

Activity: Model Solar System

On SCOPE's Things that... are really big episode, you saw Julia make a model solar system.



A scale model is an exact replica of something, often smaller than the original but relative measurements are still the same. They are a great way of putting things in perspective, like how BIG the solar system really is!

Here's how you can make your own scale model of the solar system:

What you need:

Pen, paper and calculator to work out the measurements of your model planets.

The rest is up to you! Find things around your house that are the correct size to represent your planets.

What to do:

1. Find something to represent the sun (eg. a swiss ball).
2. Work out the scale ratio of the model solar system by first measuring the diameter of the model sun.
3. Then divide the actual diameter of the sun, which is about 1,391,000km, by the diameter of the model sun. Eg. a swiss ball is about 70cm. $1,391,000 / 70 =$ about 20,000.
4. The answer tells you how many kilometres are represented by 1cm in the model (20,000km).
5. For the other planets, divide the actual diameter of the planet by 20,000.
6. The answer will tell you the diameter of the model planet. You can find out the diameter of all the planets on the internet. Suggested websites below.
7. Then find items that have the same diameter to represent your planets (you can even find one to present the dwarf planet of pluto). Eg:

Mercury	Head of a pin
Venus	Small sultana
Earth	Pea
Mars	Peppercorn
Jupiter	Orange
Saturn	Tennis Ball
Uranus	Cherry
Neptune	Marshmallow
Pluto	Sprinkle

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You can also find out the equivalent distances between the planets, in your scale model.

1. Once again divide the actual distance between the planets by 20,000.

2. The answer will tell you how far apart the planets are in your model solar system. You can find the distance between each of the planets on the internet. Suggested websites below. Values do vary, so you can take an average and divide that number by 20,000. Eg:

Sun – Mercury	29 paces
Mercury – Venus	25 paces
Venus – Earth	21 paces
Earth – Mars	39 paces
Mars – Jupiter	275 metres
Jupiter – Saturn	312 metres
Saturn- Uranus	750 metres
Uranus- Neptune	800 metres
Neptune- Pluto	700 metres

Here are some websites that will help you with this activity

<http://solarsystem.nasa.gov/planets/profile.cfm?Object=SolarSys>

http://www.exploratorium.edu/ronh/solar_system/

http://www.kidsastronomy.com/solar_system.htm