

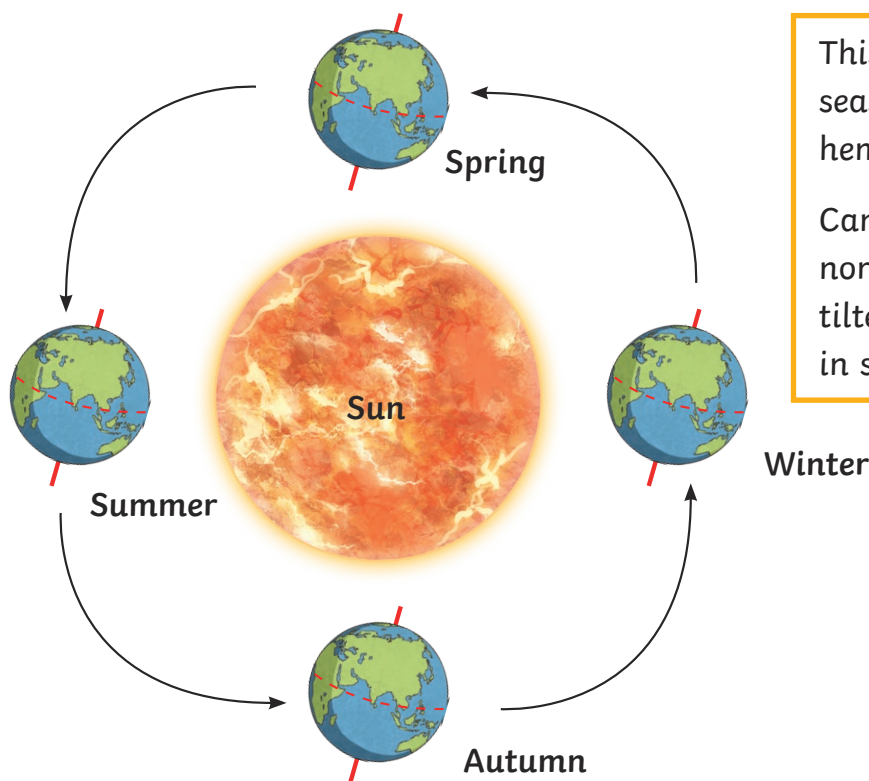
# Summer Solstice

The equator is an imaginary line around the middle of the Earth. Countries above the equator are in the northern hemisphere. Countries below the equator are in the southern hemisphere.

Can you imagine a pole going through Earth from the North Pole to the South Pole? This pole would be the Earth's axis. The Earth spins around this axis. The axis is not vertical; it tilts the Earth over. This means the Earth appears to lean at an angle.

The Earth orbits around the Sun. This orbit takes around one year. At different times of the year, as it journeys around the Sun, some places on Earth are nearer to the Sun than others.

If you live in the northern hemisphere, Earth is tilted closer to the Sun in the summer, giving more light and heat. The northern hemisphere is further away from the sun in the winter and countries receive less light and heat.



This diagram shows the seasons in the northern hemisphere.

Can you see how the northern hemisphere is tilted towards the Sun in summer?

## What is the Summer Solstice?

The Summer Solstice happens when the Earth has reached the part of its orbit when the North Pole is most tilted towards the Sun. It marks the change when the days in the northern hemisphere begin to grow shorter. The Winter Solstice in December marks the change when days begin to grow longer.



The word solstice comes from Latin words which mean 'sun stand still'. During the solstice, for people in the northern hemisphere, the sun reaches its highest point in the sky and after the solstice the sun gradually gets lower.

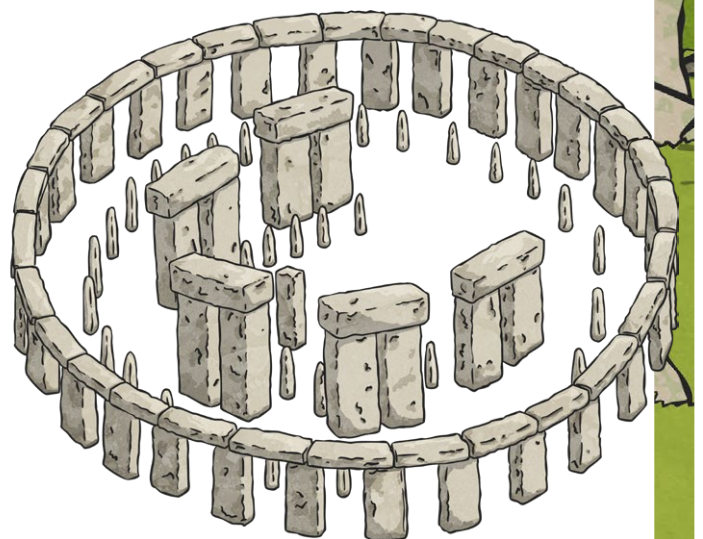
The Summer Solstice happens around 21st June. This is also known as midsummer and is the longest day and shortest night of the year in the northern hemisphere. On this day, there is the most amount of sunshine, if the weather is good.

## Summer Solstice in the Far North

Around the Summer Solstice, northern hemisphere countries in the Arctic Circle, like parts of Norway, Finland, Greenland and Alaska, have daylight all day long. This is sometimes called the midnight sun. In the Arctic Circle, the sun does not

set and this is all because of the tilt of the Earth's axis.

