TEACHING TASK (Page 2 – 4)

Multiple Choice Questions

1) What is air mostly made up of?

Answer: B) Nitrogen **Explanation**: Air is primarily composed of nitrogen (about 78%) and oxygen (about 21%), with trace amounts of other gases like carbon dioxide and argon.

2) What do we need oxygen in the air for?

Answer: B) Breathing **Explanation**: Oxygen is essential for human and animal respiration, as it is used by the body to produce energy.

3) What gas do plants need from the air to make their food?

Answer: C) Carbon dioxide **Explanation**: Plants use carbon dioxide during photosynthesis to produce food (glucose) and release oxygen as a byproduct.

4) What does air moving around create?

Answer: C) Wind **Explanation**: Wind is the movement of air caused by differences in air pressure.

5) What is the term for the push air exerts on everything?

Answer: C) Air pressure **Explanation**: Air pressure is the force exerted by air molecules on surfaces due to their weight and movement.

6) Why do we need air?

Answer: B) For breathing **Explanation**: Air, particularly oxygen, is necessary for breathing to sustain life.

7) How do airplanes and birds use air?

Answer: C) To fly **Explanation**: Air provides lift and support for the wings of birds and airplanes, enabling flight.

8) What happens when you blow up a ball or a balloon?

Answer: A) It floats around **Explanation**: When air is blown into a ball or balloon, it becomes inflated and, in the case of a balloon, can float due to the lower density of the air or gas (e.g., helium) inside.

9) What can wind be used for?

Answer: B) Making electricity **Explanation**: Wind energy is harnessed by wind turbines to generate electricity.

10) How do fans help us when we're hot?

Answer: B) By blowing air **Explanation**: Fans move air, which helps cool us by increasing evaporation of sweat from our skin.

Advanced Level

More than One Answer Type

11) What can air do for us when we are hot?

Answer: A) Make us cold, B) Help us cool off **Explanation**: Moving air (e.g., from a fan) cools us by aiding evaporation and lowering body temperature.

12) What are some uses of air?

Answer: A) Breathing, C) Flying, D) Making music **Explanation**: Air is used for breathing (oxygen), flying (lift for birds and airplanes), and making music (e.g., wind instruments like flutes).

13) What can dirty air be caused by?

Answer: A) Smoke, B) Chemicals, D) Dust **Explanation**: Smoke, chemicals, and dust are pollutants that contaminate air, while water is not a pollutant.

14) What does air do for the weather?

Answer: A) Creates wind, B) Regulates temperature, C) Makes rain, D) Helps with cooling **Explanation**: Air movement creates wind, influences temperature regulation, contributes to rain formation (via water vapor), and aids cooling through evaporation.

Fill In the Blanks

15) Air is mostly made up of **nitrogen** (about 78%) and **oxygen** (about 21%).

16) When you blow up a ball or a balloon, the **air** inside makes it bigger and float around.

Matching Type

17) Match the following gases with their percentages in air:

Answer:

Nitrogen – c) About 78%

Oxygen – a) About 21%

Carbon dioxide – b) A tiny bit

Argon – d) A small amount

Answer the Following Questions

18) Why do we need air?

Answer: We need air primarily for breathing, as oxygen in the air is essential for respiration, which provides energy to our bodies. Air also supports various activities like flying (for birds and airplanes), generating electricity (wind power), and playing musical instruments (wind instruments).

19) What does air do? and what can affect the air?

Answer:

What air does: Air supports life by providing oxygen for breathing, enables flight for birds and airplanes, creates wind for weather and energy production, and is used in musical instruments to produce sound. It also plays a role in weather patterns (wind, rain) and temperature regulation.

What affects air: Air can be affected by pollutants like smoke, chemicals, dust, and vehicle emissions, leading to air pollution. Natural events like volcanic eruptions or human activities like burning fossil fuels can also degrade air quality.

LEARNERS TASK (Page 4 – 5)

Multiple Choice Questions

1) What can make the air dirty?

