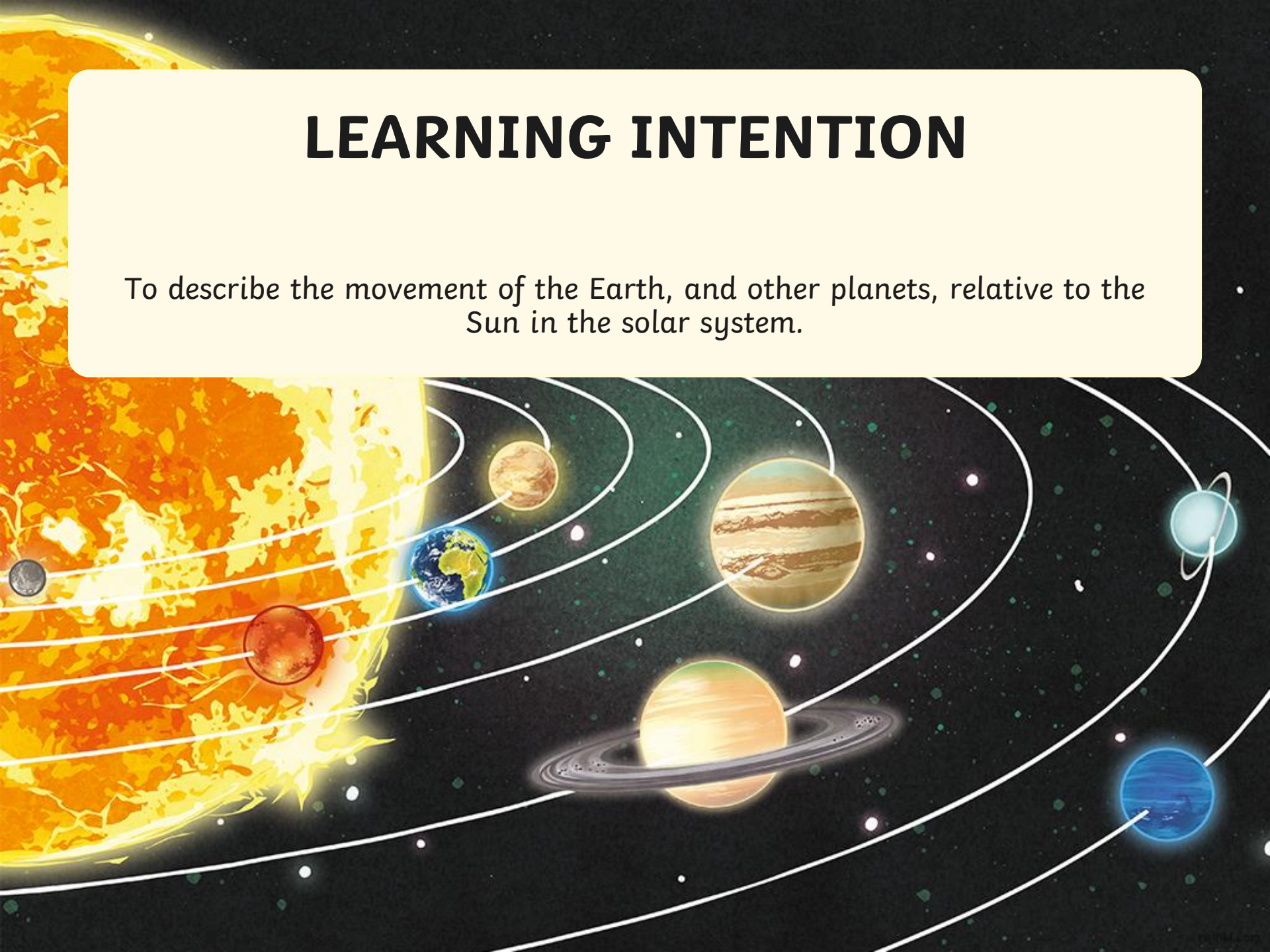


# LEARNING INTENTION

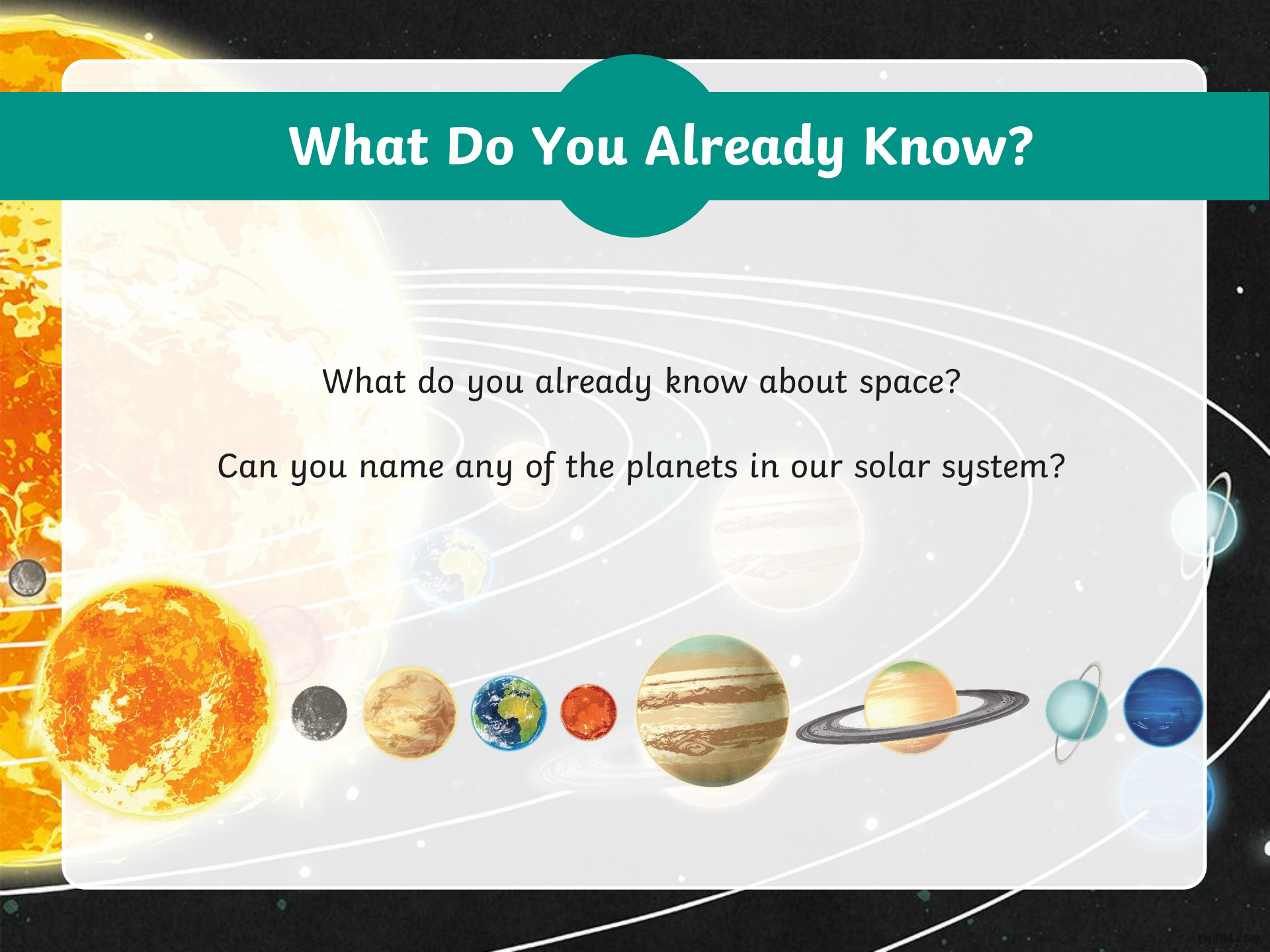
To describe the movement of the Earth, and other planets, relative to the Sun in the solar system.



# What Do You Already Know?

What do you already know about space?

Can you name any of the planets in our solar system?

