The Sun

What Is the Sun?

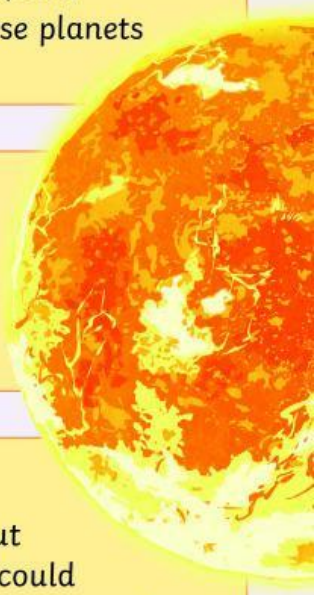
The Sun is a huge star made up of bright gas. It's a very hot and fiery ball that provides us with heat, light and energy. Without the Sun, we wouldn't be able to live on Earth. The Sun doesn't move but the Earth moves around it. When we face away from the Sun, it's night time and when we face towards it, it's day time.

The Solar System

The Sun is the stationary star in the middle of our Solar System. There are eight planets that orbit the Sun. These planets are called Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. The Sun's strong gravitational force keeps these planets in their orbits.

A Powerhouse

Inside the Sun, a process called nuclear fusion happens. This process turns **hydrogen** into **helium** and releases a lot of energy. This energy spreads out and warms our planet. It's because of the Sun's energy that life is possible on Earth.



How Big Is the Sun?

The Sun is incredibly big, much bigger than it appears from Earth. It's about 695,700 kilometres wide, which is about 109 times wider than Earth. You could fit more than one million Earths inside the Sun! Even though it's very large, compared to other stars in space, it's just an average-sized star.

How Do We Know about the Sun?

Scientists use different ways to study and learn about the Sun. One way is by using special **satellites**, such as the Solar Dynamics Observatory (SDO). The SDO takes detailed pictures of the Sun, which helps us see what it looks like, learn about its temperature and study solar flares.

There are also observatories around the world with special telescopes that watch the Sun's activity and gather information.

The Sun

Eclipses

Sometimes, the Moon moves exactly between the Earth and the Sun and makes a shadow on Earth's surface. This is called a solar eclipse. During a total solar eclipse, the Moon can completely block out the Sun and we can see a glowing ring called the corona.

How Does the Sun Benefit Us?

Sun rays provide many benefits. Firstly, plants need sunlight to make their own energy through a process called photosynthesis. They also release oxygen into the air, which helps us and other living things breathe. The Sun also helps our bodies make vitamin D, which is important for keeping our bones healthy. Moreover, many people believe that sunlight can make us feel happier and improve our mood.

Lifespan

Scientists describe the Sun as being approximately halfway through its lifespan. It was born about 4.6 billion years ago and has been shining ever since. However, in the future, the Sun will run out of its hydrogen fuel and become bigger, turning into a red giant. Eventually, in about six billion years, it will lose its outer layers and leave behind a small and dense centre called a white dwarf.

Interesting Facts!

- The Sun is incredibly hot at its middle with a temperature of about 15 million degrees Celsius.
- It takes an average of 8 minutes and 20 seconds for sunlight to travel from the Sun to Earth.
- The Sun's surface has dark patches called sunspots, which are cooler than the rest of the surface.

Glossary

helium: A very light gas that does not burn.
hydrogen: A gas that is the lightest of all the elements.
orbit: The curved path that one object takes around another one in space.
satellite: An object that orbits another object or planet.

Questions

1. What is the Sun? Tick one.

   ◯ a star

   ◯ a planet

   ◯ a galaxy

   ◯ a satellite

2. Draw **four** lines and match each sub-heading with its summary.

The Solar System	The Sun's energy comes from a process called nuclear fusion.
A Powerhouse	One day, the Sun will become a white dwarf.
Eclipses	The Sun has eight planets that orbit it while it remains stationary.
Lifespan	Sometimes, the Moon can completely block out the Sun.

