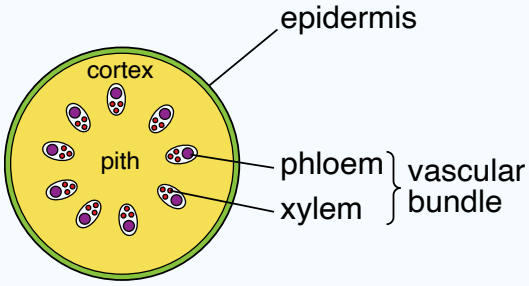
Easy Science 7
Worksheet Answer Key

Unit 1: Plant Systems
Worksheet 1

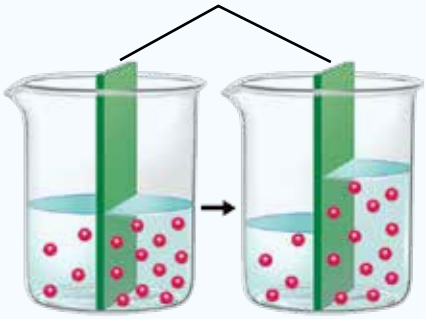
1. Match the following.

Photosynthesis	Occurs in the roots of plants
Flowers	Contain reproductive plant parts
Roots and stems	Leaf structure is especially designed for it
Osmosis	Main plant systems

2. Label the following section of the stem.

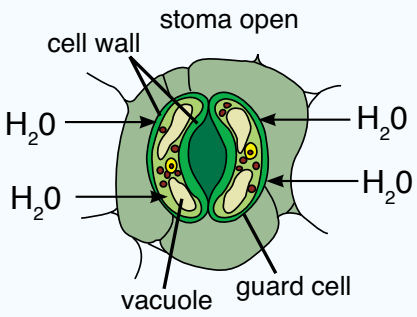


3. Look at the diagram and briefly write about the process.



Ans. Water molecules move from a higher concentration of water to a lower concentration of water, through a semi-permeable membrane is called osmosis. The diagram shows practical demonstration of the same.

4. Recognise and label the diagram.

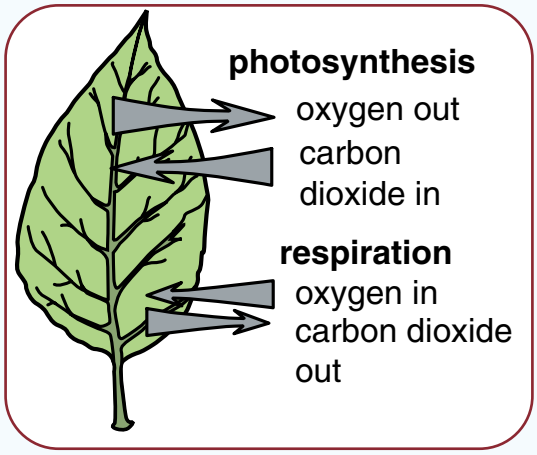


Worksheet 2

1. Fill in the blanks.
   a. Water vapour exits primarily through **stomata**.
   b. In **xylem**, water molecules stick together to form a column.
   c. Chlorophyll is found in the **leaves**.
   d. **Sunlight** provides energy in the food-making process, in plants.
   e. **Nitrogen, Potassium,** and **Phosphorous** are important minerals for plants.
2. Write the three factors that affect the speed of transpiration in plants.
   - **Temperature**
   - **Wind**
   - **Humidity**
3. Write word equation for photosynthesis.

Carbon dioxide + water —(Sunlight absorbed by chlorophyll)→ chlorophyll + oxygen

4. Draw and label a diagram of a leaf to show respiration.



Unit 2: Human Respiratory and Circulatory System
Worksheet 1

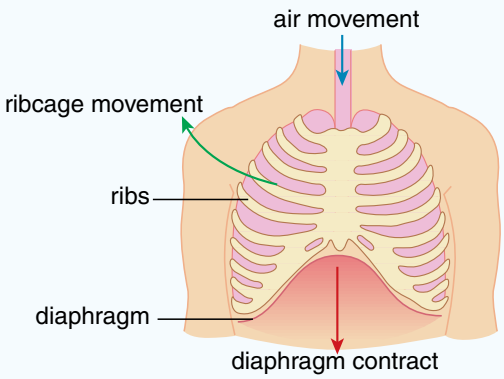
1. Name the six systems in the human body.

