

Rjukan is a town in Norway, located in the bottom of a deep valley. Until 2013, the residents of Rjukan never saw the Sun from their town between October and March. Then in 2013, a set of giant mirrors were installed on a hillside above the town. These mirrors reflect a pool of sunlight into the town square.

1 Does the valley that Rjukan is in run east-west or north-south? Explain your answer.

2 Explain why the mirrors are only needed between October and March.

3 Copy the sketch on the right.

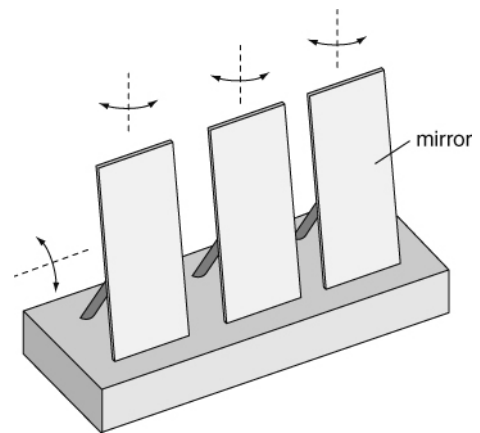
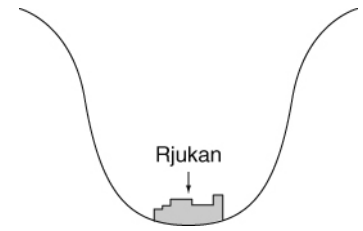
a Draw the position of the mirrors on your sketch, and mark the compass directions of the sides of the valley.

b Explain why the mirrors are in the place you have shown.

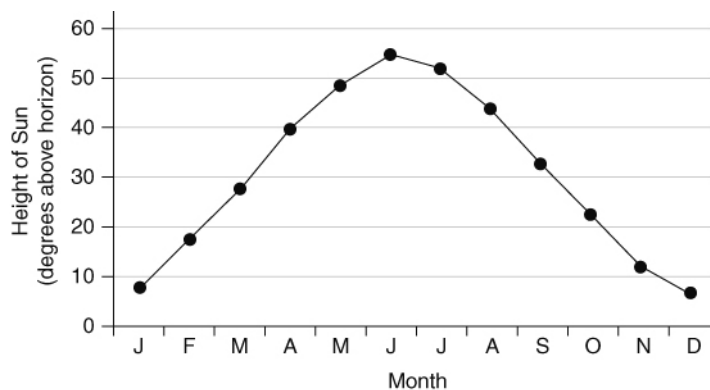
4 The mirrors above Rjukan are moveable and controlled by computer. Explain why it is necessary to turn the mirrors:

a from side to side

b up and down.



5 The graph below shows the height of the Sun at midday in Rjukan for each month of the year. How can you tell from the graph that Rjukan is in the northern hemisphere?



6 You can draw similar graphs for other places in the world. Describe how the graph would be different for these places.

a London, further south than Rjukan.

b Singapore, close to the equator.

c Johannesburg, in South Africa.

I can...

- explain some effects of changes in the seasons.