Answer: B) Smoke **Explanation**: Smoke from burning materials pollutes the air, unlike water, sunlight, or sand.

2) What helps with the weather and keeps the Earth cool?

Answer: B) Wind **Explanation**: Wind circulates air, distributing heat and moisture, which helps regulate Earth's temperature.

3) What is the part of air that we need to stay alive?

Answer: C) Oxygen **Explanation**: Oxygen is critical for respiration, which keeps humans and animals alive.

4) What do balloons need to blow up?

Answer: B) Air **Explanation**: Balloons are inflated with air or gases like helium, which makes them float.

5) Why is it important to keep the air clean?

Answer: C) To avoid health problems **Explanation**: Clean air prevents respiratory issues and other health problems caused by pollution.

6) What do many musical instruments use to make sounds?

Answer: B) Air **Explanation**: Wind instruments, like flutes and trumpets, use air vibrations to produce sound.

7) What role does air play in weather?

Answer: B) It helps make wind, rain, and snow **Explanation**: Air movement creates wind, and water vapor in the air forms rain and snow.

8) What is created when air moves around quickly?

Answer: C) Wind **Explanation**: Rapid air movement results in wind.

9) What happens when you use a fan?

Answer: B) It makes air move **Explanation**: Fans circulate air to cool people or spaces.

10) How does air help us play with balls and balloons?

Answer: A) By making them lighter **Explanation**: Air (or helium in balloons) reduces density, making balls and balloons lighter and able to float or bounce.

Advanced Level

11) What gases make up air?

Answer: A) Nitrogen, B) Oxygen, D) Carbon dioxide **Explanation**: Air is primarily nitrogen (78%), oxygen (21%), and a small amount of carbon dioxide, along with trace gases. Hydrogen is not a significant component.

12) How does air help with the weather?

Answer: A) By creating wind, C) By influencing rain and snow, D) By cooling down **Explanation**: Air movement creates wind, carries water vapor for rain and snow, and aids cooling through evaporation.

13) What are some ways we use air in everyday life?

Answer: A) Breathing, C) Flying, D) Playing with balls **Explanation**: Air is used for breathing, flight (airplanes, birds), and inflating balls or balloons for play.

14) Which of these uses air to create something?

Answer: A) Wind turbines, C) Musical instruments **Explanation**: Wind turbines use air (wind) to generate electricity, and musical instruments use air to produce sound.

Fill In the Blanks

15) Plants need **carbon dioxide** from the air to make their food, and they give us **oxygen** to breathe.

16) Fans blow **air** around to help us cool off when we're hot.

Matching Type

17) Match the uses of air with their descriptions:

Answer:

Breathing – d) We need oxygen from the air to stay alive

Flying – a) Helps things like airplanes and birds stay in the sky

Playing with Balls – c) The air inside makes them bigger and float around

Wind Power – b) Turns the wind's energy into electricity

Answer the Following Questions

18) What is air and what is it made up of?

Answer: Air is a mixture of gases that surrounds the Earth. It is primarily made up of nitrogen (about 78%), oxygen (about 21%), and small amounts of other gases like carbon dioxide, argon, and trace gases.

19) Write any three uses of air?

Answer:

Breathing: Air provides oxygen, which is essential for respiration.

Flying: Air supports the flight of birds and airplanes by providing lift.

Generating electricity: Wind, which is moving air, is used by wind turbines to produce electricity.

TEACHING TASK (Page 8 – 10)

Multiple Choice Questions

1) What is matter?

Answer: B) Everything around us that takes up space and has weight **Explanation**: Matter is anything that has mass and occupies space, including solids, liquids, and gases.

2) What shape do solids keep?

Answer: C) They keep their shape and size **Explanation**: Solids have a fixed shape and size due to tightly packed particles.

3) How do liquids behave in a container?

Answer: B) They spread out and fill the container **Explanation**: Liquids take the shape of their container but maintain a fixed volume.

