Texas STAAR 2017 Biology

Exam Materials
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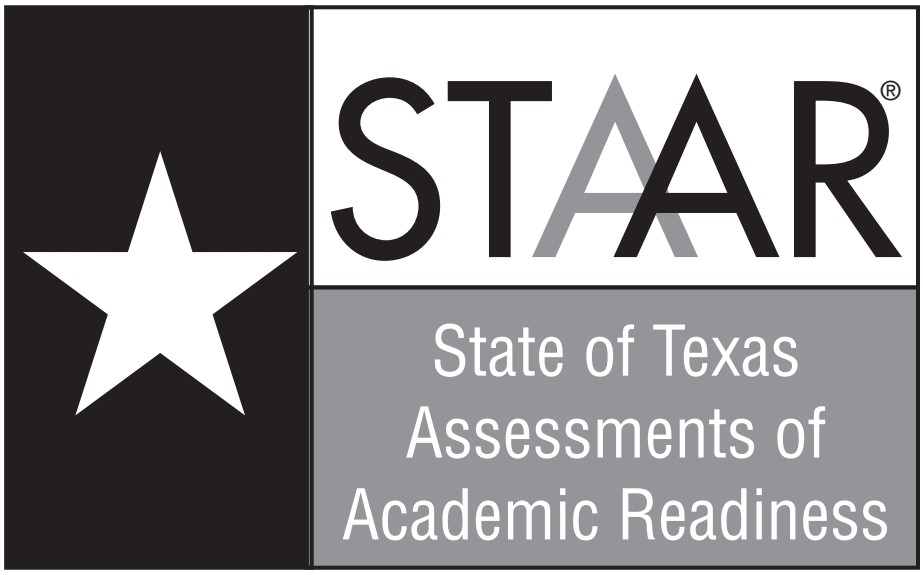
Answer Key Materials
Page 35



Biology

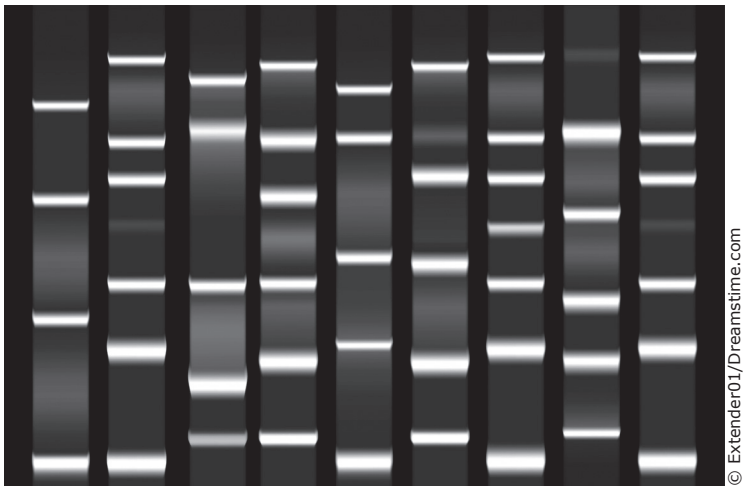
Administered May 2018

RELEASED

DIRECTIONS

Read each question carefully. Determine the best answer to the question from the four answer choices provided. Then fill in the answer on your answer document.

1 The results shown in the picture were obtained using a technique known as gel electrophoresis. This technique separates mixtures of DNA. In the picture nine different samples of DNA are compared.



Gel electrophoresis can be used to —

A determine the differences in ages of a set of people

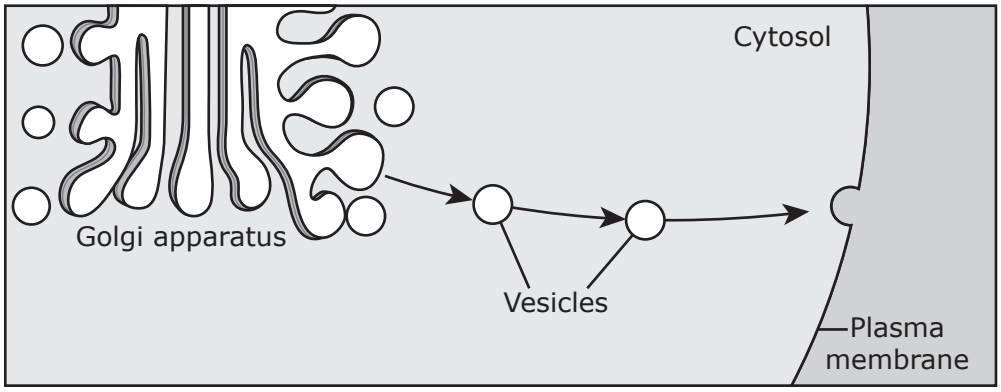
B identify how closely two individuals are related

C determine how effective certain medications are

D identify different blood types

2 The diagram illustrates the activity of vesicles during a cellular process.

Vesicle Activities in a Cell



Which statement best explains the function of the vesicles?

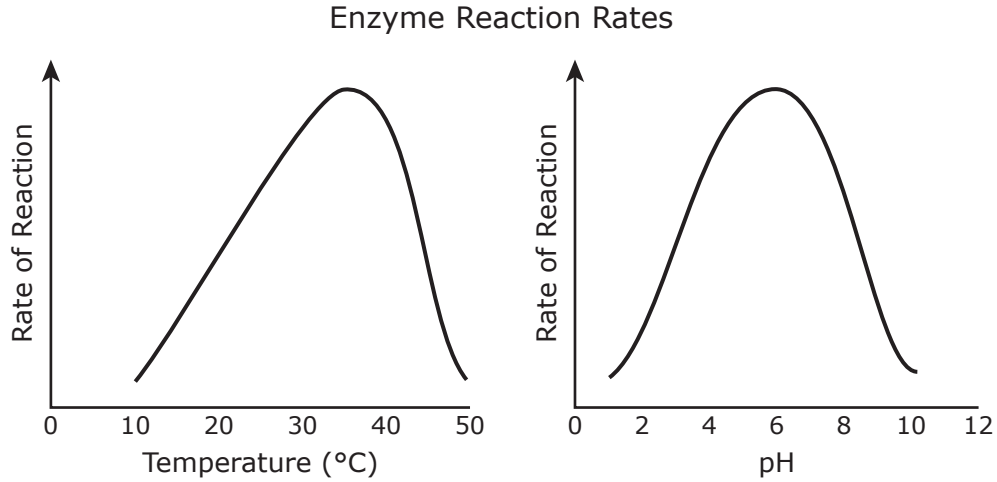
F Delivering packaged materials to the Golgi apparatus for protein synthesis

G Exchanging genetic information between the Golgi apparatuses of separate cells

H Extracting portions of the Golgi apparatus to be regenerated for growth within the cell

J Transporting packaged molecules from the Golgi apparatus to be released out of the cell

3 The graphs show the reaction rate for an enzyme across a range of temperatures and pH.



Based on these data, this enzyme functions best at what temperature and pH?

