

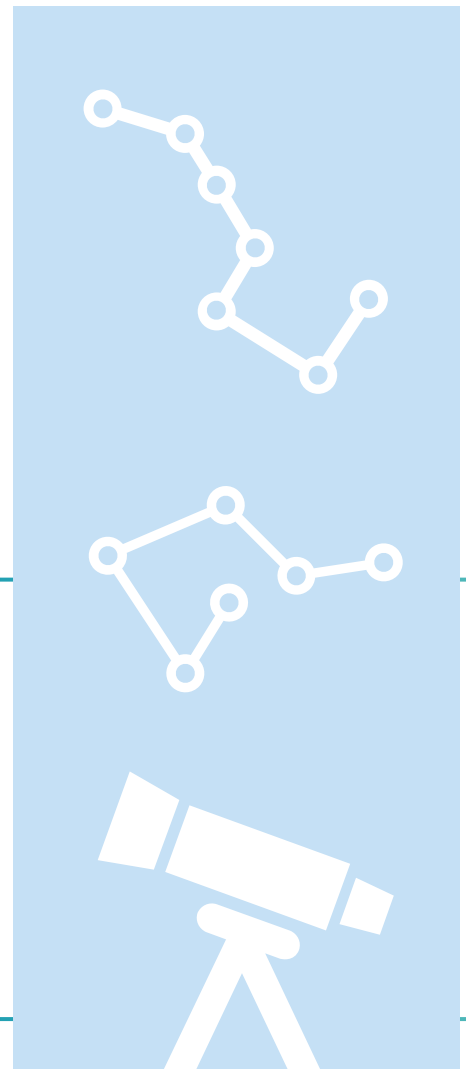
# Constellation Scope

**Ages 6 – 10** Learn the basic shapes of celestial patterns by making your own scope with materials you have at home.

**Activity Time:** 30 minutes

**Materials:**

- Cardboard toilet paper or paper towel tube
- Scissors
- Glue Stick
- Pencil
- Crayons, markers, or paint
- Printed or drawn Constellation Patterns (pages 3 and 4)



- 1** To start, decorate the outside of your cardboard toilet paper tube using crayons, markers, paint, stickers, etc. For you minimalists, leave the tube as is.
- 2** Write the name of the constellation on the side of the tube.
- 3** Create your constellation patterns in one of two ways:
  - Print the Constellation Patterns (included), and use scissors to cut out each Pattern; **OR**
  - If you do not have a printer, trace the circumference of your toilet paper or paper towel tube eight times on two pieces of blank paper. Leave space in between these circles, as in the patterns. Draw a wider (about one inch wider) dotted-line circle around each of these traced
- 4** Place a Constellation Pattern over one end of the toilet paper or paper towel tube, folding the paper over and gluing it to the cardboard tube to keep the pattern in place. Place the pattern as you see it facing **INSIDE** the tube (that way, the orientation will be correct when you look inside the tube).
- 5** With a pencil point, very carefully poke a small hole where each star of the constellation is located. Take your time—you don't want to tear the paper!



# Constellation Scope

## Using Your Constellation Scope

Hold the constellation scope up to your eye and look at the light coming through the holes marking each star in the constellation. You will see the outline of each star pattern as it would appear in the real nighttime sky. After viewing the constellation right-side up, rotate the constellation scope to learn how this pattern looks in the sky when in different orientations throughout the evening. To extend this activity, you can use your constellation scopes at night, and shine a flashlight through the tube to illuminate the constellation on the wall of a dark room.

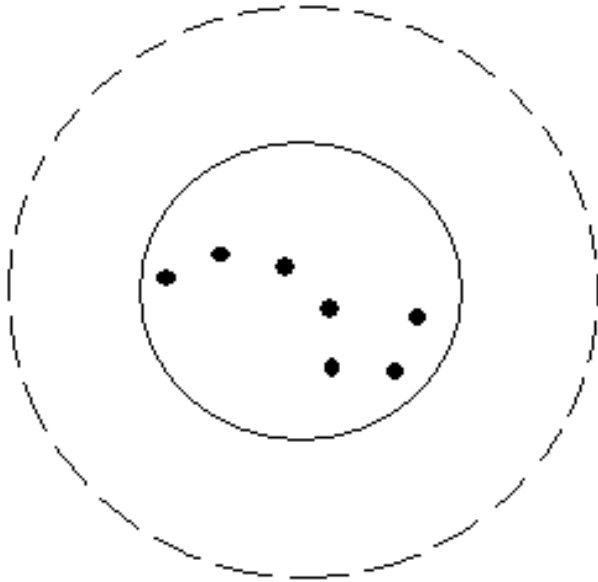
## Follow Up and Background Information

Constellations are the shapes and patterns that people see when they look up at the stars. From long ago to present day, humans from around the world have used them to map the night sky. The constellations you see change over the course of the year as the Earth rotates around the Sun. The stars you can see also change as we change latitudes, moving north to south. Because of this, stars were used for navigation for centuries.

