Comparing the planets

Outstanding Science Year 5 - Earth and space - OS5D006

National Curriculum Statutory Requirements
5D3 - describe the Sun, Earth and Moon as approximately spherical bodies

Learning Objective
I can compare the sizes of the planets in the solar system.

Me: Teacher:

A **planet** is a large, roughly spherical body which moves in a path directly around a star. This movement is called an **orbit**. There are eight planets orbiting our nearest star, the Sun. Planets can be grouped into types, based on the material that they are made from.

A **terrestrial planet** is made up mostly of heavy materials such as rock. **Mercury**, **Venus**, **Earth** and **Mars** are terrestrial planets.

A **gas giant** is an enormous planet which is made up mostly from hydrogen and helium. The outer layers are in the form of gas, but deeper inside the planet the gas is compressed into a liquid and then a solid. **Jupiter** and **Saturn** are gas giants.

Jupiter is a gas giant and the largest planet in the solar system.

Ice giants are large, but not as large as gas giants. They are made up of heavier materials than the gas giants, but do not have solid surfaces. **Uranus** and **Neptune** are ice giants. Scientists believe that there may be another ice giant planet orbiting the Sun much further away than **Neptune**.

Activity

Look at the models of the planets on the next page. The planets are all to the same scale. We are going to measure and compare their **diameters**. The diameter of a circle or sphere is the longest possible straight line which goes from one side to the other, through the centre. Cut out the Earth ruler.

Use the **Earth ruler** to measure the diameter of the planets in Earth diameters. For example, the diameter of Earth is 1 Earth diameter. Record this information in the table.

Next, measure the diameter of the models using a **normal ruler**. Make your measurements in **millimetres**. Record this information in the table.

Finally, multiply the diameters of the models in millimetres by 1000 to get the diameter of the actual planet in kilometres. Record this information in the table.

Discussion

Can you place the planets in order of size?

Can you see any relationship between the positions, sizes and types of planet? Can you explain why?

Can you cut out the models to make your own solar system diagram or display?

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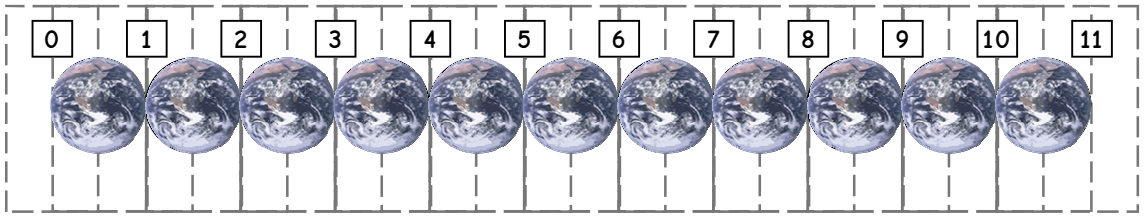

Earth ruler

Neptune

Venus

Mars

Uranus

Mercury

Jupiter

Saturn

The planets of the solar system

Name of planet								
Picture								
Planet type			Terrestrial					
Position from Sun	1	2	3	4	5	6	7	8
Diameter of planet (Earth diameters)			1					
Diameter of model (mm)			13mm					
Diameter of planet (km)			13,000km					