- Circulatory System
- Respiratory System
- Skeletal System
- Nervous System
- Digestive System
- Muscular System

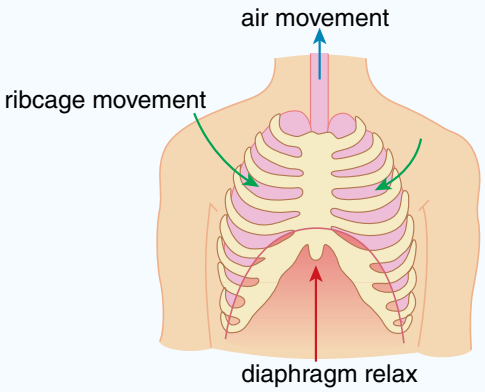
2. Define breathing.

Breathing is the process by which carbon dioxide leaves the body and oxygen enters it. It occurs in the lungs. Blood transports carbon dioxide from the cells back to the lungs and oxygen to the cells.

3. Identify phases in the following diagrams.



a. Inhalation



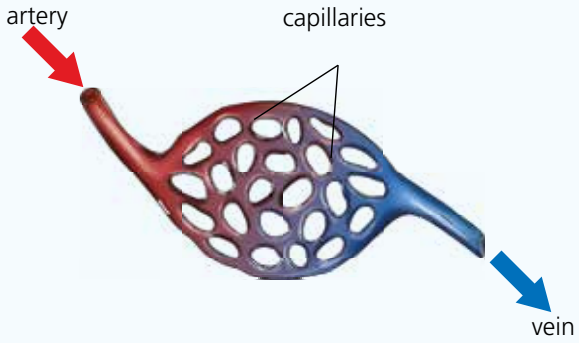
b. Exhalation

4. Match the following:

Breathing	Process of releasing energy through out the breakdown of glucose
Mitochondria	Exchange of gases between the lungs and the surrounding air
Respiration	Involved where energy is generated
Oxygen	Break down of glucose in a chemical reaction
Inhalation and Exhalation	Is taken in from the air is in breathing

Worksheet 2

1. Draw a diagram to show blood vessels.



2. Mark the following statements as **True** or **False**.

a. The human circulatory system is also known as the cardiovascular system. **True**

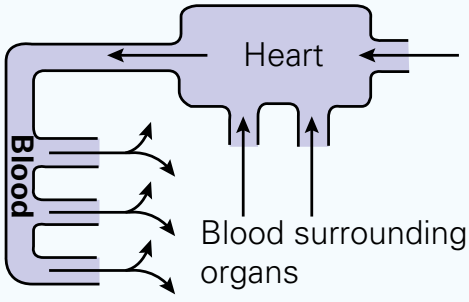
b. The human heart pumps blood through an open circulatory system. **False**

c. Blood vessels include arteries and capillaries only. **False**

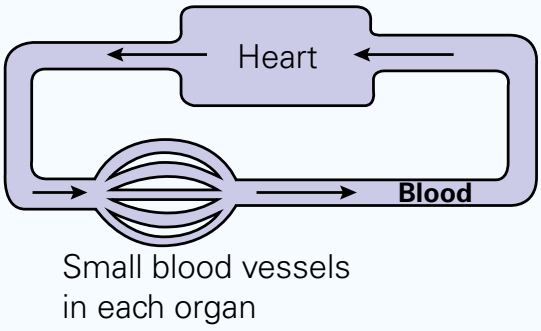
d. Veins carry deoxygenated blood to the heart. **True**

