

Skill focused	TARGET LEARNING OUTCOME	SUGGESTED STRATEGIES
1.Observation 2.Experimentation 3.Analysis	Explores the surrounding in and shares experience with others	Individual Task/group task

### Sample Activity 1

<b>TLO</b>	<b>Understands different crops are grown in different seasons.</b>
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1. During holidays while visiting their native places, students find out crops grown in their respective villages. They also find out the month and time of sowing them and the month of harvesting the same crop.
2. Based on their observations they can tabulate their findings in the following format:

Name of the student:

Village/town visited:

S.NO	Name of the crop	Month of sowing	Month of harvesting	Is the crop a rabi or kharif

### ACTIVITY NO.2 Various practices of crop production

The students are divided into groups and specific areas are allotted to them in the school garden. They are made to grow the crop plants following the various agricultural practices. They record the activities in a log book starting from the preparation of the soil.

**Other activities** like reasoning questions, quiz ,crossword can be conducted to test the learning outcomes like asking questions leading to investigations and analysis of findings.

**Pedagogical tools** for achieving learning indicators : . Class room discussion ,ppts.

## EVALUATING THE LEARNING OUTCOME:

1. Maize (June to September)



2. Cotton (June to September)



3. pea (October to March)



4. wheat (October to March)



5. Mustard (October to March)



6. paddy (June to September)

Observe the pictures and identify the

1. Plants which are rabi crops
2. Plants which are kharif crops

## EVALUATING THE LEARNING OUTCOME:

The following are the agricultural practices ,but not in the correct order.Rewrite them in correct order.

1. protecting from weeds
2. irrigation
3. sowing
4. preparation of soil
5. adding manure and fertilizers
6. storage
7. Harvesting.

Skill focused	Target Learning outcome	Suggested strategies
1.Observation 2.Posing questions 3.Analysis	Ask questions leading to investigations	Individual Task

### Sample Activity 1

<b>TLO</b>	<b>Growth of microorganisms in food items</b>
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Your mother has kept the bread outside for 1 week, see how the bread has changed



Similarly look at the tomato



Student observes the spoiled food item and questions the cause of the same.

### Activity 2



student inquires how the milk changes into curd.

### Activity 3

Keep a banana peel for 5 days and then observe , write your observations,

DAY	OBSERVATIONS
1	
2	
3	
4	
5	

**Some group activities** can be conducted using yeast to test the learning outcomes like exploration and analysis of findings.

**Pedagogical tools** for achieving learning indicators : use of microscope, experiments and demonstrations.

### EVALUATING THE LEARNING OUTCOME:

**Lactobacillus is commonly found in**

- a) Cake
- b) **CURD**
- c) Bread
- d) All of the above

**The process of conversion of sugar into alcohol by yeast is called**

- a) **Fermentation**
- b) Pasteurisation
- c) Alcoholism
- d) All of the above

**A common preservative used in jam and pickles is**

- a) **Sodium benzoate**
- b) Nitric acid
- c) Sodium Chloride
- d) Copper Sulphate

Skill focused	Target Learning outcome	Suggested strategies
1.Observation 2. Analysis	Explores different types of synthetic fibres	Individual Task

**SAMPLE ACTIVITY 1:**

TLO	UNDERSTAND THE USE OF SYNTHETIC FIBRES
ACTIVITY	IDENTIFICATION OF SYNTHETIC FIBRES.

1. Collect items made out of synthetic fibres and name the fibres used for making those items
2. Identify the synthetic fibre used in the following items.



i.



ii.



iii.



iv.



v.



vi.



vii.

**Some group activities** can be conducted using different fibers to test the learning outcomes like investigation and analysis of findings, connecting scientific concepts to everyday life.

**Pedagogical tools** for achieving learning indicators : experiments and demonstrations to test the strength of various fibres.

### EVALUATING THE LEARNING OUTCOME:

**Match the following.**

A	B
polyester	Prepared using food pulp
teflon	Used for making stocking
Rayon	Used to make non stickcookwares
nylon	Fabrics do not wrinkle easily

## LEARNERS ACHIEVEMENT TEST

### I. MULTIPLE CHOICE QUESTIONS:

1. This is used for tilling the soil  
(a) Plough (b) hoe (c) plank (d) sickle
2. The given below is a Rabi crop  
(a) Wheat (b) Paddy (c) maize (d) cotton
3. Separation of grain from the chaff is  
(a) Harvesting (b) threshing (c) winnowing (d) Weeding.

