

Rendezvous With a Comet
The Earth in the Solar System

Summary Page

Performance Task Title: Space Station Systems Design

Challenger Learning Center focus on: Remote, Life Support, Isolation, and Medical.

Grade Level(s): Nat'l 5-8, MA 5, 6-8	Discipline: Earth/Space Science
Enduring Understanding: Living things have basic needs, and require certain environment conditions, which must be met in order to survive. Manmade environments simulate natural environments by providing systems and conditions necessary to support life.	
Unifying Concepts: systems, order, organization, evidence, models, explanations, form, and function	
Interpret: Students will research and design a floor plan for a space station environment in which humans can live and work.	
Essential Question: What systems make up a space station and how well do they function with each other to support scientific and life supporting functions?	
National Standard: <i>Organisms have basic needs. Organisms can survive only in environments in which their needs can be met.</i>	
Massachusetts Framework: <i>Recognize how organisms meet some of their needs in an environment by using behaviors in response to stimuli received from the environment. Engineering design is an iterative process involving modeling and optimizing for developing technological solutions to problems within given constraints.</i>	
Thinking Skills:	Focus Questions Connecting Content to the Thinking Skills:
<p>Prior Ideas: students describe and give examples of systems they are familiar with</p> <p>Developing an Interpretation: make and support inferences about systems</p> <p>Making Connections: detailed observations that connect prior ideas about systems to new information gathered</p> <p>Critical Stance: evaluate efficiency of interrelationships (dynamics) between space station systems</p>	<p>What types of systems are necessary for the health and safety of the crew?</p> <p>How do the space station systems work together efficiently to support life and also support the scientific mission of the crew?</p>
Problem Solving: Data collection, observations, graphic organizer, floor plan	
Work Habit(s): Attention to detail, finished work on time,	
Adult Role Situation/Simulation	
Format of Product(s) and/or Performance(s): Floor plan, including photographs and descriptions, of the various space station systems and how they interrelate.	
Audience: NASA	Purpose: Space station systems design
Role of the Learner in this Task: Member of a NASA space station systems design team	