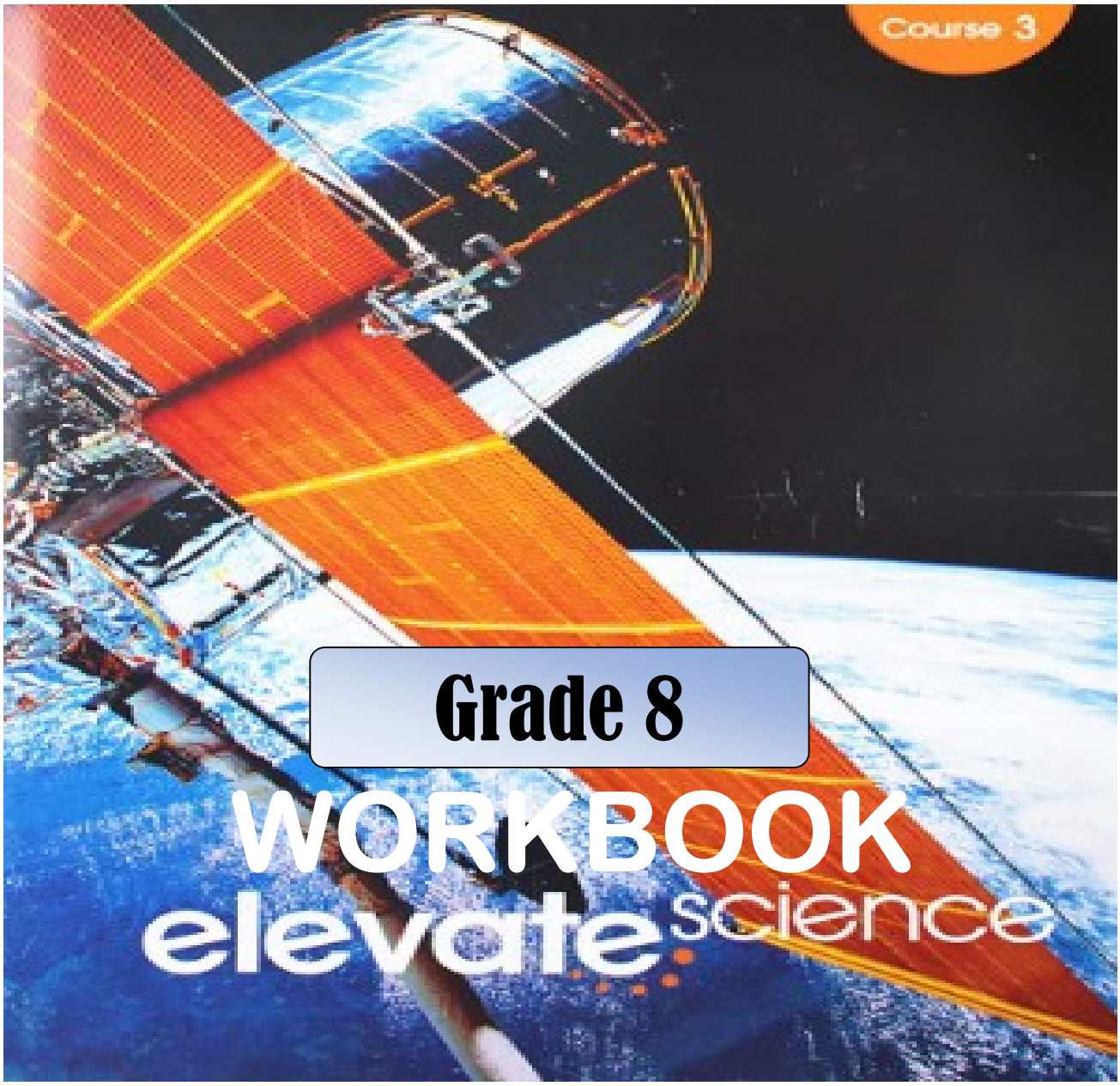
وزارة التعليم
Ministry of Education

AL NOOR INTERNATIONAL SCHOOL
Riyadh, Saudi Arabia




Name: _____

Grade : _____ Section : _____

Academic Year: _____

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Chapter 1

**Lesson 1: Atomic Theory** (TB. pages 5-12)

## Q.1: Circle the letter of the correct answer.

**1. A subatomic particle that has a negative charge is called a(n)…**

a. molecule. c. element.

b. electron. d. compound.

**2. Thomson is responsible for discovering that an atom contains….**

a. electrons. c. anodes.

b. molecules. d. a nucleus.

**3. Which of the following statements not true?**

a. Protons have a positive charge.

b. A nucleus has a positive charge.

c. Neutrons have no charge.

d. Neutrons have a negative charge.

**4. Whose model determined that an atom's positive charge is concentrated in the atom's center?**

a. Rutherford's c. Democritus's

b. Dalton's d. Thomson's

**5. Two different isotopes of an element have different …**

a. numbers of neutrons. c. atomic numbers.

b. numbers of protons. d. numbers of electrons.

**6. Unlike the modern model of the atom, Bohr's model states that …**

a. electrons move in set paths around the nucleus of an atom.

b. atoms cannot be divided into smaller parts.

c. electrons behave like waves.

d. electrons contain orbitals.

## Q.2: Fill in the blanks to complete the following statements.

1. The word *atom* comes from a Greek word that means "unable to be ……....."

2. The first person who suggested that matter was made up of atoms was the Greek philosopher …….....

3. Isotopes of an element have the same atomic …….... but different atomic …….....

4. Rutherford's gold-foil experiment revealed that an atom's positive charge is concentrated in the atom's …….....

5. Neutrons and protons are found in the …….... of an atom.

## Q.3: Complete the table with the mass number, number of protons, number of neutrons, and the number of electrons for the elements shown.

| Element | Mass number | $P^+$ | N | $e^-$ |
|---|---|---|---|---|
| Carbon (C) | 12 | | | 6 |
| Chlorine (Cl) | 35.5 | 17 | | 17 |
| Magnesium (Mg) | | | 12 | 12 |

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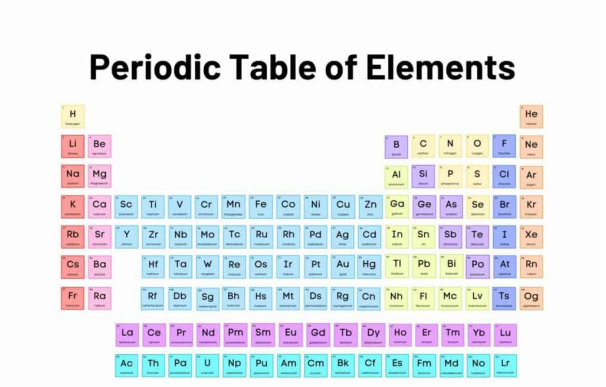
Chapter 1

**Lesson 2: The Periodic Table.** (TB. pages 16-27)

## Q.1: Circle the letter of the correct answer.




**1. The order of elements in the periodic table is based on ..**

a. the number of protons in the nucleus.
b. the electric charge of the nucleus.
c. the number of neutrons in the nucleus.
d. atomic mass.

**2. Which of the following elements is an alkali metal?**

a. calcium
b. magnesium
c. mercury
d. sodium

**3. In Mendeleev's periodic table, elements in each column had similar …**

a. atomic masses.
b. properties.
c. atomic numbers
d. symbols.

**4. Magnesium (Mg) is located to the right of sodium (Na) because Mg has …**

a. fewer protons.
b. no neutrons.
c. no protons.
d. more protons.

**5. How was Mendeleev's periodic table arranged?**

a. by increasing atomic mass
b. by decreasing atomic mass
c. by increasing atomic number
d. by decreasing atomic number

**6. Mendeleev left gaps in his periodic table because …**

a. the table was too small.
c. the table was too full.
b. protons belonged there.
d. no known elements fit there.

**7. Each column of the periodic table is …**

a. an element.
c. an isotope.
b. a group.
d. a period.

