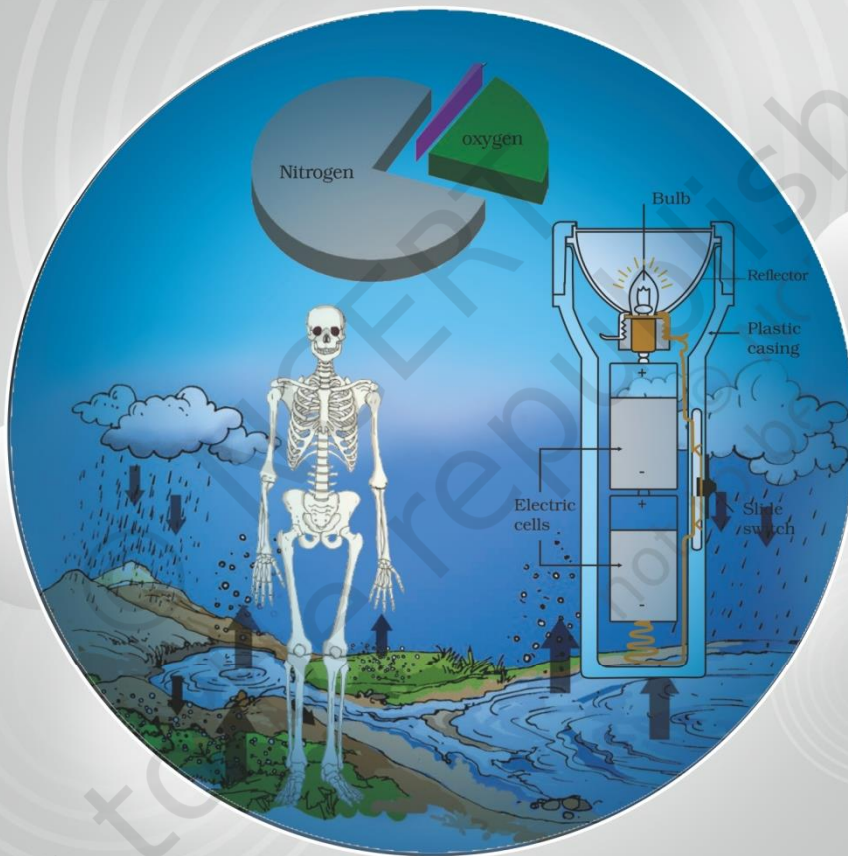


EXTRA RESOURCES BASED ON LEARNING OUTCOMES AT UPPER PRIMARY STAGE

WORKBOOK CLASS - VI



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

Pramila Tanwar, Associate Professor, DESM, NCERT, New Delhi

DEVELOPMENT TEAM, NCERT

Anjni Koul, 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

Poonam Aggarwal, Professor, DGS, NCERT, New Delhi

Pushplata Verma, Associate Professor, DESM, NCERT, New Delhi

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

Rachna Garg, Professor, DESM, NCERT, New Delhi

Ruchi Verma, Professor, DESM, NCERT, New Delhi

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

Sharad Sinha, Professor, DTE, NCERT, New Delhi

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

Sunita Farkya, 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

Arun Verma, DTP Operator, DESM, NCERT

Manju Negi, Computer Typist, DESM, NCERT

Rajiv Chandeliya, DTP Operator, DESM, NCERT

Romeo Khonganbatbam, JPF, DESM, NCERT

Shiksha Tiwari, 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.RavijotSandhu, *lecturer*, NDMC-Navyug School, Peshwa Road, New Delhi; Ms.PreetiKhanna, *Senior TGT*, National Blind Association, Delhi; Dr.Abinash Kumar Singh, *PGT*, K.V. BSF Camp, Chhawla, New Delhi; Ms.ReemaMarwah, *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 SunitaFarkya, 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*, ShikshaTiwari, *Junior Project Fellow*, Ankit Sharma, *Computer Typist*, ArunVerma, *DTP Operator*, ManjuNegi, *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.

TABLE OF CONTENTS

S. No.	Learning Outcome	Worksheet No.	Page No.
1	Identifies materials and organisms, such as, plant fibres, flowers, on the basis of observable features i.e., appearance, texture, function, aroma, etc.	1	1
		2	2
		3	3
		4	4
		5	5-6
		6	7
		7	8
2	Differentiates materials and organisms, such as, fibre and yarn; tap and fibrous roots; electrical conductors and insulators; on the basis of their properties, structure and functions	8	9-11
		9	12-13
		10	14
		11	15-16
		12	17-18
		13	19-21
3	Classifies materials, organisms and processes based on observable properties, e.g., materials as soluble, insoluble, transparent, translucent and opaque; change as can be reversed and cannot be reversed; plants as herbs, shrubs, trees, creeper, climbers; components of habitat as biotic and abiotic; motion as rectilinear, circular, periodic etc.	14	22-23
		15	24-25
		16	26-28
		17	29-30
		18	31-32
		19	33-34
4	Conducts simple investigations to seek answers to queries, e.g., what are the fruit nutrients present in animal fodder? Can all physical changes be reversed? Does a freely suspended magnet align in a particular direction?	20	35-36
		21	37-38
		22	39-40
		23	41-42

5	Relates processes and phenomenon with causes, e.g., deficiency diseases with diet; adaptations of animals and plants with their habitats; quality of air with pollutants, etc	24	43-44
6	Explains processes and phenomenon, e.g., processing of plant fibres; movements in plants and animals; formation of shadows; reflection of light from plane mirror; variations in composition of air; preparation of vermicompost, etc.	25	45-46
		26	47-48
		27	49-50
7	Measures the physical quantity and expresses in SI units, e.g., length	28	51-53
		29	54-56
		30	57-58
		31	59-60
		32	61-64
8	Draws labelled Diagrams/flow charts of organisms and processes, e.g., parts of flowers; joints; filtration; water cycle, etc.	33	65
		34	66
9	Constructs models using materials from surroundings and explains their working, e.g., pinhole camera, periscope, electric torch, etc.	35	67-68
		36	69
		37	70-71
		38	72-74
		39	75-76
10	Applies learning of scientific concepts in day to day life e.g., selecting food items for a balanced diet; separating materials; selecting season appropriate fabrics; using compass needle for finding directions; suggesting ways to cope with heavy rain/ drought etc.	40	77-78
		41	79-81
		42	82
		43	83-84
		44	85-86

11	Make efforts to protect environment, e.g., minimising wastage of food, water, electricity and generation of waste; spreading awareness to adopt rain water harvesting; care for plants etc.	45	87-88
12	Exhibits creativity in designing, planning, making use of available resources, etc.	46	89-90
13	Exhibits values of honesty, objectivity, cooperation, freedom from fear and prejudices	47	91




© NCERT
not to be republished

Worksheet: 1 (Mode: FACE-TO -FACE) (LO-1)

Learning Outcomes to be achieved:

Identifies materials and organisms, such as, plant fibres, flowers, on the basis of observable features i.e., appearance, texture, function, aroma, etc.

Q1. We have five sense organs, namely eyes, ears, nose, tongue and skin. Suppose you are blind-folded and are asked to identify the above food items even without tasting them!

Local Popcorn vendor baking popcorns	Mug of steaming Coffee	Pineapple fruit
		
A	B	C

Which of your other three sense organs will you use to identify each food item QUICKLY? Write your answers in the table given below:

Picture	Food item being cooked or served	Sense organ that will help to identify food item QUICKLY without seeing or tasting it
A	Local Popcorn vendor baking popcorns	
B	Mug of steaming Coffee	
C	Pineapple fruit (entire)	

Worksheet: 2 (Mode: FACE-TO -FACE)

Learning Outcomes to be achieved:

Identifies materials and organisms, such as, plant fibres, flowers, on the basis of observable features i.e., appearance, texture, function, aroma, etc.

Q1. In the table given below write the name of the plant against the edible part of the plant shown in each picture.



Cauliflower



Cashew nut



Custard apple



Spinach

Edible part of the plant shown in the picture	Name of the plant
Seeds	
Leaves	
Flower	
Fruit	

Worksheet:3 (Mode: FACE-TO -FACE)

Learning Outcomes to be achieved:

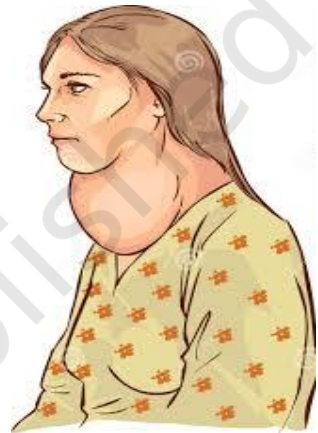
Identifies materials and organisms, such as, plant fibres, flowers, on the basis of observable features i.e., appearance, texture, function, aroma, etc.



