

AL NOOR INTERNATIONAL SCHOOL
Riyadh, Saudi Arabia



Workbook

Name: _____

Grade 6 - _____

Academic Year: _____

Chapter 1

Lesson: 1 What Is a Plant?

Understanding Main Ideas

Answer the following questions in the spaces provided.

1. What characteristics do all plants share?

2. What do plants need to live successfully on land?

Building Vocabulary

Fill in the blank to complete each statement.

3. A group of similar cells that perform a specific function is called a(n) _____.
4. The internal transporting system through which water, minerals, and food move inside the plant is called _____.
5. A(n) _____ is a structure inside a plant's cell in which food is made.
6. The process by which plants make food is called _____.
7. A(n) _____ is a waxy, waterproof layer that covers the leaves and stems of most plants.
8. The sac inside a plant cell where water, wastes, and food are stored is called a(n) _____.
9. The green pigment called _____ is necessary to the food-making process in plants.

Name _____ Date _____ Class _____

What Is a Plant?

I. Write the letter of the correct answer on the line at the left.

1. ___ Which of the following is thought to be the ancestor of land plants?
A. bacteria
B. red algae
C. ferns
D. green algae
2. ___ Organisms that produce their own food are called
A. heterotrophs
B. autosomes
C. autotrophs
D. herbivores
3. ___ The sac inside a plant cell where water, food, and wastes are stored is the
A. vacuole
B. chloroplast
C. chlorophyll
D. cuticle
4. ___ Two structures found in plant cells but **NOT** in animal cells are
A. cell wall and cell membrane
B. chloroplasts and cell membrane
C. cell wall and chloroplasts
D. vacuole and nucleus

II. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

5. _____ The cell wall helps a plant retain water.
6. _____ During photosynthesis, plants produce carbon dioxide.
7. _____ The green pigment found in specialized plant structures is called chlorophyll.
8. _____ The system of tubelike structures inside a plant through which water, minerals, and food move is called root tissue.
9. _____ Nearly all plants are unicellular.
10. _____ The energy for photosynthesis comes from the sun.

Chapter 1

Lesson: 2 Classifying Plants

Understanding Main Ideas

Answer the following questions.

1. In what ways do nonvascular plants, seedless vascular plants, and seed plants differ?

2. How does the absence of vascular tissue in nonvascular plants affect their structure and appearance?

3. Name the two types of vascular tissue and describe their functions.

4. What three structures do the bodies of all vascular plants have?

5. How are gymnosperms and angiosperms different?

6. What are the four types of gymnosperms?

7. Describe the different traits of monocots and dicots.

Building Vocabulary

Match each term with its definition by writing the letter of the correct definition in the right column on the line beside the term in the left column.

- | | |
|-------------------|---|
| 8. ____ cotyledon | a. a thin, rod like structure that anchors a moss plant and absorbs water and nutrients |
| 9. ____ rhizoid | b. a seed leaf |
| 10. ____ frond | c. the leaf of a fern |
| 11. ____ pollen | d. structures that contain cells that will later become sperm cells |

Classifying Plants

I. Write the letter of the correct answer on the line at the left.

1. ___ Which of the following is **NOT** true of mosses, liverworts, and hornworts?
 - A. They are nonvascular plants.
 - B. They have true roots, stems, and leaves.
 - C. They grow in moist places.
 - D. They are small and low-growing.
2. ___ Which type of plant has seeds that are encased in a protective fruit?
 - A. gymnosperms
 - B. conifers
 - C. angiosperms
 - D. horsetails
3. ___ Which of the following is **NOT** a characteristic of a dicot?
 - A. two cotyledons
 - B. vascular tissue bundles arranged in a ring
 - C. floral parts often in multiples of three
 - D. one main root
4. ___ Which statement best describes a gymnosperm?
 - A. a nonvascular plant with roots, stems, and leaves
 - B. a low-growing nonvascular plant lacking true roots
 - C. a vascular plant that uses spores to reproduce
 - D. a vascular plant that uses pollen to produce seeds that are not enclosed in protective fruits

II. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

5. _____ Seedless vascular plants use spores to reproduce.
6. _____ The young leaves of some hornworts are known as fiddleheads.
7. _____ The vascular tissue that conducts water and nutrients in a plant is phloem.
8. _____ All flowering plants are gymnosperms.
9. _____ The rootlike structures that anchor a moss plant and absorb water and nutrients are called rhizomes.
10. _____ Angiosperm species outnumber all other land plant species by about seven to one.

Chapter 1

Lesson: 3 Plant Structures

Understanding Main Ideas

Answer the following questions.

1. How is the structure of a root adapted for its functions?

2. How are herbaceous stems and woody stems alike? How are they different?

3. How does the structure of a leaf help in photosynthesis?

4. How does dispersal affect a seed's chances for survival?

5. Describe the structure and function of the male and female reproductive parts of a typical flower.

Building Vocabulary

Match each term with its definition by writing the letter of the correct definition in the right column on the line beside the term in the left column.

- | | |
|------------------------|---|
| 6. ____ cambium | a. the process by which water evaporates from a plant's leaves |
| 7. ____ petal | b. the process by which an embryo grows and pushes out of a seed |
| 8. ____ germination | c. colorful, leaflike structure of a flower |
| 9. ____ embryo | d. the young plant that develops from a fertilized egg |
| 10. ____ transpiration | e. the transfer of pollen from male reproductive structures to female reproductive structures |
| 11. ____ sepal | f. the layer of a woody stem that produces new xylem |
| 12. ____ pollination | g. rounded tip that protects a growing root |
| 13. ____ root cap | h. leaflike structure that protects a bud |

Name _____ Date _____ Class _____

Plant Structures

I. Write the letter of the correct answer on the line at the left.

1. ___ Animals are helpful to plants in the process of
A. germination
B. pollination
C. transpiration
D. fertilization
2. ___ Which of the following is **NOT** part of a flower's pistil?
A. stigma
B. ovary
C. style
D. anther
3. ___ Which part of a plant is responsible for absorbing water and minerals and anchoring the plant?
A. roots
B. stems
C. anthers
D. filaments
4. ___ The three parts of a seed are
A. stored food, embryo, cambium
B. embryo, seed coat, ovary
C. cotyledon, seed coat, ovule
D. embryo, stored food, seed coat

II. Fill in the blank to complete each statement.

5. Seed _____ is the scattering of seeds.
6. A flower bud is protected by leaflike structures called _____.
7. The _____ protects the root as it grows through the soil.
8. A tree has 24 light rings and 24 dark rings. The tree is _____ years old.
9. _____ on the surface of a leaf control the movement of gases into and out of the leaf.
10. The hollow structure at the base of a pistil that protects seeds as they develop is the _____.

Chapter 1

Lesson:4 Plant Reproduction

Understanding Main Ideas

Answer the following questions in the spaces provided.

1. Describe the two stages of a plant's life cycle.

2. Describe how angiosperms are classified according to the length of their life cycle.

3. What happens during fertilization?

4. What are the steps in angiosperm reproduction?

Building Vocabulary

Fill in the blank to complete each statement.

5. A fertilized egg is called a(n) _____.
6. When pollen lands on the stigma of a flower, _____ occurs.
7. A(n) _____ is a ripened ovary.
8. A plant that lives for two years and flowers in the second year is called a(n) _____.
9. The reproductive structure of a gymnosperm is the _____.
10. Egg cells develop inside a structure called a(n) _____.

