

# Girl Scouting at Home

## Daisy Space Science Explorer Badge



### 1. Explore the Sun

Sunrise is when the sun is coming up in the morning. Sunset is when the sun is going down at night.  
**Pick one to do.**

#### A. Sun Portraits

**What you'll need:**

- Large piece of paper
- Friend or adult
- Markers
- Paint
- Glue

**Steps:**

1. On a sunny morning, place a large piece of paper down outside and put something on the corners to keep it from moving.
2. Stand near the piece of paper so your shadow falls across the paper. Have another person trace the outline of your shadow onto the paper.
3. Using paint or markers, color your shadow or make crazy designs inside of it. Be creative.
4. If you like, make a collage inside the outline of your shadow using leaves, seeds, sticks, or whatever else you find around the yard.
5. Come back to your creation later in the day and trace another shadow next to the one you traced earlier. Since the sun is in a different place in the sky, your shadow will have a whole new look.

#### B. Sun Paper

**What you'll need:**

- Paper
- Cardboard or paper
- Plate
- Shaving cream
- Food coloring
- Toothpick

**Steps:**

1. To prevent any messes, first put down old newspaper, then place a piece of paper on top of the newspaper. Spread shaving cream in a roughly circular shape on your paper and make sure it's nice and smooth and foamy.
2. Drop five drops of red and yellow food coloring in a circular motion. Using a toothpick, swirl the red and yellow colors together in a circle. Make sure not to swirl too much.
3. Place your paper on top of the shaving cream and food coloring. Press it down lightly. Give it a few seconds to absorb the dye.
4. Remove the paper, then gently scrape off the shaving cream with a cardboard, squeegee or ruler. Allow your paper to dry and blot off any extra shaving cream with a paper towel. Be careful not to smear the food coloring before it dries. When dry, cut into the shape of a sun.

*(continues on next page)*

## 2. Observe the Moon

Have you ever noticed the moon in the daytime sky? Sometimes it's there! It just doesn't seem very bright compared to the blue sky or clouds. When it's up at night it's hard to miss, and some nights it's brighter than others. **Pick one to do.**

### A. Make the Moon

#### What you'll need:

- Black construction paper
- Sheet of aluminum foil
- Scissor
- Glue

#### Steps:

1. Start by cutting a sheet of aluminum foil into a large circle.
2. In order to make it look like the texture of the moon crinkle the foil up into a ball.
3. Carefully open up the aluminum foil ball and flatten it out. Explore the foil texture as you smooth it out—its crinkly sound, shiny appearance, and bumpy texture.
4. Glue the foil onto a black sheet of paper.
5. Decorate the space around your moon. Draw a sun, star, etc.

### B. Measure the Moon (ask an adult for help)

#### What you'll need:

- Paper clip
- Clear night when the moon is low in the sky

#### Steps:

1. Unbend the paper clip then twist it into a U shape.
2. When the moon is low in the sky, go outside and hold the paper clip at arm's length in the direction of the moon.
3. With the help of an adult, use the paper clip like a pair of calipers, bending so the tips are touching the top and bottom of the moon to record its apparent diameter.
4. After an hour, go back and measure the moon again. The moon should fit within the paper clip exactly.
5. The moon isn't changing size or getting closer, it's just an optical illusion. The moon takes up just about the same proportion of our field of vision no matter how high or low it is relative to the horizon.

## 3. Meet the Stars

Although the Sun is a star, other stars are much farther away than the sun and the moon. That's why they look like tiny points of light. **Pick one to do.**

### A. Telescope

Everything in the sky is either making light or reflecting light. Stars make light, while the moon and planets reflect light.

#### What you'll need:

- Empty paper towel roll
- Stickers of stars and planets (optional)
- Paint
- Internet or local newspaper
- Blanket

#### Steps:

1. Paint the paper towel roll and decorate it with stickers
2. You won't be able to see any far-out planets, but the roll will help you focus on what you're looking at.
3. Ask an adult for help and research different constellation and see if you can find any.

**B. Constellation Projector** (ask an adult for help)

A constellation is a group of stars that are seen together in imaginary patterns.

