

## STARGAZING: From Read Words

Read the passage and answer the questions below. Use this doc ONLY if you can't get to the Read Works website.

After the sun sets, take a look at the night sky. On a clear night, you'll be able to see stars scattered across the black expanse that we call our universe. If you're lucky, you might be able to spot some stars that look bigger than others—they shine brighter and attract our attention more than their smaller neighbors do. You might wonder: why are some stars brighter than others?

After much observation, scientists discovered the way stars appear to us depends on more than their actual size—it's also about how far they are from us. Therefore, the farther a star is from Earth, the smaller it will appear to us. The closer it is, the bigger it will look.

Try to think of the biggest star you've seen in the sky. An easy one, right? The sun! That's because the sun is closest to us compared to all other stars, located at just a short 150 million kilometers from Earth.

The next one? That's a tougher question. Many people answer Alpha Centauri, but some don't know that it's actually a cluster of three stars—Alpha Centauri A, Alpha Centauri B, and Proxima Centauri. Proxima Centauri is 4.24 light-years away and closest to our sun. A light-year is the distance that light travels in one year. We use this measurement because light is the only thing in the universe that maintains a constant speed. However, even though Proxima Centauri is the closest star to the earth after the sun, you can only see it with a very powerful telescope. That doesn't make sense—didn't we just say that closer stars appear larger and more visible?

Well, Proxima Centauri is what we call a red dwarf. Red dwarf stars are very small, typically having less than half the mass of the sun. That means they generate less energy than the sun. Most stars burn hydrogen for fuel. Similar to the way a car uses gas for power, a star uses hydrogen for energy. Red dwarfs burn hydrogen very slowly, which means they generate little light compared to stars like the sun.

Proxima Centauri is the closest star after the sun, but that doesn't necessarily mean it's what we consider close in our minds. To completely understand how

far away this star is, let's think about traveling 4.24 light-years away. NASA has built one of the fastest spacecrafts in existence, called New Horizons, which travels at about 60,000 kilometers per hour. Even at this speed, it would take the spacecraft 78,000 years to reach Proxima Centauri from Earth.

Sadly, the first few closest stars are not visible to the naked eye at night, which means we can't see them while we're stargazing from our homes or backyards. The closest star we can see at night is called Sirius, or the Dog Star. While Proxima Centauri is only 4.24 light-years away, Sirius is 8.6 light-years away. However, since Sirius is so large (almost twice the size of the sun), we can see it in the night sky.

So go outside and see what you can find up there!

1. What affects how big a star appears to be?

- A. a star's distance from Earth
- B. the speed of NASA's fastest spacecraft
- C. what a car uses for power
- D. the name of the star

2. A large star shining brightly in the sky is an effect. What could be a cause?

- A. The star is burning hydrogen very slowly.
- B. The star is far away from Earth.
- C. The star is close to Earth.
- D. The star is less than half as big as Proxima Centauri.

**Questions 3-5 on the next page**

3. The sun is closer to Earth than any other star.

What evidence from the passage supports this statement?

- A. A light year is the distance that light travels in one year.
- B. Alpha Centauri is a cluster of three stars.
- C. Sirius and the sun can be seen without a telescope.
- D. The sun appears bigger than any other star.

4. Why do you need a telescope to see Proxima Centauri?

- A. Proxima Centauri burns hydrogen for energy.
- B. Proxima Centauri is too small to be seen without a telescope.
- C. Proxima Centauri is too close to Earth to be seen without a telescope.
- D. Proxima Centauri is too close to the sun to be seen without a telescope.

5. What is this passage mainly about?

- A. why Sirius is known as the Dog Star
- B. why some stars appear larger than others in the sky
- C. the difference between a light year and a year on Earth
- D. the New Horizons spacecraft built by NASA