3. Look at the section called **How Does the Sun Benefit Us?**

   Find and copy one word which means the same as 'also'.

   _____

4. Fill in the missing words.

   Inside the Sun, a process called nuclear _____ happens. This process turns hydrogen into _____ and releases a lot of energy.

5. According to the text, approximately how wide is the Sun?

   _____

6. Explain what happens during an eclipse.

   _____

   _____

   _____

7. Look at the section called **How Does the Sun Benefit Us?**
   What do you think would happen if we didn't have the Sun?

_____

_____

_____

8. Summarise what you have learnt about the Sun in 30 words or fewer.

_____

_____

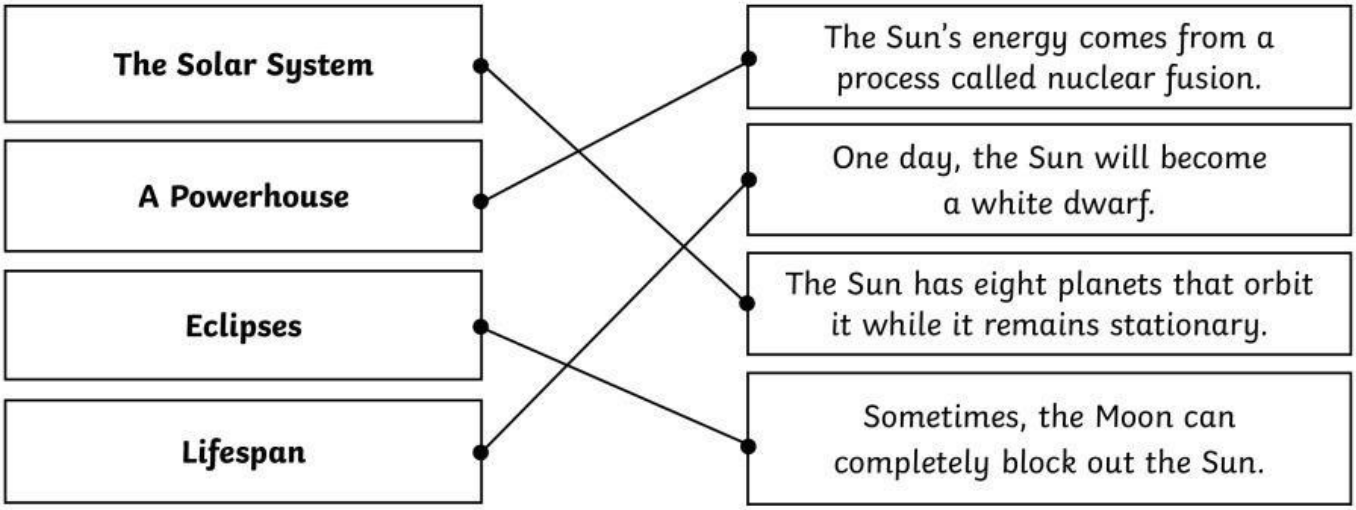
_____

Answers

1. What is the Sun? Tick one.

   - ☑ **a star**
   - ○ a planet
   - ○ a galaxy
   - ○ a satellite

2. Draw **four** lines and match each sub-heading with its summary.



3. Look at the section called **How Does the Sun Benefit Us?**

   Find and copy one word which means the same as 'also'.

   moreover

4. Fill in the missing words.

   Inside the Sun, a process called nuclear **fusion** happens. This process turns hydrogen into **helium** and releases a lot of energy.

5. According to the text, approximately how wide is the Sun?

   According to the text, the sun is approximately 695,700 kilometres wide.