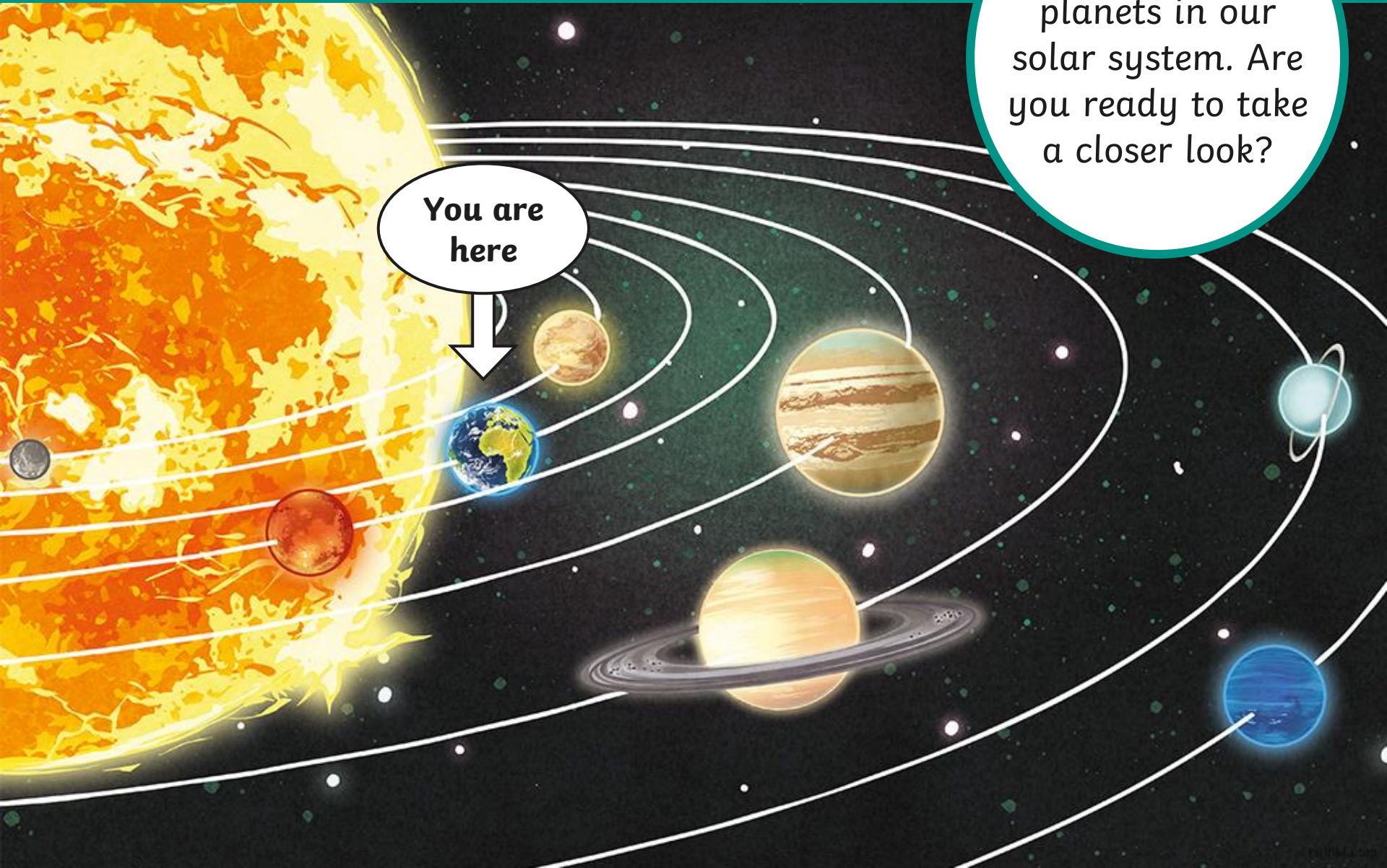




# The Planets

There are eight planets in our solar system. Are you ready to take a closer look?

You are  
here





# The Planets

There are eight planets in our solar system. Are you ready to take a closer look?



The Sun

~~The Sun is at the center of the solar system.~~  
The Sun is at the center of the solar system.

the Earth. However, we now know that the Sun is in the centre of the solar system and that the Earth and all the other planets move around it.



# The Planets

**Distance from the Sun:**

58 million kilometres

**One day lasts:** 59 Earth days

**One year lasts:** 88 Earth days



Mercury