e. The circulatory system supports higher metabolic rates. **True**

3. Look at the diagrams and recognize the systems and label.



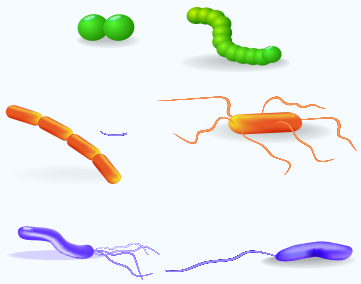
Open circulatory system



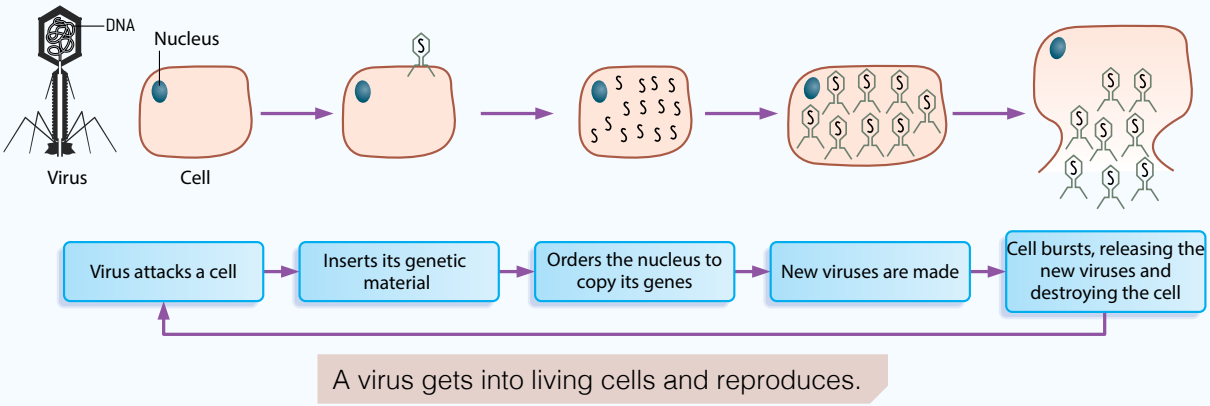
Closed circulatory system

Unit 3: Immunity and Diseases
Worksheet 1

1. Draw bacteria to show their different shapes.



2. Label the following diagram to show how a virus gets into living cells and reproduces.



A virus gets into living cells and reproduces.

3. Define the following:

a. Parasites:

Parasites are organisms that live off other living things.

b. Fungi:

They are microorganisms that can cause anything from minor skin irritation to serious diseases.

4. Write names of some infectious diseases.

- Typhoid
- Whooping cough
- Hepatitis
- Measles
- COVID-19

Worksheet 2

1. Label the following pictures to show hygienic practices.

a. Brushing the teeth

b. Taking a shower daily

c. Keeping the room neat and tidy

d. Using handkerchief

e. Not sharing personal hygiene items

2. Why do we need to stay at home when sick? Explain.

We need to stay at home during illness to avoid spreading germs in school workplaces, and other public areas.

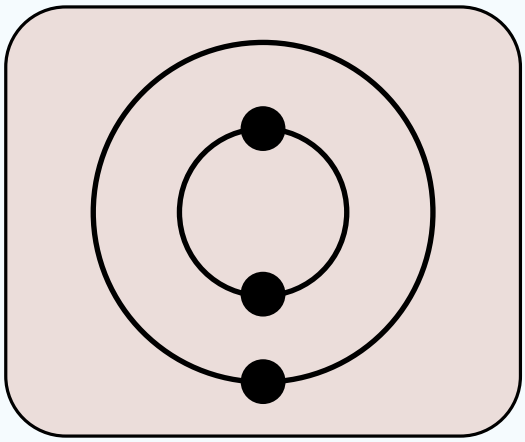
3. Name the three types of the immune system in the human body.

- Active immune system
- Adaptive immune system
- Passive immune system

4. **Vaccine:** A vaccine consists of dead or weakened pathogens and is injected in human body as passive immunity measure/precaution.

Unit 4: Structure of an Atom
Worksheet 1

1. Draw a diagram to show the structure of Lithium (atomic no.3) and write the distribution of electrons in its shells.



The diagram shows the element Lithium with atomic number 3.

2 electrons are in K shell and 1 electron is in the L shell.

2. Answer the following question:

a. What is the mass number? Write the definition and equation.

The protons and neutrons have approximately the same mass. It can be written as Mass number=number of protons + number of neutrons

3. Complete the following table for the first six elements:

Element	Symbol	Atomic number	Number of electrons	K	L	M
Hydrogen	H	1	1	1	-	-
Helium	He	2	2	2	-	-
Lithium	Li	3	3	2	1	-
Beryllium	Be	4	4	2	2	-
Boron	B	5	5	2	3	-
Carbon	C	6	6	2	4	-

Worksheet 2

1. Fill in the blanks.

a. The periodic table is a big chart.

b. Basic building blocks of matter are elements.

c. Hydrogen is the element outside the periodic table, as it does not belong to a any particular group.

d. The group number is rhe same as the number of electrons in the outermost shell.

e. Lanthanides are a group of soft, silvery metals.

