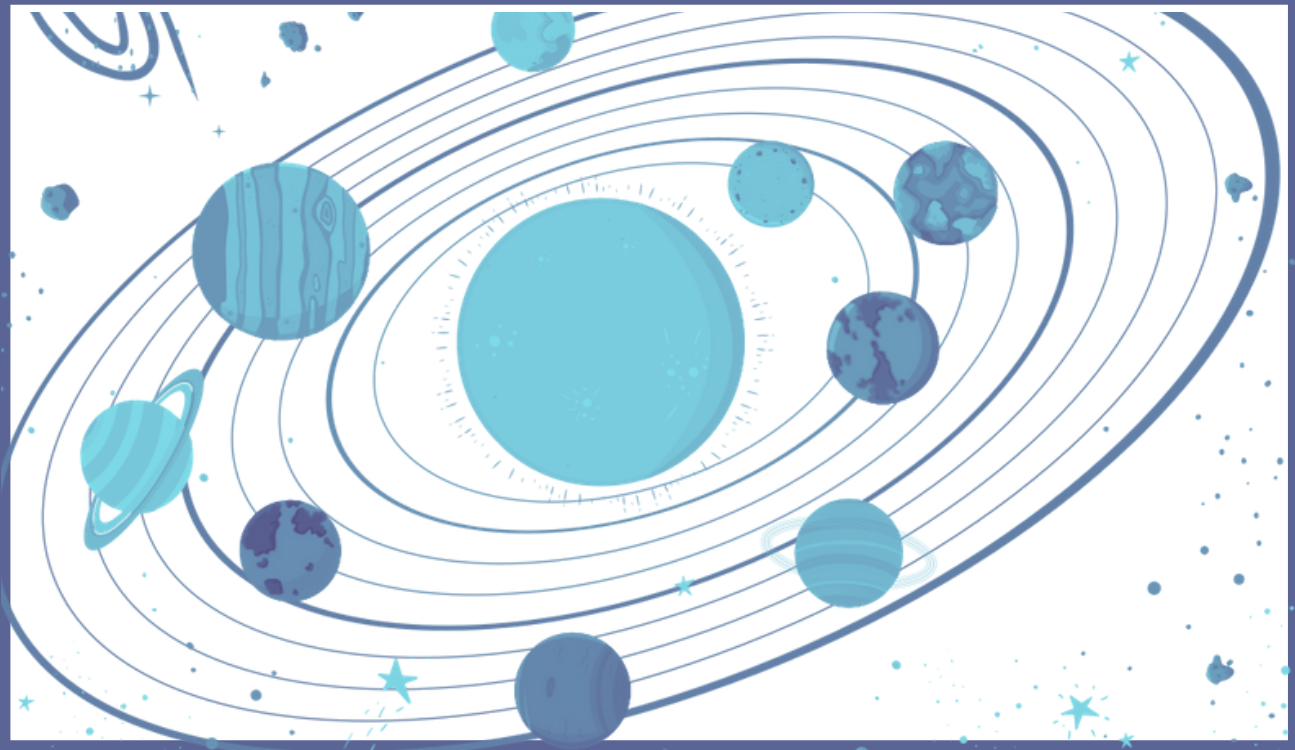


# MEET THE PLANETS



## Junior Astronauts

**Grades:** 1-3

**Objectives:** Understand that Earth is one of several planets that orbit the Sun in our solar system. Observe the different planets and objects in our solar system. Gain an understanding of scale when comparing planet sizes

**Sources:** PBS Learning Media

### What's Included?

- *Meet the Planets* Lesson Plan
- Solar System Model Handout (PDF) and Planetary Postcard Handout (PDF)
- *Meet the Planets* Presentation Slides and Solar System Poster (available for download in CILC Maker Space)