## Q.2: Fill in the blanks to complete the following statements.

1. Noble gases are nonreactive gaseous elements that are located in Group …… in the periodic table.

2. Group 1 of the periodic table consists of the ……..., a highly reactive group of elements.

3. The ……..... are reactive elements in Group 17 in the periodic table.

4. Six elements called ……..... which have some properties of metals and some properties of nonmetals.

## Q.3: What do alkali metals and alkaline earth metals have in common? How are they different?

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Chapter 1

## Lesson 3: Bonding and the Periodic Table. (TB. pages 28-36)

## Q.1: Circle the letter of the correct answer:

**1. Semiconductors are elements that….**

a. have large atomic masses but small atomic numbers.

b. not form compounds.

c. can conduct heat and electricity under certain conditions.

d. extremely hard.

**2. Elements that belong to the same group have the same number of …**

a. valence electrons.

b. neutral electrons.

c. inner electrons.

d. total electrons.

**3. The three main groups of elements are metals, nonmetals, and …**

a. inert gases.

b. alkali metals.

c. radioactive isotopes.

d. metalloids.

**4. Most elements are ……..**

a. metals.

b. nonmetals.

c. metalloids.

d. semiconductors.

**5. Most nonmetals are ……..**

a. brittle.

b. good conductors.

c. metalloids.

d. shiny.

**6. Which element is a semiconductor?**

a. carbon.

b. silicon.

c. sodium.

d. uranium.

**Q.2: Understanding Main Ideas. Look at the diagram below. Then answer the following questions in the space provided.**



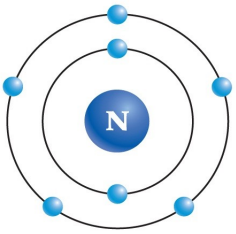
**1.** How many protons does a nitrogen atom have? _____

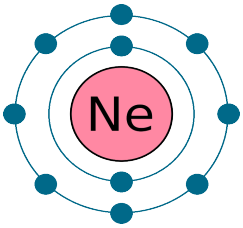
**2.** How many valence electrons does a nitrogen atom have? _____

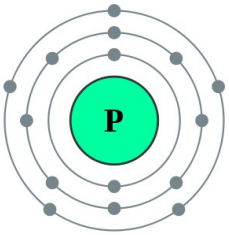
**3.** Is nitrogen reactive or stable? _____

**4.** The element directly below nitrogen in the periodic table is phosphorus (P). How many valence electrons do phosphorus have? _____

**5. Will the properties of nitrogen be more similar to the properties of neon or the properties of phosphorus? Explain.**



***Name:*** _____ ***Date:*** ___/____/_____

**Lesson 4: Types of Bonds.** (TB. pages 38-47)

## Q.1: Circle the letter of the correct answer:

**1. Ionic bonds form between two ions that have _____.**

a. ionic compounds _ c. positive charges

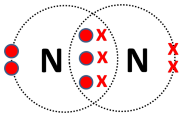
b. negative charges d. opposite charges

**2. Ions that are made of more than one atom are called _____.**

a. ionic compounds _ c. polyatomic ions

b. crystals d. ionic bonds

**3. A nitrogen molecule ($N_2$) has one triple bond. How many electrons do the nitrogen atoms share?**




a. 1 c. 4

b. 3 d. 6

**4. Compared to ionic compounds, molecular compounds generally have _____.**

a. good conductivity c. more chemical bonds

b. greater densities d. a low melting point

## Q.2: If the statement is true, write true.

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

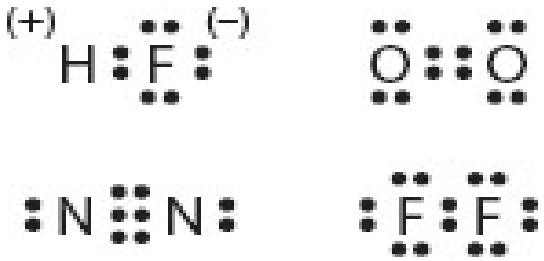
_____1. The chemical bond formed when two atoms share electrons is called a(n) **ionic** bond.

_____2. **Covalent** bonds usually form when a nonmetal combines with a(n) metal.

_____3. If a molecule contains **polar** bonds, the molecule may or may not be polar overall.

_____4. In a(n) polar bond, one atom pulls on the shared electrons **more than** the other atom.

## Q.3: Understanding Main Ideas. Answer the following questions in the spaces provided. Use the diagram at right to answer questions 1–5.




1. Circle all of the covalent bonds in the electron dot diagrams.

_____

2. Which bond(s) shown are double bonds?

_____

3. Which bond(s) shown are triple bonds?

_____

4. Which molecule(s) shown have polar bonds?

_____

Chapter 1

***Name:*** _____ ***Date:*** ___/____/_____

**Lesson 5: Acids and Bases.** (TB. Pages 48-54)

## Q.1: Circle the letter of the correct answer:

**1. When a solution of an acid reacts with a solution of a base, hydronium ions react with hydroxide ions to form**

a. a salt.
b. a stronger acid.
c. a weaker base.
d. water.

**2. soap is a weak base. What is true about the taste of bases?**

a. they taste sour.
b. they taste sweet.
c. they taste bitter.
d. they taste salty.

**3. Which type of ion does an acid produce when it is dissolved in water?**

a. oxide.
b. oxygen.
c. positive hydrogen.
d. negative hydroxide.

**4. Which statement is true when acids and bases are mixed together?**

a. acids become stronger.
b. bases become stronger.
c. there is no change.
d. they neutralize each other.

**5. litmus paper can tell you if a solution is acidic, neutral or basic by changing color when placed in a solution. If you test a base with litmus paper, it will turn ____.**

a. purple

b. red

c. blue

d. pink

**6. Reacts with metals and corrodes them.**

a. Acids

b. Bases

c. salts

d. all of the above

## Q.2: Compare between the acids and bases according to the following properties.

| Property | Acids | Bases |
|---|---|---|
| **1. Taste.** | | |
| **2. Feel.** | | |
| **3. Reaction with metals.** | | |
| **4. Reaction with carbonate.** | | |
| **5. Color with litmus paper.** | | |

Chapter 2

*Name:* _____ *Date:* ___/____/_____

**Lesson 1: Mixtures and Solutions.** (TB. pages 68-76)

## Q.1: Circle the letter of the correct answer.

**1. The particles in a colloid remain dispersed throughout the mixture because they …….**

a. are extremely small.
c. have a negative charge.
b. have a positive charge.
d. are of different sizes.

**2. You can make a solute dissolve more quickly in a solvent by ……**

a. adding more solute.
c. heating the solvent.
b. adding ice.
d. removing some solvent.

**3. All of the following will make it easier to dissolve a solute in a solvent except ……**

a. heating the solvent.
b. stirring the solution.
c. increasing the surface area of the solute.
d. adding a larger amount of solute.

**4. Some types of peanut butter settle into two layers, a solid layer and a liquid layer. These peanut butters are ……..**

a. colloids.
c. solutions.
b. emulsions.
d. suspensions.

**5. What determines whether a mixture is a suspension or a colloid?**

a. number of particles
c. distribution of particles
b. size of particles
d. None of the above

**6. Particles in a(n) _____ can be separated by filtration.**

a. alloy
c. suspension
b. solution
d. All of the above

## Q.2: Fill in the blanks to complete the following statements:

1. When a solid is dissolved in water, you can separate the two by _____ .

2. A solution is an example of a(n) _____.

3. Garden soil and potato salad are two examples of _____.

4. The particles in a(n) _____ are smaller than those in a suspension.

5. The solubility of gases increases when _____ is high and _____ is low.

## Q.3: Identify if the mixture is a solution or suspension



1. muddy water

_____ Solution
_____ Suspension

5. juice


_____ Solution
_____ Suspension

2. ocean water

_____ Solution
_____ Suspension

3. oil and water

_____ Solution
_____ Suspension

*Name:* _____ *Date:* ___/____/_____

**Lesson 2: Chemical Change** (TB. pages 78-88)

## Q.1: Circle the letter of the correct answer.

**1. A release of energy is a sign that ……..**

a. a chemical change is taking place.
b. a physical change has just occurred.
c. oxygen is present.
d. organic chemicals are present.

**2. The substance that is formed in a chemical reaction is called the**

a. polymer.
b. reactant.
c. radical.
d. product.

**3. Which of the following is a sign that a chemical reaction has occurred?**

a. change in shape.
b. melting.
c. formation of a gas.
d. dissolving.

