

# SELECTION

## ⑥ SCIENCE

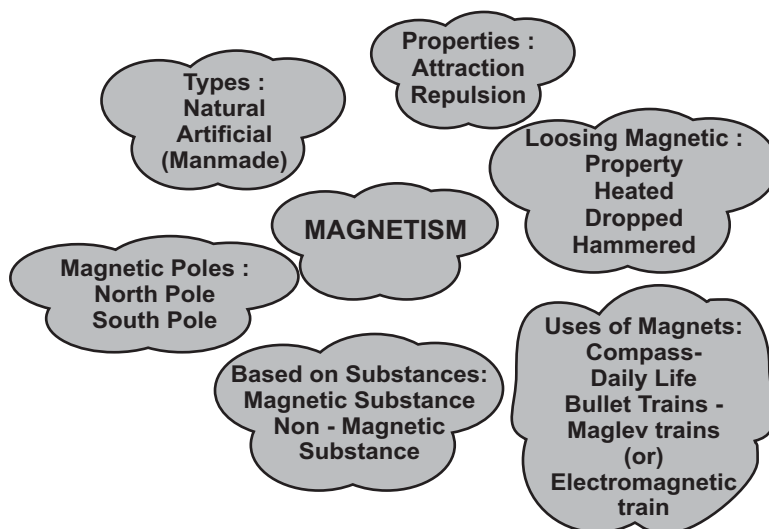
### TERM - III

#### 5 in 1

#### UNIT - 1

#### Magnetism

#### MIND MAP



#### Evaluation

##### I. Choose the appropriate answer

##### 1. An object that is attracted by magnet.

- a) wooden piece
- b) plain pins
- c) eraser
- d) a piece of paper

Ans : b) plain pins

**SELECTION 6 SCIENCE****270****TERM - III 5 in 1****2. People who made mariner's compass for the first time.**

- a) Indians                      b) Europeans  
c) Chinese                    d) Egyptians      **Ans : c) Chinese**

**3. A freely suspended magnet always comes to rest in the.....direction.**

- a) North - east              b) South - west  
c) East - west              d) North - south      **Ans : d) North - south**

**4. Magnets lose their properties when they are**

- a) used                      b) stored  
c) hit with a hammer      d) cleaned      **Ans : c) hit with a hammer**

**5. Mariner's compass is used to find the**

- a) speed                      b) displacement  
c) direction                  d) motion      **Ans : c) direction**

**II. Fill in the Blanks**

1. Artificial magnets are made in different shapes such as....., .....and..... **Ans : Oval Shape, Disc Shape, Cylindrical Shape**

2. The Materials which are attracted towards the magnet are called..... **Ans : Magnetic Substances**

3. Paper is not a.....material. **Ans : Magnetic**

4. In olden days, sailors used to find direction by suspending a piece of ..... **Ans : Iode stone**

5. A magnet always has.....poles. **Ans : Two**

**III. True or False. If False, give the correct statement**

1. A cylindrical magnet has only one pole.

**Ans : False**

**Correct Statement :** A cylindrical magnet has two poles.

2. Similar poles of a magnet repel each other.

**Ans : True**

3. Maximum iron filings stick in the middle of a bar magnet when it is brought near them.

**Ans : False**

**Correct Statement :** Maximum iron filings stick in the poles of a bar magnet when it is brought near them.

4. A compass can be used to find East - West direction at any place.

**Ans : False**

**Correct Statement :** A Compass can be used to find north - south direction at any place.

5. Rubber is a magnetic material.

**Ans : False**

**Correct Statement :** Rubber is a non - magnetic material.

**IV. Match the following**

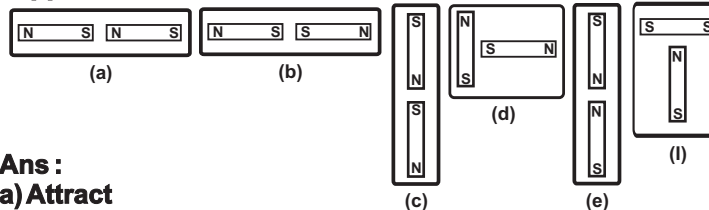
- |                   |   |                           |
|-------------------|---|---------------------------|
| 1. Compass        | - | Maximum magnetic strength |
| 2. Attraction     | - | Like poles                |
| 3. Repulsion      | - | Opposite poles            |
| 4. Magnetic poles | - | Magnetic needle           |