A. Scurvy



B. Rickets



C. Goitre

Q1. Observe the symptoms of deficiency diseases given above and fill up the table given below with appropriate answers.

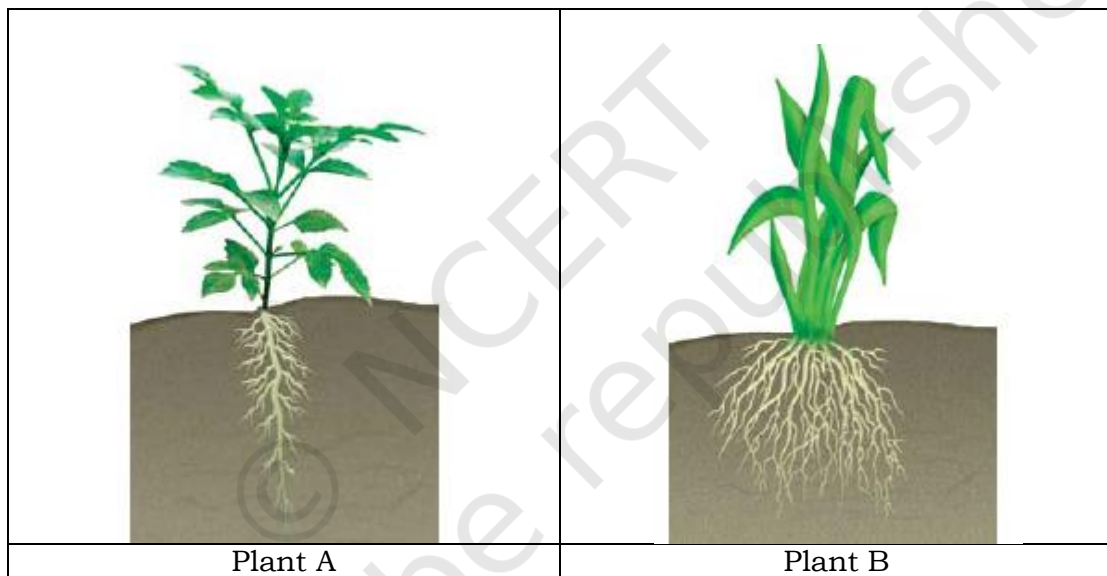
Picture	Name of the deficiency disease	Caused by the deficiency of which nutrient	Food source rich in this nutrient
A			
B			
C			

Worksheet: 4 (Mode: FACE-TO -FACE)

Learning Outcomes to be achieved:

Identifies materials and organisms, such as, plant fibres, flowers, on the basis of observable features i.e., appearance, texture, function, aroma, etc.

- Q1. Observe the features of plants A and B and identify the type of root system and leaf venation present in them.



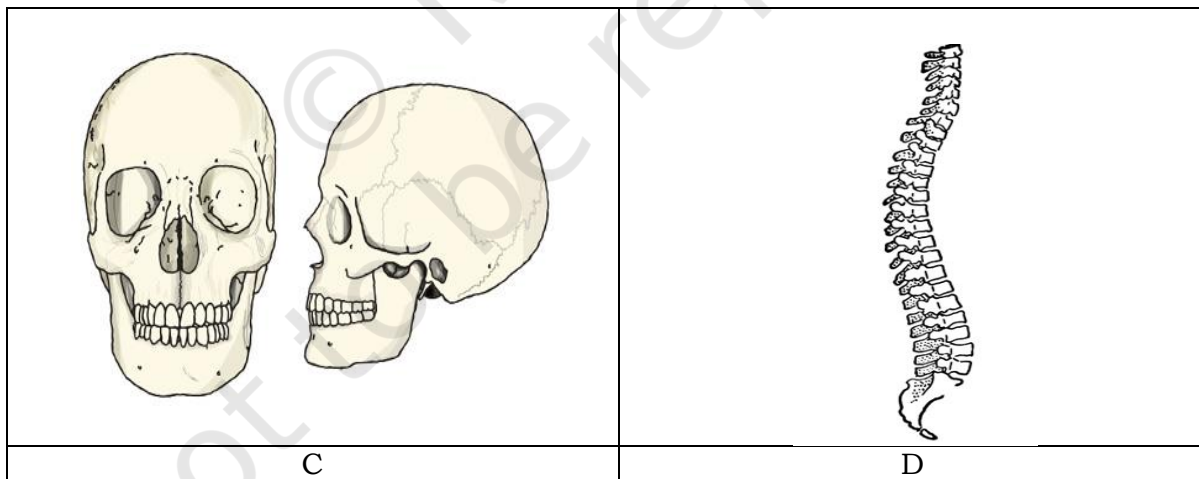
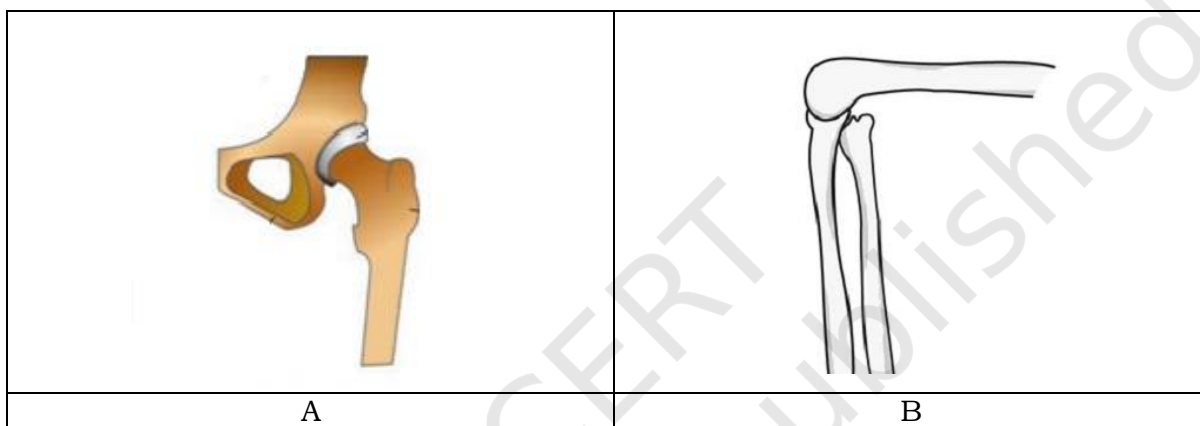
Plants in the figure	Plant A	Plant B
Type of Root system		
Type of Leaf venation		

Worksheet: 5 (Mode: FACE-TO -FACE)

Learning Outcomes to be achieved:

Identifies materials and organisms, such as, plant fibres, flowers, on the basis of observable features i.e., appearance, texture, function, aroma, etc.

Q1.



The figures above are showing bones of different parts of our body. The points where two bones are joined together are called joints. There are various types of joints in our body which allow various degrees of movement.

Identify the location and type of joint in each figure and write them in the table given below:

Figure	Location of the joint in body	Type of Joint
A		
B		
C		
D		

© NCERT
not to be republished

Worksheet: 6 (Mode: Online)

Learning Outcomes to be achieved:

Identifies materials and organisms, such as, plant fibres, flowers, on the basis of the observable features, i.e. appearance, texture, function, aroma, etc.

- Q1. There are some plant related things placed in a grid. It can be a plant product, its part, its type, etc. The task is to find and mark all the words hidden inside the puzzle. The word can be made by choosing letter from top to bottom, bottom to top, left to right, right to left and diagonally also.

x	c	h	n	o	p	a	b	n	O	E
t	s	t	e	m	u	d	e	c	S	C
h	z	j	b	r	a	n	c	h	E	I
a	r	u	v	e	f	l	o	w	E	R
w	o	o	d	n	r	t	i	d	d	X
a	o	h	s	x	u	p	l	p	s	C
t	t	x	j	v	i	f	e	q	r	W
e	b	a	f	u	t	p	a	p	e	R
r	o	s	e	h	s	o	s	u	z	K
n	l	m	c	r	e	v	o	l	c	A
e	d	o	x	y	g	e	n	s	i	E
n	a	p	e	f	h	k	r	e	l	S
l	e	a	f	k	e	o	c	s	v	Y
t	o	p	w	h	e	a	t	j	k	A

Stem	Branch	Seeds	Rice
Root	Wood	Rose	Oxygen
Leaf	Fruits	Paper	Pulses

Worksheet: 7 (Mode: ONLINE)

Learning Outcomes to be achieved:

Identifies materials and organisms, such as, plant fibres, flowers, on the basis of the observable features, i.e. appearance, texture, function, aroma, etc.

