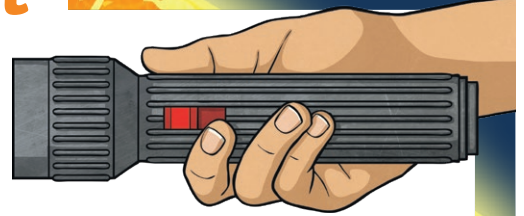


Speed of Light

When you click on a flashlight, it looks like the light shines instantly in a straight line from the bulb. However, what you can't see is that light travels at a specific speed.



Throughout history, many scientists have wanted to figure out the speed light travels. In ancient times, a scientist and philosopher named Aristotle wrote about the speed of light. Aristotle thought light traveled instantaneously.

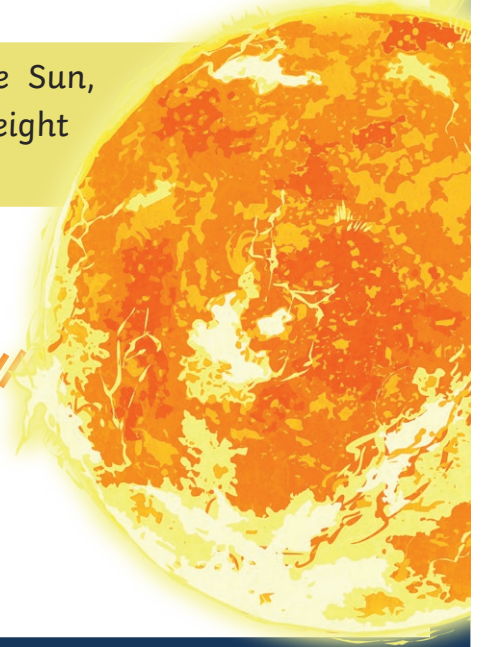


In 1638, another famous scientist named Galileo studied the speed of light. He thought he could calculate how fast light was traveling. He and an assistant used lanterns to test his theory. Galileo was unable to measure the speed of light, but he did conclude that light moves faster than sound. He was correct.

A Danish scientist named Ole Rømer began studying Jupiter's moon, Io, in 1675. He saw that when Earth was closer to Jupiter, Io seemed to move faster. When Earth was farther away from Jupiter, Io moved slower. He didn't think the distance between Earth and Jupiter should affect Io's speed. Rømer believed that the change must be from the speed of light. The light had to travel further when Earth was farther away, so it took longer. This meant that light had a speed.

There was not as much technology at this time, so even though Rømer was not right, his calculations were very close. The actual speed of light was later determined to be 186,000 miles per second. This means that the Sun's light takes eight minutes and twenty seconds to reach Earth.

When you step outside today and feel the light from the Sun, remember the light left the surface of the Sun precisely eight minutes and twenty seconds ago.



Questions

1. Aristotle was a scientist who _____.
 - ☐ found out the speed of light
 - ☐ used technology to measure the speed of light
 - ☐ thought light traveled instantaneously
 - ☐ found out the speed of sound
2. Galileo was a scientist who _____.
 - ☐ first measured the speed of light
 - ☐ thought sound moved faster than light
 - ☐ thought light moved faster than sound
 - ☐ first measured the speed of sound
3. Rømer was a scientist who _____.
 - ☐ studied Jupiter to understand the speed of light
 - ☐ correctly figured out the speed of light
 - ☐ correctly figured out the speed of sound
 - ☐ measured the speed of light with lanterns
4. How long does it take the Sun's light to reach Earth?
 - ☐ 186 minutes
 - ☐ 8 minutes and 20 seconds
 - ☐ 16 minutes and 3 seconds
 - ☐ 160 minutes
5. Why do you think scientists are interested in the speed of light?

6. What technology do we have today that could help measure the speed of light?

Answers

1. Aristotle was a scientist who _____.

- ☐ found out the speed of light
- ☐ used technology to measure the speed of light
- ☒ **thought light traveled instantaneously**
- ☐ found out the speed of sound

2. Galileo was a scientist who _____.

- ☐ first measured the speed of light
- ☐ thought sound moved faster than light
- ☒ **thought light moved faster than sound**
- ☐ first measured the speed of sound

3. Rømer was a scientist who _____.

- ☒ **studied Jupiter to understand the speed of light**
- ☐ correctly figured out the speed of light
- ☐ correctly figured out the speed of sound
- ☐ measured the speed of light with lanterns

4. How long does it take the Sun's light to reach Earth?

- ☐ 186 minutes
- ☒ **8 minutes and 20 seconds**
- ☐ 16 minutes and 3 seconds
- ☐ 160 minutes

5. Why do you think scientists are interested in the speed of light?

Answers may vary. A possible answer is: Scientists are interested in the speed of light because it helps them to understand how quickly light can affect something.

6. What technology do we have today that could help measure the speed of light?

Answers may vary. A possible answer is: The technology that we have today that could help measure the speed of light includes powerful telescopes, slow motion video cameras, and computers.