Moon Phase Lesson Plan

Objectives: 1. Describe and explain the motion of celestial bodies; 2. Describe the composition and characteristics of the components of the solar system; 3) Describe the effects of solar phenomena on Earth

Materials: Moon phase diagram; multiple-choice quiz

Preliminary Discussion (Introduction)

1. Teacher begins by asking class in very friendly tone what they know about moon phases.
2. Teacher praises and confirms answers. Teacher asks others who did not respond if they can add anything.

Presentation

3. Teacher holds up diagram of moon phases and explains how the moon phases change:

New Moon - When the Moon is roughly in the same direction as the Sun, its illuminated half is facing away from the Earth, and therefore the part that faces us is all dark: we have the new moon. When in this phase, the Moon and the Sun rise and set at about the same time.

Waxing Crescent Moon - As the Moon moves around the Earth, we get to see more and more of the illuminated half, and we say the Moon is waxing. At first we get a sliver of it, which grows as days go by. This phase is called the crescent moon.

Quarter Moon - A week after the new moon, when the Moon has completed about a quarter of its turn around the Earth, we can see half of the illuminated part; that is, a quarter of the Moon. This is the first quarter phase.

Waxing Gibbous Moon - During the next week, we keep seeing more and more of the illuminated part of the Moon, and it is now called waxing gibbous (gibbous means "humped").

Full Moon - Two weeks after the new moon, the moon is now halfway through its revolution, and now the illuminated half coincides with the one facing the Earth, so that we can see a full disk: we have a full moon. As mentioned above, at this time the Moon rises at the time the Sun sets, and it sets when the Sun rises. If the Moon happens to align exactly with the Earth and Sun, then we get a lunar eclipse.

Waning Gibbous Moon - From now on, until it becomes new again, the illuminated part of the Moon that we can see decreases, and we say it's waning. The first week after full, it is called waning gibbous.

Last Quarter Moon - Three weeks after new, we again can see half of the illuminated part. This is usually called last quarter.

Waning Crescent Moon - Finally, during the fourth week, the Moon is reduced to a thin sliver from us, sometimes called waning crescent.

A while after four weeks (29.5 days, more precisely) the illuminated half of the Moon again faces away from us, and we come back to the beginning of the cycle: a new moon. Sometimes, when the Moon is almost new, it is possible to dimly see its darkened disk. The light from the Sun cannot reach this part of the Moon directly;

but at this time the Earth (as viewed from the Moon) is at its full and very bright, and what we see is light reflected from the Earth, that then bounces back at us from the Moon. It's a long trip for this light: from the Sun to the Earth, to the Moon, and back to the Earth.

4. Teacher questions class—What phase follows the first quarter? Answer: "waxing gibbous." What do we call the moon when we see it as completely dark? Answer: "new moon." What do we call the moon when we see it as completely lit? Answer: "full moon."

Practice

5. Teacher asks students to work in pairs, taking turns stating the phases of the moon to each other.

Performance (Individual Assessment)

6. Teacher passes out a multiple-choice quiz to individuals.

Adapted from http://home.hiwaay.net/~krcool/Astro/moon/moonphase/

http://engage.ucf.edu/v/p/h65d4ak

Moon Phases Quiz

Name:_____ Date:_____

Circle the best answer for each question.

1. When the illuminated part of the moon decreases, we call that:

   a. New
   b. Waxing
   c. Waning
   d. Subtraction

2. What occurs two weeks after the new moon?

   a. First quarter
   b. Full moon
   c. Eclipse
   d. Waxing crescent

3. When the moon and sun rise and set at approximately the same time:

   a. Full moon
   b. Last quarter
   c. New moon
   d. Waning gibbous

4. What causes the moon to appear different throughout the month?

   a. The earth
   b. The sun
   c. Both a & b
   d. None of the above