

Week 2

This week, your students will continue to observe the Sun and the Moon. In addition to daily entries in the Moon Calendar, they will keep track of the relative positions of Sun and Moon, and of the location and time of sunset. At night, they will look for bright stars and planets, and record the Moon's position with respect to them.

Make sure your students continue to enter daily records on the Moon calendar. Remember to discuss their observations daily, first thing in the morning if possible. A few minutes a day is all it takes, ^{and helps} ~~but~~ it ~~can~~ keep the interest level high.

While this kit does not primarily rely on "book learning", you should complement it with some research projects for your students. Ask a few students each week to prepare oral reports and/or bulletin board displays on various topics related to the Solar System. At the beginning of each week, a research topic will be suggested.

* Research topic: the Sun, sun spots.

Lesson 4

SUNSET

OBJECTIVES:

* To start noticing seasonal variations in the Sun's path.

GRADES: 4 and up.

SCHEDULING:

This activity needs a clear sky (though a few clouds can make for a more dramatic sunset.) It is a good idea to schedule it two or three days after the New Moon. This would help the students find the Moon after its monthly disappearance.

Students should make a weekly drawing of the location of the sunset until Lesson 19.

Only a few minutes of class time are required to introduce the activity, and a little more to discuss it the next day.

DISCUSSION:

Motivate the homework with a discussion of the following questions:

* Where does the Sun set (rise)? At what time does the Sun set (rise)?

* Does the Sun set in the same place every night? Does it set at the same time?

* Are days getting longer? shorter?

Some students may be aware of seasonal changes in the times of sunrise and sunset, but it is a widely held misconception that the Sun rises exactly due East, and sets exactly due West. (In fact, this only happens on the day of the

Equinox. Do not reveal this to your students: it will be made clear by their own observations and by the activity in Lesson 18.)

STUDENT SHEET:

* Sunset

ACTIVITY:

Every week, remind the students to mark the location of the sunset on their drawing. The intervals do not need to be exactly one week: if you forget to remind them on a certain day, or if it is cloudy, the observation should be done on the following day.

Explain that it is best to watch the sunset from a place that has a wide view with many distant landmarks near the horizon. Using nearby landmarks is misleading, because standing in a different spot makes the Sun appear to set at a different spot.

Early risers should be encouraged to carry out the activity at sunrise.

CONCLUSIONS:

* After a few weeks, your students should be able to see that while the statement that "The Sun rises in the East and sets in the West" is basically true, it is not usually exact. Depending on the season, your students may have seen the sunset North or South of due West, and will have noticed changes from week to week.

* They will also become aware of the time of sunset changes.

* The most observant may notice that the location and time are

related: when the Sun sets further South, it sets earlier. When it sets further North, it sets later. This will be clearer after the experiment in lesson 18.

COMMENTS:

* The location and time of sunset change fastest around the time of the Equinox, slowest around the time of the Solstice. (In fact solstice means "still sun".) In other words, this Lesson would be most effective in March or September, least effective in December or June.

* Be aware of Daylight Savings Time. If your students' observations span a period that includes a time change, convert all clock times to Standard Time in order to facilitate comparisons.

* Students enjoy noticing the large number of colors that become visible in the sky during some sunsets.

SUNSET

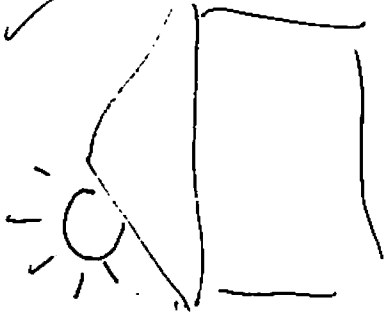
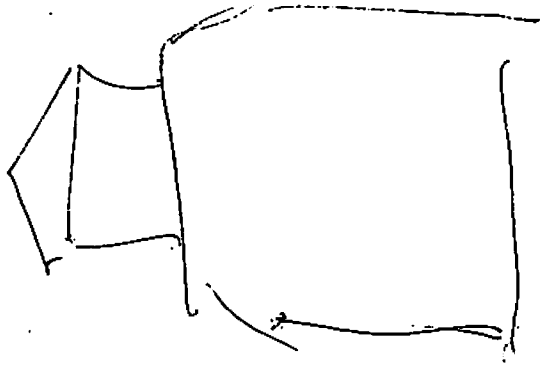
* Go where you can see the Sun set. People often say the Sun sets in the West. Is this exactly true?

* Describe the sunset in a short paragraph. Be sure to pay close attention to any colors you may see in the sky. How many different colors do you notice? (You may be surprised!) Also notice how stars start appearing as the sky darkens.

* Make a simple drawing of the western horizon, and on it, mark where the Sun sets. Do it again, on the same drawing, every week. Be sure to write the date and time each time.

* Extra: If you can get up early enough, repeat these activities at sunrise.

Oct
25



Nov
10

