

THE UNIVERSITY OF THE STATE OF NEW YORK

# GRADE 8

## INTERMEDIATE-LEVEL SCIENCE TEST

### WRITTEN TEST

June 6, 2022

Student Name \_\_\_\_\_

School Name \_\_\_\_\_

**The possession or use of any communications device is strictly prohibited when taking this examination. If you have or use any communications device, no matter how briefly, your examination will be invalidated and no score will be calculated for you.**

Print your name and the name of your school on the lines above.

The questions on this test measure your knowledge and understanding of science. The test has two parts. Both parts are contained in this test booklet.

**Part I** consists of 45 multiple-choice questions. Record your answers to these questions on the separate answer sheet. Use only a No. 2 pencil on your answer sheet.

**Part II** consists of 40 open-ended questions. Write your answers to these questions in the spaces provided in this test booklet.

You may use a calculator to answer the questions on the test if needed.

You will have two hours to answer the questions on this test.

**DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.**

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THE UNIVERSITY OF THE STATE OF NEW YORK  
THE STATE EDUCATION DEPARTMENT  
ALBANY, NEW YORK 12234



## Part I

### DIRECTIONS

There are 45 questions on Part I of the test. Each question is followed by three or four choices, lettered A through D. Read each question carefully. Decide which choice is the best answer. On the separate answer sheet, mark your answer in the row of circles for each question by filling in the circle that has the same letter as the answer you have chosen.

Read the sample question below.

#### Sample Question

Earth gets most of its light from

- A the stars
- B the Sun
- C the Moon
- D other planets

The correct answer is **the Sun**, which is choice **B**. On your answer sheet, look at the box showing the row of answer circles for the sample question. Since choice **B** is the correct answer for the sample question, the circle with the letter **B** has been filled in.

Answer all of the questions in Part I in the same way. Mark only one answer for each question. If you want to change an answer, be sure to erase your first mark completely. Then mark the answer you want.

You will not need scrap paper. You may use the pages of this test booklet to work out your answers to the questions.

You may use a calculator if needed.

When you are told to start working, turn the page and begin with question 1. Work carefully and answer all of the questions in Part I.

When you have finished Part I, go right on to Part II. Answer all of the questions in Part II.

## Part I

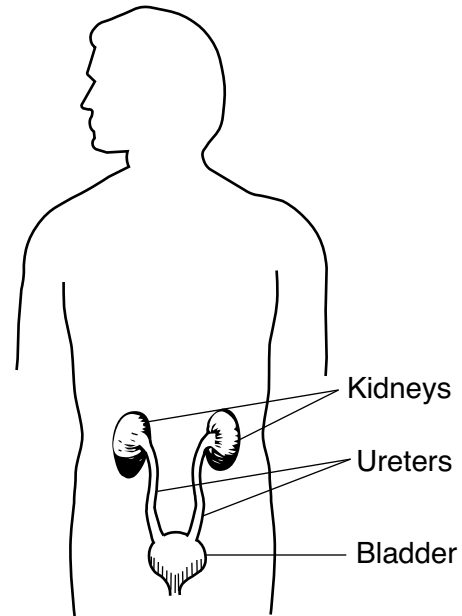
- 1 All living things are composed of  
A vitamins                      C cells  
B blood                          D organs
- 2 Which process is carried out by both a plant and an animal?  
A eating food  
B growing in size  
C taking in carbon dioxide  
D making oxygen
- 3 The chart below shows the classification of *Felis catus*, the common house cat.

### Classification of Common House Cat

Kingdom	Animalia
Phylum	Chordata
Class	Mammalia
Order	Carnivora
Family	Felidae
Genus	<i>Felis</i>
Species	<i>catus</i>

- Which level of classification contains organisms that are the most closely related?  
A Family                      C Kingdom  
B Genus                        D Species
- 4 When a person chews food, the teeth grind the food into smaller pieces. This is an example of  
A mechanical digestion  
B chemical change  
C cellular respiration  
D waste removal

- 5 The diagram below represents a human organ system.



What is the function of this system?

- A breakdown of food  
B production of sex cells  
C removal of dissolved wastes  
D coordination of body movement
- 6 The guinea pigs in a certain population all have black fur. The sudden appearance of a guinea pig with white fur in this population may be the result of  
A ozone depletion  
B asexual reproduction  
C gene mutation  
D habitat destruction
- 7 As their environment slowly changes, organisms with certain traits are more likely to survive and produce offspring with those same traits. This statement describes  
A cell division  
B genetic engineering  
C resource conservation  
D natural selection



8 The photograph below shows four different dogs. All four dogs belong to the same species.



The significant differences between these four dogs were caused by humans. These differences are best explained by the process of

- A biological adaptation
- B selective breeding
- C metamorphosis
- D regulation

9 Three birds are represented in the drawings below.

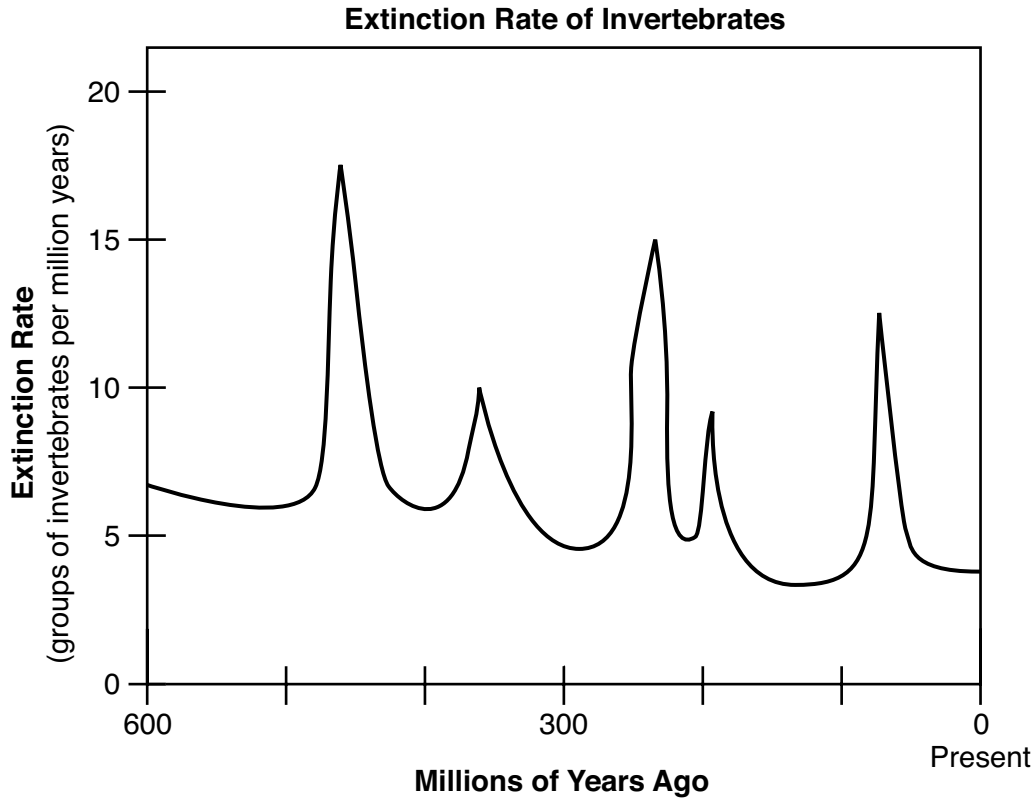


(Not drawn to scale)

Studying the beak of each of these birds would best help a scientist understand

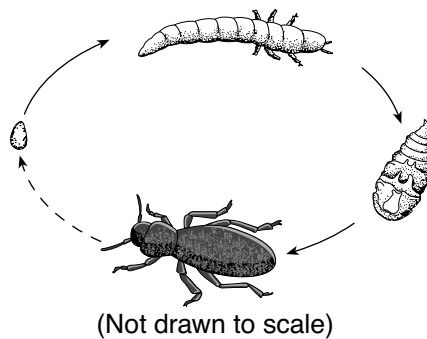
- A how the birds fly
- B where the birds live
- C what the birds eat
- D if the birds migrate

- 10 The graph below represents the extinction rate of invertebrates (animals without a backbone) over the last 600 million years.



Based on the graph, it might be concluded that

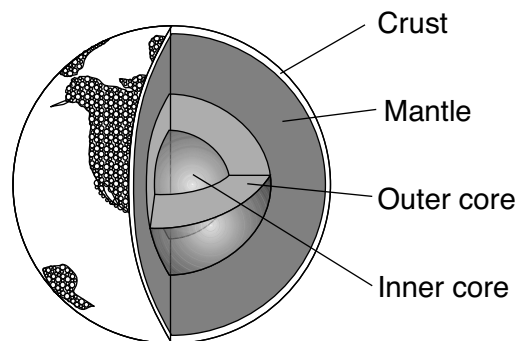
- A there were fewer extinctions 600 million years ago than at present
  - B the greatest invertebrate extinction rate occurred about 450 million years ago
  - C the most recent peak in extinction rate affected the largest number of groups
  - D the five greatest invertebrate extinction rates occurred every 100 million years
- 11 Which process is represented by the diagram below?



