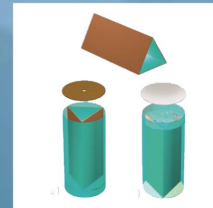
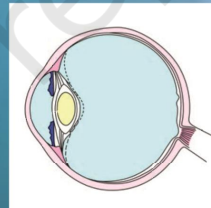
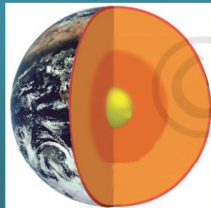
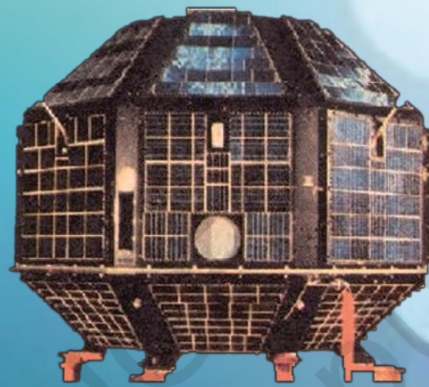


EXTRA RESOURCES BASED ON LEARNING OUTCOMES AT UPPER PRIMARY STAGE

WORKBOOK
CLASS - VIII



PREFACE

The literature on Education for All (EFA), in the last three decades emphasized on quality of education. It has been considered in terms of enrolment, retention and achievement. It further included desirable characteristics of learners, learning processes, facilities, learning materials, contents, governance and management and learning outcomes.

As per the recent Global Monitoring Report (GMR). 2015, impressive gains in access to education have occurred in developing countries including India, but improvement in quality still remains a concern. In India, different achievement surveys such as the Annual Status of Education Report (ASER) reported wide disparities in students' achievement of basic skills across states, which were also affirmed by the National Achievement Survey (NAS) of Class III, (MHRD, 2014).

Most often, teachers are not clear about what kind of learning is desired and the criteria against which it could be assessed. They use textbooks as the complete curriculum and assess children using questions given at the unit end exercises. The contextual variations in textual material and variations in pedagogy adopted are generally not taken into account, for there are no criteria to assess them. The learning outcomes for each class not only help the teachers to direct their teaching-learning in the desired manner but make other stakeholders, especially the parents or guardians, School Management Committee (SMC) members, community and the state functionaries to be responsible and alert towards their role for ensuring quality education. The learning outcomes defined explicitly can guide and ensure the responsibility and accountability of different stakeholders for its accomplishment by expectations in different curricular areas.

In the view of learning continuum, NCERT developed a document which includes learning outcomes in all the curricular areas at the elementary stage, linked to curriculum expectations and the pedagogical processes. Based on the respective document, to assess the understanding of the students of the content, several worksheets have been assembled in a form of a workbook. It will help the teachers as well as parents to analyze the cognitive ability of the student.

The National Council of Educational Research and Training (NCERT) appreciate the hard work done by the Textbook Development Committee responsible for this workbook. Several teachers contributed to the development of this workbook; we are grateful to them for making this possible.

As an organization committed to systemic reform and continuous improvement in the quality of its products, NCERT welcomes comments and suggestions which will enable us to undertake further revision and refinement.

DEVELOPMENT TEAM MEMBERS

PROGRAMME COORDINATOR

PramilaTanwar, Associate Professor, DESM, NCERT, New Delhi

DEVELOPMENT TEAM, NCERT

AnjniKoul, Professor, DESM, NCERT, New Delhi

Ashish Kr. Srivastava, Assistant Professor, DESM, NCERT, New Delhi

C.V. Shimray, Associate Professor, DESM, NCERT, New Delhi

Dinesh Kumar, Professor, DESM, NCERT, New Delhi

Gagan Gupta, Associate Professor, DESM, NCERT, New Delhi

K.V. Sri Devi, Assistant Professor, DCS, NCERT, New Delhi

PoonamAggarwal, Professor, DGS, NCERT, New Delhi

PushplataVerma, Associate Professor, DESM, NCERT, New Delhi

R. K. Parashar, Professor, DESM, NCERT, New Delhi

RachnaGarg, Professor, DESM, NCERT, New Delhi

RuchiVerma, Professor, DESM, NCERT, New Delhi

R. K. Sharma, Assistant Professor, DESM, RIE Ajmer

SharadSinha, Professor, DTE, NCERT, New Delhi

S.C. Chauhan, Professor & Head, DEGSN, NCERT, New Delhi

SunitaFarkya, Professor & Head, DESM, NCERT, New Delhi

Veerpal Singh, Professor & Head, ESD, NCERT, New Delhi

Vinay Kumar Singh, Professor, DEGSN, NCERT, New Delhi

V. P. Arya, Assistant Professor, DESM, RIE Ajmer

SUPPORT STAFF

Ankit Sharma, Computer Typist, DESM, NCERT

ArunVerma, DTP Operator, DESM, NCERT

ManjuNegi, Computer Typist, DESM, NCERT

Rajiv Chandeliya, DTP Operator, DESM, NCERT

Romeo Khonganbatbam, JPF, DESM, NCERT

ShikshaTiwari, JPF, DESM, NCERT

Acknowledgements

The National Council of Educational Research and Training (NCERT) acknowledge the valuable contribution of the individuals and organizations involved in the development of Science Workbook for Class VI. The Council acknowledges the valuable contribution of the following academics for the development of the worksheets of this book: Dr.Ravijot Sandhu, *lecturer*, NDMC- Navyug School, Peshwa Road, New Delhi; Ms.Preeti Khanna, *Senior TGT*, National Blind Association, Delhi; Dr.Abinash Kumar Singh, *PGT*, K.V. BSF Camp, Chhawla, New Delhi; Ms.Reema Marwah, *TGT*, The Mothers International School, New Delhi; Ms. Swati Bhardwaj, *TGT*, The Mothers International School, New Delhi. We are thankful to them.

The dynamic leadership of Professor Sunita Farkya, Head, DESM, for providing guidance and continuous support in extending infrastructure facilities is highly acknowledged.

The Council also acknowledges the efforts of Romeo Khonganbatbam, *Junior Project Fellow*, Shiksha Tiwari, *Junior Project Fellow*, Ankit Sharma, *Computer Typist*, Arun Verma, *DTP Operator*, Manju Negi, *Computer Typist*, Rajiv Chandeliya, *Graphic Designer*, DESM, and NCERT.

The Contribution of APC-office, administration of DESM, Publication Department and Secretariat of NCERT is also acknowledgement.

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Worksheet: 1 (Face-to-Face mode) (LO-1)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

All animals produce young ones like themselves. Some animals give birth to young ones while some animals lay eggs which later develop into young ones.

- The animals which give birth to young ones are called **Viviparous** animals.
- The animals which lay eggs are called **Oviparous** animals.

Write which of the following animals lay eggs and which ones give birth to young ones and also draw their young ones in the given space.



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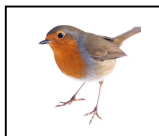
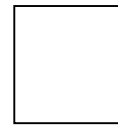
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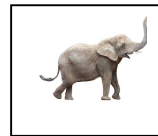
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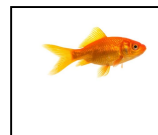
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Worksheet – 2 (Face-to-Face mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1. In an activity learners were exposed to following items and they were asked to identify them-

- (i) Nylon (ii) cellulose (iii) Acrylic (iv) Polyester

Amongst the items given above, synthetic fibres are

- a) (i), (ii) and (iii)
- b) (ii), (iii) and (iv)
- c) (i), (ii) and (iv)
- d) (i),(iii) and (iv)

Q2. When one end of a magnet is brought near the end of the magnet placed on the wooden rollers, it is observed that the magnet on the rollers begin to move. The force exerted by a magnet in this activity is

- a) Non-contact force
- b) Contact force Friction
- c) Friction
- d) Muscular Force

Q3. A tester is used to check the conduction of electricity through two liquids, labelled A and B. It is found that the bulb of the tester glows brightly for liquid A while it glows very dimly for liquid B. You would conclude that

- a) Liquid A is a better conductor than liquid B.
- b) Liquid B is a better conductor than liquid A.
- c) Both liquids are equally conducting.
- d) Conducting properties of liquid cannot be compared in this manner.

Q4. Which of the following is not a characteristic of an animal cell?

- a) Cell Wall is present
- b) Plastids are absent
- c) Cell Membrane is present
- d) Liposomeqare present

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

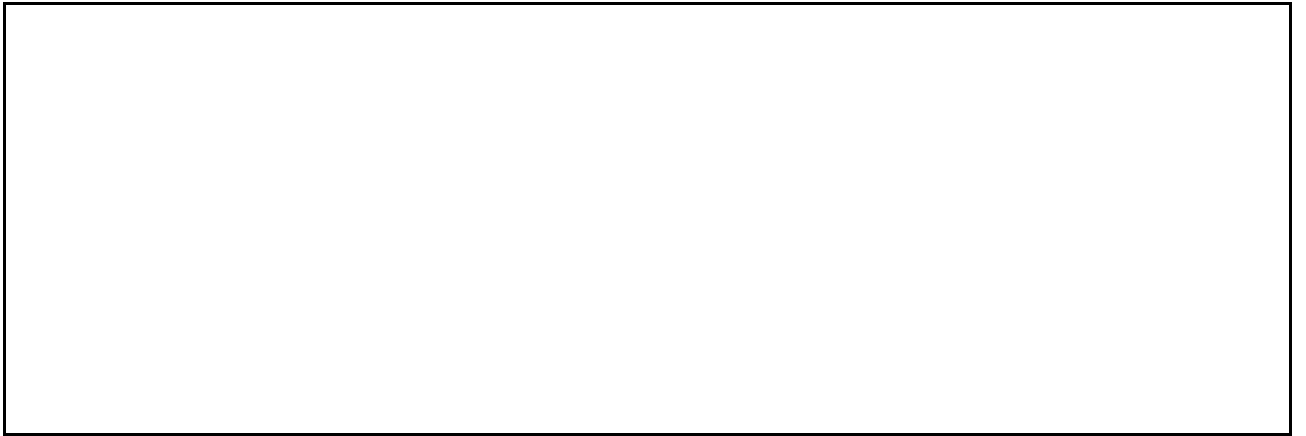
- “ Differentiates materials such as biodegradable and non-biodegradable.
- “ Makes efforts to conserve environment
- Exhibits creativity in planning and making use of available resource

Q2. Ananya was Eco-Club Monitor. She made a poster to create awareness on Segregation of Waste at Source+ to motivate her school friends.



You also make a poster on the same topic in the space/box provided.

Poster on %Waste Segregation at Source+



You are an aware student, so help your father segregate the garbage into three Bins by suggesting 5 items which will go in the following Green, Black and Blue Bins-



1õ õ õ õ .

2õ õ õ õ .

3õ õ õ õ .

4õ õ õ õ .

5õ õ õ õ .



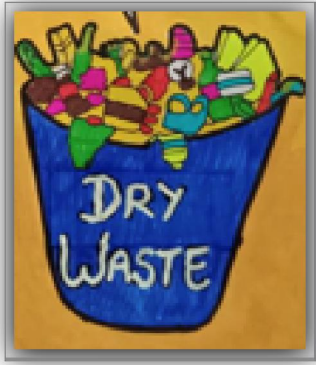
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5õ õ õ õ .

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Worksheet - 4(Face-to Face mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1. Chapter : Conservation of Plants and Animals

Choose a statement that correctly differentiates between Endemic species and endangered species of plants and animals.

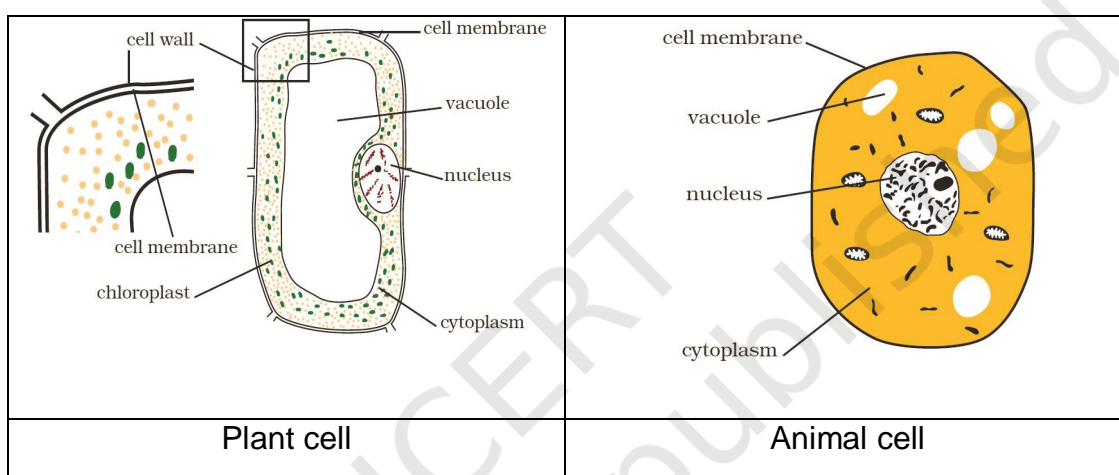
- (a) Endemic species no longer exist anywhere in the world, whereas, extinct species are found nowhere else in the world except for in a particular area.
- (b) Endemic species are found exclusively in a particular area whereas, extinct species no longer exist.
- (c) Endemic species have become so rare that they are in danger of becoming extinct whereas, extinct species are likely to become endangered within the foreseeable future.
- (d) Endemic species no longer exist anywhere in the world whereas; extinct species are likely to become endangered within the foreseeable future.

Worksheet - 5(Face-to Face mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1.Plants and animals are made up of basic structural units known as CELLS. Each cell has some basic components that are similar to both. However, there are some distinguishing features that help us to differentiate between plant and animal cells.



(a) Label the parts of Plant cell and Animal cell in the figures given above.

(b) Distinguish between plant and animal cell in the table given below on the basis of their structure and function:



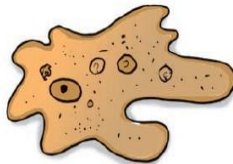
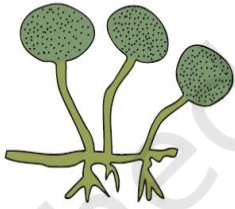
S. No.	Part of cell	Present or Absent (Put a tick or cross)		Function of that part
		Plant cell	Animal cell	
1	Cell wall			
2	Cell membrane			
3	Nucleus			
4	Nuclear membrane			
5	Cytoplasm			
6	Plastids			
7	Vacuole			

Worksheet - 6 (Face-to Face mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1.

			
A	B	C	D
Microorganisms			

In the table given below write one distinguishing feature of each microorganism A,B,C and D. Name each organism and the group to which it belongs.

Microorganism	Distinguishing feature of the microorganism	Name of the microorganism	Group to which it belongs
A			
B			
C			
D			

Worksheet - 7(Face-to Face mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1. Chapter: Reproduction in Animals

A mixed list of 8 characteristics of oviparous and viviparous animals is given below. Read them carefully. Then fill up the differentiating characteristics between oviparous and viviparous animals in the given table.

1. They lay eggs which later develop into young ones.
2. They give birth to young ones directly.
3. In such animals the embryo develops inside the body of the mother until it is able to survive on its own outside her body.
4. In such animals the embryo develops inside an egg with a hard shell-like outer covering until it hatches out of the egg.
5. As it develops the embryo obtains nourishment from the uterus of the mother.
6. As it develops the embryo obtains nourishment from the yolk and the albumin present in the egg itself.
7. Examples include most insects, frogs, fishes, snakes, lizards and almost all birds.
8. Examples include humans, cows, dogs, elephants, lions, some sharks, etc.

S.No.	Differentiating characteristics	Oviparous animals	Viviparous animals
1	How do they give birth to young ones?		
2	Where does the embryo develop?		
3	Where does the embryo obtain its nourishment from while it is developing?		
4	Give some examples		

Worksheet - 8(Face-to Face mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1.

Usually puberty starts between 10 to 13 years in girls and 12 to 15 in boys. A boy or girl before birth can be distinguished from the sex organs. But at the onset of puberty, physical changes and development take place. These changes are a part of growing up. Such changes are called secondary sexual characteristics which distinguish the male from a female.

Fill up the table given below on the basis of your observation of secondary sexual characteristics that occur in boys and girls during adolescence.

Secondary sexual characteristics	In adolescent Girls	In adolescent Boys
Increase in height		
Increase in weight		
Shoulder and chest		
Development of muscles		
Facial hair		
Body hair pattern		
Changes in voice		
Development of breasts		

Worksheet - 9(Face-to Face mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1. Differentiate between the following 4 terms related to conservation of plants and animals. Give one example each of Indian species of plant and animal for each term.

