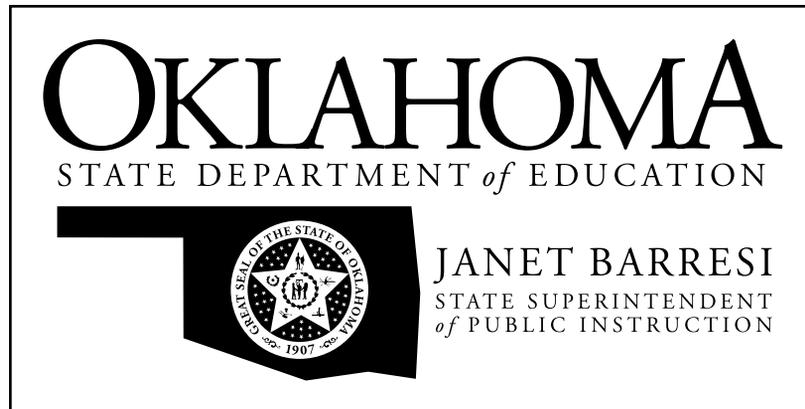


Oklahoma School Testing Program



Oklahoma Core Curriculum Tests

2011–2012 Released Items

Grade 5
Science

Oklahoma State Department of Education
Oklahoma City, Oklahoma

PEARSON

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Science



Directions

Read each question and choose the best answer.

1 Study the picture below. Then answer the question.

534052_2



The student above is conducting an experiment to classify common liquids by their odor.

Which of the following is the most likely safety hazard for the student in this experiment?

- A The work area is not neat.
- B The liquid is too close to his nose.
- C The student is not wearing a lab coat.
- D The goggles are interfering with his vision.

2 When scientists wear lab aprons during experiments, what are they protecting?

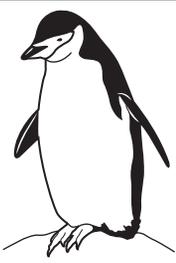
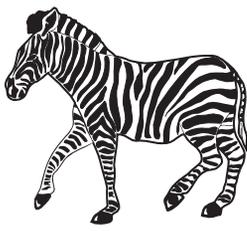
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- A eyes
- B shoes
- C hands
- D clothes



3

Physical Characteristics of Animals

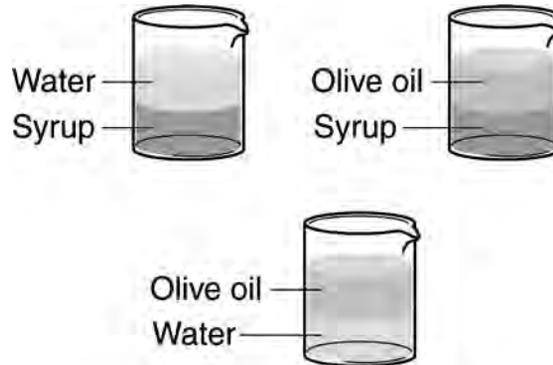
Animal	Number of Legs	Number of Eyes	Wings or No Wings?	Backbone or No Backbone?
 penguin	2	2	has wings	has backbone
 zebra	4	2	has no wings	has backbone
 monarch butterfly	6	2	has wings	has no backbone
 garden spider	8	more than 2	has no wings	has no backbone

Which physical characteristic would be least helpful to a student who wants to classify these animals into two groups?

- A legs
- B eyes
- C wings
- D backbone



4 The containers below show the layers formed by three different liquids.



If all three liquids shown above were poured into one container, which container below shows how the layers would form?





5 A student performs the following investigation steps.

Investigation Steps

1. Pour one liter of tap water into a cooking pot.
2. Pour one liter of water mixed with 15 mL of table salt into an identical cooking pot.
3. Place each pot on identical burners.
4. Set both burners on high and observe.
5. Measure and record the time it takes for the tap water and the salt water to reach a full boil.

Which hypothesis is the student most likely testing?

