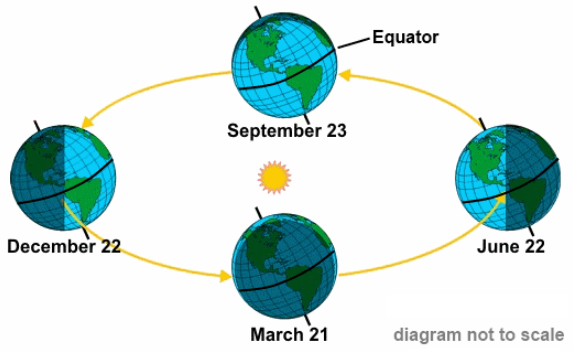
The Earth, Moon & Sun System

Question 1 .

The diagram below represents the positions of the Earth and Sun during different times of the Earth year.



Based on the information in the diagram, what causes the Earth to have seasons?

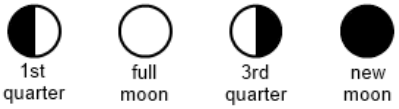
- **A.** the Earth's tilt and its revolution around the Sun
- **B.** the Earth's tilt and its rotation on its axis
- **C.** the Earth's revolution around the Sun only
- **D.** the Earth's rotation on its axis only

Question 2 .

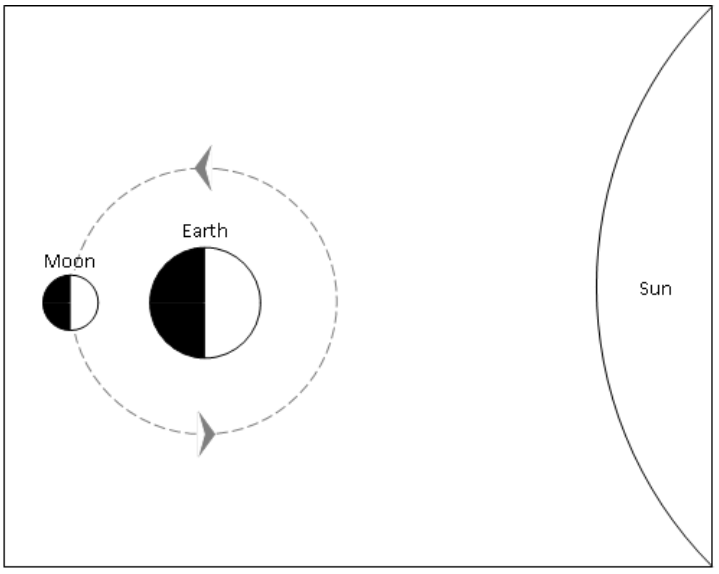
Directions: Drag the moon diagrams to the correct locations on the image.

The image below shows the four major phases of the Moon as they look from space. In each phase, what does the Moon look like from Earth?

Label the image by dragging the moon diagrams to their correct locations.



Question 3 .



Imagine you are viewing the Moon from Earth. Based on the diagram above, which of the following phases would you see?

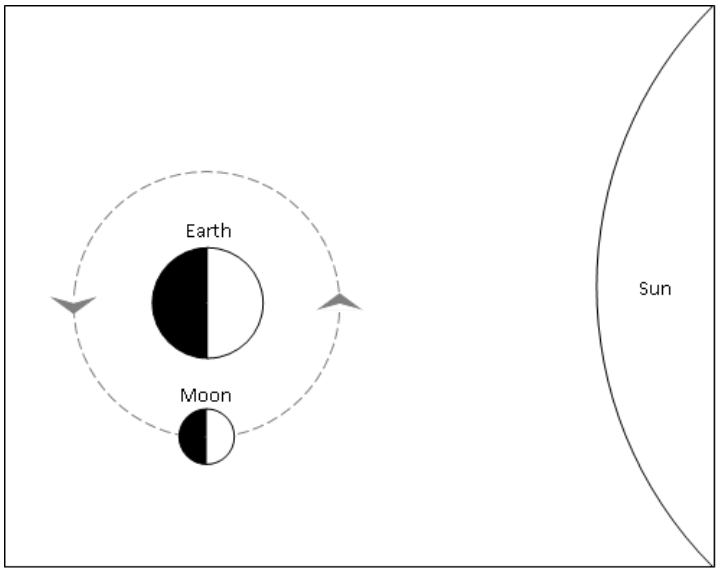
- **A.** full moon
- **B.** first quarter
- **C.** new moon
- **D.** third quarter

Question 4 .