2. Fill in the following table.

Number of groups	Name of group	Number of electrons in the outermost shell
I	Alkali metals	1
II	Alkaline earth metals	2
III	-	3
IV	Carbon family	4
V	Nitrogen family	5
VI	Includes Oxygen and Sulphur	6
VII	Halogens	7
VIII	Noble gases	8

Unit 5: Physical and Chemical changes
Worksheet 1

1. Complete the table to indicate whether the change that occurred is physical or chemical.

Example	Physical change	Chemical change
Melted of ice	✓	
Burnt candle		✓
Mixture of sugar and water	✓	
Crushed aluminium cane	✓	
Fried eggs		✓

2. Fill in the blanks.

a. Physical changes are reversible.

b. Chemical changes are irreversible.

c. Heat energy is always taken in or given out in a chemical change.

d. Through a physical change, no new substances are formed.

e. Ash is a result of the burning of wood, which is a chemical change.

3. Look at the following images and recognize the type of change.

a. Chemical change

b. Physical change

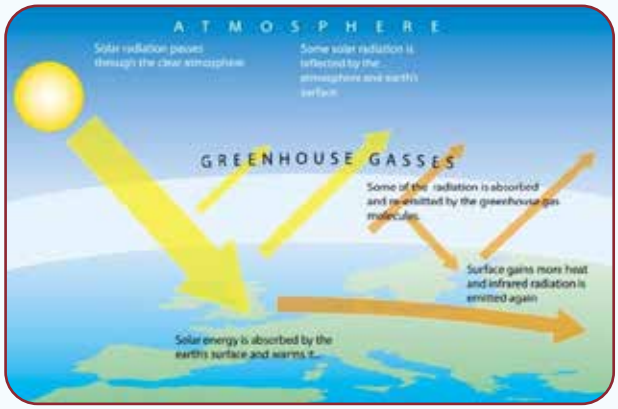
a. Physical change

Worksheet 2

1. Complete the following.
   - **a.** Oxidation is a chemical process in which a substance reacts with oxygen to create an oxide.
   - **b.** Combustion happens when fuel reacts with oxygen, producing heat and light.
   - **c.** Fuel + Oxygen ⟶ Carbon dioxide + Water
   - **d.** Rusting is a process where metals react with oxygen and water to form a reddish-brown substance.
   - **e.** Rust is the substance formed when iron is exposed to moisture and air.
2. Write three effective ways to prevent rusting.
   - Store metal items in a dry place to avoid exposure to moisture.
   - Use paint, oil, or grease to create a barrier between the metal and the air.
   - Clean and inspect metal items regularly to remove signs of rust easily.m
3. Look at the following image and recognize the phenomenon and write.

This image shows the effects of acid rain.

4. Draw a diagram to show the 'Greenhouse' effect.



Unit 6: Chemical Bonds
Worksheet 1

1. Fill in the blanks.

a. Molecules form when atoms of elements bond together.

b. Elements in chemical compounds are joined together by chemical bonds.

c. A molecule of Nitrogen contains two nitrogen atoms.

d. In ionic bonding, atoms gain or lose extra electrons.

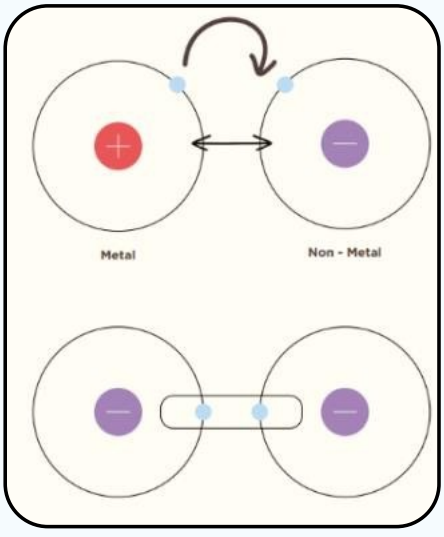
e. Valency is based on the number of electrons in the outermost shell.