4) Which of these is an example of a solid?

Answer: C) A book **Explanation**: A book is a solid with a fixed shape and size, unlike water (liquid), air (gas), or helium (gas).

5) Which of these best describes gases?

Answer: C) They spread out to fill any space **Explanation**: Gases have no fixed shape or volume and expand to fill their container.

6) What is the process called when matter changes from one form to another?

Answer: B) State change **Explanation**: A state change (or phase change) refers to matter transitioning between solid, liquid, and gas states.

7) What happens to ice when it gets warm?

Answer: B) It turns into water **Explanation**: Ice melts into liquid water when heated.

8) What form does water take when it is put in the freezer?

Answer: B) Solid **Explanation**: Water freezes into ice, a solid, in a freezer.

9) What happens to water when it gets very hot?

Answer: B) It turns into steam **Explanation**: When water is heated to its boiling point, it turns into steam (water vapor, a gas).

10) What is steam turning into when it cools down on a cold mirror?

Answer: C) Liquid **Explanation**: Steam condenses into liquid water droplets when it cools on a cold surface.

11) What is the first step of the water cycle?

Answer: D) Evaporation **Explanation**: Evaporation, where water turns into vapor due to heat, is the first step of the water cycle.

12) What happens during condensation?

Answer: A) Water vapor turns into clouds **Explanation**: Condensation occurs when water vapor cools and forms tiny droplets, creating clouds.

13) What is an example of precipitation?

Answer: C) Rain falling from the clouds **Explanation**: Precipitation includes rain, snow, sleet, or hail falling from clouds.

Advanced Level

More than One Answer Type

14) Which of the following characteristics describe liquids?

Answer: B) They take the shape of their container, C) They can flow and be poured **Explanation**: Liquids conform to the shape of their container and can flow, unlike solids (fixed shape) or gases (fill entire space).

15) Which of the following processes involve matter changing from a gas to a liquid?

Answer: A) Steam from a hot shower cooling into water droplets, D) Condensation on a cold mirror **Explanation**: Both processes involve gas (water vapor) cooling and condensing into liquid water.

Fill In the Blanks

16) When water in rivers, lakes, or oceans gets warm and turns into an invisible gas, this process is called **evaporation**.

17) When water vapor rises into the sky, cools down, and turns back into tiny water droplets that form clouds, this process is called **condensation**.

Matching Type

18) a) Boiling water – 4. Liquid to Gas

b) Water vapor cooling on a cold mirror – 3. Gas to Liquid

c) Freezing water in the freezer – 2. Liquid to Solid

d) Frost forming on a cold window – 1. Gas to Solid

Answer the Following Questions

19) Explain about different changes of matter that occurs in the water on heating and cooling

Answer: Water undergoes several changes of state depending on heating or cooling:

Heating: When water (liquid) is heated, it can undergo **evaporation** or **boiling**, turning into water vapor (gas). For example, boiling water produces steam.

Cooling: When water vapor (gas) cools, it undergoes **condensation**, turning back into liquid water (e.g., water droplets on a cold surface). If liquid water is cooled further, it undergoes **freezing**, turning into ice (solid). Additionally, water vapor can directly turn into a solid (frost) through **deposition** when cooled rapidly on a cold surface.

20) Explain different properties of solids, liquids, and gases

Answer:

Solids: Have a fixed shape and volume, with particles tightly packed and vibrating in place. They are rigid and do not flow (e.g., a book).

Liquids: Have a fixed volume but take the shape of their container. Particles are less tightly packed, allowing them to flow and be poured (e.g., water).

Gases: Have no fixed shape or volume, spreading out to fill their container. Particles are far apart and move freely (e.g., air or helium).

LEARNERS TASK (page 10 – 11)

Multiple Choice Questions

1) What is an example of a liquid?

Answer: C) Milk **Explanation**: Milk is a liquid, while a toy and a balloon are solids, and air is a gas.

2) How do gases spread out?