**4. Which of the following is <u>NOT</u> an example of a physical change?**

a. crumpled paper.
b. pencil sharpening.
c. shrunken clothing.
d. rust.

**5. The rate of a chemical reaction tells us about ……..**

a. the reactants taking part in the reaction
b. the products formed in the reaction
c. how slow or fast the reaction is taking place
d. none of the above

**6. What is the difference between a chemical change and a physical change?**

a. A physical change forms a new substance with different properties.

While in a chemical change, the materials remain the same.

b. A chemical change forms a new substance with different properties.

While in a physical change, the materials remain the same.

c. a and b.

d. neither a nor b.

**7. In a(an) ……. Reaction, the energy released as the products form is greater than the energy required to break the bonds of the reactants.**

a. endothermic

b. substitution

c. exothermic

d. oxidation-reduction

**8. In a(an) ……. Reaction, more energy is required to break the bonds of the reactants than is released by the formation of the products.**

a. endothermic

b. substitution

c. exothermic

d. oxidation-reduction

## Q.2: Decide whether each of these reactions is exothermic or endothermic:

a) When two chemicals' mix their temperature rises: _____

b) A solid burns brightly and releases heat, light and sound: _____

c) When two chemicals are mixed their temperature drops: _____

d) Two chemicals will only react if you heat them continually: _____

e) Plants take in light energy for photosynthesis: _____

***Name:*** _____ ***Date:*** ___/____/_____

**Lesson 3: Modeling Chemical Reactions.** (TB. pages 90-97)

## Q.1: Circle the letter of the correct answer.

**1. A shorter, easier way to show chemical reactions, using symbols instead of words, is called a …….**

a. chemical equation.
b. symbol.
c. chemical formula.
d. subscript.

**2. In chemical reactions, what does the principle of conservation of mass mean?**

a. Matter is not created or destroyed.
b. The total mass of the reactants is greater than the total mass of the products.
c. The total mass of the reactants is less than the total mass of the products.
d. Matter is not changed.

**3. Which of the following is constant in a closed system?**

a. Energy
b. Mass
c. Temperature
d. Momentum

**4. The opposite of a synthesis reaction is a ……. reaction.**

a. decomposition.
b. oxidation-reduction.
c. replacement.
d. substitution.

**5. James planted seeds in a pot and after a few days a plant started to grow. It appeared that the plants carrying out photosynthesis had more mass than what was being taken in. Plants are often in a system in which the matter going in and out can't be controlled or observed. What kind of system do most plants function within?**

a. decomposition system.

b. manufactured system.

c. closed system.

d. open system.

**Q.2: Having read about the different kinds of chemical equations, Jameel decided to learn more about how they work. Read each of the descriptions or equations that describe the different kinds of chemical reactions that can occur. Use the graphic organizer to place each description or equation in the correct column.**

- two or more elements or compounds combine to make a more complex substance.
- $2Kl + Pb(NO_3)_2 \rightarrow Pbl_2 + 2KNO_3$
- compounds break down into simpler products.
- $2H_2O_2 \rightarrow 2H_2O + O_2$
- two elements in different compounds trade places
- $2Mg + O_2 \rightarrow 2MgO$

| Decomposition | Replacement | Synthesis |
|---|---|---|
| | | |

***Name:*** _____ ***Date:*** ___/____/_____

**Lesson 4: Producing Useful Materials.** (TB. pages 98-105)

## Q.1: Circle the letter of the correct answer.

**1. Chemicals and resources made by humans are called ……**

a. pesticides.
b. synthetic materials.
c. fertilizers.
d. polymers.

**2. What are some common natural materials?**

a. cotton, wood, plastic.
b. wood, plastic, polymers.
c. wood, cotton, wool.
d. none of the above.

**3. What are synthetic materials usually made from?**

a. cotton fibers.
b. polymers.
c. a type of fiber from wood.
d. smaller synthetic materials.

**4. A polymer is …….**

a. a useful chemical made of many repeating units.
b. only found in chemistry laboratories, under high protection because they're extremely reactive.
c. a shape with at least three straight sides and angels.
d. all of the above.

**5. A …… is a molecule that forms the basic unit for polymers.**

a. monotone.
b. monomer.
c. dimer.
d. monopoly.

**6. Desmond wanted to paint his bedroom. He went to the hardware store and was shown a variety of different paint colors from which to pick. Paint is an example of which kind of product that is made with chemicals by humans?**

a. natural.
b. accidental.
c. synthetic.
d. natural resource.

**7. David has learned that natural materials such as silk, rubber, and wool are made of long chains of repeating units that occur naturally and that these chains can also be synthesized. Look at the two images in the diagram, and then circle the words or phrases that correctly complete the sentence below.**

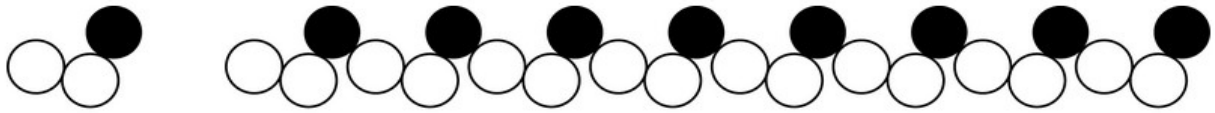


Image 1 Image 2

Image 1 is an example of a **(synthetic material / polymer / natural material / monomer)**, and Image 2 is an example of a **(monomer / synthetic material / natural material / polymer)**.

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Chapter 3

**Lesson 1: Describing Motion and Force.** (TB. pages 120-127)

## Q.1: Circle the letter of the correct answer.

**1. The combination of all of the forces acting on an object is called the ……..**

a. total force.
b. union of forces.
c. super force.
d. net force.

**2. If the net force on an object is zero then the object has**

a. reaction forces.
b. action forces.
c. balanced forces.
d. unbalanced forces.

**3. A tug-of-war that results in one team pulling the other across the line is an example of ……..**

a. action forces.
b. reaction forces.
c. balanced forces.
d. unbalanced forces.

**4. An object that changes position relative to a reference point is**

a. stationary.
b. in motion.
c. moving at constant speed.
d. moving at constant velocity.

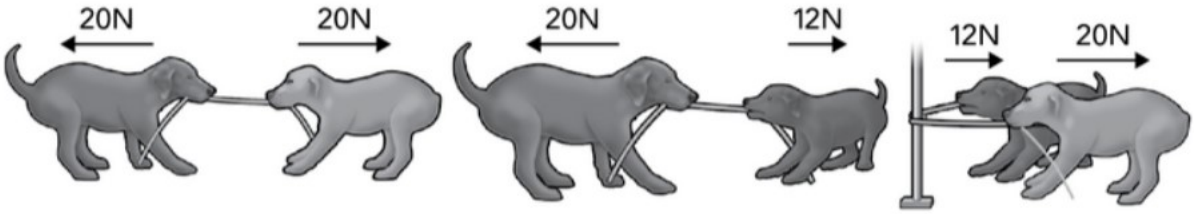
**5. The SI unit for force is**

a. newton.
b. meter/second$^2$.
c. meter/second.
d. newton/meter

**6. Which of the following statements is true?**

a. Frictional forces are greatest when both surfaces are rough.
b. When a truck is parked on a hill, friction pulls the truck down the hill.
c. Air resistance always opposes friction.
d. Friction can exist between two objects even when they are not in contact.

**Use the information below to answer questions 7 and 8.**
**Keisha has two large dogs and a small dog. The dogs like to play tug-the-rope with each other. Each of these three diagrams shows one way that the dogs play together with the rope. Look at each arrow and the number that goes with it. They show the direction and amount of force each dog exerts on the rope.**




**_____ 7. Look at the middle diagram, where the large dog and the small dog tug on the rope. Which statement correctly explains the amount and direction of the net force acting on the rope, and in which direction the rope will move?**

a. The net force is 8 N to the left, and the rope will move to the right.
b. The net force is 8 N to the left, and the rope will move to the left.
c. The net force is 32 N to the left, and the rope will move to the left.
d. The net force is 32 N to the right, and the rope will move to the right.

**8. Explain whether the forces shown in each diagram are balanced or unbalanced. Use math-based evidence to support your claim for each diagram.**

Name: _____ Date: ___/____/_____

Chapter 3

**Lesson 2: Speed, Velocity, and Acceleration.** (TB. pages 128: 137)

## Q.1: Circle the letter of the correct answer.

**1. The SI unit for speed is ……**

a. mph. c. m/s.

b. ft/s$^2$. d. Δv /t.

