

JASON Expedition: Mysteries of Earth and Mars

How the curriculum correlates to National Science Education Standards:

<p>Unit 1: Physical Science</p> <p>Examines the physical properties of space science as well as the engineering challenges of robotic exploration. Topics include:</p> <ul style="list-style-type: none"> • Characteristic properties and chemical changes of water: freezing point, boiling point, solubility, density, chemical reactions • Motions and Forces: Newton’s Laws, gravity • Transfer of Energy: potential and kinetic energy • Science and Technology: technological design 	<p>National Science Education Standards</p> <ul style="list-style-type: none"> • B.1 Properties and Changes in Matter • B.2 Motion and Forces • B.3 Transfer of Energy • D.1 Water Cycle • D.3 Earth in the Solar System • E.1 Abilities of Technological Design
<p>Unit 2: Earth and Space Science</p> <p>Examines comparative planetology, the geological features and processes on Earth and Mars. Topics include:</p> <ul style="list-style-type: none"> • Physical Geology: landforms, rocks, minerals, and soil • Geological Processes: tectonics, volcanism, cratering, erosion, and measuring geological time • Electromagnetism: waves, infrared radiation, and spectroscopy • Solar System: planets and meteors 	<p>National Science Education Standards</p> <ul style="list-style-type: none"> • A.1 Abilities Necessary to do Scientific Inquiry • A.2 Process of Scientific Inquiry • B.1 Properties and Changes in Matter • D.1 Structure of the Earth System • D.2 Earth’s History
<p>Unit 3: Life Science</p> <p>Examines requirements for life, astrobiology (the search for life throughout the solar system) and extremophiles (organisms adapted to extreme environments). Topics include:</p> <ul style="list-style-type: none"> • Requirements for Life: energy, nutrients, water • Living Systems: structure and function in living systems, cells, microbes • Diversity and Adaptation of Organisms: extreme environments, extremophiles • Earth’s History: fossils, biosignatures 	<p>National Science Education Standards</p> <ul style="list-style-type: none"> • A Science as Inquiry • B.1 Properties and Changes in Matter • C.1 Structure and Function of Living Systems • C.3 Regulation and Behavior • C.4 Population and Ecosystems • C.5 Diversity and Adaptations of Organisms • D Earth and Space Science • E Science and Technology • G History and Nature of Science