Q1. In an activity following items were given in the class and students were asked to identify them-

(i) Nylon (ii) Wool (iii) Acrylic (iv) Silk (v) Polyester (vi) Jute

Amongst the items given above, synthetic fibres are

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

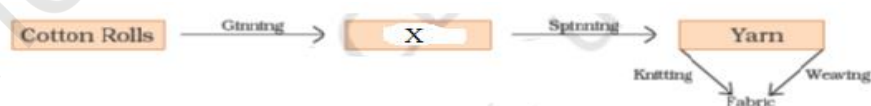
Q2. A field trip of the learner was organised to give hands on experience about plants and character of plants were explained. Which of the following is not a character of herbs?

- (a) Plants with green and tender stems
- (b) Plants develop branches near the base of stem
- (c) Plants are very tall and have hard and thick stem
- (d) Plant stem is hard but not very thick

Q3. From a field trip to a locality where there were plants with flowers and to see the inner parts of the flower clearly, it was cut to open. The innermost part of flower students identify is

- (a) Pistil
- (b) Petals
- (c) Sepals
- (d) Stamens

Q4. Consider the following process of fibre to fabric



In the above process X is

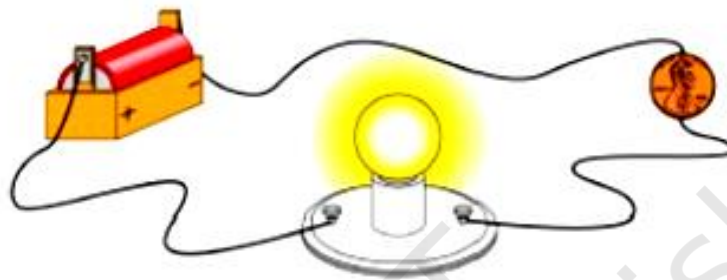
- (a) Plant fibre
- (b) Animal fibre
- (c) Synthetic fibre
- (d) Synthetic fabrics

Worksheet: 8 (Mode: FACE TO FACE) (LO-2)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, fibre and yarn; tap and fibrous roots; electrical conductors and insulators; on the basis of their properties, structure and functions

Q1:



Radha conducted the experiment by making electric circuit using various materials and noted down the observation in a table. Analyse the recordings of the observations and categorise the materials under two categories Conductors/insulators

Material	State of bulb	Conductors	Insulators
Rubber band	Bulb does not glow		
penny	glows		
Nickel	glows		
Toothpick	Bulb does not glow		

Q2. In the batteries below give some examples of conductors and insulators.
Two examples each are given:

Insulators

1. Diamond 2. Pure water 3. _____

4. _____ 5. _____ 6. _____

Conductors

1. Mercury 2. Dirty water 3. _____

4. _____ 5. _____ 6. _____

Q3.



Ram was given a task by his teacher to build an electric circuit to make a bulb to glow; he had taken battery, bulb and a screwdriver to complete the circuit. After trying so many times, the bulb did not glow.

(i) Give reason that why bulb did not glow?

.....

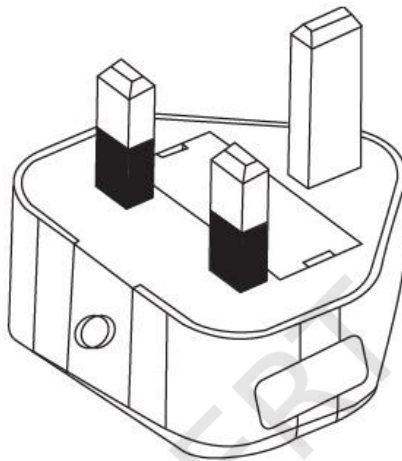
.....

(ii) Can you suggest a material which can be used instead of screwdriver so that the bulb can glow? Also give reason for your choice of material.

.....

.....
.....

Q4. You all must have seen this three pin plug at your home. It is made up of two types of materials brass and plastic. These two materials have different properties. Based on their properties the pins are made up of brass and plug case of plastic. Give reasons for the choice of materials of pin and plug case.



.....
.....

Q5. Electrician had covered the open ends of conducting wires with adhesive tape. Can you suggest the reason?

.....
.....

Worksheet: 9 (Mode: FACE TO FACE)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, fibre and yarn; tap and fibrous roots; electrical conductors and insulators; on the basis of their properties, structure and functions

Q1. Electric wires were being changed outside Seeta's house. She observed that electricians were wearing rubber gloves and shoes. The tools used by them are also covered with rubber or plastic material. They asked Seeta to stay away from the wires.

Answer the following questions using above information:

(i) Why did electricians wear rubber gloves and rubber shoes?

.....
.....

(ii) Why are the handles of tools made up of Plastic/rubber?

.....
.....

(iii) Can we use water to control fire caused by electricity?

.....
.....

Q2. Observe the figure carefully. In Figure A bulb did not glow but in figure B bulb glows. Give reasons for this observation.

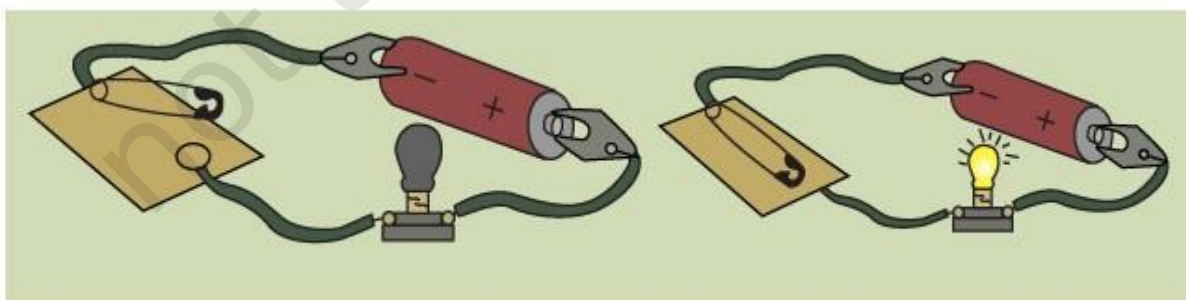


FIGURE A:

.....

FIGURE B:

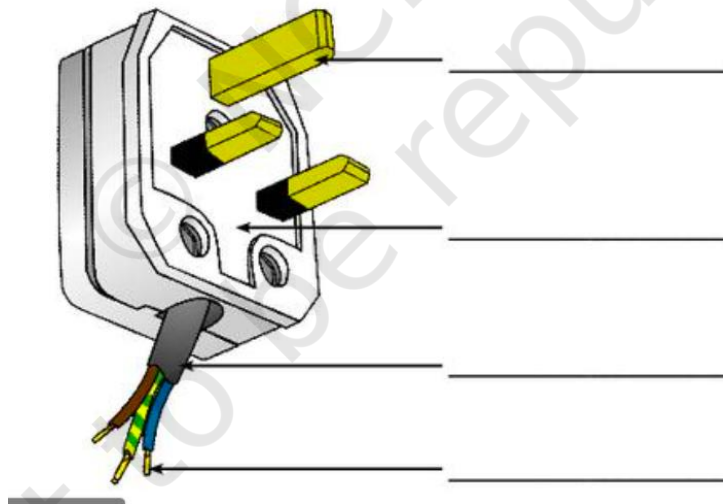
.....

Q3. Observe the various parts of electric bulb which are marked. Categorise them in two categories (conductors/insulators)

Part	NAME	CONDUCTOR/INSULATOR
P		
Q		
R		
S		



Q4. Label the plug stating the material whether they are insulators or conductors



Q5. Give reasons why both conductors and insulators are equally important. Give one example each to support the answer.

.....

Worksheet: 10 (Mode: Online)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, fibre and yarn; tap and fibrous roots; electrical conductors and insulators; on the basis of their properties, structure and functions

- Q1. Choose the biodegradable item from the following -
- (a) Plastic pieces
 - (b) Broken Rubber items
 - (c) Glass pieces
 - (d) Newspapers
- Q2. Choose the non-biodegradable item from the following -
- (a) rubber slippers
 - (b) vegetable peels
 - (c) egg shell
 - (d) cotton cloth
- Q3. Choose the natural fibre among the following which is obtained from animals -
- (a) silk
 - (b) Jute
 - (c) cotton
 - (d) flax
- Q4. Choose the natural fibre among the following which is obtained from plants-
- (a) cotton
 - (b) Fur
 - (c) Silk
 - (d) Wool

Worksheet: 11 (Mode: Online)

Learning Outcomes to be achieved:

- Differentiates materials and organisms, such as, fibre and yarn; tap and fibrous roots; electrical conductors and insulators; on the basis of their properties, structure and functions
- Makes efforts to protect environment, e.g., minimising wastage of food, water, electricity and generation of waste; spreading awareness to adopt rain water harvesting; care for plants, etc.
- Exhibits creativity in designing, planning, making use of available resources, etc.

Q1. In an awareness program Nanu's teacher advised all the students to segregate household waste at source, into green, blue and black bins. They were told to throw wet waste (biodegradable) in green bins, dry waste (non-biodegradable) in blue bins and domestic hazardous waste (non-biodegradable) in black bins. Which of the following household waste did Nanu put into the black bin?