Name _____ Date _____ Class _____

Plant Reproduction

I. Write the letter of the correct answer on the line at the left.

- | | |
|---|--|
| 1. ___ Many angiosperms rely on animals for | 2. ___ Because it lives for many years, a maple tree is a(n) |
| A. fertilization | A. perennial |
| B. pollination | B. annual |
| C. photosynthesis | C. biennial |
| D. transpiration | D. biannual |
-
- | | |
|--|---|
| 3. ___ The product of the union of sperm and egg is a(n) | 4. ___ The ovules of a pine tree are found in its |
| A. embryo | A. fruits |
| B. gametophyte | B. cones |
| C. fruit | C. ovaries |
| D. zygote | D. seeds |

II. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

- _____ The gametophyte produces spores.
- _____ Most gymnosperms produce both male and female fruit.
- _____ After a pollen grain lands on the stigma of a flower, a(n) pollen tube grows down into the ovule.
- _____ The female sex cell is the sperm.
- _____ Animals that eat fruits help to pollinate their seeds by depositing them in new areas.
- _____ Grafting is an example of asexual reproduction.

Chapter 2

Lesson: 1 Skeletons and Muscles

Understanding Main Ideas

Answer the following questions in the spaces provided.

1. What are the three types of skeletons found in animals?

2. Describe the skeleton found in cnidarians and earthworms.

3. What are two disadvantages of exoskeletons?

4. What materials make up the endoskeletons of most vertebrates?

5. Why do muscles occur in pairs?

Building Vocabulary

Fill in the blank to complete each statement.

6. Tissues that contract or relax to create movement are _____.

7. A shark's endoskeleton is made up of _____, which is a tissue that is more flexible than bone.

8. A(n) _____ is a place where two or more parts of a skeleton meet.

9. During _____, an arthropod sheds its exoskeleton to grow a new one.

Skeletons and Muscles

I. Write the letter of the correct answer on the line at the left.

1. ____ Which of these animals has a skeleton without hard parts?
A. whale
B. lobster
C. jellyfish
D. goldfish
2. ____ What happens to an arthropod during molting?
A. It sheds its exoskeleton.
B. It grows a new appendage.
C. It replaces cartilage with bone.
D. It contracts its muscles.
3. ____ Which of the following happens at a joint?
A. Muscle cells grow.
B. A new exoskeleton is formed.
C. Spikelike structures are made in cells.
D. Two parts of a skeleton meet.
4. ____ What factor makes it possible for animals with endoskeletons to grow larger than animals with exoskeletons?
A. Endoskeletons can be removed and replaced.
B. Endoskeletons are lighter than exoskeletons.
C. Endoskeletons are made of fluid-filled tubes.
D. Endoskeletons lack joints that can break down.

II. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

5. _____ Some muscles are parts of an organ.
6. _____ When a muscle relaxes, it becomes shorter.
7. _____ Cartilage is less flexible than bone.
8. _____ During molting arthropods shed their skeletons in order to grow.
9. _____ Mollusks have spike like structures among their cells instead of skeletons.
10. _____ A jellyfish skeleton is made up of fluid-filled cavities surrounded by air.

Chapter 2

Lesson: 2 The Nervous System

Understanding Main Ideas

Answer the following questions.

1. How are a stimulus and a response related?

2. How do the three different types of neurons function?

3. What is a nerve net? How many specialized neurons does a nerve net include?

4. What are the three functions of a brain?

5. How are animals with many sense organs able to process many stimuli at the same time?

Building Vocabulary

Match each term with its definition by writing the letter of the correct definition in the right column on the line beside the term in the left column.

- | | |
|-------------------------|--|
| 6. ____ stimulus | a. an animal's reaction to a stimulus |
| 7. ____ impulse | b. a collection of organs that act like the body's control panel |
| 8. ____ neuron | c. an organized grouping of neurons in the head of an animal with bilateral symmetry |
| 9. ____ brain | d. a signal that causes an animal to react in some way |
| 10. ____ response | e. a nerve cell with a unique structure for receiving and passing on information |
| 11. ____ nervous system | f. information that travels as an electrical message |

Name _____ Date _____ Class _____

The Nervous System

I. Fill in the blank to complete each statement.

1. A(n) _____ is an animal's reaction to a stimulus.
2. The _____ is the part of a complex animal's nervous system that receives information, interprets it, and controls the animal's response.
3. Eyes and ears are examples of _____ organs.
4. The odor of baking bread is an example of a(n) _____.
5. A(n) _____ is an electrical message that travels through the nervous system.

II. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

6. _____ Sensory neurons carry response information to organs.
7. _____ A(n) brain is a nerve cell with a unique structure for receiving and passing on information.
8. _____ Blinking in bright light is an example of a(n) response.
9. _____ A(n) ear is a sense organ that detects stimuli in the form of sight.
10. _____ An impulse is sent through the body as a(n) electrical signal.

Chapter 2

Lesson:3 Animal Movement

Understanding Main Ideas

Answer the following questions in the spaces provided.

1. How do all animals move?

2. List three reasons for animals to move.

3. Why do you think it is useful for animals that live in water to have streamlined bodies?

4. You see an arthropod with strong, muscular hind legs. How might this animal move on land? Explain your reasoning.

5. What type of flight is enabled by large wings with long, broad feathers?

Building Vocabulary

Write a definition for each of these terms on the lines below.

6. water vascular system

7. swim bladder

Name _____ Date _____ Class _____

Animal Movement

I. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ Animals that live in air might have fins and flippers.
2. _____ Echinoderms have a system of fluid-filled tubes known as a(n) swim bladder.
3. _____ Some insects warm up their flight muscles by vibrating their wings.
4. _____ A snail uses a(n) tail and mucus to move on land.
5. _____ Webbed feet are most useful for an animal to move in water.

II. Fill in the blank to complete each statement.

6. The _____ is the only mammal that flies.
7. Animals move to obtain food, defend and protect themselves, maintain _____, and find mates.
8. A squid moves through water using _____ propulsion.
9. A dragonfly can change direction quickly because it has _____ pairs of wings.
10. The bones in a bat's wings are actually _____ bones.

Chapter 3

Lesson: 1 Living Things and the Environment

Understanding Main Ideas

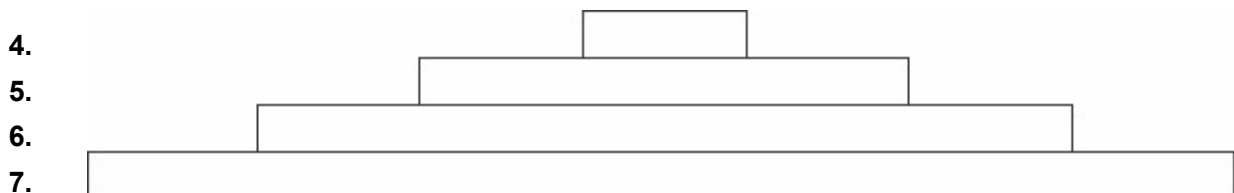
Answer the following questions in the spaces provided.

1. What is ecology?

2. Name four abiotic factors found in a prairie ecosystem.

3. Name three populations found in a prairie ecosystem.

Complete the table to show the levels of organization in an ecosystem. Start with the smallest unit.



Building Vocabulary

Fill in the blank to complete each statement.

- An environment that provides the things a specific organism needs to live, grow, and reproduce is its _____.
- All the living and nonliving things that interact in a particular area make up a(n) _____.
- The parts of an organism's environment that are living or once living, and interact with the organism are _____.
- All the different populations that live together in an area make up a(n) _____.

Living Things and the Environment

I. Write the letter of the correct answer on the line at the left.

1. ____ Which of the following lives in a prairie ecosystem?
A. grass
B. mushroom
C. oak tree
D. woodpecker
2. ____ Which of the following is a biotic factor?
A. temperature
B. sunlight
C. bacteria
D. water
3. ____ Which of the following lists the levels of an ecosystem in order from largest to smallest?
A. population, organism, community, ecosystem
B. ecosystem, community, organism, population
C. organism, community, population, ecosystem
D. ecosystem, community, population, organism
4. ____ An organism gets food, water, shelter, and other things it needs to live, grow, and reproduce from its
A. population
B. habitat
C. abiotic factors
D. species

II. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

5. _____ The nonliving things that interact with an organism are called biotic factors.
6. _____ The study of how living things interact with each other and their environment is called ecology.
7. _____ A group of organisms that can mate with each other and produce offspring that can also mate and reproduce is called a species.
8. _____ Oxygen is an abiotic factor in the environment that is important for plants to make their own food.
9. _____ All the organisms that live in a particular area and their nonliving surroundings make up an ecosystem.
10. _____ All the members of one community living in a particular area make up a population.

