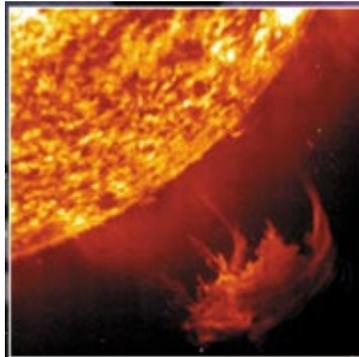


The Sun Heats Up

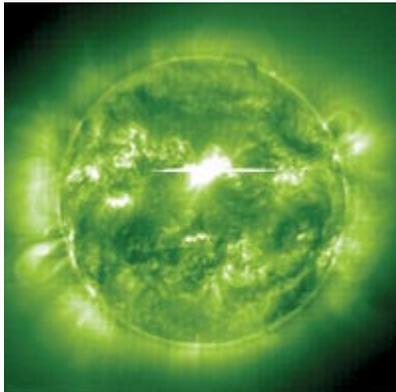


A solar flare blasts away from the sun

From Earth, our sun looks like a round yellow ball in the sky. The sun looks as if it never changes. But it is really a boiling, seething ball of gas that's always changing.

Right now, scientists say, the sun is becoming extra active. When the sun is active, dark spots, or *sunspots*, dot its surface. And huge streams of gas, called *flares*, explode from the surface.

Sunspots and flares can happen at any time, but they are more common when the sun is active.



The bright areas in this photo show flares erupting from the sun.

Meet the Sun

The sun is the hottest object in our solar system. Our sun has been making heat and light since it formed 4.5 billion years ago. It does that by changing hydrogen into another element, helium.

Heat from the center of the sun slowly bubbles to the surface. The sun's surface looks like a rapidly boiling pot of water. The temperature at the surface is about 7,000 degrees Fahrenheit.

Streams of gas, called flares, can explode from the sun's surface. Those streams of gas soar through space and sometimes collide with Earth's atmosphere.

'Zat a Fact?	Sunspots are storms on the sun. They look dark because they are cooler than the surrounding surface. Each sunspot, however, is very hot--about 5,000 degrees Fahrenheit.
The sun is nearly 1,000,000 miles across. Jupiter is almost 89,000 miles across. Earth is almost 8,000 miles across.	When gases from the sun reach Earth's atmosphere, they cause the atmosphere to glow. The glowing lights are called an <i>aurora</i> . Auroras are usually seen when the sun is active.

Hot Facts

The sun is about 93 million miles from Earth.

It takes a beam of light eight minutes to travel from the surface of the sun to Earth.

A car traveling at 55 miles an hour would take 193 years to travel from Earth to the sun.

Name: _____

Date: _____

1. What is a solar flare?
 - A a stream of gas that explodes from the sun's surface
 - B a storm on the sun's surface that looks like a dark spot
 - C a glowing light in the Earth's atmosphere
 - D a flash on the surface of the sun caused by a change in temperature

2. How do the "Hot Facts" at the end of the passage relate to the rest of the article?
 - A They switch the focus of the article from the sun to Jupiter.
 - B They provide additional information about the sun.
 - C They explain why it is important for scientists to study the sun.
 - D They warn readers about the dangers of the sun.

3. If the sun burned out, how long would it take people on Earth to notice?
 - A eight minutes
 - B 193 years
 - C a millennium
 - D unknown

4. Read the following sentence: "It takes a beam of light eight minutes to travel from the surface of the sun to Earth."

The word **beam** most nearly means

 - A board
 - B blast
 - C watt
 - D ray

5. What is the main purpose of this passage?
 - A to calculate the temperature of the sun
 - B to list all the steps in the formation of auroras
 - C to inform readers about the sun
 - D to explain how light travels between the sun and Earth

6. What is an aurora, and how is it formed?

7. Based on the information in the article, would you expect the temperature of the sun at its core to be higher or lower than the temperature at its surface? Why?

8. The question below is an incomplete sentence. Choose the answer that best completes the sentence.

Jupiter is larger than Earth _____ smaller than the sun.

- A but
- B because
- C so
- D after

9. Read the following sentence.

When the sun is active, sunspots appear on its surface.

Answer the questions below based on the information provided in the sentence you just read. One of the questions has already been answered for you.

1. What is the main subject of the sentence? sunspots

2. What do sunspots do? _____

3. When? _____

4. Where? _____

10. Vocabulary Word: seething: bubbling, foaming.

Use the vocabulary word in a sentence: _____

Teacher Guide & Answers

Passage Reading Level: Lexile 820

Featured Text Structure: Descriptive – the writer explains, defines, or illustrates a concept or topic

Passage Summary: “The Sun Heats Up” describes physical characteristics of the sun, with an emphasis on flares and sunspots.

1. What is a solar flare?

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- B to list all the steps in the formation of auroras**
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- D to explain how light travels between the sun and Earth**

6. What is an aurora, and how is it formed?

Suggested answer: An aurora is a glowing light created by gases from the sun entering Earth’s atmosphere.

7. Based on the information in the article, would you expect the temperature of the sun at its core to be higher or lower than the temperature at its surface? Why?

Suggested answer: The sun's core temperature would probably be hotter, because the core is the source of the sun's heat. As the heat travels outward, it seems to cool—the surface temperature is 7,000 degrees Fahrenheit, while gases that erupt above the surface are 5,000 degrees.

8. The question below is an incomplete sentence. Choose the answer that best completes the sentence.

Jupiter is larger than Earth _____ smaller than the sun.

- A but
- B because
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9. Read the following sentence.

When the sun is active, sunspots appear on its surface.

Answer the questions below based on the information provided in the sentence you just read. One of the questions has already been answered for you.

1. What is the main subject of the sentence? sunspots
2. What do sunspots do? **appear**
3. When? **when the sun is active**
4. Where? **on its (the sun's) surface**

10. **Vocabulary Word:** seething: bubbling, foaming.

Use the vocabulary word in a sentence: answers may vary.