- A** Salt water boils longer than tap water.
- B** The salt in a boiling salt water mixture will remain solid.
- C** Salt water reaches its boiling point faster than tap water.
- D** Warm water reaches its boiling point faster than cool water.

**6 There are three main types of coal found in the United States.**

Data for Three Types of Coal in the United States

Type of Coal	Color	Common Location	Use
Lignite	black with some brown	Texas North Dakota	generate electricity
Bituminous	bright and dull bands of black color	West Virginia Kentucky Pennsylvania Wyoming	generate electricity materials used for steel industry
Anthracite	shiny black	Pennsylvania	generate electricity

Which statement best describes a physical property based on this data table?

- A** The steel industry uses coal.
- B** Most coal is used to generate electricity.
- C** Color can be used to compare the three types of coal.
- D** More energy is stored in bituminous coal than in lignite coal.



7 The properties of four minerals are shown in the table below.

Mineral Properties

Mineral Sample	Hardness	Streak	Color	Shape
1	hard	none	white	odd-shaped
2	hard	none	colorless	rectangular
3	soft	white	white	crumbly blocks
4	soft	white	colorless	flat sheets

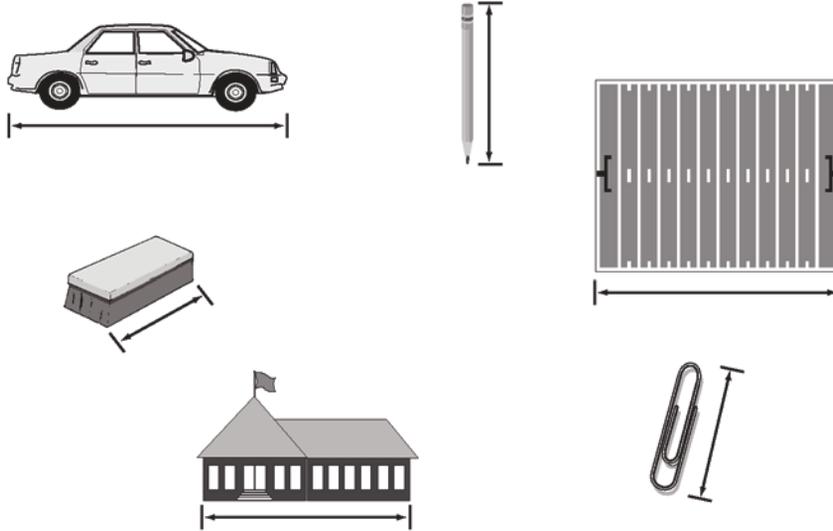
A fifth mineral sample is the same mineral as one of the samples in the table. Sample 5 must be identified using only one property.

Which property will match Sample 5 to the correct mineral in the table?

- A** hardness
- B** streak
- C** color
- D** shape



8 Tara is measuring the lengths of different objects.

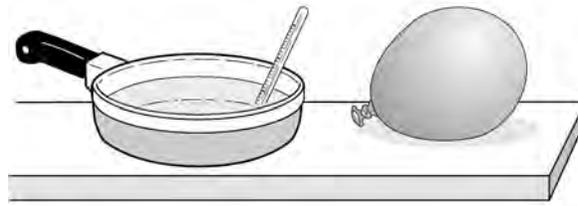


Which three items shown above would best be measured in centimeters?

- A** eraser, pencil, car
- B** paperclip, school, car
- C** paperclip, pencil, eraser
- D** paperclip, football field, pencil



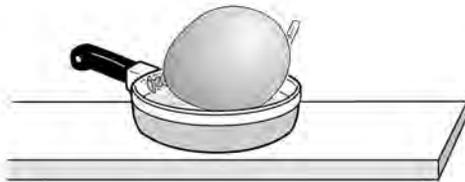
9



As the temperature of air increases, air expands. The balloon shown above was placed into the pan after the temperature of the water was changed four different times.

Which pan probably had the hottest water?