A Temperature of 27°C and a pH of 4

B Temperature of 37°C and a pH of 6

C Temperature of 40°C and a pH of 8

D Temperature of 50°C and a pH of 10

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4 The Indian leaf butterfly has traits that allow it to resemble a leaf. The bright colors of the monarch butterfly indicate that the butterfly tastes bad and can be poisonous.

How does the appearance of these butterflies help them to survive?

F The Indian leaf butterfly is able to avoid predators while the monarch butterfly warns predators away.

G The Indian leaf butterfly frightens predators away while the monarch butterfly poisons predators before they can eat it.

H Both butterflies rely on camouflage to avoid predation.

J Both butterflies cooperate with one another to avoid predation.

5 The female reproductive and endocrine systems work interactively for which main purpose?

A To maintain homeostasis by removing waste products from the body

B To release neurotransmitters during times of stress

C To control hormone levels to prepare the body for pregnancy

D To exchange gases to support cellular aerobic respiration

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6 Scientists can determine relatedness among organisms by comparing partial amino acid sequences. The table shows four partial amino acid sequences from four organisms.

Partial Amino Acid Sequence

Organism 1	SER LEU VAL GLU
Organism 2	LEU SER ASN VAL
Organism 3	ALA LEU SER GLU
Organism 4	THR LEU SER GLU

Which organism is the LEAST related to the other three organisms?

F Organism 1

G Organism 2

H Organism 3

J Organism 4

7 In the 1880s, Louis Pasteur developed a method of weakening viruses. The weakened viruses could be injected into healthy individuals.

How is this method effective in fighting viral diseases?

A The immune system develops antibodies in response to the weakened viruses.

B The weakened viruses attach to unaffected viruses in the host and interrupt the viral reproductive cycle.

C The rate of genetic mutation in the host is decreased due to the introduction of weakened viruses.

D Weakened viruses are unable to enter the host organism.

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8 In humans blood type is determined by the A, B, and O alleles. The A and B alleles are codominant to each other and dominant over the O allele. An individual with the AO genotype and an individual with the BO genotype can produce offspring with which of the following phenotypes?

F O only

G A or B only

H A, B, or O only

J A, B, AB, or O

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9 Which of these best demonstrates mutualism between certain types of bacteria and humans?

A Intestinal bacteria obtain nutrients from the gut and produce vitamin K used by humans.

B Bacteria become resistant to antibacterial medication that humans use for treatment.

C Invasive bacteria at an area of injury produce toxins that damage healthy tissues of the human body.

D Bacteria in improperly prepared food is consumed by humans, causing food poisoning.

10 What is the role of mRNA in expressing specialized structures?

F Making energy available for cellular activities

G Creating bonds to form biomolecules

H Producing sugars that assist with replication

J Providing information to form proteins

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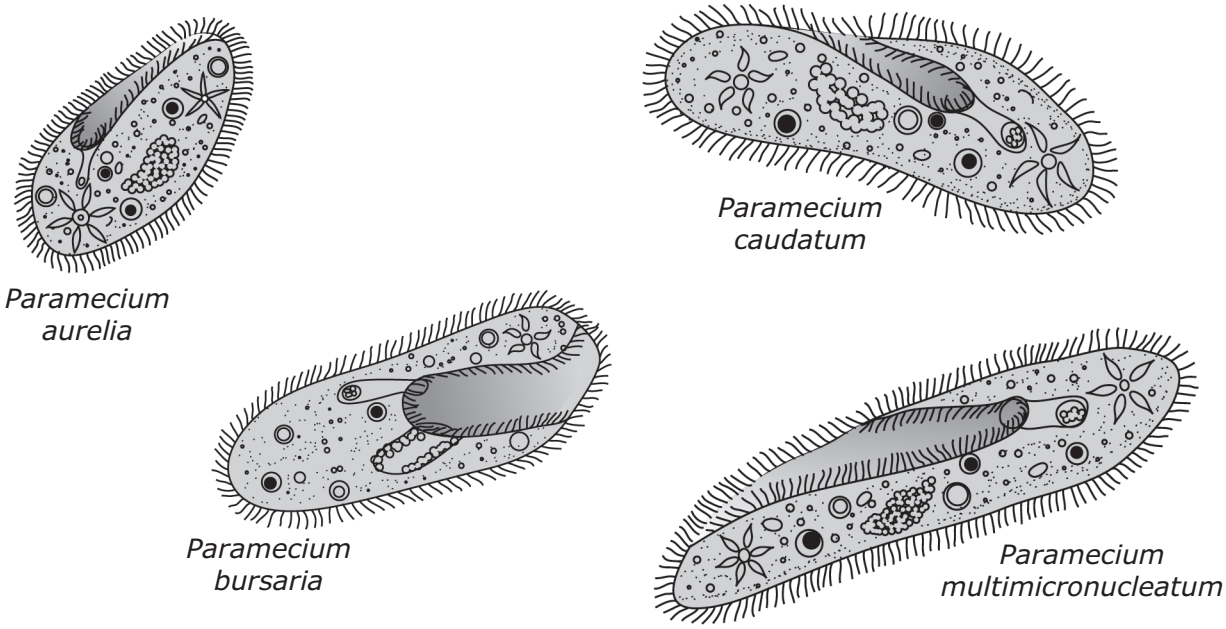
11 A student used a microscope to study four members of the phylum Ciliophora. Members of this phylum move when propelled by hundreds of tiny cilia.



Although these organisms belong to the same phylum, they are classified as different —

A families

B species

C kingdoms

D orders

12 A mutation in which types of cells would only affect the organism and not future generations?

F Egg cell and liver cell

G Sperm cell and egg cell

H Nerve cell and brain cell

J Sperm cell and lung cell

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13 In the mid-1980s an aggressive strain of algae known as *Caulerpa* was accidentally introduced into the Mediterranean Sea when a seaside aquarium cleaned out its tanks. The algae contains a toxin that prevents native herbivores from consuming it. *Caulerpa* quickly spread over the sea floor, crowding out many species including sponges, corals, sea fans, and lobsters.

Which statement explains the most likely impact *Caulerpa* has had on the biodiversity in the Mediterranean Sea?

A The presence of *Caulerpa* within an ecosystem is an indicator of the ecosystem's health.