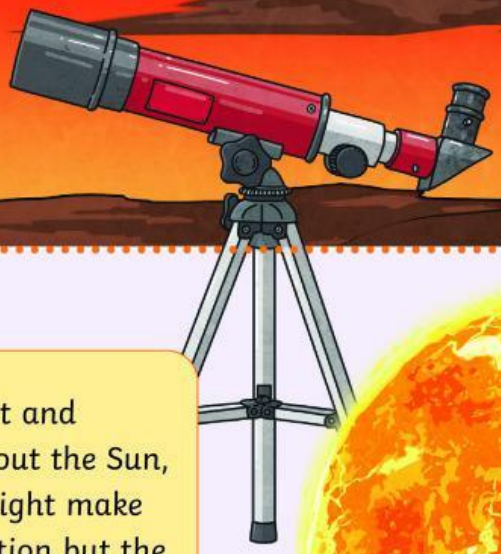
6. Explain what happens during an eclipse.

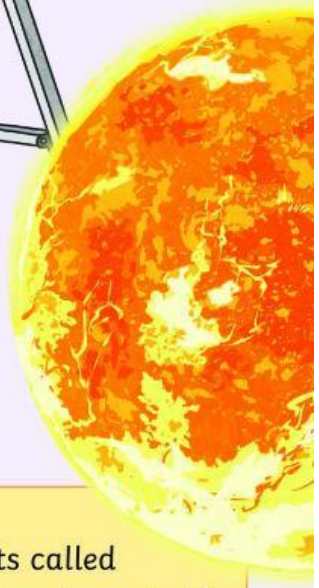
   Pupil's own responses, such as: During an eclipse, the Moon moves exactly between the Earth and the Sun and makes a shadow on Earth's surface.

7. Look at the section called **How Does the Sun Benefit Us?**
   What do you think would happen if we didn't have the Sun?
   Pupil's own responses, such as: If there was no Sun, plants would not be able to survive because they use the Sun's rays to make energy. Therefore, there would be less oxygen for other life meaning no living things could survive on Earth.

8. Summarise what you have learnt about the Sun in 30 words or fewer.
   Pupil's own responses, such as: The Sun is a star at the centre of our Solar System that is much larger than Earth. The Sun produces energy through nuclear fusion and will eventually stop shining.

The Sun





What Is the Sun?

The Sun is a huge star made of bright gas. It's a very hot and luminous ball that gives us heat, light and energy. Without the Sun, life would not be possible on Earth. The Sun's heat and light make it visible during the day. The Sun stays in the same position but the Earth moves around it. Night is when we face away from the Sun and day is when we face towards it.

The Solar System

The Sun is at the centre of our Solar System. It's orbited by the eight planets called Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. These planets are held in their orbits by the powerful gravitational pull of the Sun.

A Powerhouse

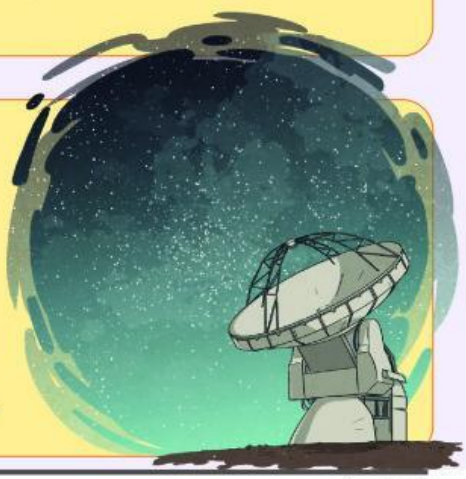
The Sun is a source of energy. Inside the Sun, a process called nuclear fusion turns hydrogen into helium and it releases a lot of energy. This energy spreads out and warms our planet, making it possible for life to survive and grow.

How Big Is the Sun?

The Sun is huge and is much bigger than it looks from Earth. It's about 695,700 kilometres wide, which is about 109 times wider than Earth. You could fit more than one million Earths inside the Sun! Even though it's very big, compared to other stars in the universe, it's just an average-sized star.

How Do We Know about the Sun?