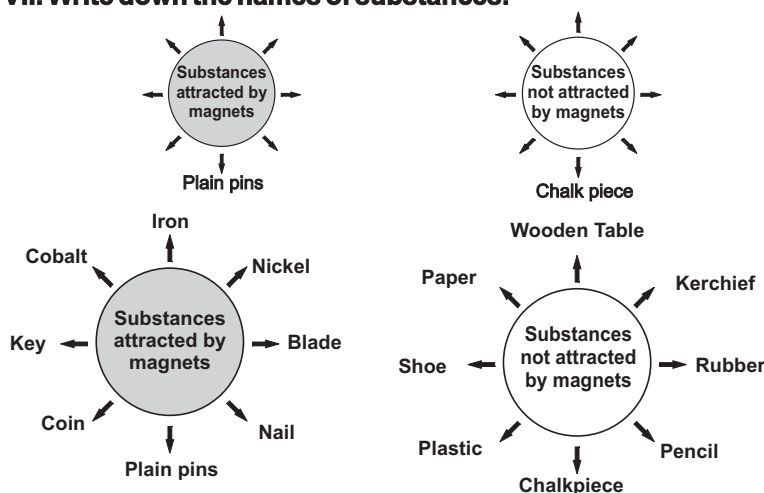
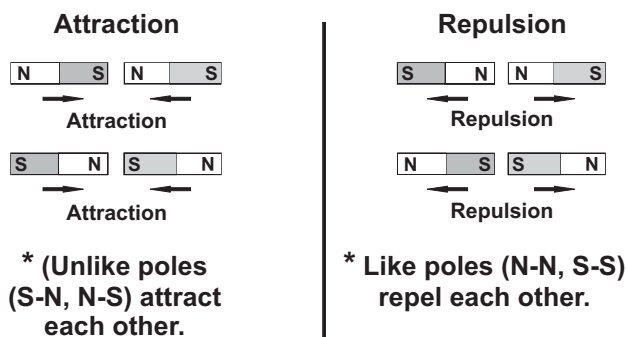
**Ans :-**

- |                   |   |                           |
|-------------------|---|---------------------------|
| 1. Compass        | - | Magnetic needle           |
| 2. Attraction     | - | Opposite poles            |
| 3. Repulsion      | - | Like poles                |
| 4. Magnetic poles | - | Maximum magnetic strength |

**V. Circle the odd ones and give reasons****1. Iron nail, pins, rubber tube, needle****Ans : Odd one :** Rubber tube**Reason :** Rubber is a non - magnetic substance. Others are magnetic substances.**2. Lift, escalator, electromagnetic train, electric bulb.****Ans : Odd one :** Electric bulb**Reason :** It uses electrical energy, others use magnetic energy.**3. Attraction, repulsion, pointing direction, illumination.****Ans : Odd one :** illumination**Reason :** It is a property of light others are properties of magnet.

**VI. The following diagrams show two magnets near one another. Use the words, Attract, Repel, Turn around to describe what happens in each case.**

**Ans :****a) Attract****b) Repel****c) Attract****d) Turn around****e) Repel****f) Turn around**

**VII. Write down the names of substances.****VIII. Give short answer****1. Explain the attraction and repulsion between magnetic poles.****2. A student who checked some magnets in the school laboratory found out that their magnetic force is worn out. Give three reasons for that ?****Reasons :** Magnets lose their magnetic force by,

H When heated

H When dropped

H When hammered

**IX. Answer in detail****1. You are provided with an iron needle.****How will you magnetize it ?**

- H Take an iron needle and place it on a table.
- H Now take a bar magnet and place one of its poles near one edge of the needle.
- H Rub from one end to another end without changing the direction of the pole of the magnet.
- H Repeat the process for 30-40 times.
- H Bring a pin or some iron filings near the needle.
- H Iron filings are attracted by the needle.
- H It shows that iron needle is magnetized.

**2. How does the electromagnetic train work ?**

- H Electromagnets are used in electromagnetic train.
- H Electromagnets are magnetised only when current flows through them.
- H When the direction of current is changed the poles of the electromagnets are also changed.
- H Like poles of the magnets which are attached at the bottom of the train and rail track repel each other.
- H So, the train is lifted from the track upto a height of 10cm.
- H This train also moves with the help of the magnets attached on the sides of track and the magnets fitted at the bottom sideways of the train.
- H By Controlling the current, we can control the magnets and movement of the train.

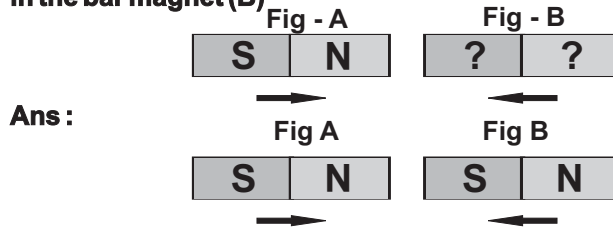
**X. Questions based on Higher Order Thinking Skills****1. You are provided with iron filings and a bar magnet without labelling the poles of the magnet. Using this.....****a. How will you identify the poles of the magnet ?**

- H Tie a piece of thread to the centre of a bar magnet and suspend it .
- H Note, in which direction the magnet stops.
- H The end of the magnet that points to north is called North pole.
- H The end that points to the south is called the south pole.

**b. Which part of the bar magnet attracts more iron filings ? Why ?**

- H The two ends of the magnet attract the largest amount of iron filings.
- H Because, the attractive force of the magnet is very large near the two ends.

2. Two bar magnets are given in the figure A and B. By the property of attraction, identify the North pole and the South pole in the bar magnet (B)



3. Take a glass of water with a few pins inside, How will you take out the pins without dipping your hands into water ?

Ans :

H Tie a bar magnet with a thread and suspend it into a glass of water with a few pins.