- (a) Egg shell
- (b) Aluminium can
- (c) Expired medicines
- (d) Garden waste

Q2. During summer vacations Mohit and his brother collected garbage from their house and segregated it into two groups.

Group 1: Fruit and vegetable peels, egg shells, waste food, tea leaves, dry leaves, news papers and paper bags.

Group 2: Polythene bags, broken glass, aluminium wrappers, nails, old shoes and broken plastic toys.

With the help of their grandmother they buried them into two pits in their backyard and labelled them and 1 and 2. After 4 weeks they removed the soil and observed the changes in the garbage. Choose their correct observation after 4 weeks-

- (a) Group 1: Waste rot completely, turned black.
Group 2: Did not rot at all

- (b) Group 1: Waste rot partially
Group 2: Waste rot partially
- (c) Group 1: Did not rot at all
Group 2: Rot almost completely, but still smells bad.
- (e) Group 1: Did not rot at all
Group 2: Rot only partially.

Q3. Ananya segregated the household waste into 3 bins- green, black and blue. She later drew a poster and shared it with her school friends, colony friends and relatives on social media platforms.

Few of her friend's got confused about the segregation of a few items. Choose the correct option to help them-



- (a) Sanitary Napkins-Blue Bin, Walnut shells-Green Bin, Paints-Black Bin, Cosmetics-Black Bin, Aluminium Foil-Blue Bin
- (b) Sanitary Napkins-Black Bin, Walnut shells-Green Bin, Paints-Black Bin, Cosmetics-Black Bin, Aluminium Foil-Blue Bin
- (c) Sanitary Napkins-Green Bin, Walnut shells-Green Bin, Paints-Black Bin, Cosmetics-Black Bin, Aluminium Foil-Blue Bin
- (d) Sanitary Napkins-Blue Bin, Walnut shells-Green Bin, Paints-Black Bin, Cosmetics-Black Bin, Aluminium Foil-Blue Bin

Worksheet: 12 (Mode: ONLINE)

Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, fibre and yarn; tap and fibrous roots; electrical conductors and insulators; on the basis of their properties, structure and functions

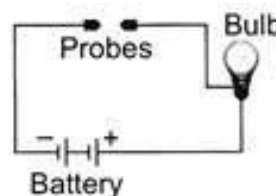
Q1. Which of the following statements are correct?

(i) Human body conducts electricity.
(ii) The air gap surrounding an electric circuit will conduct electricity. Hence, categorized as conductor.
(iii) Silver conducts electricity better than any other metal.
(iv) The air gap surrounding an electric circuit will not conduct electricity. Hence, categorized as Insulator.

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

Q2. Direction: Based on the given figure and answer the following question.

Which one of the following will be placed in between the probes to make the bulb glow?



- (a) Eraser
- (b) Comb
- (c) Metallic clip
- (d) Piece of stone

Q3. There is a mistake in the given classification table

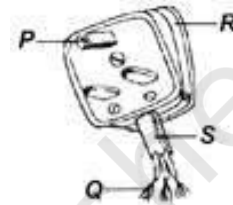
Non-conductor of electricity	Conductor of electricity
Wool	Copper
Cotton	Brass
Plastic	Iron

Cork	Steel
Graphite	Silver

Which of the following is placed incorrectly in the groups?

- (a) Wool
- (b) Graphite
- (c) Wool
- (d) Silver

Q4. To protect the user, part(s) ____ of the plug as shown in the figure must be made of electrical insulators.



- (a) P only
- (b) R only
- (c) R and S
- (d) Q and S

Q5. Ram, Shyam, Rita and Seeta all brought materials to test whether they are conductors or insulators in the lab. The materials each student brought to the lab are listed below:

RAM	Rubber band, metal fork, paper
SHYAM	Nail, wooden block, paper clip
RITA	Cork, bar of soap, Plastic scale
SEETA	Nail, metal hook, copper wire

Which student brought all the materials which are good conductors of electricity?

- (a) Ram
- (b) Shyam
- (c) Rita
- (d) Seeta

Worksheet: 13 (Mode: Online)

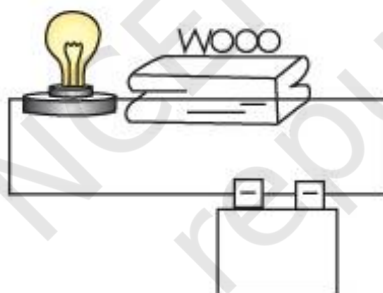
Learning Outcomes to be achieved:

Differentiates materials and organisms, such as, fibre and yarn; tap and fibrous roots; electrical conductors and insulators; on the basis of their properties, structure and functions

Q1. From the following, identify the sets that consist of conductors of electricity.

- (a) Nickel coin, cotton, copper wire
- (b) Eraser, clay, thermocol
- (c) Thermocol, nickel coin, copper wire
- (d) Graphite, nickel coin, copper wire.

Q2.



Tara had made an electric circuit as shown above:

How will the light bulb be affected in the circuit?

- (a) It will glow because wood is a good conductor.
 - (b) It will not glow because wood is a poor conductor
 - (c) It will glow because wood is an insulator.
 - (d) It will not glow because wood is a poor insulator.
- Q3. In an electric wire, the outer plastic case makes electric wire
- (a) More attractive as it is colourful
 - (b) Safe to touch as its insulator
 - (c) Long lasting as its sturdy
 - (d) Resistant to corrosion.

Q4. If we touch a live wire carrying current, we get a shock. This is because our body is a/an

- (a) conductor of electricity.
- (b) Insulator of electricity.
- (c) Source of electricity.
- (d) Both (b) and (c).

Q5. Electric heaters used for cooking have a filament or a heating coil placed on a plate made up of clay. Why is this so?

- (i) It is a good conductor of electricity.
- (ii) It is a bad conductor of electricity.
- (iii) It is porous.
- (iv) Clay is hard.

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

Q6. Which of the following does NOT conduct electricity?

- (a) Aluminium
- (b) Distilled water
- (c) Ceramic articles
- (d) Silver

Q7. Which one of the following is the correct grouping of different materials according to their electrical conductivity?

(a)	Electrical Insulators Plastic/wood	Electrical Conductors Mercury, tungsten
(b)	Electrical Insulators Carbon, steel	Electrical Conductors Iron, paper
(c)	Electrical Insulators Copper, gold	Electrical Conductors Nickel, clay
(d)	Electrical Insulators Iron, rubber	Electrical Conductors Silver, plastic

Q8. Which of the following statement is correct?

- (a) Those materials which allow electric current to pass through them are called insulators.
- (b) Rubber, air, water, wood, plastics (like polyethylene, PVC), asbestos all are examples of insulators.
- (c) A wax made candle, thermocol and glass bangle are non-insulators.
- (d) None of the above

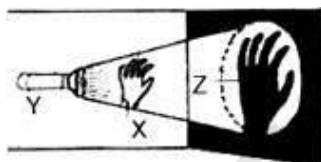
© NCERT
not to be republished

Worksheet: 14 (Mode: Face to face) (LO-3)

Learning Outcomes to be achieved:

Classifies materials, organisms and processes based on observable properties, e.g., materials as soluble, insoluble, transparent, translucent and opaque; change as can be reversed and cannot be reversed; plants as herbs, shrubs, trees, creeper, climbers; components of habitat as biotic and abiotic; motion as rectilinear, circular, periodic etc.

Q1. (I) Observe the figure given below.



Y is the light source. Z is a clear dark shadow. Which type of material should be placed at X. (opaque/transparent/translucent)

X(material)	Y	Z
-----	Light source	Dark Shadow

(II) Same experiment was conducted by another student using same source of light but different material. This time the shadow obtained was not very clear/ faint shadow. Can you judge the type of material placed at X. The distance between X, Y and Z remains same.

X(material)	Y	Z
-----	Light source	Faint Shadow

Q2. Match the events related to motion in Column I with the types of motions given in Column II

Column I	Column II
Motion of a child on a swing	Circular motion
The falling of the stone.	Periodic motion
Movement of the tip of the minute hand of a clock in 1 hr.	Rectilinear motion

Q3. Write the similarities and differences between the motion of a bicycle and a ceiling fan that has been switched on.

Difference:

.....
.....
.....

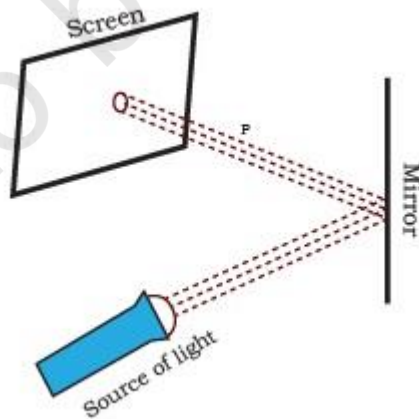
Difference:

.....
.....
.....