- (a) Endemic species
- (b) Extinct species
- (c) Endangered species
- (d) Threatened species

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Q3. A force is either a push or a pull. From your experience, enlist two situations each to distinguish between a push and a pull.

o .o o

o .o o

Q4. (a) Identify the type of force acting in each picture.



A



B

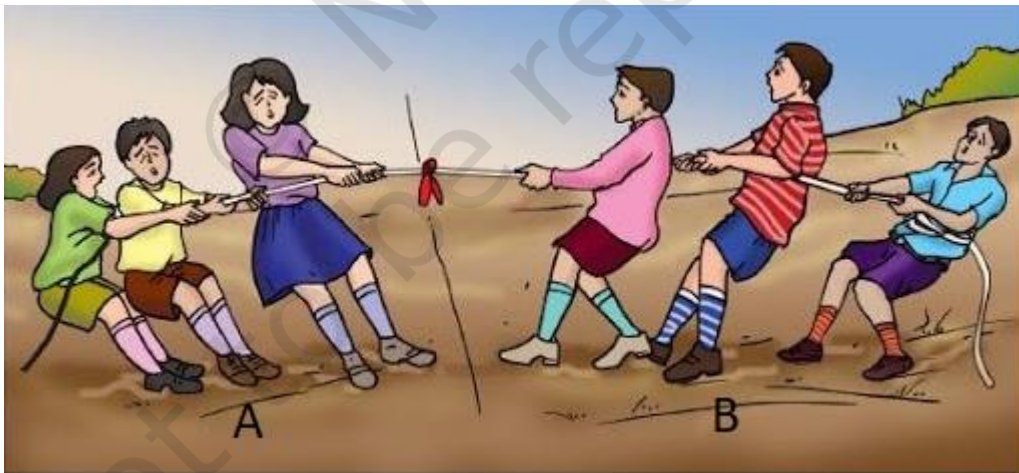
(b) What is the similarity between these forces?

o .o o

(c) Give one difference between these forces?

o .o o

Q5. Consider the picture given below and answer the questions that follow:



(a) Force applied by team A is (> or < or=) the force applied by team B? Give reason for your answer.

o o

(b) If the central red knot begins to shift towards right side then which team is applying greater force?

o o

o o

(b) In which case(s), angle of incidence is equal to angle of reflection?

o o

(c) What is the difference between reflected rays of figure 1 and reflected rays of figure 2? State the cause of this difference?

o o

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Worksheet - 12(Face-to Face mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

- Q1. A regular reflection is observed _____
- (a) on a sheet of paper
 - (b) on the surface of still water
 - (c) in a newspaper
 - (d) on a log of wood
- Q2. A lightning conductor is can be made using
- (a) a metallic rod
 - (b) a plastic rod
 - (c) a PVC pipe
 - (d) a glass rod
- Q3. A baby's voice is different than that of a woman as they have different _____
- (a) Frequency
 - (b) amplitude
 - (c) loudness
 - (d) decibel
- Q4. Find odd one out from the following musical instruments?
- (a) cymbals
 - (b) metallic bell
 - (c) a Mridangam
 - (d) ghatam
- Q5. Complete the following statement:
- A ball pen refill rubbed with polythene cannot _____.
- (a) diverge leaves of an electroscope
 - (b) repel another charged ball pen refill
 - (c) attract a balloon rubbed with woollen cloth
 - (d) attract a glass rod rubbed with silk
- Q6. Which material can be charged by friction?
- (a) iron rod

- (b) glass rod
- (c) copper rod
- (d) steel rod

Q7. An earth wire is usually made up of

- (a) a charged wire
- (b) a insulator
- (c) a green plastic wire
- (d) copper

Q8. Which mirror forms an image that is of the same size as the object?

- (a) plane mirror
- (b) concave mirror
- (c) magnifying glass
- (d) convex mirror

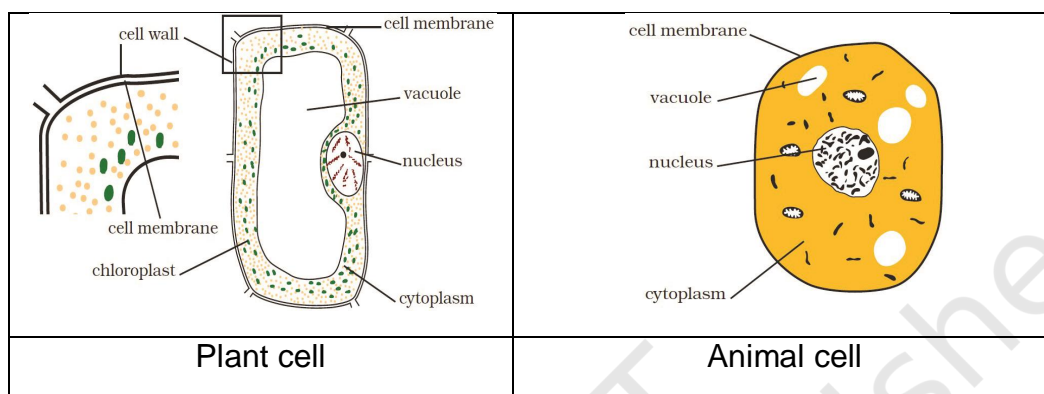
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Worksheet – 13 (On-line mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1.



Plants and animal cells have some basic components that are similar to both. However, there are some distinguishing features that help us to differentiate between plant and animal cells.

Given below are four statements a, b, c, d about distinguishing features between plant cells and animal cells. Some of them are correct and some are incorrect.

- (a) Animal cells have large vacuoles, whereas, plant cells have much smaller vacuoles.
- (b) Plant cells have large vacuoles, whereas, animal cells have much smaller vacuoles.
- (c) Chloroplast in plant cells is essential for photosynthesis, whereas, in animal cells chloroplast is essential for inheritance of characters.
- (d) Cytoplasm and nucleus of animal cell are enclosed within the cell membrane, whereas, the plant cells have cell membrane and an outer thick cell wall.

Which of the following pair of statements is correct?

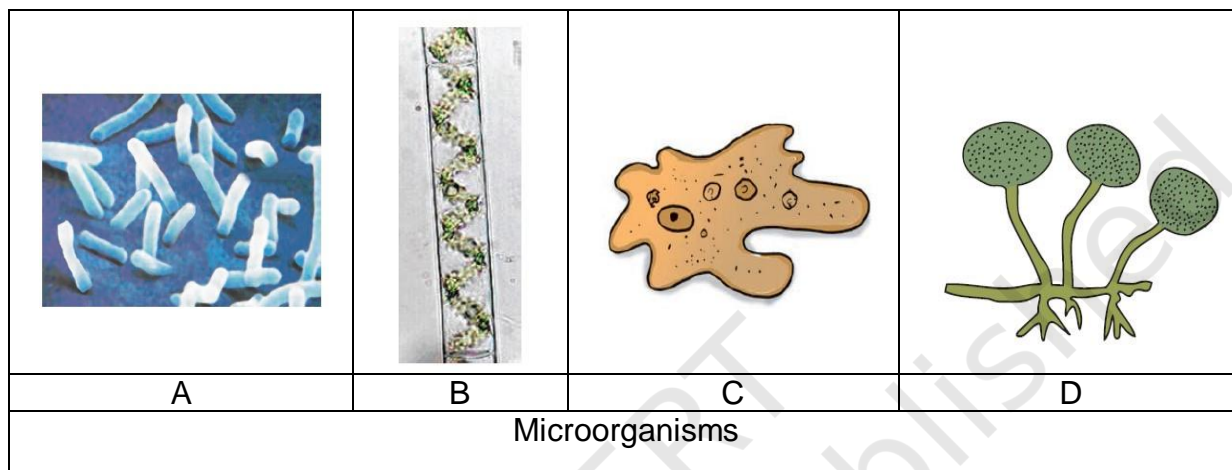
- A. a-b
- B. c-d
- C. a-c
- D. b-d

Worksheet - 14(On-line mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1.



Study the diagrams and match the distinguishing feature of microorganisms A,B,C and D with their correct name.

	Distinguishing feature		Name of the microorganism
a	Rod-shaped structure	i	Bread mould
b	Spiral-shaped chloroplast	ii	Bacteria
c	Irregular-shaped body	iii	Amoeba
d	Pin-shaped structure	iv	Spirogyra

Choose the correct matches.

- (a) a- i ; b- ii ; c- iii ; d- iv
- (b) a- ii ; b- iii ; c- iv ; d- i
- (c) a- iv ; b- i ; c- iii ; d- ii
- (d) a- ii ; b- iv ; c- iii ; d- i

Worksheet - 15(On-line mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1.

Given below are four statements a, b, c, d about differentiating characteristics of oviparous and viviparous animals. Some of them are true (T) and some false (F).

- (a) Viviparous animals lay eggs whereas oviparous animals give birth to young ones directly.
- (b) In viviparous animals the embryo develops inside the body of the mother whereas in oviparous animals the embryo develops inside an egg.
- (c) The embryo of viviparous animal obtains its nourishment from the uterus of the mother whereas the embryo of oviparous obtains nourishment from the yolk and the albumin present in the egg itself.
- (d) An example of oviparous animal is lizard and an example of viviparous animal is cow.

Choose the option with correct sequence of True (T) and False (F) statements.

- (a) a.(F) b. (F) c. (T) d. (F)
- (b) a. (F) b.(T) c. (T) d. (T)
- (c) a. (T) b. (F) c. (F) d. (T)
- (d) a. (F) b. (T) c. (F) d. (F)

Worksheet - 16(On-line mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

Q1.

Reproduction is different from other life process because it

- (a) Keeps the organism living year after year?
- (b) It helps the organism to grow and develop.
- (c) Provides energy to living organism for carrying out other life processes.
- (d) Keeps a species alive generation after generation.

Worksheet - 17(On-line mode)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions.

- Q1. While listening to a musical piece, we can distinguish between sounds of different musical instruments even if they are of same loudness and pitch on the basis of _____ sound.
- (a) frequency
 - (b) amplitude
 - (c) quality
 - (d) shrillness
- Q2. Which of the following sound can be distinguished as audible sound?
- (a) Sound produced by bats
 - (b) Sound produced by special whistles that can be used to command dogs
 - (c) sound produced by deer
 - (d) Sound produced by vibrations of a simple pendulum.
- Q3. Which of the following statement gives correct distinction between a bulb and an LED?
- (a) A bulb has one positive and a negative terminal where as an LED has same terminals
 - (b) A bulb works on heating effect of current where as an LED is a semiconductor device.
 - (c) Brightness of the bulb as well as LED is independent of the amount of current
 - (d) Tungsten wire in the LED produces more brightness than that of a bulb.
- Q4. Which of the following examples represent same kind of force?
- (a) A man pushing a car and a ball thrown upwards
 - (b) A fast moving ball coming to rest and a magnet attracting objects made of iron.
 - (c) Rowing a boat and drawing a bucket of water from the well.
 - (d) Rain falling down towards the Earth and a bicycle slows down when the rider stops pedalling

- Q5. What is the difference between muscular force and frictional force?
- (a) Frictional force causes wear and tear of objects but Muscular force doesn't.
 - (b) Frictional force can slow down objects but muscular force cannot do so.
 - (c) Frictional force can change state of the objects but muscular force cannot do so.
 - (d) Frictional force is a contact force whereas muscular force is a non-contact force

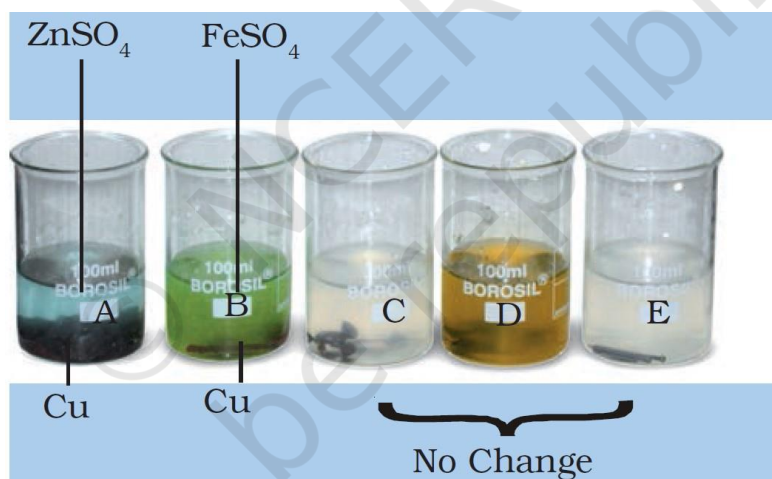
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Worksheet – 18 (Face-to-Face) (LO-2)

Learning Outcomes to be achieved:

Classifies materials and organisms based on properties/ characteristics, e.g., metals and non-metals; kharif and rabi crops; useful and harmful microorganisms; sexual and asexual reproduction; celestial objects; exhaustible and inexhaustible natural resources, etc.

- Q1. Metals react with acids and produce metal salts and hydrogen gas. Generally, non-metals do not react with acids. Select the materials that react with acid to produce hydrogen gas
- Sulphur
 - phosphorus
 - iodine
 - zinc
- Q2. More reactive metals displace less reactive metals from their compounds in aqueous solutions. Figure 4.6(b) for displacement reaction activity 4.8 on page 50. Which one of the following are right arrangements for the metals according to their increasing order of the reactivity of the metals zinc, copper and iron.



- zinc < iron < copper
 - Copper < zinc < iron
 - Copper < iron < zinc
 - Iron < copper < zinc
- Q3. On burning, metals react with oxygen to produce metal oxides which are basic in nature. Non-metals react with oxygen to produce non-metallic oxides which are acidic in nature.

Magnesium + oxygen → Magnesium oxide (MgO)

The nature of magnesium oxide is ○ ○ ○ ○ ○ ○

- acidic
- basic

- (c) neutral
- (d) amphoteric

Q4. Metal A reacts with cold water, metal B reacts with steam, metal C reacts with warm water on the basis of the above observations arrange the metals in increasing order of the reactivity

- (a) $C < A < B$
- (b) $A < B < C$
- (c) $B < C < A$
- (d) $B < A < C$

Q5. Mohan wants to store large quantities of grains and he seeks suggestions from his friend Sohan. The following options are suggested by Sohan select the best option to store the grains in large quantities

- (a) jute bags
- (b) plastic bags
- (c) silos
- (d) metallic bins

Q6. The crops which are sown in the rainy season are called kharif crops. The rainy season in India is generally from June to September. Paddy, maize, soya bean, Select the kharif crops from the following options available.

- (a) wheat
- (b) soybean
- (c) gram
- (d) wheat

Q7. An inexhaustible resource is one that is replaceable, while an exhaustible resource is not replaceable. Select the exhaustible resource from the following options

- (a) water
- (b) wind
- (c) sunlight
- (d) coal

Worksheet - 19(Face-to Face mode)

Learning Outcomes to be achieved:

Classifies materials and organisms based on properties/ characteristics, e.g., metals and non-metals; kharif and rabi crops; useful and harmful microorganisms; sexual and asexual reproduction; celestial objects; exhaustible and inexhaustible natural resources, etc.

Q1. Ria was doing experiments related to static electricity. A few of her observations are given below:

Observation 1: When Object-1- amber was rubbed with fur, it attracted object-2- hair

Observation 2: When object-3- a plastic comb was rubbed with dry hair, it attracted object-4-bits of paper

Help Ria in answering the following questions:

(a) Classify Object1, object2, object3 and object4 as charged and uncharged objects (after rubbing).

Charged objects	Uncharged objects

(b) If object -1- is rubbed with dry hair then will it still attract object-2? Give reason

o o

o o

Q2. Classify the following liquids on the basis of their conductivity and complete the table given below :

Tap water, Distilled water, sea water, mustard oil, dilute NaOH, coconut Oil, Vinegar and dilute HCl

Good conductors	Insulators

Sound of a drum, voice of a woman, voice of a man, voice of a baby, roar of a lion, sound of a whistle

Low pitched Sound	High Pitched Sound

(b) Distinguish between low pitched and high pitched sounds graphically

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Worksheet – 20 (Face-to Face mode)

Learning Outcomes to be achieved:

Classifies materials and organisms based on properties/ characteristics, e.g., metals and non-metals; kharif and rabi crops; useful and harmful microorganisms; sexual and asexual reproduction; celestial objects; exhaustible and inexhaustible natural resources, etc.