Scientists have used different ways to study and learn about the Sun. One way is by using special satellites, such as the Solar Dynamics Observatory (SDO). The SDO takes detailed pictures of the Sun, which helps us to see what it looks like, what its temperature is and to study solar flares. There are also observatories around the world with special telescopes that keep an eye on the Sun's activity and collect information.



The Sun

Eclipses

Sometimes, a solar eclipse occurs. This happens when the Earth's natural satellite, the Moon, aligns perfectly between the Earth and the Sun. This casts a shadow either partially or entirely over Earth's surface. A solar eclipse is called 'total' if the Moon totally covers the Sun and the Sun's corona (a glowing ring of light seen around the Sun) becomes visible. If only part of the Sun appears covered, it is called 'partial'.

Using the Sun's Power

Humans have found ways to use the Sun's energy to help us. Solar panels are used to turn sunlight into electricity. These panels, consisting of numerous solar cells, convert sunlight into usable electricity, which can be used to power homes, schools and even cities. Solar water heaters also use the Sun's heat to warm water without using traditional heating methods.

How Does the Sun Benefit Us?

The Sun's rays have many advantages. Firstly, plants need sunlight to make their own energy through a process called photosynthesis. They also release oxygen into the air, which helps us and other living things to breathe. The Sun also helps our bodies make vitamin D which is important for keeping our bodies healthy. Moreover, many people believe that sunlight can make people feel happier and improve our mood.

Lifespan

Scientists describe the Sun as being approximately halfway through its lifespan. It was born around 4.6 billion years ago and has been shining ever since. However, one day in the future, the Sun will use up its hydrogen fuel and start to expand. It will become a bigger star called a red giant. Eventually, in about six billion years, it will lose its outer layers and leave behind just a small and dense centre called a white dwarf.

Fun Facts!

- The Sun is incredibly hot at its core with a temperature of about 15 million degrees Celsius.
- It takes an average of 8 minutes and 20 seconds for sunlight to travel from the Sun to Earth.
- The Sun's surface has dark patches called sunspots, which are cooler than the rest of the surface.

Questions

1. What does the Sun give us? Tick **three**.

   - ◯ heat
   - ◯ night
   - ◯ light
   - ◯ energy

2. Draw **four** lines and match each summary with its sub-heading.

The Sun stays in the same position.	**Eclipses**
The Moon sometimes moves between the Earth and the Sun and makes a shadow on the Earth's surface.	**What Is the Sun?**
The Sun was born around 4.6 billion years ago.	**Fun Facts!**
It takes an average of 8 minutes and 20 seconds for sunlight to travel from the Sun to Earth.	**Lifespan**

3. Look at the section called **How Does the Sun Benefit Us?**

   Find and copy one word which means the same as 'benefits'.

   _____

4. Fill in the missing words.

   The Sun also helps our bodies make _____ which is important for keeping our _____ healthy.

5. List **two** things that will happen to the Sun during its lifespan.

   - _____
   - _____

6. Explain how an eclipse happens.

7. Look at the section called **How Does the Sun Benefit Us?**
   What do you think the biggest benefit of the Sun is? Explain your answer.

