

Mars Rover Celebration NGSS Alignment

WEEK 1: LEARNING RESEARCH SKILLS
LESSON 3: RESEARCH TOOLS AND SKILLS
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">• Learn about features of Mars through a demonstration of Google Earth Mars• Gather, and analyze data from multiple sources on the internet as well as print sources• Develop and use strategies for reading informational text to systematically find information• Differentiate between paraphrasing and plagiarism and identify the importance of citing valid sources• Understand that Earth and Mars have similar geological features		
Earth's Systems: Processes the Shape the Earth		
4-ESS2-1 Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind or vegetation.		
SCIENCE AND ENGINEERING PRACTICES (SEP)	DISCIPLINE CORE IDEAS (DCI)	CROSSCUTTING CONCEPTS (CCC)
Obtaining, Evaluating and Communicating Information Obtain and combine information from books and/or other reliable media to explain phenomena or solutions to design problems Analyzing and Interpreting Data	ESS1: Earth's Place in the Universe: ESS1.B: Earth and the Solar System	System and System Models A system can be described in terms of its components and interactions.

Analyze and interpret data to
make sense of phenomena
using logical reasoning.

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	Obtaining, Evaluating and Communicating Information	Earth and the Solar System	Systems and System Models
EXPLORE	Obtaining, Evaluating and Communicating Information	Earth and the Solar System	Systems and System Models
EXPLAIN	Analyzing and Interpreting Data	Earth and the Solar System	Systems and System Models
ELABORATE	Analyzing and Interpreting Data Obtaining, Evaluating and Communicating Information	Earth and the Solar System	Systems and System Models
EVALUATE	Performance Expectations	Performance Expectations	Performance Expectations