Only two spacecraft have even visited Mercury.  
due to how close it is to the Sun.



# The Planets

**Distance from the Sun:**

108 million kilometres

**One day lasts:** 243 Earth days

**One year lasts:** 225 Earth days



Venus

Venus is the hottest planet in the solar system.  
of  $462^{\circ}\text{C}$ . That's hot enough to melt lead!

clouds of sulphuric acid that smell like rotten eggs!

# The Planets

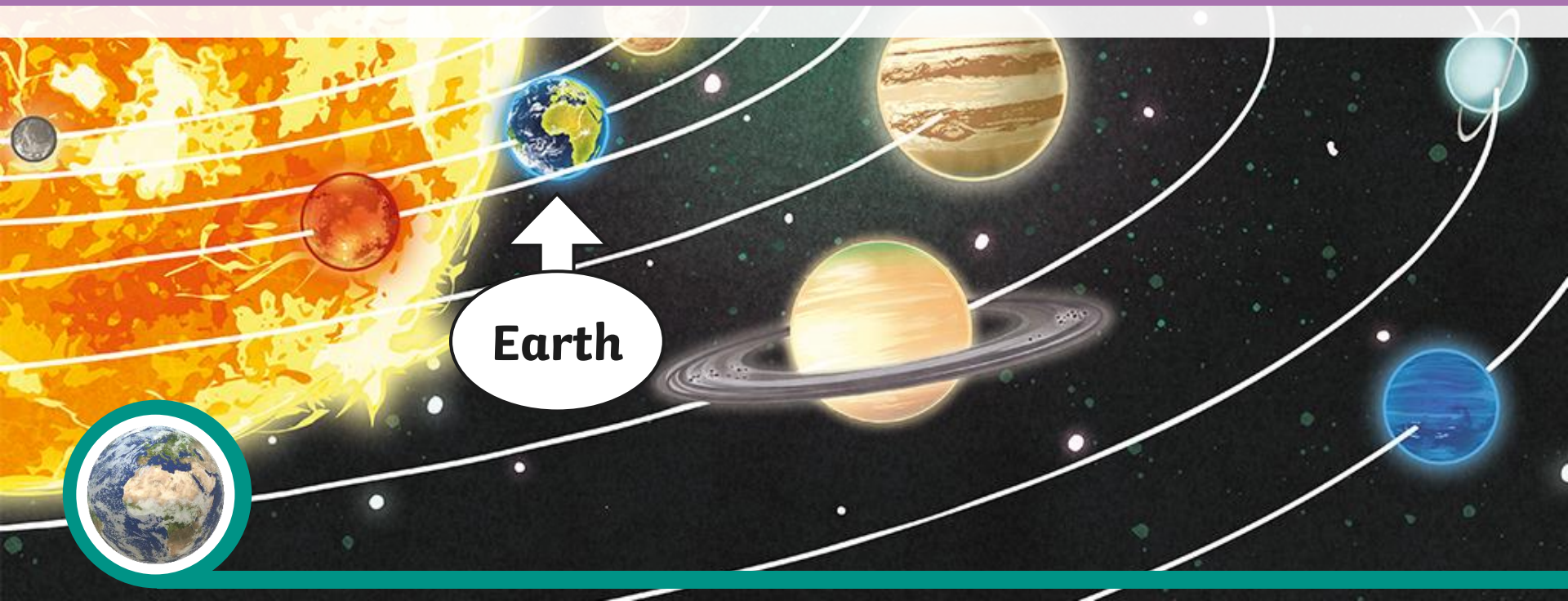
**Distance from the Sun:**

150 million kilometres

**One day lasts:** 24 hours

**One year lasts:** 365 days

Earth is the third planet from the Sun.  
True or false?