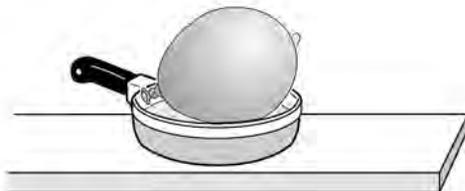
A



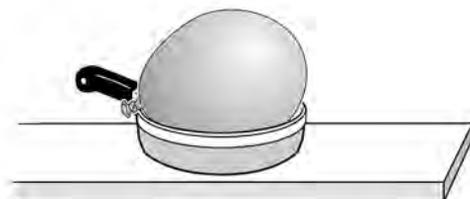
B



C



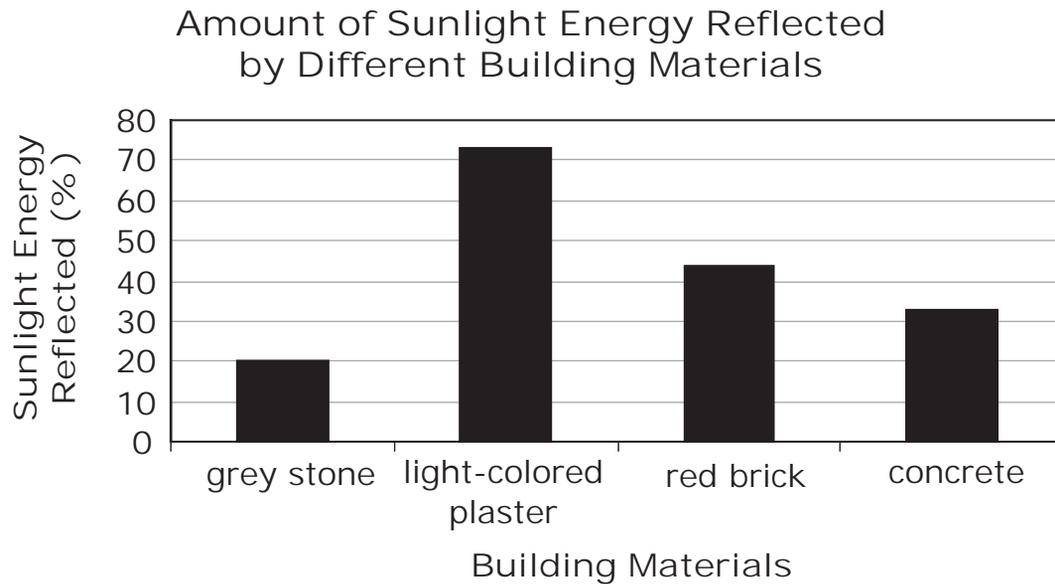
D





- 10** Building materials reflect sunlight differently. This can affect the surface temperature of a building.

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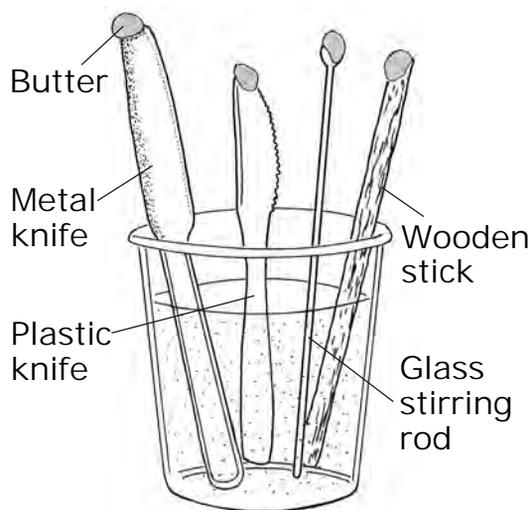


Which list orders the building materials from the material that would have the lowest surface temperature to one with the highest?