2. Complete the following table:

Group numbers in periodic table	Number of electrons in the outermost shell	Valency
1	1	1
2	2	2
3	3	3
4	4	4
5	5	3
6	6	2
7	7	1
8	8	0

3. Label the following diagrams.

Ionic Bond

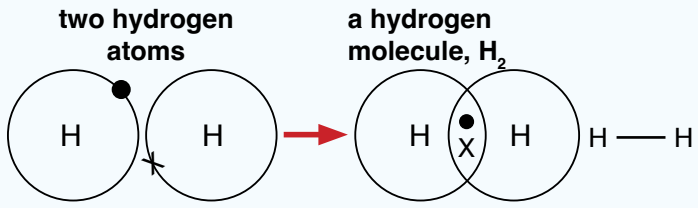


Covalent Bond

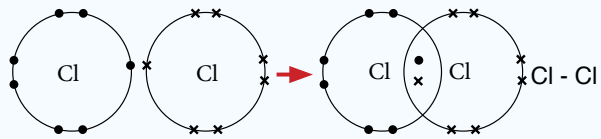
Worksheet 2

1. Define covalent bond.
   - Covalent bonding occurs when two or more atoms share electrons to achieve stability.
2. What are the three types of covalent bonds? Write with an example.
   - Single covalent bond
   - Double covalent bond
   - Triple covalent bond
3. Draw the diagrams/cross and dot structures to show the bonding between the molecules of:

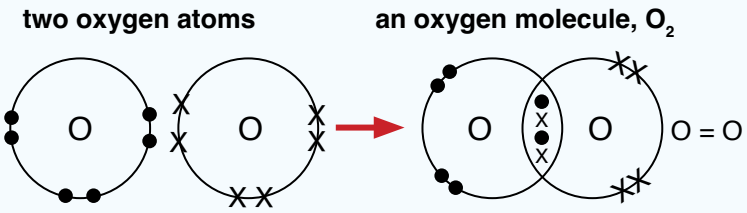
   a. Hydrogen



   b. Chlorine

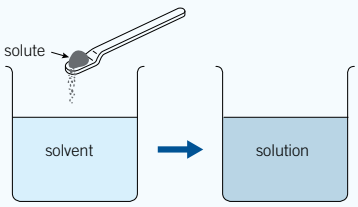


   c. Oxygen



Unit 7: Solutions
Worksheet 1

1. Briefly write about the following diagram.



In this diagram salt is the solute and water is the solvent.

When mixed together they form a solution.

2. Fill in the blanks.

a. Solution is produced when a solid is dissolved in a liquid.

b. Suspension is made, when a substance does not dissolve in another substance.

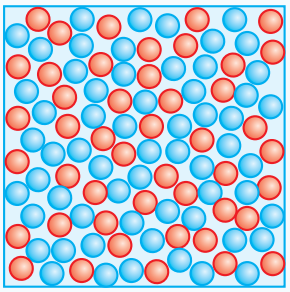
c. A solution forms when a solute is dissolved in a solvent.

d. A substance that dissolves in a solvent is known as a soluble.

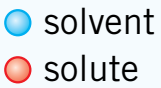
e. A substance that does not dissolve in a solvent is known as insoluble.

3. Draw diagrams to show:

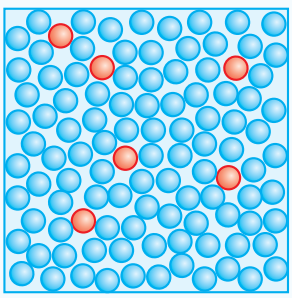
- Concentrated solution



Concentrated solution



- Dilute solution



Dilute solution

Worksheet 2

1. Define:

- Solubility.

  Solubility refers to how well a solute, dissolves in a solvent to form a solution

2. Name the factors that affect solubility.

- Temperature
- Pressure
- Particle size
- Stirring or agitation

3. Mark the following as True or False.

a. Solubility is the property of a solution that shows how well a solute, dissolves in a solvent. True

b. With a temperature rise, solubility of a salt solution decreases. False

c. With an increase in pressure in solids, the solubility increases. False

d. At higher temperatures, more gas molecules dissolve. True

e. CO_2 is added to fizzy drinks under pressure to make them fizz when opened. True

Unit 8: Force and Motion
Worksheet 1

1. Define:

- Force:

  A force is a push or a pull on an object in a direction.