H Pins are attracted by the bar magnet.

H Thus, Pins are taken out without dipping the hands into the water.

#### Additional Questions & Answers

I. Choose the correct answer :

1. Natural magnets are.....

- a) Nickel                      b) Cobalt                      c) Iron                      d) Magnetite

Ans : d) Magnetite

2. Substance not attracted by magnet.....

- a) Iron                      b) Paper                      c) Cobalt                      d) Nail

Ans : b) Paper

3. Electromagnetic trains run.....km/hr.

- a) 200                      b) 400                      c) 600                      d) 500

Ans : c) 600

II. Short Answer :

1. Write the differences between a normal train and an electromagnetic train.

| Normal Train                            | Electromagnetic Train                              |
|-----------------------------------------|----------------------------------------------------|
| In, Normal Train metal wheels are used. | In, Electromagnetic train electromagnets are used. |
| It have friction                        | It Does not have friction                          |
| Requires diesel or petrol               | Requires Current                                   |

**2. What is magnetite? How does it gets its name ?**

- H Magnetites are natural magnets .  
 H They are called magnetic stones.  
 H The name is supposed to come after the name of the place magnesia, in which it was found.

**3. Define - Magnetization**

The method of changing the piece of iron magnet.

**4. Name the objects which affects magnetic properties of magnet?**

Cell phone, Computer, DVD

**III. Answer in Detail :****1. List out the methods to save the magnets from losing their properties.**

- H Barmagnets should be kept in pairs with their unlike poles on the same side.  
 H They must be separated by a piece of wood and two pieces of soft iron.

**Activity : 1**

**Take a magnet. Take the magnet closer to the objects surrounding you. what happens? Observe and note.**

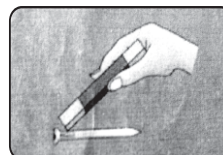
The objects attracted by the magnet : **Plainpins, Nail, Blade, Key, Coin**

The objects, not attracted by the magnet : **Plastic, Paper, Rubber, Pencil**

Which substances are used to make the objects attracted by the magnet ?

**Magnetic Substances****Activity : 2 LET US MAKE MAGNETS**

Take a nail / a piece of Iron and place it on a table. Now take a bar magnet and place one of its poles near one edge of the nail / piece of Iron and rub from one end to another end without changing the direction of the pole of the magnet. Repeat the process for 30 to 40 times.



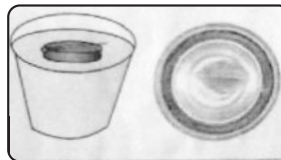
Bring a pin or some iron filings near the nail / piece of Iron to check whether it has become a magnet. Does the nail / piece of iron attract the pin / iron filings ? If not, continue the same process for some more time.

**Ans : If the nail is magnetized, it attracts the pin / iron filings.**

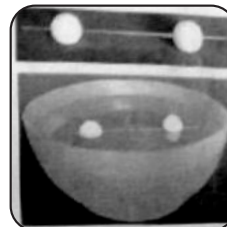
**Activity : 3 Make your own magnetic compass**

Insert the magnetized needle, that you made in the activity 2, into two styrofoam balls (Thermocol balls) and place the needle in bowl of water. Test whether the floating needle is always turned in rest on north - south direction.

**NOTE :** If you don't have styrofoam balls you can use dry leaf or a cork piece.



**Ans : Yes, Floating needle is always turned in rest on North - South direction.**



**UNIT - 3 Chemistry in Everyday life****Mindmap****CHEMISTRY IN EVERY DAY LIFE****Soaps and Detergents :**

Gets clothes cleaner and cleans your body

**Fertilizers :**

It helps plants to grow.  
Organic fertilizers restore soil fertility

**Adhesives :**

Helps the materials fixing it up together

**Cement :**

Important material in construction industry

**Plaster of Paris :**

Used in surgery for setting fractured bones and used for making casts for statues and toys

**Gypsum - Epsom :**

Helpful to humans, animals, plants and environment

**Evaluation****I. Choose the appropriate answer****1. Soaps were originally made from.....**

- a) proteins                      b) animal fats and vegetable oils  
c) chemicals extracted from the soil                      d) foam booster

**Ans : b) animal fats and vegetable oils**

**2. The saponification of a fat or oil is done using.....solution for hot process.**

- a) Potassium hydroxide                      b) Sodium hydroxide  
c) Hydrochloric acid                      d) Sodium chloride

**Ans : b) Sodium hydroxide**

**3. Gypsum is added to the cement for.....**

- a) fast setting                      b) delayed setting  
c) hardening                      d) making paste

**Ans : b) delayed setting****4. Phenol is.....**

- a) carbolic acid                      b) acetic acid  
c) benzoic acid                      d) hydrochloric acid

**Ans : a) carbolic acid****5. Natural adhesives are made from.....**

- a. protein                      b) fat  
c. starch                      d) vitamins

**Ans : c) starch****II. Fill in the blanks**

1.....gas causes tears in our eyes while cutting onions.

