

21 A teacher asks students to explain what they see in this picture. Four student explanations are shown in the box.

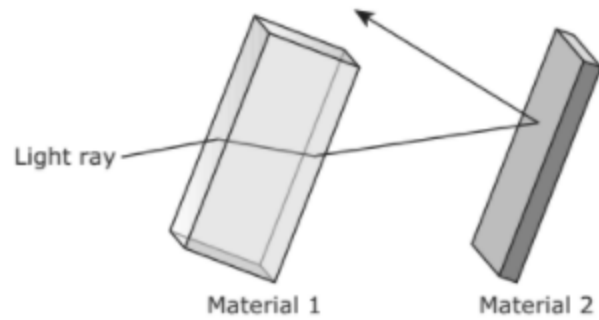


Student 1: The sun will set in less than 6 hours.
Student 2: The sun will reach the east horizon in less than 10 hours.
Student 3: The picture shows early morning.
Student 4: The picture shows the location of the sun at noon.

Which of the students gave a correct explanation?

- A** Student 1 only
- B** Students 2 and 4 only
- C** Student 2 only
- D** Students 1 and 3 only

17 The picture shows how a light ray behaves with two different types of materials.



Which table best describes the behavior of the light ray as it encounters the materials?

A

Material 1	Material 2
The light ray is scattered in all directions.	The light ray is refracted.

B

Material 1	Material 2
The light ray is absorbed.	The light ray is reflected.

C

Material 1	Material 2
The light ray is transmitted.	The light ray is refracted.

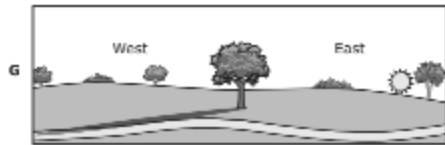
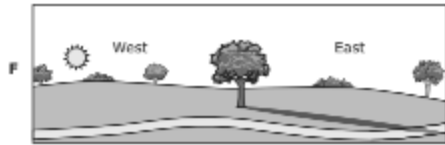
D

Material 1	Material 2
The light ray is refracted.	The light ray is reflected.

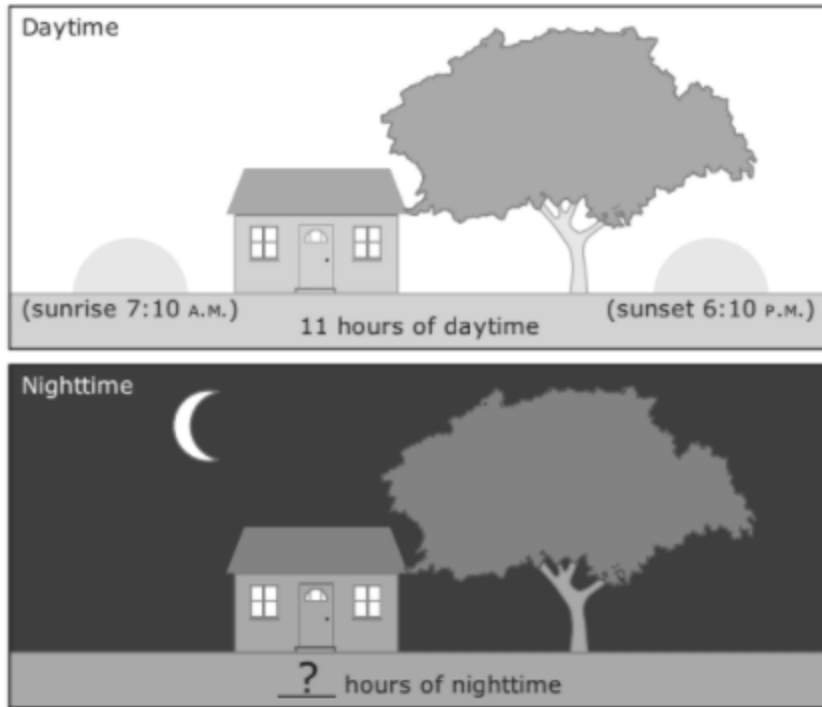
20 The diagram shows the shadow of a tree in a field at noon on a summer day.



The sun rises at 7:00 A.M. on this day. Which diagram best shows the shadow of the tree at 10:00 A.M. on the same day?



23 A student drew the following pictures to show the day-night cycle of Earth.



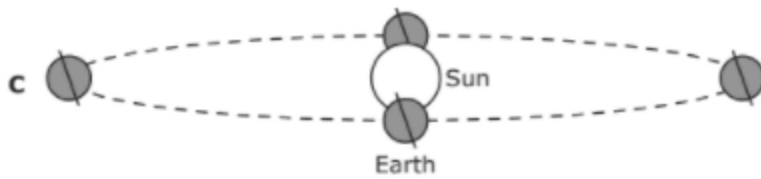
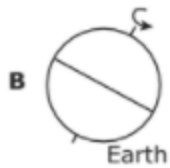
Based on the pictures, how many hours should the student record on the nighttime picture to complete a day-night cycle?