8. How is this text organised to help the reader?

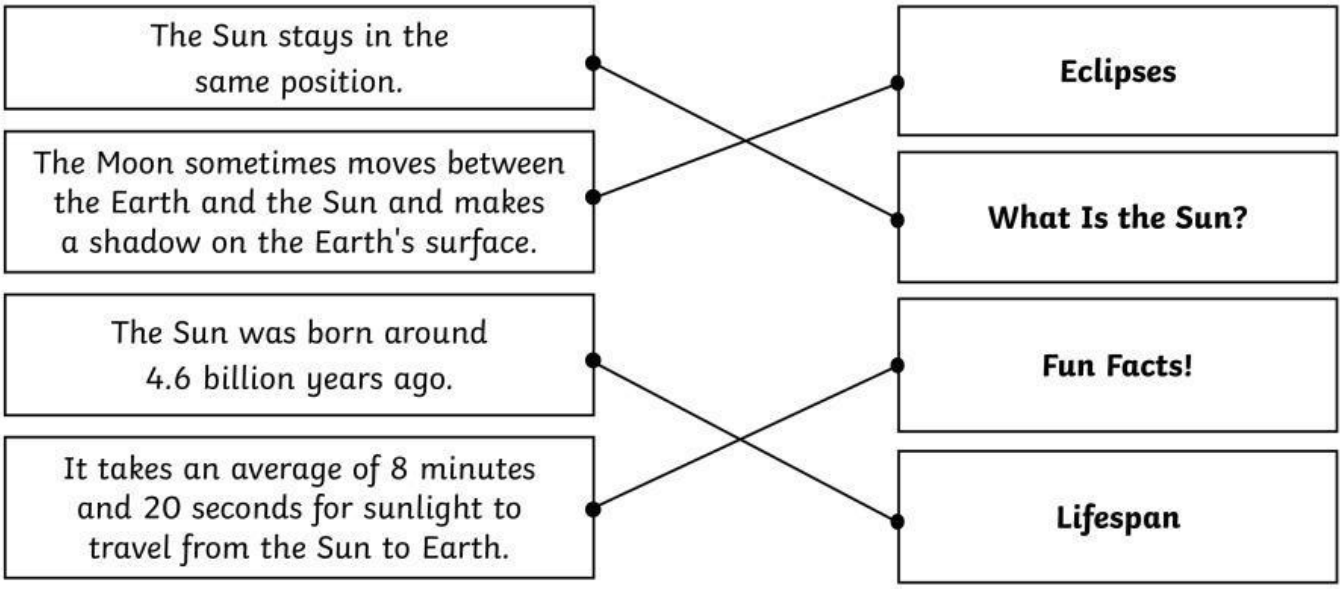
9. Summarise what the text tells us about the Solar System in 35 words or fewer.

Answers

1. What does the Sun give us? Tick **three**.

- [x] **heat**
- [ ] night
- [x] **light**
- [x] **energy**

2. Draw **four** lines and match each summary with its sub-heading.



3. Look at the section called **How Does the Sun Benefit Us?**

   Find and copy one word which means the same as 'benefits'.

   advantages

4. Fill in the missing words.

   The Sun also helps our bodies make **vitamin D** which is important for keeping our **bodies** healthy.

5. List **two** things that will happen to the Sun during its lifespan.

   Accept any two of the following:

   - **It will become a red giant.**
   - **It will become a white dwarf.**
   - **It will expand.**
   - **It will lose its outer layer.**

6. Explain how an eclipse happens.
   Pupils' own responses, such as: An eclipse happens when the Moon moves between us and the Sun, casting a shadow on Earth and blocking our view of the Sun.

7. Look at the section called **How Does the Sun Benefit Us?**
   What do you think the biggest benefit of the Sun is? Explain your answer.
   Pupils' own responses, such as: I think the biggest benefit the sun gives us is sunlight. The sun's rays help plants to achieve photosynthesis which means they are able to produce oxygen that we need in order to survive.

8. How is this text organised to help the reader?
   Pupils' own responses, such as: The author has organised the text into paragraphs with sub-headings. This makes it easier for the reader to find information quickly.

9. Summarise what the text tells us about the Solar System in 35 words or fewer.
   Pupils' own responses, such as: The text tells us that the Sun is at the centre of the Solar System and does not move. Eight planets orbit around the Sun due to its powerful gravitational pull.

The Sun

What Is the Sun?

The Sun is a massive ball of glowing gas. It is a fiery orb that provides heat, light and energy to our planet, Earth. Without the Sun, life as we know it would cease to exist. The Sun's powerful heat and light makes it visible during the day while it sets in the evenings to give way to night due to Earth's rotation around its axis.