- A photosynthesis
- B metamorphosis
- C digestion
- D succession

- 12 Which group of organisms may undergo an evolutionary change in the *shortest* period of time?  
 A birds                                    C human beings  
 B bacteria                                 D flowering plants
- 13 In a pond, algae (plant-like organisms) absorb sunlight and the fish in the pond eat tadpoles. These are both examples of how pond organisms  
 A get their energy  
 B escape their predators  
 C remove waste products  
 D produce new offspring
- 14 In order to perform photosynthesis, a leaf must absorb sunlight and take in  
 A carbon dioxide                        C oxygen  
 B nitrogen                                 D methane
- 15 In which part of a leaf cell does photosynthesis take place?  
 A chloroplast                             C cell membrane  
 B nucleus                                 D cell wall
- 16 Two different species of animals live in the same area of a park and eat the same food to survive. Which term describes the relationship between these two species of animals?  
 A regulation                              C succession  
 B conservation                         D competition
- 17 Some species of plants may replace others over time, resulting in a long-term gradual change in an area. This long-term process is referred to as  
 A ecological succession  
 B climate change  
 C environmental degradation  
 D ozone depletion

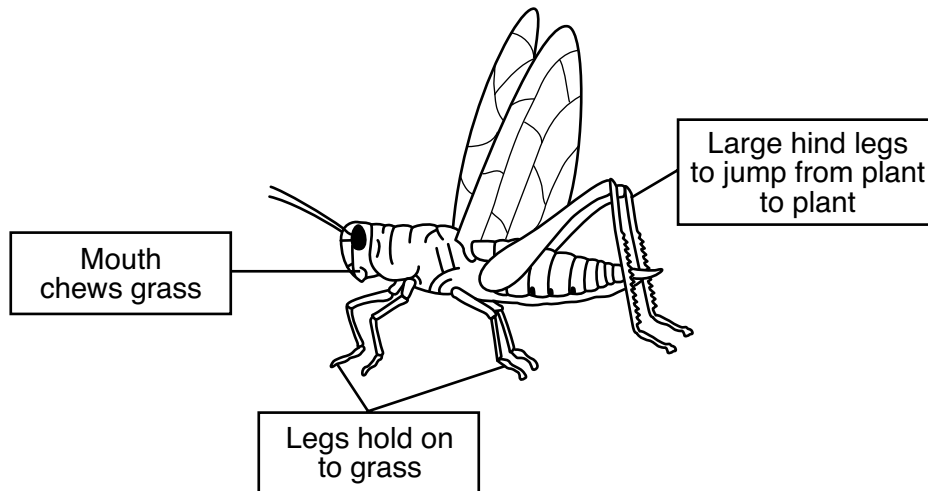
- 18 Global warming will most likely cause a change in  
 A Earth's revolution                    C ocean water levels  
 B Earth's rotation                      D ocean tide times
- 19 About how long does it take the Moon to revolve once around Earth?  
 A a day                                      C a month  
 B a week                                  D a year
- 20 Which kind of rock is most likely to contain fossils?  
 A igneous                                 C metamorphic  
 B sedimentary                         D volcanic
- 21 Gravity is the major force that  
 A keeps planets in their orbits  
 B affects melting of a solid  
 C keeps sunlight in Earth's atmosphere  
 D affects evaporation of water from oceans
- 22 The diagram below represents Earth's interior divided into four layers, each with unique properties.



(Not drawn to scale)

- This model of Earth is based primarily on the  
 A study of ocean tides  
 B analysis of earthquake waves  
 C classification of volcanic eruptions  
 D observation of meteor showers

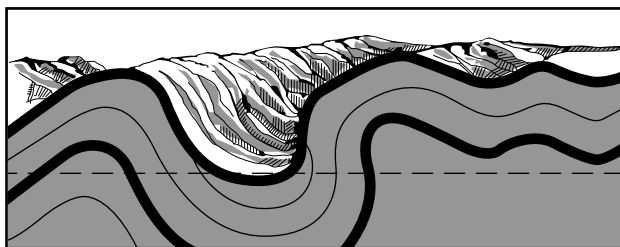
23 The diagram below represents a grasshopper and includes information about some of its body parts.



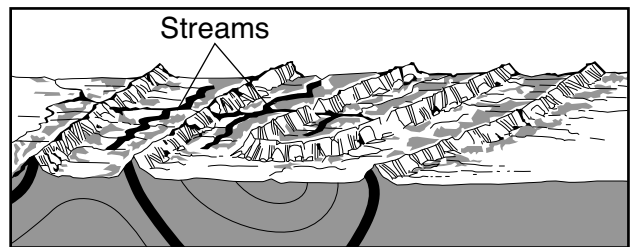
The grasshopper is classified as a

- A producer
- B decomposer
- C carnivore
- D herbivore

24 Cross section 1 below represents deformed rock layers. Cross section 2 below represents the same location millions of years later.



**Cross section 1**

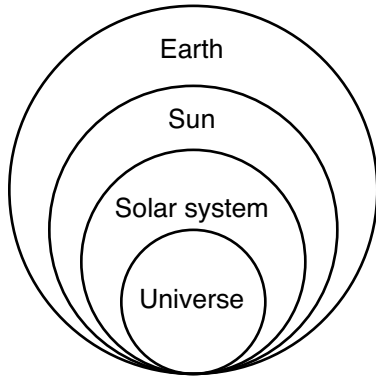


**Cross section 2**

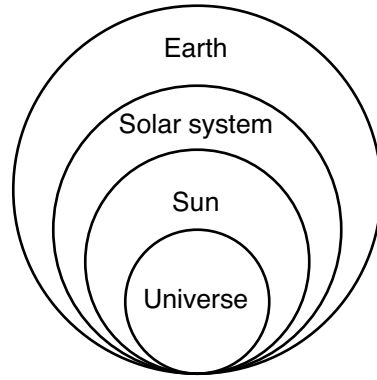
Which two factors are mainly responsible for changing the surface features shown in cross section 1 into the surface features shown in cross section 2?

- A tilting and deposition
- B melting and evaporation
- C freezing and condensation
- D weathering and erosion

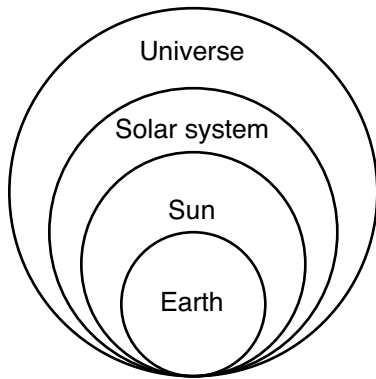
25 Which model below best represents the relative sizes of celestial objects from largest to smallest?



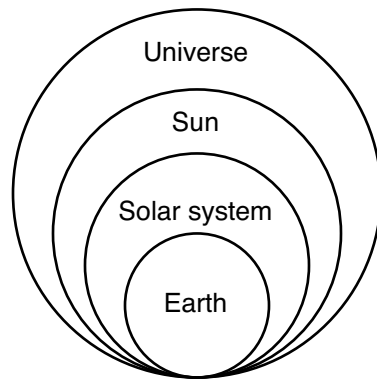
A



C

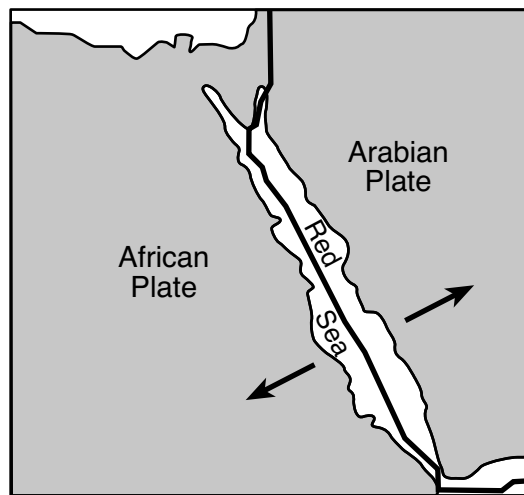


B



D

- 26 The map below shows a portion of Earth's surface where two tectonic plates are located. The arrows indicate the direction of plate movement along the boundary between the two plates.

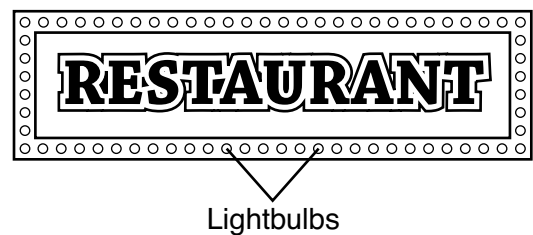


If the African Plate and Arabian Plate continue to move in the directions the arrows indicate, the Red Sea will most likely become

- A narrower because the two tectonic plates are coming together
  - B narrower because the two tectonic plates are moving apart
  - C wider because the two tectonic plates are coming together
  - D wider because the two tectonic plates are moving apart
- 27 Rocks are classified into one of three major groups according to
- A how they formed
  - B the depth where they are found
  - C their chemical properties
  - D their age
- 28 An air mass that forms over the ocean near the equator will most likely be
- A cold and dry
  - B cold and humid
  - C warm and dry
  - D warm and humid

- 29 Which two factors are most responsible for the movement of air masses over the United States?
- A prevailing winds and upper air currents
  - B prevailing winds and hurricanes
  - C thunderstorms and upper air currents
  - D thunderstorms and hurricanes
- 30 Sugar will most likely dissolve in water at the fastest rate when the temperature of the water is
- A cool and the solution is stirred
  - B cool and the solution is not stirred
  - C warm and the solution is stirred
  - D warm and the solution is not stirred
- 31 Compared to the particles in liquid water, the particles in solid ice move
- A faster and resist changes in position
  - B faster and easily change position
  - C slower and resist changes in position
  - D slower and easily change position