Q4. Identify the type of motion in each of the following case given below:

- (a) The movement of screwdriver-----
- (b) The movement of earth on its axis-----
- (c) The motion of a stone dropped from a roof. -----
- (d) Movements of blades of a windmill. -----

Q5. Observe the picture given in the figure. A sheet of some material is placed at position P, still the patch of light obtained on the screen. What is type of material of this sheet? Also give reason for your answer.



.....
.....

Worksheet: 15 (Mode: Face to Face)

Learning Outcomes to be achieved:

Classifies materials, organisms and processes based on observable properties, e.g., materials as soluble, insoluble, transparent, translucent and opaque; change as can be reversed and cannot be reversed; plants as herbs, shrubs, trees, creeper, climbers; components of habitat as biotic and abiotic; motion as rectilinear, circular, periodic etc.

Q1. Radha wanted to produce a darkest shadow if the object is placed in front of a source of light? Her mother gave her the following objects to try out the experiment with.

- (a) Glass window
- (b) Butter paper
- (c) Net cloth
- (d) Wooden block

(i) Which one should she use to get the darkest shadow and why?

.....
.....

(ii) With which material she will not get any shadow and why?

.....
.....

Q2. A glass sheet is given to you. As you know that glass sheet is a transparent material. Can you suggest the method; it can be converted into an opaque object without breaking?

.....
.....

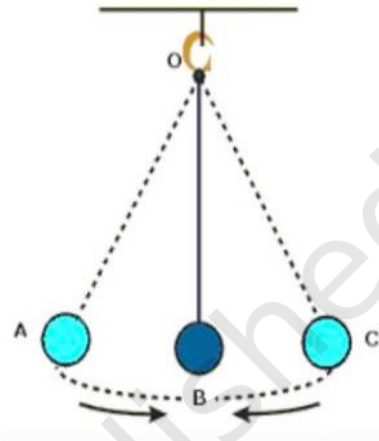
Q3. Seeta and Meghna are friends. They were riding their bicycle. Radha said that motion of wheel of cycle is rectilinear but Meghna said that the motion of cycle is circular. Who was correct and why?

.....
.....

Q4. Write one example of a motion which has both circular and periodic motion.

.....
.....

Q5. A pendulum consists of a small metal ball (also called a bob) suspended by a long thread from a rigid support, such that the bob is free to swing back and forth. Initially the pendulum is at position B. If we pull the bob a pendulu, a little to the left side up to position B and then release it, the pendulum bob starts moving like a swing between positions A and C. The swinging of pendulum bob from position A to C, and back to A is called one vibration. A pendulum always takes the same time to complete its one vibrator.



(i) Which type of motion is exhibited by pendulum and why?

.....
.

(ii) Is it similar to the motion of a ball dropped from a height? Give reason too

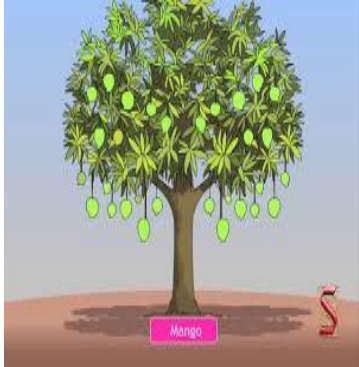

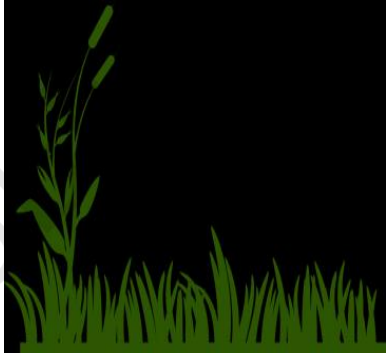
.....
.

Worksheet: 16 (Mode: Face to Face)

Learning Outcomes to be achieved:

Classifies materials, organisms and processes based on observable properties, e.g., materials as soluble, insoluble, transparent, translucent and opaque; change as can be reversed and cannot be reversed; plants as herbs, shrubs, trees, creeper, climbers; components of habitat as biotic and abiotic; motion as rectilinear, circular, periodic etc.

- Q1. Look at the pictures carefully and identify their type.
 a. Identify the names of the given pictures and answer the questions given below.

		
<p>A.....</p>	<p>B.....</p>	<p>C.....</p>

b. Are they similar in length?

.....

c. Classify the plants shown in pictures above under one of the three categories; that is; herbs, shrubs and trees.

.....

d. Which category has the biggest plants and which has the smallest?

.....

e. Which category has soft and tender stem and which has thick hard brown and very thick stem?

.....

Q2. Classify following plants on the basis of plant habits



Rose, Banyan, Mint, Neem, Tulsi, Sunflower

Herbs	Shrubs	Tree

Q3. Can you identify a plant in your house or neighbourhood, which has a long but weak stem? Under which category of stem modification would you classify it?

.....

Q4. Look at the given picture and answer the questions given below:

	
a.	b.

a. Which plant needs support to climb plant A or plant B?

.....
.....

b. Identify plant A and B and classify the pictures as climbers and creepers?

.....
.....

© NCERT
not to be republished

Worksheet: 17 (Mode: Face to Face mode)

Learning Outcomes to be achieved:

Classifies materials, organisms and processes based on observable properties, e.g., materials as soluble, insoluble, transparent, translucent and opaque; change as can be reversed and cannot be reversed; plants as herbs, shrubs, trees, creeper, climbers; components of habitat as biotic and abiotic; motion as rectilinear, circular, periodic etc.

- Q1. Silk is obtained from the cocoon of the silk worm. The cocoons are placed in boiling water to soften the natural gum, sericin that holds the cocoon together. The silk worm is killed and the cocoon is then unwound to get silk fibre. This is an example of cruelty towards animals.
- (a) Can you give two more examples of cruelty towards animals?
 - (b) Are humans justified in causing suffering to animals?
- Q2. Amrit visited his grandparents who live in a village. It was in the month of June and his grandparents did not have either cooler or AC. Though Amrit was used to air conditioner yet he did not complain or grumble.
- (a) What values were displayed by Amrit?
 - (b) What would you have done if you were in a similar situation?
- Q3. Ruhani accompanied her mother and father to a party she noticed that many of the guests filled up their plates with more food than they could eat and wasted a lot of food. She stood near the bin and requested people to finish whatever they had taken.
- (a) What values did Ruhani display?
 - (b) Why shouldn't we waste food?
- Q4. Manas has a pet dog. He also maintains a beautiful garden with his mother's help. He loves his dog and takes good care of him. He waters his plants regularly; He also tries to take care of stray animals in his colony.
- (a) What values does Manas show?

Q5. Aarav was drawing a figure on A4 size sheet but he wasn't getting it right. Instead of reusing the same sheet after rubbing off the imperfect figure, he just crumpled and dumped many sheets in the bin. His elder sister sumedha picked them up and used them to make papiermache items. She also told Aarav not to waste paper in future.

(a) Do you think Aarav's action was responsible?

(b) What values did sumedha display?

© NCERT
not to be republished

Worksheet: 18 (Mode: Online)

Learning Outcomes to be achieved:

Classifies materials, organisms and processes based on observable properties, e.g., materials as soluble, insoluble, transparent, translucent and opaque; change as can be reversed and cannot be reversed; plants as herbs, shrubs, trees, creeper, climbers; components of habitat as biotic and abiotic; motion as rectilinear, circular, periodic etc.

- Q1. In rectilinear motion, the objects move along
- (a) Closed line
 - (b) Perpendicular line
 - (c) Straight line
 - (d) Vertical line
- Q2. An object moves such that its distances from the fix point remain same
- (a) Oscillatory motion
 - (b) Periodic motion
 - (c) Rectilinear motion
 - (d) Circular motion
- Q3. Motion of a pendulum is an example of
- (a) Air motion
 - (b) Periodic motion
 - (c) Rectilinear motion
 - (d) Circular motion
- Q4. In periodic motion, the objects repeat itself after
- (a) Very small period
 - (b) A large period of time
 - (c) Same period of time
 - (d) Infinite period of time
- Q5. A ball rolling on a straight road is in:
- (a) Periodic motion
 - (b) Circular motion
 - (c) Rectilinear motion
 - (d) Both [B] and [C]

Q6. You are provided with the following materials

- (i) Magnifying glass
- (ii) Mirror
- (iii) Stainless steel plate
- (iv) Glass tumbler

Which of the above materials will you identify as opaque.

- (a) (I) and (ii)
- (b) (II) and (III)
- (c) (I) and (iv)
- (d) (iii) and (iv)

Q7. Sometimes in the morning, my car windows are fogged up. This allows me to see SOME of the road, but it is not very clear. This means my window is now _____.

