

The drawing shows Holly swinging a block of wood on a string. This is a model for the way the Earth moves around the Sun.



- 1 In this model, what do the following things represent?
- Holly
 - the wooden block
 - the string?

- 2 How should Holly change the model if she wants to represent Mercury moving around the Sun? Explain your answer.

- 3 The block of wood Holly is using has a mass of 500 g (0.5 kg).

- What is its weight?
- What would its weight be on Mars?

gravitational field strength on Earth = 10 N/kg
 gravitational field strength on Mars = 4 N/kg
 weight = mass × gravitational field strength

The position of the Earth in the Solar System and the way it spins determines factors such as day length, year length and the seasons.

- 4 Explain what change is needed in the Solar System so that:
- the length of a year on Earth is only half as long as it is now
 - there is no difference between the weather in December and in January on Earth
 - the Moon looks much bigger in the sky from Earth.
- 5 If the Earth were as far from the Sun as Mars is, explain how this would affect:
- the length of a day
 - the length of a year
 - the number of days in a year
 - the force of gravity between the Earth and the Sun
 - the Earth's temperature?

I can...

- use models to explain features of the Solar System
- calculate the weight of objects on different planets.