**Ans : Propanethial S-Oxide**

2. Water, coconut oil and.....are necessary for soap preparation.

**Ans : Sodium hydroxide**

3.....is called as farmer's best friend.

**Ans : Earthworms**

4.....fertilizer is ecofriendly.

**Ans : Organic**

5.....is an example for natural adhesive.

**Ans : Starch****III. True or False. If False, give the correct statement**

**1. Concentrated phenol is used as a disinfectant.**

**Ans : False**

**Correct Statement :** Low Concentrated Phenol is used as a disinfectant.

**2. Gypsum is largely used in medical industries.**

**Ans : False**

**Correct Statement :** Epsom is largely used in medical industries.

**3. Plaster of Paris is obtained from heating gypsum.**

**Ans : True**

**4. Adhesives are the substances used to separate the components.**

**Ans : False**

**Correct Statement :** Adhesives are the substances used to bind the components.

**5. NPK are the primary nutrients for plants.**

**Ans : True**

**IV. Match the following**

|                |   |                      |
|----------------|---|----------------------|
| 1. Soap        | - | $C_6H_5OH$           |
| 2. Cement      | - | $CaSO_4 \cdot 2H_2O$ |
| 3. Fertilizers | - | NaOH                 |
| 4. Gypsum      | - | RCC                  |
| 5. Phenol      | - | NPK                  |

**Ans :-**

|                |   |                      |
|----------------|---|----------------------|
| 1. Soap        | - | NaOH                 |
| 2. Cement      | - | RCC                  |
| 3. Fertilizers | - | NPK                  |
| 4. Gypsum      | - | $CaSO_4 \cdot 2H_2O$ |
| 5. Phenol      | - | $C_6H_5OH$           |

**V. Arrange the following statements in correct sequence**

1. Pour that solution into an empty match box, soap can be obtained after drying.
2. Take necessary quantity of water in a jar.
3. Then add coconut oil drop by drop and stir it well.
4. Add concentrated sodium hydroxide in the jar and allow it to cool.
5. Try this soap to wash your hand kerchief.
6. Cover your work area with old newspaper.

**Correct Sequence :**

1. Cover your work area with old newspaper.
2. Take necessary quantity of water in a jar.
3. Add concentrated sodium hydroxide in the jar and allow it to cool.
4. Then add coconut oil drop by drop and stir it well.
5. Pour that solution into an empty match box, soap can be obtained after drying.
6. Try this soap to wash your hand kerchief.

**VI. Analogy****1. Urea : Inorganic fertilizer : Vermi compost : .....****Ans : Organic fertilizer****2. .... : Natural adhesives : Cello tape : Artificial adhesives.****Ans : Starch**

**VII. Give very short answer****1. What are the three main constituents of soap ?****Three main constituents of soap :**

- H Sodium hydroxide
- H Water
- H Coconut Oil

**2. What are the two different types of molecules found in the soap?****Two types of molecules found in the soap :-**

1. Water loving
2. Water hating

**3. Give an example for inorganic fertilizer.****Examples for inorganic fertilizer :**

- H Urea
- H Super phosphate
- H Ammonium Sulphate
- H Potassium Nitrate

**4. Mention any three physical properties of phenol.****Physical properties of phenol :**

1. Phenol is volatile
2. It is a white crystalline powder
3. It is a colourless solution

**5. Explain the uses of plaster of paris.****Uses of plaster of paris :**

- H In making black board chinks.
- H In surgery for setting fractured bones.
- H For making casts for statues and toys etc.
- H In construction industry.

**6. What are the ingredients of the cement ?****Ingredients of cement :**

- H Lime
- H Clay
- H Gypsum

**7. Why gypsum is used in cement production ?**

- H Gypsum is added to control the setting of cement.

**VIII. Give short answer****1. Why earthworm is called as farmer's friend ?**

H Earthworms take organic wastes as food and produce compost castings.

H So earthworms are known as **Farmers' friends** because of the multitude of services they provide to improve soil health and consequently plant health.

**2. Explain the process of manufacturing cement.**

H The cement is manufactured by crushing of naturally occurring minerals such as lime, clay and gypsum through milling process.

H Cement becomes hardened when it is mixed with water.

H Gypsum plays a very important role in controlling the rate of hardening of the cement.

H During the cement manufacturing process, a small amount of gypsum is added at the final grinding process.

H Gypsum is added to control the "setting of cement".

**3. What are uses of Gypsum ?****Uses of Gypsum :**

H Used as fertilizers.

H Used in the process of making cement.

H In the process of making Plaster of Paris.

**IX. Answer in detail****1. How are detergents manufactured ?**

**Materials Needed :** Water, Sodium hydroxide, Coconut oil.

**Procedure :**

H In a big aluminium container they add concentrated sodium hydroxide and allow it to cool.

H Then add, Coconut oil drop by drop and stir it well.

H Pour that solution into an empty box.

H Soap can be obtained after getting dried.

