

CBA # 2 Earth and Space and Life Sciences
CBA Test Date: Tuesday or Thursday, December 17 or 19, 2019

CBAs are CUMULATIVE, so along with the information below, you will also be tested on concepts from CBA 1 (Life Science: photosynthesis, food chains/webs, symbiosis). Be sure to review all concepts!

Concepts to know:

Life Science Concepts:

- Species of plants and animals can become threatened, endangered, or extinct for many reasons, including: habitat loss (1), introduction of non-native (invasive) species, natural disasters, disruption of the food web.

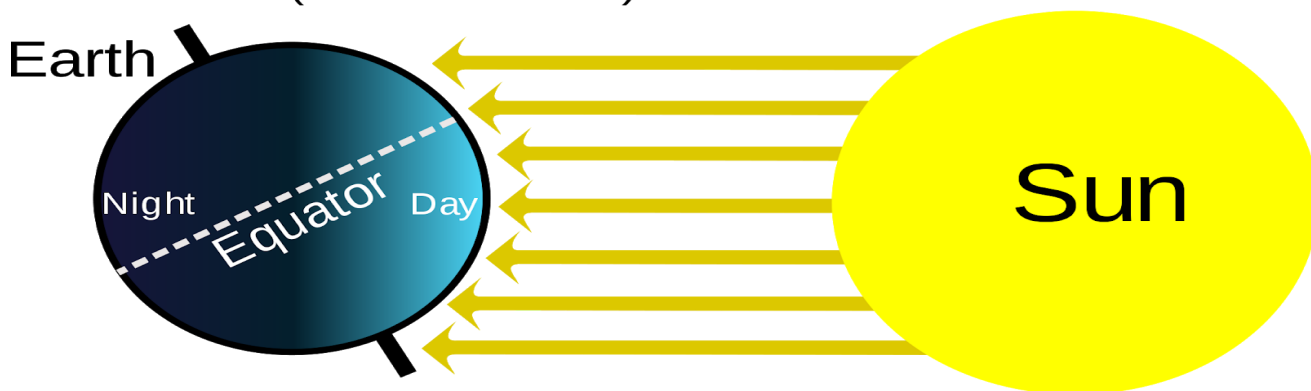
Earth & Space Concepts:

1. The sun is one of many stars that exists in the universe

- The sun is at the center of our solar system. It is the biggest object in our solar system.
- The sun is a medium size star. There are stars that are much bigger than our sun and stars that are smaller than our sun.
- The closer a star is to Earth, the larger they appear in the night sky. We see stars outside our solar system at night when there is no light from our sun. The sun's light is much brighter because it is so much closer to the Earth

2. Most of the cycles and patterns of motion between Earth and the sun are predictable.

- Every 24 hours the Earth rotates once on its axis. The side that is facing the sun is experiencing day. The side that is facing away from the sun is experiencing night. The western hemisphere and the eastern hemisphere experience day and night opposite one another. (When it is day in North America, Asia is experiencing night and vice versa.)
- The rotation also causes movements of shadows throughout the day.



- We travel in an ELLIPTICAL ORBIT around the sun.
- The revolution & tilted axis causes the four **seasons**- spring, summer, fall, and winter. The northern and southern hemisphere have opposite seasons.



3. The solar system includes the sun and all other celestial bodies that orbit the sun. Each planet in the solar system has unique characteristics.

- There are 8 planets in our solar system. All the planets orbit the sun.
- The planets in order closest to the sun are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.
- The first four planets are made of rock and the last four planets are made of gas.
- The inner planets and outer planets are separated between an asteroid belt that is between Mars and Jupiter. (Inner planets are the first four planets and the outer planets are the last four planets.)

4. Earth is unique in that it has life on it. Reasons why Earth has life:

- Thin blanket of air called an atmosphere protects us from harmful rays and meteors.
- Air is made up of oxygen which is key for life.
- We are $\frac{3}{4}$ covered by water
- We are the right distance from the sun at 93 million miles.
- Perfect temperature for life to exist.

5. The Moon orbits around the Earth, as the Earth orbits around the Sun.

- It takes the moon approximately 29 days to orbit Earth (1 "moonth").
- The moon orbiting Earth gives us the "moon phases."

Vocabulary to Know

You should be able to draw the vocabulary words with * next to them.

Rotation*- To spin on an axis. Earth rotates once every 24 hours. Causes us to have day and night.