Q1. Observe the pictures given below and answer the questions that follow:



(a) Identify all the musical instruments shown in the pictures.

o o

(b) Classify these instruments on the basis of the vibrating part that produces sound

String based instruments	Air column based instruments	Plate based instruments

Q2. Consider the following examples:

- (a) a hockey player flicking a ball
- (b) all moving objects come to rest on their own, if no force is applied on them
- (c) a cricket player catching a ball
- (d) a ball thrown upwards
- (e) a heavy box lying on floor doesn't shifts from its place inspite of applying force
- (f) all objects fall towards the Earth

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(b) Identify certain liquids in your house which when poured in the beaker will not result in a deflection in the magnetic compass needle.

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.õ ..

Q5. The help box given below enlists a few metals.

Copper	Iron	Steel	Chromium
Tin	Silver	Gold	Nickel
	aluminum		

(a) Which of these metals are generally connected at the negative terminal in an electroplating experimental setup. Justify your answer.

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(b) Which of these metals are generally used to electroplate other metals and why?

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Worksheet – 21 (Face-to Face mode)

Learning Outcomes to be achieved:

Classifies materials and organisms based on properties/ characteristics, e.g., metals and non-metals; kharif and rabi crops; useful and harmful microorganisms; sexual and asexual reproduction; celestial objects; exhaustible and inexhaustible natural resources, etc.

- Q1. Which of the following metal is **NOT** used to electroplate iron objects?
(a) Tin
(b) Chromium
(c) Zinc
(d) Copper
- Q2. Identify the device that can be used to find nature of a charge.
(a) electroscope
(b) oscilloscope
(c) stethoscope
(d) spectroscope
- Q3. Identify the substance that will get charged on rubbing with a woollen cloth
(a) glass
(b) a ball pen refill
(c) an inflated balloon
(d) a steel spoon
- Q4. Sometimes a cracking sound is heard while taking of some clothes. These clothes are made of _____.
(a) Linen
(b) Cotton
(c) Jute
(d) Nylon
- Q5. Identify an illuminated object from the following :
(a) moon
(b) stars
(c) sun
(d) a lighted candle
- Q6. Identify a device that works on the principle of reflection of light
(a) oscilloscope
(b) pyroscope
(c) electroscope
(d) periscope
- Q7. Identify the constellation that can be used to locate pole star
(a) Ursa minor

- (b) Ursa Major
- (c) Orion
- (d) Leo Major

Q8. Which planet is known as sideways planet?

- (a) Jupiter
- (b) Saturn
- (c) Uranus
- (d) Neptune

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Worksheet – 22 (On-line mode)

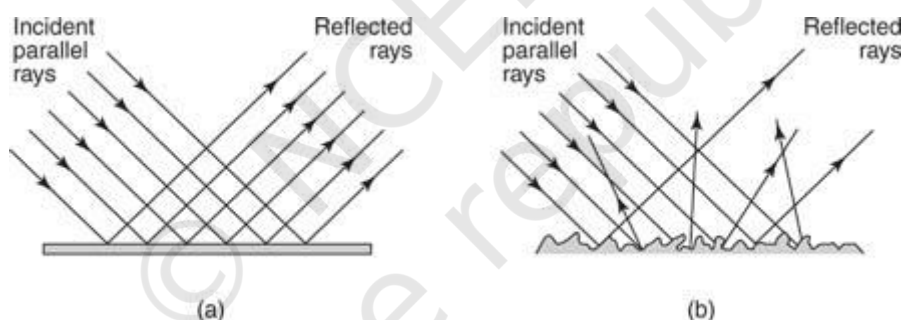
Learning Outcomes to be achieved:

Classifies materials and organisms based on properties/ characteristics, e.g., metals and non-metals; kharif and rabi crops; useful and harmful microorganisms; sexual and asexual reproduction; celestial objects; exhaustible and inexhaustible natural resources, etc.

Q1. An electroscope is a device that is used to detect electric charge on an object. Which is the correct statement wrt an electroscope?

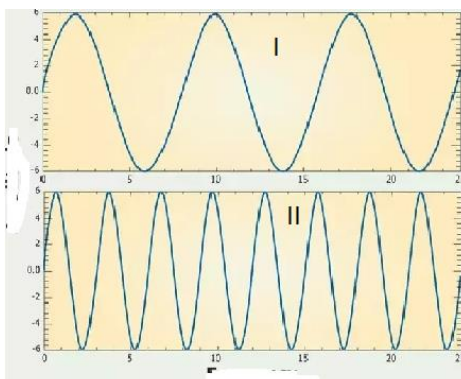
- (a) The leaves of the electroscope diverge when its metal cap is touched with a glass rod rubbed with silk
- (b) The leaves of the electroscope do not diverge when its metal cap is touched with a balloon rubbed with silk
- (c) The leaves of the electroscope diverge when its metal cap is touched with a plastic comb rubbed with dry hair
- (d) The leaves of the electroscope do not diverge when its metal cap is touched by our finger.

Q2. Two surfaces A and B show reflection as shown below:



Which of the following pair of surfaces will result in such a reflection?

- (a) Surface A- plane mirror; Surface B- concave mirror
 - (b) Surface A- a stainless steel sheet; Surface B- a piece of paper
 - (c) Surface A- a leather purse; Surface B- a thin aluminium sheet
 - (d) Surface A- a cardboard; Surface B- a plane mirror
- Q3. The graphs I and II given below show sound waves produced by a drum and a whistle respectively.



Which of the following statements is correct wrt these graphs ?

- (a) Amplitude of graph I < Amplitude of graph II
- (b) Amplitude of graph II > Amplitude of graph II
- (c) Frequency of graph I > Frequency of graph II
- (d) Frequency of graph I < Frequency of graph II

Q4. Certain liquids have been grouped together on the basis of their conductivity. Identify the correct group.

- (a) Sea water, distilled water, dilute HCl
- (b) dilute HCl, oil, dilute NaOH
- (c) Vinegar, lemon juice, dilute HCl
- (d) Rain water, dilute HCl, Coconut oil

Q5. Which one of the following combinations consists of only contact forces

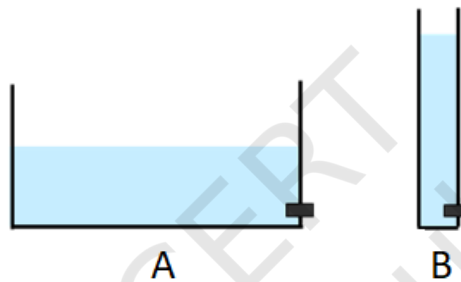
- (a) Magnetic and gravitational
- (b) Rotational and rectilinear
- (c) Electrostatic and nuclear
- (d) Muscular and frictional

Worksheet - 23(Face-to Face mode) (LO-3)

Learning Outcomes to be achieved:

Conducts simple investigations to seek answers to queries e.g., What are the conditions required for combustion? Why do we add salt and sugar in pickles and murabbas? Do liquids exert equal pressure at the same depth

Q1. Amit conducted a simple experiment to study effect of size of a can on the fluid pressure at the base. For this he took two empty cans of different size but same shape as shown in the diagram below. Then he punched a hole at a distance of 1 inch from the base of each can. The holes were closed using a tape and water was filled in both the cans. Once water level in both cans was filled then the tape on the holes of each can was removed. This resulted in a stream flowing out of the holes. Help Ashish solve his queries by answering the following questions :



(a) Stream of water coming out of holes in can A and can B will cover equal distance. (True / False)

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(b) Stream of water coming out of which can will cover a larger distance? Give reason for your answer.

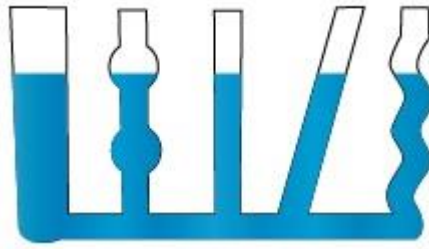
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Q2. If height of water column in both containers shown in the question above is made same then what can be said about the distance covered by stream of water coming out of holes of both the cans?

o .

o .

Q3. John connected four bottles of different shapes and sizes with each other using a small rubber tube as shown in the diagram. The arrangement was kept on a levelled surface. Based on the given experimental arrangement answer the following questions :



(a) If water is filled in any one bottle then what will the height of water in each bottle?

.....

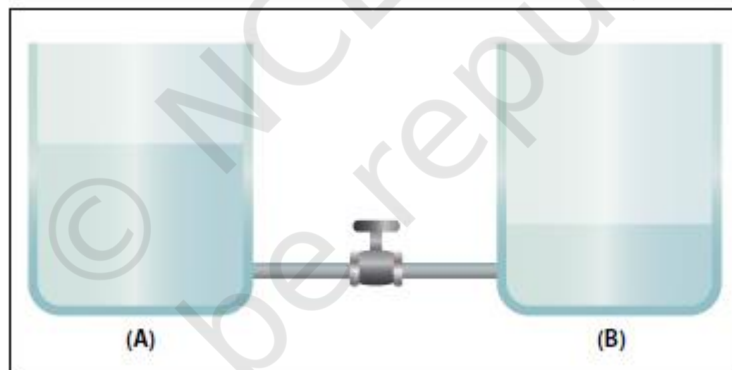
(b) Compare pressure exerted by air on water contained in each bottle.

.....

For each bottle, pressure exerted by water at the base is equal. (True / False)

Q4. (a) What will be the direction in which the liquid will flow if knob attached between container A and container B is opened?

.....



(b) When will flow of water stop on its own even if the knob between the vessels is kept open?

.....

.....

Q5. Aditi filled two cylindrical containers of same dimensions with water. First container was filled up to the height of 12cm and the second one was filled up to the height of 20cm. Next she kept the first container at a height of 1m above the ground level where as the second one was kept on ground. Aditi wanted to compare pressure at the base of the containers.

(a) Suggest a method to compare fluid pressure at the base of each container.

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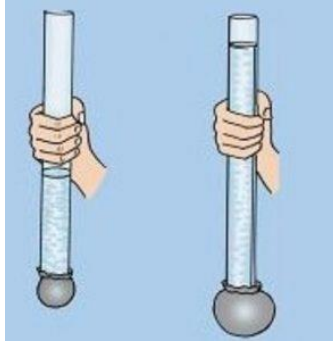
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(b) Fluid pressure will be greater at the base of which container? Justify your answer.

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(a) What will Sudha observe after increasing the amount of water in the tube?

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o .

(b) If water is replaced by glycerine / honey, then compare the bulge of the balloon for water and glycerine assuming that they are filled up to same height in the tube.

o .

o .

Q4. When a rubber sucker is pressed hard on a smooth surface then it sticks to the surface.

(a) Compare air pressure on the rubber sucker with the air pressure between the sucker and the plane surface?

o .

(b) It is possible to stick the rubber sucker on a rough surface? Give reason

o .

Q5. Ramneet took an empty plastic bottle and made four holes near the base of the bottle at the same height. Then he filled the bottle with water.

(a)What will Ramneet observe?

o .

(b) Compare distance covered by each stream of water.

o .

Worksheet – 25 (On-line mode)

Learning Outcomes to be achieved:

Conducts simple investigations to seek answers to queries e.g., What are the conditions required for combustion? Why do we add salt and sugar in pickles and murabbas? Do liquids exert equal pressure at the same depth

- Q1. Rudra took a tumbler and filled it with water. Then he covered the mouth of the tumbler with a thick card. While keeping the card pressed to its mouth he turned the tumbler upside down. To his amazement, he found that the card stayed at its place even after it is not supported by hand.



Which of the following statements with reference to this experiment is true?

- (a) Atmospheric pressure is the only pressure that is being exerted on the card
 - (b) Weight of the water is more than the atmospheric pressure
 - (c) Atmospheric pressure above and below the card is same. This equivalent pressure makes the card stay at its place.
 - (d) The small air pocket above water inside the tumbler is a low pressure area
- Q2. Rudra tried performing the same experiment by using different materials of the card. When the tumbler filled with water is inverted then the card made of which material will stay at its place without support?
- (a) A thin sheet of paper.
 - (b) A plastic card
 - (c) A corrugated piece of cardboard
 - (d) A polythene sheet

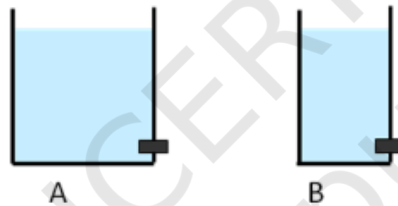
- Q3. The statements given below represent the precautions that Rudra should take while performing the above experiment.

Which of these statements is incorrect?

- (a) The tumbler should be filled upto the brim with water.
 - (b) The card that is used to perform the experiment must be thick and should be devoid of any irregularities.
 - (c) The card should be pressed against the mouth of the tumbler when the tumbler is turned upside down.
 - (d) The tumbler must be held vertical before removing the hand supporting the card.
- Q4. After watching Rudra, many of his friends too tried the same experiment and made following observations. Which of these observations is incorrect?

- (a) If the cardboard is pressed tightly while turning the tumbler then the card stays at its position even without any support
- (b) When the tumbler is turned upside down then just a little water leaks out between the tumbler and the card.
- (c) Every time the card stays at its place then there is always a small air column present above the water inside the tumbler.
- (d) Whether the card will be able to hold water in the inverted tumbler depends on the height of the water column.

Q5. Ashish conducted a simple experiment to study effect of size of a can on the fluid pressure at the base. For this he took two empty cans of different size but same shape. Can A was bigger in height and diameter than Can B. Then he punched a hole at a distance of 1 inch from the base of each can. The holes were closed and water was filled in both the cans. Once water level in both cans was upto the same height then the tape on the holes of each can was removed. This resulted in a stream flowing out of the holes. Which of the following statements represents the correct observation of Ashish's experiment?



- (a) The stream of water from the can with bigger diameter shoots out covering a larger distance.
- (b) The stream of water from the can with smaller diameter shoots out covering a larger distance.
- (c) The stream of water from both cans shoots out at the same distance.
- (d) The stream of water from the can with greater height will shoot out covering a larger distance.

Worksheet - 26(Face-to-Face) (LO-4)

Learning Outcomes to be achieved:

Relates processes and phenomenon with causes, e.g., smog formation with the presence of pollutants in air; deterioration of monuments with acid rain, etc.

- Q1. Smog which is made up of smoke and fog. Smoke may contain oxides of nitrogen which combine with other air pollutants and fog to form smog. The smog cause several ailments the main diseases is
- (a) TB
 - (b) Asthma
 - (c) cancer
 - (d) cholera
- Q2. Chlorofluorocarbons (CFCs) which are used in refrigerators, air conditioners and aerosol sprays. CFCs damage the ozone layer of the atmosphere. The Ozone layer protects us from which rays.
- (a) visible
 - (b) ultra violet
 - (c) infra-red
 - (d) cosmic
- Q3. Acid rain corrodes the marble of the historical monument like TajMahal.
- The gases O_2 and O_3 - reacts with water vapour present in the atmosphere to form acid rain.
- (a) oxygen and hydrogen
 - (b) helium and argon
 - (c) sulphur dioxide and nitrogen dioxide
 - (d) carbon dioxide and oxygen
- Q4. Global warming has become a major concern for governments worldwide. Many countries have reached an agreement to reduce the emission of greenhouse gases. The following are activities to reduce the greenhouse gas emissions select the best suited from the following options.
- (a) For transportation use own vehicle
 - (b) use diesel vehicles

- (c) use public transport
- (d) Use electric vehicles.

Q5. PM10: inhalable particles, with diameters that are generally 10 micrometers and smaller; and

PM2.5: fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.

Suggest the suitable way to reduce the content of PM by

- (a) People shifted from most populated areas
- (b) decreasing vegetation
- (c) reducing excessive construction activities
- (d) Control outdoors activities.

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Worksheet – 27 (Face-to-Face)

Learning Outcomes to be achieved:

Relates processes and phenomenon with causes, e.g., smog formation with the presence of pollutants in air; deterioration of monuments with acid rain, etc.

A trip to TajMahal was organized for class VIII students. While looking at Taj, following conversation was taking place:

Ali . wow, what a beautiful view.

Shikha . when I last visited this monument, it was looking brighter but now it is getting dull.

Ali- oh really! Let's explore by answering these questions



Q1. What can be the possible reason behind the discoloring of TajMahal?

Q2. Name the two gases which are actually responsible for acid rain.

