Space
KS3
Wednesday - Maths

First you are going to use standard form to find the diameter of the planets in real numbers and standard form.

Complete this table:

Planet	Diameter (km)	Diameter in standard form (km)
Mercury	4879.4	4.8794×10^3
Venus	12104	
Earth		1.2756×10^3
Mars	6787	
Jupiter	142800	
Saturn		1.2066×10^5
Uranus		5.1118×10^4
Neptune	49528	

Answer these questions:

1. Which planet has the largest diameter?
2. Roughly, which planet is ten times the size of mercury,
3. The distance of earth from the sun is 149600000km. Write this in standard form.
4. 4.5045×10^9 km is the distance from Neptune to the sun. Write this in standard form.

Next you are going to draw the solar system to scale.

What does a scale on a map mean? E.g. 1: 100000

This means that 1cm on the map = 100,000cm in real life (this is the same as 1km)

We are going to use the scale 1: 200,000,000,000

Here is a table with the distance of the planets from the sun. (The distances have been rounded.)

Planet	Distance (km) (rounded)	Scale distance (cm)
Mercury	58,000,000	
Venus	108,000,000	
Earth	150,000,000	
Mars	228,000,000	
Jupiter	778,000,000	
Saturn	1,427,000,000	
Uranus	2,871,000,000	
Neptune	4,497,000,000	
Pluto	5,913,000,000	
Sun	0	0

Work out the scale distance from the sun.

Then draw this so you have a perfect scale factor of the solar system. Remember to measure from the centre of each planet.

Use a compass to get them perfectly circular. You could also make the planets the accurate size.

You will need to stick some paper together or use large pieces of paper.