Directions: Drag each tile to the correct box.

Starting with the New Moon, put the phases of the Moon in order.

Question 5 .



Imagine you are viewing the Moon from Earth. Based on the diagram above, which of the following phases would you see?

- **A.** third quarter
- **B.** first quarter
- **C.** full moon
- **D.** new moon

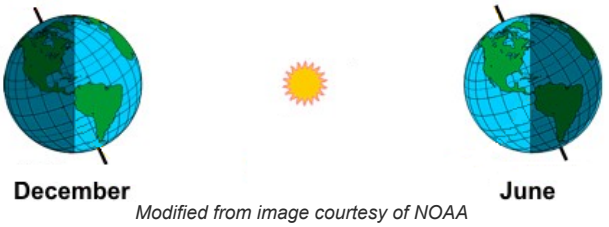
Question 6 .

Which of the following best compares the amount of daylight during the seasons?

- **A.** Winter experiences more daylight than spring.
- **B.** Winter experiences more daylight than fall.
- **C.** Summer experiences more daylight than winter.
- **D.** Summer experiences less daylight than spring.

Question 7 .

The diagram below shows the Earth's position in relation to the Sun during two different months of the year.



Modified from image courtesy of NOAA

In the Northern Hemisphere, there are fewer hours of daylight per day in December than in June. Why is this true?

- **A.** The Earth is much closer to the Sun in June than it is in December.
- **B.** The Earth is much closer to the Sun in December than it is in June.
- **C.** The Northern Hemisphere is pointed away from the Sun and receives less sunlight per day in December.
- **D.** The Northern Hemisphere is pointed toward the Sun and receives more sunlight per day in December.

Question 8 .

A student records the time the Sun rises and sets each day for a month. She notices that the amount of daylight is getting shorter. Which of the following best explains her observations?

- **A.** The Earth is closer to the Sun.
- **B.** Summer is coming to an end.
- **C.** Summer is starting.
- **D.** The Earth is farther from the Sun.

Question 9 .

The diagram below shows the Earth's position in relation to the Sun during two different months of the year. A location in the United States is labeled in both positions.

Modified from image courtesy of NOAA

Which of these is true about the United States?

- **A.** The United States experiences 24 hours of daylight per day during month Y.
- **B.** The United States experiences 24 hours of darkness per day during month X.
- **C.** The United States has more sunlight hours per day during month X than during month Y.
- **D.** The United States has more sunlight hours per day during month Y than during month X.

Question 10 .

Which of the following is a result of the Earth's tilt?

I. Days are longer during the summer than during the winter.
II. Tides change throughout the day.
III. Seasons change throughout the year.

- **A.** I, II, and III
- **B.** I only
- **C.** I and III only
- **D.** II and III only

Question 11 .

The change of seasons is an example of

- **A.** change that happens suddenly.
- **B.** change that almost never happens.
- **C.** change that cannot be expected.
- **D.** change that has a pattern.

Question 12 .

The _____ and _____ Hemispheres of the Earth experience opposite seasons.

- **A.** Southern, Eastern
- **B.** Eastern, Western
- **C.** Western, Northern
- **D.** Northern, Southern

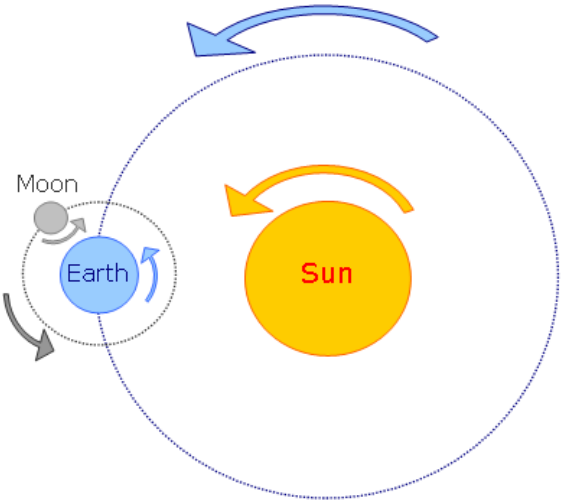
Question 13 .

The Sun seems to move across the sky each day because the Earth spins on its axis. The Sun's path across the sky also appears to change over the different seasons of the year.

Why does the Sun's path change over the different seasons?

- **A.** The Sun is tilted, and it spins around its axis.
- **B.** The Earth is tilted, and it is moving around the Sun.
- **C.** The Sun is tilted, and it is moving around the Earth.
- **D.** The Earth is tilted, and it spins around its axis 365 times.