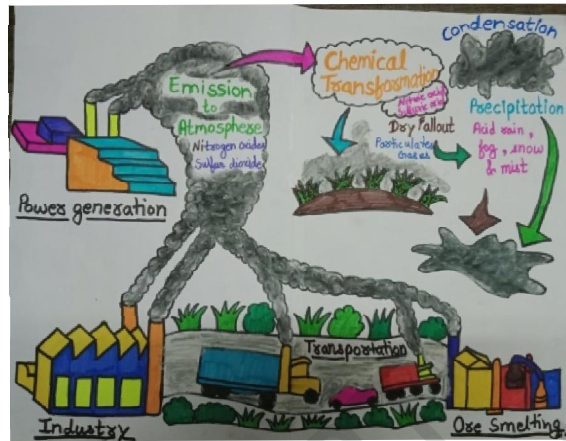
Q3. Name the diseases caused by these pollutants?

Q4. Suggest preventive measures to protect the environment around TajMahal.

Worksheet – 28 (Face-to-Face mode)

Learning Outcomes to be achieved:

Relates processes and phenomenon with causes, e.g., smog formation with the presence of pollutants in air; deterioration of monuments with acid rain, etc.



Q1. Shrikant's father has come on posting to Delhi. His village air was much cleaner. Shrikant drew the poster to show few air pollutants, their sources and its effects.

You also draw a poster and show other various air pollutants, their sources and its effects

Poster



Shrikant made a list how air pollution was affecting the health and environment in many ways of people living in city and the sources of the air pollutants. Help him complete the list-

AIR POLLUTANTS-

1. Carbondioxide
2. Carbon monoxide
- 3.
- 4.
- 6.

SOURCES

1. Industry mining, oil
- 2 Industrial waste
- 3.
- 4.
- 5.
- 6.

EFFECTS

1. Smog
2. Global warming
- 3.
- 4.
- 5.
- 6.

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Worksheet - 29(On-line mode)

Learning Outcomes to be achieved:

Relates processes and phenomenon with causes, e.g., smog formation with the presence of pollutants in air; deterioration of monuments with acid rain, etc.

Q1. Ananya made a poster on Air Pollution. She was appreciated by his teacher. Teacher showed the poster to all pollution. Later discussion was held on various causes of air pollution and the effects they have on the health and environment-

Choose the major cause of the following effects-

1. Acid rain
 2. Greenhouse effect
 3. Damaging of ozone layer
 4. Reduction in oxygen carrying capacity of blood
- (a) 1. Sulphur dioxide 2. Carbon dioxide 3. Carbon monoxide
4. Chloroflourocarbons
- (b) 1. Sulphur dioxide 2. Carbon dioxide 3. Chloroflourocarbons
4. Carbon monoxide
- (c) 1. Carbon dioxide 3. Chloroflourocarbons 4. Sulphur dioxide 4. Carbon monoxide
- (d) 1. Carbon monoxide 3. Chloroflourocarbons 4. Sulphur dioxide 4. Carbon dioxide

Q2. Classify the following materials into 3 categories i.e. natural fibres, synthetic fibres and plastics-

SILK	RAYON	TERYLENE	MELAMINE	WOOL
ACRYLIC	POLYTHENE	TERRYCOT	COTTON	
JUTE	LINEN	BAKELITE	PVC	NYLON

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Worksheet – 30 (Face-to-Face) (LO-5)

Learning Outcomes to be achieved:

Explains processes and phenomenon with causes, e.g., reproduction in human and animals; production and propagation of sound; chemical effects of electric current; formation of multiple images; structure of flame, etc.

- Q1. Electroplating is generally done to decorate the metallic articles, in this process electrical energy is used to produce chemical effects. The statement is-
- (a) true
 - (b) false
 - (c) can't say exactly
 - (d) Partially true.
- Q2. The passage of an electric current through a conducting solution causes chemical reactions. As a result, bubbles of a gas may be formed on the electrodes. When the liquid is water(acidulated) then the gas evolved at positive terminal will be
- (a) hydrogen
 - (b) oxygen
 - (c) water vapour
 - (d) Nitrogen.
- Q3. The passage of an electric current through a solution causes _____ effects.
- (a) chemical
 - (b) lighting
 - (c) magnetic
 - (d) reversible
- Q4. Small amounts of mineral salts are naturally present in water. This water is thus a good conductor of electricity. Which of the following is a bad conductor of electricity?
- (a) distilled water
 - (b) vinegar
 - (c) sulphuric acid
 - (d) copper sulphate

- Q5. Waste from an electroplating factory must be disposed off
- (a) in the nearby river
 - (b) in the nearby pond
 - (c) in the nearby field
 - (d) According to the disposal guidelines of waste management bodies.
- Q6. In LEDs, the longer lead (wire) is always connected to the . . . terminal.
- (a) negative
 - (b) neutral
 - (c) positive
 - (d) any terminal

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Worksheet – 31 (Face-to-Face)

Learning Outcomes to be achieved:

Explains processes and phenomenon with causes, e.g., reproduction in human and animals; production and propagation of sound; chemical effects of electric current; formation of multiple images; structure of flame, etc.

Q1. Sofia and Rajesh are trying to warm water in a balloon. Will they be able to warm water in a balloon? Justify your answer.

Q2. The calorific value of wood is around 17000-22000 kJ/kg, but still it is advised not to use it as a fuel. Explain why?



Q3. Why carbon dioxide is considered as an excellent fire extinguisher?

Q4. Why is use of kerosene replaced by liquefied petroleum gas in household cooking in most of the cities of India?

Worksheet – 32 (Face-to Face mode)

Learning Outcomes to be achieved:

Explains processes and phenomenon with causes, e.g., reproduction in human and animals; production and propagation of sound; chemical effects of electric current; formation of multiple images; structure of flame, etc.

Q1. Rearrange the following given agricultural practices into proper correct sequence:

- | | | |
|-------------|--------------------------------|---------------|
| (a) Sowing | b) Preparation of soil | c) Irrigation |
| (d) Weeding | e) Adding manure & fertilizers | f) Harvesting |
| (g) Storage | | |

- (a) a, b, d, c, e, f, g
(b) b, a, c, e, d, f, g
(c) b, a, e, c, d, f, g
(d) a, b, c, d, e, f, g

Q2. Manures and fertilisers are used to increase the yield of the crop. Which one of the following is not true to manure? They

- (a) enhances water holding capacity of the soil
(b) makes soil porous
(c) are not deficient in plant nutrients
(d) does not provide humus to the soil

Q3. A farmer plants lots of banana in his farm but he is facing scarcity of water in the fields. Of the following methods of irrigation, which type will you suggest to solve the farmer problem?

- (a) Sprinkler irrigation
(b) Drip irrigation
(c) Surface irrigation
(d) Localised irrigation

Q4. Polio drops are given to children between age from 1-5 years old but not above because Polio acts as a.....

- (a) Antigens
(b) Antibiotics
(c) Antibodies
(d) Antiviral

Q5. The flow chart given below explains the process

Eggs Caterpillars Pupa Silk Moth

- (a) Transformation
- (b) Metamorphosis
- (c) Reproduction
- (d) Conversion

Q6. Which one of the following terms meets the explanations given below:

- (i) a unit of inheritance
- (ii) controls the transfer of a heredity characters

- (a) Chromosomes
- (b) Nucleus
- (c) Mitochondria
- (d) Gene

Q7. Select the habitat with the characteristics given below:

- (i) Not only protects animals but also provides favourable living conditions to the birds, animals, insects etc.
- (ii) A very limited human activity is allowed.

- (a) National Park
- (b) Biosphere Reserves
- (c) Wildlife Sanctuary
- (d) Zoological Park

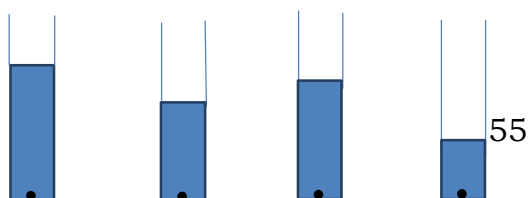
Q8. What would happen to wheat crop if it is sown in kharif season? It may get destroyed

- (a) As it is susceptible to pests
- (b) as it cannot adapt itself to the season & pests
- (c) as it is extremely hot
- (d) a & b

Q9. What measures should we take to limit noise pollution?

- (a) Stringent laws have to be made
- (b) Always stay indoors
- (c) Reduced use of automobiles
- (d) Control the source of noise

Q10. Four identical glass tubes are filled with water up to different levels as shown in figures. At which point is the pressure maximum?



- | | A | B | C | D |
|-----|---|---|---|---|
| (a) | a | | | |
| (b) | b | | | |
| (c) | c | | | |
| (d) | d | | | |

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Worksheet - 33(Face-to Face mode)

Learning Outcomes to be achieved:

Explains processes and phenomenon with causes, e.g., reproduction in human and animals; production and propagation of sound; chemical effects of electric current; formation of multiple images; structure of flame, etc.

How Sound is produced?

We hear a variety of sounds in our surroundings. Can you explain how sound is produced? Let us try to find out.

Take rubber band and stretch it across the mouth of an open container. Now, pluck the rubber band somewhere in the middle.

Do you hear any sound? Yes/ No

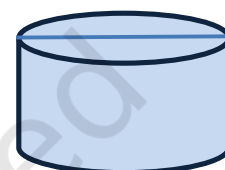
Did you see the to and fro motion of the rubber band?

Yes/ No

Do you still hear the sound when the rubber band stops moving?

Yes/No

Rubber band



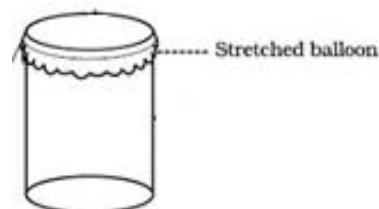
When a tightly stretched string is plucked, it vibrates and produces sound. When it stops vibrating, it does not produce any sound.

Take a plastic or tin can with wide mouth. Stretch a piece of rubber balloon tightly across the mouth of the can and fasten it with a string. Now strike the balloon.

Do you hear any sound? Yes/ No

Did the stretched balloon vibrate? Yes/ No

Now put a few rice grains on the stretched balloon and again strike. Observe what happens to the rice grains. Do they jump? Yes/ No



When we strike a tightly stretched membrane, it vibrates and produces sound.

Take a drinking straw. Flatten one end of the straw and cut that end in conical shape. Now blow from the conical end of the straw.

Do you hear any sound? Yes/ No

Does something vibrate in the straw? Yes/ No



When we blow air through the hole, it creates vibration of air at the hole and produces sound.

Sound is produced by vibrating objects

Explain how sound is produced in the following musical instrument, when these are played?







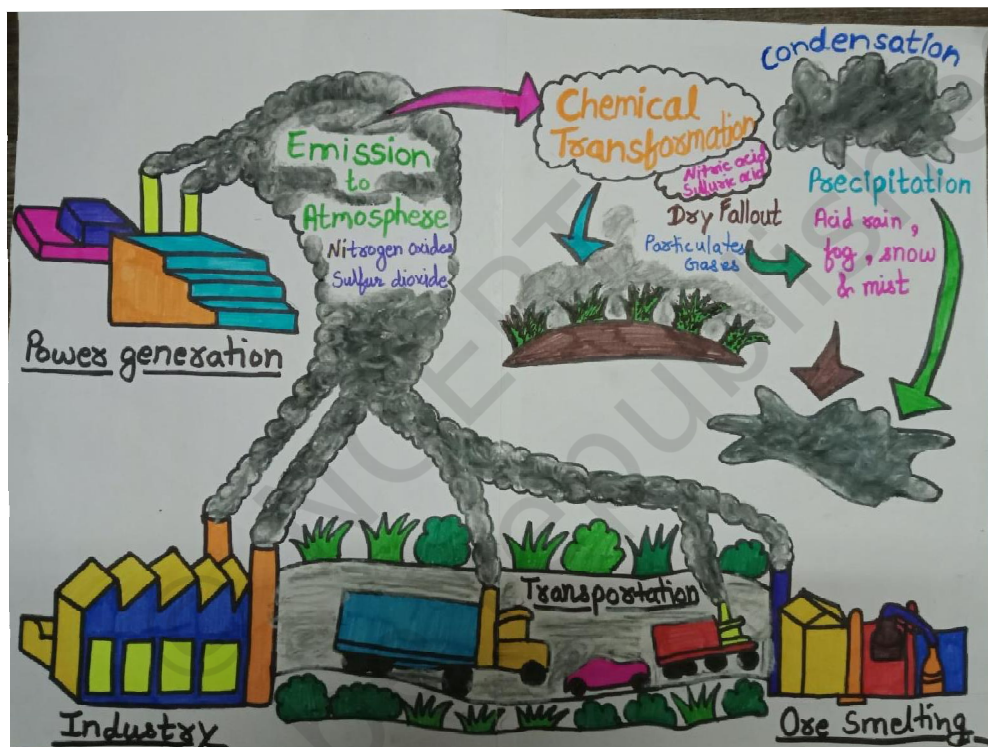
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Worksheet – 34 (Face-to Face mode)

Learning Outcomes to be achieved:

Explains processes and phenomenon with causes, e.g., reproduction in human and animals; production and propagation of sound; chemical effects of electric current; formation of multiple images; structure of flame, etc.

Q1. Ananya made a poster to create awareness amongst her school friends, relatives and residents of her colony and posted it on social media with a request



to get their vehicles (scooters, motorcycles, cars, jeeps, tractors etc) serviced from time to time. People asked her the reason for getting the service done.

Service On Time
Vehicle remains Prime...

Combustion of most fuels releases carbon dioxide gas in the environment.
Increased concentration of (i) CO_2 in the air is believed to
cause (ii) global warming

Can you help her complete the message?

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Worksheet – 35 (Face-to Face mode)

Learning Outcomes to be achieved:

Explains processes and phenomenon with causes, e.g., reproduction in human and animals; production and propagation of sound; chemical effects of electric current; formation of multiple images; structure of flame, etc.

Respiratory, pollutants, Carbon,

Q1. Fill in the blanks using the words provided in the box-

On her visit to city, Jyoti was surprised to find her cousin had developed asthma. In city where her cousin lived there was huge traffic problem. She was told by her uncle that carbon fuels like wood, coal, petroleum release unburnt (i) _____ particles. These fine particles are dangerous (ii) _____ .causing (iii) _____ diseases, such as asthma.

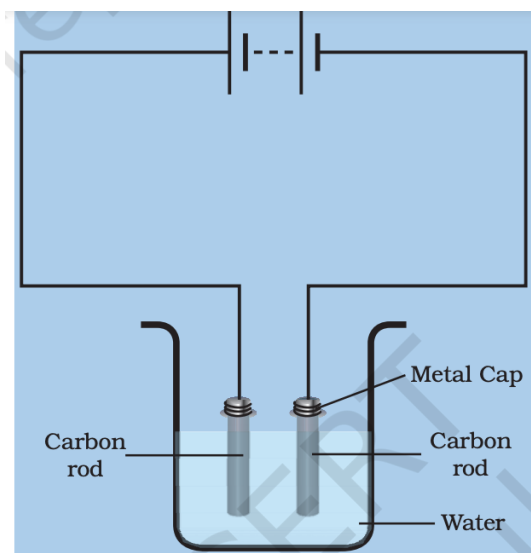


Worksheet - 36(On-line mode)

Learning Outcomes to be achieved:

Explains processes and phenomenon with causes, e.g., reproduction in human and animals; production and propagation of sound; chemical effects of electric current; formation of multiple images; structure of flame, etc.

Q1.



Yashwant and Imran took out carbon rod from two discarded cells and wrapped copper wires around the metal caps of the carbon rods after cleaning them with sand paper and joined them to a battery. They poured water in a glass bowl and added a teaspoonful of salt. Then immersed the electrodes in this solution as shown in the set up. They observed gas bubbles near the electrodes after 3-4 minutes. Help them find the reason behind formation of bubbles of a gas on the electrodes?

- (a) The salt added made the water more conducting.
- (b) The passage of an electric current through a conducting solution caused chemical reactions.
- (c) Water broke down into hydrogen and oxygen gas on addition of salt.
- (d) The passage of an electric current caused salt and water to react with each other.

Worksheet – 37 (On-line mode)

Learning Outcomes to be achieved:

Explains processes and phenomenon with causes, e.g., reproduction in human and animals; production and propagation of sound; chemical effects of electric current; formation of multiple images; structure of flame, etc.

Q1. Jyoti and Ramjatan lighted a candle under supervision of their teacher. They held a glass tube with the pair of tongs and introduced its one end in the dark zone of a non-flickering candle flame. On bringing a lighted matchstick near the other end of the glass tube, they saw a flame. What is that produces a flame?

