

# KidsBuddy

## Grade 2 Ebook Science



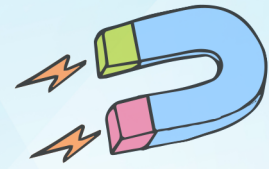
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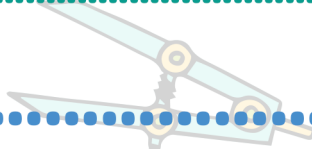
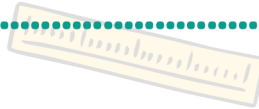
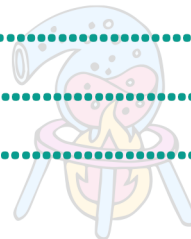
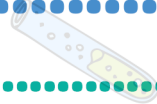
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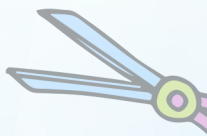
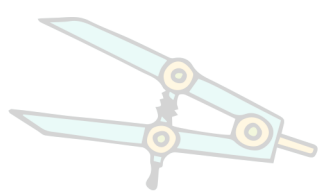
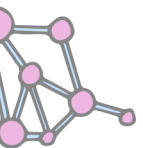
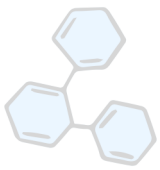
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# KNOWLEDGE CARDS

# Chapter- 1

## Living things

### 1 HOW DO FISH BREATHE UNDER WATER?



FISH



Fish are special animals that live in water. They breathe in a different way than animals that live on land. Fish use their gills to breathe. Gills are like small branches located on the side of their heads. Gills have many tiny blood vessels called capillaries.

Water flows through the fish's gills and the capillaries help the fish take oxygen from the water. The oxygen then goes into the fish's bloodstream and is carried to all the cells in its body. Fish do not have lungs like humans do. They use their gills to breathe underwater. It's important to take care of our environment and keep water clean so fish can continue to breathe properly.

1.1 Fish can breathe underwater by using their \_\_\_\_\_

Gills

Lungs

Pores

Tail

1.2 Gills have many small blood vessels called \_\_\_\_\_

Capillaries

Captions

Coolings

1.3 Gills are branching organs located on the side of fish \_\_\_\_\_

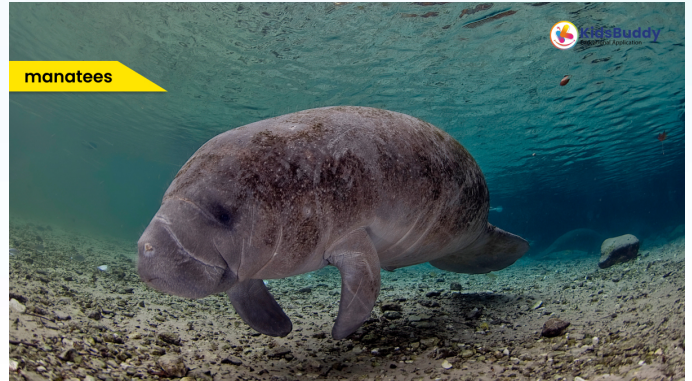
Legs

Stomach

Heads

Hands

## 2 FISH AND MARINE MAMMALS



Marine mammals are special animals that live in water just like fish. However, they are different from fish in many ways. Marine mammals have tails that move up and down to swim, while fish move their tails from side to side. Unlike fish, marine mammals do not have gills to breathe. They have to come up to the surface of the water to breathe in air through their lungs. Examples of marine mammals include whales, manatees, seals, and polar bears. One interesting fact about marine mammals is that they are warm-blooded animals. This means that they can regulate their body temperature,

unlike fish which are cold-blooded. This allows marine mammals to live in different environments, from the icy Arctic to the warm tropics.

2.1 **State True/False?**

Marine mammals can swim in the water.

True

False

2.2 **State True/False?**

Marine mammals swim by moving their tail from side to side.

True

False

2.3 **State True/False?**

Marine mammals have gills to breathe

True

False

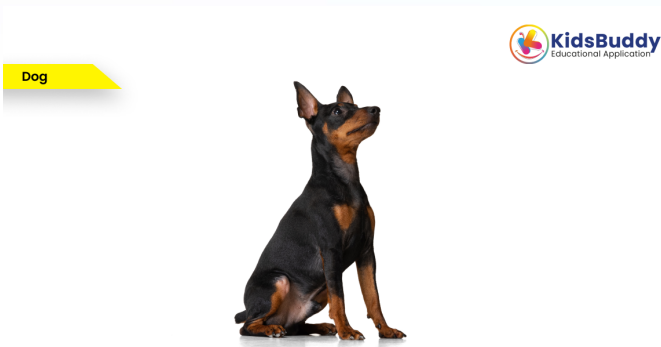
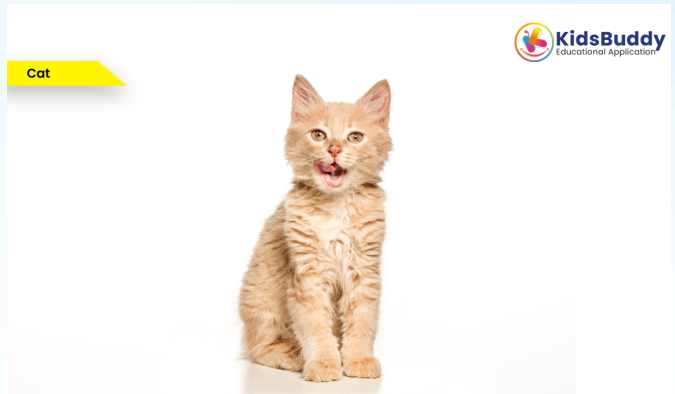
2.3 **Fish are \_\_\_\_\_ animals.**

Cold-blooded

Warm-blooded



# 3 MAMMALS



A class of vertebrate creatures known as mammals is distinguished by the presence of mammary glands, which in females provide milk for the care of their young.

Features of mammals:

1. Presence of salivary glands
2. Mammary glands are glands with the specific function of producing milk.
3. Have three middle ear bones

4. A part of the brain's neocortex is dedicated to hearing and sight.

5. Customized teeth.

6. A heart with four chambers.

7. The existence of fur or hair.

8. The sweat glands.

A mammal is an animal that can breathe air, has a backbone, and frequently develops hair. Additionally, milk-producing glands are present in all female mammals. Of all living things, mammals are among the most intelligent. Examples: A diverse variety of animals, including cats, rats, dogs, people, and whales, are considered as mammals.