### II. FILL IN THE BLANKS:

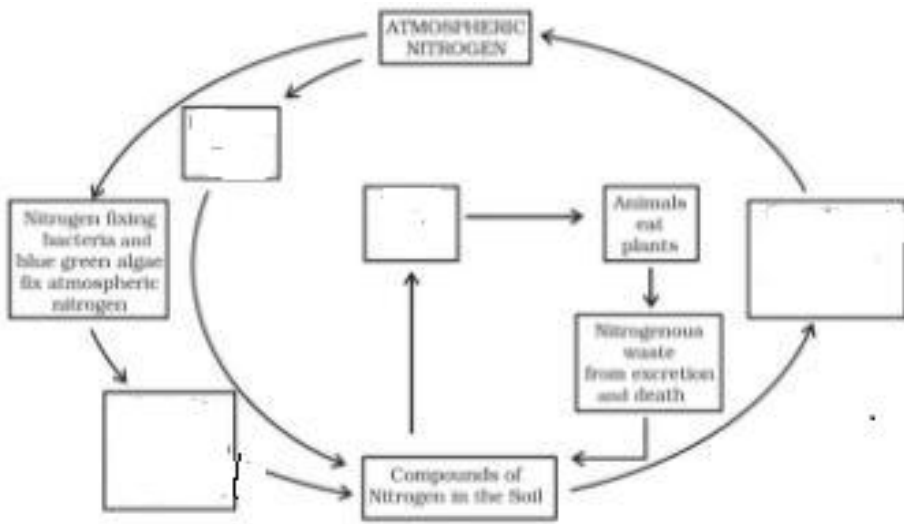
1. Microorganisms can be seen with the help of a -----
  2. Blue green algae fix ----- directly from air to enhance fertility of soil.
  3. Alcohol is produced with the help of -----.
- II. Answer the following
1. Why we should not wear synthetic clothes while working in the kitchen or in laboratory?
  2. Give example which indicates that nylon fiber is very strong.
  3. Write why plastics are considered as materials of choice.
  4. Name the different types of irrigation.
  5. Why drying of grains before storing is essential?
  6. Write 10 lines on the usefulness of microorganism.

### IV Draw the following

1. amoeba
2. Virus
3. paramecium

### V. Complete the missing links in the given diagram





Skill focused	Target Learning outcome	Suggested strategies
1.Observation 2. Analysis	Performance of activities : making hypothesis and plan activities to test them	Individual/group Task

### Activity

TLO	Understands the physical properties of metals and nonmetals.
ACTIVITY	Demonstrating ductility and malleability using wires and metal sheets

Rub the spoon with an abramer ,it shines showing lustrous.

Burn magnesium wire it burns with a bright light, collect the white ash ,add water to it and heat. Test the solution with litmus

Record the observations and verify the hypothesis.

**Some group activities** can be conducted using different metals to test the learning outcomes like exploration, connecting scientific concepts to everyday life and efforts to acquire knowledge from various sources.

**Pedagogical tools** for achieving learning indicators: experiments and demonstrations to test the properties of metals and non metals. Collection of materials for activities and class room discussion.

### EVALUATING THE LEARNING OUTCOME:

Enlist the objects in your home like spoon ,plates ,jewellery and electrical appliances.

Observe and classify them on the basis of material of which they are made of.

Skill focused	Target Learning outcome	Suggested strategies
1.inquiring 2.communicating and applying	Engages in sustained discussion on scientific issues.	Individual/group Task

**ACTIVITY:**

TLO	Increasing awareness about exhaustible sources of energy
ACTIVITY	Seminar

Conduct a seminar on uses of Exhaustible source of energy and their conservation.

**Some group activities** like finding information about coal and petroleum availability and their processing can be conducted using different sources to test the learning outcomes like exploration, connecting scientific concepts to everyday life and efforts to acquire knowledge from various sources.