# The Moon

**Distance from the Sun:**

150 million kilometres

**One day lasts:** 27.3 days

**One year lasts:** 365 days



Only one side of the Moon is visible from Earth.  
**True or false?**

man, one giant leap for mankind.





# The Planets

**Distance from the Sun:**

228 million kilometres

**One day lasts:** 24 hours  
and 37 minutes

**One year lasts:** 687 days

Mars is the fourth planet from the Sun. It is sometimes called the Red Planet

True Mars has two moons, Phobos and Deimos.



A diagram of the solar system with the Sun on the left and planets on the right. The planets shown are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. Mars is highlighted with a red circle and a white arrow pointing to it from a label. A circular inset in the bottom left corner shows a close-up of Mars.

**Mars**

# The Planets

**Distance from the Sun:**

778 million kilometres

**One day lasts:** 10 hours

**One year lasts:** 11.9 Earth years

**Jupiter's gravity is weaker than the gravity on Earth. True or false?**

False because Jupiter is so huge, its gravity is much stronger than the gravity on any other planet in the solar system.





# The Planets

**Distance from the Sun:**

1.4 billion kilometres

**One day lasts:** 10.7 hours

**One year lasts:** 29 Earth years

Saturn is the sixth planet from the Sun. It is another gas giant. The rings of

~~Saturn is the shortest day short of the~~  
~~A day on Saturn is only 10.7 hours long!~~



A diagram of the solar system with the Sun on the left and planets on the right. Saturn is highlighted with a callout bubble. The text 'Saturn' is inside the bubble, and an arrow points from the bubble to Saturn. The background is a dark space with stars and orbital lines.

**Saturn**

# The Planets

**Distance from the Sun:**

2.9 billion kilometres

**One day lasts:** 17 hours

**One year lasts:** 84 Earth years



Uranus

Uranus is named after one of the Greek gods of the sky. True or false?

True  
big a long time ago, which knocked it over onto its side.



# The Planets

**Distance from the Sun:**

4.5 billion kilometres

**One day lasts:** 16 hours

**One year lasts:** 165 Earth years

True – they are all named after minor water  
Neptune has 14 moons. True or false?  
gods from Greek mythology.

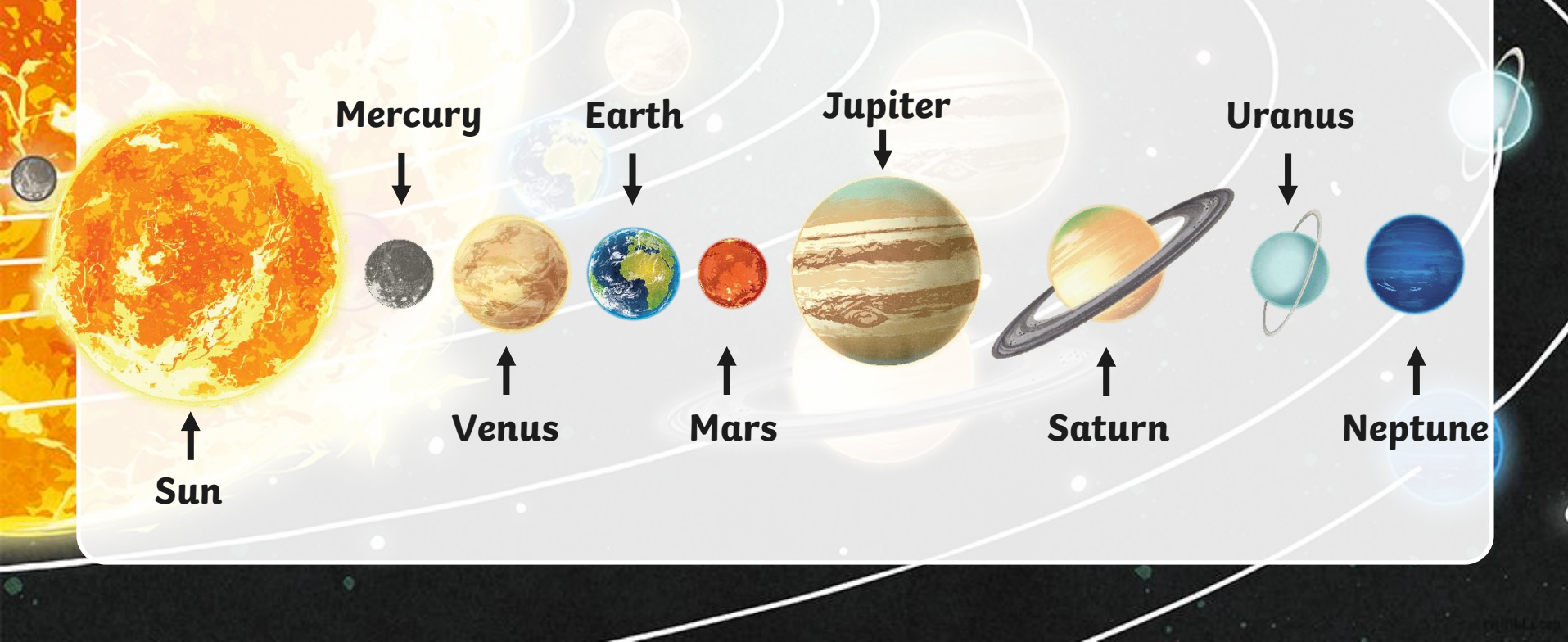
hour – nearly the speed of a fighter jet!