3.1 Find the odd one out.

Dogs

Crow

Rats

Cats

3.2 Largest mammal is \_\_\_\_\_

Elephant

Blue Whale

Giraffe

Camel

3.3 What are the features of Mammals?

Presence of salivary glands

Have three middle ear bones

The sweat glands

All of the above

3.4 A \_\_\_\_\_ is an animal that can breathe air, has a backbone, and frequently develops hair.

Omnivores

Mammals

Domestic animals

Wild animals

# 4 REPTILES

lizards



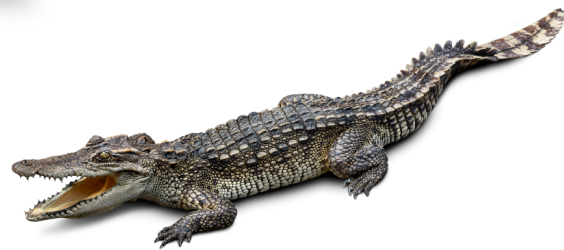
Turtle



Snake



Crocodiles



Reptiles are animals that breathe air and have special skin. They are made up of tortoises, turtles, lizards, snakes, and crocodiles. These animals have unique skin that can be covered in scales, bony plates, or a combination of both. Reptiles shed their skin's outer covering periodically.

Here are some important things to know about reptiles :

Reptiles have a spine, which means they are vertebrates.

Most of their body is covered in scales.  
Reptiles have cool blood.

Some reptiles lay hard-shelled eggs, while others give birth to live babies.

The eggs are carried inside the reptile's body.  
All reptiles have at least one lung.

4.1 Air-breathing vertebrates are known as \_\_\_\_\_

Mammals

Reptiles

Omnivores

Domestic animals

4.2 Find the odd one out.

Dogs

Crow

Snakes

Cats

4.3 What are the features of reptiles?

A vertebrate is a reptile. They have a spine.

Scales cover almost part of their body

They have cool blood.

All of the above

## Answer key

- 1.1 Gills
- 1.2 Capillaries
- 1.3 Heads
- 2.1 True
- 2.2 False
- 2.3 False
- 2.4 Cold-blooded
- 3.1 Crow
- 3.2 Blue whale
- 3.3 All of the above
- 3.4 Mammals
- 4.1 Reptiles
- 4.2 Snakes
- 4.3 All of the above

# KIDS CHALLENGES

# Chapter- 1

## *Living things*

### 1 Cool plant

#### **Description:**

The procedure mentioned in the previous message may not be appropriate as subjecting a plant to cold temperatures in a refrigerator may harm or even kill the plant. Here's an alternative procedure:

#### **Aim:**

To understand the importance of sunlight for plant growth.





**Materials used :**

A baby plant in a small pot.

**Procedure:**

**Step 1 :** Observe the baby plant carefully and note down its current condition.

**Step 2 :** Place the baby plant in a dark room or closet and leave it there for 2-3 days without giving it any sunlight.

**Step 3 :** After 2-3 days, take the plant out of the dark room and examine it again.

**Expected result:**

The plant will appear to be weak and pale due to lack of sunlight.

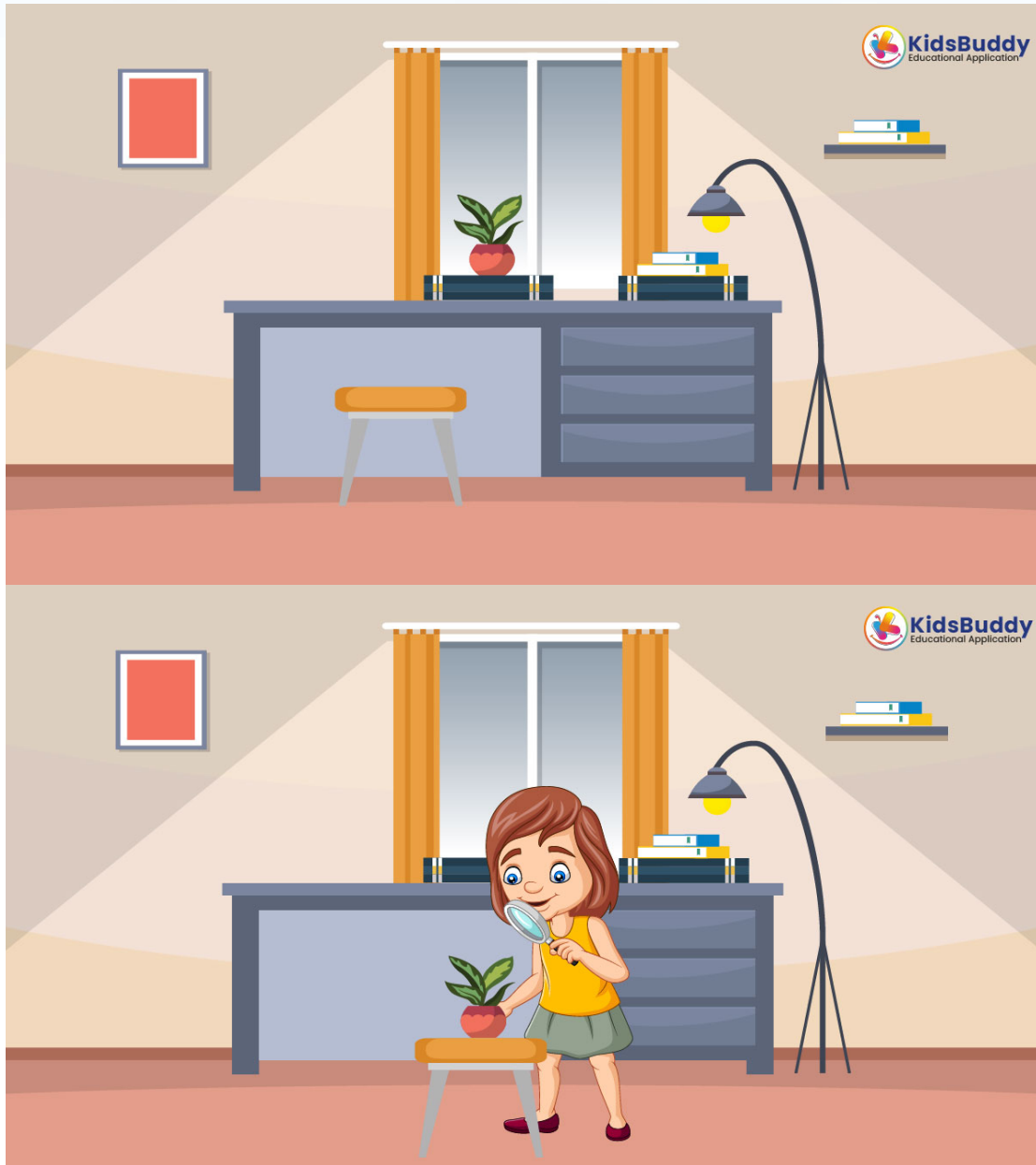
**Principle:**

Sunlight is essential for photosynthesis in plants, which is the process by which they create their food and grow.

## 2 Up or Down

**Aim:**

To understand the effect of gravity on plant growth.



**Materials used :**

Books, Indoor Plant.

### **Procedure:**

**Step 1 :** Place the pot of plant on the books in a horizontal position.

**Step 2:** Observe the position of the stem and leaves for one week.

**Step 3:** After one week, observe the position of the stem and leaves again.

### **Expected result:**

The stem and leaves of the plant will gradually turn upward due to the influence of gravity.

### **Principle:**

Gravity pulls the plant chemical called auxin downwards. Auxin causes plant cells to grow extra long. Therefore, the cells grow longer where the auxin build-up is causing the stem to turn upward.