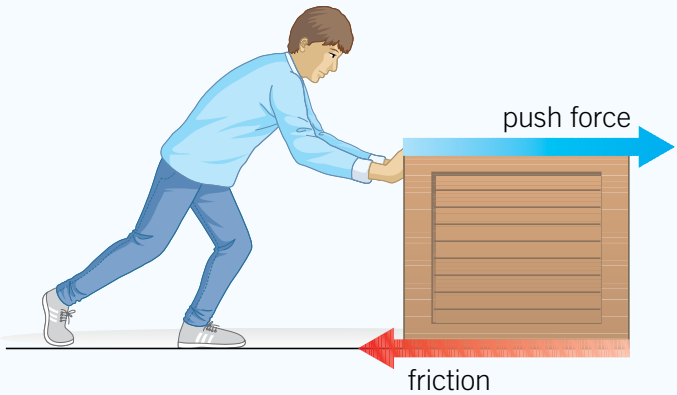
- Contact Forces:

  These forces act together in contact.

- Non-contact Forces:

  Some forces act at a distance, hence the name non-contact forces.

2. Look at the following image and briefly explain it.



When you try to push a box, the friction between the box and the ground resists the motion.

3 Name the contact forces.

- Frictional Force
- Tension
- Applied Force
- Air Resistance (Air Friction)
- Spring Force

Worksheet 2

1. Fill in the blanks:

a. The **non-contact forces** are between two objects that are physically separated from each other.

b. Magnetic force appears between two **magnets**.

c. The force experienced between electrically charged particles is known as **electrostatic force**.

d. Gravitational force is a **contact force** noticed present between large masses.

e. The Earth has a **gravitational force**.

2. Match the following.

Forces	Force Meter
Action and reaction forces	Pushes and pulls between objects
	Work in the opposite direction
Force Measurement	
Unit of force measurement	Newtons(N)

3. Complete the following by filling in the missing words.

a. Speed=**distance** + time

b. SI unit for speed is **meters** per second.

c. Average speed = Total distance + **Total time taken**

d. A **distance-time** graph tells us how far something travels over a period of time and whether or not its speed is changing

Unit 9: Waves and Energy
Worksheet 1

1. Fill in the blanks.

a. A disturbance in the medium that carries energy without the movement of particles is known as wave.

b. The energy across water is moved by water waves.

c. Light waves travel through space.

d. The waves that require a medium to travel through air are called mechanical waves _____.

e. Sound cannot travel through a vacuum.

2. Label the following images to show the type of wave.

a. Slinky spring

b. Water waves

2. Complete the following.

The electromagnetic waves spectrum includes radio, microwave, X-rays, and gamma rays. _.

The visible light has wavelengths of 400 and 700 nanometers, with different colours based on wavelength.

Worksheet 2

1. True/False

a. True

b. False

c. True

d. False

e. False

2. Two factors that affect loudness

- Amplitude of vibration
- Distance from the source

3. Diagram Explanation

The diagram shows **lightning and a person hearing thunder after 3 seconds** at a distance of 1 km.

This illustrates that light travels much faster than sound, so we see lightning almost instantly, but sound (thunder) takes time to reach us. The delay helps estimate distance:

Distance ≈ Time × Speed of sound (343 m/s).

4. Reflection of Sound

Reflection of sound is when sound waves bounce back after hitting a surface.

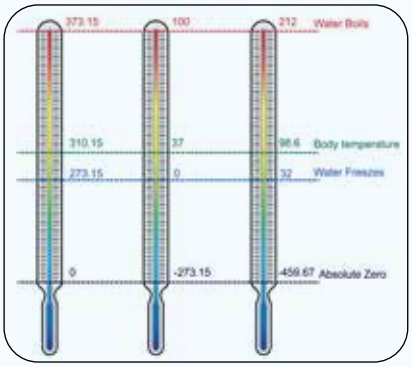
Example: Echo occurs when reflected sound reaches the listener after a short delay.

Unit 10: Heat and Temperature
Worksheet 1

1. Match the following in the table.

Heat gain	We pull our hand away
Touch something hot	Metal container gets warmer
Joules	Absolute zero
Kelvin scale	Unit for heat measurement
In °C (freezing point of water)	0°C

2. Look at the following diagrams of thermometers and name the types of scales.



Kelvin (K) Celsius (°C) Fahrenheit (°F)

a. absolute zero.