**X. Questions based on Higher order Thinking Skills****1. Ravi is a farmer; he rears many cattle in his farm. His field has many bio wastes. Advise Ravi how to change this bio waste to compost by using vermi-composting techniques. Explain the benefits of vermi castings.**

H Dig a pit for about one feet depth in the backyard of farm.

H Fill the pit by bio wastes, paper and food wastes, place few earth worms in it, sprinkle water and close the place with jute or cardboard and ensure moisture all the time.

H After 45 days the vermi casting layer formed just above the pit.

H These castings will be applied to the plant.



**IV. Long Answer :****1. When we cut onion we get tears in the eyes. why ? Explain.**

H When we cut onion, we get tears in the eyes with irritation, because of the presence of a chemical, propanethial s-oxide in onion.

H This is easily volatile.

H When we cut onion some of the cells are damaged and this chemical comes out.

H It becomes vapour and reach our eyes result in irritation and tears in eyes.

H When we crush the onion, more cells will be damaged and more chemicals come out.

**1. What would happen to the nutrient content of the soil, if the field is farmed continuously ?**

If the field is farmed continuously, the nutrient content of the soil is reduced.

**2. How could we resend these nutrients back to the soil ?**

H We can resend these nutrients back to the soil by using the fertilizers containing only plant or animal based materials or those synthesized by micro organisms.

**The table given below lists the nutrients in inorganic fertilizers**

| Name of fertilizer | Nitrogen(%) | Phosphorus(%) | Potassium(%) |
|--------------------|-------------|---------------|--------------|
| Urea               | 46          | 0             | 0            |
| Super phosphate    | 0           | 8-9           | 0            |
| Ammonium sulphate  | 21          | 0             | 0            |
| Potassium nitrate  | 13          | 0             | 44           |

If we use 50 kg of urea, then according to the table, 23 kg of nitrogen (46 percent) will be added to the soil.

H The percentage of nitrogen in ammonium sulphate is

**Ans : 21 %**

H If 50 kg of potassium nitrate is added to soil, how much potassium would the soil get ?

**Ans : 44%**

**Activity : 1**

**Discuss with your group and list out few chemicals which we use in our home and school.**

| Place  | Chemicals                                 |
|--------|-------------------------------------------|
| House  | Water, Salt, Tooth paste, Medicines, Soap |
| School | Water, Blackboard, Chalkpiece             |

**Activity 2 : Preparation of Soap**

**Materials Required :** 35 ml of water 10g. of Lye (Sodium hydroxide) 60 ml of coconut oil.

**Process :**

Cover your work area with old newspaper.

Take 35 ml of water in a jar. Add 10 gram of concentrated sodium hydroxide and allow it to cool.

Then add 60 ml of coconut oil drop by drop and stir it well. Pour that solution into an empty match box, soap can be obtained after getting dried.

Try this soap to wash your handkerchief.

**Activity : 3**

**Collect various kinds of soap's wrapper. Complete the following table based on the information provided in the wrapper.**

| S. No | Name of the soap           | Ingredients                              |
|-------|----------------------------|------------------------------------------|
| 1.    | Bathing soap               | Fats / oils                              |
| 2.    | Washing soap               | Sodium Hydroxide, Coconut oil            |
| 3.    | Bathing soap for kids      | Milk Protein                             |
| 4.    | Toilet cleaners            | Hydrochloric Acid, Chlorine, Citric acid |
| 5.    | House floor cleaner liquid | Water, White vinegar, Alcohol, oils      |

**Inference :** Nature of the soaps varies according to its constituents.

**Activity : 4**

**Make a visit to agriculture field in your area. List out the various crops and types of fertilizers used there.**

| S. No | Name of the crop | Name of the Fertilizer |
|-------|------------------|------------------------|
| 1.    | Rice             | Urea                   |
| 2.    | Corn             | Super phosphate        |
| 3.    | Sugar cane       | Ammonium sulphate      |

**Activity : 5**

**Take three empty tumblers of same size and name them as A, B and C. Add two tea spoonful of cement in each of the container. Then pour one tea spoonful of water in container A and two spoonful of water in B and three spoonful of water in C.**

**After an hour, observe which container of the cement set fast ?**

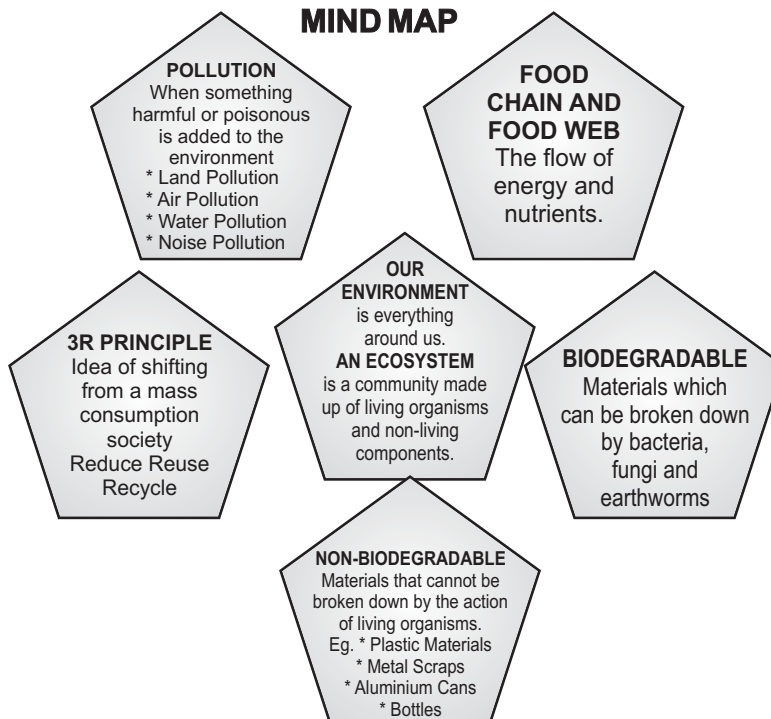
**Touch the containers and see if they are warm or cool.**