- A red brick, grey stone, light-colored plaster, concrete
- B light-colored plaster, red brick, concrete, grey stone
- C grey stone, concrete, red brick, light-colored plaster
- D concrete, light-colored plaster, grey stone, red brick



- 11** A student conducted an experiment to see which of four materials is the best conductor of heat. The student placed a dab of cold butter on the end of a glass stirring rod, a metal knife, a plastic knife, and a wooden stick. Then the student placed the other end of each of these objects into a cup of very hot water.



The student then recorded the amount of time it took for each of the four dabs of butter to melt into liquid.

Time for Four Materials to Conduct Heat and Melt the Butter

Object	Time for Butter to Melt (seconds)
Glass stirring rod	36
Metal knife	31
Plastic knife	39
Wooden stick	46

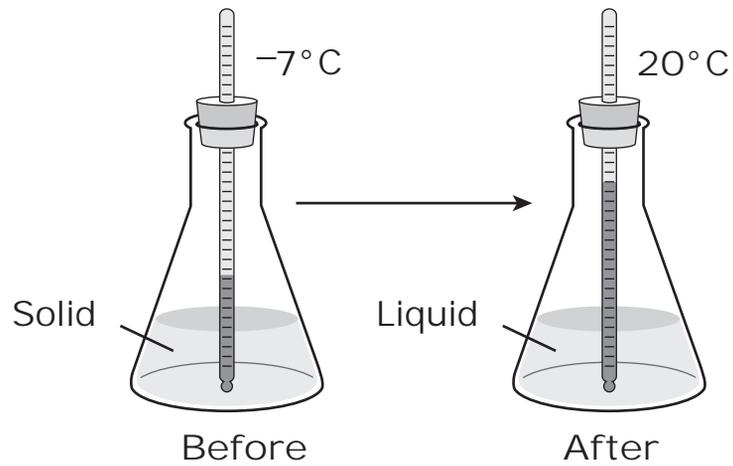
Which material was the best conductor of heat?

- A** glass
- B** metal
- C** plastic
- D** wood



12

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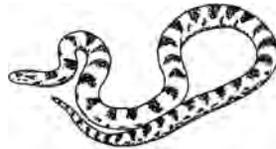
The container of water shown above was placed in a dark closet at room temperature for eight hours.

Which of the following most likely caused the water in the flask to change temperature?

- A sunlight
- B chemicals
- C warm air
- D cold water



13 The organisms below are all found in a grassland environment.



Snake



Grass



Mouse



Hawk

Which food chain shows the best order of energy transfer in this environment?

- A** grass → snake → hawk → mouse
- B** grass → snake → mouse → hawk
- C** grass → mouse → hawk → snake
- D** grass → mouse → snake → hawk



- 14** The animals in the table below are all found on a prairie. The diet column lists what each animal eats.

Prairie Animal Diets

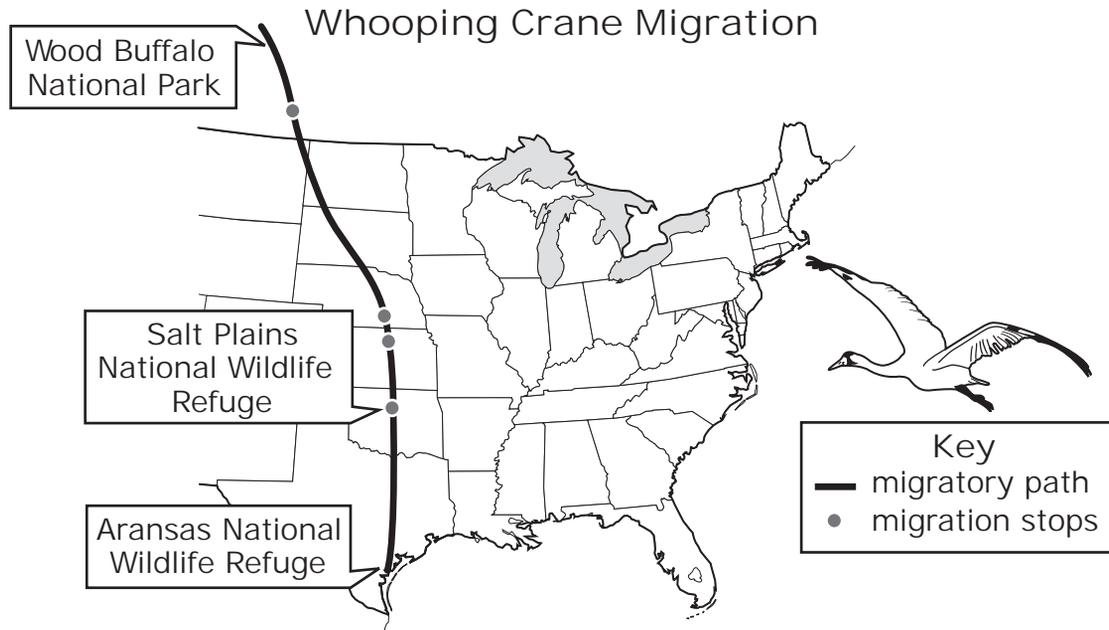
Animal	Diet
caterpillar	plant leaves
coyote	insects, birds, and mammals
bird	seeds and insects
mouse	seeds and fruits
praying mantis	other insects