**Pedagogical tools** for achieving learning indicators: class room discussion and PowerPoint presentation.

**EVALUATING THE LEARNING OUTCOME:**

Match the following

Petroleum component	uses
Lubricating oil	paints
Petrol	Fuel for vehicles
Paraffin wax	lubrication
bitumen	Ointments and candle

Skill focused	Target Learning outcome	Suggested strategies
1.inquiring 2.communicating and applying	Problem solving and applying scientific concepts to everyday life	Individual/group Task

## ACTIVITY:

TLO	Develop Scientific attitude
ACTIVITY	Control of fire

Students will demonstrate the various methods to control fire and to learn the use of fire extinguisher in case of emergency.

**Some group activities** like finding information about combustible and noncombustible substances and understanding ignition temperature and their processing can be conducted using different sources to test the learning outcomes like exploration and acquire further knowledge.

**Pedagogical tools** for achieving learning indicators : class room discussion and experimenting and demonstrating.

**EVALUATING THE LEARNING OUTCOME:**

Find out the number ,type and location of fire extinguishers available in the school,nearby shops and malls.

**LEARNER'S ACHIEVEMENTTEST**

I. Complete the table

<u>Properties</u>	<u>Metals</u>	<u>Non-metal</u>
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1. Appearance
2. Hardness
3. Malleability
4. Ductility
5. Heat conduction
6. Conduction of Electricity

II Name the petroleum product used for:

Surfacing roads

Making ointments, candles etc.

III List the advantages of using CNG and LPG as fuels?

IV Which zone of a flame does a goldsmith use for melting gold and silver.

V Give reason for covering a person caught in flames with a blanket to extinguish the fire.

VI Why does a piece of paper wrapped around an aluminium pipe not catch fire easily?

Skill focused	Target Learning outcome	Suggested strategies
1.inquiring 2.communicating and applying	Engages in sustained discussion on scientific issues, responds critically to media coverage of issues.	Individual/group Task

**Activity:**

TLO	Awareness of environment
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Poster drawing competition on deforestation and slogan writing competition on conservation of environment.

**Some group activities** like finding information natural parks and wild life sanctuaries understanding endemic species can be conducted using different sources to test the learning outcomes like exploration and acquire further knowledge.

**Pedagogical tools** for achieving learning indicators : class room discussion and power point.

**EVALUATING THE LEARNING OUTCOME:**

**Identify the following endemic species found in Pachmarhi Biosphere Reserve.**



\_\_\_\_\_



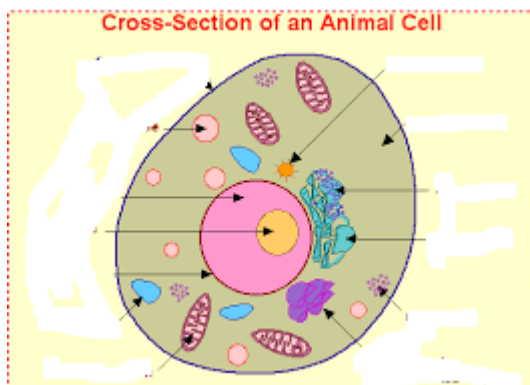
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Skill focused	Target Learning outcome	Suggested strategies
1.inquiring 2. drawing diagram	Makes efforts to acquire scientific knowledge	Individual/group Task

**Activity :**

TLO	Identifies different parts of animal cell.
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**1. observe the diagram and label.****2. Name the largest cell and smallest cell in human being.**

**Some activities** like observing unicellular organisms and other cells under microscope and drawing diagrams to test the other learning outcome