Question 14 .



Based on the diagram above, which statement is true?

- **A.** The Earth revolves around the Moon, and the Earth revolves around the Sun.
- **B.** The Sun revolves around the Earth, and the Earth revolves around the Moon.
- **C.** The Moon revolves around the Sun, and the Sun revolves around the Earth.
- **D.** The Earth revolves around the Sun, and the Moon revolves around the Earth.

Question 15 .

What causes temperatures in the summer to be higher than temperatures in the winter?

- **A.** More of the Sun's rays directly hit a particular region on Earth during the summer than during the winter.
- **B.** Volcanic activity is at its peak during the summer, resulting in elevated temperatures on Earth.
- **C.** The Earth is closer in distance to the Sun during the summer than it is during the winter.
- **D.** Global warming takes place during the summer months, which raises temperatures on Earth.

Question 16 .

Directions: Drag each label to the correct dotted box on the image. Each label may be used more than once.

Label the four phases of the moon shown below.

new moon quarter moon full moon

Question 17 .

Directions: Drag the correct tile to the box. Only one tile will be used.

The waning gibbous moon is shown below. Which moon phase happens next?

waning gibbous moon

Question 18 .

Directions: Select the correct answer from each drop-down menu.

The Moon seems to change as it moves through its phases.

The Moon has phases because ▼ around ▼ once about every ▼

Question 19 .

The Sun always shines on half of the Moon. During a new moon, the Moon looks dark.

Where is the lit side of the Moon during a new moon?

- **A.** The lit side faces half away from the Earth.
- **B.** The lit side faces toward the Earth.
- **C.** The lit side faces away from the Sun.
- **D.** The lit side faces away from the Earth.

Question 20 .

A scientist is studying the apparent position of the Moon in the sky over the course of one month. He notices that the apparent position of the Moon changes every day when viewed from the same position at the exact same time.

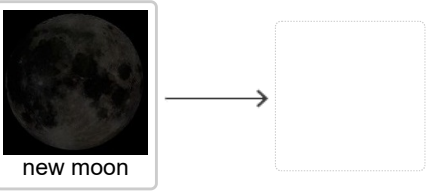
What could be the reason for this change in the apparent position of the Moon over the course of one month?

- **A.** The Moon has a perfectly circular orbit.
- **B.** The Earth rotates on its axis.
- **C.** The Earth revolves around the Sun.
- **D.** The Moon revolves around the Earth.

Question 21 .

Directions: Drag the correct tile to the box. Only one tile will be used.

The new moon is shown below. Which moon phase happens next?



Question 22 .

Directions: Select each correct answer.

The Earth has four main seasons: winter, spring, summer, and fall.

What causes the seasons to change?

- The Earth's axis is tilted.
- The Earth revolves around the Sun.
- The Earth rotates on its axis.

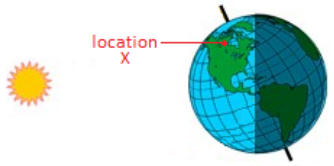
Question 23 .

During the winter, days are _____ than in the summer.

- **A.** shorter
- **B.** slower
- **C.** brighter
- **D.** longer

Question 24 .

The diagram below shows the Earth's position in relation to the Sun during the month of June. A location in the Northern Hemisphere is labeled as location X.



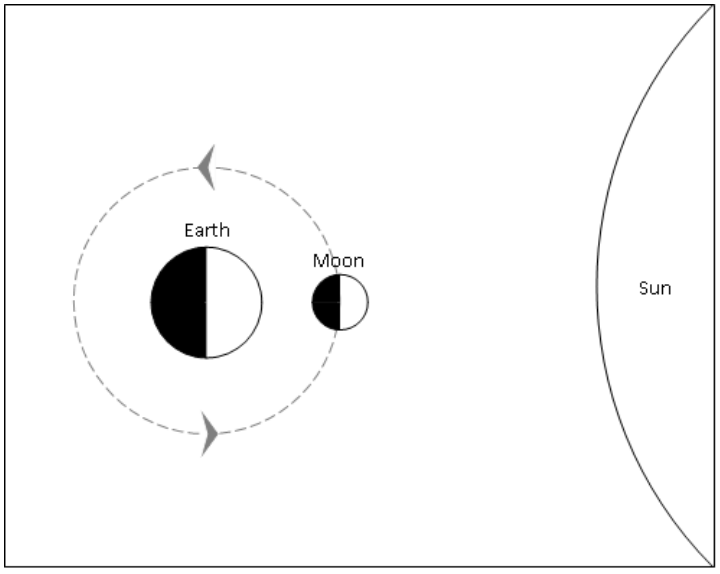
June

Modified from image courtesy of NOAA

Which of these is true about location X during the month of June?

