# How Long Does Sunlight Take?

Light travels about 11.2 million miles per minute. Time (minutes) = distance ÷ 11.2

Name: Date:

Use a calculator and round to the nearest minute. Distances are from the Sun, in millions of miles.

| Planet | Distance (million miles) | Light travel time (min) |
|---|---|---|
| Mercury | 36 | |
| Venus | 67 | 6 |
| Earth | 93 | 8 |
| Mars | 142 | |
| Jupiter | 484 | |
| Saturn | 891 | 80 |
| Uranus | 1,784 | 159 |
| Neptune | 2,793 | |

## Think and answer

1. Which planet gets sunlight first, Mars or Jupiter? How many minutes earlier?

2. A radio message from Earth to Mars travels at the speed of light. If Mars is 142 million miles from the Sun and Earth is 93 million miles, about how long does the message take when the planets are on the same side of the Sun? (Hint: subtract the distances.)

3. A rover on Mars sends a photo and waits for orders. Why can’t we steer it live like a toy car?

4. Light from the Sun takes 8 minutes to reach us. If the Sun suddenly vanished, how long would we see it still shining?

(T) (F) Sunlight reaches Neptune in less than one hour.

(T) (F) Radio waves travel at the speed of light.

# Answer key

How Long Does Sunlight Take? · for parents and teachers

1. **Table:** Mercury 36 ÷ 11.2 ≈ 3 min · Mars 142 ÷ 11.2 ≈ 13 min · Jupiter 484 ÷ 11.2 ≈ 43 min · Neptune 2,793 ÷ 11.2 ≈ 249 min (about 4 hours 10 min).
2. **Q1:** Mars gets it first. Jupiter takes 43 min, Mars 13 min: 30 minutes earlier.
3. **Q2:** 142 − 93 = 49 million miles, 49 ÷ 11.2 ≈ 4.4 minutes (about 4 minutes).
4. **Q3:** The message takes minutes each way, so a joystick command would arrive when the rover is already long past that spot. Rovers drive themselves in small steps.
5. **Q4:** About 8 minutes (and 20 seconds).
6. **True/False:** first is False (about 4 hours); second is True.

## Keep exploring

Compare real distances in the free 3D simulator at demo.astraviator.com, and read the full lesson at astraviator.com/learn/planets/how-long-does-sunlight-take-to-reach-the-planets/.