Answer: C) They fill up all the space around them **Explanation**: Gases expand to fill their container completely due to freely moving particles.

3) What happens to a solid when you move it?

Answer: B) It stays the same shape **Explanation**: Solids maintain their shape and size regardless of movement.

4) Which of these is a gas?

Answer: C) Helium **Explanation**: Helium is a gas, while water and milk are liquids, and ice is a solid.

5) What happens to liquids when you pour them?

Answer: B) They take the shape of their container **Explanation**: Liquids conform to the shape of the container they are poured into.

6) What is dry ice turning into when it gets warm?

Answer: C) Carbon dioxide gas **Explanation**: Dry ice (solid carbon dioxide) sublimates into carbon dioxide gas when warmed.

7) What can happen when water vapor in the air gets very cold?

Answer: B) It turns into frost **Explanation**: Water vapor can undergo deposition, turning directly into frost (solid) when very cold.

8) What causes a solid to turn into a liquid?

Answer: B) Heating up **Explanation**: Heating a solid, like ice, causes it to melt into a liquid.

9) What happens to a liquid when it gets cold enough?

Answer: B) It turns into a solid **Explanation**: Cooling a liquid, like water, causes it to freeze into a solid (ice).

10) What happens to a gas when it cools down?

Answer: A) It turns into a liquid or a solid **Explanation**: Cooling a gas can cause condensation (into a liquid) or deposition (into a solid).

11) What happens to the water after precipitation?

Answer: B) It flows into rivers, lakes, and oceans **Explanation**: After precipitation (rain, snow, etc.), water collects in bodies like rivers and oceans.

12) What does the term "collection" refer to in the water cycle?

Answer: C) Water gathering in rivers, lakes, and oceans **Explanation**: Collection is the process where water accumulates in natural reservoirs after precipitation.

13) What causes water to turn into vapor during evaporation?

Answer: B) The sun's heat **Explanation**: The sun's heat provides the energy for water to evaporate into vapor.

Advanced Level

More than One Answer Type

14) Which of the following are examples of solids?

Answer: B) A book, D) A toy **Explanation**: A book and a toy are solids with fixed shapes, while water is a liquid and air is a gas.

15) Which of the following examples describe how matter changes from a solid to a gas?

Answer: C) Dry ice turning into carbon dioxide gas **Explanation**: Dry ice sublimates directly from a solid to a gas. The other options involve different state changes.

Fill In the Blanks

16) When clouds get too full of water droplets and the water falls back to the ground as rain, snow, sleet, or hail, this process is known as **precipitation**.

17) After precipitation, the water that falls to the ground collects in rivers, lakes, and oceans, which is called **collection**.

Matching Type

18) A) Ice turning into water – 2. Solid to Liquid

B) Steam turning into water droplets – 3. Gas to Liquid

C) Water freezing into ice – 4. Liquid to Solid

D) Dry ice turning into carbon dioxide gas – 1. Solid to Gas

Answer the Following Questions

19) Explain about water cycle

Answer: The water cycle is the continuous process by which water moves through Earth's environment. It involves:

Evaporation: Water from oceans, rivers, or lakes turns into vapor due to the sun's heat.

Condensation: Water vapor cools in the atmosphere, forming clouds.

Precipitation: Water falls from clouds as rain, snow, sleet, or hail.

Collection: Water gathers in rivers, lakes, oceans, or underground reservoirs, restarting the cycle.

20) Explain about Evaporation, Condensation, Precipitation, and Collection

Answer:

Evaporation: The process where water (liquid) turns into water vapor (gas) due to heat, usually from the sun, from surfaces like oceans or lakes.

Condensation: The process where water vapor (gas) cools and turns back into liquid water, forming clouds or droplets (e.g., on a cold surface).

Precipitation: When clouds become too heavy with water droplets or ice, water falls to the ground as rain, snow, sleet, or hail.

Collection: Water that falls as precipitation gathers in rivers, lakes, oceans, or underground, completing the water cycle.