B The spread of *Caulerpa* improved the habitat for many species of sea grasses, and increased the biodiversity.

C *Caulerpa* interbred with native species with the same adaptations within the ecosystem.

D *Caulerpa* became dominant within the ecosystem and reduced the biodiversity.

14 A sequence of a DNA template strand is shown.

3′ TCC AAT GGC TTA TTT GCA 5′

mRNA Codon Chart

First Base	Second Base: U	Second Base: C	Second Base: A	Second Base: G	Third Base
U	Phenylalanine	Serine	Tyrosine	Cysteine	U
	Phenylalanine	Serine	Tyrosine	Cysteine	C
	Leucine	Serine	Stop	Stop	A
	Leucine	Serine	Stop	Tryptophan	G
C	Leucine	Proline	Histidine	Arginine	U
	Leucine	Proline	Histidine	Arginine	C
	Leucine	Proline	Glutamine	Arginine	A
	Leucine	Proline	Glutamine	Arginine	G
A	Isoleucine	Threonine	Asparagine	Serine	U
	Isoleucine	Threonine	Asparagine	Serine	C
	Isoleucine	Threonine	Lysine	Arginine	A
	Methionine	Threonine	Lysine	Arginine	G
G	Valine	Alanine	Aspartic acid	Glycine	U
	Valine	Alanine	Aspartic acid	Glycine	C
	Valine	Alanine	Glutamic acid	Glycine	A
	Valine	Alanine	Glutamic acid	Glycine	G

Which of these is the correct amino acid chain produced from the DNA template strand?

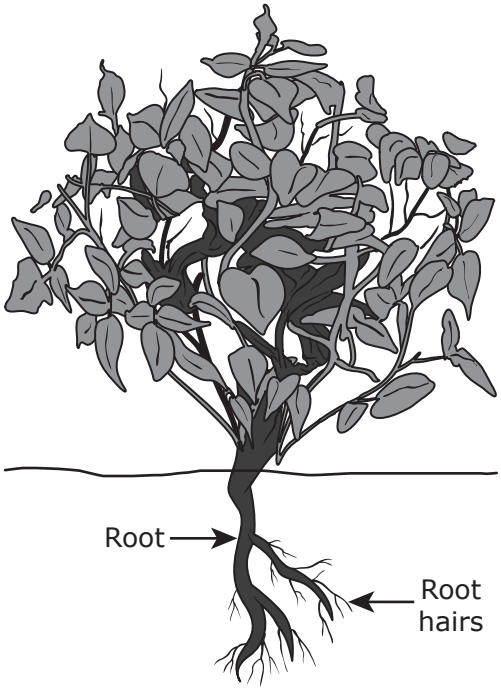
F Arginine - Leucine - Proline - Asparagine - Lysine - Arginine

G Tryptophan - Phenylalanine - Leucine - Glycine - Asparagine - Phenylalanine

H Serine - Leucine - Proline - Asparagine - Lysine - Arginine

J Tryptophan - Phenylalanine - Leucine - Glycine - Asparagine - Serine

15 Plant roots have extensions called root hairs. These root hairs are important in the homeostasis of the plant.



Which statement best explains the importance of the root hairs to the stems and leaves of the plant?

A Root hairs convert minerals into glucose for immediate use by cells.

B Root hairs decrease the need for osmosis and diffusion in vascular tissue.

C Root hairs prevent water loss in leaves through transpiration and gas exchange.

D Root hairs increase the surface area of the roots for nutrient and water absorption.

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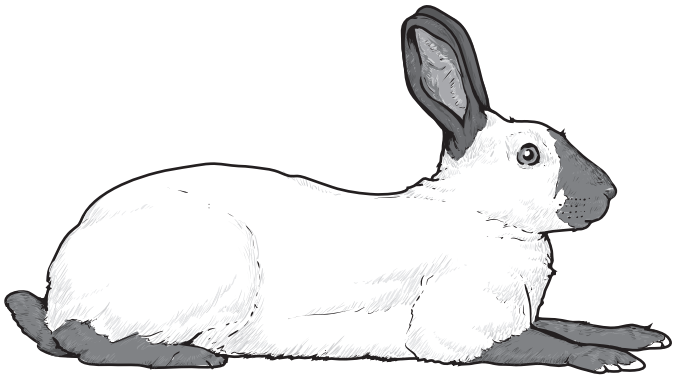
16 The Himalayan rabbit's habitat has cold, snowy winters and mild summers. The body is typically covered in white fur except for the nose, feet, tail, and ears, which are covered in black fur.

Himalayan Rabbit



A scientist shaved an area of white fur on the back of a Himalayan rabbit and placed an ice pack over the shaved area. The shaved area grew black fur.

Which of these best explains why the hair that grew back where the ice pack was placed was black and not white?

F The genes for black hair were activated by specific temperatures.

G The white hair mutated to black hair as the rabbit's body temperature decreased.

H The coat color changed from white to black with the age of the rabbit.

J White hair only grows during certain times of the year.

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17 A small town in the piney woods of East Texas has a soccer field composed of native grasses. The soccer field is mowed once a week.

What effect does continual mowing have on the ecology of the field?

A Mowing increases the likelihood of nonnative species displacing native species.

B Mowing increases the number of species found in the field.

C Mowing causes different types of communities to form across the field.

D Mowing maintains a low species diversity by inhibiting further succession.

18 Which list correctly identifies characteristics that protists share with animals?

F
- Motile
- Reproduce sexually
- Photosynthetic

G
- Motile
- Multicellular
- Photosynthetic

H
- Eukaryotic
- Motile
- Reproduce sexually

J
- Motile
- Prokaryotic
- Multicellular

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19 The activities in the cell cycle occur during specific phases. In which phase of the cell cycle is DNA replicated?

A Mitosis

B G_1 phase

C G_2 phase

D S phase

20 The table lists some organisms found in a swamp ecosystem and their sources of energy.

Swamp Ecosystem Data

Organism	Energy Source
Raccoon	Frogs, bird eggs, fish, insects, snails, reptiles, plants
Grass carp	Plants, mosquito larvae
Great blue heron	Fish, frogs
American alligator	Reptiles, birds, fish, mammals
Southern leopard frog	Insects
Butterfly orchid	Sunlight
Eastern mud turtle	Fish, snails, tadpoles, plants, worms, insects

When constructing an energy pyramid of the swamp ecosystem, which of these would be placed at the top of the pyramid?

F Grass carp

G American alligator

H Eastern mud turtle

J Great blue heron

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21 The white cattail is a hybrid species of plant that is a result of the cross between the broad-leaved cattail and the narrow-leaved cattail. Over time, the white cattail has established itself in the wetlands of Midwestern states.