**QUIZ**

# Chapter- 1

## Living things

1 Which of the following is a man-made thing?

Moon

Star

Ball

Sun

2 The things around us that are alive are called \_\_\_\_\_

living things

Non living things

3 State True/False?

Human beings are living things.

True

False

4 State True/False?

Living things will become taller and heavier.

True

False

5

**State True/False?**

The water, air and fire are living things.

True

False

6

**What can living things do?**

They stand still

They are born, they grow, they reproduce and they die.

They do nothing.

7

**Is it a living or a non-living thing?**

Non-living thing

Living thing

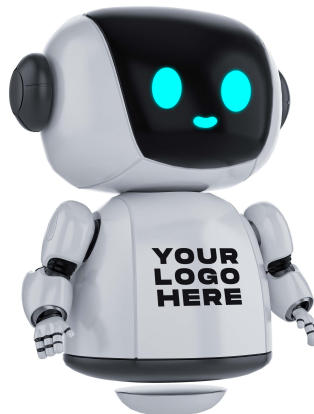
8 Is it a living or a non-living thing?



Non-living thing

Living thing

9 Is it a living or a non-living thing?



Non-living thing

Living thing

10 Is it a living or a non-living thing?



Non-living thing

Living thing

11 Why animals and humans need food ?

They need food to give their bodies energy

They need food to make flowers.

They need food to get sick

None of these

12 Materials that living things need are

---

Nutrients

Fish

Noodle

None of these



13 The function of the stem is to \_\_\_\_\_

Anchor the plant and carry water, food and nutrients to the plant.

Hold the plant underground.

Blocks the sun and water from reaching the roots.

None of these

14 Plants can get nutrients from the \_\_\_\_\_

Rice

Noodle

Soil

None of these

15 What is a basic need of an animal?

Work

Car

Water

Roots

16 There are many other things that DO NOT need food, water or air. They are called \_\_\_\_\_

Wild animals

Farm animals

Living things

Nonliving things

17

The adult body has how many bones?

306

206

106

100

18

Mammals, fish, reptiles, amphibians, and birds are all example of \_\_\_\_\_

invertebrates

Vertebrates

19

Is a jellyfish a invertebrate?

Yes

No

20

An organism that eats only animals are called as \_\_\_\_\_

Herbivore

Carnivore

## Answer key

- 1 Ball
- 2 living things
- 3 True
- 4 True
- 5 False
- 6 They are born, they grow, they reproduce and they die.
- 7 Non-living thing
- 8 living things
- 9 Non-living thing

## Answer key

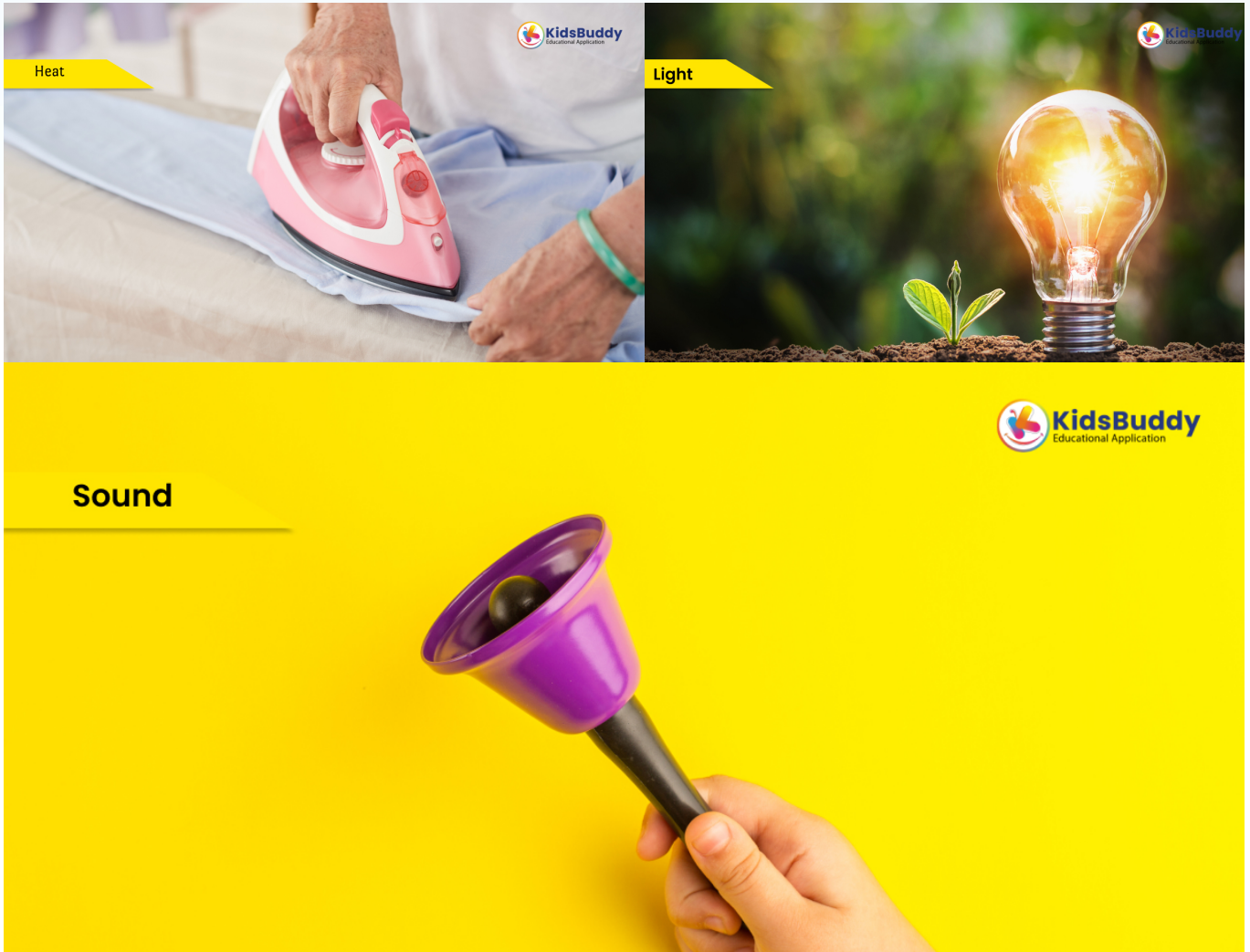
- 10 living things
- 11 They need food to give their bodies energy
- 12 Nutrients
- 13 Anchor the plant and carry water, food and nutrients to the plant.
- 14 Ostrich
- 15 Butterfly
- 16 206
- 17 Shark
- 18 Tiger
- 19 Chameleon
- 20 Camel

# KNOWLEDGE CARDS

# Chapter- 2

# Energy

## 1 Energy



Energy is what we need to do everything in our daily life. It can't be made or disappear, but it can change from one form to another. There are three main types of energy: heat, light, and sound. Heat is a type of energy that we use every day, like when we cook food or take a warm shower. Another type of energy is light.

We need light to see things around us. Without light, everything would be dark. Sound is also a form of energy that travels in waves. We use sound to hear things like music, people's voices, and animal sounds. It's important to take care of our ears so we can hear properly.