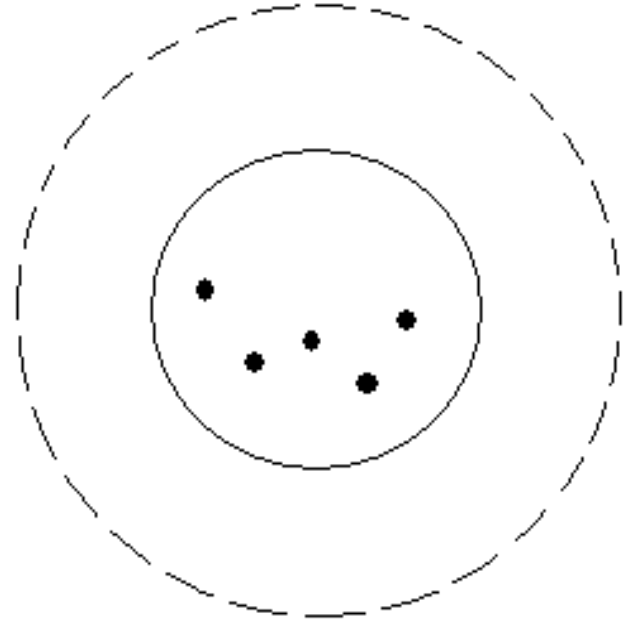


# Constellation Patterns

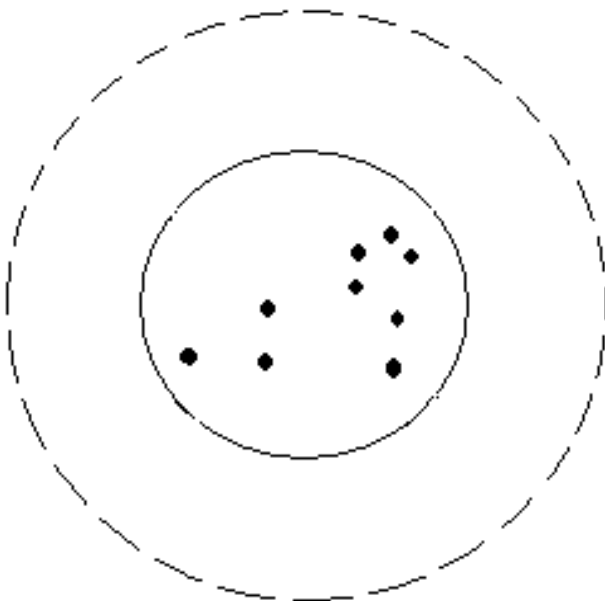
Cut out patterns along the dotted lines.



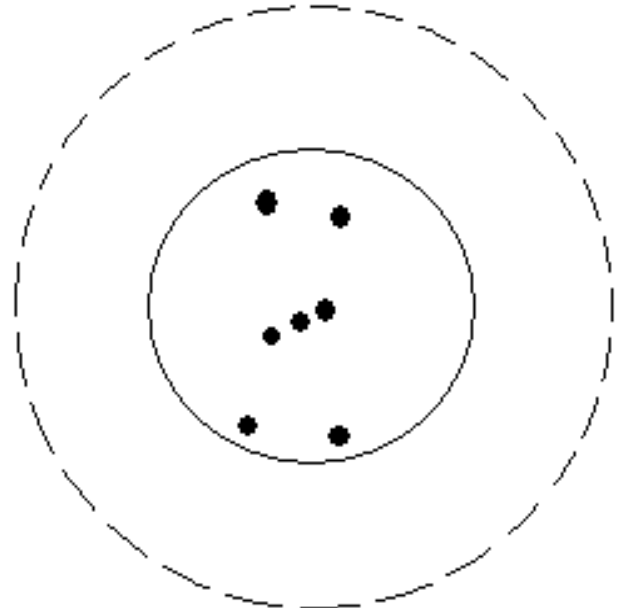
**The Big Dipper**  
Part of the Great Bear