Which of these explains the success of the white cattail?

A Favorable genes from parental generations provide advantageous characteristics to the hybrid species.

B Hybridization produces offspring traits that allow different species to survive in extreme environments.

C Inherited traits passed on from parental generations make hybrid species more susceptible to disease.

D Hybrid species display more adaptations due to their reduced genetic diversity.

22 An individual who participates in a long-distance run on a hot day will produce large quantities of sweat. As a result of the excessive sweating, the amount of urine produced by the kidneys will change.

How will the kidneys respond to help the individual's body maintain homeostasis?

F The kidneys will decrease urine production so the body can maintain blood pH.

G The kidneys will increase urine production to eliminate excess salt in the body.

H The kidneys will decrease urine production to allow the body to conserve water.

J The kidneys will increase urine production so the body can absorb more nutrients.

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23 The gray squirrel, Eastern fox squirrel, and red squirrel are all different species of squirrels. Why is having a scientific name for each species of an organism important?

A To prevent existing named organisms from having their names changed as they become extinct

B To keep the classification system from being altered as new organisms are discovered

C To allow organisms to be placed in many classification levels at the same time

D To standardize the naming and organization of organisms to avoid confusion

24 Students are given data from an investigation that identified some of the chemical elements present in four different samples.

Elements Present in Samples

Sample	Elements
1	Hydrogen, phosphorus, and nitrogen
2	Aluminum, silicon, and copper
3	Calcium, potassium, and nitrogen
4	Iron, oxygen, and magnesium

Which sample was most likely DNA?

F Sample 1

G Sample 2

H Sample 3

J Sample 4

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25 Saprophytes are fungi that feed on dead and decomposing organisms. They secrete enzymes that digest components of cell walls, such as cellulose and lignin.

Which statement explains why these fungi are an important part of the biogeochemical cycle?

A Saprophytes perform gas exchange that assists the cellular activities of autotrophs.

B Saprophytes extract minerals from living tissue to recycle them back into the soil.

C Saprophytes transport nutrients through the xylem and phloem in autotrophs.

D Saprophytes return organic material to the soil for use by living organisms.

26 An advertisement for a health supplement for dogs claims to build lean muscle and strengthen tendons and ligaments, as well as provide energy. Which two biomolecules must the supplement contain to provide these benefits?

F Carbohydrates and lipids

G Proteins and carbohydrates

H Nucleic acids and carbohydrates

J Lipids and nucleic acids

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27 Scientists have observed many types of tropical fish moving beyond their traditional ocean ranges into waters that have historically been more temperate. These fish compete for food with native fish, consuming much from the kelp forests and beds of sea grass.

The expansion of the ranges of tropical fish was most likely caused by —

A agricultural runoff that contributes to dead zones in the ocean

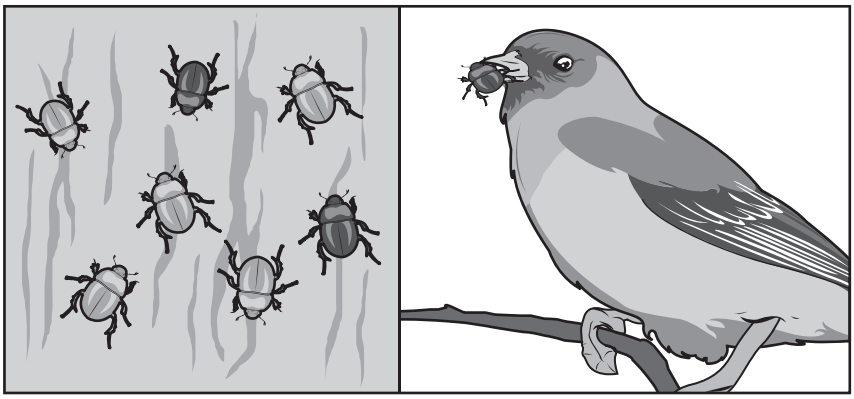
B global droughts that raise the salt concentration of ocean waters

C the rising temperatures of ocean waters

D acid rain pollution that lowers the pH of ocean waters

28 The diagram shows light- and dark-colored beetles that live on a tree.

Predator and Prey Relationship



Which result is most likely to occur to the beetle population due to predation over time?

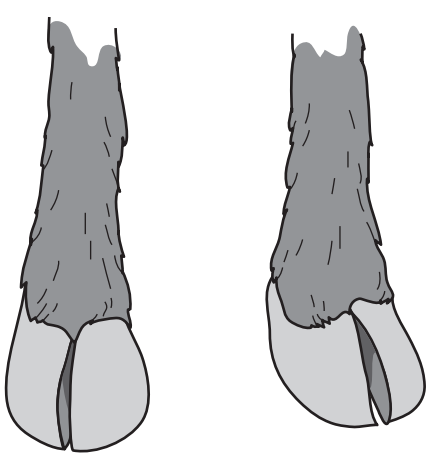
F The number of light-colored beetles in the population will increase.

G There will be more dark-colored beetles than light-colored beetles.

H The number of light-colored beetles will decrease.

J The dark-colored beetles will move to a different type of tree.

29 In cattle the allele for cloven hooves (H) is dominant over the allele for mule-foot hooves (h). The phenotype for each trait is shown in this picture.



Cloven hooves

Mule-foot hooves

What is the probability of cloven hooves in the offspring of parents that are heterozygous for the trait?

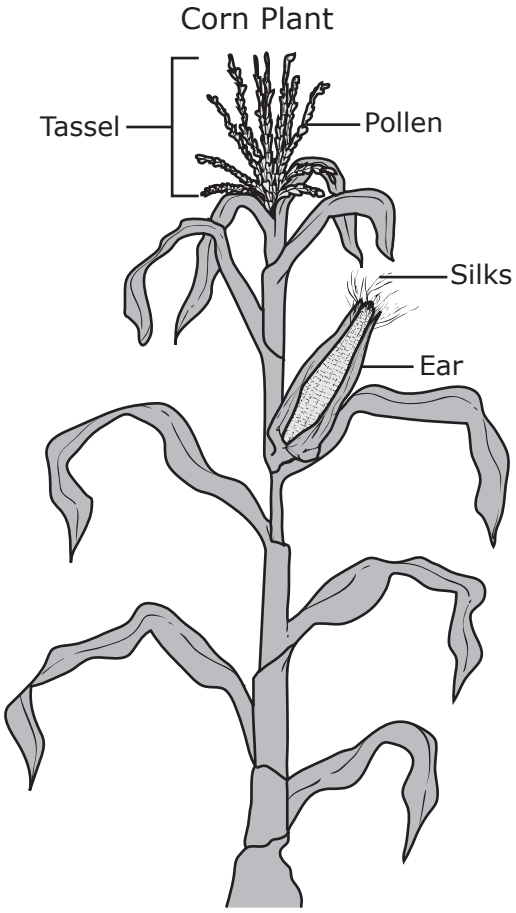
A 25%

B 50%

C 75%

D 100%

30 A corn plant produces both male and female flowers. The male flower forms the tassel and the female flower forms the ear of corn. The silks that emerge from the ear are the stigma of the female flower. Each silk leads to an ovule that can become a corn seed.



