

Model of Our Solar System



Option 1: Make models of the planets.

Use salt dough to make tiny versions of the eight planets in our Solar System! You will form all of the planets from a 3-pound ball of dough.

Before you begin, can you predict the sizes of Earth, Mercury, and Jupiter? Draw your predictions on a piece of paper and compare them to the scale model when you're finished.

Next, make a name card for each planet and line them up in order from the Sun. You are going to have many small pieces, so keep track of them carefully! See the instructions below.

Step 1: Divide the entire ball of dough into 5 equal parts.

- 1) Put 3 parts on the Jupiter paper.
- 2) Put 1 part on the Saturn paper.

Step 2: Cut the piece you have left from Step 1 into 10 equal parts

- 1) Add 7 parts to the Saturn pile.
- 2) Put 1 part on the Neptune paper.
- 3) Put 1 part on the Uranus paper.

Step 3: Cut the piece you have left from Step 2 into 10 equal parts.

- 1) Add 2 parts to the Saturn pile.
- 2) Add 4 parts to the Uranus pile.
- 3) Add 3 parts to the Neptune pile.

Step 4: Cut the piece you have left from Step 3 into 10 equal parts.

- 1) Add 5 parts to the Saturn pile.
- 2) Put 2 parts on the Earth paper.
- 3) Put 2 parts on the Venus paper.

Step 5: Cut the piece you have left from Step 4 into 10 equal parts.

- 1) Add 4 parts to the Earth pile.
- 2) Add 1 part to the Saturn pile.
- 3) Put 1 part on the Mercury paper.
- 4) Put 3 parts on the Mars paper.

Step 6: Cut the piece you have left from Step 5 into 5 equal parts.

- 1) Add 2 parts to the Mars pile.
- 2) Add the last 3 parts to the Mercury pile.
- 3) Now roll each planet into an even sphere. Compare your model to the predictions you made at the beginning. Did anything surprise you?

This will complete Step 1 of the Junior Space Science Investigator Badge!

Option 2: Create a picture of our planets.

With an adult's help, go online and look at the different planets in our Solar System.

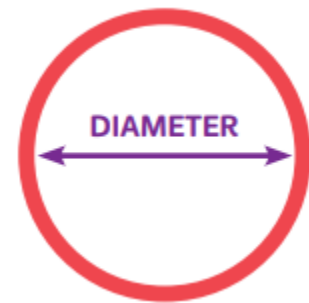
Next, draw eight circles on white paper using the chart with the sizes below.

Have an adult help you measure the circles, then color the planets to show what they look like.

Cut them out and glue them to a piece of paper. You will need multiple pieces of construction paper taped together or a long strip of paper.

Write the planet names on the paper and hang up your picture at home!

Planet	Circle diameter in inches	Circle diameter in centimeters
Mercury	0.4	1
Venus	0.9	2.3
Earth	1.0	2.5
Mars	0.5	1.3
Jupiter	11.2	28.4
Saturn	9.5	24.1
Uranus	4.0	10.2
Neptune	3.9	9.9



Option 3: Make a Pocket Solar System.

You will need:

-Long paper strip, like the kind found in some cash registers, with the ends cut or folded so they are straight. The paper should be about the length of your body, from head to toe.

-Pencil or pen

- 1) Label one end of the paper "Sun" and the other end "dwarf planets."
- 2) Fold the paper in half and crease it, then open it up again and place a mark at the crease. This point is "Uranus." Write the name near the mark.
- 3) Now fold the paper back in half, then in half again. Unfold and lay it flat. Label the crease closest to the Sun as "Saturn." The crease closest to "dwarf planets" is "Neptune."
- 4) Fold the Sun to Saturn and crease it. Label this new crease "Jupiter."

- 5) Fold the Sun to Jupiter. Unfold it and label this crease “asteroid belt.”
- 6) Now fold the Sun to the asteroid belt. Unfold it and label the crease “Mars.” See how the “neighbors” are getting closer together? There are three more planets left, so you may need to write smaller.
- 7) Fold the Sun to Mars. Keep it folded and fold that section in half.
- 8) Unfold the paper. You should have three new creases.
- 9) Label the crease closest to Mars, “Earth.”
- 10) Label the middle crease “Venus.”
- 11) Label the crease closest to the Sun, “Mercury.”
- 12) Take a step back and look at your Pocket Solar System. Does anything surprise you? Are some planets closer or farther away from each other than you thought they’d be?

Brownies can use option 2 or 3 to complete Step 1 of their Space Science Adventurer Badge!