Neptune

# The Planets

The Sun and these eight planets make up our solar system. There are many other objects in the solar system too, such as moons, comets, asteroids and dwarf planets. Our solar system is one of many. Scientists think that there may be tens of billions of other solar systems out there – and that's just in our galaxy!

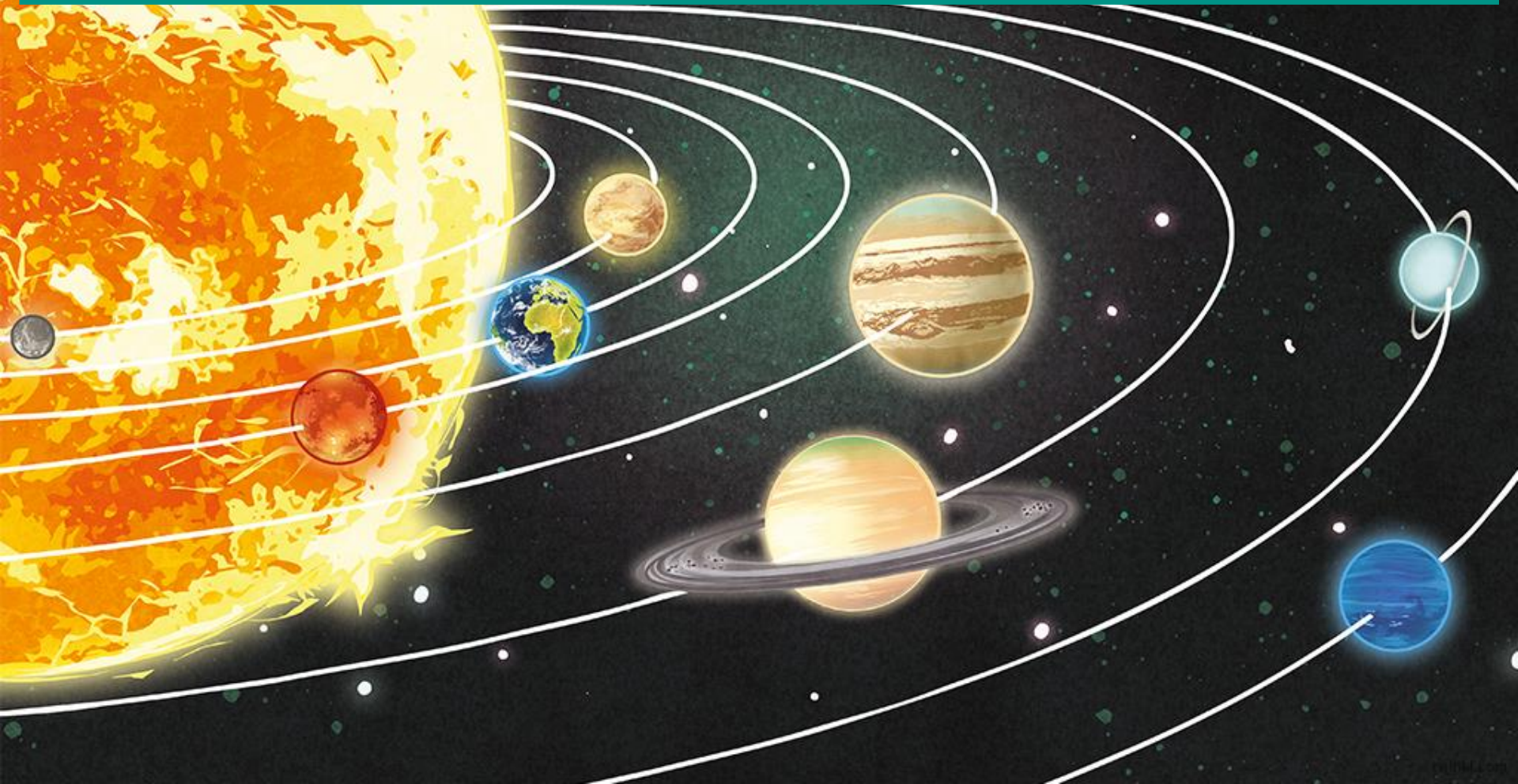




# The Solar System

1. **The Sun**
2. Orbits
3. Gravity
4. Day and Night
5. Clockwise or Anticlockwise?

The Sun is a star that spins anticlockwise in the middle of our solar system. It is surrounded by eight planets.