Which example shows a possible food chain between these animals?

- A** mouse → caterpillar → bird → praying mantis
- B** praying mantis → coyote → bird → caterpillar
- C** caterpillar → praying mantis → bird → coyote
- D** bird → praying mantis → mouse → coyote



15



Which chart correctly shows the fall migration path of whooping cranes and a reason why these birds migrate from place to place to survive?

A

Fall Migration	Beginning End Aransas Salt Plains Wood Buffalo
Reason	changes in environmental conditions caused by Earth's rotation

B

Fall Migration	Beginning End Aransas Salt Plains Wood Buffalo
Reason	changes in environmental conditions caused by the seasons

C

Fall Migration	Beginning End Wood Buffalo Salt Plains Aransas
Reason	changes in environmental conditions caused by Earth's rotation

D

Fall Migration	Beginning End Wood Buffalo Salt Plains Aransas
Reason	changes in environmental conditions caused by the seasons



16 Marcie is studying which kind of nuts the squirrels in her neighborhood like the most.

525456_1

Which step should Marcie use in her study?

- A** Record the types of nuts found in her neighborhood.
- B** Identify the types of mammals in her neighborhood.
- C** Observe the number of squirrel nests in her neighborhood.
- D** Measure the masses of different nuts found in her neighborhood.

17 A student set up an experiment to observe the effect of pollutants on plant growth. Below is a list of liquids she used in her experiment.

525450_4

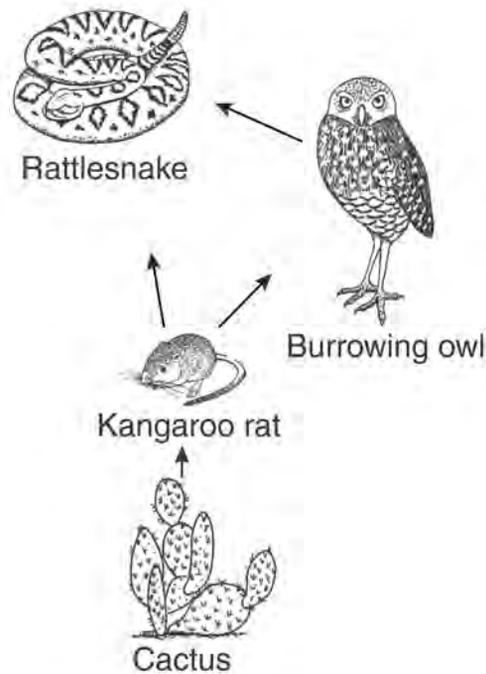
Experimental Watering Mixtures

Plain tap water
Plain tap water and motor oil
Plain tap water and baking soda

The student prepared three identical plant pots with the same type of soil, same amount of soil, and the same type and number of tomato seeds. She placed each pot on the same windowsill. For six weeks, she watered each pot when the soil was dry with one of the mixtures shown above. Once a week, the student observed and measured each plant and recorded her observations. The teacher said that the experiment was very good but had a flaw.