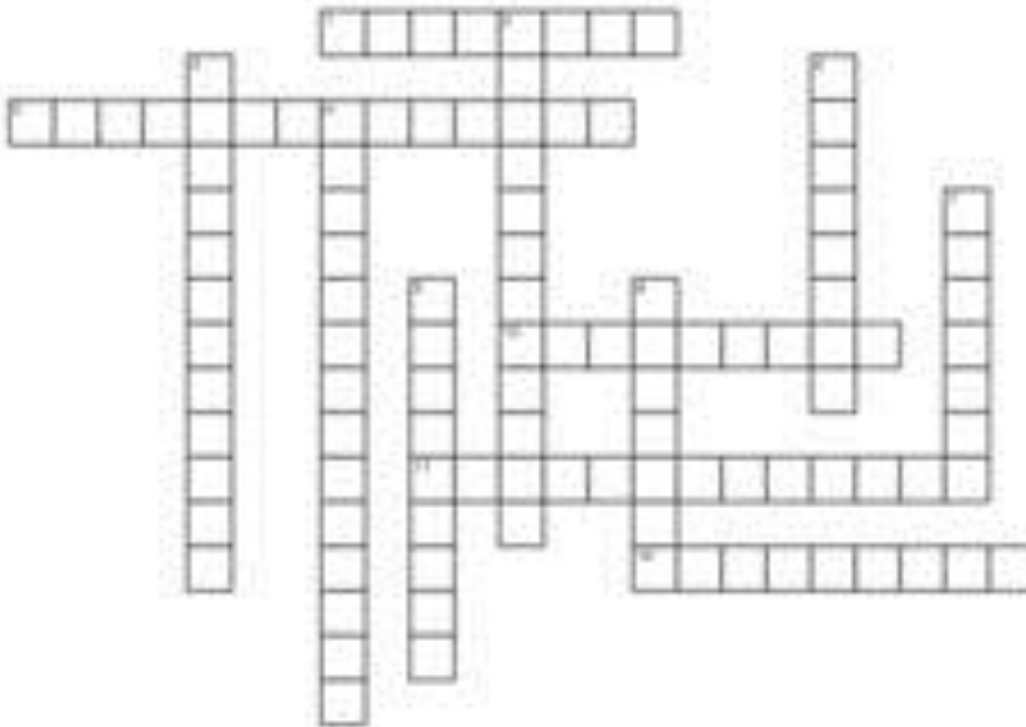
**Pedagogical tools** for achieving learning indicators: experimentation demonstration and drawing diagrams.



## EVALUATING THE LEARNING OUTCOME:

Name: \_\_\_\_\_ Period: \_\_\_\_\_

### Cells Crossword



#### Across

1. Proteins are packaged in these and sent to/from the Golgi apparatus.
5. The organelle responsible for packaging and directing various proteins.
10. These sacs contain enzymes that help digest proteins.
11. The plasma membrane is composed primarily of these molecules.
12. These are found throughout the cell and manufacture proteins.

#### Down

2. These proteins help give a cell its shape.
3. These organelles produce chemical energy for the cell in the form of ATP!
4. This organelle can manufacture lipids and detoxify alcohol.
6. This encloses the cell and determines what can exit and enter it.
7. This is the cell's "control center" and stores DNA.
8. The region inside the cell; includes both cytosol and organelles.
9. This organelle has ribosomes attached to it and manufactures proteins.

Skill focused	Target Learning outcome	Suggested strategies
1.inquiring 2. drawing diagram	Makes efforts to acquire scientific knowledge , Self awareness	Individual/group Task

TLO	Exploring the surrounding and gaining knowledge about organisms in and around us.
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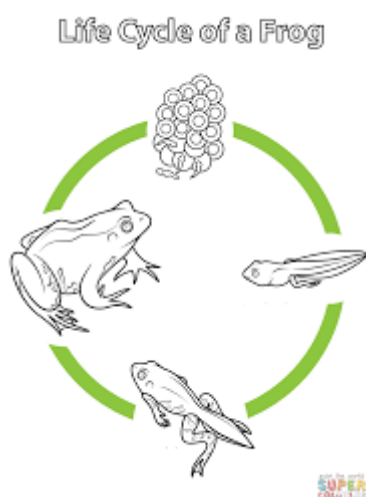
**Activity** :Collect the eggs of following organisms -hen, lizard, frog ,butterfly etc take pictures of them and paste them. Also takes pictures of tadpole and paste them.

**Some activities** like observing slides under the microscope in the lab and quiz may be conducted to test the other learning outcomes.

**Pedagogical tools** for achieving learning indicators: experimentation demonstration and drawing diagrams

### EVALUATING THE LEARNING OUTCOME:

Label the different stages in the life cycle of frog



## MCQ

1 Part of the earth which supports life where living beings exists is called \_\_\_\_\_

- a) Atmosphere
- b) Biosphere
- c) Biology
- d) Biodiversity

2 Animals whose numbers are reducing to a level that they might face extinction are

- a) Reducing species
- b) Extinction species
- c) Endangered species
- d) Dangerous species

3 One millionth of a metre is

- a) Millimetre
- b) Micrometre
- c) Nanometre
- d) Centimetre

4 A cell without organized nucleus is called

- a) Prokaryotic cell
- b) Eukaryotic cell
- c) Virus
- d) None of the above

5 Fertilization results into formation of

- a) egg
- b) zygote
- c) sperm
- d) individual

6 Dolly the famous animal was a

- a) donkey
- b) girl
- c) Cloned sheep
- d) Normal sheep

Fill in the blanks.