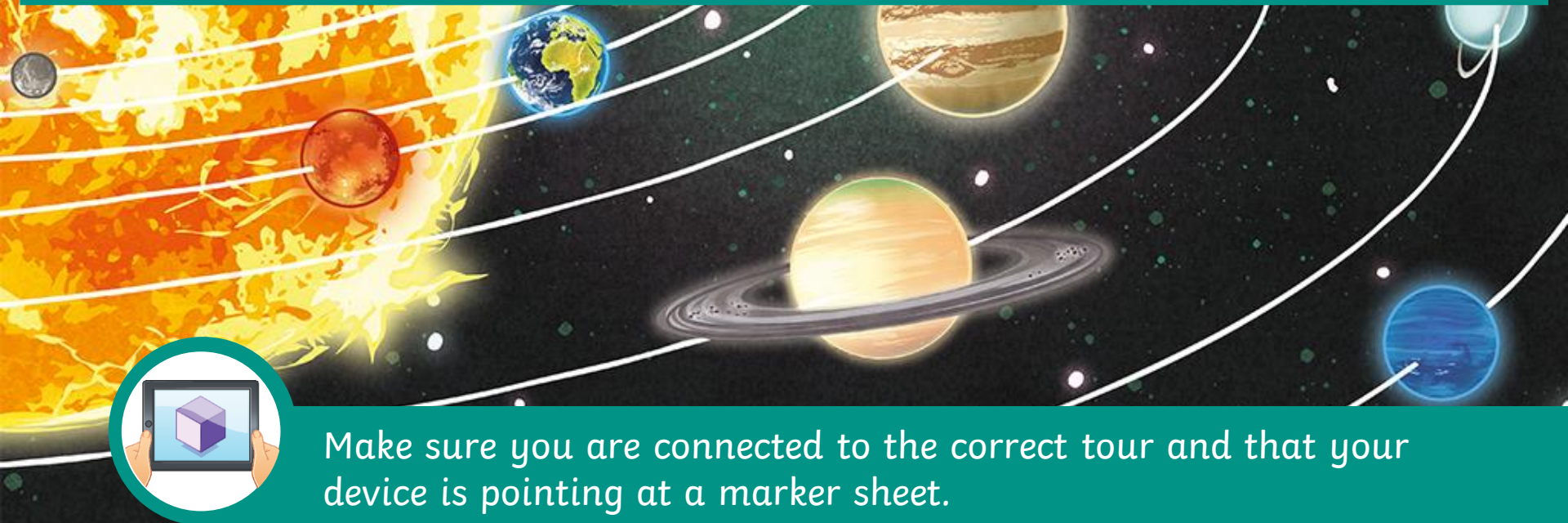


# The Solar System

1. The Sun
2. **Orbits**
3. Gravity
4. Day and Night
5. Clockwise or Anticlockwise?

Every planet in the solar system moves anticlockwise around the Sun, following a curved path. We call this curved path an orbit. Although it looks like some of them are orbiting in a circle, each planet's orbit around the Sun is shaped like an ellipse.

When a planet makes one complete orbit around the Sun, this is counted as one year on that planet. The time that it takes each planet to orbit once around the Sun depends on how fast the planet is travelling and how far away it is from the Sun. This means that a year lasts for different lengths of time on different planets. Can you see which planets have the longest years?



Make sure you are connected to the correct tour and that your device is pointing at a marker sheet.



# The Solar System

1. The Sun
2. Orbits
3. **Gravity**
4. Day and Night
5. Clockwise or Anticlockwise?

The planets orbit the Sun because they are caught by the Sun's massive gravitational force. Without the pull of the Sun's gravity, the planets would no longer follow their paths around the Sun and would go flying off in a straight line into space.

In the same way that each planet orbits the Sun, most planets are also orbited by smaller objects that are caught by the planet's gravity. For example, Earth is orbited by the moon. Some planets are orbited by lots of moons. Can you remember which planets have a large number of moons?

