

<b>Topic</b>	Solar System scale model	<b>Level</b>	GCSE (or any other course for students aged 11-16)
<b>Outcomes</b>	<ol style="list-style-type: none"> <li>To build a scale model of the solar system</li> <li>To use and understand the terms: diameter, radius, scale, model and arbitrary unit</li> </ol>		

## Building a scale model of the Solar System

You are going to create a model of our Solar System in which the planets and the distances between the planets are to scale.

### Materials:

- Paper
- Colouring pencils
- Poster paper (for Sun)
- Scissors
- Rulers
- Glue
- Metre stick

### Instructions:

- Look at the table on the next page that shows information about the Solar System
- Determine an appropriate scale that you could use to show the distance of the planets from the Sun and complete the table.
- Determine an appropriate scale that you could use to show the diameter of the planets and complete the table.
- Working in your group, draw and cut out the planets from a piece of paper. Label the planets and colour them appropriately.
- Now create your Solar System on the floor by arranging the planets and Sun.

### Questions:

Use your scale model of the Solar System to answer the following questions.

- Which planet do you expect to be the hottest? Explain your answer.
- What is a scale model and why do scientists build them?
- How does your scale model help you to understand the Solar System better?

Object	Distance from the Sun		Diameter	
	Scaled distance (AU)	Scaled distance (cm)	Actual (Earth diameter)	Scale (cm)
Sun			110.0	
Mercury	0.4		0.4	
Venus	0.7		1.0	
Earth	1.0		1.0	
Mars	1.5		0.5	
Jupiter	5.2		11.0	
Saturn	9.5		9.0	
Uranus	19.2		3.7	
Neptune	30.1		3.5	
Pluto	39.5		0.2	

**Progress:** further resources on Earth and space are available here:  
<http://thescienceteacher.co.uk/earth-and-space/>