

Fruity Solar System

Astronomy | 30 - 40 minutes

In this activity, students are challenged to work together to create a solar system of fruit (and friends).

Materials Needed

Fruit and non-fruit friends in order from smallest to largest:

- 1 Peppercorn
- 1 Pea
- 1 Large Blueberry
- 1 Cherry Tomato
- 1 Lime
- 1 Apple
- 1 Large Grapefruit
- 1 Watermelon

Optional:

- Printed list of planet sizes (attached)
- Printed list of planet order (attached)

Steps:

1. Lay out all of the fruits and friends randomly on a table or other flat surface.
2. Give the students 5 minutes to try to complete The Challenge.
3. After the 5 minutes, give students the list of planet sizes
4. Give students 3 minutes to adjust the order if they would like
5. After the 3 minutes, give students the list of the planet order
6. Give the students 3 minutes to adjust the order if they would like
7. Look at the result. Reflect.

The Challenge

1. Determine which food represents each planet in our solar system by size.
2. Place the “planets” in order from the closest to the Sun to the farthest.

Explanation:

The solar system is difficult to model. This exercise doesn't try to address distances or relative motion, but it is a fun way to get an idea of the relative sizes of the planets. If we compare the other planets to Earth, that gives us some understanding of the other celestial bodies that are all traveling around the sun with us.

Reflect:

How did you do when you were first given the “planets”?

Did you get it right the first time?

How about after you had the size list?

How about after the order list?

Which planets are bigger than our Earth? Smaller?

Which planets are similar in size to our Earth? Which are really different?

Real World:

Sometimes we can see Mercury, Venus, Mars, Saturn and Jupiter from here on Earth.

Adapted from Wild About Here

Planet Sizes

Earth- 6,371 km / 3,959 miles
Jupiter- 69,911 km / 43,411 miles
Mars- 3,390 km / 2,460 miles
Mercury- 2,440 km / 1,516 miles
Neptune- 24,622 km / 15,299 miles
Saturn- 58,232 km / 36,184 miles
Uranus- 25,362 km / 15,759 miles
Venus- 6,052 km / 3,761 miles

Planet Order

(Distance from Sun)

Earth- 149.6 million km / 93 million miles
1AU
Jupiter- 778.3 million km / 483.6 million miles / 5.203 AU
Mars- 227.9 million km / 141.6 million miles / 1.524 AU
Mercury- 57.9 million km / 36 million miles / 0.39 AU
Neptune- 4,497.1 million km / 2,794.4 million miles / 30.06 AU
Saturn- 1,427 million km / 886.7 million miles / 9.539 AU
Uranus- 2,871 million km / 1,784 million miles / 19.18 AU