1.1 \_\_\_\_\_ is what we need for everything we do

Work

Energy

Sound

All of these

1.2 State True or False

Energy is neither created nor destroyed

True

False

1.3 Which are the different forms of energy?

Heat

Light

Sound

All of these

1.4

Identify true or false

Sound travels in a Straight line.

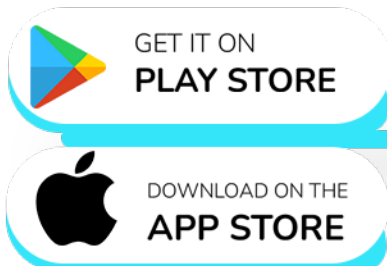
True



False



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## 2 FORMS OF ENERGY



There are different ways to get energy, and these are called energy sources. The sun is an important energy source because it provides the Earth with heat and light. Plants need sunlight to grow, and animals get energy by eating plants or other animals. Light is a type of energy that moves and travels through the air and space as waves. We can see different colors because of the different wavelengths of visible light. For example, red light has a longer wavelength than blue light. Sound is also a type of energy that moves,

but it moves in a different way than light. It's created when something vibrates, like a guitar string or our vocal cords. Sound waves travel through the air and allow us to hear things like music, voices, and sounds from nature.

2.1

Energy can be obtained in different ways. It is known as \_\_\_\_\_

Heat

Light

Energy sources

None of these

2.2

What provides heat and light to the Earth?

Sun

Moon

Venus

Jupiter

2.3

Moving Energy is \_\_\_\_\_ energy.

Heat

Light

Sound

All of these

2.4

\_\_\_\_\_ is created by the vibration of the object.

Heat

Light

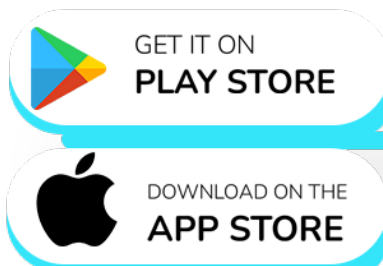
Sound

All of these



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# 3 GRAVITATIONAL ENERGY



Gravitational energy.



Gravitational energy, also referred to as gravitational potential energy, is a form of potential energy that is associated with the gravitational force between two large objects. The gravitational potential energy between two objects is determined by their masses and their distance from each other. As the two objects move closer to each other, the gravitational potential energy

stored in the system decreases and is transformed into kinetic energy. This is because the gravitational force between the objects accelerates them toward each other, increasing their speed and causing them to gain kinetic energy. Gravitational energy is also related to the relative positions of objects. An object that is located at a higher position in a gravitational field has a higher gravitational potential energy than an object at a lower position. For instance, if you hold a pen above a table, the pen has a higher gravitational potential energy than the pen resting on the table. When an object is released from a higher position, the gravitational potential energy is converted into kinetic energy as the object falls toward the lower position. The amount of gravitational potential energy an object has depends on its mass, height, and the strength of the gravitational field it is in. Overall, gravitational energy plays a critical role in the behavior of celestial bodies and the motion of objects on Earth. It is a fundamental concept in physics and is essential to our understanding of the universe

3.1 The potential energy that an object holds due to its higher position in relation to a lower position is known as \_\_\_\_\_

Thermal energy

Sound energy

Gravitational energy

Chemical energy

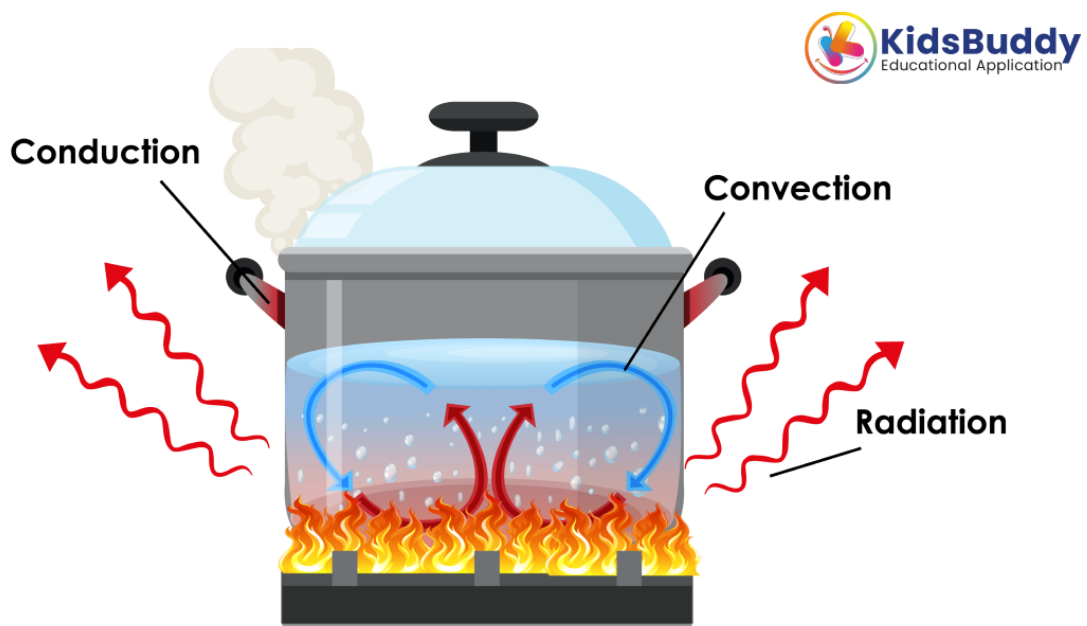
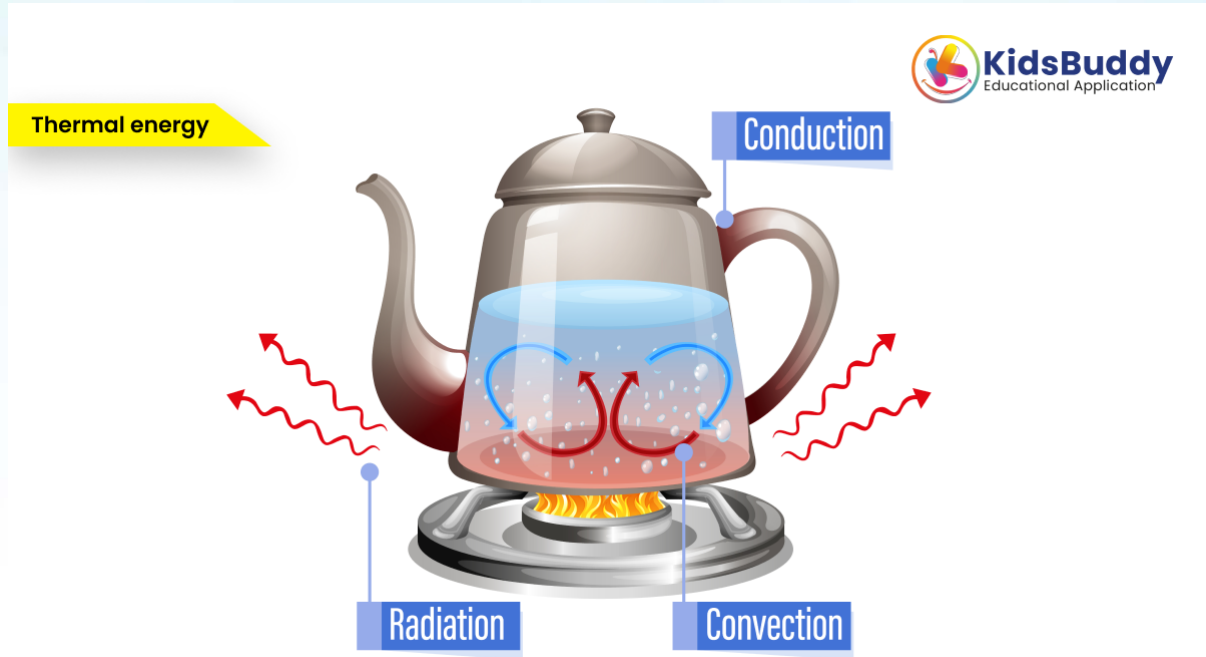
3.2 State true or false.