- **A.** Location X has more hours of daylight than hours of darkness per 24-hour day.
- **B.** Location X has 12 hours of darkness followed by 12 hours of daylight per 24-hour day.
- **C.** Location X has more hours of darkness than hours of daylight per 24-hour day.
- **D.** Location X has 24 hours of darkness followed by 24 hours of daylight throughout the month.

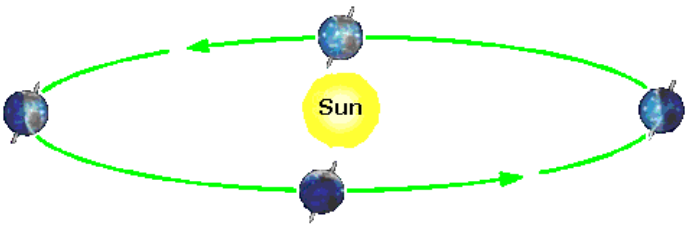
Question 25 .



Imagine you are viewing the Moon from Earth. Based on the diagram above, which of the following phases would you see?

- **A.** first quarter
- **B.** new moon
- **C.** third quarter
- **D.** full moon

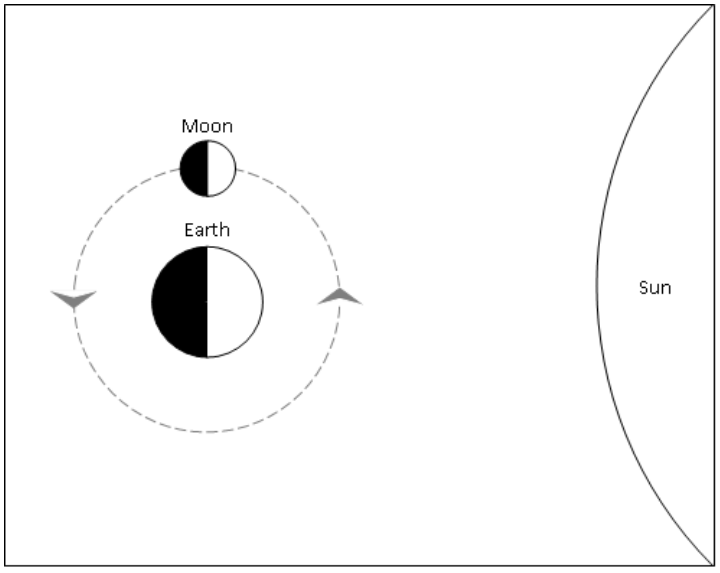
Question 26 .



The Earth revolves, or moves in a circular pattern, around the Sun. At each of the positions shown above, the Earth has _____.

- **A.** the same temperature
- **B.** a different season
- **C.** a different tilt
- **D.** the same time of day

Question 27 .



Imagine you are viewing the Moon from Earth. Based on the diagram above, which of the following phases would you see?

- **A.** third quarter
- **B.** first quarter
- **C.** full moon
- **D.** new moon

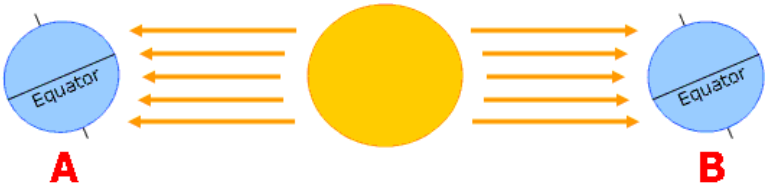
Question 28 .

Which of the following correctly completes the following sentence?

Due to the tilt of the Earth's axis,

- **A.** certain regions on Earth can have non-stop daylight for six months of the year.
- **B.** the North and South Poles have the same seasons at the same time.
- **C.** daylight in Texas lasts longer in December than in July.
- **D.** the Eastern and Western Hemispheres have opposite seasons.

Question 29 .



The figure above shows the Earth at two different positions in its orbit around the Sun.

In which position would it be summer in the Northern Hemisphere?

- **A.** position B
- **B.** position A
- **C.** both position A and position B
- **D.** neither position A nor position B