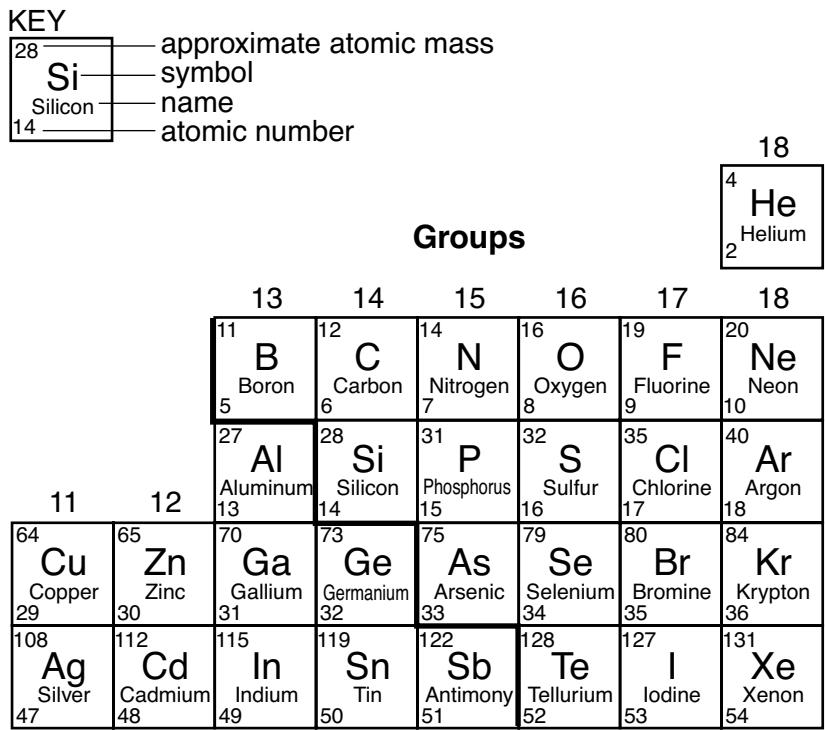
- 32 The diagram below represents a restaurant sign that is surrounded by a string of lightbulbs.



- Which statement might explain why the string of lightbulbs does *not* light when one of the lightbulbs is burned out?
- A Heat is reduced.
  - B The circuit is interrupted.
  - C A voltmeter is missing.
  - D Conduction is taking place.

Base your answers to questions 33 and 34 on the diagram below and on your knowledge of science. A portion of the Periodic Table of the Elements is shown below. The placement of elements on the Periodic Table is based on their properties.

### Portion of the Periodic Table of the Elements



33 Which element reacts in a manner most similar to oxygen?

- A sulfur
- B fluorine
- C phosphorus
- D neon

34 Three categories of elements and an example of each are shown in the table below.

<b>Metal</b>	<b>Nonmetal</b>	<b>Noble Gas</b>
Ag	N	He

Which table correctly lists the placement of the elements C, Kr, and Cu?

A

<b>Metal</b>	<b>Nonmetal</b>	<b>Noble Gas</b>
Cu	Kr	C

C

<b>Metal</b>	<b>Nonmetal</b>	<b>Noble Gas</b>
C	Kr	Cu

B

<b>Metal</b>	<b>Nonmetal</b>	<b>Noble Gas</b>
Cu	C	Kr

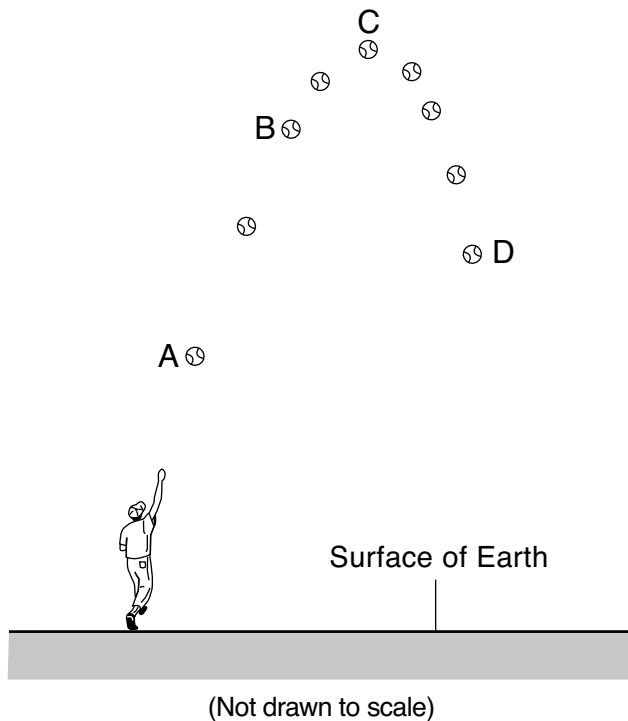
D

<b>Metal</b>	<b>Nonmetal</b>	<b>Noble Gas</b>
C	Cu	Kr

35 Molecules are made up of

- |            |          |
|------------|----------|
| A cells    | C atoms  |
| B mixtures | D solids |

36 The diagram below represents the path of a ball after it has been thrown. Letters A, B, C, and D represent different locations in the path that the ball traveled.



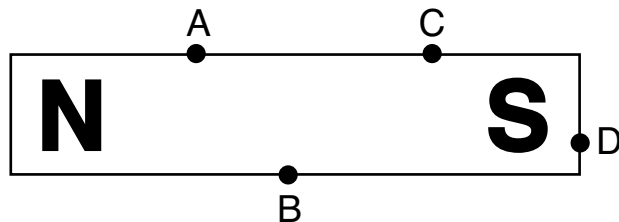
At which location did the ball have the greatest potential energy?

- |     |     |
|-----|-----|
| A A | C C |
| B B | D D |

37 A student sorts and categorizes a group of mineral samples based on their streak, hardness, and luster. Which scientific process is the student using?

- |               |              |
|---------------|--------------|
| A classifying | C measuring  |
| B sequencing  | D predicting |

38 The diagram below represents a bar magnet with the north (N) and south (S) poles labeled. Letters A, B, C, and D represent locations on the surface of the bar magnet.



An iron nail would feel the greatest attractive pull from this bar magnet at point

- |     |     |
|-----|-----|
| A A | C C |
| B B | D D |

39 A group of students is designing an experiment to determine if the temperature of water affects how well laundry detergent cleans clothing. Which statement best describes a hypothesis for this experiment?

- A If more detergent is used, then the water will become colder.
- B If more detergent is used, then the clothes will be cleaner.
- C If the water is hotter, then the detergent will make the clothes cleaner.
- D If the water is hotter, then the detergent will shrink the clothes.

40 Which observation of a plant on a windowsill supports the inference that plants need sunlight?

- A Flowers were produced.
- B Larger leaves wilted.
- C Stems grew toward the window.
- D Roots were visible above the soil.



- 41 The table below shows some minerals, their chemical composition, and some characteristics of these minerals.

**Characteristics of Some Minerals that Contain a Metal**

Mineral	Chemical Composition	Characteristic
chalcopyrite	$\text{CuFeS}_2$	brass yellow; often tarnished
galena	$\text{PbS}$	silver-colored; cubic cleavage
hematite	$\text{Fe}_2\text{O}_3$	reddish-brown streak; nonmagnetic
limonite	$\text{FeO}(\text{OH})\cdot\text{H}_2\text{O}$	yellow-brown streak; nonmagnetic
magnetite	$\text{Fe}_3\text{O}_4$	black streak; magnetic

<b>Key</b>	Al = aluminum	O = oxygen
	Cu = copper	Pb = lead
	Fe = iron	S = sulfur
	H = hydrogen	U = uranium

What do the minerals hematite, limonite, and magnetite have in common?

- A brown streak  
 B black streak  
 C contain hydrogen  
 D contain iron

- 42 The data table below shows the solubility of three gases in water at various temperatures.

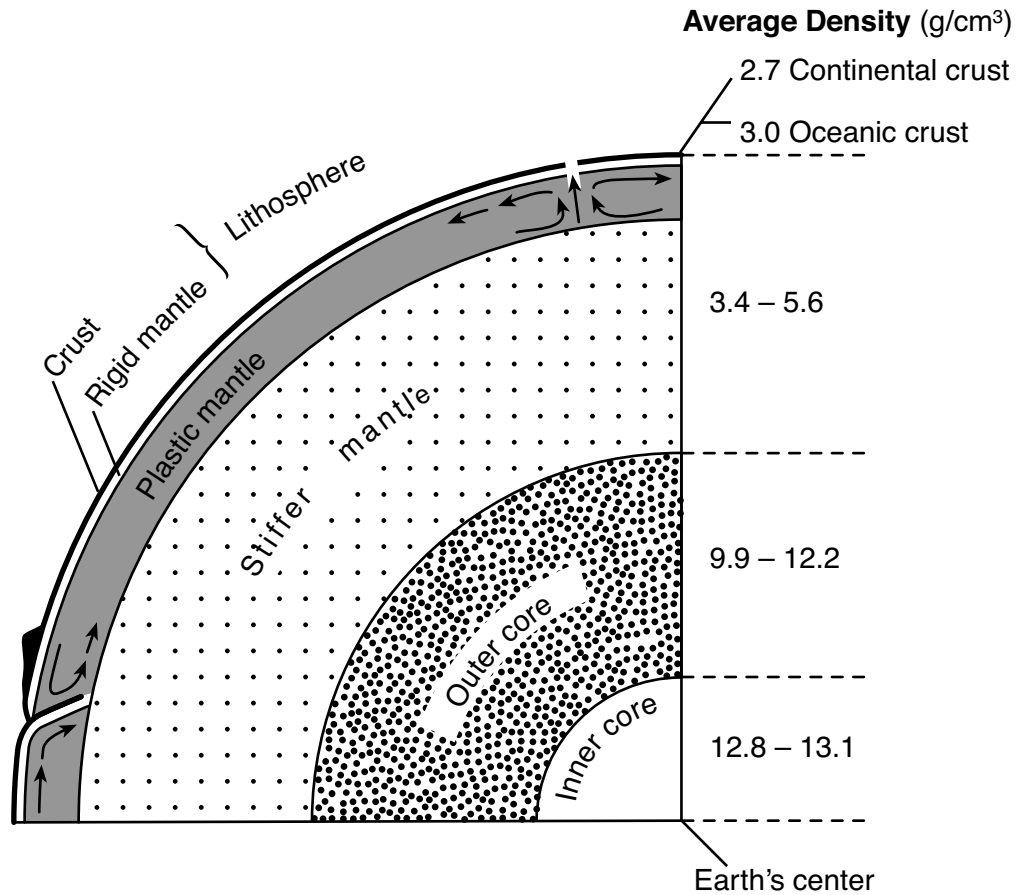
**Data Table**

Water Temperature (°C)	Solubility in Water (grams per liter)		
	Nitrogen	Oxygen	Carbon dioxide
0	0.0294	0.0695	3.346
10	0.0231	0.0537	2.318
20	0.0190	0.0434	1.688
30	0.0162	0.0359	1.257
40	0.0139	0.0308	0.973
50	0.0122	0.0266	0.761