Gravitational force is therefore energy related to gravity or the gravitational force.

True

False

# 4 THERMAL ENERGY



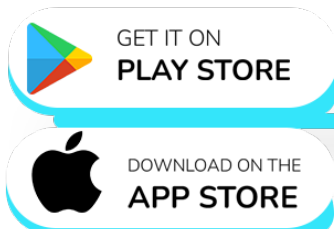
Thermal energy is the energy that makes things hot. When things get hotter, the molecules and atoms inside them start to move faster. This movement is called kinetic energy, which is a type of energy that is produced by moving particles. Some examples of thermal energy come from the sun, the ground, fuel cells, and the ocean. All of these things have energy

that comes from heat. Thermal energy is what makes things able to do work. Work is when something moves or changes. So when things move because of the heat inside them, that's called thermal energy. In conclusion, thermal energy is the heat energy that makes things hot and is produced by the movement of particles inside something. It helps things do work and can come from many different sources.



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4.1

\_\_\_\_\_ is produced by materials whose molecules and atoms vibrate more quickly as a result of a rise in temperature

Thermal energy

Sound energy

Gravitational energy

Chemical energy

4.2

Which are examples of Thermal energy?

Solar energy

Geo-Thermal energy

Fuel cell energy

All of the above

4.3

Thermal energy is a type of \_\_\_\_\_ because it is produced by moving particles.

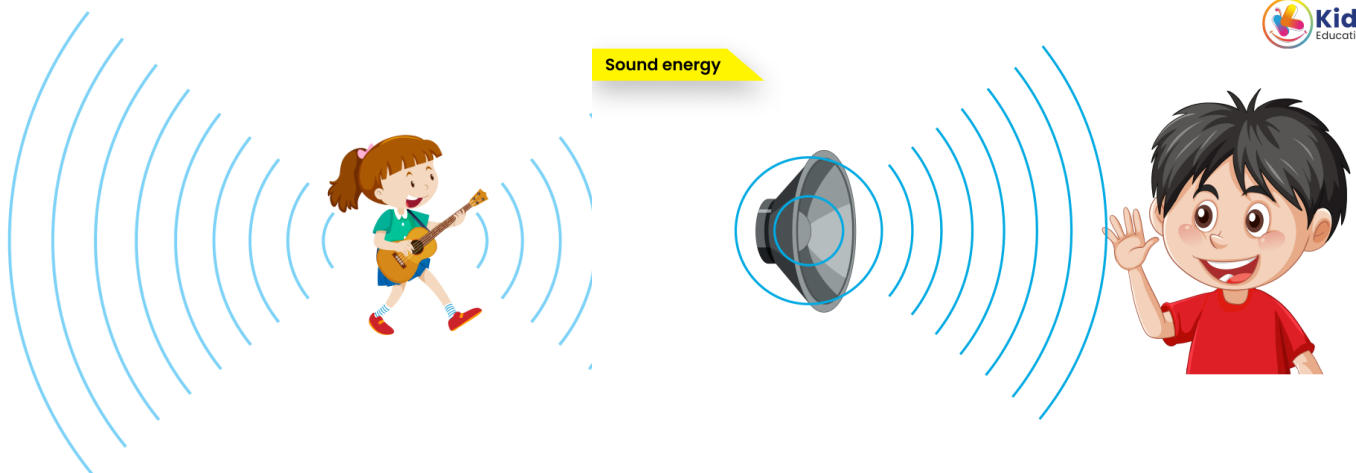
Thermal energy

Chemical energy

Kinetic Energy

Gravitational energy

# 5 SOUND ENERGY



Sound energy is a type of energy that we can hear. It is created when something vibrates, which makes sound waves that travel through the air. These waves have a frequency between 16 and 20 Hz. When the sound waves reach our ears, they make our eardrums vibrate too. This sends a message to our brain, and that's how we hear the sound. We can hear all sorts of sounds,

like talking, singing, or music. We can also hear sounds from things like animals, machines, or even the wind blowing. So, sound energy is the energy that makes sounds, and it's created when something vibrates. We hear sounds when these vibrations travel through the air and make our eardrums vibrate too.

5.1 The type of energy that people can hear is called \_\_\_\_\_

Thermal energy

Sound energy

Gravitational energy

Chemical energy

5.2 The sound is produced when the object \_\_\_\_\_

Shakes

Vibrates

Float

## Answer key

- |     |                      |     |                  |
|-----|----------------------|-----|------------------|
| 1.1 | Energy               | 4.1 | Thermal energy   |
| 1.2 | TRUE                 | 4.2 | All of the above |
| 1.3 | all of these         | 4.3 | Kinetic Energy   |
| 1.4 | FALSE                | 5.1 | Sound energy     |
| 2.1 | Energy sources       | 5.2 | Vibrates         |
| 2.2 | Sun                  |     |                  |
| 2.3 | light                |     |                  |
| 2.4 | sound                |     |                  |
| 3.1 | Gravitational energy |     |                  |
| 3.2 | TRUE                 |     |                  |