Which of these must happen for corn seeds to develop on the ear?

F More tassels than silks need to be present on the same plant.

G Pollen grains must fall from tassels and land on the silks of the ear.

H Pollen must be transported from the tassel to the silk through the phloem.

J The tassels must come into direct contact with the silks of the ear.

31 Adaptations that result from natural selection are expected to increase the fitness of an organism. In terms of natural selection, which of the following best describes fitness?

A Being able to escape from predators

B Being among the strongest organisms in a population

C Being able to survive, find a mate, and produce offspring

D Being able to survive long enough to reach the adult stage

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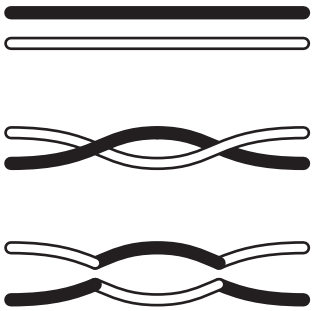
32 In the early 1900s, Thomas Hunt Morgan was among the first scientists to contribute to the chromosome theory of heredity. Morgan's investigations into heredity in fruit flies led him to propose that the event represented in the diagram sometimes occurs.



Which statement about the event represented in the diagram is valid?

F The event represents RNA translation in the smooth endoplasmic reticulum.

G The event takes place in bacterial cells.

H The event produces genetically identical daughter cells.

J The event provides genetic diversity in eukaryotic cells.

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33 The human body is composed of organ systems. Which list represents a system organized from least to most complex?

A Heart → cardiac muscle → muscle tissue → muscle cell

B Lung tissue → trachea → nostrils → circulatory system

C Muscle cell → muscle tissue → biceps muscle → muscular system

D Integumentary system → skin cell → hair → sweat glands

34 Some components of cells are listed.

1. Cytoplasm
2. Nucleus
3. Chloroplasts
4. Cell Wall
5. Cell membrane

Which of the components could be observed using a microscope in a prepared slide of leaf epidermal cells but not in a prepared slide of human cheek cells?

F Components 2 and 3 only

G Components 3 and 4 only

H Components 1, 2, and 3 only

J Components 1 and 5 only

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35 Niles Eldredge and Stephen Jay Gould researched the lenses of the eyes of fossil trilobites of different species. In 1972 they published a paper in which they described the tendency of a species to remain the same until a sudden change in the environment causes a new related species to appear.

Which hypothesis was most challenged by the work of Eldredge and Gould?

A Redi's hypothesis that spontaneous generation does not occur

B Haeckel's hypothesis that embryological development mimics the evolution of species

C Wallace's hypothesis that geography affects the distribution of species

D Darwin's hypothesis that the development of species is a slow, gradual process

36 Which part of a DNA molecule is responsible for the direct coding of specific traits in an organism?

F The number of hydrogen bonds that hold the strands of DNA together.

G The number of carbons in the DNA molecule.

H The sequence of nucleotide bases in the DNA molecule.

J The sequences of phosphates along each DNA strand.

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37 When mammals get an infection, their internal body temperature often rises 2 to 3 degrees Celsius. The body gets the energy it needs to react to an infection by —

A increasing the rate of cellular division

B decreasing the rate of glucose movement into the cell

C increasing the rate of cellular respiration in mitochondria

D decreasing the rate at which carbon dioxide is removed from the cell

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38 Scientists use zebra fish to study human genetic diseases because zebra fish and humans share many of the same genetic diseases.

Which statement describes why zebra fish experience similar genetic diseases as humans?

F Zebra fish have an omnivorous diet similar to that of humans.

G Zebra fish have nucleotide sequences similar to those of humans.

H Zebra fish go through embryonic stages similar to those of humans.

J Zebra fish produce gametes through a process that is similar to that of humans.

39 How do the circulatory system and immune system work together to respond to an injury?

A Increased blood flow kills healthy cells which prevents infection at the site of the injury.

B Increased blood flow removes infected cells from the body at the site of the injury.

C Increased blood flow carries white blood cells to the site of the injury.

D Increased blood flow allows for an increase in the exchange of O_2 and CO_2 at the site of the injury.

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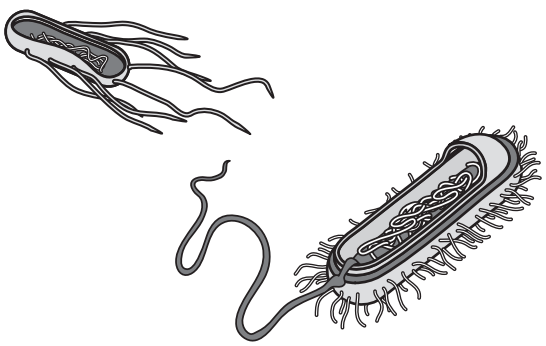
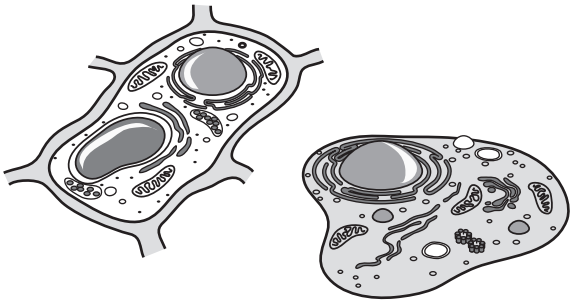
40 A student groups different types of cells as shown.

1.	2.
	

Which table headings should the student use for the two groups?

F

1. Animal Cells	2. Plant Cells

G

1. Prokaryotic Cells	2. Eukaryotic Cells

H

1. Mobile Cells	2. Motile Cells

J

1. Fungal Cells	2. Bacterial Cells

41 Enchanted Rock State Natural Area is located in Central Texas. Enchanted Rock is a dome of granite. The area contains four easily identifiable communities. The table describes characteristics of each type of community in the area.

Communities in Enchanted Rock State Natural Area

Type of Community	Dominant Characteristics
Open oak woodland	Several species of oaks, cacti, and some scattered grasses among scattered boulders
Mesquite grassland	Mesquite trees, abundant grasses in areas with thick soil, and few boulders
Floodplain	A thick mix of trees, shrubs, grasses, and numerous wildflowers; floods with heavy rains
Granite rock	Barren rock with lichen patches

A student studying primary succession should focus on which of these communities?

