KS2 SCIENCE · EARTH AND SPACE (YEAR 5)

Pace out the solar system

A scale model of distances for the playground or a field

Name: _____

Date: _____

In this model, 1 big step stands for the average distance from the Sun to the Earth (150 million km). Scientists call this distance 1 astronomical unit (1 AU). One child stands still as the Sun. The others walk out in a straight line.

1 How many steps from the Sun?

Planet	Distance from the Sun	Small space: 1 step = 1 AU	Big field: 3 steps = 1 AU
Mercury	58 million km	**0.4 steps**	**1.2 steps**
Venus	108 million km	**0.7 steps**	**2.2 steps**
Earth	150 million km	**1.0 steps**	**3 steps**
Mars	228 million km	**1.5 steps**	**5 steps**
Jupiter	778 million km	**5 steps**	**16 steps**
Saturn	1,433 million km	**10 steps**	**29 steps**
Uranus	2,872 million km	**19 steps**	**58 steps**
Neptune	4,495 million km	**30 steps**	**90 steps**

2 Safety and set-up

- Use a safe, flat, open space. An adult checks the area first.
- Take normal big steps. Count out loud together.
- Hold up the planet card that matches your planet (page 2).
- Tip: Mercury, Venus, Earth and Mars stand very close to the Sun!

3 Think about it

a) Which planets are close together? Which are far apart?

_____

b) Neptune is about 30 steps away. How many times farther is that than Earth?

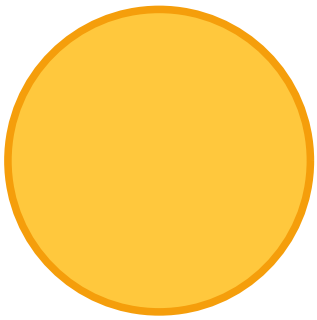
_____

c) Why is it hard to draw the solar system to scale on one page?

_____

Answers: a) The 4 inner planets are close together; the outer planets are far apart. b) About 30 times. c) The distances are too big.

Cards to hold · cut along the dashed lines

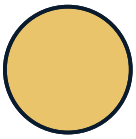


Sun



Mercury

0.4 steps (small space)



Venus

0.7 steps (small space)



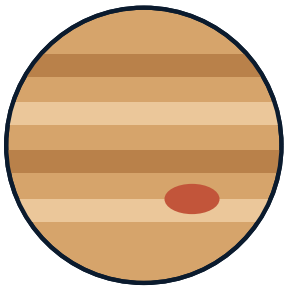
Earth

1.0 steps (small space)



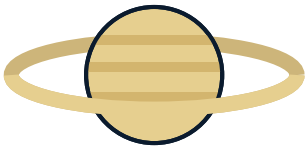
Mars

1.5 steps (small space)



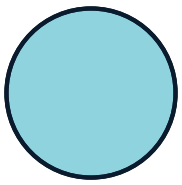
Jupiter

5 steps (small space)



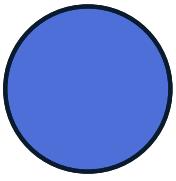
Saturn

10 steps (small space)



Uranus

19 steps (small space)



Neptune

30 steps (small space)