Learning Progression

Text: McDougal Littell, *Space Science* **Grade level: 8**

Prerequisite skill:
Implications of the spherical Earth and its place in the Solar System 4-5

Describe how Earth's *rotation* on a tilted *axis* in a predictable cyclic motion around the Sun affects the seasons and day & night.

6-8 ES1C, & D

I can explain how the Earth's tilt, its rotation, and orbit around the Sun predict the seasons and day & night.

Exit ticket
Given a diagram that shows the Earth's tilt on its axis, rotation, and orbit around the Sun explain how days and seasons are created.

If the Earth's axis were not tilted with respect to its orbit, would days be different? Would seasons? Why or why not?

Explain why the same side of the Moon always faces the Earth.

6-8ES1B, C, & D

I can describe the Moon's rotation on its axis as it orbits the Earth.

Activity 2.2 p.52.
Table group discussion
Journal: Describe **how much the Moon turn on its axis in a given amount of time and how this affects what is seen from Earth.**

If the Moon's rate of rotation changed, would the same side still face the Earth? Why or why not?

Compare the Moon's characteristics in size, composition, and relative position to other bodies in the *Solar System*.

6-8ES1B

I can describe the surface and features of the Moon and compare them to those of another celestial body.

Worksheet 2.2,
Reinforcing Key Concepts

How are the structure of the moon and the structure of the Earth similar? Different?

Construct a diagram showing the Moon's sunlit half during its orbit around the Earth.

6-8ES1A & C

Success Criteria:
I can predict the position of the Moon for each of its phases.

Exit ticket
Draw and label Moon phases on a diagram of the Earth-Moon system.

Why does the Moon seem to change shape?

Show how an *eclipse* occurs when the relative positions of the Earth, Moon, and Sun create a shadow that makes the Moon or Sun appear to grow dark.

6-8 ES1A & C

I can demonstrate how solar and lunar eclipses occur.

Draw, shade, and label a diagram that demonstrates how solar and lunar eclipses occur in the Earth-Moon-Sun system.

Is there ever an eclipse during a gibbous Moon phase? Why or why not?

The Earth and the Moon move in predictable ways as they orbit the sun. 6-8ES1

Later big ideas that build on this big idea include:

Life cycle of stars

The Big Bang theory

Seasonal climate variations

9-12

Northwest Educational Service District 189
Together We Can
Math & Science Collaborative Inquiry Project