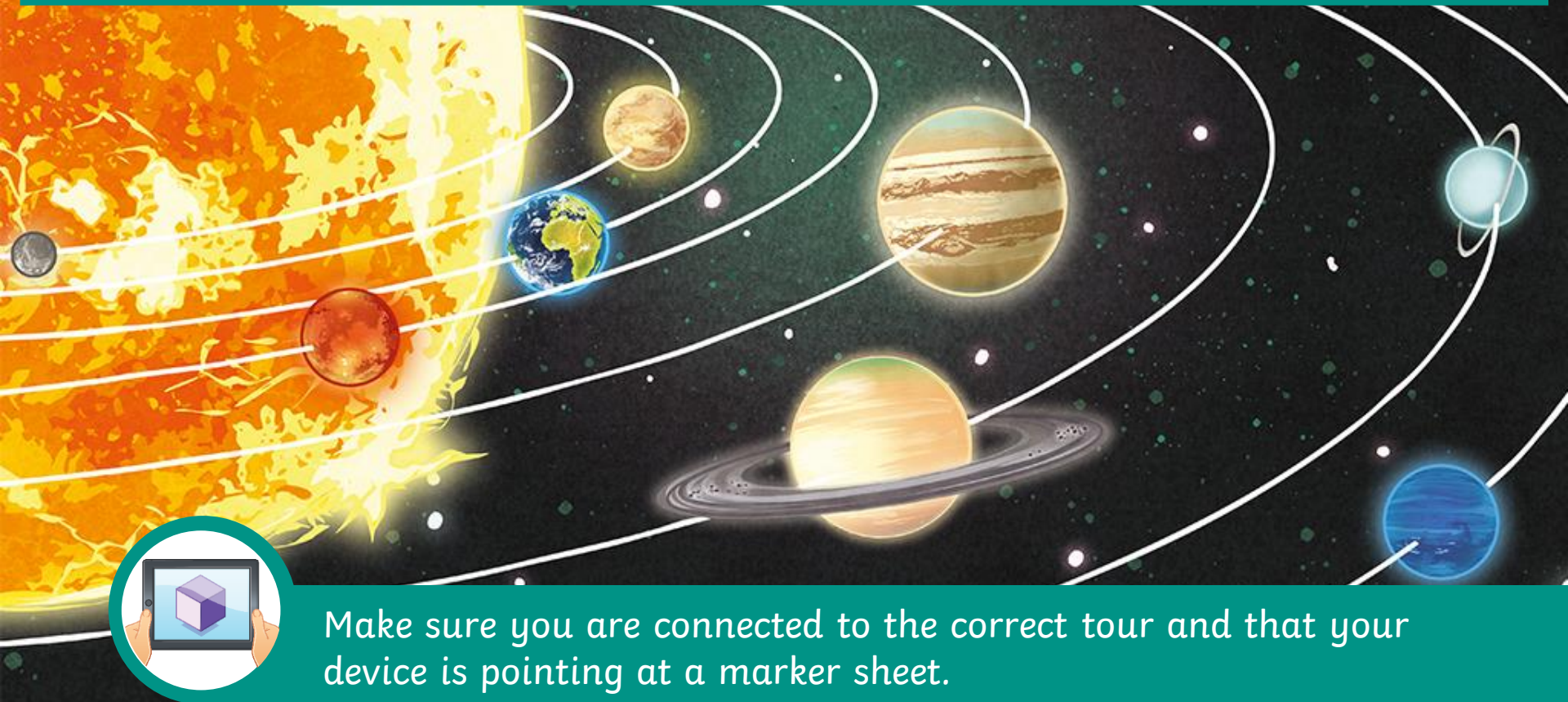


Make sure you are connected to the correct tour and that your device is pointing at a marker sheet.

# The Solar System

1. The Sun
2. Orbits
3. Gravity
- 4. Day and Night**
5. Clockwise or Anticlockwise?

Each planet also spins on its axis as it moves. At any one time, it is daytime for the part of the planet that is facing the Sun and night-time for the part that is facing away. As some planets spin faster than others, the length of a day can vary greatly between different planets. Can you remember which planets have the shortest days?



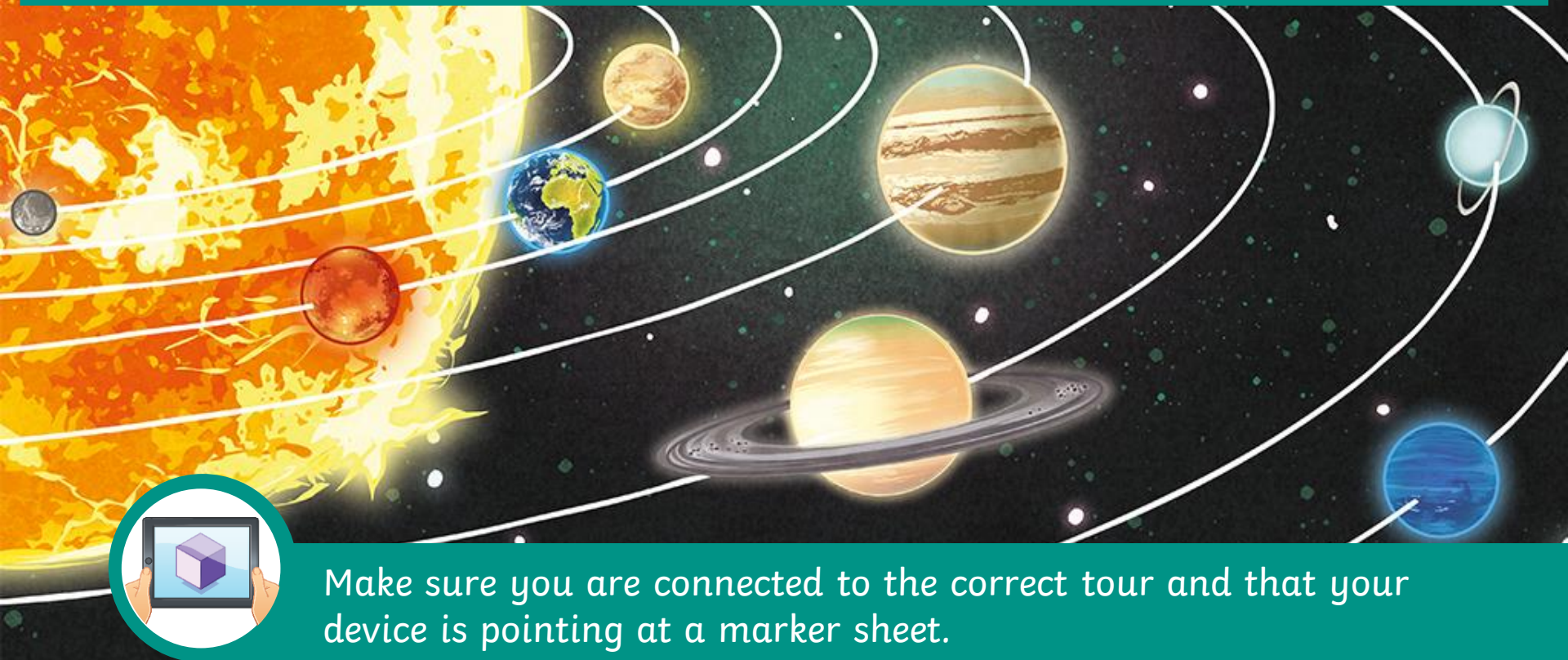
Make sure you are connected to the correct tour and that your device is pointing at a marker sheet.