**2. Average speed can be represented by the mathematical expression**

a. distance/time. c. time – distance.

b. distance × time. d. time + distance.

**3. The _____ of an object consists of its speed and direction.**

a. velocity. c. average speed

b. instantaneous speed d. displacement

**4. The average speed of a runner who runs 500.0 m in 1.6 min is …….**

a. 0.19 m/s. c. 96 m/s.

b. 5.2 m/s. d. 312 m/s.

**5. A car moving at an average speed of 55.0 m/h for 4.25 h has traveled ..**

a. 0.08 m. c. 55 m.

b. 13 m. d. 234 m.

**6. When the motion of an object is shown by a straight line on a distance vs. time graph with distance on the y-axis, the slope of the line is the ….**

a. distance traveled._ c. speed.

b. displacement. d. time of travel.

**7. The equation for finding average acceleration for straight-line motion is …**

a. initial velocity – final velocity × time.

b. final velocity – initial velocity/time.

c. initial velocity + final velocity + time.

d. initial velocity + final velocity – time.

**8. Moving from 0 m/s to 25 m/s in 8.0 s equals an average acceleration of**

a. 0.32 m/s.
b. 0.32 $m/s^2$.
c. 3.1 m/s.
d. 3.1 $m/s^2$.

## Q.2: Fill in the blanks to complete the following statements:

1. The distance-time graph for a faster moving object has a(n) _____ slope than the graph for a slower moving object.

2. The measurement 82 km/h southeast is a measurement of _____.

3. Acceleration can be determined from a velocity vs. time graph by calculating the line's _____.

4. Acceleration is the rate at which _____ changes.

## Q.3: Find the velocity of a dolphin that swims 55 m in 5.0 s.

Name: _____ Date: ___/___/_____

Chapter 3

**Lesson 3: Newton's Laws of Motion.** (TB. pages 140: 148)

## Q.1: Circle the letter of the correct answer.

**1. The law that states that an object at rest will remain at rest unless acted upon by a nonzero net force is ….**

a. Newton's first law of motion.
b. Newton's second law of motion.
c. Newton's third law of motion.
d. the law of conservation of momentum.

**2. The law that states that for every action force there is an equal and opposite reaction force is ……**

a. Newton's first law of motion.
b. Newton's second law of motion.
c. Newton's third law of motion.
d. the law of conservation of momentum.

**3. The law that states that the unbalanced force acting on an object equals the object's mass times its acceleration is ……**

a. Newton's first law of motion.
b. Newton's second law of motion.
c. Newton's third law of motion.
d. the law of conservation of momentum.

**4. Earth pulls on the moon and holds the moon in its orbit. The moon pulls on Earth with an equal and opposite force. This is an example of ……**

a. Newton's first law.
b. Newton's second law.
c. Newton's third law.
d. None of the above

**5. Which statement illustrates Newton's first law?**

a. A stone will not move unless something pushes or pulls it.

b. A ball rolling across the floor eventually slows down.

c. As a car comes to a stop, the passengers continue to move forward.

d. All of the above

**6. What unbalanced force is needed to give a 976 kg vehicle an acceleration of 2.50 $m/s^2$?**

a. $3.90 \times 10^2$ N

b. $3.90 \times 10^2$ lb

c. $2.44 \times 10^3$ N

d. $2.44 \times 10^3$ lb

**7. A force of 240.0 N causes an object to accelerate at 3.2 $m/s^2$. What is the mass of the object?**

a. 0.013 kg

b. 75 Kg

c. 240 kg

d. 768 kg

**8. A 0.25 kg steel ball experiences a net force of 1.15 N as it rolls down a ramp. What is the acceleration of the ball?**

a. 0.29 $m/s^2$

b. 0.90 $m/s^2$

c. 1.4 $m/s^2$

d. 4.6 m/s

**9. If an equal force is applied to two cars of equal mass, Car A and Car B, Car A will have _____ acceleration as (than) Car B.**

a. the same

b. greater

c. less

d. the opposite

**Q.2: A 2.5 kg box is sliding along a level floor. It is slowing down at a rate of 0.45 m/s2. What is the force of friction the floor is exerting on the box?**

Name: _____ Date: ___/____/_____

Chapter 3

**Lesson 4: Friction and Gravitational Interactions.** (TB. pages 150: 158)

## Q.1: Circle the letter of the correct answer.

**1. The gravitational force between two objects depends on masses of objects and …….**

a. accelerations of objects.
b. distance between objects.
c. speeds of objects.
d. sizes of objects.

**2. Which of the following objects exerts a gravitational force?**

a. a bowling ball
b. a book
c. a feather
d. All of the above

**3. How much does a 59.0 kg woman weigh on Earth?**

a. 6.02 N
b. 59.0 lb
c. 145 lb
d. 578 N

**4. Weight is best described as ……**

a. an object's resistance to acceleration.
b. what causes an object to fall.
c. the downward force exerted on an object due to gravity.
d. a force solely dependent on an object's mass.

**5. Which is an example of static friction?**

a. pulling a skier behind a boat
b. pushing a box that is at rest
c. braking a car going down a hill
d. driving a car up a hill

**6. Which is not an example of sliding friction?**

a. ice skating on a frozen pond
b. taking notes with a pencil
c. rolling a ball across a desk
d. pushing a book across a table

**7. The friction between a book at rest and the desk it is lying on is an example of …….. friction.**

a. static
c. sliding
b. rolling
d. fluid

**8. The friction between objects that are stationary is called …**

a. static friction.
c. fundamental friction.
b. rolling friction.
d. kinetic friction.

**9. Which of the following requires friction?**

a. cleaning a pan
c. skiing
b. writing a letter
d. All of the above

***Name:*** _____ ***Date:*** ___/____/_____

Chapter 4

## Lesson 1: Patterns of Inheritance. (TB. pages 172: 181)

**Q.1: 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.**

| A | B |
|---|---|
| ____1. Heredity | a. an allele whose trait is hidden in the presence of a dominant allele. |
| _____2. Allele | b. a number that describes how likely it is that an event will occur. |
| _____3. Dominant allele | c. an organism's genetic makeup or combination of alleles. |
| _____4. Recessive allele | d. the passing of traits from parents to offspring. |
| _____5. Genotype | e. each different form of a gene. |
| _____6. Phenotype | f. an organism's physical appearance or visible traits. |
| _____7. Probability | g. an allele whose trait always shows up in the organism. |

## Q.2: Circle the letter of the correct answer.

**1. Genes are carried from parents to offspring on structures called ….**

a. alleles. c. Chromosomes.

b. phenotypes. d. genotypes.

**2. Which of the following represents a heterozygous genotype?**

a. GG. c. Gg.

b. gg. d. none of the above.

**3. Which of these is <u>NOT</u> a phenotype?**

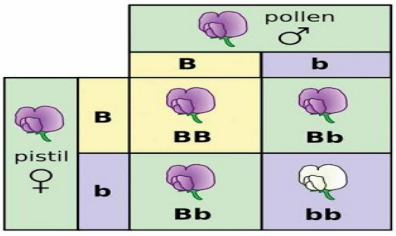
a. tall
c. short
b. homozygous
d. round

**4. In a cross between individuals that are Aa × Aa, how many boxes of the Punnett square will show an offspring that is AA?**

a. 1
c. 2
b. 3
d. 4

**4. Which of these is NOT a way to express probability?**

a. 1 in 4
c. $\frac{3}{4}$
b. 50 percent
d. 25




**Q.3: Fill in the Punnett square to show a cross between two guinea pigs who are heterozygous for coat color. B is for black coat color and b is for white coat color.**

| | |
|---|---|
| | |

Name: _____ Date: ___/____/_____

Chapter 4

## Lesson 2: Chromosomes and Inheritance. (TB. pages 184: 192)

**Q.1: 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.**

| A | B |
|---|---|
| _____1. Cell cycle. | a. the process during which the number of chromosomes is reduced by half. |
| _____2. Mitosis. | b. each chromosome splits into two rod-like structures called … |
| _____3. Pedigree. | c. the series of events in which a cell grows, prepares for division, and divides to form daughter cells. |
| _____4. Meiosis. | d. a tool that geneticists use to map out the inheritance of traits. |
| _____5. Chromatids. | e. the process during which the body cells divide to make two genetically identical new cells. |

**Q.2: Modified True or False: If the statement is true, write true. If the statement is false, change the underlined word or words to make the statement true.**

_____1. Body cells of humans have **46** pairs of chromosomes.

_____2. Sex cells have **twice** the number of chromosomes as body cells.

_____3. Genes pass from parents to offspring on **chromosomes**.

_____4. A fertilized egg has **twice** the number of chromosomes as the body cells of the parent.

## Q.3: Choose the correct answer:

**1. Chromosomes are long, thread-like structures of ….**

a. cells.
c. proteins.
b. genes.
d. DNA.