1. \_\_\_\_\_ and \_\_\_\_\_ are two national parks of India.
2. \_\_\_\_\_ and \_\_\_\_\_ are examples of migratory birds in India.
3. A \_\_\_\_\_ in human blood is a single cell which can change its shape.
4. The practice of identifying the \_\_\_\_\_ of the unborn is illegal and punishable.

Skill focused	Target Learning Outcome	Suggested strategies
1.inquiring 2. observation 3.applying	Makes efforts to acquire scientific knowledge and data interpretation.	Individual/group Task

### Activity

TLO	To understand there is change in height during puberty
ACTIVITY	Comparing height of different students and analyzing

Using the standard chart of height calculate the final height of your classmates and put them in descending order.

**Some activities** like to construct a work sheet on balanced diet and discuss the demerits of junk food may be conducted to test the other learning outcomes.

**Pedagogical tools** for achieving learning indicators: Data interpretation ,class room discussion .

### EVALUATING THE LEARNING OUTCOME:

1. List the changes taking place during puberty.
2. Why is it important to eat the right kind of food during the growing years.

Skill focused	Target Learning Outcome	Suggested strategies
1.Experimentation 2. observation 3.conclusion	Performs activity to understand and critically examines	Individual/group Task

Sample Activity

TLO	Understands the effect of force
ACTIVITY	Studying the effect of force on objects.

Identify in which cases due to force, shape changes and in which cases due to force speed changes.

1. Hitting a cricket ball with bat.
2. Striking a carom coin with a striker.
3. Rolling dough into a chapatti.
4. Stretching a rubber band.

Magnetic force, gravitational force and other forces can be demonstrated using various activities to test the other learning outcomes.

**Pedagogical tools** for achieving learning indicators: experimentation, demonstration

#### **EVALUATING THE LEARNING OUTCOME:**

In everyday life list the forces used for changing shape and speed.

Skill focused	Target Learning Outcome	Suggested strategies
1.Experiments 2. observation 3.applying	Performs activity to understand and connects scientific concepts in everyday life	Individual/group Task

Sample Activity

TLO	Understands the friction is a necessary evil.
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Why the surface of the tyres and the shoes are rough?



Why do the ice skaters move fast?



Does this increase or decrease the friction?

Other activities may be demonstrated to achieve the other learning outcomes.

**Pedagogical tools** for achieving learning indicators : experimentation and observation.

**EVALUATING THE LEARNING OUTCOME:**

1. Friction depends on the ----- of surfaces.
2. Rolling friction is much \_\_\_\_\_ than the sliding friction.
3. Hammering the nails on the walls is due to \_\_\_\_\_.

**LEARNER'S ACHIEVEMENT TEST:**

**1 The human body undergoes several changes during adolescence. These changes mark the onset of**

- a) **puberty**  
c) Post adolescence
- b) Prematurity  
d) ageing

**2 When a sperm containing Y chromosome fertilizes an egg with X chromosome, the zygote develops into a \_\_\_\_\_ child**

- a)Female  
c)**Male**
- b) Either a male or female  
d) No child

**3 A ball rolling on the ground slows down and finally stops. This is because of**

- a)Force  
c)**Friction**
- b) Less force applied  
d) None of the above

**4) Pressure =**

- a)Area / force on which it acts  
c)Volume / force on which it acts
- b) **force / area on which it acts**  
d) Force / volume on which it acts

**5 Spring balance is a device used for measuring the \_\_\_\_\_ acting on an object.**

- a)mass  
c) **force**
- b) pressure  
d) None of the above

**6 A boat or an aeroplane has a pointed or tapering front / head. Why?**

- a)To increase the friction of fluid  
c)To look good
- b) **To reduce the friction of fluid**  
d) For no reason

7 chips and tinned snacks should never replace regular meals.Give reason.

8 why are we not crushed by the atmospheric pressure?

9 Give reasons for applying oil on the hinges of a door.

10. why is it easier to pull a suitcase with wheels.?

11. if a force of 10 N is applied on a surface area of  $10\text{m}^2$ , calculate the pressure exerted on the surface.