The Solar System

The Sun is the star at the heart of our Solar System in our galaxy, the Milky Way. Together with the planets, asteroids, comets and other celestial bodies, it forms the remarkable Solar System that we call home. Orbiting around the Sun are eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Each planet has its unique characteristics, which scientists continue to explore and study.

A Powerhouse

The Sun is an almost inexhaustible source of energy. Through the process of nuclear fusion, the Sun's core converts hydrogen into helium. This releases a tremendous amount of energy in the process. This energy radiates outward, warming our planet and providing the fuel for life to thrive.

How Big Is the Sun?

The Sun is an astronomical giant, much larger than it appears from Earth. Its radius measures a staggering 695,700 kilometres, making it approximately 109 times larger than Earth. In fact, over one million Earths could fit inside the Sun! Despite its enormous size, the Sun is just an average-sized star when compared to others in the universe.

How Do We Know about the Sun?

Scientists have employed various methods to study and gather information about the Sun. One technique is solar observing satellites, such as the Solar Dynamics Observatory (SDO). The SDO captures images of the Sun in great detail, allowing us to examine its surface, temperature and solar flares. Observatories around the world also contribute to our knowledge, using specialised telescopes to monitor the Sun's activity and gather data.

The Sun

Eclipses

Throughout history, humans have witnessed the natural phenomenon known as eclipses. A solar eclipse occurs when the Earth's natural satellite, the Moon, aligns perfectly between the Earth and the Sun, casting a shadow either partially or entirely over Earth's surface. A solar eclipse is called 'total' if the Moon totally covers the Sun and the Sun's corona (a glowing ring of light seen around the Sun) becomes visible.

Harnessing the Sun's Energy

We have found ways to harness the Sun's energy for our benefit. Solar panels utilise the Sun's rays to generate electricity, offering a cleaner and renewable alternative to fossil fuels. These panels, consisting of numerous photovoltaic cells (also called solar cells), convert sunlight into usable electricity that can power homes, schools and even entire cities. Furthermore, solar water heaters use the Sun's heat to warm water, reducing our reliance on traditional heating methods.

How Does the Sun Benefit Us?

The Sun's rays provide numerous benefits to our planet and its inhabitants. Firstly, sunlight is essential for plants to carry out photosynthesis, the process through which they generate energy to grow and produce oxygen. This oxygen is then released into the atmosphere, allowing us and other living beings to breathe. Additionally, exposure to sunlight helps our bodies produce vitamin D, which is essential for bone health. Moreover, many people believe that sunlight has a positive impact on our mental well-being as it can lift our spirits and improve our mood.

Lifespan

Like all stars, the Sun has a limited lifespan. It was born around 4.6 billion years ago and has been shining ever since. However, at some point in the future, the Sun will exhaust its hydrogen fuel supply and begin to expand, evolving into a red giant. Ultimately, in about six billion years, it will shed its outer layers, leaving behind a dense core known as a white dwarf.

Fun Facts!

- The Sun's temperature reaches a scorching 15 million degrees Celsius at its core.
- It takes an average of 8 minutes and 20 seconds for sunlight to travel from the Sun to Earth.
- The Sun's surface is covered in dark patches called sunspots, which are cooler compared to the rest of the surface.

Questions

1. How many planets are in our solar system? Tick one.

   ○ 6
   ○ 7
   ○ 8
   ○ 9

2. Draw **four** lines and match each celestial body with its definition.

the Sun	planet
Venus	star
the Moon	natural satellite
the Milky Way	galaxy

3. Look at the section called **Harnessing the Sun's Energy.**
   Find and copy one word which could be replaced with 'use'.

   _____

4. Fill in the missing words.
   Firstly, sunlight is essential for plants to carry out _____, the process through which they generate energy to grow and produce _____.

5. List **two** ways in which the Sun benefits us.

   • _____
   • _____