

Cup Constellations

Overview:

Participants will learn how stars were used for navigation and create a simple model of a constellation.

Goals:

- Learn how to find the North Star.
- Create a model of a Constellation.

Time Required: 30 minutes

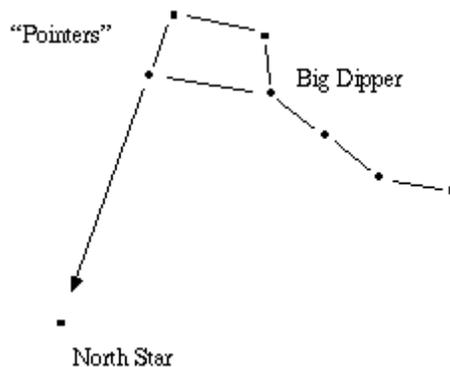
Materials:

- 5 oz drinking cups
- Constellation templates
- Push pins
- Scissors

Vocab: Asterism, Constellation

Procedures:

1. Start by asking students: “What are constellations? What are some examples?” Explain that before we had computers, televisions, radios or even books, people entertained each other by telling stories based on images they saw in the sky.
2. For Sailors (and pirates), Constellations had a more practical purpose. Sailors used the stars for navigation. To use the Quadrant, one needs to find the North Star. An easy way to locate the North Star is to use the “pointer” stars in the Big Dipper.



<https://www.physics.ucla.edu/~huffman/finddip.html>

Note: The “Big Dipper” is not a constellation – it is part of the constellation Ursa Major. A familiar group of stars with a popular name is called an asterism.



OSU EXTENSION
4-H YOUTH DEVELOPMENT

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3. Have students select a constellation template. You can choose which ones you want to have available for students to pick from.
4. Cut out the circular image and put the constellation on the end of the cup so the artwork is showing (should fit easily on the end of a 5oz paper cup). Depending on the size of your cup, you might need to instruct them to cut on the dotted or solid line.
5. Using the push-pin, carefully poke holes in each star/dot of the constellation.
6. Note: The constellations are printed backwards, but if you look from the inside of the cup, they will look as they should.
7. Students can look through the open end of the cup to see the dots representing the constellation. If you are doing this activity outside during the day, make sure you caution students to NEVER look at the sun!
8. You can also put the cup over the end of a flashlight or cell phone light and project the constellation image on a wall or ceiling. Works best in a darkened room.

Extensions:

1. While students are working, introduce them to 1-2 myths about constellations.
2. Have students create their own constellation and make up a story about it.

Reflection:

1. What purposes have constellations served?
2. Why did you choose the constellation you used?
3. What is the difference between a constellation and an asterism?

Adapted from the following Lesson:

“Paper Cup Planetarium.” *California Academy of Sciences*, 2024,
www.calacademy.org/educators/lesson-plans/paper-cup-planetarium.

Additional Resources:

Huffman, Art, and Bill Layton. “Find the Dipper and the North Star.” *FindDipper.Html*,
www.physics.ucla.edu/~huffman/finddip.html.

Rey, H. A. *Find the Constellations*. Houghton Mifflin Harcourt, 2017.

Rey, H. A. *The Stars: A New Way to See Them*. Houghton Mifflin Harcourt, 2016.