A Open oak woodland

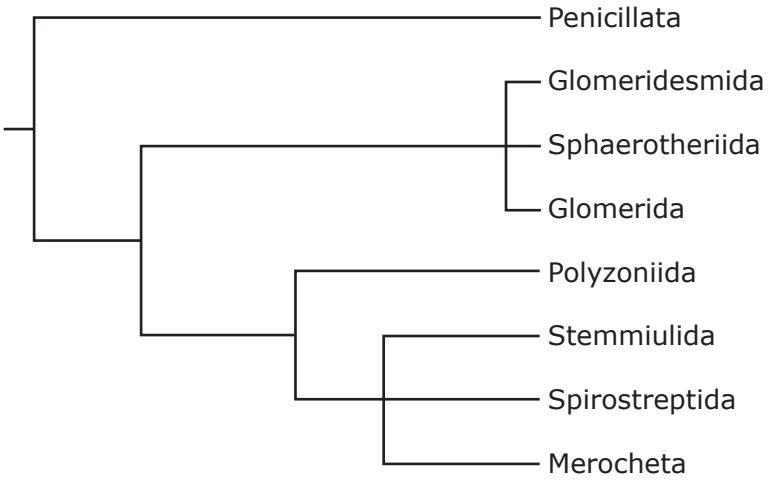
B Mesquite grassland

C Floodplain

D Granite rock

42 The relationships among different orders of millipedes are shown in the cladogram.

Cladogram



Based on this cladogram, which statement best describes relationships among millipede orders?

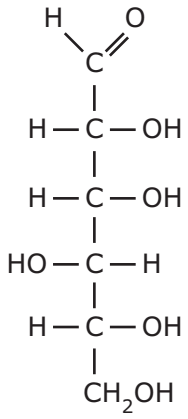
F Stemmiulida is more closely related to Merocheta than Penicillata is to Merocheta.

G Spirostreptida is more closely related to Glomerida than Sphaerotheriida is to Glomerida.

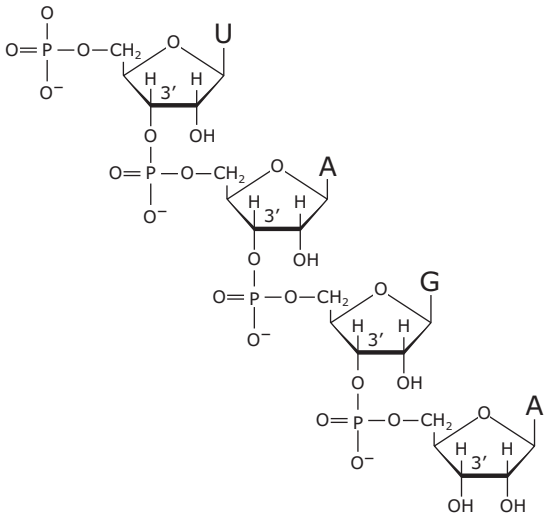
H Polyzoniida is more closely related to Glomeridesmida than Sphaerotheriida is to Glomeridesmida.

J Merocheta is more closely related to Glomeridesmida than Glomerida is to Glomeridesmida.

43 Two biomolecules are shown.



Molecule X



Molecule Y

Which of the following best describes these biomolecules?

A Molecule X and Molecule Y are both carbohydrates.

B Molecule X is a nucleic acid, and Molecule Y is a carbohydrate.

C Molecule X and Molecule Y are both nucleic acids.

D Molecule X is a carbohydrate, and Molecule Y is a nucleic acid.

44 In North American forests, two species of birds, nuthatches and brown creepers, forage on the same trees for insects. Brown creepers feed on insects found near the bottom of the tree trunk, while nuthatches feed on insects in the top part of the tree.

The difference in foraging behavior most likely affects the nuthatches and brown creepers by —

F allowing the birds to avoid many types of predators

G reducing competition between the birds for resources

H preventing the birds from interbreeding with each other

J establishing dominance between the birds for nesting sites

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45 Fruits grown in hot climates are usually less sweet than those grown in cooler temperatures. The high temperatures increase the rate of respiration in the plants, thus reducing the sugar content in some fruits.

Why does increased respiration in the leaves and stems reduce the sugar content in the fruits of a plant?

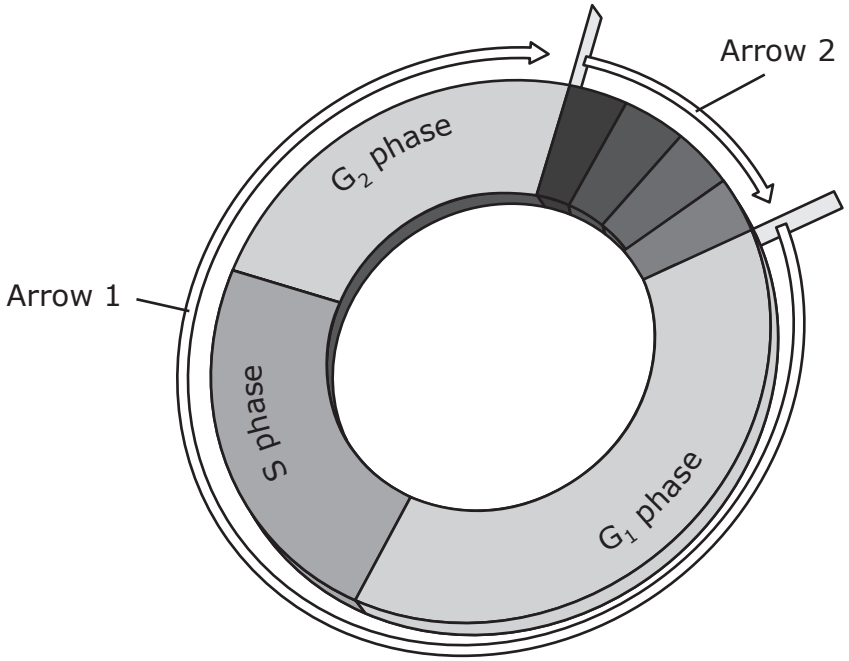
A Chloroplasts move from the fruits to the leaves and stems to provide energy for respiration.

B The flow of nutrients shifts from the phloem to the xylem, moving nutrients away from the fruits.

C Sugars are moved from the fruits to the roots for storage.

D Sugars produced in the leaves are used as an energy source instead of being stored in fruits.

46 This model of the cell cycle includes two arrows that each represent a process in the cycle.



What do the two arrows represent?