Absolute zero is the temperature at which a material has no heat energy and particles stop moving at this temperature.

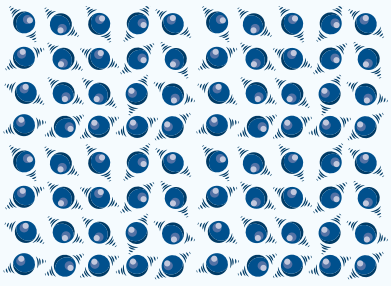
b. Temperature

It is a measure of how hot or cold something is.

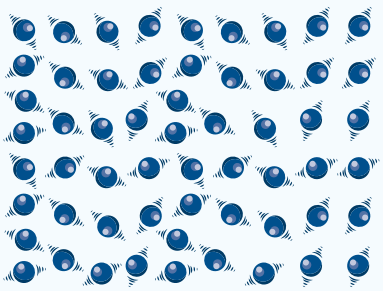
c. Heat

It is the transfer of energy from a higher temperature object to a lower temperature object.

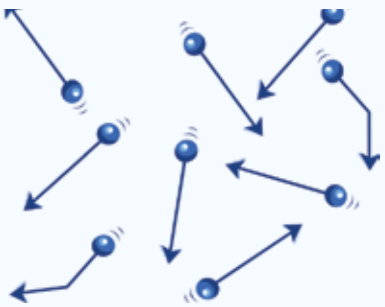
3. Draw diagrams of solid, liquid, and gas particles based on kinetic theory.



Solids Particles



Liquids Particles



Gases Particles

Worksheet 2

1. Name the three methods of heat transfer.

- Convection
- Conduction
- Radiation

2. Look at the following images and identify the material as conductor or insulator.

a. Conductor

b. Conductor

c. Insulator

d. Insulator

3. Name some appliances that work on the principle of radiation.

- Microwave oven
- Solar Inverters

4. Why do the railway lines have expansion joints? Explain.

The railway lines have expansion joints between them to allow for the increase of steelrails with temperature changes preventing them from breaking in lower temperatures or buckling in heat.

Unit 11: Earth and Space
Worksheet 1

1. Fill in the blanks.

a. The mass of the astronauts will remain the same on the Moon and Mars.

b. The force of gravity is not the same on every object.

c. Different planets have different gravitational pulls, due to their different sizes.

d. All the planets in our solar system orbit the Sun due to its huge mass, which results in higher gravity.

e. Weight depends on mass of the object.

2. Label the following image.

Gravity pulls objects to the ground when they are dropped

3. Complete.

Formula of weight:

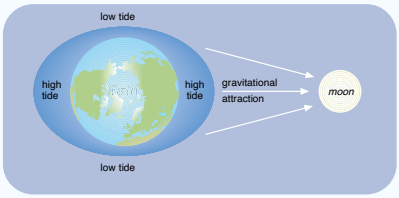
Weight = mass x gravity

W= m x g

4. Match the following.

Tides	Happens during full Moon
Tidal force	Rise and fall of sea level
Daytime on Earth	Caused by Earth's rotation and gravitational pull of the Moon
Spring tide	When part of the Earth faces the Sun
Earth's rotation	1. When Earth spins like a top

5. Draw and label a diagram to show gravitational pull of the Moon.



Worksheet 2

1. State whether True or False.

a. When part of the Earth faces away from the Sun, it is nighttime. True

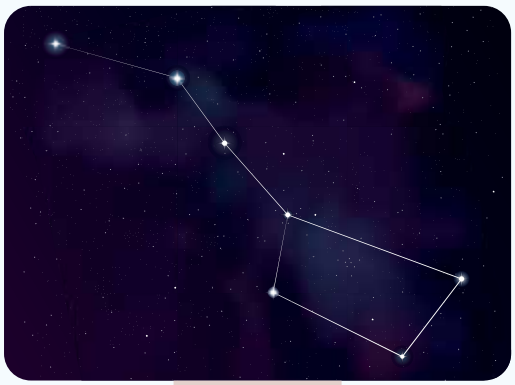
b. As Earth revolves around the Sun, all parts of the Earth have light. False

c. Pakistan experiences winter, when Northern Hemisphere is tilted away from the Sun. True.

d. When countries in the Northern Hemisphere like Pakistan have summer, in Australia and New Zealand, it is winter. True

2. Identify and name the following constellations.

Orion



Big Dipper

3. Complete the following.

a. A group of stars that forms a certain pattern in the sky is known as constellation.

b. The position of stars on the sky keeps on changing due to Earth's tilted axis.