Chapter 3

Lesson: 2 Populations

Understanding Main Ideas

Answer the following questions.

1. A vegetable garden is 12 meters long by 7 meters wide. It is home to 168 mice. What is the population density of the mice?

2. What are two ways that the size of a population can increase? What are two ways that the size of a population can decrease?

3. Identify three limiting factors that can prevent a population from increasing. Explain how each factor limits a population's size.

The line graph below shows how the size of the squirrel population in a city park changed over time. Use the line graph to answer questions 4–6.

4. Over which time period(s) did the squirrel population increase?
5. Over which time period(s) did the squirrel population decrease?
6. In which year did the population reach its lowest point? What was the size of the population that year?



Building Vocabulary

Fill in the blank to complete each statement.

7. Moving into a population is called _____.
8. Moving out of a population is called _____.
9. The largest _____ an area can support is called the carrying capacity.
10. The number of individuals that die in a population in a certain time period is the _____.

Name _____ Date _____ Class _____

Populations

I. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ The size of a population increases if the number of individuals added to the population is equal to the number of individuals leaving the population.
2. _____ Immigration means moving out of a population.
3. _____ Three coyotes per square kilometer is an example of population density.
4. _____ If foxes arrive in an area and catch and eat a large number of rabbits, the foxes are causing an increase in the birth rate of the rabbit population.
5. _____ Sunlight can be a limiting factor for populations of plants.

II. Fill in the blank to complete each statement.

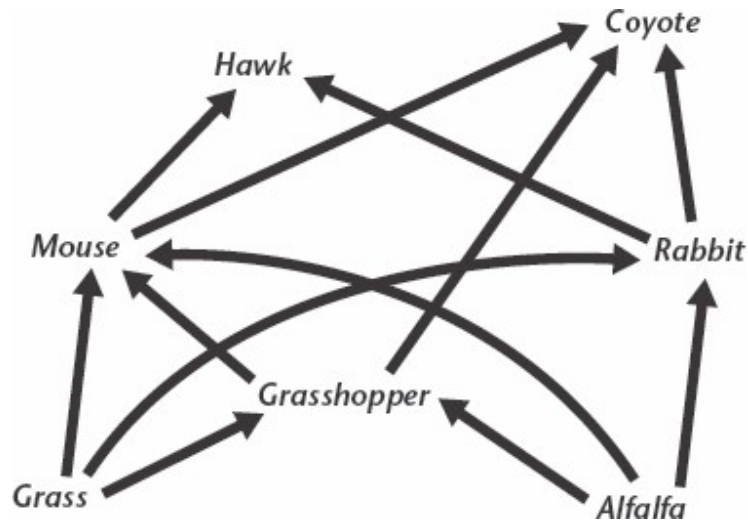
6. Water and food are examples of _____ for populations.
7. If an area has all the wolves that it can support, the wolf population has reached its _____.
8. A population can decrease due to deaths or _____.
9. If animals cannot find enough places to build nests, it is because _____ is a limiting factor for the population.
10. A flood that covers a meadow and drowns animals and a late frost that kills young plants are examples of how _____ can affect the size of a population.

Chapter 4

Lesson:1 Energy Flow in Ecosystems

Understanding Main Ideas

Answer the following questions .



1. Which organism in the food web above is sometimes a first-level consumer and sometimes a second-level consumer? Explain.
2. Choose one food chain in the web. Name all the organisms in that chain. Start with the producer and end with the top-level consumer.
3. Draw an energy pyramid for the food chain you chose. Label the pyramid to tell how much food energy is available at each level.

Building Vocabulary

Write the term that fits each definition below.

4. Organisms that make their own food _____
5. Organisms that obtain energy by feeding on other organisms _____
6. Organisms that break down wastes and dead organisms and return the raw materials to the environment _____
7. Consumers that eat only animals _____
8. Consumers that eat only plants _____
9. Consumers that eat both plants and animals _____
10. Consumers that feed on the bodies of dead organisms _____

Name _____ Date _____ Class _____

Energy Flow in Ecosystems

I. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ A food web is a series of events in which one organism eats another and obtains energy.
2. _____ Each of the organisms in an ecosystem fills the energy role of producer, consumer, or decomposer.
3. _____ Organisms may play only one role in an ecosystem.
4. _____ An organism that obtains energy by feeding on other organisms is a decomposer.
5. _____ Energy enters most ecosystems as sunlight.

II. Fill in the blank to complete each statement.

6. An organism that can make its own food is a _____.
7. Mushrooms and bacteria are common _____.
8. _____ moves through an ecosystem when one organism eats another.
9. The most energy is available at the _____ level of the pyramid.
10. As energy moves up the pyramid, each level has _____ energy available than the level below.

Chapter 4

Lesson: 2 Cycles of Matter

Understanding Main Ideas

Answer the following questions.

1. What is the source of energy for the process of evaporation?

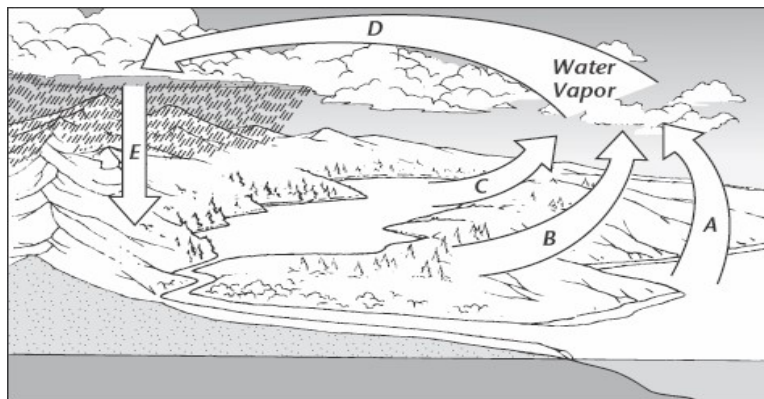
2. What happens to rainwater that falls on land?

3. How are oxygen and carbon cycled between plants and animals?

4. Why are nitrogen-fixing bacteria so important to other organisms?

Building Vocabulary

Answer the following question and identify labels in the spaces provided.



5. Which cycle is shown in the diagram above?

Identify each process labeled in the diagram.

6. A _____

7. B _____

8. C _____

9. D _____

10. E _____

Name _____ Date _____ Class _____

Cycles of Matter

I. Fill in the blank to complete each statement.

1. The processes of evaporation, condensation, and precipitation make up _____.
2. The process by which a gas changes to a liquid is called _____.
3. In ecosystems, producers, consumers, and decomposers are linked by their roles in recycling carbon and _____.
4. _____ is a major component of bones and the proteins that build muscles.
5. The process of changing free nitrogen into a usable form of nitrogen is called _____.

II. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

6. _____ Condensation is the continuous process by which water moves from Earth's surface to the atmosphere and back.
7. _____ In the water cycle, liquid water evaporates from oceans, plants, and other living things and forms water vapor, a gas, which rises in the atmosphere, then cools and turns back to drops of liquid water.
8. _____ Most organisms take in nitrogen from the air or water and use it to carry out their life processes.
9. _____ In a(n) food web, nitrogen moves from the air into the soil, into living things, and back into the air.
10. _____ The air around us is about 78 percent nitrogen gas, but most organisms cannot use this "free nitrogen."