**2. Which process results in the formation of sex cells?**

a. crossing over.
c. meiosis.
b. separation.
d. transfer.

***Name:*** _____ ***Date:*** ___/____/_____

## Lesson 3: Genetic Coding and Protein Synthesis. (TB. pages 194: 202)

### Q.1: Fill in the blank to complete each statement.

1. The sides of a DNA molecule are made up of sugar molecules alternating with _____ molecules.

2. In DNA, adenine always pairs with _____.

3. Each _____ on a chromosome contains the information to code for one specific protein.

4. Each group of three DNA bases on a gene code for a single _____.

### Q.2: Modified True or False: If the statement is true, write true. If the statement is false, change the underlined word or words to make the statement true.

_____1. Each gene is located at a specific place on a(n) **protein**.

_____2. DNA **synthesis** is the process by which DNA copies itself.

_____3. The process of DNA copying itself begins when the two sides of the DNA molecule unwind and **separate**.

_____4. The genetic code is determined by the **sizes** of the nitrogen bases.

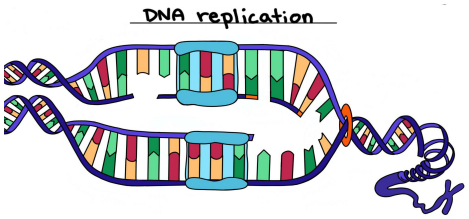
_____5. Nitrogen bases are **molecules** that contain nitrogen and other elements.

## Q.3: Answer the following questions.

**1. These letters represent the nitrogen bases on one strand of DNA: GGCTATCCA. What letters would form the other strand of the helix?**

_____

**2. Why is DNA replication important?**




_____

_____

_____

_____

**3. Describe the steps in protein synthesis.**

_____

_____

_____

_____

***Name:*** _____ ***Date:*** ___/____/_____

Chapter 4

**Lesson 4: Trait Variations.** (TB. pages 204: 215)

## Q.1: Fill in the blank to complete each statement.

1. A mutation can be passed to offspring only if it takes place in a(n)_____ cell.

2. A mutation is any change in the _____ of a gene or chromosome.

3. A mutation can occur if a base pair is _____, deleted, or substituted to another one.

4. The 22 pairs of chromosomes that are not sex chromosomes are _____ chromosomes.

## Q.2: Modified True or False: If the statement is true, write true. If the statement is false, change the underlined word or words to make the statement true.

_____1. Mutations are **sometimes** helpful to the organism.

_____2. If **chromosomes** do not separate correctly during the formation of sex cells, the organism that forms can end up with too many or too few chromosomes.

_____3. A female human has **one** X chromosome.

_____4. Inherited mutations occur when the parent passes on the mutation during **reproduction**.

**Q.3: How many and what types of chromosomes are found in every one of your cells?**

_____

_____

_____

_____

**Q.4: How are inherited mutations different from acquired mutations.**

_____

_____

_____

_____

***Name:*** _____ ***Date:*** ___/____/_____

Chapter 4

## Lesson 5: Genetic Technologies. (TB. pages 216: 225)

### Q.1: Modified True or False: 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 process of **cloning** involves removing an unfertilized egg and replacing its nucleus with the nucleus of a body cell from the same species.

_____2. In **selective breeding**, organisms with desired traits are chosen to be parents of the next generation.

_____3. The complete set of genetic information that an organism carries in its DNA is called **gene therapy**.

_____ 4. through a process called **cellular respiration**, modern geneticists can transfer a gene from the DNA of one organism into another.

_____5. Small rings of DNA called **plasmids** are found in some bacterial cells.

_____6. Genetic diseases are caused by **genetic engineering**.

### Q.2: Scientists created a new variety of rice. They modified a common strain of rice by inserting the carotene gene from carrots. The addition of this gene resulted in a rice enriched with Vitamin-A, a crucial vitamin for humans. What technology does this example represent.

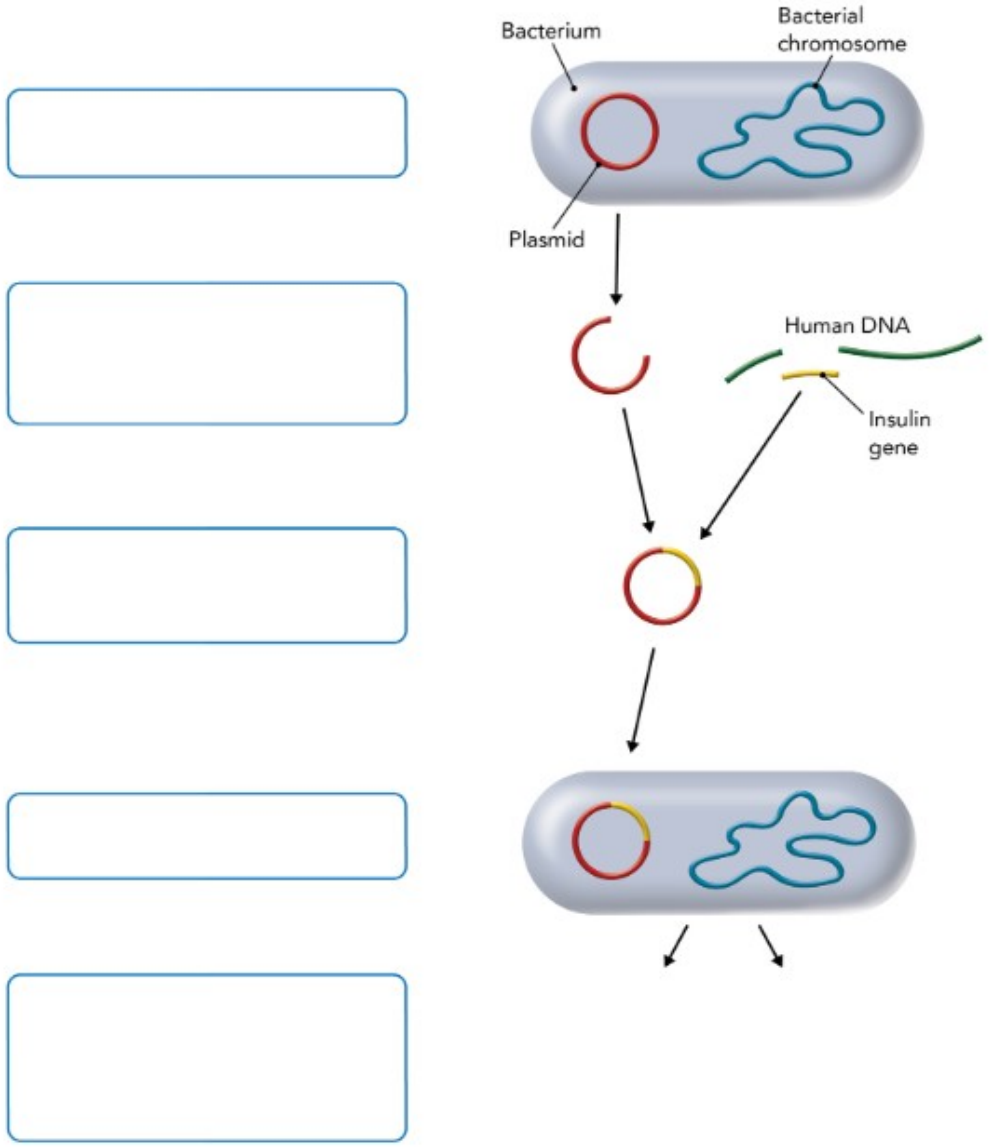
a. meiosis.

b. genetic engineering.

c. artificial selection.

d. cloning.