The information in the table shows that the solubility of

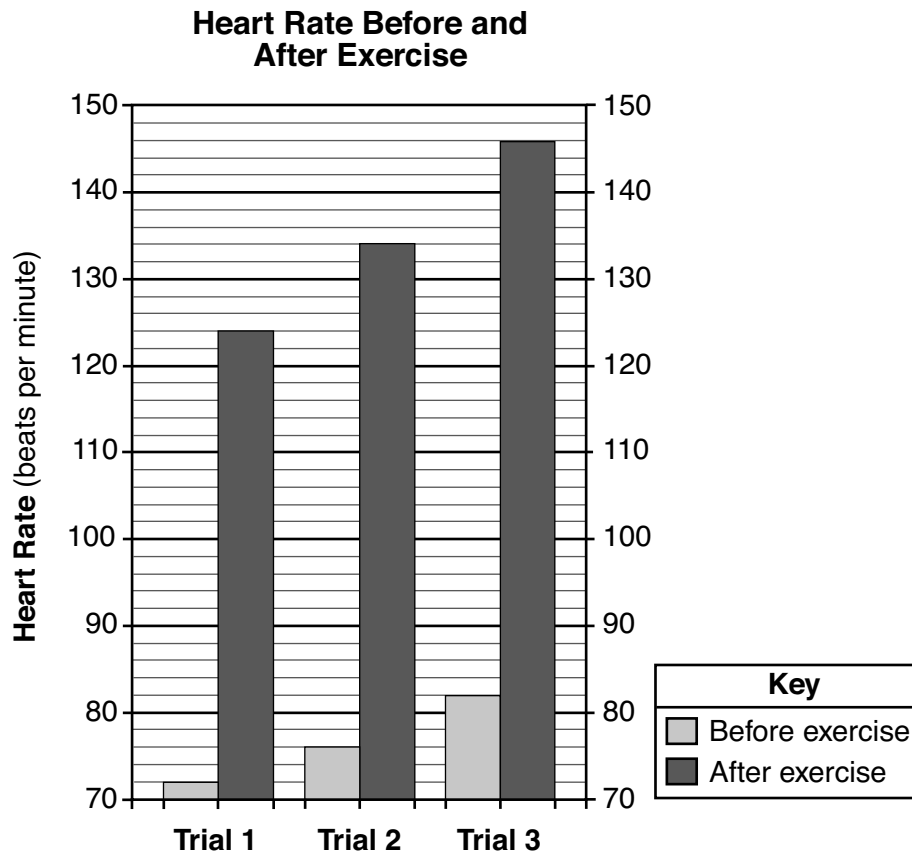
- A nitrogen gas in water is greatest when the water temperature is 30°C  
 B oxygen gas in water increases with increasing water temperature  
 C a gas in water depends primarily on the volume of water  
 D carbon dioxide gas in water decreases with increasing water temperature

Base your answers to questions 43 and 44 on the diagram below and on your knowledge of science. The diagram represents the inferred properties of Earth's interior.



- 43 As the depth below Earth's surface increases, the average density of Earth's interior
- A decreases, only
  - B increases, only
  - C increases and decreases
  - D remains the same
- 44 Which Earth layer contains convection currents that are believed to be responsible for the movement of Earth's tectonic plates?
- A lithosphere
  - B plastic mantle
  - C stiffer mantle
  - D outer core

- 45 The graph below shows the results of an experiment in which a student measured her heart rate in beats per minute (bpm) before and after five minutes of exercise. The experiment was repeated three times, with two minutes of rest in between each trial.



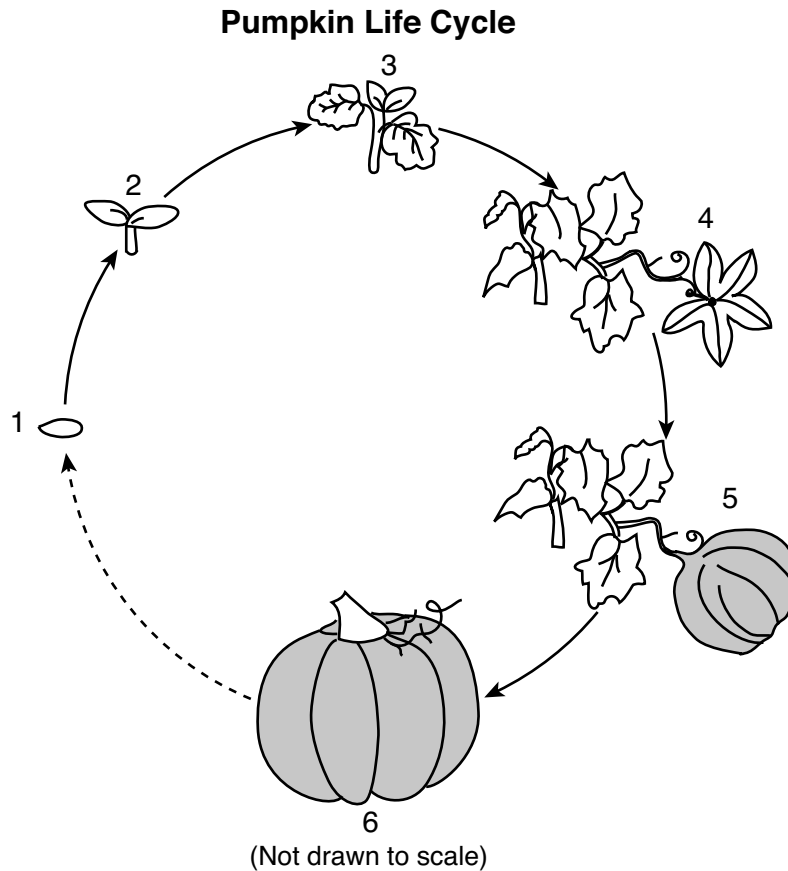
Which conclusion about heart rate can be supported by the data shown in the graph?

- A The before-exercise heart rate in trial 2 was 78 bpm.
  - B The before-exercise heart rate increased 6 bpm after each trial.
  - C The heart rate after exercise increased 10 bpm after each trial.
  - D The heart rate went up 64 bpm after exercise in trial 3.
-

## Part II

Directions (46–85): Record your answers in the spaces provided below each question.

Base your answers to questions 46 and 47 on the diagram below and on your knowledge of science. The diagram represents the life cycle of a pumpkin with the stages labeled 1 through 6.



46 Identify the structure shown at stage 1. [1]

\_\_\_\_\_

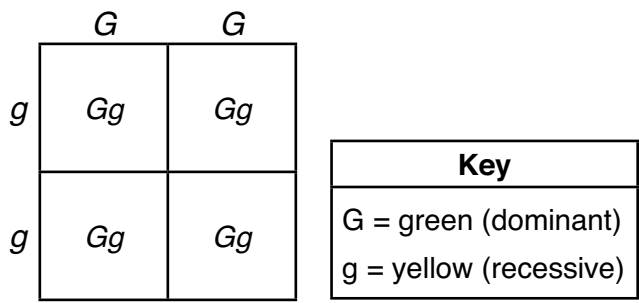
47 In stages 2 through 5, a part of the pumpkin plant that is *not* shown is located underground. Identify this plant structure and explain its function. [1]

Plant structure: \_\_\_\_\_

Function: \_\_\_\_\_

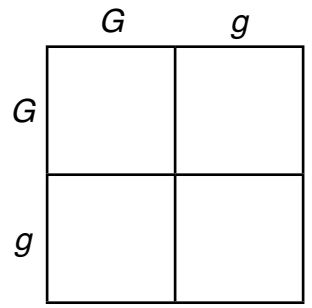
\_\_\_\_\_

Base your answers to questions 48 and 49 on the Punnett square below and on your knowledge of science. The Punnett square shows the possible offspring of a cross between a green pea plant ( $GG$ ) and a yellow pea plant ( $gg$ ).