- (a) Flame is produced when the substance attains its ignition temperature.
- (b) Substance which burns easily in air at moderate rate, gives flame.
- (c) The wax near the heated wick melted quickly and substance which vaporize during burning, gives flames.
- (d) The substances which do not vaporize during burning, gives flame

Worksheet –38 (On-line mode)

Learning Outcomes to be achieved:

Explains processes and phenomenon with causes, e.g., reproduction in human and animals; production and propagation of sound; chemical effects of electric current; formation of multiple images; structure of flame, etc.

Q1. Burning of coal and diesel releases Sulphur dioxide gas. It is extremely suffocating and corrosive gas. Moreover, petrol engines give off gaseous oxides of nitrogen. Oxides of which element dissolve in rain water and form acids. What is the nature of the rain which gets mixed with these acids?

- (a) Sulphur and nitrogen; basic rain
- (b) Carbon and nitrogen; basic rain
- (c) Sulphur and carbon; acid rain
- (d) Sulphur and nitrogen; acid rain

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Worksheet - 39 (Face-to-Face) (LO-6)

Learning Outcomes to be achieved:

Writes word equations for chemical reactions, e.g., reactions of metals and non-metals with air, water and acids, etc.

- Q1. When a metal is burnt in air an oxide of that metal is formed generally which is basic in nature. When magnesium is burnt in air an oxide is formed. Which one is the best option to represent the equation?
- (a) Magnesium, oxygen gives oxide
 - (b) Magnesium + air gives magnesium oxide
 - (c) Magnesium + oxygen \rightarrow Magnesium oxide
 - (d) Magnesium + oxygen \rightarrow Magnesium oxide
- Q2. Sodium metal reacts vigorously with water but some metals react slowly with water depending upon the reactivity of the metals. Select the best suitable word equation when sodium reacts with water.
- (a) Sodium + water \rightarrow sodium hydroxide + hydrogen gas
 - (b) $\text{Na} + \text{H}_2\text{O} \rightarrow$ sodium hydroxide + hydrogen gas
 - (c) Sodium + water \rightarrow sodium oxide
 - (d) Sodium + water \rightarrow sodium hydro peroxide
- Q3. Non-metals do not react with dilute acid while metals react with acid to form salt and hydrogen gas. Select the best suited word equation when iron reacts with sulphuric acid from the following.
- (a) Iron oxide + sulphuric acid gives iron sulphate
 - (b) Iron + sulphuric acid \rightarrow iron sulphate + hydrogen gas
 - (c) Iron + sulphurous acid \rightarrow Iron sulphate
 - (d) Iron + sulphuric acid \rightarrow iron sulphate
- Q4. Metals react with sodium hydroxide to produce hydrogen gas (which produces a pop sound indicator of hydrogen gas) when zinc reacts with sodium hydroxide to produce hydrogen gas. Mohan wants to write word equation for the reaction that takes place between zinc and sodium hydroxide. Please help to choose right option.
- (a) zinc + sodium hydroxide \rightarrow sodium zincate + hydrogen gas
 - (b) Zinc + sodium hydroxide \rightarrow sodium zincate
 - (c) Zinc, sodium hydroxide gives hydrogen
 - (d) Zinc + sodium oxide \rightarrow zinc oxide + hydrogen gas.
- Q5. An element X on exposure to moist air turns reddish-brown and a new compound Y is formed. The substance X and Y are
- (a) $\text{X} = \text{Fe}$, $\text{Y} = \text{Fe}_2\text{O}_3$
 - (b) $\text{X} = \text{Ag}$, $\text{Y} = \text{Ag}_2\text{S}$
 - (c) $\text{X} = \text{Cu}$, $\text{Y} = \text{CuO}$
 - (d) $\text{X} = \text{Al}$, $\text{Y} = \text{Al}_2\text{O}_3$

Q6. Iron metal combines slowly with air in presence of water to form a reddish brown spot on the surface of the metal. Select the suitable word equation for the reaction.

- (a) Iron (Fe) + Oxygen (O₂) + Water (H₂O) → rust (ferrosoferric oxide)
- (b) Iron and oxygen gives rust
- (c) Iron (Fe) + Oxygen (O₂) + Water (H₂O) → iron oxide
- (d) Iron + water + nitrogen → Iron nitride.

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Worksheet – 40 (Face-to-Face)

Learning Outcomes to be achieved:

Writes word equations for chemical reactions, e.g., reactions of metals and non-metals with air, water and acids, etc.

Q1. Anjali took a zinc granule in a test tube and added a few drops of hydrochloric acid to it. A gas with pop sound was released when burning match stick was brought near the mouth of the test tube.

a) Name the gas formed



b) Name the product formed

c) Write the word equation for the above reaction

Q2. Will there be any change in the colour of copper sulphate solution on adding zinc to it? Write the word equation for the reaction.



Q3. Will there be any reaction when copper is added to zinc sulphate solution? If yes, write the word equation.

Worksheet – 41 (Face-to Face mode)

Learning Outcomes to be achieved:

Writes word equations for chemical reactions, e.g., reactions of metals and non-metals with air, water and acids, etc.

Q1. You are familiar with the phenomenon of rusting of iron. Recall the reaction by which rust is formed. You have also performed an activity of burning a magnesium ribbon in air. Complete the following reactions of iron and magnesium with oxygen-(Hint- In both the processes oxide formation takes place)

(a) Iron (Fe) + Oxygen (O₂) + Water (H₂O) · ->

(b) Magnesium (Mg) + Oxygen (O₂) · · >

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Worksheet – 42 (Face-to Face mode)

Learning Outcomes to be achieved:

Writes word equations for chemical reactions, e.g., reactions of metals and non-metals with air, water and acids, etc.

Q1. Sonu's copper tumbler acquired a dull green coating. She explained to her younger sibling that it was due to exposure to moist air for long. The green material was a mixture of copper hydroxide ($\text{Cu}(\text{OH})_2$) and copper carbonate (CuCO_3). Write the chemical reaction to explain the above process-



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Worksheet – 44(Face-to Face mode)

Learning Outcomes to be achieved:

Writes word equations for chemical reactions, e.g., reactions of metals and non-metals with air, water and acids, etc.

Q1. Mohit and Jyoti were performing an activity to study about displacement reactions. They prepared 50mL of copper sulphate solution in a beaker and added 2-3 Zinc granules to it. After 20 minutes they saw that blue colour of copper sulphate disappears and a powdery red mass of copper gets deposited at the bottom of the beaker. Write word chemical equation to represent the above process-

Answer

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Worksheet – 45 (On-line mode)

Learning Outcomes to be achieved:

Writes word equations for chemical reactions, e.g., reactions of metals and non-metals with air, water and acids, etc.



Q1. Balbir's copper tumbler acquired a dull green coating due to exposure to moist air for long. The green material was a mixture of copper hydroxide ($\text{Cu}(\text{OH})_2$) and copper carbonate (CuCO_3). Which of the following chemical reactions represent the above process-

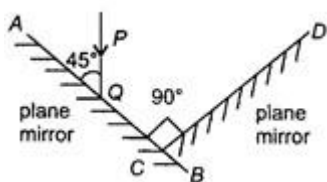
- a) $2 \text{Cu} + \text{CO}_2 + \text{O}_2 \cdot \rightarrow \text{Cu}(\text{OH})_2 + \text{CuCO}_3$
- b) $2 \text{Cu} + \text{H}_2\text{O} + \text{O}_2 \cdot \rightarrow \text{CuCO}_3$
- c) $2 \text{Cu} + \text{H}_2\text{O} + \text{CO}_2 + \text{O}_2 \cdot \rightarrow \text{Cu}(\text{OH})_2 + \text{CuCO}_3$
- d) $2 \text{Cu} + \text{H}_2\text{O} + \cdot \rightarrow \text{Cu}(\text{OH})_2$

Worksheet - 46(Face-to Face mode) (LO-7)

Learning Outcomes to be achieved:

Measures angles of incidence and reflection, etc.

Q1. Two plane mirrors AB and CD are placed at right angles to one another. A ray of light PQ hits AB at Q making an angle of 45° as shown in the diagram. Show the reflected ray from mirror CD.



Q2. Draw the normal YQ to the mirror AB at point Q.

Q3. Find the angle of incidence $\angle PQY$ which the incident ray PQ is making with the normal YQ

o .

Q4. Draw the reflected ray QR from point Q and write the measure of angle of reflection $\angle YQR$

o .

Q5. Let reflected ray at Q meet mirror CD at R. Draw normal ZQ to mirror CD at R and write the measure of angle of incidence $\angle QRZ$ for mirror CD

o .

Q6. Draw reflected ray RS to mirror CD at R. Write the measure of angle of reflection $\angle ZRS$. Are the rays PQ and RS parallel to each other.

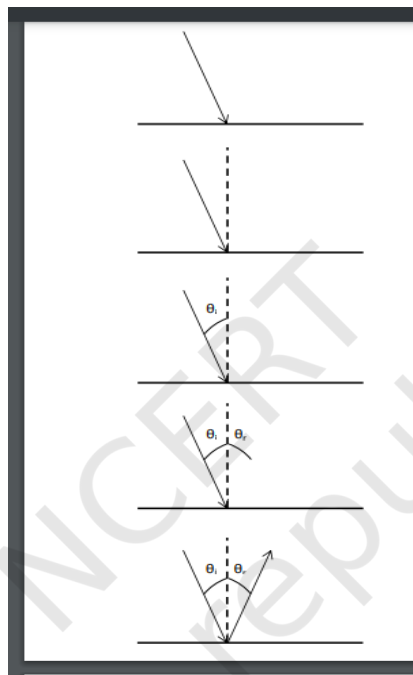
o .

Worksheet – 47(Face-to Face mode)

Learning Outcomes to be achieved:

Measures angles of incidence and reflection, etc.

Q1. Use the Law of Reflection to draw the path of the reflected ray from the mirror in the diagram below: Hereqshow one would complete this type of problem.



Step1: Draw a line normal to the surface of the mirror at the point where the incident ray strikes the mirror.

Step2: Using a protractor, measure the angle of incidence between the incident ray and the normal i

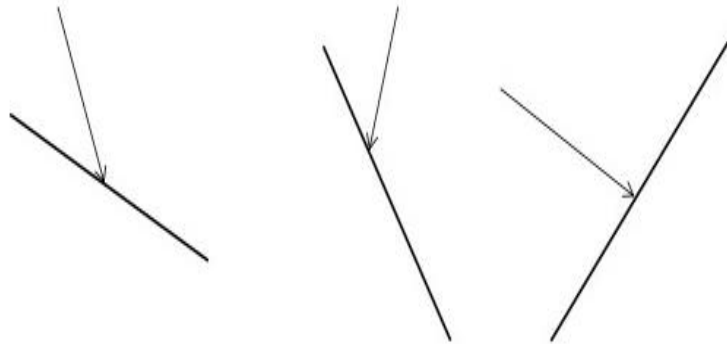
Measure of $i = \text{-----}$

Step3: Measure the angle of reflection from the normal.

Measure of $r = \text{-----}$

Step4: Draw the reflected ray.

Q2. For each of the following incident rays, draw a line normal to the surface where the incident ray strikes the surface, and draw the reflected ray.



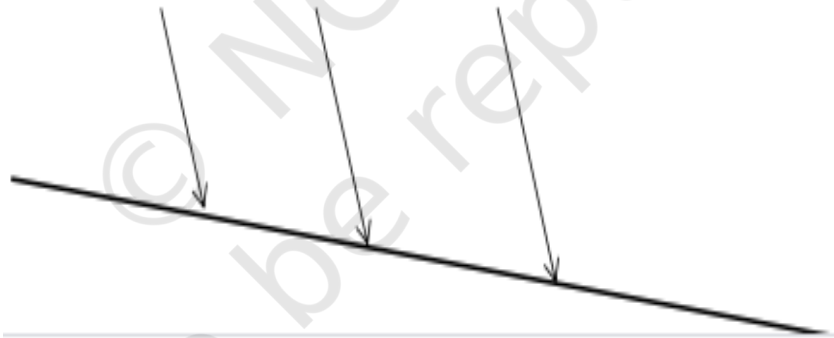
Write the measure of angle of incidence and angle of reflection in each case

Figure1 :--- $\angle i$ -----, $\angle r$ -----

Figure2 :--- $\angle i$ -----, $\angle r$ -----

Figure3 :--- $\angle i$ -----, $\angle r$ -----

Q3. Draw the reflected rays for the incident rays shown below. Include the normal at each point where the incident ray strikes the surface of the mirrors.



(a) Is this an example of specular reflection or diffuse reflection? How do you know?

o .

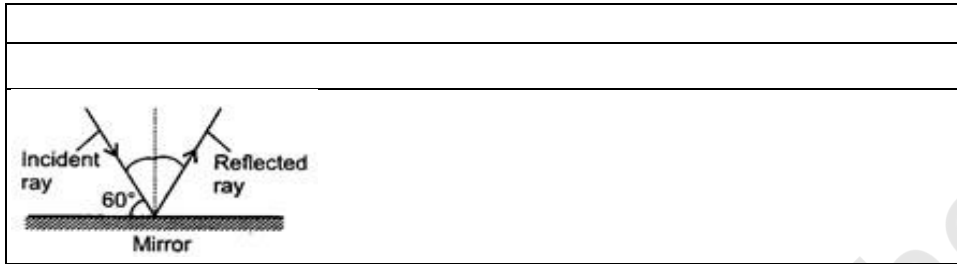
o .

Worksheet – 48(On-line mode)

Learning Outcomes to be achieved:

Measures angles of incidence and reflection, etc.

Q1:



A)

Angle of Incidence	Angle of reflection
30°	30°

B)

Angle of Incidence	Angle of reflection
30°	60°

C)

Angle of Incidence	Angle of reflection
60°	30°

D)

Angle of Incidence	Angle of reflection
60°	60°

Worksheet – 49 (Face-to-Face mode) (LO-8)

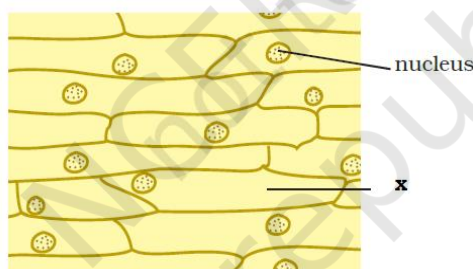
Learning Outcomes to be achieved:

Prepares slides of microorganisms; onion peel, human cheek cells, etc., and describes their microscopic features.

Q1. A group of learners collects samples from various places and prepares slides to describe microscopic features of microorganisms. Which of the following is not a feature of microorganism?

- (a) They are only single-celled
- (b) They live in all types of environment
- (c) They are also found inside the bodies of animals
- (d) Some microorganisms grow on other organisms

Q2. A student prepares slide of onion peel and observes the following structure inside the microscope. X in the structure is



- (a) Cell Wall
- (b) Cytoplasm
- (c) Cell Membrane
- (d) Nucleus

Q3. Which one of the following part will not be seen in the slide of human cheek cells .

- (a) Cell membrane,
- (b) Nucleolus,
- (c) Cell wall
- (d) Cytoplasm

Q4. Based on slides prepared, a chart about comparasion of plant and animal cells was displayed in the class room. X, Y and Z in the chart displayed are, respectively

Sl. No.	Part	Plant Cell	Animal Cell
---------	------	------------	-------------

1.	Cell membrane	Present	Present
2.	Cell wall	Present	X
3.	Nucleus	Y	Z

- (a) Absent, present, present
- (b) Absent, absent, present
- (c) Present, present, present
- (d) Absent, present, absent

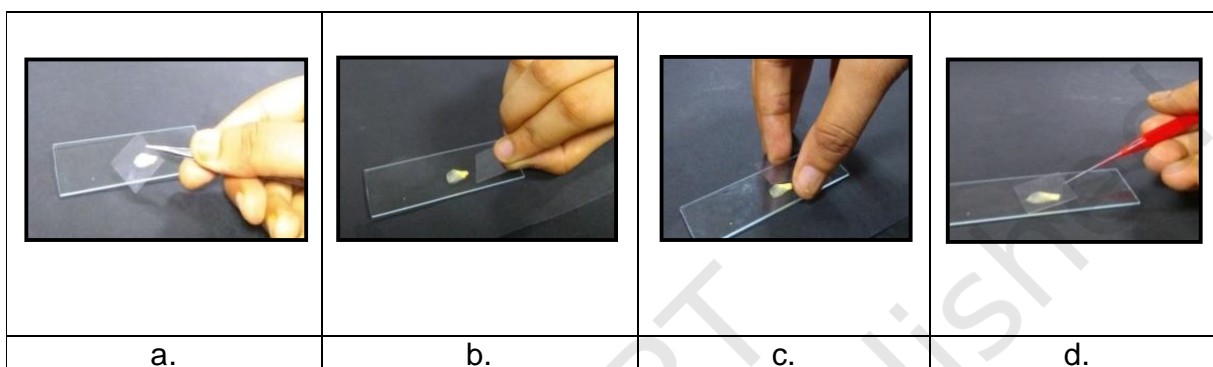
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Worksheet - 50(Face-to Face mode)

Learning Outcomes to be achieved:

Prepares slides of microorganisms; onion peel, human cheek cells, etc., and describes their microscopic features.