**Subject: Science**

**Level: B2 Class: VIII**

**LESSON: SOUND**

**Worksheet: 13**

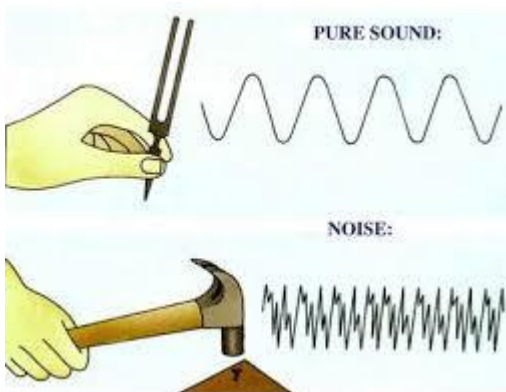
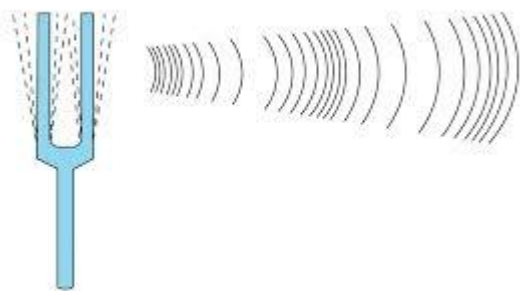
Skill focused	Target Learning Outcome	Suggested strategies
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1.experiments 2. observation 3. analysis	Ask questions to investigation and connects scientific concepts in everyday life	Individual/group Task
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Sample Activity

TLO	Understanding vibrating objects produce sound.
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Some other activities like about the need of a medium to propagate may be demonstrated to achieve the other learning outcomes.

**Pedagogical tools** for achieving learning indicators: experimentation and observation and drawing conclusions.

## EVALUATING THE LEARNING OUTCOME:

Fill in the blanks:

1. Vibrating objects produce \_\_\_\_\_.
2. The unit of frequency is \_\_\_\_\_.
3. A tuning fork vibrates 40 times in 4 seconds. Find its frequency and time period.

## Worksheet: 14

Skill focused	Target Learning Outcome	Suggested strategies
1.experiments 2. observation 3. analysis	Ask questions to investigation and connects scientific concepts in everyday life	Individual/group Task

## SAMPLE ACTIVITY

TLO	Investigate the conductivity of liquids.
Activity	Conduction in liquids.

Collect different liquids and test their conductivity using simple electrical circuit, tabulate the observations

S.NO	LIQUID	GOOD / BAD CONDUCTOR

Some other activities like electroplating may be demonstrated to achieve the other learning outcomes

**Pedagogical tools** for achieving learning indicators: experimentation and observation and drawing conclusions

**EVALUATING THE LEARNING OUTCOME****1. Say true or false**

- I. Pure water can be made conducting by adding acid to it.
- II. Metals are insulators.
- III. All liquids conduct electricity.

Skill focused	Target Learning Outcome	Suggested strategies
1. experiments 2. observation 3. analysis	Explores the surroundings and shares experience	Individual/group Task

## SAMPLE ACTIVITY

TLO	Understands static electricity
Activity	Attraction and repulsion of charges.

Take a glass rod and rub it in a piece of silk. The glass rod becomes positively charged and attracts small bits of paper. Similarly take an ebonite rod and rub it in a piece of wool. The ebonite rod becomes negatively charged.

It can be also observed the two charged rods attract each other.

Some other activities like transfer of charge using a self-made electroscope, collecting information about earthquake prone areas may be conducted to achieve the other learning outcomes.

**Pedagogical tools** for achieving learning indicators: experimentation, class discussion, PowerPoint presentation and seminar.

## EVALUATING THE LEARNING OUTCOME



Identify the phenomenon in the above images.

Learner's Achievement Test.

I Fill in the blanks

1. Shrillness of sound is determined by the \_\_\_\_\_ of a vibration.
2. The damage to the \_\_\_\_\_ can cause deafness.
3. \_\_\_\_\_ is produced when oppositely charged clouds come closer to each other.

II Give reasons :

1. Nylon clothing crackles as you remove them.
2. During lightening why should you sit inside the car.
3. Electrical appliances should be unplugged during a thunderstorm.

III. A gun is fired in the air at a distance of 680 m from a person. He hears the sound of the gun after 2 seconds. Calculate the speed of sound.