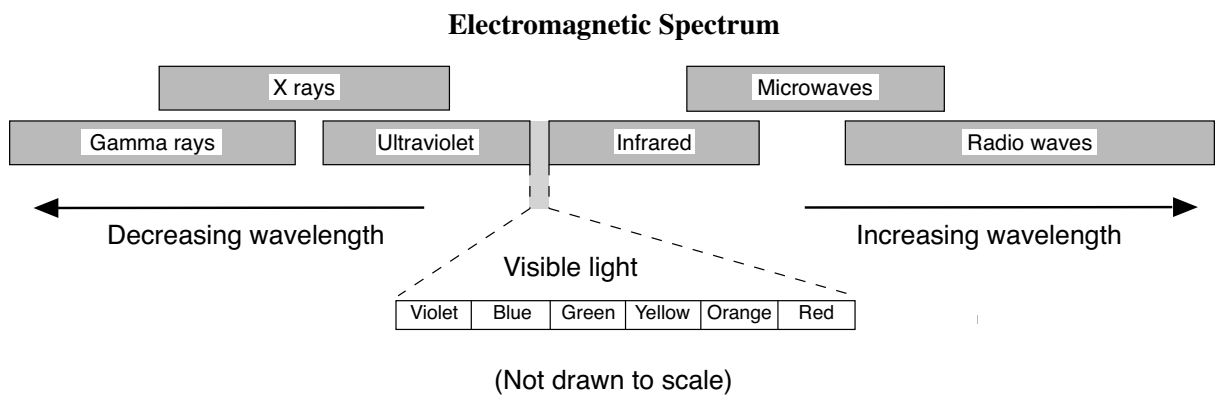


48 What percentage of the offspring shown in the Punnett square will be green pea plants? [1]  
 \_\_\_\_\_ %

49 Complete the Punnett square below, which shows a cross between two pea plants that are both  $Gg$ . [1]

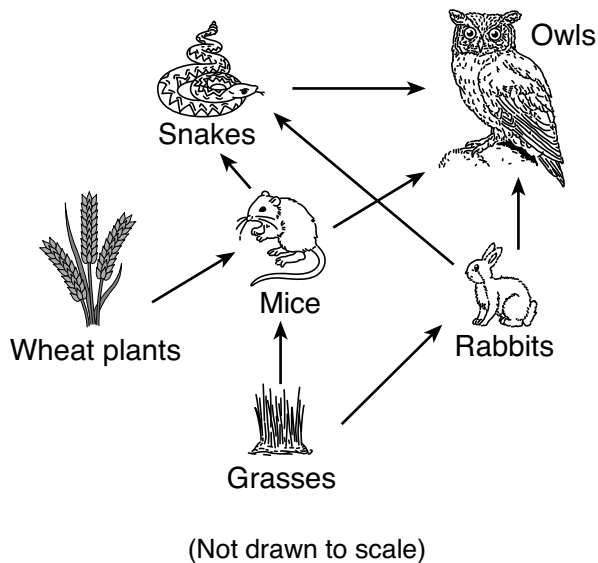


50 The diagram below represents different forms of electromagnetic energy in the electromagnetic spectrum.



Identify the color of visible light that has the longest wavelength. [1]  
 \_\_\_\_\_

Base your answers to questions 51 through 53 on the diagram below and on your knowledge of science. The diagram represents a partial food web.



51 Identify the *two* predators that are competing for the same food source. [1]

\_\_\_\_\_ and \_\_\_\_\_

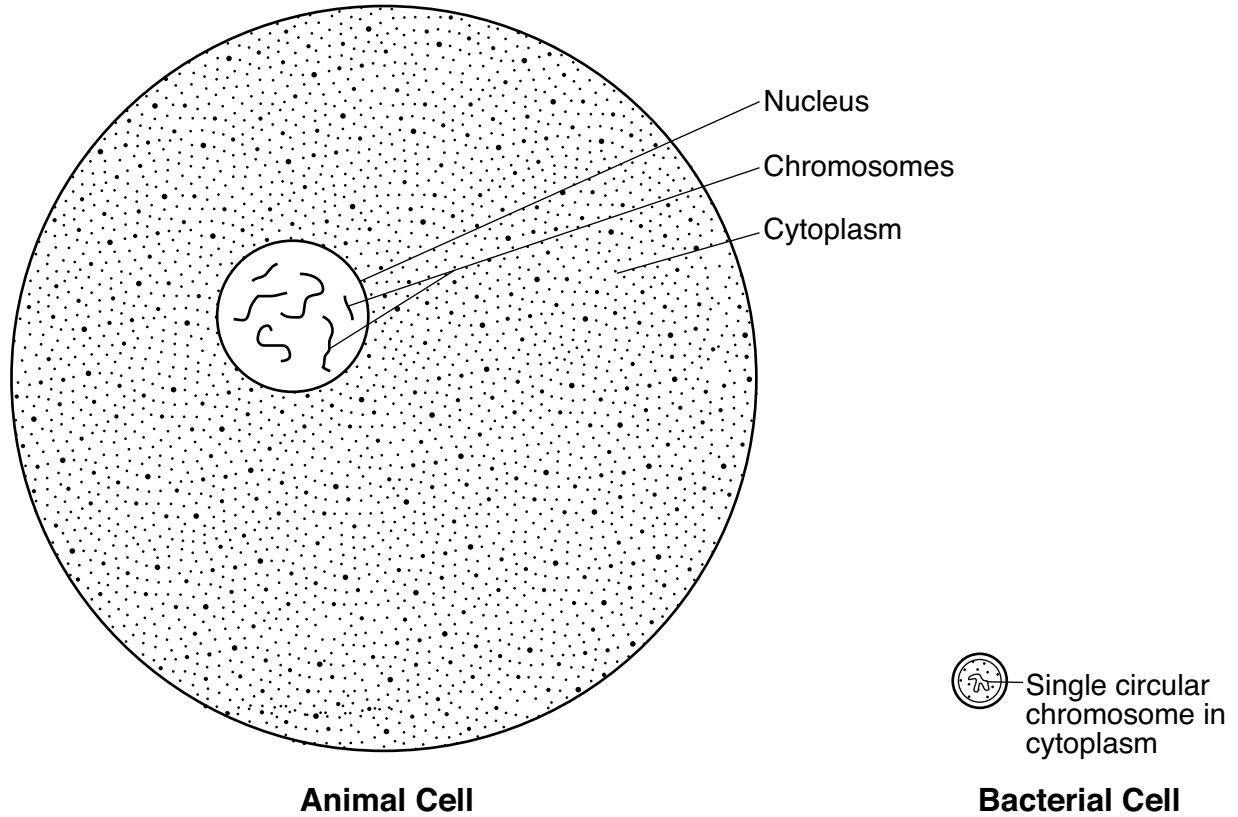
52 Explain why the grass population in this food web may *decrease* if the wheat plants were destroyed by disease. [1]

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

53 Decomposers play an important role in an ecosystem. Identify *one* type of decomposer that is most likely found in this ecosystem. [1]

\_\_\_\_\_  
\_\_\_\_\_

54 The diagram below represents an animal cell and a bacterial cell drawn to scale. Some parts of the two different cells are labeled.



**Animal Cell**

**Bacterial Cell**

(Drawn to scale)

Source: <https://www.chegg.com> (adapted)

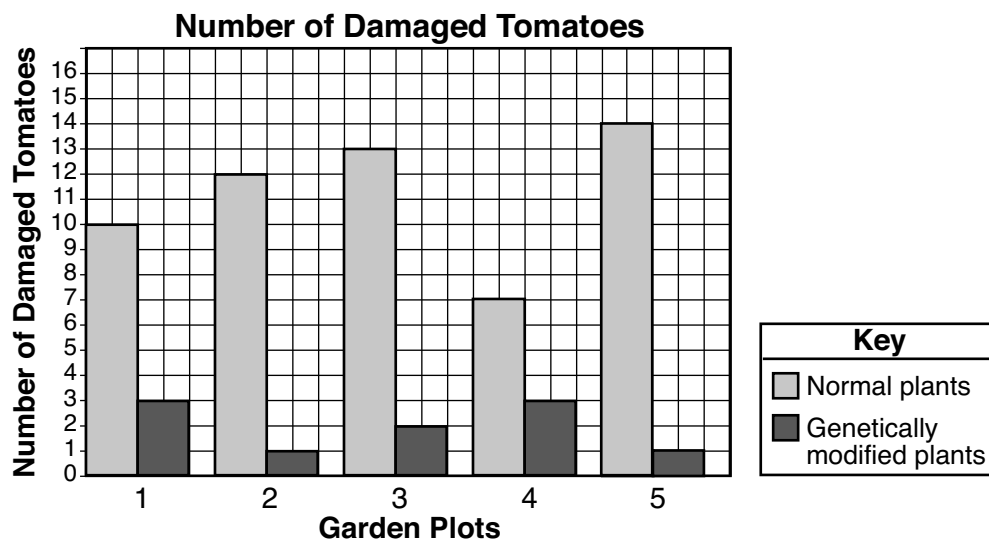
Identify *two* differences between an animal cell and a bacterial cell. [1]

Difference 1: \_\_\_\_\_

Difference 2: \_\_\_\_\_

Base your answers to questions 55 through 58 on the information and graph below, and on your knowledge of science.

An equal number of two types of tomato plants (a normal one and a genetically modified one) were planted in five different garden plots. The genetically modified plants produce a protein that kills caterpillars when the plant is eaten. Each plant received the same amount of water daily. The graph below shows the actual number of damaged tomatoes in each of the five garden plots for both the normal plants and genetically modified plants.