What variable did the student fail to control?

- A** type of soil used
- B** amount of sunlight
- C** type of plant grown
- D** amount of liquid used for watering



In this food web, what would happen to the burrowing owls if the rattlesnakes were all removed from the ecosystem?

- A** The burrowing owls would all die.
- B** The number of burrowing owls would increase.
- C** The number of burrowing owls would stay the same.
- D** The burrowing owls would become prey for the kangaroo rats.



19

Animal	Habitat	Reproduction	Locomotion	Method of feeding young	Eating habits
dolphin	water	live birth	swim	produce milk	carnivore
zebra	land	live birth	walk	produce milk	herbivore
deer	land	live birth	walk	produce milk	herbivore
dog	land	live birth	walk	produce milk	carnivore

Why are all the animals listed in the table classified together?

- A** They are all mammals.
- B** They all have similar diets.
- C** They all have the same number of legs.
- D** They all live in the same type of environment.



- 20** Students in Mrs. Clark's class were studying climate zones. Mrs. Clark asked them to determine the climate zone where they live by using an identification key. The students knew that in their area there is a medium amount of rainfall, winters are cold, and summers are warm.

Identification Key

Step	Characteristics	Identification
1 a	light rainfall	Go to 2
b	medium to heavy rainfall	Go to 3
2 a	cold all year	Polar zone
b	hot summers and cool winters	Desert zone
3 a	cold winters	Go to 4
b	hot all year	Tropical zone
4 a	cool summers	Mountain zone
b	warm summers	Temperate zone

The identification key above describes some climate zones. Mrs. Clark's students live in which climate zone?

- A** Desert zone
- B** Tropical zone
- C** Mountain zone
- D** Temperate zone

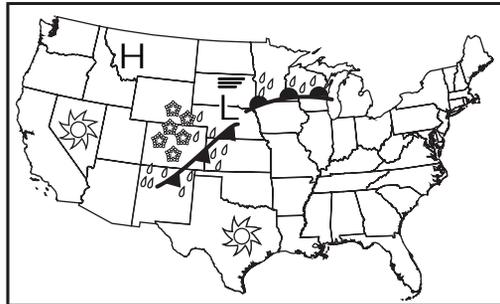


Weather Experiment

Problem:	Does wind direction affect temperature?
Hypothesis:	Temperatures are colder when the wind blows from the north than when the wind blows from the south.
Procedure:	<ol style="list-style-type: none">1. Record temperature and wind speed each day at the same location for 30 days.2. Construct a graph to compare wind speed and temperature.

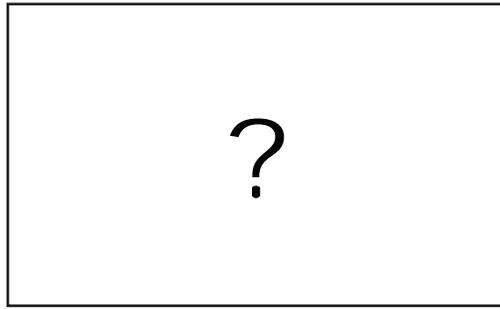
Which error in design could cause the wrong conclusion to be made in this experiment?

- A** assuming that wind direction affects temperature
- B** recording the wind speed instead of the wind direction
- C** constructing a graph instead of a data table
- D** identifying the problem before conducting the experiment

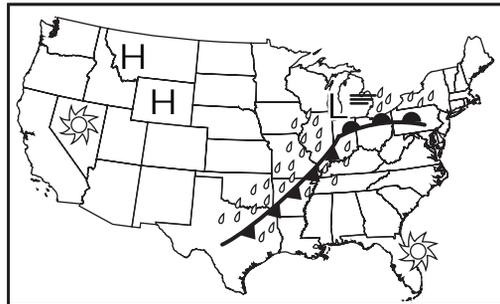


Key	
☁	Fog
☔	Rain
❄	Snow
☀	Sunshine

June 1



June 2



Key	
☁	Fog
☔	Rain
❄	Snow
☀	Sunshine

June 3

What was the weather in most of Oklahoma probably like on June 2nd?

