Find Your Way Around the Night Sky

**Objective:** Students will use simple star maps – one each for each month between October and March -- that they can take and use outside on clear nights. Since the night sky is always changing they are designed for a specific month and time of night when the students will be able to go out and use them.

**Classroom Materials per monthly map:**
-- 1 copy of the star map for the specific month (one per student)

**Outdoor Observing Session Materials:**
-- small pocket flashlight, or a regular flashlight (one per student); see Observing Tip C

**Background Information**
Each monthly map includes three circumpolar constellations (the Big Dipper, the Little Dipper and Cassiopeia) that can be seen any clear night as well as other seasonally-related constellations that can also be seen during that month. Only bright easy to find figures have been included and identified to help ensure that the students will have success while out under the stars.

**How to Use the Star Maps**
Discuss with the students what they can do with a star map. Then distribute the materials among the members of the class. Be sure to pick the right star map for the month that you are going to go out and observe. Each star map has the name of the month for that particular map. Also make sure that you are going outside at the right clock time to observe.

Have the students take a look at their star map before going outside in the dark. This will help them be familiar with it rather than when just having to use a flashlight for a light source.

When we talk about directions outdoors we often refer to the cardinal, or compass, points north, south, east and west. The sky appears to be a hemisphere over our heads and therefore very hard to represent on a piece of paper. Note that each part of a seasonal map has a large letter (N, E, S, or W) along the horizon. This shows which direction that part of the map is facing.

The map should be held so that the letter with the direction you are facing is down toward the ground. This then becomes the horizon in the direction you are facing.
The center of each map marks the point in the sky directly overhead, also known as the zenith.

The simplest place to start an evening’s constellation observing is by having everyone face north. Look at the north horizon of the star map and then search the sky over the northern horizon for the easy-to-find group known as the Big Dipper, which many people already know. Once you have found north you can use the Big Dipper to find the Little Dipper and from the Little Dipper you can find Cassiopeia.

Next take a look at the stars in the west (as they are on their way to set below the horizon) by turning the map until the part with the “W” is down. After west, follow with south and end with east.

**Observing Tips**

A) Try to pick an observing site that has as few car, street and building lights as possible. The more light pollution the fewer stars you will be able to see overhead. In addition, the horizon should also be free from tall trees and buildings, which will make it hard to find constellations close to the horizon.

B) The teacher should make themselves familiar with both the observing site and how to use the star map before they go out for an observing session with the students. On the night of the actual outdoor observing session invite interested parents to come along.

C) While outside the students will need to have some sort of a light source in order to be able to read the maps. A pocket flashlight is ideal for this. Rather than have the normal white light from the flashlight disturb their night vision, ask them to put their flashlight inside of a brown paper bag, or tape a piece of red-colored gel, or a piece of brown paper bag, over the flashlight’s lens. Any of these three methods will help quite a bit in reducing the bright glare from their flashlights.

D) It can often be cold at night while observing during autumn, winter and spring, especially in winter. Make sure that the students dress appropriately and that everyone brings a thermos of something warm to drink. Some quick energy snacks like raisins, dried apple slices and nuts, will also help to keep them warm. Remember that star watching is not a very physical activity, so every so often have the students do some fun warm-up exercises “in place” to get their blood flowing before continuing with their observing.

E) If it becomes cloudy the night that you go out to observe, try again the next night, or whenever it is next clear. Unlike the moon and planets, the stars will remain in the same relative positions throughout our lifetimes. Once you have learned a constellation you will always be able to find it in the same place relative to the others around it. With experience it will be noted that the same constellation can appear in more than one season’s night sky, such as Orion in both winter and spring. The circumpolar constellations shown – the Big Dipper, the Little Dipper and Cassiopeia – can be seen on any clear night throughout the year.
Follow-Up Activities

1) Students could look up the legends associated with the constellations (some can be found in mythology books). Some constellations have more than one story associated with them. One good source in Swedish is “Hjältar och monster på himlavalvet,” (del 1 - 4) Maj Samzelius, Sveriges Radio Förlag. In English, see “Burnham’s Celestial Handbook” (volumes 1 – 3), Dover Publications. This last series also looks at non-Western backgrounds to constellations.

2) After finding information about the various circumpolar and seasonal constellations the students could make their own pictures of the characters that the constellations portray for the class bulletin board. They could also draw a series of pictures, or make up a comic strip, telling the story about a constellation.

3) Some students may wish to make up a short skit about a constellation based on its legend. Some constellations, such as Orion, Taurus and the Big Dog and the Little Dog, have stories that are directly related to each other.
The Wizard from Space

OCTOBER, 19.30

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NOVEMBER, 18.00

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JANUARY, 18.00

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FEBRUARY, 18.00

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