Chapter 4

Lesson:3 Biomes

Understanding Main Ideas

Answer the following questions.

1. How does climate affect the type of biome found in an area?

2. What are two adaptations that enable mammals to survive cold winters?

3. Why are tropical rain forests such rich habitats for many species of animals?

4. Why does a deciduous forest have a variety of habitats?

Building Vocabulary

Name each biome described in the table below.

	Biome	Climate and Organisms
5.		warm summers, cold winters; receives at least 50 cm of precipitation per year; trees shed their leaves and grow new ones each year
6.		hot in daytime, cool or cold at night; very dry; organisms are adapted to extreme temperatures and dry conditions
7.		warm, rainy summers; very cold winters with heavy snow; trees produce cones with seeds that are eaten by many animals
8.		warm temperatures do not vary much throughout the year; very wet and humid; greater variety of species than any other biome
9.		extremely cold winters, 10.warmer summers; windy; very dry; no trees, only low-growing plants
10.		receives between 25 and 75 centimeters of rain each year; populated by grasses and many large herbivores

Name _____ Date _____ Class _____

Biomes

I. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ A group of animals limits the species of plants that can grow in an area.
2. _____ The Pacific Northwest is home to a temperate rain forest, where over 300 centimeters of rain falls yearly.
3. _____ Tropical rain forests cover a small part of the planet, yet they contain more species of plants and animals than all other biomes combined.
4. _____ Rain forests are home to many of the largest animals on Earth.
5. _____ In a boreal forest biome, many trees shed their leaves and grow new ones each year.

II. Fill in the blank to complete each statement.

6. A biome is a group of ecosystems with similar _____ and organisms.
7. Organisms that live in the _____ must be adapted to little or no rain and to extreme temperatures.
8. Prairies and savannas are two types of _____.
9. A _____ biome is a dense forest found in upper regions of the Northern Hemisphere.
10. Mosses, grasses, dwarf forms of a few trees, insects, birds, and a few mammals live on the _____ biome.

Chapter 4

Lesson: 4 Aquatic Ecosystems

Understanding Main Ideas

Answer the following question in the spaces provided.

1. What are the four main types of freshwater ecosystems?

2. What conditions to organisms face in the intertidal zone?

3. Why is the neritic zone particularly rich in living things?

Building Vocabulary

Fill in the blank to complete each statement.

4. The _____ zone is the point along the shoreline between the highest high-tide line and the lowest low-tide line.
5. The point where the fresh water of a river meets the salt water of the ocean is called a(n) _____.
6. The _____ zone is out in the open ocean where light penetrates only to a depth of a few hundred meters.
7. The _____ zone is a region of shallow water below the low-tide line that extends over the continental shelf.
8. The _____ zone is almost totally dark.

Name _____ Date _____ Class _____

Aquatic Ecosystems

I. Fill in the blank to complete each statement.

1. _____ ecosystems include streams, rivers, ponds, and lakes.
2. A(n) _____ is found where the fresh water of a river meets the salt water of an ocean.
3. Located on the shore, the _____ zone is home to organisms that can survive pounding waves and sudden changes in water levels and temperature.
4. There are two types of aquatic ecosystems: freshwater biomes and _____ biomes.
5. Organisms like the giant squid and anglerfish are adapted to life in the dark of the _____ zone.

II. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

6. _____ All aquatic ecosystems are affected by the same nonliving factors: sunlight, temperature, oxygen, and salt content.
7. _____ Most of Earth's surface is covered with water, yet only 30 percent is fresh water.
8. _____ Usually lakes are smaller and shallower than ponds.
9. _____ Tuna, swordfish, and some whales feed on algae in the intertidal zone.
10. _____ The neritic zone is a region of shallow water where many living things, such as algae and schools of fish, live.

Chapter 5

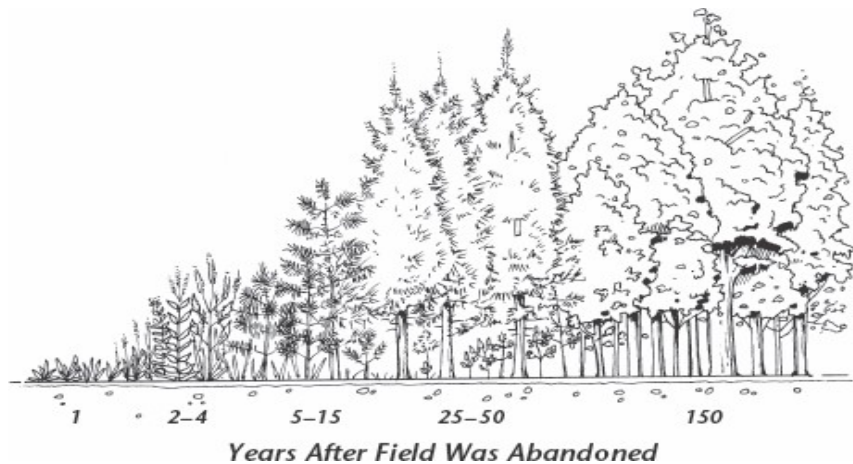
Lesson:1 Changing Ecosystems

Understanding Main Ideas

Answer the following questions.

1. What organisms are usually the pioneer species in anew area? How do these organisms prepare the area for other species?

2. The illustration below shows succession in an abandoned field. How did the plant populations in the community change over time?



Building Vocabulary

Identify each of the following as an example of primary succession or secondary succession. Write your answers in the spaces provided.

3. An old house was torn down. Small weeds and grasses grew in the vacant lot. Over the next few years, bushes and tree seedlings began to grow.

4. An undersea volcano erupted and formed a small island. Mosses and lichens began to grow on the bare volcanic rock.

Name _____ Date _____ Class _____

Changing Ecosystems

I. Fill in the blank to complete each statement.

1. Pioneer species break down rocks, forming the beginning of _____.
2. Two examples of pioneer species are _____ and lichens.
3. A lichen is a symbiotic combination of _____ and algae.
4. A forest fire is followed by _____ succession.
5. The series of changes that occur in an area where no soil or organisms exist is called _____ succession.

II. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

6. _____ After a long time, a mature community is established and this community does not change unless it is disturbed.
7. _____ The first species to populate an area are called primary species.
8. _____ Unlike primary succession, secondary succession occurs in a place where an ecosystem currently exists.
9. _____ Secondary succession is usually slower than primary succession.
10. _____ Natural disturbances that lead to succession include fires, hurricanes, and tornadoes.

Chapter 5

Lesson: 2 Humans and the Environment

Understanding Main Ideas

Answer the following questions in the spaces provided.

1. What is an abiotic resource?

2. What is a nonnative species? Name one example.

3. Describe one way that mining for coal affects the environment.

4. Describe what happens to the air when oil is processed and burned.

Fill in the blank to complete each statement.

5. Oxygen is an example of an _____ resource.

6. Trees are a _____ resource.

7. When _____ wash into streams, they may increase plant and algae growth.

Building Vocabulary

Fill in the blank to complete each statement.

8. A _____ is anything in an ecosystem that is used to live.

9. The advance of desert-like conditions in an area once fertile is called _____.

10. Carbon dioxide contributes to global warming through the _____.

Humans and the Environment

I. Write the letter of the correct answer on the line at the left.

1. ___ Which of the following is an abiotic resource?
 - A. decomposer
 - B. tree
 - C. oil
 - D. water
3. ___ Which of the following can increase the growth of algae when it enters streams?
 - A. insecticide
 - B. herbicide
 - C. carbon dioxide
 - D. oil
2. ___ Which of the following may result in desertification?
 - A. overgrazing
 - B. overfishing
 - C. drilling for oil
 - D. using insecticides
4. ___ Which of the following contributes to the greenhouse effect?
 - A. too much water
 - B. too much oxygen
 - C. too much carbon dioxide
 - D. too many herbicides

II. If the statement is true, write *true*. If the statement is false, changed the underlined word or words to make the statement true.