**Q.3: List the steps by which bacteria can be used to produce insulin in humans and complete the diagram by showing the process for Step 5.**



***Name:*** _____ ***Date:*** ___/____/_____

Chapter 5

**Lesson 1: Early Study of Evolution.** (TB. pages 238: 247)

## Q.1: 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.

| A | B |
|---|---|
| _____1. Species | a. a well-tested explanation for a wide range of observations and experimental results. |
| _____2. Evolution | b. an inherited behavior or physical characteristic that helps an organism survive and reproduce in its environment. |
| _____3. A fossil | c. the process by which modern organisms have descended from ancient organisms. |
| _____4. Adaptation | d. a group of similar organisms that can mate with each other and produce offspring that can also mate and reproduce. |
| _____5. A scientific theory | e. is the preserved remains or traces of an organism that lived in the past. |

## Q.2: Circle the letter of the correct answer.

**1. Members of a species can mate with each other and produce _____.**

a. gene pools
c. variations
b. fertile offspring
d. adaptations

**2. The different shapes of bird beaks are examples of _____.**

a. fossils
c. evolution
b. adaptation
d. naturalism

**3. The preserved remains of an organism that lived long ago is a(n) _____.**

a. adaptation
c. fossil
b. Galápagos
d. Beagle

**4. Adaptations and variations sow evidence of past _____**

a. evolution
c. fossil
b. offspring
d. diversity

**5. Who made the first attempt at developing a theory of evolution?**

a. Anning
c. Lamarck
b. Darwin
d. Lyell

## Q.3: Modified True or False: If the statement is true, write true. If the statement is false, change the underlined word or words to make the statement true.

_____1. Today scientists know that organisms are much **less** diverse than Darwin imagined.

_____2. Darwin made a number of important observations on the **Hawaiian** Islands.

_____3. Without **variation**, all the members of a species would have the same traits.

Name: _____ Date: ___/____/_____

Chapter 5

## Lesson 2: Natural Selection. (TB. pages 248: 256)

### Q.1: 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.

| A | B |
|---|---|
| _____1. A mechanism. | a. the struggle among living things to get the necessary amount of food, water, and shelter. |
| _____2. Natural selection. | b. determines how a cell acts. |
| _____3. Competition. | c. is the natural process by which something takes place. |
| _____4. Gene expression. | d. a process by which individuals that are better adapted to their environment are more likely to survive and reproduce than other members of the same species. |

### Q.2: Circle the letter of the correct answer.

**1. Darwin was able to create the fantail pigeon from the wild rock dove by using …..**

a. artificial selection.
c. mechanisms.
b. natural selection.
d. overproduction.

**2. Darwin observed that some variations make individuals better adapted …**

a. to accumulate traits.
b. to their environment.
c. for population change.
d. for more mutations.

**3. Natural selection is affected by three factors: ……., variations, and overproduction.**

a. competition.

b. mechanism.

c. gene expression.

d. mutation.

**4. …… is the study of small changes to DNA that turn genes on or off but don't change the genetic code itself.**

a. zoology. c. genetics.

b. epigenetic. d. overproduction.

**5. In Darwin's book the……., he proposed that evolution occurs by means of natural selection.**

a. the Population of Species.

b. the size of species.

c. the origin of Species.

d. the evolution of species.

## Q.3: Answer the following questions:

**1. What are the factors that affect the process of natural selection?**

_____

_____

_____

**2. When members of a species compete, what do they compete for?**

_____

_____

_____

Name: _____ Date: ___/____/_____

Chapter 5

## Lesson 3: The Process of Evolution. (TB. pages 258: 265)

### Q.1: Circle the letter of the correct answer.

**1. An organism's …… describes how well it can survive and reproduce in its environment.**

a. population. c. characteristics.

b. fitness. d. overproduction.

**2. Only mutations to …… cells can get passed on and affect the fitness of offspring.**

a. sex. c. blood.

b. brain. d. body.

**3. ……. Is natural selection that acts on an organism's ability to get the best possible mate.**

a. artificial selection. c. sexual selection.

b. competition. d. asexual selection.

**4. A(an) ……. Is a unit of genetic material that acts as instructions for a specific protein or function.**

a. gene. c. atom.

b. cell. d. element.

**5. Gene flow can …….. the genetic variation of a population.**

a. increase. c. a and b.

b. decrease. d. neither a nor b.

**6. ……... is the process by which two species evolve in response to changes in each other over time.**

a. evolution. c. artificial selection.

b. natural selection. d. coevolution.

**7. …….. create all the variations among members of a species and account for the diversity of organisms on Earth.**

a. competition.

b. mechanism.

c. gene expression.

d. mutations.

**8. Unlike an organism with low fitness, an organism with high fitness has the ability to survive and …….**

a. mutate.

b. coevolve.

c. reproduce.

d. interact.

**9. Because they create multiple alleles, mutations can cause …**

a. cell division.

b. damaged DNA to repair itself.

c. overproduction of offspring.

d. variations in traits.

## Q.2: How are mutations both harmful and helpful?

_____

_____

_____

Name: _____ Date: ___/____/_____

Chapter 5

**Lesson 4: Evidence in the Fossil Record.** (TB. pages 266: 277)

## Q.1: 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.

| A | B |
|---|---|
| _____1. Fossil record. | a. is a young organism that develops from a fertilized egg. |
| _____2. An embryo. | b. similar structures that related species have inherited from a common ancestor. |
| _____3. Homologous structures | c. all the fossils that have been discovered and what we have learned from them. |

## Q.2: Circle the letter of the correct answer.

**1. Evidence supporting biological evolution is found in the fossil record and in …….**

a. adaptations to changing environments.

b. similar anatomies and embryos.

c. offspring with various traits.

d. layers of sediment.

**2. A ……. Creates a hollow area in the rock that is the shape of an organism or part of an organism.**

a. mold.

b. cast.

c. trace.

d. amber.

**3. A ……. makes a solid copy of an organism's shape, sometimes containing some of the original organism.**

a. mold. c. trace.

b. cast. d. amber.

**4. …….. is the small, solid pieces of material that come from rocks or the remains of organisms and settle to the bottom of a body of water.**

a. sediment. c. trace.

b. cast. d. amber.

**5. …….. fossils are fossils in which minerals replace all or part of an organism.**

a. trace. c. petrified.

b. cast. d. mold.

**6. Footprints, nests, and animal droppings preserved in stone are all …….**

a. trace fossils. c. petrified fossils.

b. body fossils. d. mold.

**7. Ancient mammoths frozen into ice, petrified dinosaur bones, and insects trapped in amber are other examples of …….**

a. trace fossils. c. petrified fossils.

b. body fossils. d. mold.

**8. New predators, climate change, disease, and competition with other species are a few factors that can lead to ……..**

a. variation. c. reproduction.

b. overproduction. d. extinction.

Name: _____ Date: ___/____/_____

Chapter 7

**Lesson 1: Energy in Earth's Atmosphere.** (TB. pages 342: 350)

## Q.2: Circle the letter of the correct answer.

**1. The sun's energy travels to Earth as ….**

a. mechanical waves.

b. electromagnetic waves.

c. surface waves.

d. all of the above.

**2. Earth's atmosphere is divided into layers based on …..**

a. thickness. c. height.

b. size. d. temperature.

**3. Without the ……, too much UV radiation would reach Earth's surface and threaten the health of organisms.**

a. ozone layer. c. troposphere layer.

b. thermosphere layer. d. ionosphere layer.

**4. A tiny fraction of the visible light that reaches Earth's surface is transformed to …….. in plants and other photosynthetic organisms.**

a. kinetic energy. c. chemical energy.

b. thermal energy. d. electric energy.

**5. Most of the electromagnetic waves that travel from the sun and reach Earth are in the form of ……..., which you can see.**

a. visible light. c. infrared radiation.

b. ultraviolet radiation. d. X-ray radiation.

**6. Convert 75°C to degrees Fahrenheit.**

a. 74°F
c. 150°F
b. 102°F
d. 167°F

**7. Which of the following is the process through which gases such as water vapor hold energy in the atmosphere and keep Earth warm?**

a. condensation.
b. infrared radiation.
c. ultraviolet radiation.
d. the greenhouse effect.