- (a) Transparent
- (b) Translucent
- (c) Opaque
- (d) Can be either transparent or translucent.

Q8. If you were building a house in Alaska (where it can be daylight for months!), what type of material would be best to cover your windows with that would help keep the Sun out of your room so you can sleep?

- (a) Transparent material
- (b) Translucent material
- (c) Opaque material
- (d) Glass material

Worksheet: 19 (Mode: ONLINE)

Learning Outcomes to be achieved:

Classifies materials, organisms and processes based on observable properties, e.g., materials as soluble, insoluble, transparent, translucent and opaque; change as can be reversed and cannot be reversed; plants as herbs, shrubs, trees, creeper, climbers; components of habitat as biotic and abiotic; motion as rectilinear, circular, periodic etc.

Q1. Select the odd one out

- (a) Motion of moon around the earth
- (b) Motion of stone tied to a thread and whirling around
- (c) Motion of the person sitting on merry go round
- (d) Motion of a man walking on the straight road

Q2. Radha moves on a straight road from point A to point C. She takes 10 minutes to cover a certain distance XY and 20 minutes to cover the rest of distance YZ. Radha then turns back and takes 20 minutes to cover the distance YZ and 10 minutes to cover the rest of the distance to his starting point. Radha makes 5 rounds on the road the same way. The motion of Radha is

X-----Y-----Z

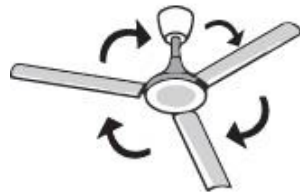
- (a) Only rectilinear motion.
 - (b) Only periodic motion.
 - (c) Rectilinear and periodic both.
 - (d) Neither rectilinear nor periodic
- Q3. The figures below show same type of motion. Choose the appropriate type of motion
- (a) Rectilinear motion
 - (b) Circular motion
 - (c) Periodic motion
 - (d) Both Circular and periodic motion



Spinning Top



Spinning Wheel



Fan



Pin Wheel

Q4. Which of the following is NOT an example of circular motion?

- (a) Movement of moon on its axis.
- (b) Movement of earth on its axis.
- (c) Movement of a person on the road.
- (d) Movement of blades of a fan.

Q5. Which of the following are examples of translucent material?

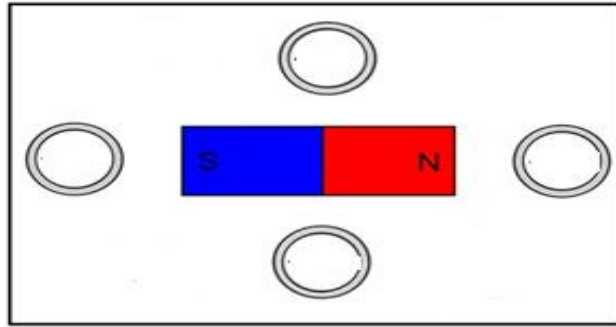
- (a) Sheet of polythene and smoke
- (b) Air, water and sheet of cellophane.
- (c) Sheet of aluminium, CD and sheet of carbon paper
- (d) Air, CD, butter paper

Worksheet: 20 (Mode: Face to Face) (LO-4)

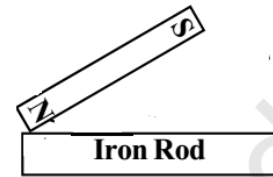
Learning Outcomes to be achieved:

Conducts simple investigations to seek answers to queries, e.g., what are the fruit nutrients present in animal fodder? Can all physical changes be reversed? Does a freely suspended magnet align in a particular direction?

- Q1. Aarohi had a bar magnet with her but its poles was not marked on it. She wanted to label poles of this magnet so she suspended it freely using a thread. The magnet rotated for some time and then came to rest in one direction?
- (a) The pole that points in geographic North direction is _____ pole of the magnet.
- (b) The pole which points in geographic South direction is _____ pole of the magnet.
- Q2. Seema had a bar magnet with her. Its poles were clearly marked on it. She decided to find geographic direction in which window of her room opened using the bar magnet.
- (a) What procedure she should follow so as to find the direction in which the window opened using a bar magnet ?
-
- (b) The South pole of the bar magnet always points in which direction ?
-
- Q3. Soham had many toy cars with him. They were made up of different materials like plastic, paper, wood, steel, iron, cardboard, aluminium and copper. He tried shifting these cars using a toy magnetic crane from one place to the other. His magnetic crane will be able to pick up cars made up of which materials?
-
-
- Q4. Sia was investigating effect of a bar magnet on a magnetic compass.
- (a) What do you think she will observe when she places a magnetic compass near a bar magnet, at different positions?
-
- (b) Complete the diagram representing Sia's observations by drawing needle of compass for each position.



- Q5. Suvir was conducting a simple experiment to convert a rectangular piece of iron into a magnet by moving it along its length. Draw arrows to show the direction in which the bar magnet should be moved over the iron piece so as to convert it into a magnet.



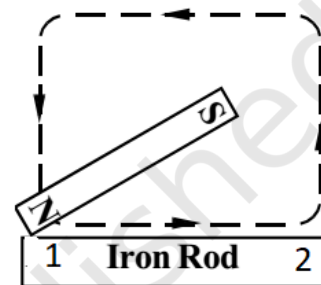
© NCERT
not to be republished

Worksheet: 21 (Mode: Face to Face)

Learning Outcomes to be achieved:

Conducts simple investigations to seek answers to queries, e.g., what are the fruit nutrients present in animal fodder? Can all physical changes be reversed? Does a freely suspended magnet align in a particular direction?

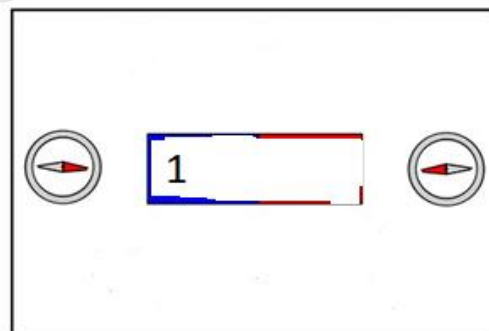
Q1. Suvir was conducting a simple experiment to convert a rectangular piece of iron into a magnet by moving it along its length. He moved the magnet over the iron piece as shown in the diagram about 30-40 times and observed that it got magnetised.



For this newly magnetised iron piece, identify the poles formed at point 1 and 2. Give reason for your answer.

.....
.....
.....

Q2. Sia was conducting an experiment to find poles of a bar magnet using a magnetic compass. The diagram below depicts one of her observations.



Complete the diagram by identifying pole 1 of the bar magnet. Give reason for your answer.

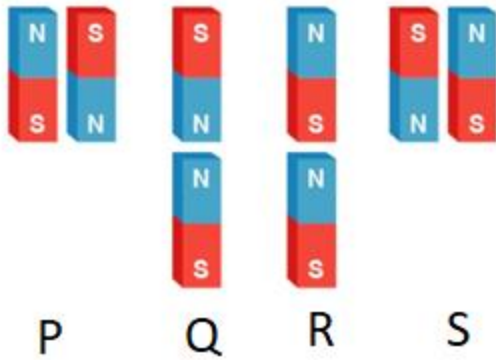
.....
.....

Q3. Teacher asked Ruhi to bring bar magnet from the lab cupboard. While bringing the magnets, she observed that they were stored in a peculiar way. Describe the specific method that is used to store bar magnets.

.....
.....

.....

Q4. A student was experimenting with bar magnets and placed them in various positions to observe action of magnetic force. Mention whether the two magnets will attract or repel in each case.



P :.....

Q:.....

R :.....

S :.....

Q5. Ritu used some commonly available material and conducted an experiment to hang a paper clip in air. The arrangement of the apparatus is shown below.



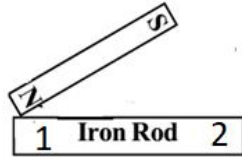
Describe the method using which Ritu was able to hang the paper clip in air as shown.

.....
.....
.....

Worksheet: 22 (Mode: ONLINE)

Learning Outcomes to be achieved:

Conducts simple investigations to seek answers to queries, e.g., what are the fruit nutrients present in animal fodder? Can all physical changes be reversed? Does a freely suspended magnet align in a particular direction?