# KIDS CHALLENGES

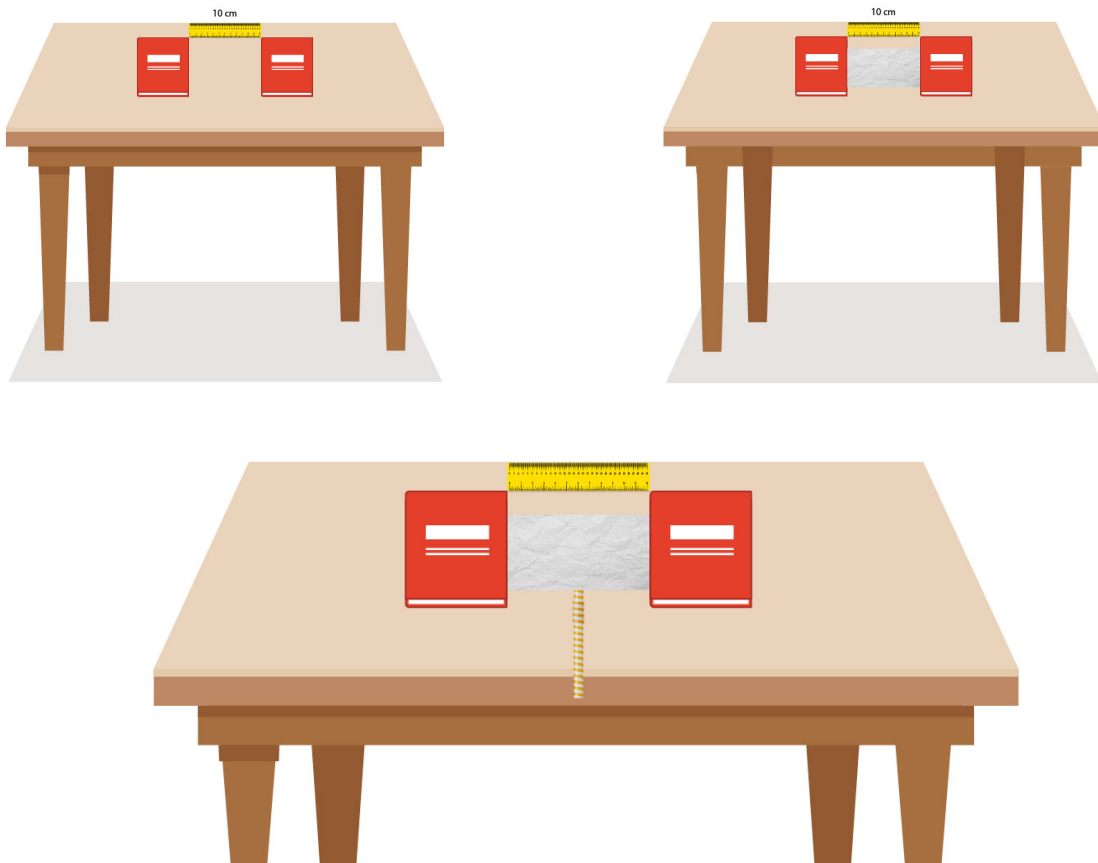
# Chapter- 2

## Energy

### 1 Paper flop

#### Aim:

To understand the relationship between air pressure and speed.



#### Materials used :

Books of equal size (2), Drinking Straw, One sheet of notebook paper, Ruler.

## Procedure:

Step 1: Place the two books 10 cm apart on a table.

Step 2: Lay the sheet of paper across the gap between the books.

Step 3: Place one end of the straw just under the edge of the paper.

Step 4: Blow air through the straw as hard as possible.

## Expected result:

The paper will flop down towards the table due to the force of the air blowing underneath it.

## Principle:

The more forceful the blow of air, the greater the air pressure, which leads to a greater movement of the paper.



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## 2 Rolling ball

### Aim:

The aim of this experiment is to understand the effect of weight and force on the movement of objects.



### Materials used :

Heavy ball, lite ball



## **Procedure:**

**Step 1 :** Place the light ball on a table and roll the heavy ball gently towards it, allowing them to collide.

**Step 2:** Observe the movement of the light ball after the collision.

**Step 3 :** Repeat the experiment by exchanging the balls, rolling the light ball towards the heavy ball.

**Step 4:** Observe the movement of the heavy ball after the collision.

## **Expected result:**

When the heavy ball collides with the light ball, it moves faster, while the light ball moves slower. In the second trial, when the light ball collides with the heavy ball, the heavy ball moves slower, while the light ball moves faster.

## **Principle:**

The principle behind this experiment is that the heavy ball stores more energy than the light ball at a gentle speed. When they collide, the energy is transferred from the heavy ball to the light ball, causing the light ball to move faster. The same principle applies when the light ball collides with the heavy ball.

# 3 Benefits of Renewable Energy

## Aim:

To understand and discuss the benefits of using renewable energy sources.



## Materials used :

Notebook and pen

## Procedure:

**Step 1 :** Take a nature walk and observe the wind or any other natural energy source that is present in your surroundings.

**Step 2 :** Write down the benefits of using renewable energy sources in your notebook.

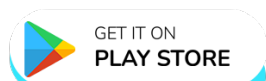
## Expected result:

Child will get an awareness about different types of renewable Energy. And the importance of them.



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## 4 Making a Solar Oven

### Aim:

To make a functional solar oven using a pizza box and other materials.



### Materials used :

Cardboard pizza box Pencil Ruler Scissors Aluminum foil Tape Black construction paper Plastic wrap Newspaper

## **Procedure:**

**Step 1 :** Take a cardboard pizza box and ensure that it is cleaned and free of any food debris.

**Step 2 :** Using a ruler and a pencil, draw a square one inch from the edges of the top of the pizza box.

**Step 3:** Use a box cutter or knife to cut out three of the four sides of the square that you drew.

**Step 4:** Make a crease along the uncut side of the square to create a flap that can stand up.

**Step 5:** Cut a piece of aluminum foil that is large enough to cover the inner side of the cardboard flap. Wrap the foil tightly around the flap and secure it with tape.

**Step 6 :** Line the bottom of the pizza box with black construction paper. The black paper will absorb the sun's energy and help to heat up the oven.

**Step 7:** Cut two pieces of plastic wrap that are the same size as the top of the pizza box.

**Step 8:** Use tape to secure the plastic wrap to the inside edges of the square window that you cut into the pizza box. Make sure that the plastic wrap is tight and secure.

**Step 9:** Roll up some newspaper pages into tubes and stuff them into the sides of the pizza box. The newspaper will help to insulate the oven and prevent heat loss through radiation.

## Expected result:

By covering the flap with foil, you created a reflective surface that will reflect sunlight into the oven. The black paper on the bottom of the oven will absorb the sun's energy and help to heat up the oven. By making the oven airtight, you ensured that the warm air inside the oven would not leave the pizza box via convection. The newspaper inside the oven will insulate it and prevent heat loss through radiation. It is best to use your solar oven between 11 AM-2 PM when the sun's rays are strongest.



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**QUIZ**

## Chapter- 2

# Energy

1 When you push something, you apply

\_\_\_\_\_

Force

Mass

Compression

Kilogram

2 Which color absorb heat?

Black

Yellow

White

Orange

3 The energy of sun comes from the fusion of \_\_\_\_\_

Nitrogen and Helium

Hydrogen and Helium

Hydrogen and Nitrogen

Helium only

4 What are the non-renewable sources of energy called?

Solar

Wind

Water

Fossil fuels



5 What does solar mean?

Caused by the sun

Caused by a liquid

Caused by a light switch

6 Energy that warms objects is called \_\_\_\_\_.

Sound energy

Heat energy

Light energy

7 Energy you can see is \_\_\_\_\_.

Sound energy

Heat energy

Light energy

8 \_\_\_\_\_ is the ability to do work.

Light

Energy

Heat

Sound

9 An Unlit matchstick has which kind of energy?

Chemical Energy

Light Energy

Sound Energy

Mechanical Energy

10 Which object do people use for light.

Candle

Fan

Book

Pencil

11 What type of motion do the wheels of a bicycle perform?

Rectilinear Motion

Periodic Motion

Rotational motion

Linear Motion

12 What does a thermometer measure?

how hot or cold it is

the wind speed

the wind direction

the air pressure

13 If you rub your hands together, you will produce \_\_\_\_\_ energy.

Light

Heat

Sound

14 Identify the statement which is TRUE?

The sun does not produce light and heat.