- A foggy
- B rainy
- C snowy
- D sunny



23

Wind Speed
(kilometers per hour)

	Day	Night
Monday	24	17
Tuesday	21	14
Wednesday	24	14
Thursday	21	16
Friday	23	17
Saturday	21	?

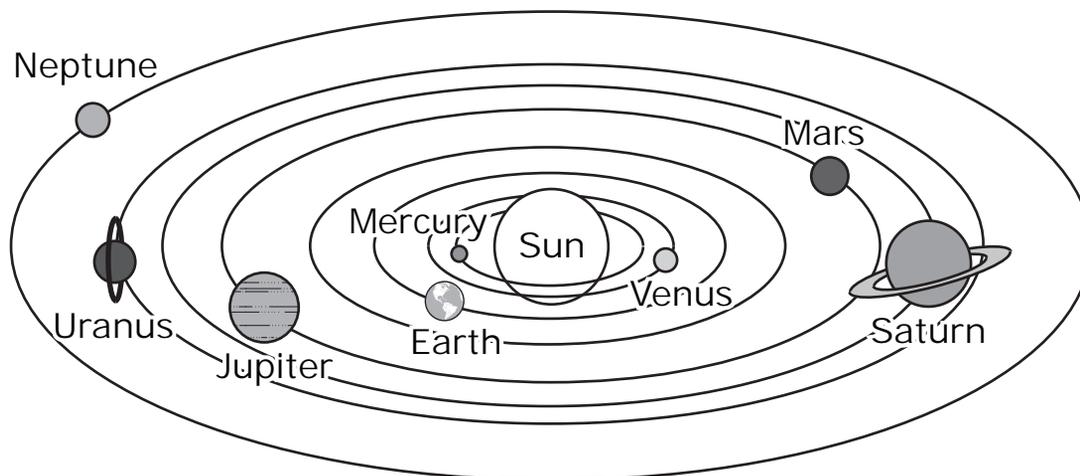
If the trends in the table continue, what will be the most likely wind speed for Saturday night?

- A** 10 kilometers per hour
- B** 15 kilometers per hour
- C** 20 kilometers per hour
- D** 21 kilometers per hour



24

524421_2



Earth orbits the sun once every 365 days.

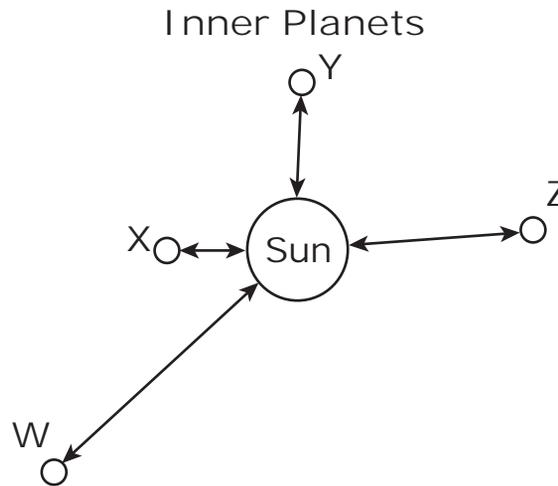
Which of the following planets orbits the sun in less time than Earth?

- A** Saturn
- B** Mercury
- C** Mars
- D** Jupiter



Planetary Data

Planet	Distance from Sun (km)
Mercury	58,000,000
Venus	110,000,000
Earth	150,000,000
Mars	230,000,000



Which planet shown in the diagram above is most likely Earth?

- A W
- B X
- C Y
- D Z