Q1. If you had to mount the given material on a slide, how would you do it?



Q2. What would be the sequence of steps that you would follow in mounting of an onion peel?

- (i) taking out of onion peel
- (ii) putting cover-slip
- (iii) cleaning the peel with water on a Petridis
- (iv) adding a drop of glycerine
- (v) adding a few drops of safranin

- (a) i, iii, ii, iv, v
- (b) i, iii, v, iv, ii
- (c) i, iii, iv, v, ii
- (d) i, v, iii, iv, ii

Q3. For preparing a temporary mount of human cheek cells, rearrange the correct sequence of operation from the followings?

- (i) taking scrapping from the inner side of the cheek and spreading on a clean slide
- (ii) rinsing the mount with fresh water and disinfectant solution
- (iii) adding glycerine on the material
- (iv) adding 2-3 drops of Methylene blue

- (a) i, ii, iii, iv

- (b) ii, i, iv, iii
- (c) ii, i, iii, iv
- (d) i, ii, iv, iii

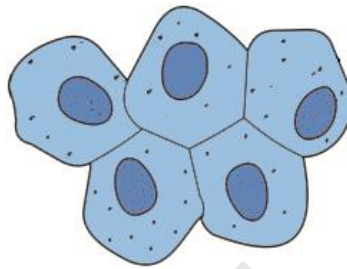
- Q4. Which staining reagent will you use if you want to stain starch?
- (a) methylene blue
 - (b) safranin
 - (c) iodine
 - (d) glycerine
- Q5. What was the shape & structure of the cells that you observe in the slides mounted with onion peel and human cheek cells under a microscope?
- (a) Rectangular and flat polygonal cells respectively
 - (b) Polygonal and rectangular cells
 - (c) Both are rectangular in shape
 - (d) Both have irregular boundaries
- Q6. Why do you put glycerine on the mount before placing the cover slip?
- (a) To stain the tissue properly
 - (b) To change the colour of the tissue
 - (c) To clean the tissue
 - (d) To keep the tissue moist
- Q7. If the cell observed by you under the microscope has large vacuole, then which type of cell is it?
- (a) Animal cell.
 - (b) Bacterial cell.
 - (c) Plant cell.
 - (d) Virus
- Q8. Which of the organelles are present in plant cell and not in animal cell?
- (a) Plastids & nucleus
 - (b) Cell wall & plastids
 - (c) Cytoplasm & cell membrane
 - (d) Cell membrane & cell wall

Worksheet – 52 (Face-to-Face mode) (LO-9)

Learning Outcomes to be achieved:

Draws labelled diagram/ flow charts, e.g., structure of cell, eye, human reproductive organs; experimental set ups, etc.

Q1.



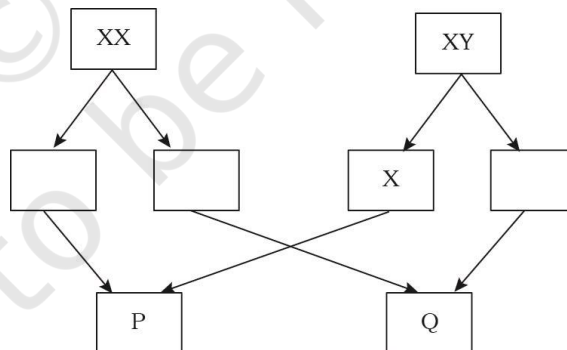
Human Cheek Cell

Observe the figure given above.

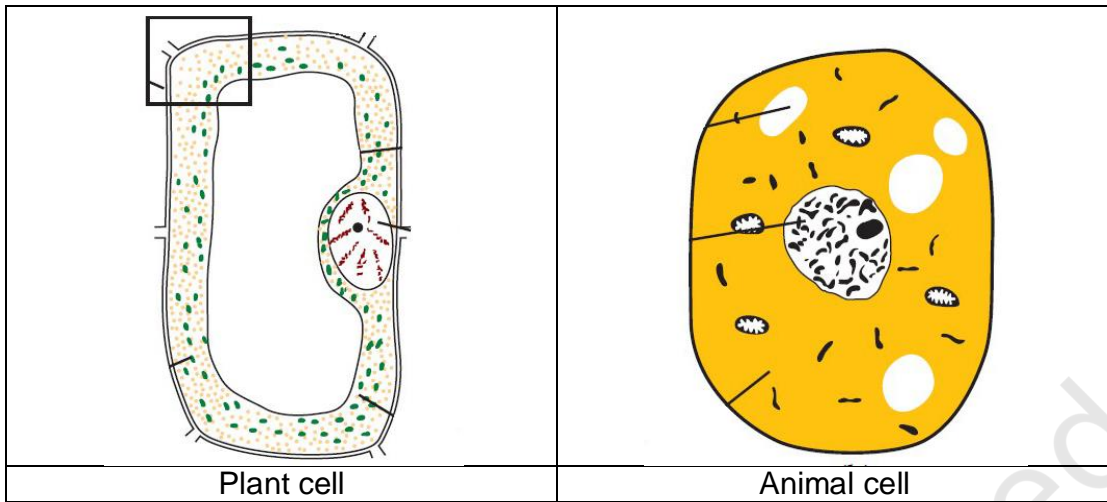
Identify and label the following parts

- (a) The part which separates nucleus from the cytoplasm
- (b) The part which carries chromosome

Q2. Fill the blank boxes in the figure given below and identify the sex of child P and Q.



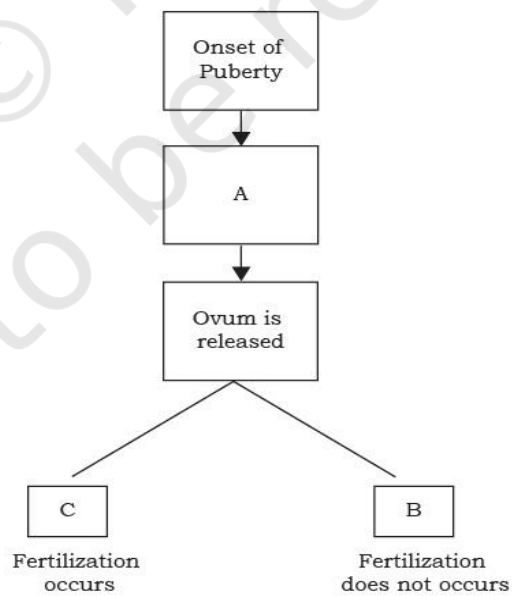
Q3.



Observe both the figures carefully and label the following in both of them

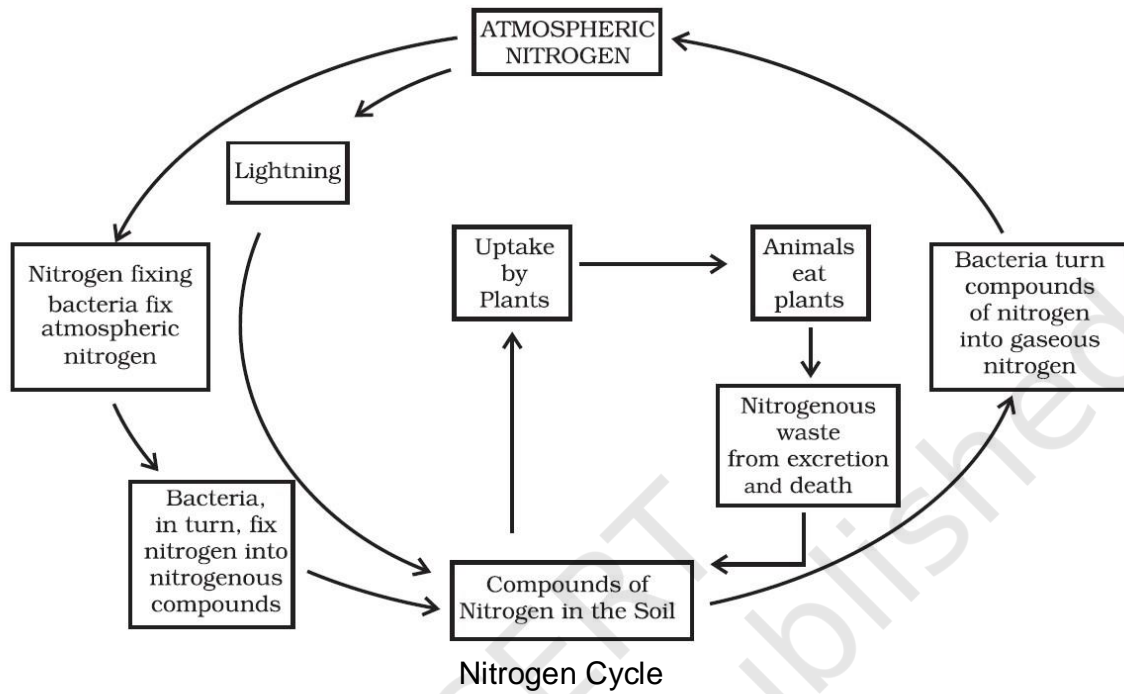
- (a) Vacuole
- (b) Nucleus
- (c) Cytoplasm

Q4.



In the given diagram label the boxes A, B and C

Q5. Complete the given cycle by filling the blanks (P), (q), (r), (S)

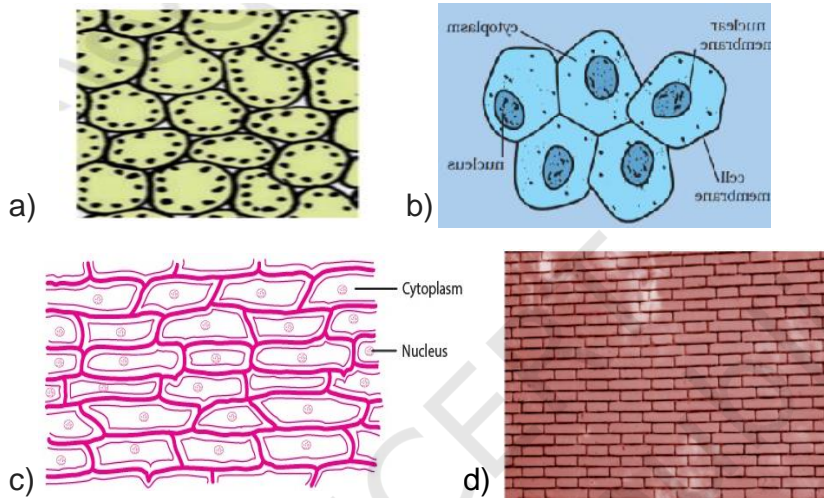


Worksheet – 53(Face-to Face mode)

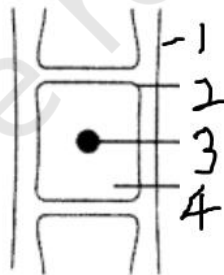
Learning Outcomes to be achieved:

Draws labelled diagram/ flow charts, e.g., structure of cell, eye, human reproductive organs; experimental set ups, etc.

Q1. If you had to draw a labelled diagram of an animal cell which was observed by you under a microscope, how would you draw?

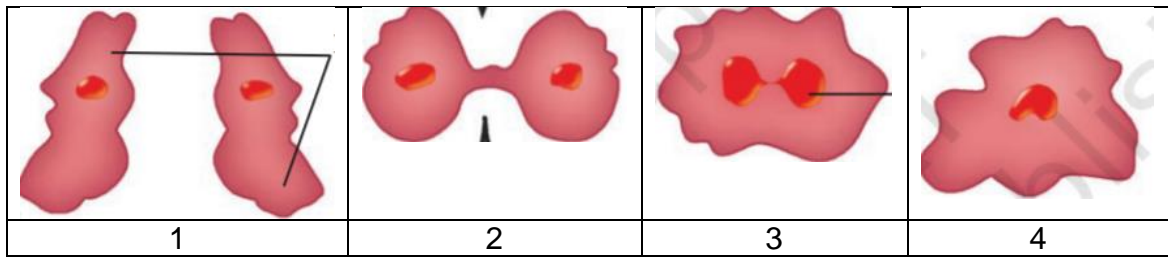


Q2. If you were to label the parts of the cell given below, what would you label 1,2,3,4 as?



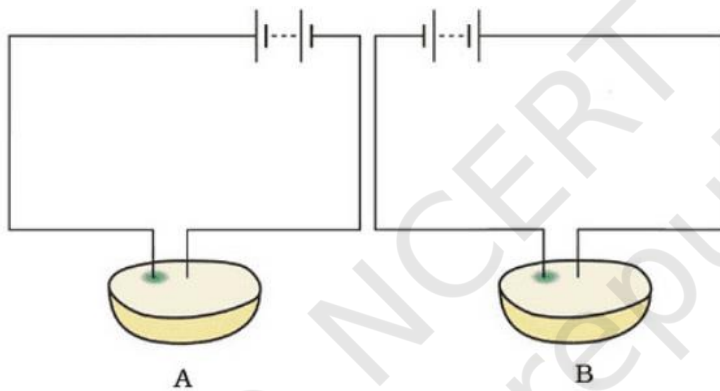
- (a) Cell wall, Cell membrane, Nucleus, Cytoplasm
- (b) Cell membrane, Cell wall, Nucleus, Cytoplasm
- (c) Intracellular space, Cell membrane, Nucleus, Cytoplasm
- (d) Cell membrane, Intracellular space, Nucleus, Cytoplasm

Q3. In which order would you draw the binary fission in amoeba. Sequence the stages given below.



- (a) 1,2,3,4
- (b) 4,3,2,1
- (c) 1,2,3,4
- (d) 3,2,1,4

Q4. How would you test the conduction of electricity in vegetables like potato? Show it in a circuit diagram.



- (a) A
- (b) B
- (c) Both A & B
- (d) Neither A nor B

Ans: o
o .o

(IV) Ram had to extinguish fire caused in the electric meter of his house due to short circuiting of wires. Which type of fire extinguisher he should use to extinguish fire and why?

o .
o .o

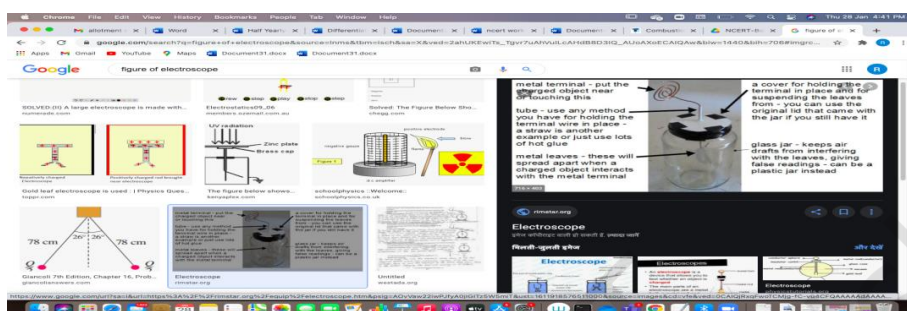
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Worksheet – 55 (Face-to Face mode)

Learning Outcomes to be achieved:

Constructs models using materials from surroundings and explains their working, e.g., ektara, electroscope, fire extinguisher, etc.

Make your own electroscope



- Materials
- Clear glass jar
- Jar lid or piece of plastic large enough to cover the opening of the jar
- Electrical tape
- Copper wire
- Straw
- Scissors
- Glue gun
- Aluminium foil or gold leaf
- Balloon
- Any other material you want to test (glass rod etc.)

1. Perform this experiment on a dry day!
2. Use the scissors to cut a two-inch long piece of straw.
3. Have an adult punch a hole through the centre of the jar lid or piece of plastic big enough to fit the straw through.
4. Insert the straw into the hole for your lid. Hot glue the straw so it is securely fastened to the lid.
5. Cut a 10-inch piece of copper wire.
6. Twist the top 4 inches into a circle or spiral to create some surface area. Insert the straight end of the wire through the straw and create a hook about 1 inch long.

Worksheet – 56 (Face-to Face mode)

Learning Outcomes to be achieved:

Constructs models using materials from surroundings and explains their working, e.g., ektara, electroscope, fire extinguisher, etc.

Task: To make an improvised fire-extinguisher.

