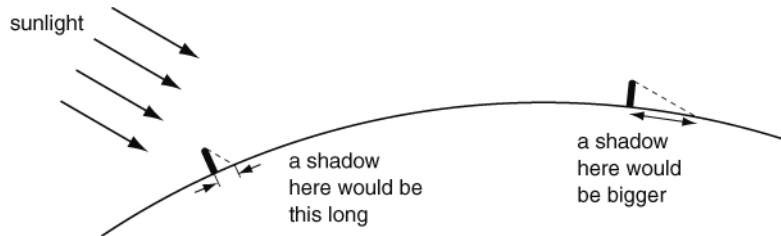


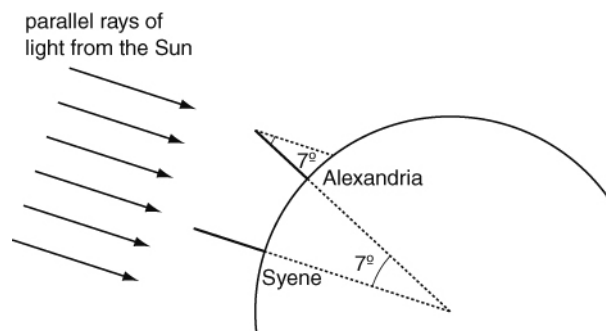
Eratosthenes lived in Alexandria, in Egypt, around 200 BCE. He worked out the circumference of the Earth using shadows, and got an answer very close to the circumference of the Earth that has been measured using modern methods.

People at that time knew that the Earth was a sphere. One reason for thinking that the Earth was not flat was that if you measured the length of shadows at different places at noon, you got different measurements.



At noon on midsummer's day, the Sun was directly overhead at a place called Syene. In Alexandria, which was further north, the Sun was not overhead. By measuring the angle of the Sun in Alexandria, Eratosthenes worked out the angle between the two places.

Eratosthenes also needed to know the distance between Syene and Alexandria, and using this information he worked out that the circumference of the Earth was about 40 200 km. Scientists today have worked out that the circumference of the Earth is about 40 000 km.



- 1 How long ago did Eratosthenes carry out his experiment to find the circumference of the Earth?
- 2 Give *one* reason why people at that time thought that the Earth was a sphere.
- 3 **a** Which day did he choose to make his measurements?  
**b** Why did he choose this day?
- 4 Eratosthenes had to measure two things to work out the circumference of the Earth. What were they?
- 5 **a** Suggest *two* ways in which scientists today could make more accurate measurements of the Earth than Eratosthenes.  
**b** Suggest how scientists can work out the diameters of other planets in the Solar System.

**I can...**

- describe how evidence for the size of the Earth can be obtained.