F Arrow 1 represents prophase, and Arrow 2 represents interphase.

G Arrow 1 represents mitosis, and Arrow 2 represents meiosis.

H Arrow 1 represents interphase, and Arrow 2 represents mitosis.

J Arrow 1 represents meiosis, and Arrow 2 represents prophase.

---

47 Which statement explains how producers are dependent upon consumers for their survival?

A Consumers supply oxygen for producers to undergo aerobic respiration.

B Consumers produce carbon dioxide for producers to use during photosynthesis.

C Consumers provide chemical energy needed by producers for cellular respiration.

D Consumers make lactic acid that producers use in photosynthesis.

48 Which of these describes a difference between viruses and cells?

F Cells contain protein, and viruses contain only carbohydrates.

G Viruses have flagella, and cells have only cilia.

H Cells reproduce independently, and viruses require a host to reproduce.

J Viruses have membranes made of proteins, and cells have membranes made of nucleic acid.

---

49 As part of the nitrogen cycle, animals acquire some amino acids by doing which of the following?

A Breathing air

B Eating plants

C Drinking water

D Producing waste

---

50 Which two body systems must directly interact for vertebrate organisms to exchange gases?

F Skeletal system and muscular system

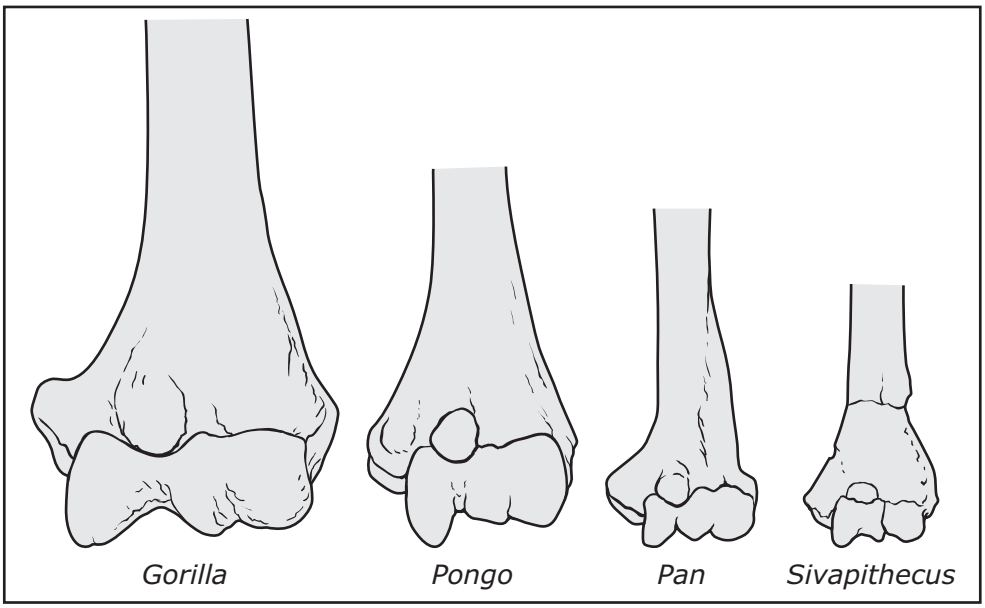
G Excretory system and reproductive system

H Circulatory system and respiratory system

J Digestive system and immune system

51 The image shows part of the humerus bone in different genera of primates.

Images of Different Humerus Bones



Which statement is best supported by the observable structures of the different humerus bones?

A The primates lived in similar environments.

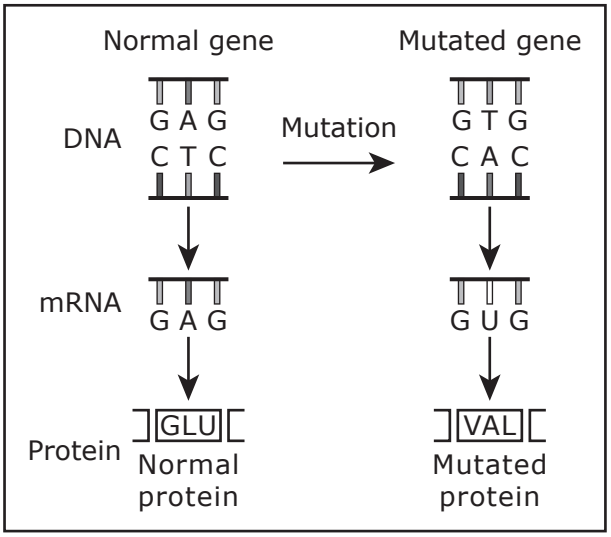
B The primates shared a common ancestor.

C The primates interbreed with similar organisms in a population.

D The primates had diets that consisted of similar types of foods.

52 A certain mutation in the gene for hemoglobin results in the red blood cells becoming sticky, rigid, and irregularly shaped. These irregularly shaped red blood cells block the flow of blood throughout the body. A single base mutation is responsible for these irregularly shaped blood cells.

Hemoglobin Gene Mutation



Which of these mutations most likely results in the mutated hemoglobin gene?

