELABORATE	Analyzing and Interpreting Data	Earth and the Solar System	Structure and Function
EVALUATE	Performance Expectations	Performance Expectations	Performance Expectations