\* In the third container C Will set cement fast. Because it contains, correct level of water.

\* Bottom of the container is warm. Because of exothermic.

### UNIT - 4 Our Environment

#### MIND MAP



#### Evaluation

##### I. Choose the appropriate answer

##### 1. Identify the fresh water ecosystem.

- a) Pond                      b) Lake  
c) River                     d) All of them

**Ans : d) All of them**

##### 2. Producers are.....

- a) Animals                b) Birds  
c) Plants                  d) Snakes

**Ans : c) Plants**

##### 3. It is a biodegradable waste.

- a) Plastic                  b) Coconut Shell  
c) Glass                   d) Aluminium

**Ans : b) Coconut Shell**

**SELECTION 6 SCIENCE****298****TERM - III 5 in 1****4. It is an undesirable change that occurs in air and water.**

- a) Recycling                      b) Reuse  
c) Pollution                      d) Reduce

**Ans : c) Pollution****5. Usage of chemical pesticides and fertilizers causes.....pollution.**

- a) Air Pollution                      b) Water Pollution  
c) Noise Pollution                      d) None of the above

**Ans : b) Water Pollution****II. Fill in the blanks****1. Primary consumers that eat plants are called.....****Ans : Herbivores****2. Temperature, light and wind are.....factors.****Ans : abiotic****3. ....is the process of converting waste materials into new materials.****Ans : Recycling****4. Water pollution can spread.....and chemicals.****Ans : diseases****5. The 3R's are Reduce,.....and Recycle.****Ans : Reuse****III. True or False. If False, give the correct statement****1. The Pacific ocean is an example of an aquatic ecosystem.****Ans : True****2. Bacteria and fungi are called decomposers.****Ans : True****3. Human and animal wastes are examples of non-biodegradable waste.****Ans : False****Correct Statement :** Human and animal wastes are examples of bio degradable waste.**4. Excessive use of pesticides leads to air pollution.****Ans : False****Correct Statement :** Excessive use of pesticides leads to land and water pollution.**5. In schools, waste management rules say that we should separate waste in two categories.****Ans : False****Correct Statement :** In schools, waste management rules say that we should separate waste in three categories.

**IV. Match the following**

|                  |   |                       |
|------------------|---|-----------------------|
| 1. Biotic factor | - | Terrestrial Ecosystem |
| 2. Sewage        | - | Land pollution        |
| 3. Fertilizers   | - | Air pollution         |
| 4. Desert        | - | Water pollution       |
| 5. Smoke         | - | Animals               |

**Answer :-**

|                  |   |                       |
|------------------|---|-----------------------|
| 1. Biotic factor | - | Animals               |
| 2. Sewage        | - | Water pollution       |
| 3. Fertilizers   | - | Land pollution        |
| 4. Desert        | - | Terrestrial Ecosystem |
| 5. Smoke         | - | Air pollution         |

**V. Arrange the following in a correct sequence and form a food chain**

1. Rabbit → Carrot → Eagle → Snake

**Ans :-**

Carrot → Rabbit → Snake → Eagle

2. Human → Insect → Algae → Fish

**Ans :-**

Algae → Insect → Fish → Human

**VI. Give very short answer****1. Define ecosystem.**

H Eco system is a community of living and non-living things that work together.

**2. What are the two types of ecosystems ?**

1. Natural ecosystem
2. Artificial ecosystem

**3. Write any two things that can be recycled.**

- H Clothes
- H Plastics

**4. What are the types of pollution.****Types of pollution :**

1. Air pollution
2. Water pollution
3. Land (soil) pollution
4. Noise pollution.

**5. Give one example of a food chain in an aquatic ecosystem ?**

Aquatic plants (Producer) → Aquatic Insect (Primary Consumer) → Larva (Secondary Consumer) → Fish (Tertiary Consumer)

**6. Name some pollutants.**

Pollutants → Fossil fuels, Solid waste, Sewage, Industrial effluents, Pesticides, Fertilizers.

**7. What are the pollutions caused by the objects given below ?**

- a. Loud Speaker                      b. Plastic

**Pollutions Caused by****a) Loud Speaker :**

Noise pollution, Loud sounds, High blood pressure, Stress, hearing loss.