5. _____ Fish are an example of an abiotic resource.
6. _____ A species brought into an ecosystem by humans is known as a native species.
7. _____ The advance of desert-like conditions in an area is called desertification.
8. _____ Processing oil and burning fuels adds oxygen to the air that affects the temperature of the atmosphere.
9. _____ Insecticides kill insect pests that damage crops.
10. _____ Herbicides break down dead organisms into humus.

Chapter 5

Lesson:3 Biodiversity

Understanding Main Ideas

Answer the following questions in the spaces provided.

1. What three factors affect the biodiversity of an ecosystem?

2. What is one reason coral reefs are such diverse ecosystems?

3. How does having a diverse gene pool help a species survive?

4. Name and describe three ways to protect the world's biodiversity.

Building Vocabulary

Write a definition for each of following terms.

5. keystone species: _____

6. extinction: _____

7. endangered species: _____

8. habitat fragmentation: _____

9. poaching : _____

10. captive breeding: _____

Name _____ Date _____ Class _____

Biodiversity

I. If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ The major cause of extinction is habitat fragmentation.
2. _____ Species that could become endangered in the near future are called extinct species.
3. _____ The Threatened Species Act prohibits trade or products made from threatened or endangered species.
4. _____ Protecting whole ecosystems is the most effective way to preserve biodiversity.

II. Fill in the blank to complete each statement.

5. Biodiversity has both _____ and ecological value within an ecosystem.
6. The sea otter is a _____ that influences the survival of many other species in its ecosystem.
7. Climate, area, and _____ affect biodiversity in an ecosystem.
8. _____ are the most diverse ecosystems in the world.
9. _____ are the second most diverse ecosystems in the world.
10. Scientists think people have directly caused the extinction of some species through habitat destruction, _____, or other actions.

Chapter: 6 Lesson: 1

The Nature of Force

Understanding Main Ideas

In the Venn diagram, write the phrases listed below to describe unbalanced forces and balanced forces. Write the characteristics shared by unbalanced and balanced forces in the area of overlap.

change an object's motion

push or pull

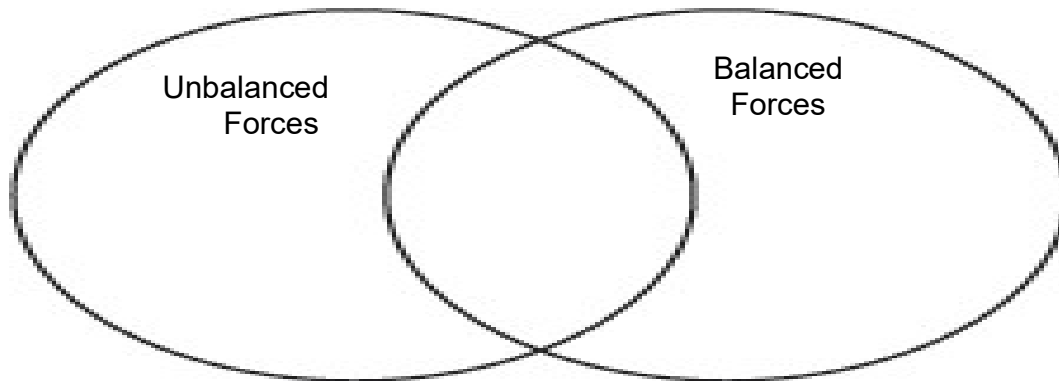
do not change an object's motion

have direction

net force = 0 N

net force does not equal 0 N

1.



Building Vocabulary

Match each term with its definition by writing the letter of the correct definition in the right column on the line beside the term in the left column.

2. ___ newton

a. the SI unit for force

3. ___ force

b. sum of all forces acting on an object

4. ___ balanced forces

c. push or pull

5. ___ unbalanced forces

d. can change an object's motion

6. ___ net force

e. will not change an object's motion

Name _____ Date _____ Class _____

Chapter: 6 Lesson: 1

The Nature of Force

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ Balanced forces do not change the motion of an object.
2. _____ Forces cause some changes in motion.
3. _____ A net force causes no change in an object's motion.
4. _____ If Manuel exerts a force of 10 N to push a desk to the right at the same time Lynn exerts a force of 15N to push the desk to the left, the desk will move to the left.

Fill in the blank to complete each statement.

5. When you pull on a window shade, you exert a(n) _____.
6. A(n) _____ can be used to represent the direction and strength of a force.
7. The strength of a force is measured in _____.
8. The net force determines how and if an object will _____.
9. When two forces act in opposite directions, the object will accelerate in the same direction as the _____ force.
10. A force is described by its _____ and by the direction in which it acts.

Chapter: 6 Lesson: 2

Friction and Gravity

Understanding Main Ideas

Answer the following questions in the spaces provided.

1. What are the two factors that affect the frictional force between two surfaces?

2. What two factors affect the gravitational force between two objects?

3. How does mass differ from weight?

Building Vocabulary

Match each term with its definition by writing the letter of the correct definition in the right column on the line beside the term in the left column.

- | | |
|-------------------------|---|
| 4. ___ friction | a. the force that pulls objects toward each other. |
| 5. ___ rolling friction | b. the type of friction that exists between oil and a door hinge. |
| 6. ___ sliding friction | c. the force that one surface exerts on another when two surfaces rub against each other. |
| 7. ___ fluid friction | d. the type of friction that occurs when you rub sandpaper against wood. |
| 8. ___ static friction | e. the type of friction that occurs when a wheel turns on a surface. |
| 9. ___ weight | f. a measure of the force of gravity on an object |
| 10. ___ gravity | g. the type of friction that occurs between objects that aren't moving. |

Chapter: 6 Lesson: 2

Friction and Gravity

Write the letter of the correct answer on the line at the left.

1. ___ When you swim in a pool,
 - A. sliding friction occurs.
 - B. static friction occurs.
 - C. rolling friction occurs.
 - D. fluid friction occurs.
2. ___ When you rub your palms together,
 - A. sliding friction occurs.
 - B. static friction occurs.
 - C. rolling friction occurs.
 - D. fluid friction occurs.
3. ___ When you skateboard on a ramp,
 - A. sliding friction occurs.
 - B. static friction occurs.
 - C. rolling friction occurs.
 - D. fluid friction occurs.
4. ___ When you push a desk that doesn't move,
 - A. sliding friction occurs.
 - B. static friction occurs.
 - C. rolling friction occurs.
 - D. fluid friction occurs.

Fill in the blank to complete each statement.

5. The _____ states that the force of gravity acts between all objects in the universe that have mass.
6. As distance increases, gravitational force _____.
7. When you stand on a bathroom scale, it displays the _____ that Earth is exerting on you.
8. Friction acts in a direction _____ to the direction of the object's motion.
9. When the irregularities of one surface come into contact with those of another surface, _____ occurs.
10. The applied force required to push something across a surface _____ as friction increases.

Chapter: 6 Lesson: 3

Newton's Laws of Motion

Understanding Main Ideas

Answer the following questions in the spaces provided. Use a separate sheet of paper if you need more room.

1. Newton's second law of motion describes the relationship among force, mass, and acceleration. Write the equation.

2. How does the diagram at the right illustrate Newton's third law of motion?



If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

3. _____ If you increase the force on an object, its acceleration increases.
4. _____ If you increase the mass of an object, its acceleration decreases.
5. _____ To accelerate a 3 kg skateboard at 9 m/s^2 , a force of 3 newtons is needed.
6. _____ The amount of inertia an object has depends on its speed.

Building Vocabulary

Write a definition for the term on the lines below.