An improvised fire extinguisher may be a **soda-acid** extinguisher utilising baking **Soda** and acetic acid. We may also use vinegar (which is 5 . 8 % acetic acid diluted in water by volume) in place of acetic acid.

To make one you need a clear jar or bottle, vinegar, baking soda to prepare the extinguisher and a candle and matches for demonstrating the functioning of the improvised utility.

(CAUTION: This activity need to be performed under the supervision of an adult)

We know that for letting a fire (or combustion) begins, three things are necessary.

These are fuel, oxygen and ignition. Once the fire is set, a continuous supply of oxygen, though through air, and fuel to burn are needed to sustain the flame. The fire can be extinguished if the supply of oxygen can be broken to the fuel. And this is what exactly is done by the sprays used in fire extinguishers.

In order to understand the functioning of a fire extinguisher, let us see what happens when baking soda (Sodium bicarbonate, NaHCO_3) is mixed with acetic acid (CH_3COOH). Carbon dioxide gas is formed. And when this reaction takes place closer to the flame, CO_2 gas being heavy assembles around the flame and thus breaks the supply of oxygen to the fuel.

For making an improvised fire extinguisher let us take an empty bottle and add 2-3 tablespoon of vinegar. Now add half a tablespoon baking soda.

What would be noticed is an immediate fuzzi in the bottle. This is due to the formation of CO_2 gas. The turning off of a flame can be seen by bringing this bottle closer to an already enlightened candle.

One can observe that the gas escaping the bottle extinguishes the flame. (Clean the spillage after the completion of experiment.)

Can you explain what caused the fire to go off? Or the gas released by the mixture?



The mixture of soda and acid produced CO_2 gas which cut the supply of oxygen to the flame and we know oxygen is necessary for combustion. Thus, in absence of oxygen, the fire goes off.

When baking soda and vinegar reaction proceeds in two steps. First the sodium acetate and carbonic acid are formed (neutralization reaction). Carbonic acid being unstable rapidly undergoes a decomposition reaction to form water and carbon dioxide.



We can make a fire extinguisher for emergency use. For that an old plastic water bottle may be used. We need to add vinegar in the plastic bottle. We may put some baking soda in a tissue paper and fold it in the form of a small packet (or bag). This small packet of baking soda can be inserted into the bottle by making a small hole in the cap of the bottle.

The instant we might like to use it, we can easily push the tissue packet into the bottle through the hole to make it fall in the bottle and to start the chemical reaction to release the carbon dioxide gas.



Worksheet – 57 (Face-to-Face) (LO-11)

Learning Outcomes to be achieved:

Applies learning of scientific concepts in day to-day life, e.g., purifying water; segregating biodegradable and non-biodegradable wastes; increasing crop production; using appropriate metals and non-metals for various purposes; increasing/ reducing friction; challenging myths and taboos regarding adolescence, etc.

- Q1. A lot of algae grows in the ponds and looks like green. Once these algae die; they serve as food for decomposers like bacteria. A lot of oxygen in the water body gets used up. This results in a decrease in the . . . - level which may kill aquatic organisms. Fill in the blank with suitable word.
- (a) carbon dioxide
 - (b) oxygen
 - (c) nitrogen
 - (d) hydrogen.
- Q2. Chlorination is mainly used to kill the microorganisms present in the water by addition of chlorine tablets and water becomes potable. In the absence of pure water people suffering from various diseases. Select the water borne diseases from the following.
- (a) TB, Cancer
 - (b) Cholera jaundice
 - (c) Fever
 - (d) Night blindness
- Q3. Non-metals like nitrogen, phosphorus and sulphur are used to produce fertiliser. The function of the fertiliser is the fertility of the soil. Complete the sentence by using suitable words.
- (a) to make acidic
 - (b) to enhance
 - (c) to make neutral
 - (d) to make basic
- Q4. Non-metal used in the purple coloured solution which is applied on wounds as an antiseptic, the role of antiseptic is Germs on wound.
- (a) to kill
 - (b) to increase
 - (c) to stop
 - (d) to decrease
- Q5. Aluminium is used for making cooking utensils. Which of the following properties of aluminium are responsible for the same?

- (i) Good thermal conductivity
- (ii) Good electrical conductivity
- (iii) Ductility
- (iv) High melting point

- (a) (i) and (ii)
- (b) (i) and (iii)
- (c) (ii) and (iii)
- (d) (i) and (iv)

Q6. Which property of metals is used for making bells and strings of musical instruments like Sitar and Violin?

- (a) Sonorousness
- (b) Malleability
- (c) Ductility
- (d) Conductivity

Q7. Which of the following non-metal is lustrous?

- (a) Sulphur
- (b) Oxygen
- (c) Nitrogen
- (d) Iodine

Worksheet – 58 (Face-to-Face)

Learning Outcomes to be achieved:

Applies learning of scientific concepts in day to-day life, e.g., purifying water; segregating biodegradable and non-biodegradable wastes; increasing crop production; using appropriate metals and non-metals for various purposes; increasing/ reducing friction; challenging myths and taboos regarding adolescence, etc.

Q1. Seema is provided with aluminium and copper foils. Which foil will she prefer to keep dry food items and why?

Q2. Which among the following materials can be used to make cooking utensils and why?

Copper, Iron, Coal, Wood, Sodium



Q3. You are provided with pots made of following materials :
Magnesium, Sodium, Glass, Aluminium, Ceramic
Which pot(s) will you use to store lemon pickle and why?



Worksheet – 59 (Face-to-Face mode)

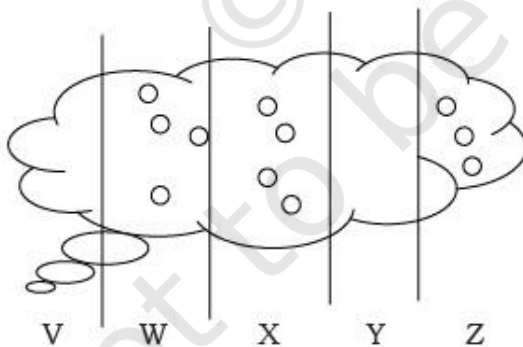
Learning Outcomes to be achieved:

Applies learning of scientific concepts in day to-day life, e.g., purifying water; segregating biodegradable and non-biodegradable wastes; increasing crop production; using appropriate metals and non-metals for various purposes; increasing/ reducing friction; challenging myths and taboos regarding adolescence, etc.

- Q1. Rajat wants to help his mother in her garden. He wants to grow the following plants can you help him select the right option of propagation for each plant by matching plants in column A with their correct way of propagation in column B.

Column A	Column B
Sweet Potato	Roots
Rose	Detached part of the stem
Bryophyllum	Cuttings
Cactus	Leaves

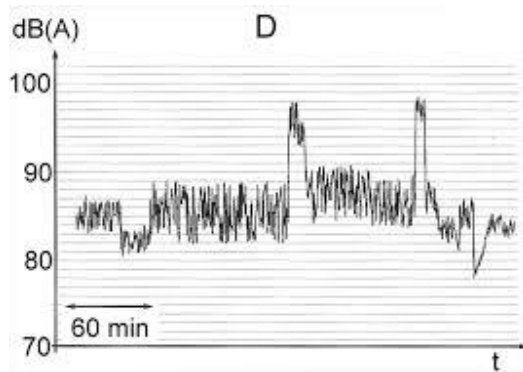
- Q2. Aman wants to grow potatoes in his kitchen garden. He has cut a potato into sections as shown in the diagram below. Which of the sections will not produce new plants?



- (a) W and Z
(b) X and Y

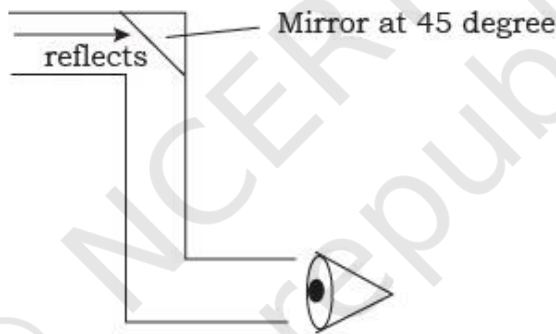
- (c) Z and W
- (d) V and Y

- Q3. Manavi is fascinated by flowers. She thought of maintain a small garden and purchased few sees her sister Jyotika also helped her. Manavi told Jyotika not to sow seeds too deep in the soil. What in your opinion is the reason for this?
- Q4. Rehman's mother has gone out to purchase a few grocery items. Rehman and his brother Afzal want to surprise their mother by preparing a meal. Rehman tells Afzal to ash the vegetables properly before chopping and using them? Is he right? Give reasons for your answer.
- Q5. Suresh is a farmer. Soil of his farm was found to be deficient in Nitrogen. He does not want to use fertilizers to treat the deficiency. What would you suggest him to grow in his farm to replenish the Nitrogen?
- (a) Wheat and Maize
 - (b) Beans and Peas
 - (c) Rice and Sugarcane
 - (d) Potato and sweet potato



Is this area a good choice to construct one's residence? Give reason for your answer.

- Q4. A diagram of a periscope is shown below. Only one mirror is shown in the diagram. Draw the second mirror in the diagram and also mention the angle which the second mirror will make with the walls of the periscope tube.



- Q5. Raman had a wooden drawer kept near his table. Although the drawer provided extra space to keep various objects but Raman didn't like using it as it often got struck while opening and closing. Suggest a method to make the back and forth movement of the drawer smooth.

o .

Worksheet - 61(Face-to Face mode)

Learning Outcomes to be achieved:

Applies learning of scientific concepts in day to-day life, e.g., purifying water; segregating biodegradable and non-biodegradable wastes; increasing crop production; using appropriate metals and non-metals for various purposes; increasing/ reducing friction; challenging myths and taboos regarding adolescence, etc.

Q1. An excavator is a large machine that is used for digging, moving, transporting loose gravel, etc. These machines are work horses and are capable of performing myriad of tasks.

(a) What kind of tyres should be used for such vehicles so as to ensure stability?

o .

(b) Use of such tyres - increases or reduces friction between the vehicle and the ground?

o .

Q2. While playing carrom board, Rohan noticed that inspite of striking hard, the striker stops quickly after covering a short distance. He wanted the striker to cover a larger distance so he thought of sprinkling some powder on the carom board. Do you think by sprinkling some powder, the striker will cover a longer distance? Give reason for your answer.

o .

Q3. (a) Do you know how a ball pen works? Fill in the blanks in the given passage.

A ballpoint pen has a small _____ fixed in a socket, connected to an ink reservoir. As the ball moves across paper, it turns and draws ink from the reservoir and onto the ball from where it is transferred onto the paper. These pens rely on _____ force in order to draw ink down towards the ball.

(b) Do roll-on anti per spirant bottles use a similar technology to work?(Yes / No)

Worksheet - 62(On-line mode)

Learning Outcomes to be achieved:

Applies learning of scientific concepts in day to-day life, e.g., purifying water; segregating biodegradable and non-biodegradable wastes; increasing crop production; using appropriate metals and non-metals for various purposes; increasing/ reducing friction; challenging myths and taboos regarding adolescence, etc.

Q1. Humans have been using ball bearings for centuries in many common items like vehicles, bicycle, etc.

Why are they used extensively in daily life?

- (a) They help to increase friction
- (b) They help to conduct electricity between two metallic wheels
- (c) They help to convert sliding friction into rolling friction.
- (d) They help to reduce mobility between moving parts of a machine.

Q2. Bina went to watch Formula 1 racing and observed that the tyres of the racing cars were quite different from that of normal cars. She noticed that in order to acquire good speed as well as better traction the tyres of racing car are

-
- (a) Narrow and treaded
 - (b) Narrow and non-treaded
 - (c) Broad and treaded
 - (d) Broad and non-treaded

Q3. In which of the following situations friction has no role to play ?

- (a) A person skidding on an oily surface
- (b) A child writing with a pencil in his notebook
- (c) A student reciting a poem
- (d) A bicycle slows down on applying brakes

Q4. We are unable to write on oily paper as

- (a) Friction between pen and the paper increases
- (b) Interlocking between pen and paper increases
- (c) Oil prevents interlocking between ink and the paper.
- (d) Oil increases irregularities on the paper.

Q5. Kabbadi players often rub their hands with dry soil as

- (a) It increases coarseness of hands
- (b) It helps to absorb oil on hands
- (c) It helps to scratch opponent's body.
- (d) It decreases friction

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Worksheet - 63(On-line mode)

Learning Outcomes to be achieved:

Applies learning of scientific concepts in day to-day life, e.g., purifying water; segregating biodegradable and non-biodegradable wastes; increasing crop production; using appropriate metals and non-metals for various purposes; increasing/ reducing friction; challenging myths and taboos regarding adolescence, etc.

- Q1. Shanti is staying in Delhi. In the month of October air pollution increased leaps and bounds. It added to the woes of the spread of Corona Pandemics. She pondered which of the following action did not cause air pollution-
- (a) Burning of leaves and garbage.
 - (b) Burning of dry grass left after paddy harvest
 - (c) Recycling of paper and plastics
 - (d) Bursting crackers during festivals/celebrations

Worksheet - 64(Face-to-Face) (LO-12)

Learning Outcomes to be achieved:

Discusses and appreciates stories of scientific discoveries

In 1836, Sorel in France took out the first of numerous patents for a process of coating steel by dipping it in molten zinc after first cleaning it.

- Q1. Galvanized metals have been covered with a thin sheet of:
- (a) tin
 - (b) zinc
 - (c) aluminium
 - (d) nickel
- Q2. CFLs contain mercury which is toxic. Therefore, used or broken CFLs need to be disposed off safely. Once the technological advances reduce the cost of LEDs, they will become the preferred lighting source. LEDs full form is
- (a) light emitting diode
 - (b) light emission diode
 - (c) light emerging diode
 - (d) Light energy diode.
- Q3. Which of the following outstanding contributions in Physics is associated with the Scientist Newton?
- (a) Universal gravitational law
 - (b) Laws of equations
 - (c) Discovery of Dynamite
 - (d) Discovery of steam engine.
- Q4. Which of the following is wrongly matched?
- (a) Heart Transplant Surgery-Christian Barnard
 - (b) Bacteria-Leeuwenhock
 - (c) Vaccination-Edward Jenner
 - (d) Rabies Vaccine-Alexander Fleming
- Q5. Silk is one of the oldest fabrics known to man. The history of silk can be traced back to the 27th century BC in China where the use of silk was limited to the Chinese. Chinese Empress Leizu (also known as Xi Ling Shi) discovered silk by accident when a silkworm cocoon dropped into her cup of tea. Silk fibre is a

- (a) Synthetic fibre
- (b) semi synthetic fibre
- (c) natural fibre
- (d) Plant fibre.

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Worksheet – 65 (Face-to-Face)

Learning Outcomes to be achieved:

Discusses and appreciates stories of scientific discoveries

- Q1. Robert Hooke in the year 1665 observed a slice of cork under a simple magnifying device. He took thin slices of cork/bark and observed under a simple magnifying device /electron microscope.
- Q2. He noticed partitioned boxes (compartments) in the cork slice. He also noticed that one box was separated from each other by a fence/wall
- Q3. The cork which was observed by Robert Hooke was dead/living cells.
- Q4. Cells of living organism was observed only after discovery of improved microscope/telescope
- Q5. Discuss the importance of the work done by Robert Hooke.

Worksheet – 66 (Face-to Face mode)

Learning Outcomes to be achieved:

Discusses and appreciates stories of scientific discoveries

LO 12 -

- Appreciate the scientific discovery of coal and petroleum
- Identify the materials with their relevance.
- Learn about the uses of different coal and petroleum products.
- Learn the difference between different types of natural resources.