**What you'll need:**

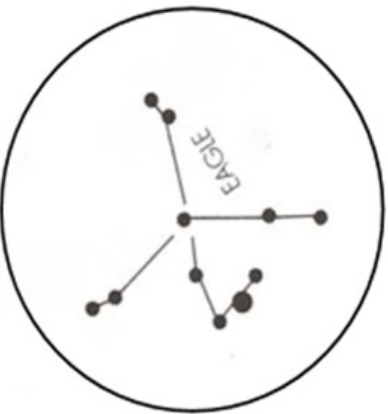
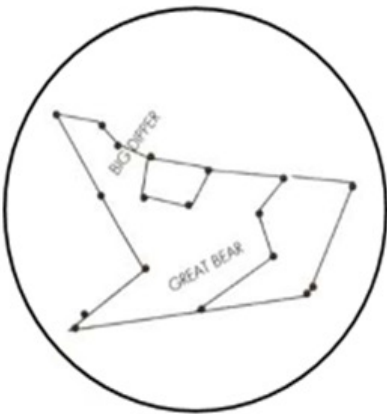
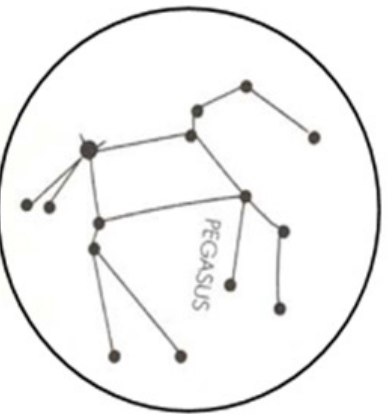
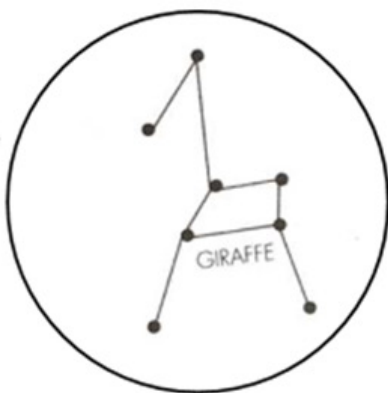
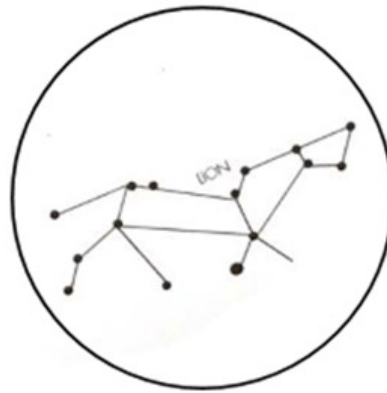
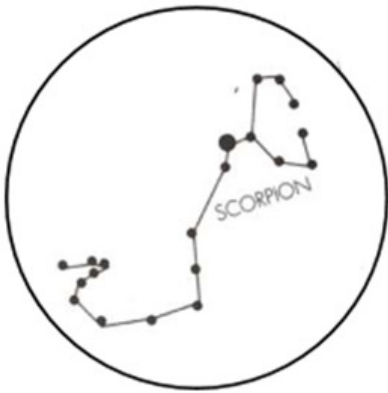
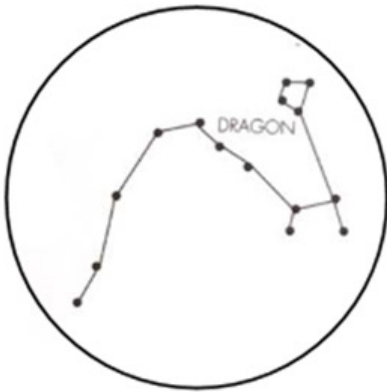
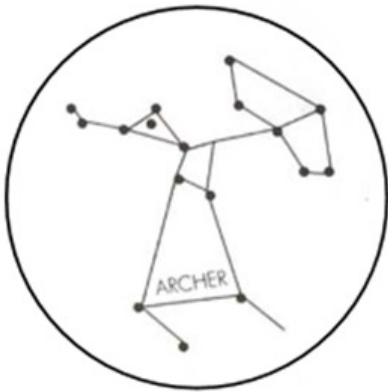
- Constellation template (on page 4)
- Some sort of light source (a flashlight, cellphone, flashlight, etc.,)
- Push pin
- Empty toilet paper roll
- Cardboard
- Tape

**Steps:**

1. Print out the Constellation Template on cardstock, if possible.
2. Next, place the template on top of a piece of styrofoam or cardboard to protect your working surface.
3. Using a push pin, poke holes at each dot in the constellation formations.
4. Once your holes are punched, cut out the circle cards and affix them with tape to the top of a toilet paper roll.
5. Tape the toilet paper roll to your light source and project your constellation formations on a wall in a dark area.
6. Use the blank circles on page 5 to create your own constellations.

CONSTELLATION TEMPLATE

V



Create your own constellations