7. inertia

Name _____ Date _____ Class _____

Chapter: 6 Lesson: 3

Newton's Laws of Motion

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ Newton's first law of motion states that an object will not experience a change in motion unless acted upon by a(n) balanced force.
2. _____ To increase acceleration of an object, you reduce its mass or increase the applied force.
3. _____ Newton's third law of motion states that if one object exerts a force on another object, then the second object exerts a force of equal strength in the same direction.
4. _____ Resistance to change in motion is called stasis.
5. _____ Action and reaction forces acting in opposite directions do cancel out because they act on different objects.
6. _____ If you lean against a wall, the wall pushes back on you with a(n) weaker force.

Fill in the blank to complete each statement.

7. Newton's second law of motion states that an object's acceleration depends on its _____ and on the net force acting on it.
8. Acceleration is measured in _____.
9. Force is measured in a unit called the _____.
10. The smaller the mass of an object, the _____ its inertia.

Chapter: 6 Lesson: 4

Momentum

Write the letter of the correct answer on the line at the left.

1. ___ Which of the following, moving at the same speed, would be hardest to stop?
A. car
B. fire engine
C. Frisbee
D. stroller
2. ___ Which moving object, in all likelihood, will have the greatest momentum?
A. volleyball hit by a fourth-grader
B. volleyball hit by an Olympic volleyball player
C. volleyball hit by a senior adult
D. volleyball hit by a basketball coach
3. ___ Which formula is used to calculate momentum?
A. Momentum = Mass \times Speed
B. Momentum = Weight \times Speed
C. Momentum = Volume \times Velocity
D. Momentum = Mass \times Velocity
4. ___ In which situation does the law of conservation of momentum apply?
A. in the absence of greatest velocity
B. in the presence of least velocity
C. in the absence of outside forces
D. in the presence of outside forces

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

5. _____ The total momentum of any group of objects remains the same unless outside forces act on the objects.
6. _____ If outside forces such as friction are negligible, when two objects of the same mass collide and do not stick together, the objects multiply velocities.
7. _____ Newton's "quantity of motion" is conservation.
8. _____ The less momentum an object has, the easier it is to stop.
9. _____ Momentum, like velocity, is described by both a direction and a force.
10. _____ The momentum of a 1000-kg vehicle traveling at a velocity of 25 m/s is 40kg \times m/s.

Chapter: 6 Lesson: 5

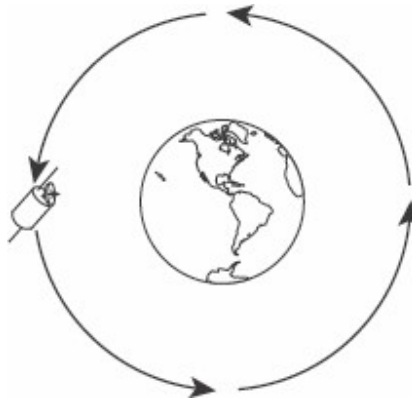
Free Fall and Circular Motion

Understanding Main Ideas

Answer the following questions in the spaces provided.

1. What is the only force acting on an object in free fall?

2. Draw an arrow representing centripetal force in the diagram below.



Building Vocabulary

Fill in the blank to complete each statement.

3. In _____, an object falling from the top of a building accelerates at 9.8 m/s^2 .
4. A(n) _____ follows a curved path in space around Earth.
5. _____ causes an object to move in a circular path.
6. Together, satellites and ground receivers enable people using _____ to pinpoint their geographic location.

Chapter: 6 Lesson: 5

Free Fall and Circular Motion

Write the letter of the correct answer on the line at the left.

1. _____ The state that exists when the only force acting on an object is gravity is called
A. free fall
B. inertia
C. acceleration
D. momentum
2. _____ The acceleration due to gravity near the surface of Earth is equal to
A. 9.8 m/s
B. 9.8 kg \times m/s
C. 9.8 N
D. 9.8 m/s²
3. _____ Satellites in orbit around Earth travel in an almost circular path because Earth is
A. centripetal
B. free falling
C. curved
D. massive
4. _____ The word *centripetal* means
A. center seeking
B. gravitational
C. continuous
D. free falling

Fill in the blank to complete each statement.

5. The force that causes an object to move in a circle is called _____.
6. Any object that travels around another object in space is a(n) _____.
7. An object traveling in a circle is accelerating because it is constantly changing _____.
8. _____ is the centripetal force that causes a satellite to move in a circle.
9. Satellites in orbit around Earth continually fall toward _____.
10. If you could turn off a centripetal force, _____ would cause the object to fly off in a straight line.

Chapter: 7 Lesson: 1

Electric Charge and Static Electricity

Write the letter of the correct answer on the line at the left.

1. ___ Atoms contain charged particles called
A. protons, neutrons, and electrons
B. protons and electrons
C. protons and neutrons
D. electrons and neutrons
2. ___ A region around a charged object where the object's electric force is exerted on other charged objects is an electric
A. field
B. outlet
C. socket
D. power plant
3. ___ In static electricity, charges
A. flow continuously
B. flow intermittently
C. build up in an atom
D. build up on an object
4. ___ Charges can redistribute themselves by friction, conduction, polarization, or
A. reduction
B. production
C. induction
D. superconduction

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

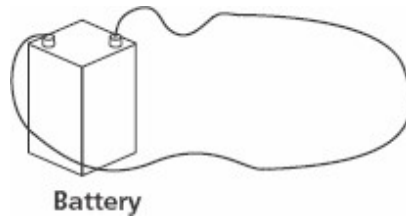
5. _____ Charges that are different repel each other.
6. _____ An electric field gets stronger the closer it is to the charge.
7. _____ Charges do not transfer between objects in polarization or conduction.
8. _____ Lightning is an example of static discharge.
9. _____ Electric current is the buildup of charges on an object.
10. _____ Most objects have some overall charge.

Chapter: 7 Lesson: 2

Electric Current

Understanding Main Ideas

Study the diagram below, then answer the following questions on a separate sheet of paper.



1. When the wires are connected to the terminals of the battery, what causes electric current in the circuit?

2. What is the voltage source and what is the conductor in this circuit?

3. What are two ways you could alter the wire to increase the resistance in the electric circuit?

Building Vocabulary

Match each term with its definition by writing the letter of the correct definition in the right column on the line beside the term in the left column.

- | | |
|-------------------------|---|
| 4. ___ electric current | a. the difference in electrical potential energy per charge between two points in a circuit |
| 5. ___ insulator | b. material through which charge can easily flow |
| 6. ___ voltage | c. a complete, unbroken path through which electric charges can flow |
| 7. ___ resistance | d. the continuous flow of electric charges through a material |
| 8. ___ conductor | e. the measure of how difficult it is for charges to flow through a material |
| 9. ___ electric circuit | f. material through which charge cannot easily flow |

Chapter: 7 Lesson: 2

Electric Current

Write the letter of the correct answer on the line at the left.

1. ___ The unit for the rate of current is the
A. ampere
B. volt
C. ohm
D. joule
2. ___ All electrical devices contain electric
A. acid
B. gears
C. circuits
D. motors
3. ___ Potential electric current can be converted into
A. heat
B. matter
C. waste
D. food
4. ___ Which of the following does *not* determine the resistance of a wire?
A. temperature
B. diameter
C. length
D. color

Fill in the blank to complete each statement.

5. The amount of charge that passes through a wire in a given period of time is the rate of electric _____.
6. The electrons in conductors move about _____ freely than the electrons in insulators.
7. Charges flow through wires because of differences in electric _____.
8. _____ is the measure of how difficult it is for charges to flow through an object.
9. _____ is the difference in electric potential energy per charge between two points in a circuit.
10. Current flow is affected by the _____ of an object (such as the length of a wire) that the charge flows through.

Chapter: 7 Lesson: 3

Electric Circuits

Write the letter of the correct answer on the line at the left.