**b) Pollutions caused by Plastic :**

Air pollution, affects skin, eyes and respiratory system.

**VII. Give short answer.****1. What is biodegradable waste ?**

Biodegradable waste are those things that can be easily decomposed by natural agents like water, oxygen, ultra violet rays of the sun, Micro organisms etc.

**Eg :**

- H Vegetable and fruit peels
- H Left over food
- H Garden waste

**2. How can we reduce water pollution ?****Measures to prevent water pollution :**

1. Do not pour leftover oil, old medicines or waste down the drain or into the toilet.
2. Reduce the use of chemical pesticides and fertilizers to grow crops.
3. Use waste water for garden in home.
4. Do not litter or dump waste - always use a waste bin.

**3. Write the importance of the food chain.****Importance of food chain :**

1. Learning food chain help us to understand the feeding relationship and interaction between organisms in any ecosystem.
2. Understanding the food chain also helps us to appreciate the energy flow and nutrient circulation in an ecosystem. This is important because pollution impacts the ecosystem.
3. The food chain can be used to understand the movement of toxic substances and their impacts

**VIII. Answer in detail****1. Give two examples of how you can avoid or reduce waste ?**

H We can reduce the waste by using durable goods that last longer instead of things that are used once and thrown away.

(e.g) Write on both sides of papers.

H Instead of unnecessary printing, use electronic facilities.

H Share newspaper, magazines and other things with others.

**2. Write a short note on noise pollution.**

H Noise pollution affects the environment. We all like a quiet and peaceful place since unpleasant or loud sounds disturb us.

H Loud music, the sounds of motor vehicles, fire works and machines cause noise pollution.

H Continuous noise disturbs our sleep and does not let us to study.

H Noise pollution has been directly linked to stress and health impacts such as high blood pressure and hearing loss.

H Even underwater noise pollution from ships, can make whales lose their way as they use sounds to navigate.

**Ways to reduce noise pollution :-**

1. Turn off your electronics when you do not use them.
2. Lower the volume when you watch TV or listen to music.
3. Remind drivers not to use the horn too much.
4. Avoid fireworks.
5. Speak, do not shout (try to set an example)

**IX. Question based on Higher Order Thinking skills****1. What would happen if an organism is removed from the food chain?**

If an organism is removed from the food chain, energy flow and nutrient circulation in an ecosystem, will be affected.

**2. Explain the link between waste and dangerous diseases like dengue and malaria ?**

H Dumping of garbage and stagnation of water pools, let mosquitoes to breed.

H They can spread unwanted diseases like dengue and malaria.

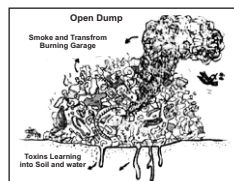
**X. See the diagram and answer the following questions.****1) Explain what is happening in the picture ?**

H Fires in the open dump, burns the unhealthy chemicals and pollute the ecosystem.

H These chemicals are present in the air we breathe.

H The left over ash from burning waste pollutes the soil.

H When it rains, some of the dangerous chemicals goes into the ground.

**2) What types of pollution are caused by open dumps ?****1. Environmental pollution :**

\* Air pollution

\* Land pollution

\* Water pollution

**Additional Questions & Answers****I. Choose the best answer :-****1.....produce their own food**

a) Carnivores

b) Producers

c) Herbivores

d) Consumers

**Ans : b) Producers**

**2. In India an average person produces.....waste per day**

a) 0.45 kg

b) 1.45 kg

c) 4.5kg

d) 0.145 kg

**Ans : a) 0.45kg**

**3. ....is important to create pollution free environment.**

a) 2R

b) 1R

c) 3R

d) None of the above

**Ans : c) 3R**

**II. Fill in the blanks :**

1. Producers are also called as.....**Ans : autotrophs**

2.....inter connects all food chains. **Ans : Food web**

3. The process converting waste materials into better quality product is.....**Ans : Creative reuse / upcycling**

4. India produces.....of solid waste every day.

**Ans : 532 million / kilos**

**III. Answer the following :****1. Differentiate Aquarium and Terrarium**

| Aquarium                                                                               | Terrarium                                                                                                  |
|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Aquarium is a place in which fish and other water creatures and plants are maintained. | Terrarium is a place in which live terrestrial animals and plants are kept.                                |
| An aquarium can be a small tank, or a large building with one or more large tanks.     | Plants and animals are kept in a terrarium with controlled conditions that copy their natural environment. |

**2. Differentiate Herbivores and Carnivores**

| Herbivores                                                                               | Carnivores                                                                  |
|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Animals which eat plants or plant products .<br><b>e.g</b> : cattle, deer, goat and rat. | Animals that eat other animals .<br><b>e.g</b> : lion, tiger, frog and owl. |

**3. Write a short note on food web.**

If we put all the food chains within an ecosystem together, then we end up with many interconnected food chains. This is called a food web.