55 Explain why the genetically modified plants in the garden plots had a *lower* number of damaged tomatoes. [1]

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56 Calculate the total number of damaged tomatoes from the genetically modified plants in the five garden plots. [1]

Number of damaged genetically modified tomatoes: \_\_\_\_\_

57 Identify *one* variable, other than the number of plants and the amount of water received daily, that should be held constant for all of the tomato plants in the five garden plots. [1]

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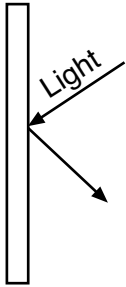
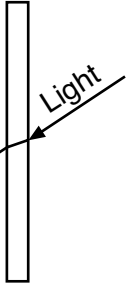
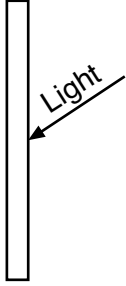
58 Using the equation below, calculate the percentage of normal tomatoes that were damaged in garden plot 1. In garden plot 1, there were 40 normal tomatoes before damage occurred. [1]

$\text{Percent Damaged} = \frac{\text{Number of Damaged Normal Tomatoes}}{\text{Number of Normal Tomatoes Before Damage Occurred}} \times 100$
--

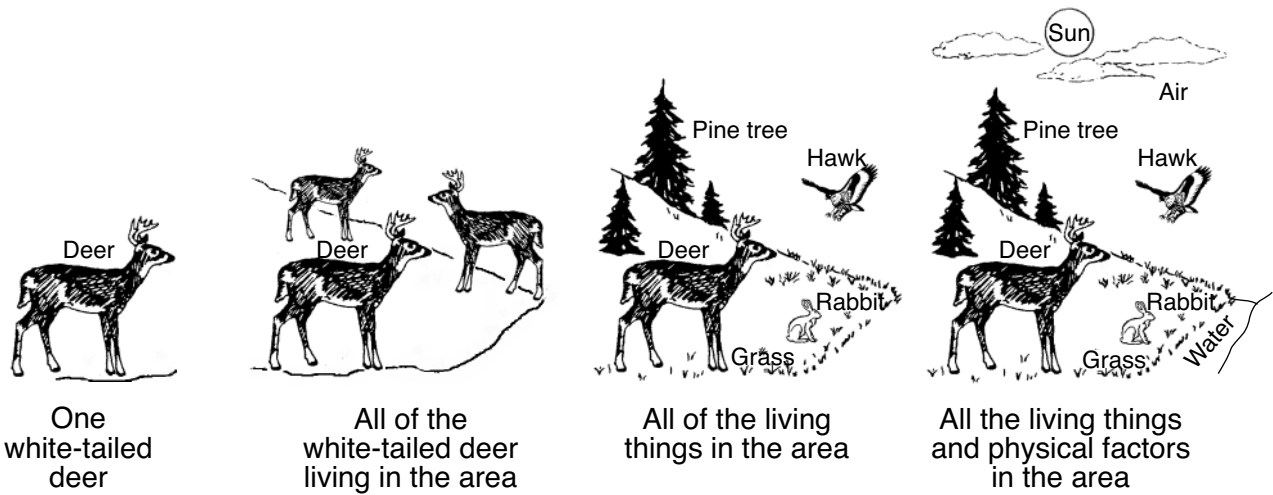
\_\_\_\_\_ %

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59 The chart below shows the behaviors of light, as indicated by the arrows, as light strikes three different surfaces labeled A through C. Place one check mark (✓) in each row to identify the reaction of light as it strikes each surface. [1]

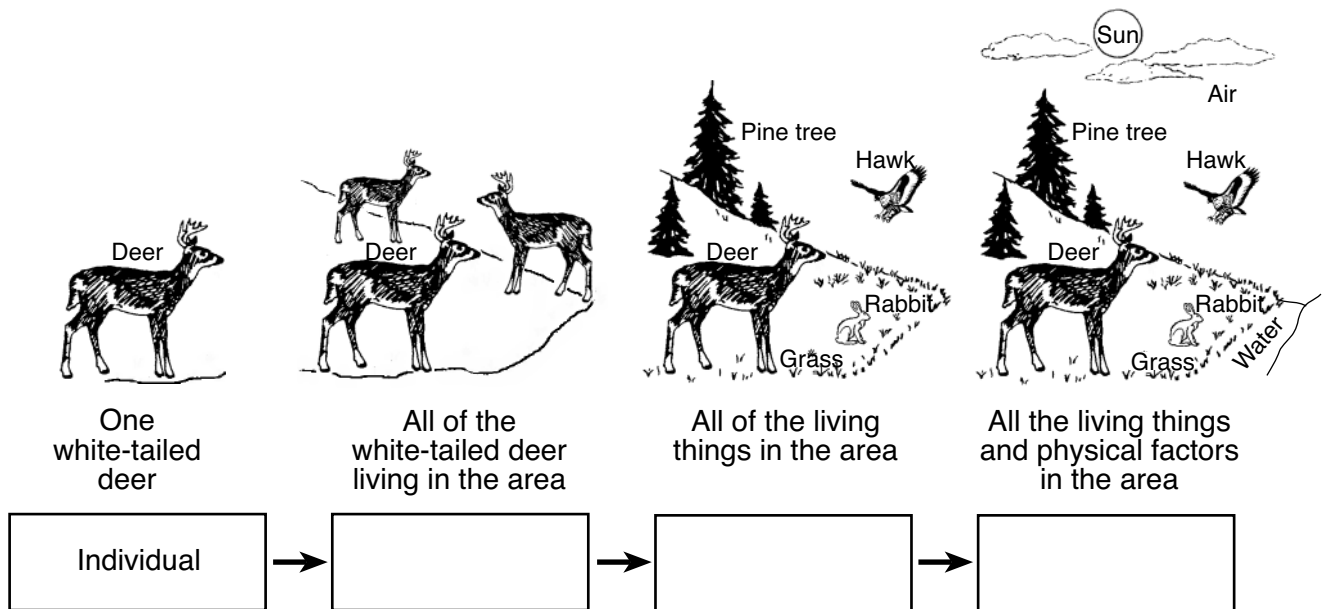
<b>Behavior of Light</b>	<b>Reaction of Light</b>		
	<b>Reflect</b>	<b>Refract</b>	<b>Absorb</b>
<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); margin-right: 10px;">Surface A</div>  </div>			
<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); margin-right: 10px;">Surface B</div>  </div>			
<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); margin-right: 10px;">Surface C</div>  </div>			

Base your answers to questions 60 and 61 on the diagram below and on your knowledge of science. The diagram represents the organizational levels in an environment. Descriptions of each organizational level are given.



60 Complete the diagram below by placing each of the labels below in the appropriate box below its description. [1]

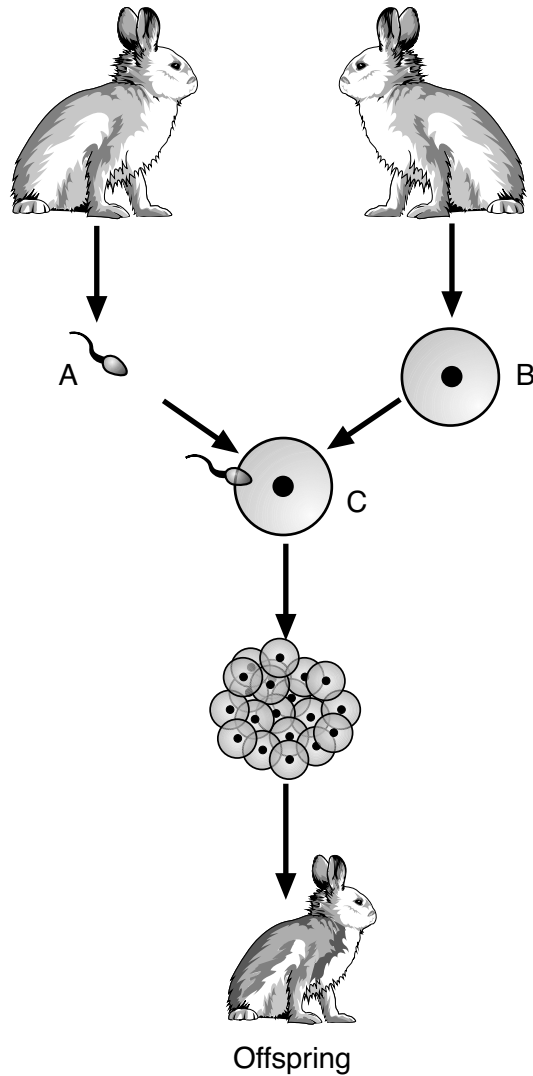
community      ecosystem      population



61 Identify the original source of energy in this environment. [1]

\_\_\_\_\_

Base your answers to questions 62 and 63 on the diagram below and on your knowledge of science. The diagram represents reproduction and development in rabbits.



(Not drawn to scale)

62 Identify the cells labeled *A* and *B*, and the process represented by letter *C*. [1]

Cell *A*: \_\_\_\_\_

Cell *B*: \_\_\_\_\_

Process *C*: \_\_\_\_\_

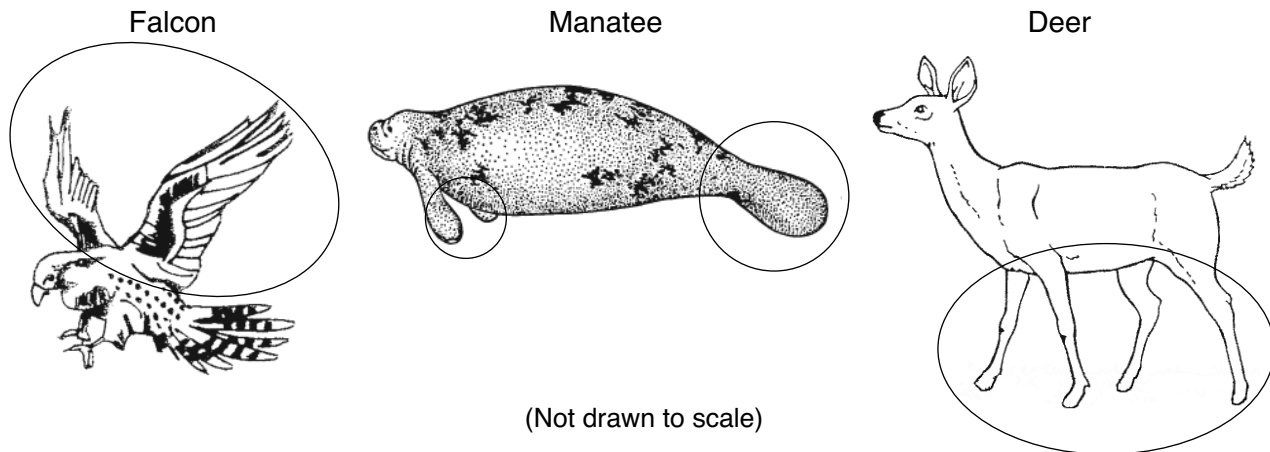
63 Explain why the offspring is *not* genetically identical to either parent. [1]

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Base your answers to questions 64 and 65 on the diagrams below and on your knowledge of science. The diagrams represent a falcon, a manatee, and a deer. Circles have been drawn around some body parts.



