Mars Rover Celebration NGSS Alignment

WEEK 3: DESIGNING THE MISSION
LESSON 8: WHERE IS THE BEST PLACE TO MEASURE?
GRADE LEVEL: 6-8

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: • Determine a landing site for their Mars Rover • Work with their team to summarize information and identify important details in non-fiction writing • Use technology skills to research Gale Crater through an online interactive module • Learn about features of Mars through use of Google Earth Mars • Gather, and analyze data to conduct a scientific experiment • Collect and record data to draw logical and scientific conclusions • Define and identify the role of constants and variables in teams' scientific or technical questions • Differentiate between weather and climate
Weather and Climate
MS-ESS2-5 Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.

SCIENCE AND ENGINEERING PRACTICES (SEP)	DISCIPLINE CORE IDEAS (DCI)	CROSSCUTTING CONCEPTS (CCC)
Planning and Carrying Out Investigations Collect data to produce data to serve as the basis for evidence to answer scientific questions or test design solutions under a range of conditions	**ESS1: Earth's Place in the Universe:** ESS1.B: Earth and the Solar System **ETS1: Engineering Design:** ETS1.A: Defining and Delimiting Engineering Problems	**System and System Models** Models can be used to represent systems and their interactions- such as inputs, processes, and outputs- and energy, matter and information flows within the system

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	Planning and Carrying Out Investigations	Earth and the Solar System	Systems and System Models
EXPLORE	Planning and Carrying Out Investigations	Earth and the Solar System Defining and Delimiting Engineering Problems	Systems and System Models
EXPLAIN	Planning and Carrying Out Investigations	Earth and the Solar System Defining and Delimiting Engineering Problems	Systems and System Models
ELABORATE	Planning and Carrying Out Investigations	Earth and the Solar System	Systems and System Models
EVALUATE	Performance Expectations	Performance Expectations	Performance Expectations