1. ___ When more branches are added to a parallel circuit,
 - A. resistance increases
 - B. voltage increases
 - C. resistance decreases
 - D. voltage decreases
2. ___ Batteries and power plants are examples of
 - A. energy sources
 - B. energy conduction
 - C. energy transformation
 - D. energy conservation
3. ___ The path of current in a circuit is completed by
 - A. a transformer
 - B. an energy source
 - C. conducting wires
 - D. an electrical device
4. ___ Resistance in a circuit is equal to voltage divided by
 - A. joules
 - B. current
 - C. power
 - D. amperage

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

5. _____ Electrical energy in a circuit gets transformed into other forms of energy, such as mechanical energy.
6. _____ Isaac Newton formulated Ohm's law.
7. _____ Opening a switch breaks an electric device.
8. _____ All electric circuits have the same basic features.
9. _____ Energy is always lost in a circuit.
10. _____ Most conductors have a(n) inconstant resistance regardless of the applied voltage.

Chapter: 8 Lesson: 1

What Is Magnetism?

Write the letter of the correct answer on the line at the left.

1. ___ Two south magnetic poles brought near each other
A. repel each other
B. attract each other
C. cancel each other
D. magnetize each other
2. ___ A north magnetic pole brought near a south magnetic pole
A. nullifies the south pole
B. attracts the south pole
C. repels the south pole
D. magnetizes the south pole
3. ___ Two north magnetic poles brought near each other
A. magnetize each other
B. attract each other
C. cancel each other
D. repel each other
4. ___ A south magnetic pole brought near a north magnetic pole
A. repels the north pole
B. attracts the north pole
C. nullifies the north pole
D. magnetizes the north pole

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

5. _____ Any material that exerts magnetic force is considered a magnet.
6. _____ Like all other forces, a magnetic force is a(n) gravitational force.
7. _____ The area(s) between the poles of a magnet has the strongest effect.
8. _____ Magnets attract wood and materials that contain iron.
9. _____ When freely swinging, one end of a magnet always points east.
10. _____ Magnets have the same properties as sedimentary rocks.

Chapter: 8 Lesson: 2

Magnetic Fields

Fill in the blank to complete each statement.

1. A(n) _____ is a device that has a magnetized needle that can spin freely.
2. _____ is the angle between geographic north and the north to which a compass needle points.
3. When the magnetic fields of two or more magnets overlap, a(n) _____ magnetic field forms.
4. Magnetic field lines are closest together at the _____.
5. The motion of liquid _____ in Earth's outer core creates a magnetic field.
6. A compass behaves as it does because each needle acts as a(n) _____.

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

7. _____ Earth's magnetic poles are not in the same place as the geographic poles.
8. _____ Magnets cannot interact without touching.
9. _____ Magnetic field lines always cross.
10. _____ The effects of a magnetic field can be observed using non-metal filings.

Chapter: 9 Lesson: 1

The Air Around You

Understanding Main Ideas

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ More than three fourths of the air we breathe is oxygen.
2. _____ Argon is the second most abundant gas in air.
3. _____ Plants need carbon dioxide to produce food.
4. _____ Without nitrogen in the air, a fire will not burn.
5. _____ When fuels such as coal and gasoline are burned they release nitrogen into the air.
6. _____ Condensed water vapor in the atmosphere forms clouds.
7. _____ Energy from the wind drives the motions in the atmosphere.

Building Vocabulary

Write a definition for each of these terms.

8. atmosphere: _____

9. water vapor: _____

10. weather: _____

Chapter: 9 Lesson: 1

The Air Around You

Fill in the blank to complete each statement.

1. The amount of _____ in the air varies greatly from place to place and time to time.
2. Gases in air that are present in very small amounts are called _____ gases.
3. Earth is surrounded by an envelope of gases called the _____.
4. When gasoline is burned it releases the gas _____.
5. Clouds form when water vapor _____ out of the air.
6. The term used to describe the condition of Earth's atmosphere at a given place or time is _____.

Write the letter of the correct answer on the line at the left.

- | | |
|---|--|
| 7. ___ What do dust, smoke, salt, and chemicals have in common?
A They are gases in air.
B They make up water vapor in air.
C They are particles in air.
D They are found only in pure air. | 8. ___ Which of these does a fire need to burn?
A argon
B carbon dioxide
C nitrogen
D oxygen |
| 9. ___ Which of these do plants need to make food?
A argon
B carbon dioxide
C nitrogen
D oxygen | 10. ___ Which of these makes up about 21 percent of the atmosphere?
A argon
B carbon dioxide
C nitrogen
D oxygen |

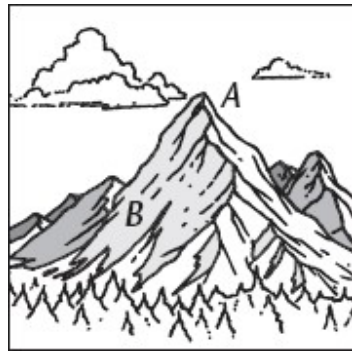
Chapter: 9 Lesson: 2

Air Pressure

Understanding Main Ideas

Fill in the blank to complete each statement. Use the illustration to answer Questions 3–6.

1. When air pressure increases, the liquid in a mercury barometer _____.
2. An aneroid barometer does not use _____.
3. Air pressure is greater at point _____.
4. Altitude is greater at point _____.
5. Density of the air is greater at point _____.



Building Vocabulary

Write a definition for each of these terms.

6. air pressure: _____
7. barometer: _____
8. density: _____
9. mercury barometer: _____
10. aneroid barometer: _____
11. altitude: _____

Chapter: 9 Lesson: 2

Air Pressure

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ To calculate the density of a substance divide its mass by its weight.
2. _____ The higher the altitude, the lower the air pressure.
3. _____ Most weather reports for the general public use millibars as units of air pressure.
4. _____ As altitude increases, the density of the air increases.
5. _____ Air pressure is the result of the weight of a column of air pushing on an area.
6. _____ The level of mercury in a barometer falls as the air pressure falls.

Fill in the blank to complete each statement.

7. Air pressure at sea level is _____ than air pressure at the top of a mountain.
8. Two instruments used to measure air pressure are the mercury barometer and the _____.
9. Air pressure doesn't crush you because molecules in air push _____.
10. The amount of mass in a given volume of air is its _____.

Chapter: 9 Lesson: 5

Heat Transfer

Understanding Main Ideas

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ In the troposphere, heat is transferred mostly by conduction.
2. _____ Conduction works best in some solids.
3. _____ Air temperature is usually measured with a barometer.
4. _____ The upward movement of warm air and the downward movement of cool air form a convection current.
5. _____ The farther apart the molecules in a substance are, the better they conduct heat.
6. _____ In the Fahrenheit temperature scale, water freezes at 0° and boils at 100°.

Building Vocabulary

Write a definition for each of these terms.

7. heat: _____

8. conduction: _____

9. thermal energy: _____

10. convection: _____

Chapter: 9 Lesson: 5

Heat Transfer

Write the letter of the correct answer on the line at the left.

1. ___ In which substance would heat transfer by conduction work best?
A oxygen
B iron
C water
D alcohol
2. ___ Which is true of a pot and a penny with equal temperatures?
A they have the same thermal energy
B they are both gaining thermal energy
C the penny has more thermal energy
D the pot has more thermal energy
3. ___ How is heat transferred from the sun to Earth?
A by convection currents
B by conduction
C by radiation
D by thermal energy
4. ___ Which temperature is the freezing point of water in the Celsius scale?
A 100°
B 32°
C 10°
D 0°

Fill in the blank to complete each statement.

5. The transfer of heat between two substances that are in direct contact is called _____.
6. _____ measures the total energy of the particles in a substance.
7. The transfer of heat by the movement of a fluid is called _____.
8. The average amount of energy of motion of each particle of a substance is called _____.
9. Radiation is the direct transfer of energy by _____.
10. Only the first few meters of the troposphere are heated by _____.