IV . Write the full form of LEDs . List where are they being used in every day life.

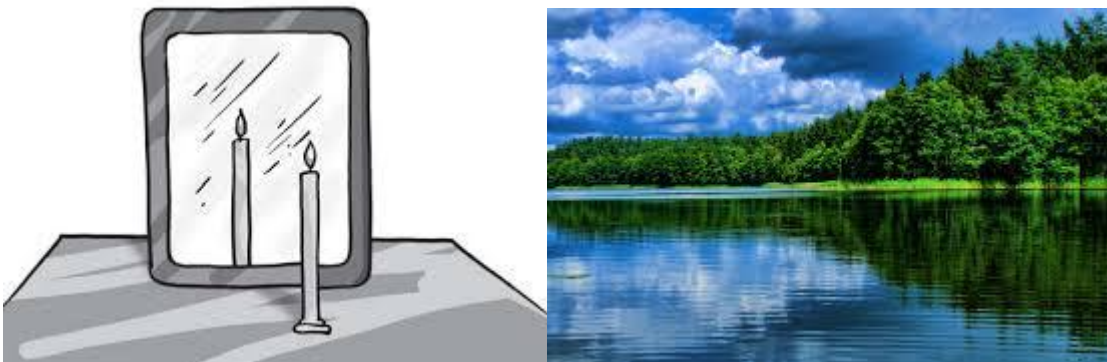
Skill focused	Target Learning Outcome	Suggested strategies
1.experiments 2. observation 3.Records and analysis	Performs activities records and organizes scientific findings, applies scientific knowledge in real life.	Individual/group Task

## SAMPLE ACTIVITY

TLO	Understands the laws of reflection of light and its application.
Activity	Experiment with ray streak apparatus.

Using a ray streak apparatus the laws of reflection can be verified.

Some images showing the light phenomenon reflection



Some other activities like using a self-made kaleidoscope ,a simple device to observe multiple images may be constructed to achieve the other learning outcomes.

**Pedagogical tools** for achieving learning indicators : experimentation, observation and analysis, applies knowledge to real life.

### EVALUATING THE LEARNING OUTCOME

A student performed the activity to verify the laws of reflection and obtained the following observations . Identify the error in the observation.

S NO	Angle of incidence	Angle of reflection
1	35°	35°
2	45°	55°
3	60°	50°

Skill focused	Target Learning Outcome	Suggested strategies
1 observation 2 collecting information	Explores surrounding, asks questions and displays a sense of interest.	Role Play

## SAMPLE ACTIVITY

TLO	Understanding the solar system and other heavenly bodies.
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Each student is assigned the role of one planet, they come and describe the planet with extra information and diagram.

Some other activities like making chart , models can be used to achieve the other learning outcomes.

**Pedagogical tools** for achieving learning indicators, observation and analysis ,visiting planetarium

**EVALUATING THE LEARNING OUTCOME**

1. Choose the correct option.
  - i. The largest planet  
a)mars b) Jupiter c) Uranus d) earth
  - ii. Orion is  
a)constellation b)galaxy c) star d) planet.
  - iii. This planet is called a morning and evening star.  
a)mars b) saturn c) Jupiter d)venus.

Skill focused	Target Learning Outcome	Suggested strategies
1.experiments 2. observation 3. analysis	Demonstrates the values imbibed, explores surrounding	Individual/group Task

## SAMPLE ACTIVITY

TLO	<ul style="list-style-type: none"> <li>recognise some of the sources of air pollution</li> <li>understand that only some pollution is visible</li> <li>Carry out simple scientific observations and interpret results.</li> </ul>
Activity	In this activity, students investigate exhaust emissions, car use and air quality.

**Exhaust emissions**

- Place a white sock over the exhaust pipe of a car and run the car for 5 minutes. Stand back while the engine is running.
- Remove the sock – use gloves as the exhaust pipe will be hot! – and turn it inside out.
- Discuss what you see. Soot particles are produced during the combustion of petrol and diesel. How dirty would the sock be after longer periods of time?
- If possible, conduct the same experiment to compare different types of car, for example diesel versus petrol, old versus new, big versus small.

