

Daytime — Night-Time

Approach: One to one

Level: Year 8

Focus: Understanding the relationship between the rotation of the earth relative to the sun and the time of day or night for different locations on the earth.

Resources: globe, torch, recording book

Questions/instructions:

Here is a globe of the earth and here is a torch.



Give students the globe and point to New Zealand.

% responses
y8

1. Imagine that it is 4 o'clock in the afternoon in New Zealand.
Where might the sun be? Hold the torch and shine it from where you think the sun might be.

Record student response.

shining on NZ from the west 38

2. It is daylight in New Zealand at the moment. Using the globe and the torch show me what happens from 4 o'clock in the afternoon until midnight.

% responses
y8

globe rotated so sun moves further west 42

rotated quarter to half a turn 30

Put torch aside. Point to New Zealand.

Imagine that it is the middle of the day in New Zealand.

Point to, and say FRANCE.

3. Will it be daytime or night-time here?

Record student response.

night time 90

Point to, and say AUSTRALIA

4. Will it be daytime or night-time here?

Record student response.

day time 50

Point to, and say JAPAN.

5. Will it be daytime or night-time here?

Record student response.

day time 38

Commentary:

Year 8 students demonstrated quite limited understanding of how the rotation of the earth relative to the sun leads to patterns of night and day in different locations on the earth.