Revolution*- Means to go around another object. Earth revolves once a year. Earth goes around the sun. Our revolution or elliptical orbit and our tilted axis causes us to have seasons. We travel in an elliptical orbit (oval shape).

Planet- an object that orbits around a star.

Satellite- an object that orbits a planet.

Moon- a natural satellite.

Atmosphere- the thin blanket of air that covers Earth.

Star- a celestial body that creates and gives off its own energy, such as light & heat.

Galaxy- A collection of stars grouped together.

Comet- a mixture of frozen gases, ice, dust, and rock that moves in an elliptical orbit around the sun

Asteroid- a huge rock in space that revolves around the sun. Most are found in the asteroid belt, between Mars and Jupiter

Meteor/meteorite/meteoroid- like an asteroid, but much smaller. Meteoroids are found in space. Meteors are in Earth's atmosphere. We call them meteorites when they hit Earth's surface (ground)

Threatened species- numbers of species are low. At risk of becoming endangered.

Endangered species- numbers are very low. At risk of becoming extinct.

Extinct- species is gone forever. No more exist.

Invasive Species- A non-native species that negatively affects habitats and the species that live there.

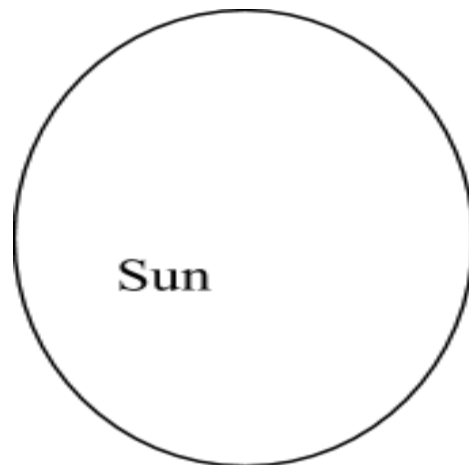
NAME: _____

Practice Questions

Using your notes and study guide, please answer the following questions.

1. Which of the following would **not** be considered a characteristic of Earth?
 - a. The Earth is made up of 9 continents.
 - b. Earth revolves around the sun in an elliptical orbit.
 - c. Three-fourths of Earth's surface is covered by water.
 - d. Earth has a thin blanket of air surrounding it.

2. Which of the following best describes what would happen if the Earth stopped revolving around the sun and stayed in the position shown below ?
 - a. North America would always experience summer because the northern hemisphere is tilted towards the sun.
 - b. North America would always experience summer because the northern hemisphere is tilted away from the sun.
 - c. North America would always experience winter because the northern hemisphere is tilted towards the sun.
 - d. North America would always experience winter because the northern hemisphere is tilted away from the sun.



3. In the space below explain what would happen in the United States if the Earth stopped rotating while the Western Hemisphere was facing away from the sun. Then explain why this would happen.

4. In the space below, describe one characteristic the Earth and moon share. Then describe one characteristic the Earth and moon do not share.

5. The Earth revolves around the sun. The trip takes one year or about 365 days. As the Earth moves around the Sun, the seasons change. In the space below, describe what causes the changing seasons. Illustrate.

6. Which of the following best describes Earth's orbit around the sun?
- a. Earth orbits the sun in an ellipse every 24 hours.
 - b. Earth orbits the sun in a circle every 365 days.
 - c. Earth orbits the sun in an ellipse every 365 days.
 - d. Earth orbits the sun in a circle every 24 hours.

7. We do not feel the Earth moving, but it is never still. It is always moving in two ways. In the space below name and then describe the two ways Earth is moving.

8. The sun shines on Earth as it spins but sunlight only hits the side of the Earth that is facing the Sun. Why does the Sun look like it is moving across the sky?
- a. The sun is flying by Earth as Earth stands still.
 - b. As Earth rotates, the sun rises in the east and then will set in the west.
 - c. As Earth rotates, it is never facing the sun.
 - d. The sun rotates and revolves around the Earth.

9.

Cause	Effect
The Earth rotates on its axis	
	Earth has changing seasons
	The moon appears to change shape

10. The sun shines on Earth as it spins, but sunlight only hits the side of the Earth facing the Sun. In the space below, draw what happens to the other side of Earth. Then tell why this happens.

11. List each of the planets in order from the sun. Then, write the phrase that we use to help us remember the planets in order.

12. What are 3 reasons why a species may become threatened, endangered, or extinct? What are some things that we, as humans, could do to help make sure that populations do not decrease?

13. Explain 3 reasons why invasive species can be detrimental to an ecosystem.