- A 11 hours
- B 12 hours
- C 13 hours
- D 24 hours

2 Earth continuously rotates on its axis while also moving in an orbit. About how much time does it take for Earth to make one complete rotation on its axis?

- F 24 hours
- G 30 days
- H 60 minutes
- J 365 days

7 Which of these best explains why the sun appears to move across the sky each day?



25 A student builds a model of the solar system that includes a sphere representing Earth. The sphere turns in a full circle on its axis.

By using a model of Earth that spins on its axis, the student can best demonstrate —

- A** the cycle of the four seasons
- B** the aging of a star
- C** the passing of a year
- D** the cycle of day and night

- 1 Some students used a globe to model the rotation of Earth. They shaded in Texas on the globe, as shown below. They rotated the globe and observed that Texas was in exactly the same place after each rotation.

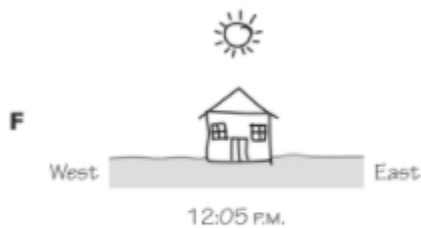


The students could rotate the globe quickly or slowly. If the globe could rotate only at the rate that Earth actually rotates, about how long would each complete rotation take?

- A 30 days
- B 60 minutes
- C 24 hours
- D 365 days

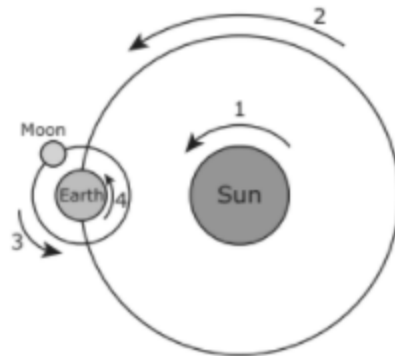


- 18 A student draws diagrams of her house and the location of the sun in the sky. Which diagram below does **not** correctly represent the location of the sun at the time indicated?



- 2 A student draws a model showing the movements of Earth, the moon, and the sun.

Movements of Earth, the Moon, and the Sun



Which arrow shows the movement that causes day and night on Earth?

- F** Arrow 1, because it shows the rotation of the sun
- G** Arrow 2, because it shows the orbit of Earth around the sun
- H** Arrow 3, because it shows the orbit of the moon around Earth
- J** Arrow 4, because it shows the rotation of Earth

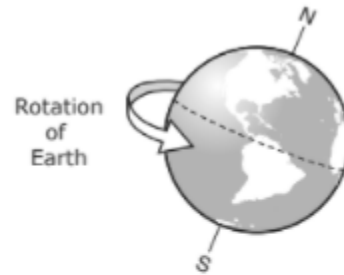
32 On which side of a house in Texas should a window be placed so that the people inside the house can see the sunrise each day through the window?

F North

G South

H East

J West



5 Which of these cycles is a direct result of Earth's rotation?

A Day and night

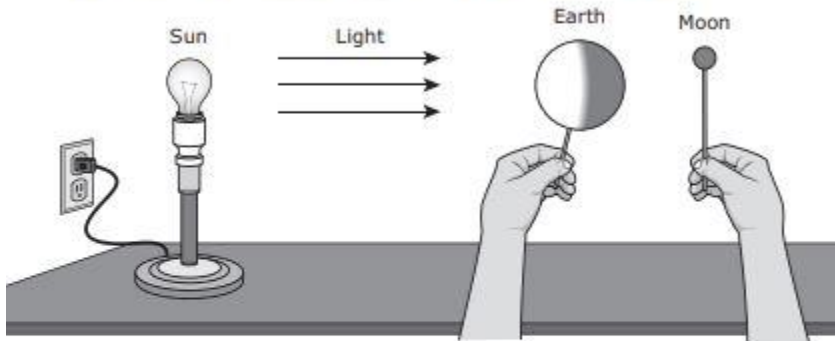
B Moon phases

C Rainfall and evaporation

D Seasons

- 2 Which statement best explains why the sun appears to move across the sky during the day?
- F The Earth is closest to the sun in the winter.
 - G The Earth is revolving around the sun.
 - H The Earth is tilted at 23.5 degrees.
 - J The Earth is rotating on its axis.

- 26 A student makes the model shown with objects representing the sun, Earth, and the moon to use in a class demonstration.



Which action should the student do with the objects to demonstrate a complete day-night cycle of Earth?

- F Move the moon around Earth once
- G Spin the sun in a circle once
- H Move Earth around the sun once
- J Spin Earth in a circle once