

Seasons and Day Length

KS3 Physics · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

What causes the seasons?

Step 1 · The tilt

The Earth's axis is tilted by about 23.5° and always points the same way in space Earth orbits the Sun.

Step 2 · June

The northern hemisphere is tilted towards the Sun: it gets summer.

Step 3 · December

The northern hemisphere is tilted away: it gets winter, while the southern hemisphere has summer.

Answer: The tilt of the Earth's axis

Check: Not the Earth's distance from the Sun.

2. Now try one with the steps

Why is it warmer in summer?

Step 1 · Higher Sun

Step 2 · Longer days

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. What causes the seasons on Earth? [1]

2. By about how many degrees is the Earth's axis tilted? [1]

3. In June, which hemisphere is tilted towards the Sun? [1]

4. What season is it in Australia in December? [1]

5. How long is the Earth's orbit around the Sun? [1]
-
-
6. Roughly how many hours of daylight are there at the equator all year round? [1]
-
-
7. London has about 16.6 hours of daylight at midsummer. How long is the night, in hours? [1]
-
-
8. A midwinter day in the UK has 8 hours of daylight. How many hours of darkness are there? [1]
-
-
9. London has about 16.6 hours of daylight at midsummer and 7.8 hours at midwinter. What is the difference, in hours? [1]
-
-
10. Give two reasons why it is warmer in summer than in winter. [2]
-
-
11. What is an equinox? [2]
-
-
12. Why does northern Norway have 24 hours of daylight in late June? [2]
-
-
13. The Earth is closest to the Sun in early January. Explain why this shows distance does not cause the seasons. [2]
-
-
14. Explain why your shadow at midday is shorter in summer than in winter. [2]
-
-

4. Before you hand it in

"It's summer when the Earth is closest to the Sun."

Seasons are caused by the tilt of the Earth's axis.

"The Earth's tilt changes direction during the year."

It's the Earth's position in its orbit that changes which hemisphere faces the Sun.

"The whole world has summer at the same time."

When it's summer in the northern hemisphere, it's winter in the southern.