- Q1. Saanvi brought a magnetic compass near one of the poles of the bar magnet. Then which one of the statements represents correct observation?
- (a) N- pole of the magnetic compass will align itself towards N – pole of the bar magnet
 - (b) N- pole of the magnetic compass will align itself towards S – pole of the bar magnet
 - (c) S- pole of the magnetic compass will align itself towards S – pole of the bar magnet
 - (d) S- pole of the magnetic compass will may align itself towards any pole of the bar magnet
- Q2. Which of the following methods cannot be employed to find poles of a bar magnet?
- (a) a bar magnet can be freely suspended to find its poles
 - (b) an iron piece can be used to determine poles
 - (c) a magnetic compass can be used to determine the poles
 - (d) another bar magnet with known poles can be used to determine unknown poles of a bar magnet
- Q3. Suvir was conducting a simple experiment to convert a rectangular piece of iron into a magnet by moving it along its length. Which of the following way to move the bar magnet over the iron piece in correct?
- 
- (a) N- pole of the bar magnet is repeatedly moved back and forth beginning from point 1
- (b) S- pole of the bar magnet is moved back and forth repeatedly beginning from point 2
- (c) S- pole of the bar magnet is moved from point 2 to point 1 and then from 1 to 2 again and again
- (d) N- pole of the bar magnet is moved from point 1 to 2 and the same direction is repeated again and again

Q4.



In the experiment shown below, the paper clip hangs in the air because

- (a) it is stuck to base of the tumbler
- (b) the tumbler is charged and is attracting the paper clip
- (c) the paper clip is hanging using a thread attached to the tumbler
- (d) it is being pulled by magnetic force of a magnet kept in the tumbler.

- Q5. Rohan wanted to magnetize a metallic piece using a bar magnet. Which of the following metallic rods he should choose for this experiment?
- (a) iron rod
 - (b) copper rod
 - (c) aluminium rod
 - (d) zinc rod

Worksheet: 23 (Mode: Online)

Learning Outcomes to be achieved:

Conducts simple investigations to seek answers to queries, e.g., what are the fruit nutrients present in animal fodder? Can all physical changes be reversed? Does a freely suspended magnet align in a particular direction?

- Q1. Vibha has a bar magnet with her. She suspends it with a thread and holds with her hand. She observes that it comes to rest after a while. Which direction is it?
- (a) Any random direction
 - (b) East-west direction
 - (c) North-south direction
 - (d) North-west direction
- Q2. Which of the following physical changes are not reversible?
- (a) Blowing air into a balloon
 - (b) Changing the sheet of paper into a toy aeroplane
 - (c) Freezing of water
 - (d) Stretching a wire by putting load on it
- Q3. Vedansh wants to know whether carbohydrate is present in cow fodder taken from his field. For this, what should he use to drop on the fodder to check for its' colour change to blue black?
- (a) Caustic soda solution
 - (b) Copper sulphate solution
 - (c) Hydrochloric acid solution
 - (d) Iodine solution

Q4. Suman wants to separate mustard oil from the mixture of water and mustard oil. Which process you will advise her to do so?

- (a) Filtration
- (b) Sieving
- (c) Sedimentation
- (d) Evaporation

© NCERT
not to be republished

Worksheet: 24 (Mode: ONLINE) (LO-5)

Learning Outcomes to be achieved:

Relates processes and phenomenon with causes, e.g., deficiency diseases with diet; adaptations of animals and plants with their habitats; quality of air with pollutants, etc

- Q1. Venkatesh observes that his mama has ruptured skin in the winter. His mother advised him to take guava. After few days of guava intake, his skin was alright. The same problem of Neelima's aunt was cured by including Amla pickle in her diet. Rohan is still suffering from the same. His diet is limited to Dal-roti. What can you conclude?
- (a) Scurvy is caused by the deficiency of guava.
 - (b) Scurvy is caused by the deficiency of amla pickle.
 - (c) Scurvy is caused by the deficiency of particular component which is present in guava and amla pickle.
 - (d) Dal-Roti is not a healthy diet.
- Q2. Complete lockdown was imposed in India during April-May 2020 because of Corona outbreak. The quality of air improved a lot in metropolitan cities as reported by media. It became possible because
- (a) Commercial activities were ceased off.
 - (b) Transportation activities were minimum.
 - (c) Consumption of power was reduced.
 - (d) All of the above.
- Q3. Snakes stay in burrows deep in the sand in summer in desert areas. They come out during the night because-
- (a) They like darkness.
 - (b) They do not like sunlight.
 - (c) They require coolness.
 - (d) They are fond of sand.
- Q4. Rabina's mother is very weak and faint. It may be because of the deficiency of the following element:

- (a) Calcium
- (b) Gold
- (c) Copper
- (d) Iron

© NCERT
not to be republished

Q4. It had rained all afternoon and in the evening when Rohit came out in the park, he observed many earthworms on the pavement. Explain, why the earthworms surface after a heavy downpour?

.....
.....

Q5. Krishna kept the following objects on a table placed in sunlight. He wanted to study shadow formed by these objects.

A steel bottle, a glass bottle, a red coloured translucent bottle and a blue coloured plastic bottle

(a) Will glass bottle form any shadow? Explain your answer.

.....

(b) What will be the colour of each shadow?

.....

(c) Krishna also observed that the length of the shadow kept changing throughout the day. Explain the reason for the changing length of the shadows.

.....

© NCBERT
not to be republished

Worksheet: 26 (Mode: Face to Face)

Learning Outcomes to be achieved:

Explains processes and phenomenon, e.g., processing of plant fibres; movements in plants and animals; formation of shadows; reflection of light from plane mirror; variations in composition of air; preparation of vermicompost, etc.

Q1. Human beings and all other animals breathe in oxygen yet the percentage of oxygen in the atmosphere remains fixed. Explain your answer.

.....
.....
.....

Q2. Kiaan was playing with an empty bottle and a bucket of water.

(a) He observed that if the bottle is held vertically as shown in the diagram then no water enters the bottle.



Explain reason for this observation.

.....
.....

(b) What conclusion can be drawn from his observation?

.....

í í í í í í í í ...í í

Q3. A radiosonde is an unmanned balloon capable of achieving high altitudes. It carries along with it instruments that measure various atmospheric parameters like altitude, pressure, temperature, humidity, wind speed, etc and transmit this data by radio to a ground receiver. It is commonly observed that as altitude increases the temperature decreases but in early 1900s the radiosondes revealed a layer, about 18 km above the surface, where temperature began to increase with altitude. Explain the reason behind increase in temperature with altitude, about 18 km above the Earth's surface.

.....
.....
.....
.....

Q4. Explain formation of circular images under a tree covered with large number of leaves?

.....
.....

Q5. (a) Explain the difference between image formed by a plane mirror and image formed by a pin holecamera?

.....

b) Identify the phenomenon responsible for image formation in both the cases.

.....

© NCERT
not to be republished

Worksheet: 27 (Mode: ONLINE)

Learning Outcomes to be achieved:

Explains processes and phenomenon, e.g., processing of plant fibres; movements in plants and animals; formation of shadows; reflection of light from plane mirror; variations in composition of air; preparation of vermicompost, etc.

- Q1. Human beings and all other animals breathe in oxygen yet the percentage of oxygen in the atmosphere remains fixed.
- (a) Plants balance oxygen level with the help of photosynthesis
 - (b) Ozone gets converted to oxygen to maintain oxygen level
 - (c) Water breaks down into hydrogen and oxygen molecules
 - (d) Oxygen is produced during decomposition of carbon-di-oxide
- Q2. Kiaan was conducting an experiment using an empty bottle and a bucket of water. He observed that if the bottle is held upside down vertically then no water enters the bottle. This shows that
- (a) Water flows from high pressure to low pressure
 - (b) There is high pressure in the bottle
 - (c) Air is trapped inside the bottle
 - (d) Air molecules exert pressure on the bottle's surface
- Q3. On a bright sunny day, while standing under an old banyan tree Sharanya noticed formation of circular images on ground. These images are of _____ and are formed as the leaves of act as _____.
- (a) Clouds, mirror
 - (b) Sun, pin hole camera
 - (c) Clouds, light absorbing surface
 - (d) Sun, mirror
- Q4. A pin hole camera is able to make a coloured and _____ image of the object as _____.
- (a) Erect, light reverses its direction
 - (b) Inverted, light bends at the aperture
 - (c) Erect, light gets reflected towards the screen
 - (d) Inverted, light travels in straight line.

Q5. Avi constructed a pin hole camera such that he was able to change the size of the aperture. What will he observe if he increases the size of the aperture?

- (a) The image becomes erect
- (b) The image becomes less blurry
- (c) The image becomes brighter
- (d) The image develops dark and light patches

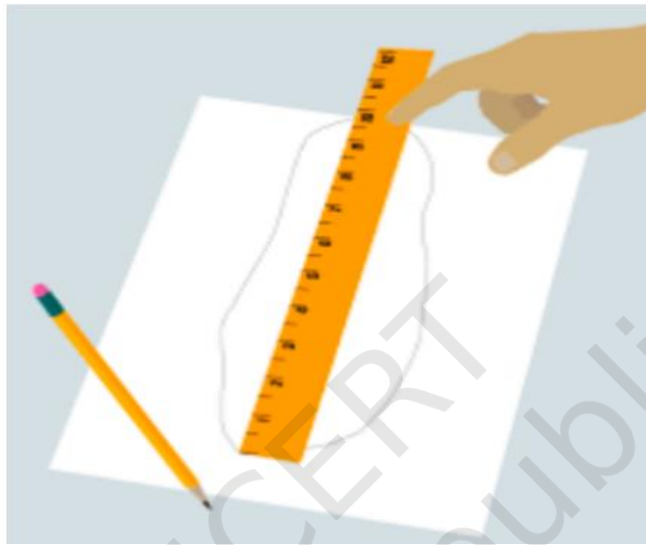
© NCERT
not to be republished

Worksheet: 28 (Mode: FACE TOFACE) (LO-7)

Learning Outcomes to be achieved:

Measures the physical quantity and expresses in SI units, e.g., length

Q1.