In the UK from mid-May to mid-July, the Shetland Islands and Orkney enjoy the summer dim or summer twilight. This is when the sun only sets for a few hours so it never gets really dark. In fine weather, the islands can have almost 19 hours of sunshine a day.



Stonehenge, Wiltshire, UK



### Solstice Celebrations

For thousands of years, there have been solstice celebrations around the world. The hours of daylight and the seasons were important to the people who lived by growing, hunting and gathering long ago. Today, festivals, bonfires and parades mark the Summer Solstice around the northern hemisphere.

In England, many people gather at Stonehenge, which is believed to have been an important religious site 4000 years ago. At the Summer Solstice, some of the stones at Stonehenge are in line with the rising sun.

On the Orkney Islands, Summer Solstice is celebrated at the ancient standing stone circle of the Ring of Brodgar.



# Questions

1. Explain what the terms equator, northern hemisphere, southern hemisphere mean.

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2. Explain what the Earth's axis is.

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3. Why is the tilt of Earth's axis significant?

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4. When would it be a good time to visit countries in the far north of the northern hemisphere? Explain your answer.

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5. When would it be a good time to visit countries in the far south of the southern hemisphere? Explain your answer.

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6. When does the Summer Solstice occur and what does it mean for countries in the northern hemisphere?

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7. What does the word **solstice** come from and what does it mean?

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8. What is summer dim and where would you go to experience this?

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## Questions

9. a. What evidence is there at Stonehenge that Summer Solstice was in some way significant for the people of ancient times?

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- b. Through research, can you find out about other ancient sites in the UK or further afield, that are linked to the Summer or Winter Solstice?

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10. The Shetland Islands can have almost 19 hours of sunshine a day around the Summer Solstice.

- a. Through research complete the table below:

<b>Summer Solstice is on:</b>			
<b>Places</b>	<b>Sun rise</b>	<b>Sun set</b>	<b>Hours and minutes of daylight</b>
Lerwick	03:38	22:34	18 hours 56 min
Edinburgh	04:26	22:02	17 hours 36 min
London	04:43	21:21	16 hours 38 min
Where I live			

- b. Now compare the differences in daylight hours. How do you think these differences affect people's daily activities?

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# Answers

1. Explain what the terms equator, northern hemisphere, southern hemisphere mean.  
**The equator is an imaginary line around the middle of the Earth.**  
**Countries above the equator are in the northern hemisphere.**  
**Countries below the equator are in the southern hemisphere.**
2. Explain what the Earth's axis is.  
**The Earth's axis is an imaginary pole going from the North pole to the South pole. The axis is not vertical but tilted. The Earth spins round on this axis.**
3. Why is the tilt of Earth's axis significant?  
**The tilt of Earth's axis is significant because, during Earth's orbit, it allows parts of the Earth to receive more light and heat than others at different points in the orbit.**
4. When would it be a good time to visit countries in the far north of the northern hemisphere? Explain your answer.  
**Various answers. This depends on pupil preference - some may say in the summer because these countries receive much longer daylight and are less cold.**
5. When would it be a good time to visit countries in the far south of the southern hemisphere? Explain your answer.  
**Various answers. This depends on pupil preference.**
6. When does the Summer Solstice occur and what does it mean for countries in the northern hemisphere?  
**The Summer Solstice happens when the Earth has reached the part of its orbit when the North Pole is most tilted towards the Sun. The Summer Solstice happens around 21st June. It marks the change when the days in the northern hemisphere begin to grow shorter.**
7. What does the word solstice come from and what does it mean?  
**The word solstice comes from Latin words which mean 'sun stand still'.**
8. What is simmer dim and where would you go to experience this?  
**Simmer dim is summer twilight. This happens in Shetland and Orkney between mid-May to Mid-July, when the sun only sets for a few hours so it never gets really dark.**
9. a. What evidence is there at Stonehenge that Summer Solstice was in some way significant for the people of ancient times?  
**At the Summer Solstice, some of the stones at Stonehenge are in line with the rising sun which indicates a link of some significance between this ancient site and the solstice.**

## Answers

b. Through research, can you find out about other ancient sites in the UK or further afield, that are linked to the Summer or Winter Solstice?

**Various answers - Maeshowe in Orkney is a burial ground from around 2800 BC. It is a grass covered mound and inside the mound are chambers and tunnels. During the Winter Solstice, the sunlight streams through to light up an area of its back wall.**

10. The Shetland Islands can have almost 19 hours of sunshine a day around the Summer Solstice.

a. Through research complete the table below:

**Answers given are for 2017 but will vary according to year.**

<b>Summer Solstice is on: 21st June 2017</b>			
<b>Places</b>	<b>Sun rise</b>	<b>Sun set</b>	<b>Hours and minutes of daylight</b>
Lerwick	03:38	22:34	18 hours 56 min
Edinburgh	04:26	22:02	17 hours 36 min
London	04:43	21:21	16 hours 38 min
Where I live			

b. Now compare the differences in daylight hours. How do you think these differences affect people's daily activities?

**Various answers - answers may relate to work patterns, sleep patterns, outdoor activities etc.**