**PBS Learning Media**

# MEET THE PLANETS

## Materials

- *Meet the Planets* Presentation Slides
- Solar System Model Handout (PDF) and Planetary Postcard Handout (PDF)
- Solar System Poster (available for download in CILC Maker Space)
- Cotton balls (2 per student)
- Whole coffee beans (2 per student)
- Whole peppercorns (2 per student)
- Pin head-sized beads or seeds (2 per student)
- Cups or paper plates (for distributing beans, beads/seeds, and peppercorns)
- Scotch tape (or white glue, if you have drying time)
- Pencils or pens

## Before the Lesson

- Download the "Meet the Planets" slides. (Optional)
- Gather enough tape or glue. Put cotton balls, coffee beans, peppercorns, and beads into separate containers.
- Make copies of the Solar System Model Handout (PDF) and the Planetary Postcard Handout (PDF).
- If you have the Solar System Poster (PDF), post it where everyone can see it.

## The Lesson | Part I: Engage

1. Ask: What's the name of the planet that we live on? (Earth) What are some of the things you know about planet Earth?
  
2. Show students the image of the solar system with all the planets. Point out the Sun and name the planets. Ask: What are some things you notice? (The Sun is huge. The planets are different sizes. The planets look different— Jupiter has stripes; Saturn has a ring; Neptune is blue.) Where do you think it is hottest? (Near the Sun.) Coldest? (Far from the sun.)
  
3. Give each student a Planetary Postcard Handout (PDF). Situate the students in their place in the solar system by starting locally with what they know and moving outward, filling out the postcards together as you go. Students can customize their postcard and design a stamp if time allows.

4. Tell students that you want them to take home a solar system so they can keep exploring the planets, but you don't know how they will be able to carry around something so large. Do they have any ideas? Ask them if they have things that they like that are too big to carry around and play with. Work toward the idea that you are going to make a model of the solar system—something that is different from the real thing but can be used to learn something about the real thing. The model we will build in this activity is similar in size scale to the planets and Sun of our solar system.

### **The Lesson | Part II: Facilitate**

5. The challenge for students is to reference an accurate image showing the scale of the solar system image, match an object (coffee bean, cotton ball, bead/seed, or peppercorn) to a planet based on size, tape/glue the objects onto the Solar System Model Handout (PDF), and label each planet. This model includes only planets, since moons, comets, and asteroids are too small to be seen at this size scale. (Work from the Sun, in an outward direction, visiting each planet.)

For each planet, ask:

- Who can name this planet?
- It is larger or smaller than its neighbor(s)?
- Which object do you think should represent this planet? (Cotton balls for Jupiter and Saturn; coffee beans for Uranus and Neptune; peppercorns for Earth and Venus; and beads/seeds for Mercury and Mars.)

Students share their ideas and reach a consensus. Everyone works to tape/glue the objects to their Solar System Model Handout (PDF) and label it.

### **Check for Understanding**

Ask: By looking at your models, what can you tell about the differences between the planets? What information does your model not tell you? Have you seen other solar system or planetary models? (If a nearby museum or park has a large solar system model, this is a good time to visit and compare the models.)

### **Keep Exploring**

Make planetary observations (Optional. This will add 10 to 15 minutes to the activity.) Use the Meet the Planets presentation slides to further explore each planet by showing detailed images of each of the planets. Work your way through the solar system as students build their models. Guide students to observe and discuss the characteristics of each planet and begin to draw some comparisons between them.



For each planet, ask:

- What do you notice about this planet?
- What tells you if it is made of rock or of gas? (Craters, ice caps, landforms, cloudiness, etc.)
- Older students can keep an observation journal or build a table comparing the characteristics of each planet (i.e., size, composition, environment, etc.). They can do further Internet research at NASA's Solar System Exploration web pages to build a portfolio or presentation.





**Mercury**

**Venus**

**Earth**

**Mars**

**Jupiter**

**Saturn**

**Uranus**

**Neptune**

Name \_\_\_\_\_

## **My Solar System**

Directions: Tape or glue materials to handout. Which size item should represent each planet?



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