Chapter: 11 Lesson: 2

Earth in Space

Write the letter of the correct answer on the line at the left.

1. ___ Earth is closest to the sun when it is
summer in the
A Southern Hemisphere
B Northern Hemisphere
C Western Hemisphere
D Eastern Hemisphere
2. ___ When it is summer in the Southern Hemisphere, it is winter in the
A equator
B Northern Hemisphere
C Western Hemisphere
D Eastern Hemisphere
3. ___ In June, there are fewer hours of daylight and less direct sunlight in the
A Southern Hemisphere
B Northern Hemisphere
C Western Hemisphere
D Eastern Hemisphere
4. ___ Each of the two days of the year when neither hemisphere is tilted toward or away from the sun is called a(n)
A winter solstice
B summer solstice
C rotation
D equinox

Fill in the blank to complete each statement.

5. Earth has _____ because its axis is tilted as it revolves around the sun.
6. Earth's _____ causes day and night.
7. Earth's orbit is a slightly elongated circle, or _____.
8. One revolution of Earth around the sun is called a(n) _____.
9. The most common _____ in use today is divided into years, months, and days.
10. The _____ occurs around March 21 in the Southern Hemisphere.

Chapter: 11 Lesson: 3

Gravity and Motion

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ Newton's first law of inertia says that an object at rest will stay at rest and an object in motion will stay in motion unless acted on by a force.
2. _____ Inertia and distance combine to keep Earth in orbit around the sun and the moon in orbit around Earth.
3. _____ Newton's law of planetary gravitation states that every object in the universe attracts every other object.
4. _____ Gravity decreases to one fourth of its original value if the distance between two objects doubles.
5. _____ Earth's gravity pulls the moon outward.

Fill in the blank to complete each statement.

6. The amount of matter in an object is its _____.
7. _____ attracts all objects toward each other.
8. An object with greater _____ is more difficult to stop or start.
9. The _____ of two objects and their distance from each other determine the gravitational force between them.
10. The measure of force on an object is its _____.

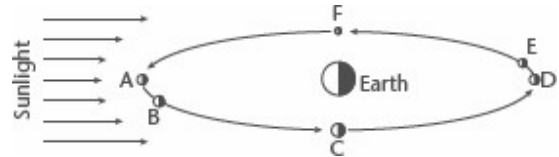
Chapter: 11 Lesson: 4

Phases and Eclipses

Understanding Main Ideas

Use the diagram below to answer Question 1 in the spaces provided.

1. What phase of the moon would someone on Earth see when the moon is at Positions A through F?



- A: _____
 B: _____
 C: _____
 D: _____
 E: _____
 F: _____

Building Vocabulary

Fill in the blank to complete each statement.

2. A(n) _____ occurs when the moon's shadow hits Earth or Earth's shadow hits the moon.
3. A person standing in the moon's _____ would see a partial solar eclipse.
4. A person standing in the moon's _____ would see a total solar eclipse.
5. The _____ of the moon you see depends on how much of the sunlit side of the moon faces Earth.
6. A(n) _____ eclipse occurs at a full moon when Earth is directly between the moon and the sun.
7. A(n) _____ occurs when the moon passes between Earth and the sun.

Chapter: 11 Lesson: 4

Phases and Eclipses

Write the letter of the correct answer on the line at the left.

1. ____ A solar eclipse occurs when the moon
A. passes into the penumbra of Earth
B. passes into the umbra of Earth
C. passes at a slight tilt between Earth and the sun
D. passes directly between Earth and the sun
2. ____ When Earth is directly between the moon and the sun,
A. a total solar eclipse occurs
B. a lunar eclipse occurs
C. a partial solar eclipse occurs
D. the penumbra of the moon shrivels
3. ____ As the moon moves through Earth's shadow,
A. a lunar eclipse occurs
B. the phases of the moon occur
C. a solar eclipse occurs
D. a new orbital path is formed
4. ____ Like Earth, the moon rotates and
A. waxes
B. goes through a cycle of phases each month
C. revolves
D. wanes

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

5. _____ Crescents are the different shapes of the moon you see from Earth.
6. _____ The moon revolves around Earth and revolves on its own axis.
7. _____ One "day" on the moon is the same length as one month on Earth.
8. _____ As the moon orbits Earth, the absolute positions of the moon, Earth, and the sun change.
9. _____ The moon's orbit around Earth is absolutely straight with respect to Earth's orbit around the sun.
10. _____ The amount of the moon's surface that is lit by the sun changes.

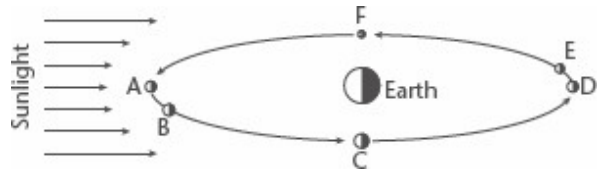
Chapter: 11 Lesson: 5

Tides

Understanding Main Ideas

Use the diagram at right to answer Question 1 in the spaces provided.

1. What kind of tide will occur when the moon is at positions A, C, D, and F?



Building Vocabulary

Fill in the blank to complete each statement.

2. A(n) _____ tide occurs when the sun is at right angles to the line between Earth and the moon.
3. Differences in the moon's and sun's pull on different sides of Earth cause _____.
4. A(n) _____ tide occurs when the sun, Earth and the moon are nearly in a line.
5. _____ pulls all objects in the universe, including the moon and Earth and the sun and Earth, toward each other.
6. The term _____ comes from an Old English word, *springen*, meaning "to jump."

Chapter 11 Lesson 5

Tides

Write the letter of the correct answer on the line at the left.

1. ___ The bulge of water on the side of Earth closest to the moon produces
A. low tide
B. neap tide
C. high tide
D. rip tide
2. ___ Water flows toward the high tides, halfway between them causing
A. low tides
B. neap tides
C. high tides
D. rip tides
3. ___ Tides are the cycle of rising and falling ocean water that repeats approximately
A. every 24 hours
B. every 12.5 hours
C. every 25 hours
D. every 6.25 hours
4. ___ A spring tide can occur
A. in any month after March
B. in March, April, or May
C. in late February–early June
D. in any month of the year

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

5. _____ A neap tide has the greatest difference between consecutive low and high tides.
6. _____ Neap tides occur once a month.
7. _____ Spring tides are produced during a new moon and crescent moon.
8. _____ The sun's gravity affects the tides, even though it is about 150 million miles from Earth.
9. _____ Changes in the positions of Earth, the moon, and the sun affect the number of high tides during a month.
10. _____ Tides are caused mainly by differences in how much gravity from the moon and the sun pulls on different parts of Earth.

Name _____ Date _____ Class _____

Chapter 12

Lesson 2 Introducing the Solar System

Write the letter of the correct answer on the line at the left.

1. ____ One day is the time it takes a planet to rotate on its
A equator
B axis
C poles
D moon
2. ____ Scientists think the solar system formed about
A 4.6 thousand years ago
B 4.6 hundred thousand years ago
C 4.6 million years ago
D 4.6 billion years ago
3. ____ The sun is a(n)
A asteroid
B planet
C planetesimal
D star
4. ____ Planetesimals collided, stuck together, and eventually combined to form all the other objects in the
A galaxy
B universe
C solar system
D zodiac

Fill in the blank to complete each statement.

5. Scientists use the _____ to measure distances within the solar system.
6. About 99.85 percent of the mass of the solar system is contained within the _____.
7. All but two planets in the solar system have a natural satellite, or _____.
8. The four outermost planets in the sun's orbit are mostly made of liquid and _____.
9. _____, once the ninth planet in the solar system, is now considered a dwarf planet.
10. The solar system began to form as _____ pulled rock, ice, and gas together.