Iron and carbons

Aluminum and tin

Aluminum and tin

15 Energy produced by vibrations is called \_\_\_\_\_

Sound energy

Light energy

Heat energy

16 All of the following produce heat except \_\_\_\_\_.

Sun

Oven

Lightbulb

Book

17 As you walked outside, you noticed your neighbour had a string tied to a pole. What type of weather could you determine by looking at that string?

Rain

Wind Direction

Humidity

Temperature

18 Identify the scientific instrument.

Barometer

Thermometer

Cresco graph

Dynamo



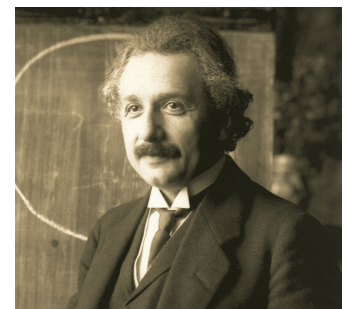
19 Identify the scientist.

Issac Newton

Charles darwin

Thomas Edison

Albert Einstein



## Answer key

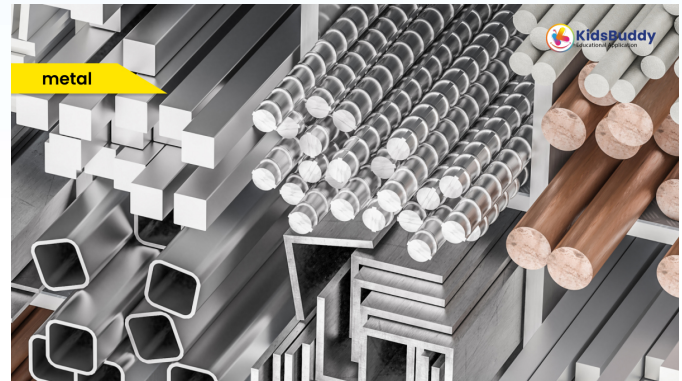
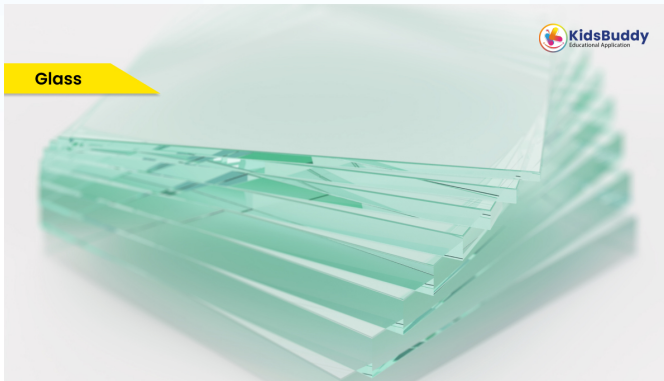
- |   |                     |    |   |
|---|---------------------|----|---|
| 1 | force               | 10 | Candle                                    |
| 2 | black               | 11 | Rotational motion                         |
| 3 | Hydrogen and Helium | 12 | How hot or cold it is                     |
| 4 | Fossil fuels        | 13 | Heat                                      |
| 5 | Caused by the sun   | 14 | A fire can produce light and heat energy. |
| 6 | Heat energy         | 15 | Sound energy                              |
| 7 | Light energy        | 16 | Book                                      |
| 8 | Energy              | 17 | Wind direction                            |
| 9 | Chemical Energy     | 18 | Thermometer                               |
|   |                     | 18 | Albert Einstein                           |

# KNOWLEDGE CARDS

# Chapter- 3

## Materials

### 1 Materials



Materials are what we use to make things. There are two types of materials: man-made and natural. Man-made materials are things that people have made. Some examples of man-made materials are plastic, nylon, polyester, and glass. These materials are made in factories or labs. Natural materials are things that come from the earth, like wood, clay, metal, and sand. Metals like iron, gold, copper, and zinc are found underground and dug up. Water is also a very important material that we need every day.

We use it to drink, clean, and grow plants. Man-made materials and natural materials, and they all play an important role in our everyday lives.

1.1 \_\_\_\_\_ are the matter or substances that we used to make things.

Man-made materials

Metals

Natural materials

Materials

1.2 There are two types of materials. Which are they?

Man-made materials

Natural materials

Both of them

None of these

1.3 Find out the example for Natural material.

Zinc

Nylon

Glass



## 2 PAPER



Any substance with a name constitutes material. Chalk, paper, wood, iron, water, air, clay, plastic, rubber, stone, leather, and wax are a few examples. Materials make up everything. Paper is thin sheet made of fiber. China was founded the paper in AD 105. Wood from subabul, eucalyptus, and bamboo trees is frequently used in paper mills.

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2.1 Any substance with a name constitutes

---

Paper

Materials

Iron

Plastic

2.2 Paper introduced in which year?

AD 751

AD 105

AD 501

AD 432

2.3

## Which trees are used for making paper?

Subabul

Eucalyptus

Bamboo trees

All of the above



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# 3 IRON



A metal called iron is used for its magnetic field. Rarely is iron discovered in its free condition; it is a metal that is recovered from iron ore. Steel, which is not an element but an alloy made of various metals and certain non-metals, most notably carbon, is produced using iron. In addition to being employed in the

production of steel, it is also utilised in the construction of girders and reinforced concrete. Alloy steels, which are similar to carbon steels but contain additions like nickel, chromium, vanadium, tungsten, and manganese, are made from iron. These are employed in the construction of bridges, power poles, bicycle chains, cutting tools, and rifle barrels. 3-5% of cast iron is carbon. Pumps, valves, and pipes are made of it. In order to produce ammonia, the Haber process uses iron catalysts. This metal, as well as its alloys and compounds, can be used to make magnets.

3.1 A metal called \_\_\_\_\_ is used for its magnetic field.

Paper

Materials

Iron

Plastic

3.2 \_\_\_\_\_ is a metal that is recovered from iron ore.

Paper

Materials

Iron

Plastic

# 4 PROPERTIES OF MATERIALS



Different materials can be described by how they look and feel. They can be soft or hard, flexible or rigid, rough or smooth, and even shiny or silky. All materials have physical and chemical properties. A physical property is something we can measure without changing the material. This can include things like the

color, size, hardness, or temperature of the material. A chemical property shows us how a material can change into a different substance under certain conditions. For example, if iron gets wet in the rain, it can turn into rust. If paper or wood catches on fire, they can turn into ashes. This is an example of a chemical change because the material has changed into something else.

4.1 All materials have Physical and \_\_\_\_\_ properties.

Chemical

Rusting

Both of them

None of these

4.2 Find out the physical property of the materials.

Hardness

Rusting

Burning

4.3

Find out the Chemical property of the materials.

