

# SCIENCE AT HOME

Arizona Science Center and #SariOnScience are here to be your resource for bringing science to life at home. From crafts to experiments, we're here to be your resource for fun science activities that spark curiosity and motivate learning! Materials are easy to find, most activities take an hour or less, and the STEM (science, technology, engineering and math) learning is limitless.

## Make Your Own Constellation Viewer



Learn about the constellations in the night sky by making your own Constellation Viewer. Use a recycled toilet paper or paper towel tube to create this activity. Make as many constellations as you would like or make as many constellations as there are in the night sky!

Be sure to ask for permission and ask for help when you need it! Have fun and be safe!



### Supplies

Empty Toilet Paper Tubes

Glue Sticks

Tape

Scissors

Writing Utensil

White Paper

Black Construction Paper Squares (4.5" x 4.5")

Push Pins

Corkboard

Small FlashLight (optional)



## How-To

1. Cut a small circle roughly the same size as your empty toilet paper tube opening.
2. Glue the white circle on top of the black construction paper square.
3. Draw your own constellation on the white circle paper, or look up a named constellation online and draw that one.
4. Place your constellation paper onto a corkboard. Use the pushpin to punch holes through each star in your constellation pattern.
5. Trim around the black square into a rough circle shape (does not need to be perfect). Then make cuts from the outer edge of the construction paper into the center, but do not cut into the constellation pattern. This allows for easy attaching of the construction paper to the cardboard tube.
6. Center the constellation in the top of the cardboard tube and tape each wedge down. Use another long piece of tape to circle all the way around the tube for extra security.
7. Use a writing utensil to write the name of your constellation on the side of the tube.
8. Look through your tube and see how your constellation turned out. Try it with a flashlight. Point the flashlight through the bottom of your tube to display the constellation on the wall, preferably in a dark room.

# Guiding Questions

1. Take a look at the night sky after activity creation. Can you find constellations in the night sky?
2. Write down which constellations you see in the night sky or recreate them in your own constellation tube.
3. If you have a telescope, try to draw the constellations you see from a more clear image.
4. Look at the night sky the next day or even the next week, and compare how the star patterns change over time.

**A constellation** is a group of visible stars that form a pattern when viewed from Earth. The pattern they form may take the shape of an animal, a mythological creature, a person or an inanimate object such as a microscope, a compass or a crown. The sky was divided up into 88 constellations in 1922. This included 48 ancient constellations listed by the Greek astronomer Ptolemy as well as 40 new constellations. The 88 different constellations divide up the entire night sky as seen from all around the Earth.

**Star maps** are made of the brightest stars and the patterns that they make which give rise to the names of constellations. Another important use for constellations was navigation. By finding Ursa Minor it is fairly easy to spot the North Star (Polaris). Using the height of the North Star in the sky, navigators could figure out their latitude helping ships to travel across the oceans.