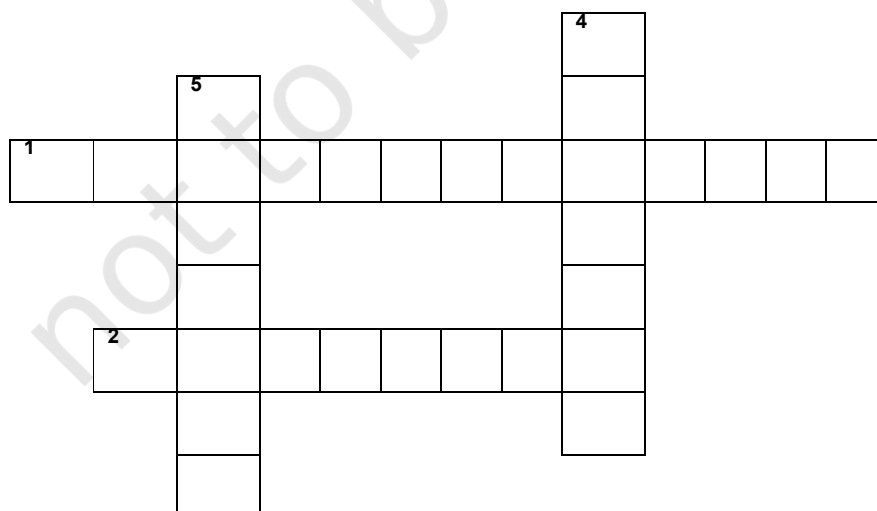
Solve the Crossword puzzle-

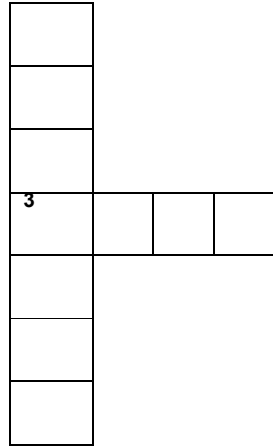
Across-

1. Sunlight is an example of natural resources.
2. Naphthalene balls used to repel moths are obtained by.
3. Pure form of carbon used in extraction of many metals.

Down-

4. Constituent of petroleum used in road surfacing.
5. Substances obtained from petroleum and natural gas.





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Worksheet – 68 (Face-to Face mode)

Learning Outcomes to be achieved:

Discusses and appreciates stories of scientific discoveries

Q1. The German scholar Otto von Guericke (1602-1686) is regarded as one of the most prominent figures of the scientific revolution in the 17th century. A politician, physicist, engineer, and natural philosopher, von Guericke invented the world's first _____ in 1650.

Q2. In 1654, a series of experiments were performed before Emperor Ferdinand III by Otto Von Guericke. He placed two copper bowls known as _____ hemispheres together to form a hollow sphere about 35.5 cm (14 inches) in diameter. After he had removed the air from the sphere, horses were _____(to pull/ to push) the bowls apart.

Q3. Magdeburg hemispheres are two half-spheres of equal size. When they are placed together they trap air between them. The pressure inside is _____ (equal / unequal) to the pressure of the atmosphere outside the spheres. At this moment, the spheres thus pull apart with nearly no resistance.

Now if all the air is removed from the inside, then the two hemispheres become very hard to separate as

o o

o o

Q4. In 1663 Otto Von Guericke invented the first _____, (electric motor/ electric generator) which produced static electricity by applying friction against a revolving ball of sulphur.

Q5. Discuss the importance of the work done by Otto Von Guericke.

o o

o o

o o

o o

Worksheet – 69 (On-line mode)

Learning Outcomes to be achieved:

Discusses and appreciates stories of scientific discoveries

- Q1. The German scholar Otto von Guericke invented world's first _____ in 1654.
- (a) vacuum cleaner
 - (b) vacuum pump
 - (c) vacuum flask
 - (d) vacuum tube
- Q2. Which of the following is true about Magdeburg hemispheres?
- (a) They are two small hemispheres which when joined together automatically produce a vacuum.
 - (b) They are two small hemispheres of varying radius and capable of creating a vacuum.
 - (c) They are two large metallic hemispheres that can be used to show presence of atmospheric pressure.
 - (d) They are two large metallic hemispheres that were used to create world's first vacuum tube.
- Q3. Which of the following statement is NOT true with respect to the famous Otto von Guericke's Magdeburg hemispheres experiment?
- (a) Thirty horses, in two teams of fifteen, could not separate Magdeburg hemispheres in the experiment.
 - (b) When the air was sucked out from inside the hemispheres then they were held firmly together by the air pressure of the surrounding atmosphere.
 - (c) This experiment was used by Otto von Guericke to demonstrate working of his newly invented vacuum pump.
 - (d) The two hemispheres were hung with a support and the air was removed from within. Then weights were strapped to the spheres, but the spheres did not separate.
- Q4. Which of the following statements is correct with respect to Benjamin Franklin's initial experiments related to electricity?
- (a) He invented a battery for storing electric charges

- (b) He suggested that electricity was produced due to two fluids.
- (c) He discovered that electricity is generated by rubbing two objects
- (d) He discovered that the number of positive charges and negative charges are always present in unequal amount in nature.

Q5. Which of the following was not invented by Benjamin Franklin?

- (a) Swim fins
- (b) Glass harmonica
- (c) Bifocals
- (d) Created steady flow of direct current

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Worksheet – 70 (On-Line mode)

Learning Outcomes to be achieved:

Discusses and appreciates stories of scientific discoveries

- Q1. Identify the picture of the scientist who has shown that if electrodes were immersed in water, and a current was passed, bubbles of oxygen and hydrogen were produced. Oxygen bubbles formed on the electrode connected to the positive terminal of the battery and hydrogen bubbles formed on the other electrode.



- (a) Hans Christian Oersted
- (b) William Nicholson
- (c) Robert Koch
- (d) William Harvey

Worksheet – 71 (On-line mode)

Learning Outcomes to be achieved:

Discusses and appreciates stories of scientific discoveries

Q1. Do you want to hear a story about the discovery of Vaccination? In 1796 in Berkeley, many people believed that dairymaids who caught cowpox- a less harmless disease that caused sores on the hands- could not catch smallpox. A family doctor from Gloucestershire took matter from a dairy maid's cowpox sore and inserted it into a cut made on the arm of a healthy boy. The boy developed cowpox and got cured. Later, the boy was inoculated with matter from smallpox sore; the boy did not develop the disease. His body had built up immunity to smallpox. Who was this scientist who discovered vaccination?

- (a) Hans Christian Oersted
- (b) William Nicholson
- (c) Edward Jenner
- (d) William Edward

Worksheet – 72 (On-line mode)

Learning Outcomes to be achieved:

Discusses and appreciates stories of scientific discoveries

Q1. In 2019-2020 global pandemic spread covid-19 virus which is transmitted through direct contact with respiratory droplets of an infected person. Entire world witnessed lockdown. School, offices, markets, sports, theatres, businesses all came to standstill. You will feel proud that India led from the front and prepared vaccination against corona virus. Which scientist invented immunization in 1776 when he introduced vaccination against small-pox?

- (a) Edward Jenner
- (b) Alexander Fleming
- (c) Louis Pasteur
- (d) William Edward

Worksheet – 73 (On-line mode)

Learning Outcomes to be achieved:

Discusses and appreciates stories of scientific discoveries

- Q1. In 1976, an eight year old boy became the first person to be vaccinated against smallpox by a family doctor. This discovery eradicated the disease. The name of the boy and the discoverer are-
- (a) James Phipps and Edward Jenner
 - (b) Edward Phipps and Louis Jenner
 - (c) Louis William and Edward Jenner
 - (d) James Phipps and William Edward
- Q2. In 1929, a scientist was working on a culture of disease causing bacteria. Suddenly he found spores of a little green mould in one of his culture plates. He observed that the presence of mould prevented the growth of bacteria. In fact, it also killed many of these bacteria. From this mould penicillin was prepared. Name the scientist.
- (a) Edward Jenner
 - (b) Alexander Fleming
 - (c) Louis Pasteur
 - (d) William Edward
- Q3. One of the famous Edward Jenner's accomplishments was-
- (a) He established a link between dairymaids and their beautiful skin complexion.
 - (b) He was the first to inoculate people with smallpox infected material to immunize them.
 - (c) He discovered that blood oscillates in the vessels of the body.
 - (d) ~~1~~accam means cow and he treated milkmaids who got infected by cowpox.
- Q4. Edward Jenner observed that milkmaids were less likely to get smallpox than other people?

- (a) Cows contact provided antibodies against smallpox.
 - (b) Milkmaids, who caught cowpox, would become immune to smallpox.
 - (c) Milkmaids did not get exposed to smallpox patients.
 - (d) Milkmaids drank cow's milk and became immune to smallpox.
- Q5. What is the name of the process Louis Pasteur invented that allowed for foods such as milk, cheese, and wine to last longer and be safer to eat?
- (a) Distillation
 - (b) Refrigeration
 - (c) Pasteurization
 - (d) Fermentation
- Q6. What is the name of the process of conversion of sugar into alcohol Louis Pasteur invented -
- (a) Distillation
 - (b) Refrigeration
 - (c) Pasteurization
 - (d) Fermentation
- Q30. Robert Hooke observed cells first in which thing?
- (a) Cork slice
 - (b) Wooden box
 - (c) Bricks
 - (d) Onion peel

Worksheet - 74(Face-to Face mode) (LO-13)

Learning Outcomes to be achieved:

Makes efforts to protect environment, e.g., using resources judiciously; making controlled use of fertilizers and pesticides; suggesting ways to cope with environmental hazards etc

Q1. Which of the following actions will help in reducing pollution?

- I) Carrying cloth bags for shopping instead of polybags
- II) Use of CNG instead of Diesel
- III) Spraying pesticides on plants to kill pests
- IV) Releasing untreated water from industries to water bodies

Options:

- (a) i)and iv)
- (b) ii)and iii)
- (c) ii)and iv)
- (d) i)and ii)

Q2. What should be done with paper products like newspaper, Notebooks and notepads after you have used them?

- (a) They should be recycled
- (b) They should be thrown in the dustbin
- (c) They should be recycled only when it is convenient for us.
- (d) They should be burnt

Q3. What is the meaning of 'going green'?

- (a) Wearing clothes of green colour
- (b) Encouraging people to use energy
- (c) Encouraging people to earn more money
- (d) Encouraging people to be environment friendly

Q4. We must not use aerosol sprays because they cause:

- (a) Garbage
- (b) Air Pollution
- (c) Water pollution
- (d) Wastage of energy

Q5. Ganga Action Plan was launched in 1985 to:

- (a) Increase transport on the river
- (b) Increase industrialization near its banks
- (c) Reduce the pollution levels in the river
- (d) Construct more bridges over the river

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Worksheet – 75 (Face-to Face mode) (LO-14)

Learning Outcomes to be achieved:

Exhibits creativity in designing, planning, making use of available resources etc

- Q1. A survey was conducted by you in 100 houses in your area on fuels used in the households. How would you report the survey results?
- (a) Through a summary in a paragraph
 - (b) Using tables
 - (c) Making a presentation video with graphs
 - (d) Informing numbers orally
- Q2. How would you grow vertical garden with the saplings for science project?
- (a) Buy identical plastic planters and hang them
 - (b) Collect & make planters out of the waste plastic bottles
 - (c) Bring readymade planters with saplings from market
 - (d) Collect planters from neighbours
- Q3. If you are asked to present on consequences of deforestation to the whole class, how would you present?
- (a) slide presentation with paragraphs
 - (b) Make & present a concept map or flow chart
 - (c) Write a paragraph & read
 - (d) Write points & submit
- Q4. You found that many of your schoolmates are unaware of deficiency diseases and their preventive measures. What would you do?
- (a) Inform them one by one in person
 - (b) Post the details on the bulletin board
 - (c) Convince the school & conduct a campaign at school
 - (d) Inform the teacher about the issue
- Q5. If you were asked to suggest an activity that has to be conducted for students related to food and nutrition, what would you suggest?
- (a) Essay writing competition
 - (b) Cookery without oven competition
 - (c) Quiz
 - (d) Role play

Worksheet - 76(Face-to Face mode)

Learning Outcomes to be achieved:

Exhibits creativity in designing, planning, making use of available resources etc

Making Flipbook

We all have seen that there is a change in shape of moon every day. There are days when the shape of the moon appears to be perfectly round. Thereafter the size of the bright part of the moon appears to become thinner and thinner. On the fifteenth day, the moon cannot be seen at all, even if the sky is clear. The next day, only a small portion of the moon appears in the sky. Then the moon grows larger and larger every day till on the fifteenth day once again we get a full view of the moon.

The various shapes of the bright part of the moon as seen during a month are called phases of the moon.

Can you depict the phases of moon in a creative manner which is very interesting? Let's try.

- Take a stack of equal sized pieces of paper.
- Start observing the moon continuously for several nights, starting from one full moon.
- Every night, make a sketch of the moon on a separate piece of paper and note the day from the day of the full moon to the next.
- Arrange and stack all the sketches in ascending order.
- Use a clip or a stapler to securely hold the stacked sketches of the moon.



- Hold the clipped or stapled part in one hand and with the other hand; flip the pages of the flipbook using your thumb.
- Do you see moon shape change through each phase?

The first of a month is the new moon day. On fifteenth of the same month, which of the following figures would represent the phase of the moon?

You may show your flipbook to your family members and friends and explain the phases of moon. Also, try to represent the phases of moon in another interesting manner.

Worksheet – 77 (Face-to-Face Mode) (LO-15)

Learning Outcomes to be achieved:

Exhibits values of honesty, objectivity, cooperation, freedom from fear and prejudices

Adolescence, a vital stage of growth and development, marks the period of transition from childhood to adulthood. It is characterized by rapid physiological changes and psychosocial maturation. Adolescence is also the stage when young people extend their relationships beyond parents and family and are intensely influenced by their peers and the outside world in general. As adolescents mature cognitively, their mental process becomes more analytical. They are now capable of abstract thinking, better articulation and of developing an independent ideology. These are truly the years of creativity, idealism, buoyancy and a spirit of adventure. But these are also the years of experimentation and risk-taking, of giving in to negative peer pressure, of taking uninformed decisions on crucial issues, especially relating to their bodies and their sexuality. Adolescence is thus a turning point in one's life, a period of increased potential but also one of greater vulnerability.

- Q1. What's the best way for your child to deal with loneliness?
- (a) spend time watching television
 - (b) communicating with friends and family
 - (c) playing games on phone
 - (d) indulging in social media
- Q2. How behavioural problems during adolescence can be minimised
- (a) scolding them
 - (b) compelling them to do what you want
 - (c) understanding their needs and concern
 - (d) helping them at every step
- Q3. As adolescents mature cognitively they are capable of
- (a) Abstract thinking
 - (b) Articulation
 - (c) Independent ideology
 - (d) All of the above

Rohan is suffering from a chronic disease that does not spread with touch, sitting together or sharing Tiffin but still all his classmates avoid speaking and playing with him. Rohan suffers from certain symptoms like damaged immune system, sore throat, fatigue and diagnosis with HIV positive. One of his classmates Anil offer to take him to his mother who is a doctor for appropriate care and treatment.

- Q4. Can you guess which disease is Rohan suffering from?
- (a) AIDS

- (b) tuberculosis
- (c) cholera
- (d) typhoid

Q5. Select the best qualities exhibited by Anil.

- (a) better human being
- (b) cooperation
- (c) sympathy
- (d) Good companion.

Q6. What do you think about Anil's decision to take Rohan to his mother?

Q7. How do you think you will help Rohan by discusses and appreciates stories of scientific discoveries.

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Online awareness program was held for students to observe Covid appropriate behaviour. Some of the Covid appropriate behaviour mentioned were that kids older than 2 years should wear a mask when in public. Masks are important for going out and help stop the spread of covid-19. Maintain social distancing and wash hands for at least 20 seconds with soap and water or use of hand sanitizer.

In the wake of ongoing pandemic corona crisis, choose the appropriate Covid Appropriate Behaviour -

- (a) Ravi and Riya while wearing masks, maintained 6 metre distance while talking to each other in classroom.
- (b) Mohit washed his hands with water before having his lunch.
- (c) Jyoti wears her masks but on feeling breathless she slides her mask down with her hands.

Worksheet – 80 (Face-to-Face mode)

Learning Outcomes to be achieved:

Exhibits values of honesty, objectivity, cooperation, freedom from fear and prejudices

Q1. Students were taken on a field trip to undertake a Project on ~~A~~ Visit to the Local Pond to observe microorganisms/ small creatures in/ near pond water. Teacher divided them into three groups and with the help of magnifying glass they started observing and noting down the names of micro-organisms in pond water.

1. **Sonu and Sehaj of first group** took out pond scum and noticed green algae. They also observed protozoa (amoeba) and Paramecium in drop of pond water taken under Microscope arranged by their teacher.
2. **Mohit of second group** overheard the names of few micro-organisms and scribbled down without going near the pond.
3. **Pavan and his friends of third group** drew the pictures of Paramecium, Vorticella and Euglena as he could not identify them. Mohit told him to just write down the names of microorganisms but Pavan was adamant of not making a false list.

Value of honesty is shown by

- (a) Group 1 and 3.
- (b) Group 2 and 3
- (c) Group 1 and 2
- (d) Group 1



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NCEERT

**Department of Education in Science and Mathematics
National Council of Education Research and Training
Sri Aurobindo Marg, New Delhi - 110016**