**4. What are the principles of 3R ?**

- \* Reduce
- \* Reuse
- \* Recycle

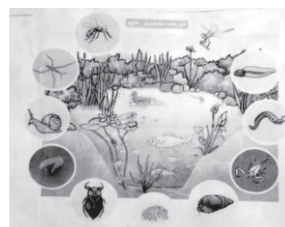
**5. Give examples for Domestic hazardous waste .**

Domestic hazardous waste means discarded paint drums, pesticide cans, CFL bulbs, tube lights, expired medicines, broken mercury thermometers, used batteries, used needles and syringes and contaminated gauge, etc., generated at the household level.

**6. What are the types of waste ?**

- \* Liquid waste ( in our drains)
- \* Gases in air (Pollutants from factories)
- \* Solid waste ( Garbage)

**Activity 1 : Think of the objects in your home. Just keep in mind, the books, toys, furniture, food materials and even pets of your home. These living and non-living things together make your home. Look at the following picture and list out the living and non-living things.**



| Living things                                                  | Non - Living things                 |
|----------------------------------------------------------------|-------------------------------------|
| Lotus plant , Fish, Duck, Mosquito, Leech, Snail, Larva, Frog. | Stones, Water, Soil, Air, Sunlight. |

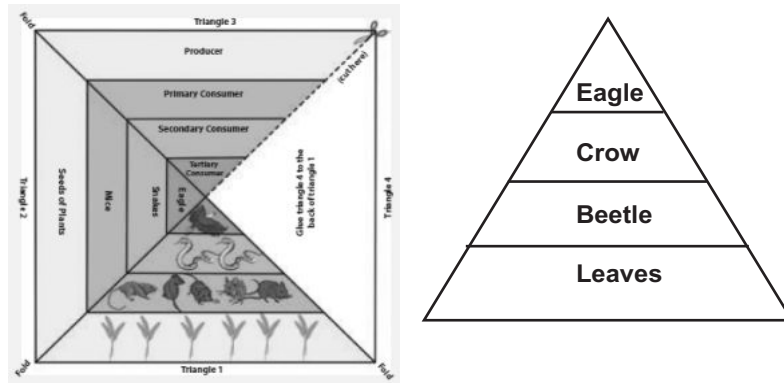
**Activity 2 :** Take a square paper. Fold its diagonals. Draw three lines in three triangles as shown in the picture.

Cut from the edge of the diagonal to the center as shown in the picture.

If you fold this triangle and paste behind the third triangle you get a pyramidal shape.

In one of the triangles, draw images of each of the organisms in the different levels.

In another triangle write the names of the organisms. In the last triangle, write the energy level of the organism. Have a look at the following example. You must come up with different organisms !.



### Activity : 3

Take two mud pots or glass jars and fill them up with garden soil. In the first pot, mix wastes such as banana peel, some vegetable peels and a few tree leaves into the soil. In the second pot, mix a piece of plastic carry bag, sweet wrapper and metal foil into the soil.

What happen to the waste materials placed in both pots ?

Do you notice a difference between first and second pot ?

Observe the changes over two weeks and discuss with your classmates.

\* In the first pot of the materials is biodegradable waste.

\* In the second pot of the materials is non-biodegradable waste.

\* In the first pot contains decomposed materials, and the second pot contains non decomposed materials.

Give some examples for Biodegradable and Non - biodegradable waste.

| S. No. | Biodegradable waste | Non - biodegradable waste |
|--------|---------------------|---------------------------|
| 1.     | Food Waste          | Plastic Bottles           |
| 2.     | Leaves              | Plastic covers            |
| 3.     | Grass               | Metals                    |
| 4.     | Vegetables          | Aluminium Cans            |
| 5.     | Banana Peels        | Glass Bottles             |

Discuss with your teacher and friends.

1. Are animal bones biodegradable ?

Yes, Biodegradable

2. Are all types of clothes biodegradable ?

No, Not biodegradable

#### Activity 4 : Preparation of vermi compost

Dig a pit for about one feet depth in the backyard or garden of your home or school. Fill the pit by bio wastes, paper and food wastes, place few earth worms in it, sprinkle water and close the place with jute or cardboard and ensure moisture all the time.



After 45 days the vermi casting layer formed just above the pit. These castings will be applied to the plant. This contains water soluble nutrients. This type of compost helps in plant growth as well as sustain the land is fertility.

#### Classroom Exercise : Identify who am I ?

1. I am the type of pollution caused by burning of fossil fuels like petrol or coal and the smoke of burning garbage. I float around and cause breathing problems. I am.....pollution. **Ans : Air Pollution**

2. I am the type of pollution caused by loud sounds and I can cause serious damage to your ears and also affect sleep. In India, I am mainly caused by loudspeakers and honking of air horns of cars. I am .....pollution. **Ans : Noise Pollution**

3. I flow from homes and farms into rivers and lakes. I kill fish and make water unfit for drinking. I am.....pollution. **Ans : Water Pollution**

4. I am the type of pollution caused by using too much chemical fertilizers and pesticides by farmers. I lower the quality of soil and even move chemicals into plant parts which are eaten by people.

I am.....pollution. **Ans : Land pollution.**