Objective Concepts (gravity, climate, solar system, hydrogen, helium, elements, core, ultraviolet rays, cluster, galaxy, Milky Way Galaxy); Sight words (surface, middle, dangerous, causes, amount, glowing, tiny, twinkling)

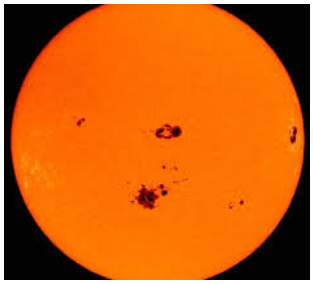
Vocabulary

surface	**amount**
middle	**glowing**
dangerous	**tiny**
causes	**twinkling**

The Sun and the Stars

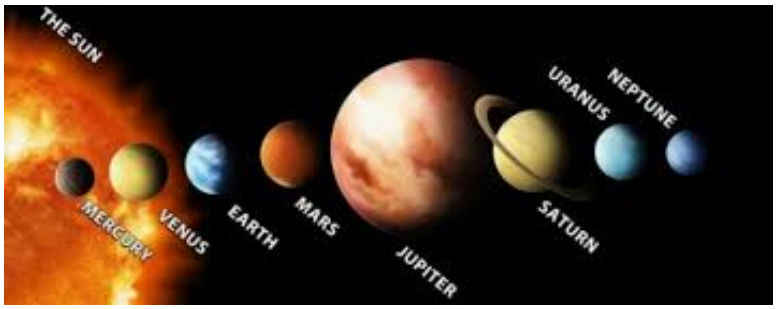
By: Sue Peterson

The Sun is more than 4½ billion years old. That would be too many candles to put on a birthday cake! There are sun spots on the surface of the Sun. These spots were made from the heat that comes up from the middle of the Sun.



The middle of the Sun is called the core. It is very hot. The Sun's core can reach over 10 million degrees Fahrenheit. Your body temperature is 98.6 degrees

Fahrenheit. In comparison, you can see that the Sun is very, very hot.



The Sun gives us light and heat. It is the center of our Solar System. The Solar System is made up of the Sun, planets, moons, asteroid belt, comets, meteors and other objects. The Earth and other planets revolve around the Sun.

The Sun also gives out dangerous ultraviolet light which causes sunburn and may cause cancer. You need to be careful of the Sun and wear sunscreen and clothing to protect yourself from its rays.

Without the Sun, there would be only darkness and our planet would very cold and be without liquid water. Our planet would also be without people, animals, and plants because these things need sunlight and water to live.

The Sun is as large across as putting 109 Earths next to each other. It weighs as much as 330,000 Earths.

The Sun seems small when you look at it in the sky during the daytime, in the morning when it comes up, and in the evening at sunset. That is because the Sun is so far away. It is 150 million miles away and it takes 8 minutes for the sunlight to reach us. That means it takes 8 minutes for us to see the sunset after the Sun has already gone down.

The Sun is made up of gases: 75% hydrogen and 25% helium. Hydrogen is the simplest and lightest of all of the known elements. When you combine hydrogen with oxygen you get water. You probably know what helium is. It is the gas that is put into balloons to make them stay in the air and float.

Scientists study the Sun using special tools or instruments such as telescopes. They look at the amount of light from the Sun and the effect of the Sun's light on the Earth's climate.

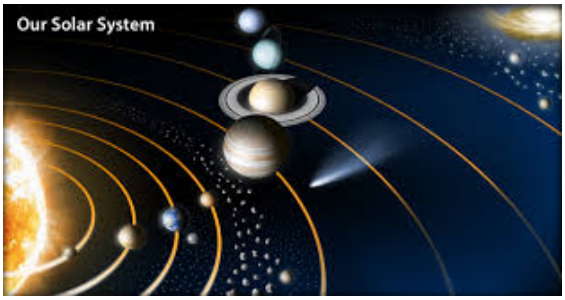
Stars are huge balls of glowing gas in the sky. There are over 200 billion stars in the sky. The Sun is the star that is closest to us. There are

large stars which are 1000 times larger than the Sun and small stars which are smaller than the Earth.

Stars look like tiny dots in the sky because their light needs to travel through many layers of the Earth's atmosphere to reach us here on Earth. The light of the star is bent many times through these layers so it looks like the stars are twinkling. That is why the words are written in the song: *Twinkle, Twinkle, Little Star*.

Stars have lifetimes of billions of years. They are held together by their own gravity. Over half of the stars in the sky are in groups of two. They orbit around the same center point and they orbit across from each other.

There are larger groups of stars called clusters. These clusters of stars make up galaxies. Our Solar System is located in the Milky Way Galaxy.



Practice

Language Work

A. Fill in the blank and spell.

surface	s __ __ f a c __	_____
middle	m __ d d __ __	_____
causes	c __ __ s e s	_____
amount	a m __ __ n t	_____
tiny	t __ n __	_____

B. Use each word in a sentence. Underline the word used.

dangerous _____

_____.

glowing _____

_____.

twinkling _____

_____.

C. Matching. Draw lines between the words and what they mean.

1. gravity	a. the kind of weather a place has
2. climate	b. the Sun and everything that revolves around it
3. solar system	c. a force that causes objects to have weight
4. hydrogen	d. the center
5. helium	e. the simplest and lightest of known elements
6. elements	f. an element in air used to inflate balloons
7. core	g. a number of things together
8. ultraviolet rays	h. simple substances from what things are made
9. cluster	i. light from the Sun that can harm

Multiple-Choice Questions (Put an X in front of the correct answer.)

1. What is **one comparison** the author makes about the size of the Sun?
   - ☐ a. There is darkness without the Sun.
   - ☐ b. 109 Earths placed next to each other equal the sun's size.
   - ☐ c. Scientists study the Sun with special tools.
   - ☐ d. The Sun is 150 miles away.

2. What is the **main idea** of this text?
   - ☐ a. The Sun and stars are fun to look at.
   - ☐ b. The Sun and stars are far away.
   - ☐ c. The Sun and stars are larger than you think.
   - ☐ d. The Sun and stars are described so you can learn more about them.

3. What does the text say is the **most likely** size of stars?
   - ☐ a. They are all the same size.
   - ☐ b. They are all small and you can see them twinkle.
   - ☐ c. Large stars are 1000 times larger than the Sun and small ones are smaller than the Earth.
   - ☐ d. They are all smaller than the Sun.

Definitions (Write the meaning of each word as it is used in the text.)

1. surface

2. glowing

3. twinkling

Extended Response (Answer in complete sentences.)

1. Why do you think the author included a section on the Sun and another section on stars in the same story?

_____

_____

_____

_____

_____

_____

_____.

2. Why do scientists feel it is important to study the Sun?

_____

_____

_____

_____

_____

_____

_____.

3. Why does the Sun look so small, but it is really large?

_____

_____

_____

_____

_____

_____

_____

_____

_____.

Answer Sheet

Answers for Matching, Multiple-Choice Questions, and Extended Response

<u>The Sun and the Stars</u>

Matching

1(c); 2(a); 3(b); 4(e); 5(f); 6(h); 7(d); 8(i); 9(g)

Multiple-Choice Questions

1. **b**
2. **d**
3. **c**

Extended Response (Accept reasonable answers.)

1. **They have similar features and they are both part of the solar system. They are both in the sky.**
2. **Free expression**
3. **The sun is very far away.**