**Car use**

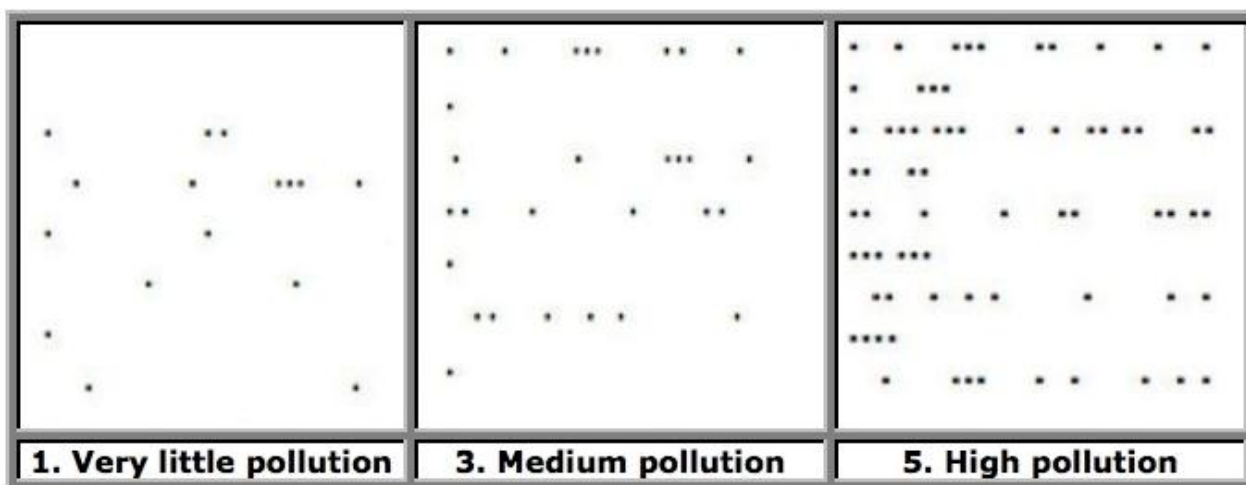
- As a class, conduct a survey about how families of students commute in the morning and create a visual human graph by putting students into categories depending on their answers. For example, you could investigate:
  - how many students come to school by car
  - how far students travel by car
  - how many trips students do by car in a week
  - how students' parents commute by car, for example, alone, car pool and so on
  - which types of car are involved and how this relates to exhaust emissions.

**Air quality**

- Cut out several 50 x 50 mm squares of white card and smear the surface of each lightly with Vaseline.



7. Have students fix the squares to as many different areas you can think of, for example, by the bus stop, inside the classroom, under trees, by a car park, on a post by traffic lights, on a back door and so on. Leave for 24 hours. (As an alternative, you could use slightly damp cotton wool to swab different surfaces, such as road signs, leaves on trees, window panes and so on.)
8. The squares will now have particles stuck to them. Some will be big enough to see, but most particles will be too small – try looking at them under a microscope.
  - Where do you think the particles have come from?
9. Have students devise a particle pollution indicator, from low pollution to high pollution, for the cards based on the results you get. It is best to have about five categories.



10. Score each card on how polluted it is and use this data to draw a graph showing the level of air pollution in the various areas.
11. Discuss the graphs. What areas were least polluted? What areas were most polluted? Are there any links between the areas that are most polluted?

Some other activities may be conducted on water pollution to achieve the other learning outcomes.

**Pedagogical tools** for achieving learning indicators : experimentation, class discussion , powerpoint presentation and seminar.

### EVALUATING THE LEARNING OUTCOME

- 1.Explain the difference between pure and polluted air.
2. At an individual level how can you help reduce air pollution

## Learner's Achievement Test.

1. Name the ray of light which falls on a mirror.
2. Write the difference between the image which we see on a mirror and the image which we see on a cinema screen.
3. Give reason the sun appears to rise in the east and set in the west
4. Planets and their satellites do not emit their own light.but they are still seen in the sky.why?
5. Give reasons for the de-colouration of Taj Mahal in recent times.
6. One of the reasons for the frequent cyclones, cloud burst is global warming what do you understand by the term global warming and what are the causes for the same.
7. Draw the sketches to show the relative position of the stars in Ursa Major and when do you see the constellation in the sky.
8. Will burning fewer crackers on Diwali help to reduce the level of air pollution Give reasons to support your answer.
9. Your friend is viewing computer/video game for long hours every day? As a well-wisher what will you advise?