**Cassiopeia**  
the Queen



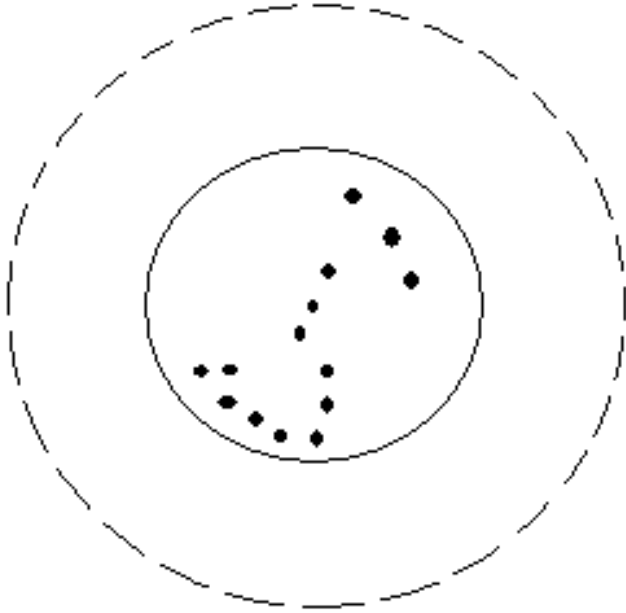
**Leo**  
the Lion



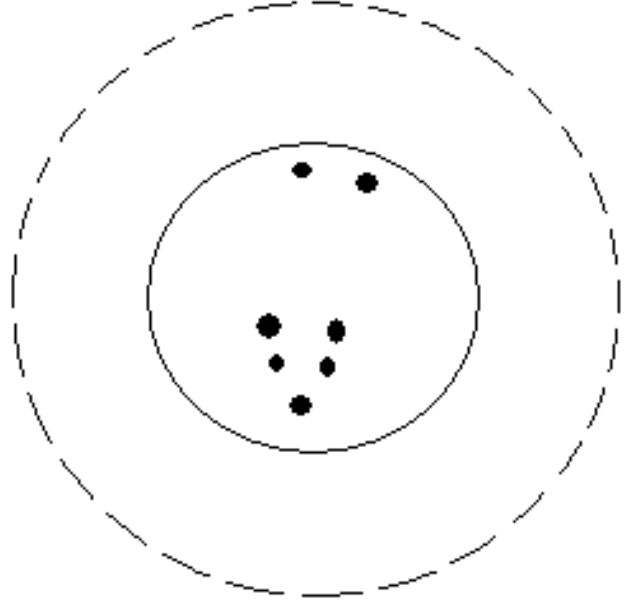
**Orion**  
the Hunter

# Constellation Patterns

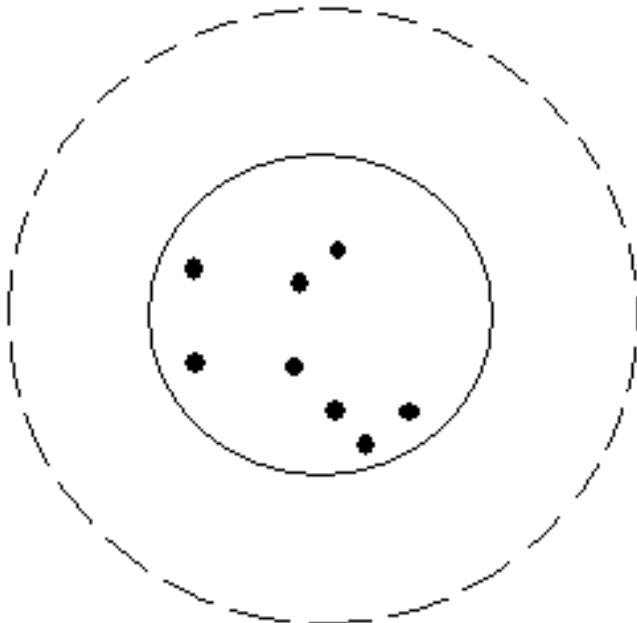
Cut out patterns along the dotted lines.



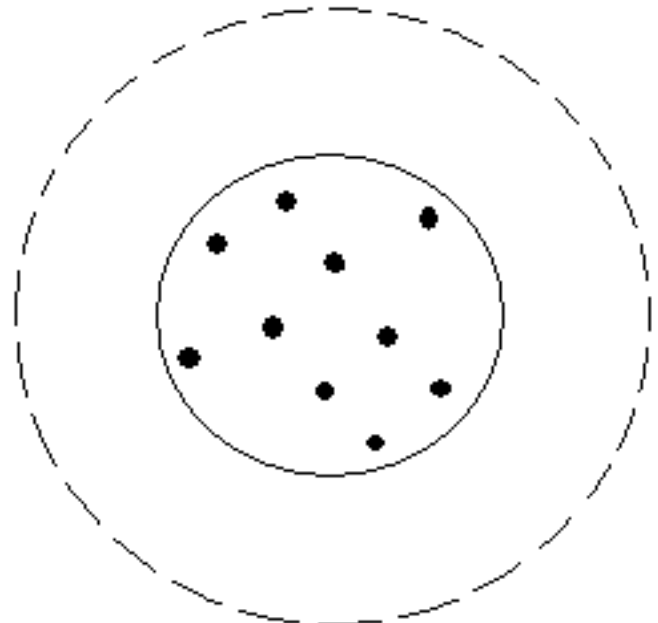
**Scorpius**  
the Scorpion



**Taurus**  
the Bull



**Pegasus**  
the Horse



**Gemini**  
the Twins