

The Planets

Running Time: 26 Minutes

Nifty questions in this episode:

- In which direction do all the planets orbit around the sun?
- Which planet is the hottest in the solar system?
- Which planet takes the longest time to make one orbit around the sun?

Awesome answers:

- The planets orbit the sun in a counterclockwise direction.
- Venus is the hottest planet in the solar system.
- Pluto takes the longest time to make one orbit around the sun.

Experiments shown on the video:

RUSTY PLANET

Objective: To demonstrate how a chemical reaction can cause soil on a planet to change color.

- Fill a baking pan almost to the top with sand (3 to 5 centimeters from the rim).
- Take a roll of steel wool and cut it into a bunch of 2-centimeter bits. (Be sure to wear gloves to guard against cuts.)
- Mix the steel wool in with the sand.
- Add water to the mixture so that it is saturated and fairly covered with water.
- Put it in a safe place and add water each day when you check on it.
- The steel wool will eventually leave rust deposits in the sand, causing it to turn red.

More interesting stuff to do:

IT'S NOT ALL GAS

Objective: To compare and contrast the size and distance of the planets in this solar system model.

- Stretch a 27-meter piece of string between two chairs.
- One chair represents the sun and the other chair represents the solar system past Pluto.
- Use the following information to make accurately-sized balls of clay (which represent the solid inner planets) and inflated balloons (which represent the gaseous outer planets, except for Pluto).
- Form the clay around or affix the balloon to the string at the appropriate distance from the sun (use a meter stick to measure).

Planet	Circumference	Distance from sun
Mercury	11 mm (clay)	27 cm
Venus	27 mm (clay)	34 cm
Earth	27 mm (clay)	58 cm
Mars	15 mm (clay)	1.5 m
Jupiter	28 cm (balloon)	3.7 m
Saturn	24 cm (balloon)	6.3 m
Uranus	10.2 cm (balloon)	12.7 m
Neptune	10.2 cm (balloon)	19.7 m
Pluto	7 mm (clay)	27 m

- This model will accurately depict the solar system for students and can be used for extended study.

PLANET PIZZA

Objective: To design, make, and cook a pizza that resembles a planet or moon in our solar system.

- Make fresh dough or purchase ready-made pizza dough or a preformed pizza shell from a grocery store.
- Using colored pictures of planets and moons, design your pizza, using eatable products that have color and texture.
- Use textbooks, journals, and scientific publications for reference pictures.
- Consider if the color or texture of the food will change when heated.
- Bake according to directions and eat.
- Dessert: If you'd rather make a dessert, follow procedure for pizza, but make a cake, pie, or other sweet dessert to illustrate the solar body you have designed.

Way Cool Scientist: Ellen Howell, Astronomer

closed-captioned



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