64 The circled parts of each organism allow for locomotion. Identify the *two* organ systems directly responsible for locomotion that are coordinated by the nervous system. [1]

\_\_\_\_\_ **system** and \_\_\_\_\_ **system**

65 Describe how the use of the circled structures is different for the falcon and manatee. [1]

Falcon: \_\_\_\_\_

Manatee: \_\_\_\_\_  
\_\_\_\_\_

Base your answers to questions 66 and 67 on the information below and on your knowledge of science.

Landfills are solid waste sites where garbage and other wastes are deposited and covered over with soil.

66 State *one negative* effect on the environment when a landfill is located in an area. [1]

\_\_\_\_\_  
\_\_\_\_\_

67 Identify *one* action humans can take to reduce the amount of garbage and other wastes they produce so that solid waste sites do not become overfilled. [1]

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Base your answers to questions 68 and 69 on the information below and on your knowledge of science.

### Carbohydrates and Proteins

Carbohydrates are nutrients that are broken down into simple sugars in the human body. These sugars are carried by the blood to all of the body cells. The cells release energy when the simple sugars are broken down further during the process of cellular respiration. Proteins are nutrients that are broken down by the body into amino acids. Amino acids are important molecules for creating new cells and making other compounds for life processes.

68 What nutrient is most directly used in the growth and repair of body tissues? [1]

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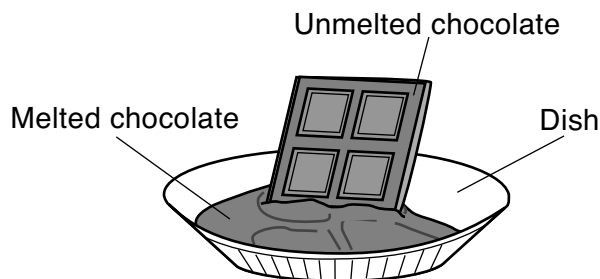
69 The amount of energy in food is measured in Calories. Explain what happens when a person consumes more Calories than the body can use for energy. [1]

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Base your answers to questions 70 and 71 on the diagram below and on your knowledge of science. The diagram represents a chocolate bar melting.



70 Explain why the melting of the chocolate bar is a physical change and *not* a chemical change. [1]

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71 At room temperature, chocolate bars are usually a solid, while water is usually a liquid. Explain why different materials can be in different phases at the same temperature. [1]

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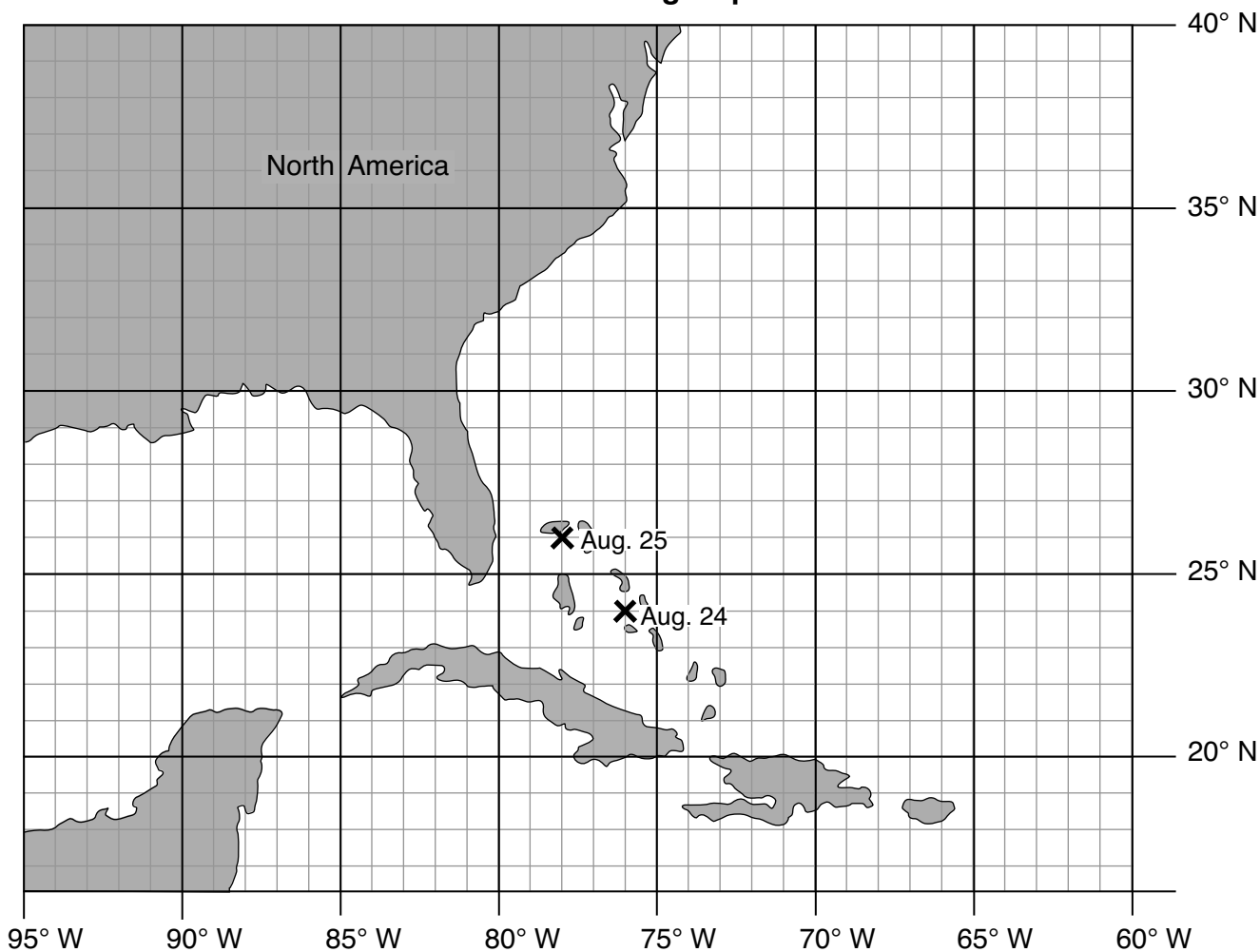
Base your answers to questions 72 and 73 on the table below and on your knowledge of science. The table shows the latitude ( $^{\circ}\text{N}$ ) and longitude ( $^{\circ}\text{W}$ ) of the center of Hurricane Katrina at 1:00 a.m. on several dates in August 2005.

**Location of Hurricane Katrina August 24 – 30, 2005**

Date	Location at 1:00 a.m.	
	Latitude ( $^{\circ}\text{N}$ )	Longitude ( $^{\circ}\text{W}$ )
August 24	24	76
August 25	26	78
August 26	25	81
August 27	24	84
August 28	25	87
August 29	28	90
August 30	34	88

72 The locations for Hurricane Katrina for August 24 and August 25 have been plotted on the hurricane tracking map below. Plot the *five* remaining locations of Hurricane Katrina shown in the data table using an **X** and connect *all seven* plots with a line, starting on August 24, to show the path of Hurricane Katrina. [1]

**Hurricane Tracking Map**



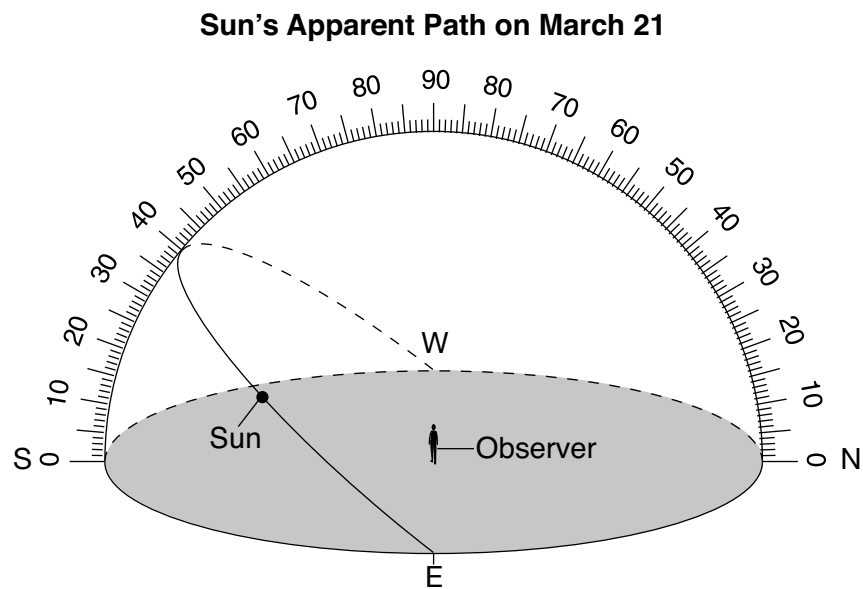
73 State *one* way humans can prepare for an approaching hurricane if given sufficient warning. [1]

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Base your answers to questions 74 and 75 on the diagram below and on your knowledge of science. The diagram shows the apparent path of the Sun across the sky for an observer in North America on March 21.



