

SpaceOLÉ • Voyager Challenge Cards

SpaceOLÉ Voyager Geologist

Challenge Question

The minerals that are mined from the earth can be very useful in making many different products. What are the possible uses of the most abundant mineral compounds on your planet/moon?

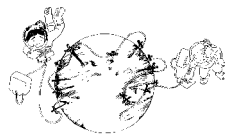
National Science Education Standards

D2: Geochemical cycles

D4: Origin and evolution of the universe

E1: Abilities of technological design

F3: Natural resources



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Challenge Question

Tectonic plate movements have shaped the surface features of the earth, causing the separation of the continents and forming mountain ranges. What evidence can be found on the planet/moon to indicate that there are tectonic plate movements?

National Science Education Standards

D1: Energy in the earth system

D4: Origin and evolution of the universe



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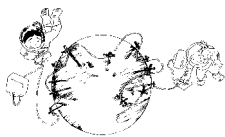
Challenge Question

The surface of the earth is renewed and new rock is created from lava flow. The lava hardens and forms many geologic features such as lava plateaus. Discuss various examples of how the surface of the planet/moon has been altered by volcanic activity.

National Science Education Standards

D1: Energy in the earth system

D4: Origin and evolution of the universe



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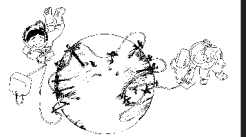
Challenge Question

Many extreme places on earth, such as arctic regions and deserts, can give us an insight into what conditions may be like on some planets. Compare and contrast the geologic conditions of your planet/moon with the conditions of a place on earth with similar geology.

National Science Education Standards

D1: Energy in the earth system

D4: Origin and evolution of the universe



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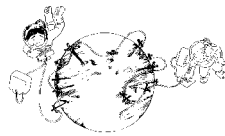
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Challenge Question

Scientists can observe major geologic events on other planets/moons from telescopes such as the Hubble telescope. Describe major geologic occurrences that have been observed in recent years on your planet/moon.

National Science Education Standards

D4: Origin and evolution of the universe
F6: Science and technology in local, national, and global challenges



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Challenge Question

Some surface conditions are too unstable for human habitation. Explain your reasons for choosing a location on your planet/moon stable enough to provide a base of operations for your team.

National Science Education Standards

D4: Origin and evolution of the universe
E1: Abilities of technological design
F4: Environmental quality
F5: Natural and human-induced hazards
F6: Science and technology in local, national, and global challenges



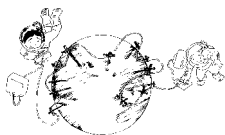
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Challenge Question

The surface of the earth shows signs of weathering, erosion and deposition. Discuss evidence that any of these events may have occurred on your planet/moon.

National Science Education Standards

D1: Energy in the earth system
D4: Origin and evolution of the universe



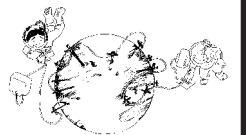
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Challenge Question

Scientists hypothesize that motion within the liquid iron core of the earth produces electrical currents that in turn create the earth's magnetic field. Determine if your planet/moon has a magnetic field and discuss what this might imply.

National Science Education Standards

D1: Energy in the earth system
D4: Origin and evolution of the universe
E1: Abilities of technological design

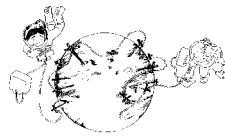


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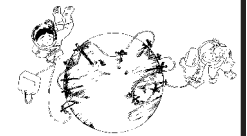
National Science Education Standards



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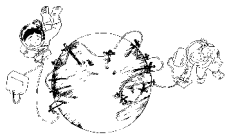
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