**8. …… is the transfer of heat by the movement of a fluid.**

a. conduction. _
c. convection.
b. radiation.
d. all of the above.

**9. The transfer of energy by electromagnetic waves is called ……..**

a. conduction. _
c. convection.
b. radiation.
d. all of the above.

**10. The transfer of heat between two substances that are in direct contact.**

a. conduction. _
c. convection.
b. radiation.
d. all of the above.

Name: _____ Date: ___/____/_____

Chapter 7

## Lesson 2: Patterns of Circulation in the Atmosphere. (TB. pages 352: 360)

**Q.1: 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.**

| A | B |
|---|---|
| _____1. Wind. | a. a local wind that blows from an ocean or lake. |
| _____2. A model. | b. the way Earth's rotation makes winds curve. |
| _____3. Sea breeze. | c. bands of high-speed winds 10 kilometers above Earth's surface. |
| _____4. Land breeze. | d. is the movement of air parallel to Earth's surface. |
| _____5. Coriolis effect. | e. the flow of air from land to a body of water forms. |
| _____6. Jet streams. | f. such as a diagram or a map, to describe and predict wind patterns and their effects. |

## Q.2: Circle the letter of the correct answer:

**1. Wind speed and pressure can be measured with a(an) …….**

a. anemometer.
c. barometer.
b. thermometer.
d. gasometer.

**2. The major global wind belts are the …….**

a. trade winds.
c. polar easterlies.
b. prevailing westerlies.
d. all of the above.

**3. The patterns of winds moving around the globe are called …….**

a. local winds.
c. polar winds.
b. global winds.
d. tropical winds.

**4. Global winds form from temperature difference between ……**

a. the north pole and the south pole.
b. the equator and the poles.
c. North America and South America.
d. Asia and Africa.

**5. Which unequal condition causes a sea breeze to develop?**

a. dryer air over land than water.
b. dryer air over water than land.
c. warmer air over land than water.
d. warmer air over water than land.

## Lesson 3: Patterns of Circulation in the Ocean. (TB. pages 362: 369)

### Q.1: Circle the letter of the correct answer:

**1. What makes ocean currents move in a curved path?**

a. Earth's rotation. c. unequal density.

b. unequal heating. d. Earth's revolution.

**2. What causes deep ocean currents to flow?**

a. global winds. c. unequal heating.

b. local winds. d. density differences.

**3. Which of the following can bring heavy rains and flooding to California and an especially warm winter in the northeastern United States?**

a. El Niño. c. Coriolis.

b. El Niña. d. North Atlantic Drift.

**4. Which effect does the Gulf stream have on the climates of nearby land?**

a. calming. c. freezing.

b. drying. d. warming.

**5. A ……. is a large stream of moving water that flows through the ocean.**

a. current. c. wind.

b. wave. d. disturbance.

**Q.2: Answer the following questions:**

**1. What pattern of movement do both warm and cold surface currents share?**

**2. What causes surface currents?**

Name: _____ Date: ___/____/_____

Chapter 8

**Lesson 1: Climate Factors.** (TB. pages 384: 392)

**Q.1: 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.**

| A | B |
|---|---|
| _____1. Climate. | a. the zone includes all of the locations on Earth that can possibly see the sun directly overhead. |
| _____2. Tropical zone. | b. the long-term weather pattern in an area. |
| _____3. Temperate zone. | c. the short-term conditions in an area. |
| _____4. Polar zone. | d. the zone that's found between the tropical zone and the polar zone. |
| _____5. Weather. | e. the zone extends from about 66.5° to 90.0° N and 66.5° to 90.0°S. |

**Q.2: Modified True or False: If the statement is true, write true. If the statement is false, change the underlined word or words to make the statement true.**

_____1. **Temperature** is affected by latitude, altitude, distance from large bodies of water, and ocean currents.

_____2. Many mountainous areas have **warmer** climates than the lower around them.

_____3. In general, areas near the **poles** have warmer climates because the sun's rays hit Earth's surface more directly there.

_____4. The main factors that affect **temperature** are prevailing winds, the presence of mountains, and seasonal winds.

## Q.3: Answer the following questions.

**1.Explain why some places on Earth are warm and others are cold.**

_____

_____

_____

**2.How do prevailing winds affect the precipitation an area experiences?**

_____

_____

_____

Name: _____ Date: ___/____/_____

Chapter 8

**Lesson 2: Climate Change.** (TB. pages 392: 403)

## Q.1: 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.

| A | B |
|---|---|
| _____1. Greenhouse gases. | a. substances formed from the remains of organisms. |
| _____2. Greenhouse effect. | b. a sudden or gradual change in Earth's climate. |
| _____3. Climate change. | c. certain gases in the atmosphere such as water vapor, carbon dioxide, methane and nitrous oxide absorb much of the heat leaving Earth's surface. |
| _____4. Global warming. | d. the gradual increase in temperature. |
| _____5. Fossil fuels. | e. the process by which the greenhouse gases trap heat, keeping Earth warm. |

## Q.2: Circle the letter of the correct answer:

**1. Why is carbon dioxide considered a greenhouse gas?**

a. it is found in high concentrations in greenhouses that contain lots of plants.

b. it is produced as a result of human activity.

c. it traps radiated energy in the atmosphere, which causes air temperatures to rise.

d. it is necessary for plants to survive.

**2. Which of the following is not a natural process that can affect Earth's climate?**

a. volcanoes.

b. lunar eclipses.

c. changes in solar radiation.

d. shifting continents.

**3. Removing trees for logging, agriculture, or development results in more ……. In the atmosphere.**

a. carbon dioxide. c. nitrogen.

b. oxygen. d. methane.

## Q.3: Answer the following questions:

**1. What are greenhouse gases List examples.**

**2. Suggest three solutions to reduce the greenhouse effect.**

Name: _____ Date: ___/____/_____

Chapter 8

**Lesson 3: Effects of a Changing Climate.** (TB. pages 406: 414)

## Q.1: Circle the letter of the correct answer:

**1. What do most climate models predict about Earth's global temperature in the near future?**

a. it will stop rising and remain constant.

b. it will rise several more degrees

c. it will drop before slowly rising again.

d. it will drop quickly and bring about an ice age.

**2. As global temperatures rise, the global sea level is expected to rise in part because …….**

a. more precipitation is falling.

b. permafrost is thawing.

c. greenhouse gases cause water to expand.

d. glaciers are melting at a faster area.

**3. Which of the following is an effect of the loss of sea ice covering northern oceans.**

a. more solar energy is absorbed by ocean water.

b. sea levels decrease.

c. Earth's global temperature drops.

d. ocean water becomes saltier.

**4. A ……., an unforeseen chain of events caused by a disturbance in a system.**

a. greenhouse effect.

b. genetic effect.

c. cascade effect.

d. audio effect.

**5. Disruptions in precipitation patterns cause ……..**

a. heat waves. c. flood.

b. droughts. d. a and b

**6. ……. energy is the clean energy sources that don't come from fossil fuels.**

a. alternative. c. renewable.

b. nonrenewable. d. all of the above.

## Q.2: answer the following questions:

**1. What factors are contributing to rising sea levels?**

**2. Suggest some actions can be done to reduce the effect of climate changing .**

Name: _____ Date: ___/____/_____

Chapter 9

## Lesson 1: Movement of Space. (TB. pages 428: 437)

**Q.1: 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.**

| A | B |
|---|---|
| _____1. A satellite. | a. is a streak of light produced when a small piece of rock or ice, known as a meteoroid, burns up as it enters Earth's atmosphere. |
| _____2. A star. | b. a pattern or group of stars that people imagine represents a figure, animal or object. |
| _____3. A planet. | c. an oval shape, rather than a perfect circle. |
| _____4. A meteor. | d. is a cold mixture of dust and ice that develops a long trail of light as it approaches the sun. |
| _____5. A comet. | e. is a giant ball of superheated gas, or plasma, composed of hydrogen and helium. |
| _____6. A constellation. | f. is an object that orbits the sun, is large enough to have become rounded by its own gravity, and has cleared the area of its orbit of any debris. |
| _____7. An ellipse. | g. is a body that orbits a planet. |

## Q.2: Circle the letter of the correct answer:

**1. An Earth-centered model is known as …..**

a. heliocentric. c. geocentric.

b. biocentric. d. comet.

