



WAIT TILL THE MOON IS FULL
by
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The little raccoon has so many questions to ask about the night and the moon that his mother answers in many different ways. She always ends with the message that he "must wait until the moon is full." Waiting is difficult for young children, but he does his best and, finally, he is rewarded.

On a night with a full moon, it almost seems bright enough to read outside. How bright is it on the other nights of the moon's monthly cycle? The Greeks were the first to discover that moonlight is actually reflected sunlight. This activity will help you and your students understand why this is true. They will use an orange as a model of the moon; when they have finished the activity, they should eat the orange/moon!

MATERIALS: four to six oranges, chopsticks, 1 small lamp without the shade, extension cord, a room that is able to be darkened.

ACTIVITY: Place the lamp in the center of a dark room; turn it on. Put each orange at the top of a chopstick. Position the students in a circle around the lamp. Distribute the oranges evenly around the circle. The lamp will represent the sun, the orange the moon, and each student the earth. The students will hold the orange up in front of them so that it covers the sun. Now they will begin to turn slowly in a counter-clockwise direction *watching* the moon as they turn. They should begin to see the reflected light of the sun on the surface of the moon, first as a small sliver, then a quarter, and finally the entire (Full Moon) surface. They will continue to move until they have made a complete circle and are back in the position they started. This moon is the New Moon; it has no light reflecting on it because it is between the earth and the sun! This activity should be repeated at least one

more time.

TEACHER NOTES: *Caution the students to not look directly at the lamp.* At the beginning of the activity, the position of the orange represents the New Moon as the moon is between the earth and the sun. When the moon is FULL, the student's back should be toward the sun. With younger children, it is helpful to have the teacher turn with each student the first time the activity is tried.

SOURCE: GEMS Leaders Workshop, NSTA National Convention, Atlanta, Georgia, 1990.

STANDARDS:

BSL: 1.7, 4.1, 9.3, 11.2

NCTM: 4d, 13a

SCS: A1, B2, D2, H1, H2, H3

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