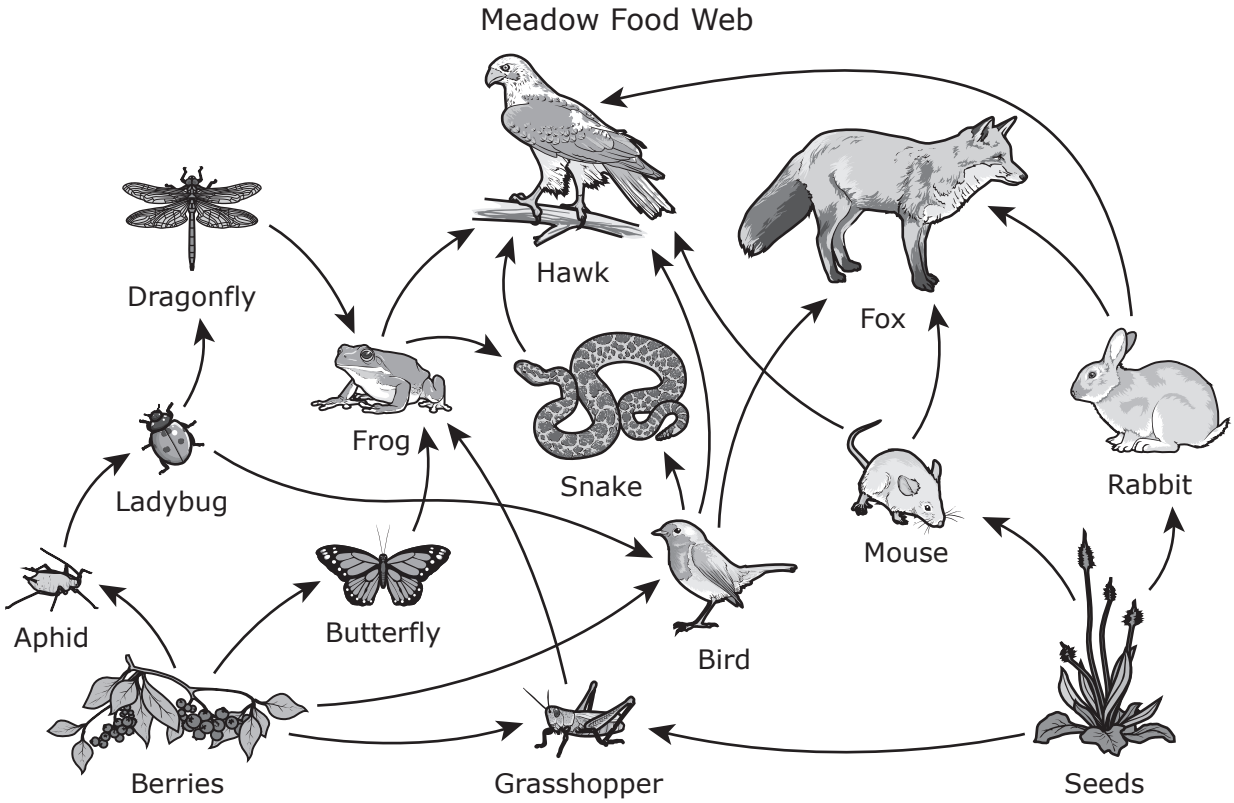
F Insertion

G Deletion

H Duplication

J Substitution

53 A partial meadow food web is shown.



Based on this food web, which organisms are direct sources of energy for secondary consumers?

A Aphid
Bird
Rabbit

B Ladybug
Fox
Dragonfly

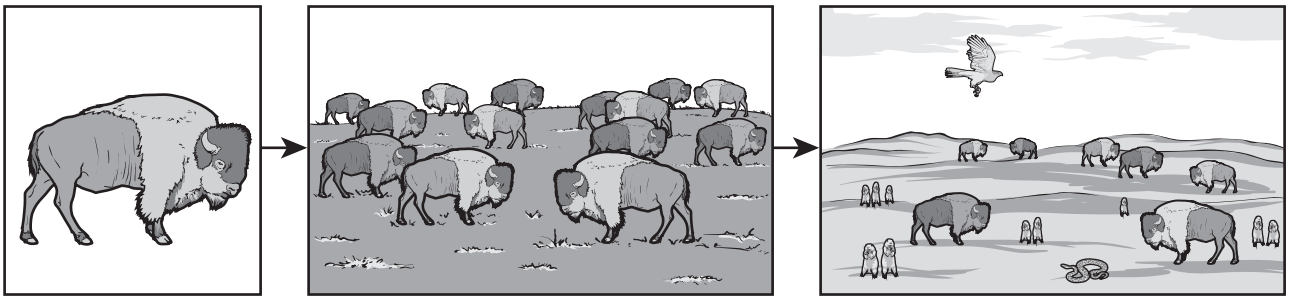
C Frog
Butterfly
Berries

D Mouse
Snake
Hawk

GO ON

54 The diagrams show some of the levels of biological organization.

Levels of Biological Organization



In what order are the levels in the diagrams?

F Population → community → ecosystem

G Organism → community → population

H Organism → population → community

J Ecosystem → population → community

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS ON THE ANSWER DOCUMENT.

STOP

Item Number	Reporting Category	Readiness or Supporting	Content Student Expectation	Process Student Expectation	Correct Answer
1	1	Supporting	B.4(A)	B.2(F)	D
2	2	Readiness	B.6(E)	B.2(G)	J
3	5	Readiness	B.12(A)		C
4	4	Readiness	B.10(B)		J
5	5	Readiness	B.12(F)	B.2(G)	A
6	2	Readiness	B.6(F)	B.2(F)	F
7	1	Readiness	B.5(A)	B.2(G)	B
8	4	Supporting	B.9(C)	B.2(G)	H
9	1	Readiness	B.4(C)		B
10	3	Supporting	B.7(F)		F
11	5	Readiness	B.11(D)		D
12	2	Readiness	B.6(A)		G
13	1	Readiness	B.9(A)	B.2(G)	A
14	3	Supporting	B.7(B)	B.2(G)	G
15	4	Readiness	B.10(A)		A
16	5	Supporting	B.12(E)	B.2(G)	J
17	1	Readiness	B.4(B)		C
18	2	Supporting	B.6(B)	B.3(F)	F
19	1	Supporting	B.5(C)		C
20	4	Supporting	B.11(A)	B.2(G)	F
21	3	Readiness	B.7(E)	B.3(F)	B
22	4	Supporting	B.9(C)	B.3(C)	H
23	3	Readiness	B.7(A)	B.2(G)	B
24	5	Readiness	B.12(C)	B.2(G)	F
25	3	Readiness	B.8(B)	B.2(F)	D
26	2	Supporting	B.6(H)	B.3(D)	H
27	4	Readiness	B.10(B)		A
28	1	Supporting	B.5(B)		H
29	2	Readiness	B.6(F)		D
30	5	Supporting	B.11(C)		G
31	4	Readiness	B.10(A)		B
32	5	Readiness	B.12(F)		H
33	1	Readiness	B.5(A)		B
34	3	Supporting	B.7(G)	B.2(C)	J
35	4	Supporting	B.10(C)		A
36	2	Readiness	B.6(E)	B.2(G)	H
37	5	Readiness	B.12(A)	B.2(G)	D
38	4	Readiness	B.10(B)		G
39	2	Supporting	B.6(G)	B.2(G)	C
40	1	Readiness	B.4(B)		F
41	5	Readiness	B.11(D)		B
42	3	Supporting	B.8(A)		J
43	1	Readiness	B.9(A)		A
44	2	Supporting	B.6(C)	B.2(H)	J
45	5	Supporting	B.11(B)	B.2(G)	C
46	1	Readiness	B.4(C)		J
47	3	Readiness	B.7(E)	B.2(F)	A
48	4	Supporting	B.9(B)		H
49	3	Readiness	B.7(A)	B.2(G)	A
50	4	Readiness	B.10(A)	B.2(G)	J
51	2	Readiness	B.6(A)		A
52	5	Readiness	B.12(C)	B.2(G)	H
53	3	Readiness	B.8(B)	B.2(G)	B
54	2	Supporting	B.6(D)		J