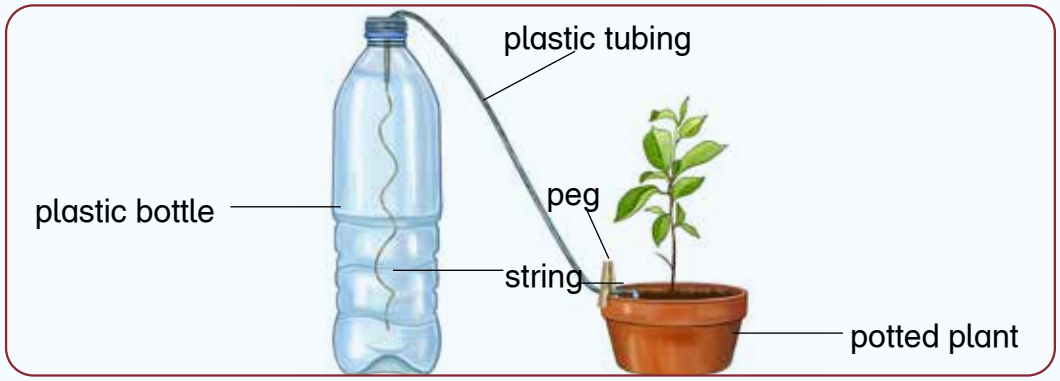
c. Constellations are often named after ancient mythological characters.

d. The Big Dipper, Orion, Southern Cross, and Scorpion are some of the brightest constellations.

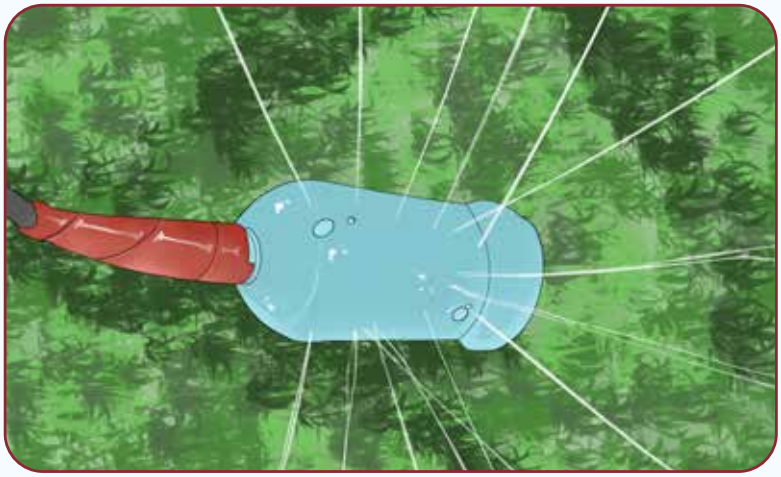
e. The big dipper

Unit 12: Technology in Everyday Life
Worksheet 1

1. Draw a diagram to show a simple irrigation system.



2. Look at the following image, identify and write how the system is useful in irrigation.



The sprinkler irrigation system helps in efficient water distribution. It has uses both in home gardens and farms. It is easier to use too.

3. What is food preservation?

The process of treating and handling food to prevent or slow down spoilage is known as food preservation.

4. Name some older techniques for food preservation.

- Drying
- Refrigeration
- Fermentation

5. What is a stethoscope?

A stethoscope is an instrument used to listen to the sounds made inside the body, mostly heart and lungs.

Worksheet 2

2. Who uses a stethoscope?

A medical doctor uses stethoscope.

3. Label the following images;

a. Stethoscope

b. A hand sanitizer

4. Why do we need to apply hand sanitizers?

The hand sanitizers are a precautionary measure. It protects from germs.

5. Name the material used for making a stethoscope.

Following materials are used to make a stethoscope?

- Aluminium wire
- Plastic tube
- Balloon
- Small Plastic cap
- Glue, tape
- Razor. Pair of scissors