Smooth

Rigid

Flexible

Rusting of iron



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## Answer key

1.1 Materials

3.1 Iron

1.2 Both of them

3.2 Iron

1.3 Zinc

4.1 Chemical

2.1 Materials

4.2 Hardness

2.2 AD 105

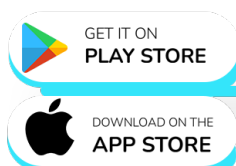
4.3 Rusting of iron

2.3 All of the above



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# KIDS CHALLENGES

# Chapter- 3

## Materials

### 1 Erasing power

#### Aim:

The Aim of this experiment is to understand the erasing property of wheat.



#### Materials used :

Wheat bread, paper , pencil.

## **Procedure:**

Step 1: Mark two or three dark spots on a piece of paper using a pencil.

Step 2: Take a piece of wheat bread and rub it against the pencil marks.

Step 3: Observe the pencil marks disappear.

## **Expected result:**

The pencil marks on the paper should disappear after rubbing the wheat bread against them.

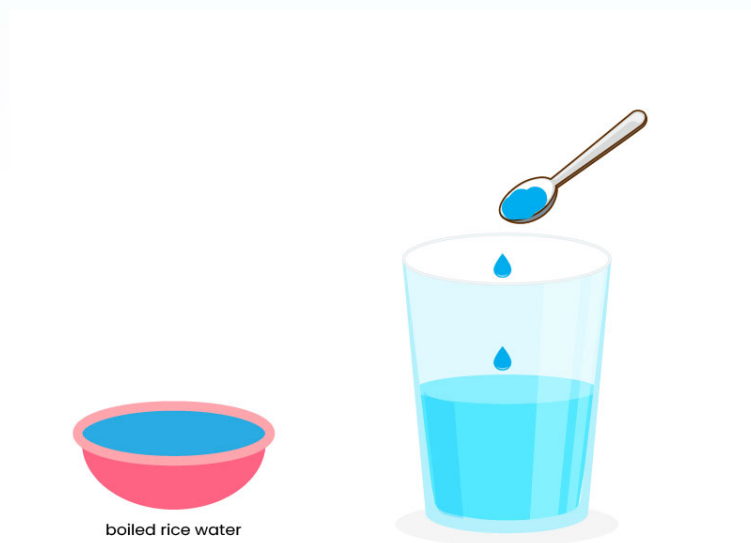
## **Principle:**

Wheat contains a protein called gluten, which has the ability to remove pencil marks. When the bread is rubbed against the pencil marks, the gluten in the wheat bread attaches to the graphite in the pencil marks, allowing the marks to be erased. Material used Wheat bread, paper , pencil.

## 2 Search for starch

### Aim:

The aim of this experiment is to understand the method of identifying the presence of starch.



### Materials used :

Boiled Rice water, Iodine containing antiseptic lotion.

## **Procedure:**

Step 1: Add three to four tablespoons of boiled rice water to half a cup of water and stir well.

Step 2: Add a few drops of iodine containing antiseptic lotion to the mixture.

Step 3: Observe the color change of the mixture.

## **Expected result:**

If starch is present in the boiled rice water, the mixture will turn dark blue or purple.

## **Principle:**

When starch is mixed with iodine, a blue or purple color is produced. This reaction occurs because iodine molecules slip into the coils of the starch molecule, creating a complex that absorbs light and reflects the blue/purple color.

## 3 Sorting Materials

### Aim:

To learn how to sort different materials based on their properties.



### Materials used :

Various materials such as pen, pencil, water, milk, ice cream, car, etc.

**Procedure:**

**Step 1 :** Sort different materials based on their properties such as colour, shape, texture, size, and whether they are living or non-living.

**Expected result:**

The matter is anything that has mass and takes up space. Matter can be classified into living and non-living things. Living things are made up of organic matter, such as plants and animals, while non-living things are made up of inorganic matter, such as rocks, minerals, and metals.



## 4 Safety with Materials

**Aim:**

To teach students how to handle materials safely.



**Materials used :**

Boiled water, medicine, tablets, grass, and plants.

**Procedure:**

**Step 1 :** Students will learn about general safety rules for handling different types of materials. For example, they will learn not to touch hot surfaces, not to taste or smell unknown substances, and to wear protective gear when necessary.

**Expected result:**

By learning how to handle materials safely, students can protect themselves from potential harm and prevent accidents from occurring. It is important to follow safety guidelines and use protective gear when necessary to minimize the risks associated with handling various materials.

**QUIZ**

## Chapter- 3

# Materials

1 What is the normal boiling point of water?

100 degree Celsius

105 degree Celsius

90 degree Celsius

102 degree Celsius

2 What are the three states of matter?

Solid, Liquid, Gas

Liquid, Solid, Solid

Gas, Gas, Liquid

Liquid

3 What gas do we need to breathe to stay alive?

Nitrogen

Carbon dioxide

Oxygen

Nitrogen

4 Something which attracts metal is called?

Magnet

Magnesium

5

Which state of matter have definite shape and volume?

Solid

Liquid

Gas

Plasma

6

Pencil leads are made up of which compound?

Oxygen

Nitrogen

Fluorine

Graphite

7

If one boils water it will convert into

---

Mist

Steam

Clouds

Snow

8

Which material from the following has the highest transparency?

Paper

Metal

Glass

Wood

9

Which phase of matter does not like to change its shape?

Gas

Solid

At Liquid

All of the above

10

An example of a liquid is \_\_\_\_\_

Cottage cheese

Saliva

A watermelon

A jolly Rancher

11

When water is poured into a different container, what changes?

It turns to gas

Shape

It turns to solid

Amount

12

What is it called when something goes from a liquid to solid state?

Melting

Freezing

Hardening

Streaming

13

Condensation is the process by which change .....to liquid.

Gas

Water

Material

Fluid

14

If I boil water what will happen to the quantity of water I have?

Increase

Decrease

Stay the same

Changes colour

15

Ice is the .....form of water.

Liquid

Solid

Gas

Fluid

16

Name of the lightest gas?

Nitrogen

Carbon dioxide

Oxygen

Hydrogen

17

Rusting of iron takes place when exposed to which gas:

Nitrogen

Carbon dioxide

Oxygen

Hydrogen

17

Which metal is used in aircrafts for its less weight?

Copper

Aluminium

Mercury

Steel

19

Graphite is made up of which element:

Ceramic

Carbon

Grains of minerals

Crystals

20

When lake starts freezing the formation of the ice will start first at which point?

Top

Middle



## Answer key

- |   |                    |    |           |    |        |
|---|--------------------|----|-----------|----|--------|
| 1 | 100 degree Celsius | 10 | Saliva    | 19 | Carbon |
| 2 | Solid, Liquid, Gas | 11 | Shape     | 20 | Top    |
| 3 | Oxygen             | 12 | Freezing  |    |        |
| 4 | Magnet             | 13 | Gas       |    |        |
| 5 | Solid              | 14 | Decrease  |    |        |
| 6 | Graphite           | 15 | Solid     |    |        |
| 7 | Steam              | 16 | Hydrogen  |    |        |
| 8 | Glass              | 17 | Oxygen    |    |        |
| 9 | Solid              | 18 | Aluminium |    |        |



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