**2. A sun-centered model is known as ……..**

a. heliocentric. c. geocentric.

b. biocentric. d. comet.

**3. Evidence collected by the scientist ……. gradually convinced others that the heliocentric model was correct.**

a. Isaak Newton. c. Galileo Galilei.

b. Tomas Adison. d. Charles Darwin.

**4. There are ……. planets in our solar system.**

a. five. c. seven.

b. six. d. eight.

**5. As a comet gets close to the sun, the cloud trailing behind the comet forms a glowing tail made up of hot ……...**

a. rocks. c. dust and gases.

b. stars. d. all of the above

**6. What object is at the center of the geocentric model?**

a. Earth. c. the moon.

b. the sun. d. a star.

**7. Planets appear to move in the sky against the backdrop of …….**

a. other planets. c. the sun.

b. the stars. d. the moon.

Name: _____ Date: ___/____/_____

Chapter 9

## Lesson 2: Earth's Movement in Space. (TB. pages 440: 448)

### Q.1: Circle the letter of the correct answer:

**1. The imaginary line that runs through Earth's pole is its …..**

a. axis. c. orbit.

b. revolution. d. rotation.

**2. Which of the following is responsible for the cyclic pattern of day and night on Earth?**

a. the tilt of Earth's axis.

b. the rotation of Earth on its axis.

c. Earth's revolution around the sun.

d. the revolution of the moon around Earth.

**3. Earth has seasons because ……..**

a. its axis is tilted as it revolves around the sun.

b. it rotates on its axis as it revolves.

c. the moon exerts a gravitational force on it.

d. the relative positions of Earth, the sun, and the moon don't change.

**4. …… is the tendency of an object to resist a change in motion.**

a. inertia. c. density.

b. weight. d. force.

**5. Without ……., the moon would veer away from Earth in a straight line.**

a. Earth's mass.
c. Earth's density.
b. Earth's gravity.
d. Earth's radius.

**6. The force that attracts all objects toward each other is called ……..**

a. push force.
c. action force.
b. gravity.
d. reaction force.

**7. Newton's …… states that every object in the universe attracts every other object.**

a. law of momentum conservation.
b. law of matter conservation.
c. law of energy conservation.
d. law of universal gravitation.

**8. The spinning of Earth on its axis is called ……**

a. revolution.
b. rotation.
c. conservation.
d. inertia.

Name: _____ Date: ___/____/_____

Chapter 10

## Lesson 1: Solar System Objects. (TB. pages 472: 483)

**Q.1: 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.**

| A | B |
|---|---|
| _____1. The solar system. | a. is round, orbits the sun, and has cleared out the region of the solar system along its orbit. |
| _____2. The sun. | b. a natural satellite. |
| _____3. A planet. | c. chunks of rock or dust smaller than asteroids. |
| _____4. Moon. | d. loose balls of ice and rock that usually have very long, narrow orbits. They develop tails as they orbit the sun. |
| _____5. Asteroids. | e. consists of the sun, the planets, their moons, and a variety of smaller objects. |
| _____6. Meteoroids. | f. are small, mostly rocky bodies, many of which are found in an area between the orbits of Mars and Jupiter. |
| _____7. Comets. | g. is a gaseous body much larger than anything else in the solar system. |

## Q.2: Circle the letter of the correct answer:

**1. Scientists use a unit called …….. to measure the distance between objects in the solar system.**

a. Kilometer.
c. meters.
b. astronomical unit.
d. hectometer.

**2. The …… zone is the outermost layer of the sun's interior.**

a. radiative.
c. convection.
b. core.
d. rocky.

**3. One astronomical unit equals the average distance measured from the center of the sun to the center of Earth, which is about ……..**

a. 150,000,000
c. 230,000,000
b. 105,000,000
d. 100,000,000

**4. The sun produces an enormous amount of energy in its core through …….**

a. nuclear fission.
c. a and b.
b. nuclear fusion.
d. neither a nor b.

**5. The interior of the sun includes the ……, ……, and the ……...**

a. convection zone.
c. radiative zone.
b. the core.
d. all of the above.

**6. The inner layer of the sun's atmosphere is called the …….**

a. photosphere.
c. corona.
b. chromosphere.
d. stratosphere.

Name: _____ Date: ___/____/_____

Chapter 10

**Lesson 2: Learning about the Universe.** (TB. pages 486: 494)

## Q.1: Circle the letter of the correct answer:

**1. All objects in space emit energy is called …….**

a. thermal energy. c. heat energy.

b. chemical energy. d. electromagnetic radiation.

**2. …… is the light you can see.**

a. ultraviolet radiation. c. infrared radiation.

b. visible light. d. gamma rays.

**3. The distance between the crest of one wave and the crest of the next wave is known as ……**

a. amplitude. c. wavelength.

b. wave speed . d. frequency.

**4. ……. Are instruments that collect and focus light and other forms of electromagnetic radiation.**

a. microscopes. c. anemometer.

b. barometer. d. telescopes.

**5. There are two main types of optical telescopes ……**

a. reflecting telescope. c. diffracting telescope.

b. refracting telescope. d. a and b

**6. Which object is the largest?**

a. Earth.

b. Saturn.

c. Jupiter.

d. the sun.

**7. A student is making a model of the sun's interior. Which feature should the student represent in the convection zone?**

a. a gas erupting into space.

b. gases rising and sinking.

c. radiation moving outward.

d. nuclear fusion producing energy.

**8. Which technology make it possible for people to live and work in space for long periods?**

a. space probe.

b. radio telescope.

c. space station.

d. optical telescope.

*Name:* _____ *Date:* ___/____/_____

Chapter 10

**Lesson 3: Stars.** (TB. pages 496: 505)

## Q.1: Circle the letter of the correct answer:

**1. A …….. is a large cloud of gas and dust containing an immense volume of material.**

a. protostar. c. nebula.

b. white dwarf. d. supernova.

**2. A ……. is the first stage of a star's formation.**

a. protostar. c. nebula.

b. white dwarf. d. supernova.

**3. The properties and life span of every star are the result of how …….**

a. fast it is. c. hot or cold it is.

b. long it is. d. massive it is.

**4. When the stars start to run out of fuel, their outer layers expand to become …….**

a. protostar. c. nebula.

b. white dwarf. d. red giants.

**5. When a supergiant runs out of fuel, it explodes suddenly. Within hours, the star blazes millions of times brighter. The explosion is called a …….**

a. protostar. c. nebula.

b. white dwarf. d. supernova.

**6. Spinning neutron stars are called ……**

a. protostar.
c. nebula.
b. pulsars.
d. supernova.

**7. The coolest stars with a surface temperature of less than 3500 K appear ….**

a. red.
c. purple.
b. blue.
d. yellow.

**8. Using H-R diagram, astronomers classify stars using which two stars properties?**

a. color and composition.

b. size and surface temperature.

c. surface temperature and absolute brightness.

d. surface temperature and apparent brightness.

**9. Which property indicates a star's temperature?**

a. size.
c. color.
b. temperature.
d. brightness.

Name: _____ Date: ___/____/_____

Chapter 10

**Lesson 4: Galaxies.** (TB. pages 506: 514)

## Q.1: Circle the letter of the correct answer:

**1. The apparent motion in the object against distant background stars is called ……**

a. galaxy. c. big bang.

b. parallax. d. light year.

**2. The …….. theory states that the universe formed in an instant, billions of years ago, in an enormous explosion.**

a. effective c. big bang.

b. quantum. d. mathematical.

**3. The …… is all of space and everything in it.**

a. galaxy. c. solar system.

b. universe. d. white dwarf.

**4. A …….. is the distance that light travels in one year.**

a. galaxy. c. big bang.

b. parallax. d. light year.

**5. In what kind of star systems does one star sometimes block the light from another?**

a. open cluster. c. globular cluster.

b. quasar system. d. eclipsing binary.

**6. What is the name of the explosion that began the university?**

a. solar nebula.

b. dark matter.

c. big bang.

d. supernova.

**7. What is dark matter?**

a. matter that can be seen directly.

b. matter that doesn't give off electromagnetic radiation.

c. matter that makes up about 10 percent of the mass of the university.

d. matter that has no effect on other objects.