(Not drawn to scale)

74 Identify the compass directions in which the observer will see the sunrise and the sunset on March 21. [1]

Sunrise direction: \_\_\_\_\_

Sunset direction: \_\_\_\_\_

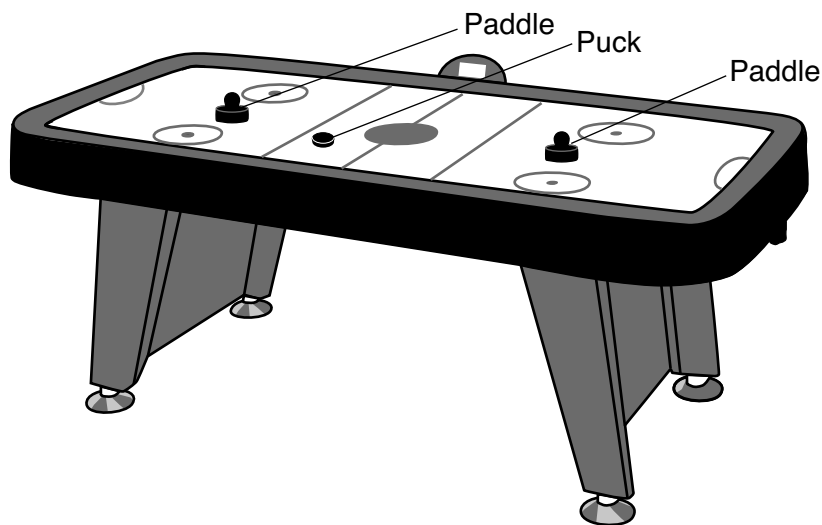
75 The observer concludes that the Sun appeared to move across the sky on a daily basis because Earth revolves around the Sun. Explain why the observer's conclusion is *incorrect*. [1]

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Base your answers to questions 76 through 78 on the diagram and information below, and on your knowledge of science. The diagram represents an air hockey table where a round, flat puck is hit by opposing players using hard, plastic paddles.



Two players played a game of air hockey while the power to the game was turned off. Each player used a hard, plastic paddle to hit a puck across the table to a scoring area on the other player's side of the table. With the power turned off, the puck moved slowly. When the players turned the power on, air was blown upwards through tiny holes on the surface of the tabletop, allowing the puck to glide on the air. This caused the puck to move very rapidly when hit.

76 Describe *one* way, other than turning the table on, that the players could have changed the puck to make it glide more easily. [1]

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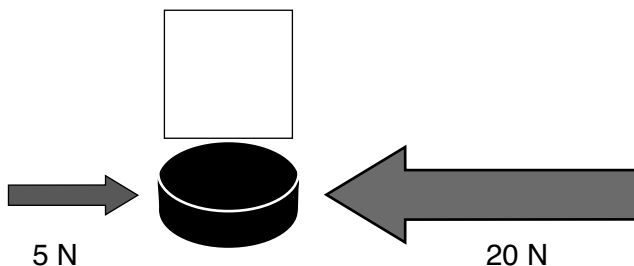
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77 Identify the type of energy used when a player's plastic paddle hits the puck and causes it to move. [1]

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78 In the diagram below, a stationary puck is shown being acted upon by two different forces at the same time.

In the box directly above the puck, draw a third arrow to indicate the direction in which the puck will move when acted upon by these two forces. The forces on the puck are measured in newtons (N). [1]



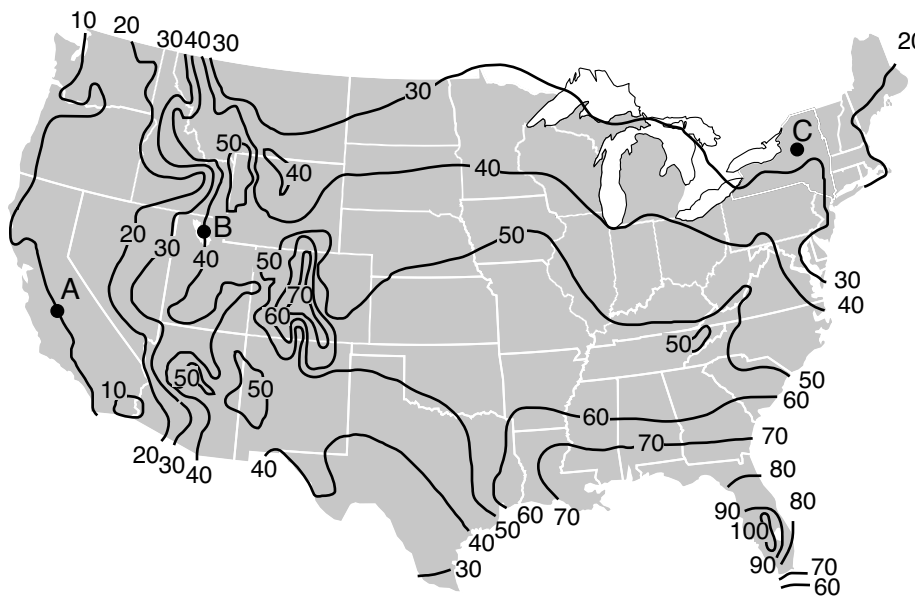


Base your answers to questions 79 through 81 on the passage and map below, and on your knowledge of science. Each line on the map represents the average number of days that thunderstorms occur each year in different locations in the United States. Points A, B, and C represent surface locations.

### Thunderstorms

A thunderstorm is a weather system that is accompanied by lightning and thunder. Some thunderstorms can bring about local flooding and large hail. Strong damaging winds and tornadoes may be produced during severe thunderstorms.

**Average Number of Days that Thunderstorms Occur Each Year in the United States**



79 Describe the change in the average number of days each year that thunderstorms are expected to occur as a person travels from location A to location B. [1]

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80 Determine the average number of days each year that the thunderstorms occur at location C. [1]

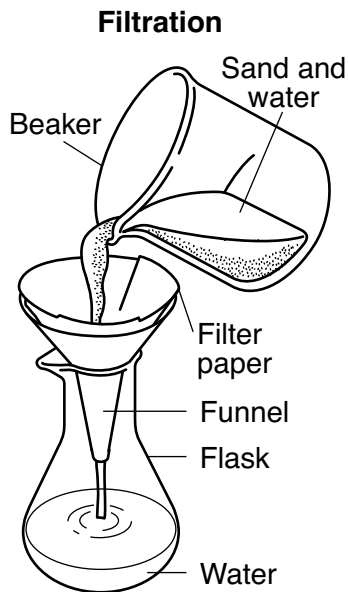
\_\_\_\_\_ days

81 Identify *two* types of hazardous weather conditions that may accompany severe thunderstorms. [1]

\_\_\_\_\_ and \_\_\_\_\_

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Base your answers to questions 82 and 83 on the diagram below and on your knowledge of science. The diagram represents the filtration of a mixture of sand and water.



82 State why the sand in the sand-and-water mixture is on the bottom of the beaker. [1]

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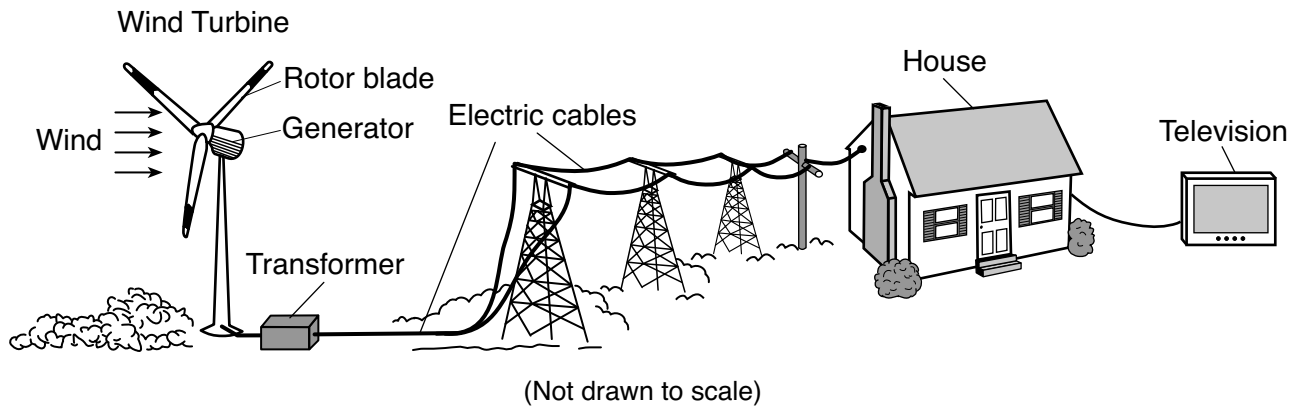
83 Describe the purpose of the filter paper in the diagram. [1]

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Base your answers to questions 84 and 85 on the diagram below and on your knowledge of science. The diagram represents a wind turbine being used to produce electricity. This electricity provides energy to appliances, such as a television, in a house.



84 The television converts electrical energy into other forms of energy. Identify *two* forms of energy that are produced by the television. [1]

(1) \_\_\_\_\_

(2) \_\_\_\_\_

85 Describe *one* advantage of producing electricity through the use of a wind turbine instead of through the use of fossil fuels. [1]

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# GRADE 8 INTERMEDIATE-LEVEL SCIENCE

## For Teacher Use Only Part II Credits

Question	Maximum Credit	Credit Allowed
46	1	
47	1	
48	1	
49	1	
50	1	
51	1	
52	1	
53	1	
54	1	
55	1	
56	1	
57	1	
58	1	
59	1	
60	1	
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73	1	
74	1	
75	1	
76	1	
77	1	
78	1	
79	1	
80	1	
81	1	
82	1	
83	1	
84	1	
85	1	
Total	40	