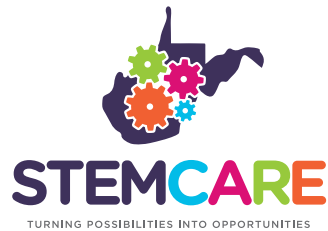


WHAT'S HAPPENING?

This model demonstrates the relative distances of the planets and some of the other objects in our solar system. At the current count, our solar system contains one star (the Sun), eight planets, 146 moons, several dwarf planets (such as Pluto), and many comets, asteroids, space rocks and ice. The inner planets (Mercury, Venus, Earth and Mars) are small, rocky and close together. The outer planets (Jupiter, Saturn, Uranus and Neptune) are gaseous giants that are spread out. Pluto is a tiny, icy dwarf planet found in the Kuiper Belt – a region of icy bodies found beyond the orbit of Neptune. While this model does a good job of demonstrating the relative distances of the planets, it does not show their relative sizes. For example, more than a million Earths could fit inside the Sun. In addition, unlike our model, the planet's orbits do not align in a straight line.

Adapted from: Gallagher, Amie (Raritan Valley Community College) and Gurton, Suzanne and Hurst, Anna (Astronomical Society of the Pacific).



A Collaboration Between



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Experiment No. 15

TRY THIS

AT

HOME

POCKET

SOLAR SYSTEM

extension.wvu.edu/stemcare

Experiment No. 15

POCKET SOLAR SYSTEM

Additional Materials Needed:

Pencils, colored pencils or markers

HOW DO I START?

Watch the step-by-step video at: extension.wvu.edu/stemcare/pocketsolarsystem

1. First, try to predict the positions of objects in our solar system.
 - On one side of the register tape included in the kit, lightly draw two dots, one on each end, right at the edge. Label one **Sun** and the other **Pluto + Kuiper Belt**.
 - Predict the placement of the planets and other objects in between (see list).
2. Now, flip the register tape over to create your own pocket solar system model.

Sun
Mercury
Venus
Earth
Mars
The Asteroid Belt
Jupiter
Saturn
Uranus
Neptune
Pluto and the Kuiper Belt

3. Once again, draw two dots on each end of the tape, one large and one small, right at the edge. Label the large one **Sun** and the small one **Pluto + Kuiper Belt**.
4. Fold the tape in half, crease it and unfold. A planet goes there! Draw and label the planet **Uranus** at the $1/2$ mark.
5. Next, take the end where Pluto is labeled and fold it to the Uranus mark. Do the same with the Sun end. These are the $1/4$ and $3/4$ marks. Planets go in each of these creases!
6. Unfold the tape and draw and label **Saturn** at the $1/4$ mark (closer to the Sun) and **Neptune** at the $3/4$ mark (closer to Pluto).
7. Now, fold the Sun edge up to meet Saturn. This fraction is $1/8$. Draw and label **Jupiter** at the $1/8$ mark.

8. Repeat, folding the Sun to meet Jupiter. This crease is the $1/16$ mark. A planet does not go here, but you can draw a line of little dots and label them the **Asteroid Belt**!
9. Repeat again, folding the Sun to meet the Asteroid Belt. This fraction is $1/32$. Place a small dot for the **Earth** just inside this fold (closer to the Sun) and a small dot for **Mars** just outside the fold (closer to the Asteroid Belt) and label them.
10. Place two small dots between the Earth and Sun, dividing the space into thirds, and label them as **Mercury** (closest to the Sun) and **Venus** (closest to the Earth).
11. All done! You now have a model solar system that can fit into your pocket. How do your predictions compare?

