21 What causes day and night?

- Day and night is caused by the Earth spinning on its axis.
- At any moment the time is different at different places on Earth.

When our part of the Earth faces the Sun, it is day. It will be night for us when our part of the Earth does not face the Sun. When it is daytime for us, it is night on the opposite side of the Earth. All times are compared with the time in Greenwich, London. As you move further east or west, the time of day changes to keep in step with the position of the Earth relative to the Sun.

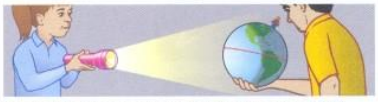
How did Leopard class use a model to explain day and night?

Sian has a torch to represent the Sun. It does not move. Luke has a globe with a figure at the top. He takes care to hold it so that it is tilted, just like the Earth is. He turns it slowly. The torch shines on the globe. They see if the figure is lit up or in the dark.

The figure is facing the Sun: It is day.

Sian said, 'The Sun stays still. Night and day happen because the Earth spins.

'I wonder why the number of hours of day and night aren't always the same.'

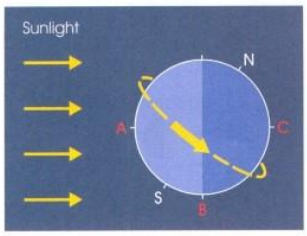


The figure faces away from the Sun: It is night.

Luke said, 'The Earth must spin on its axis once every 24 hours – once a day.

'That's because the earth is tilted so in summer the northern hemisphere gets more sun than the southern hemisphere.'

What time is it on different parts of the Earth?



Noon: People standing at point A are directly facing the Sun. For them it is the middle of the day. It is 12 a.m.

Sunset: People standing at point B see the Sun setting in the sky. It is turning from night into day.

Midnight: People standing at point C cannot see the Sun at all. It is dark and the time is 12 p.m.

Points A, B and C are at different places and the time is different too.

Earth's axis

An imaginary line going through the Earth's centre from north to south.

Greenwich Mean Time (GMT)

The time compared with that in Greenwich, London.

On track

1 Mr Hills gave his class a worksheet on how to build a model that might show them what causes night and day.

(a) What are they using to represent the Sun and the Earth?

(b) Do they keep the torch still or move it around?

(c) Do they keep the globe still or move it around?

(d) Explain how they might use this model to explain day and night.

(e) What does one turn of the globe represent?

Aiming higher

2 The time in London is mid-day: 12 noon. This table shows the time in some other parts of the world compared with London.

← ← WEST ← ←				→ → EAST → →		
Place	Mexico	Falkland Islands	London	Oman	Hong Kong	New Zealand
Time	4 am	8 am	12 noon	4 pm	8 pm	12 pm

(a) Name the place that is 6 hours behind London.

(b) What places are likely to be in daylight when it is noon in London?

(c) Where is it likely to be night when it is noon in London?

(d) Explain in your own words why the times are different.

How well am I doing?

On track

I can explain what causes night and day.

Aiming higher

I can tell you why the times in different places are different.