# The Solar System

1. The Sun
2. Orbits
3. Gravity
4. Day and Night
5. Clockwise or Anticlockwise?

Can you see which planet is spinning in a different direction from the others? Although most planets spin anticlockwise, the same way as the Sun, Venus rotates in a clockwise direction because Venus was struck by a large object long ago. [Click to reveal the answer](#) Uranus also spins in an unusual way – it is tilted so far over to one side that it almost looks as if it is rolling along.



Make sure you are connected to the correct tour and that your device is pointing at a marker sheet.





**Show What You Know**





**1**

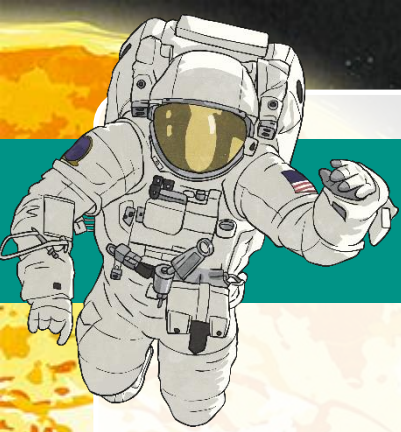
What type of object is the Sun?

**a comet**

**a planet**

**a star**

**Next  
Question**



2

What is an orbit?

**a type of sweet**

**a curved path in space that one object takes around another**

**a star**

**Next  
Question**



**3**

What keeps the planets in orbit around the Sun?

**speed**

**gravity**

**magic**

**Next  
Question**



4

Which planet is the fifth from the Sun?

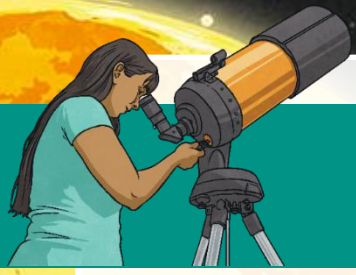
**Earth**

**Saturn**

**Jupiter**

**Next  
Question**





5

Which word describes the rough shape of a planet?

**spherical**

**circular**

**ovoid**

**Next  
Question**



6

Which word do we use to describe the Sun being at the centre of our solar system?

**geocentric**

**heliocentric**

**areocentric**

**Next  
Question**





**7**

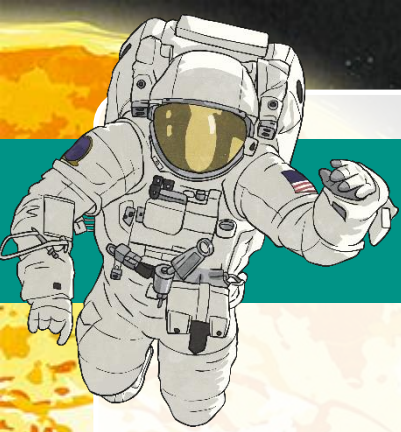
Why has Pluto not been classed as a planet since 2006?

**it floated out of the solar system**

**it exploded**

**we changed the way in which we classify planets**

**Next  
Question**



8

Which planets are classed as gas giants?

**Jupiter and Saturn**

**Mercury and Venus**

**Earth and Mars**

**Next  
Question**



9

How many moons does Mars have?

one

two

five

Next  
Question



10

One year is the time that it takes  
for a planet to...

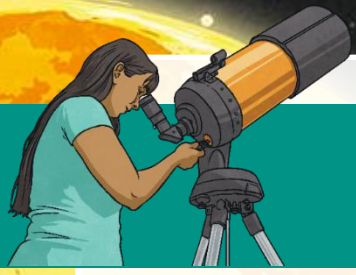
**make one complete orbit around the Sun**

**complete one rotation on its axis**

**have 365 days pass by**

**Next  
Question**





11

In which direction do the planets in our solar system orbit the Sun?

**different planets orbit in different directions**

**clockwise**

**anticlockwise**

**Next  
Question**



12

What causes day and night on a planet?

**as a planet rotates on its axis, different parts of the planet face the Sun**

**the planet moving too far away from the Sun**

**other planets blocking the light from the Sun**

**Next  
Question**





13

Which is the largest planet in our solar system?

**Neptune**

**Jupiter**

**Saturn**

**Next  
Question**



14

Which is the smallest planet in our solar system?

**Mercury**

**Venus**

**Mars**

**Next  
Question**



**15**

Which mnemonic orders the planets correctly?

**Energetic Jumping Monkeys Mainly Utter Very Silly Noises**

**Most Visitors Eat Mouldy Jam Sandwiches Until November**

**My Very Exciting Magical Nana Juggles Ugly Skateboards**

**Next  
Question**

# Aim

To describe the movement of the Earth, and other planets, relative to the Sun in the solar system.

## Success Criteria

- I can name the planets in the correct order from the Sun.
- I can explain how the Earth and other planets move around the Sun.
- I can explain why planets orbit the Sun.