Above figure shows the method of calculating the size of the shoe

- (i) Sketch the outline of your shoe on a white sheet and measure it with the help of a scale as shown in the above figure

Ans - Shoe size is = cm.

- (ii) Convert the size of your foot in meters

.....

- (iii) Use your foot to measure the length and breadth of your room

Length of room = cm, m

Breadth of room = cm m

Q2.



Calculate the size/width of your hand span using the scale as shown above in the figure. Stretch the hand and note the distance between the thumb and the small finger.

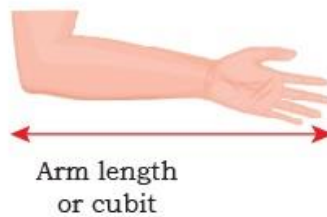
Width of your hand span = cm = m.

Number of hand spans used to measure the width of wooden block as shown above in the LHS of figure = 4

Width of wooden block shown in the figure = No. of hand spans
X size of your hand span = cm = m.

Q3. Figure below shows the ancient way of measuring things.

Ancient Measurement Units of Length



Measure

your hand span and arm length as shown in the figure above. Note down the readings in the table given below

S. NO	Size in cms (A) (use scale to measure)	Number of hand span/arm length to measure the length of TABLE (B)	Length of the TABLE = (A × B) in cms	In meters
HAND SPAN				
ARMLength				

Q4. Fill in the table

1 decametre (dam)m
1 hectometre (hm)m
1 kilometre (km)m
10 decimetrem
10000 cmm
1000000 mmm

Q5. Seema used a measuring tape made of an elastic material like rubber to measure length of her geometry box? Is it appropriate way of measuring the length? Support your answer with a reason.

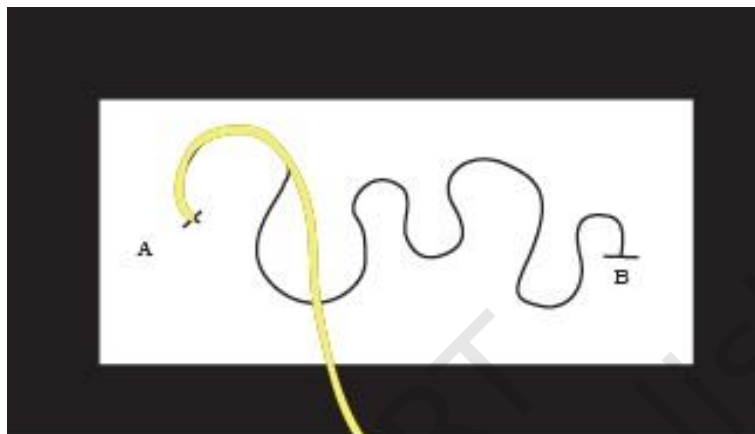
Ans.....

Worksheet: 29 (Mode: Face to Face)

Learning Outcomes to be achieved:

Measures the physical quantity and expresses in SI units

Q1. Measure the length of the curve AB as shown below in the figure with a thread



Make a sharp mark with a pen near one end of the thread. Place the mark at the starting point A of the curved line.

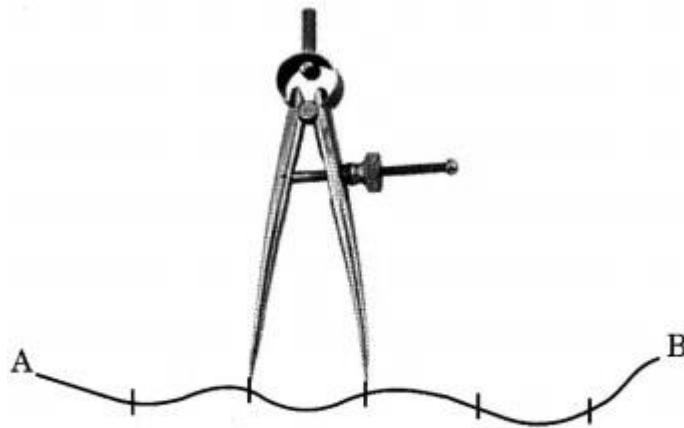
Place the thread along the curve with the help of your thumb or forefinger. Move the thread till you reach the endpoint.

Put a mark on the thread against the other end B of the curved line.

Now stretch the thread along the meter scale and measure the length between the two marks.

Length of curve AB = cm = m

Q2. Ram used another way of measuring the curved line length. He had used a divider to measure the curve AB. Let's measure the curve AB drawn below the figure with the divider



Measuring the length of a curved line with the help of a divider

(In the figure please mark each portion as 1, 2, 3, 4, 5 and 6) Open the divider equal to the portions marked done by one.

Place the two ends of the divider on the scale and note the length of each portion.

Length of portion 1 = cm

Length of portion 2 = cm

Length of portion 3 = cm

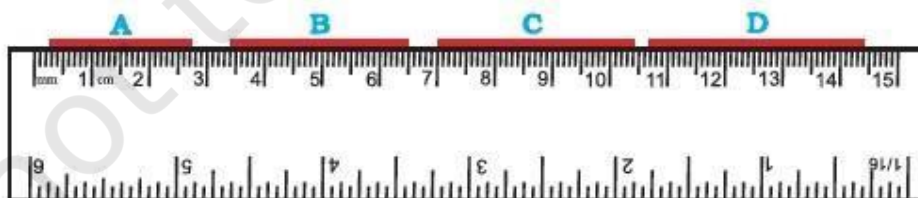
Length of portion 4 = cm

Length of portion 5 = cm

Length of portion 6 = cm

Length of curve AB = Length of portion 1 + 2 + 3 + 4 + 5 + 6 = cm = m

Q3. Four pieces of wooden sticks A, B, C and D are placed along the length of a long scale as shown in figure below. Find the lengths of A, B, C and D? Also convert the length in meter to m?



(a) Length of wooden stick A = cm = m

(b) Length of B = cm = m

(c) Length of C = cm = m

(d) Length of D = cm = m

Q4. Three students measured the length of the study table and reported their measurements. The values of their measurements were different. Could you think of three possible reasons for the difference in their readings?

.....
.....
.....

Q5. Why can hand span or arm length cannot be used as standard unit of length?

.....
.....
.....

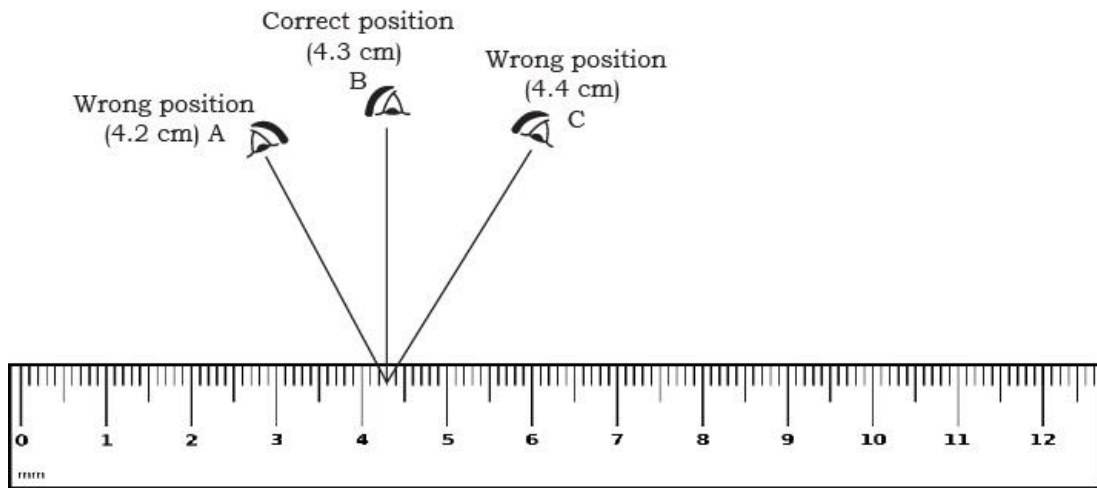
© NCERT
not to be republished

Worksheet: 30 (Mode: ONLINE)

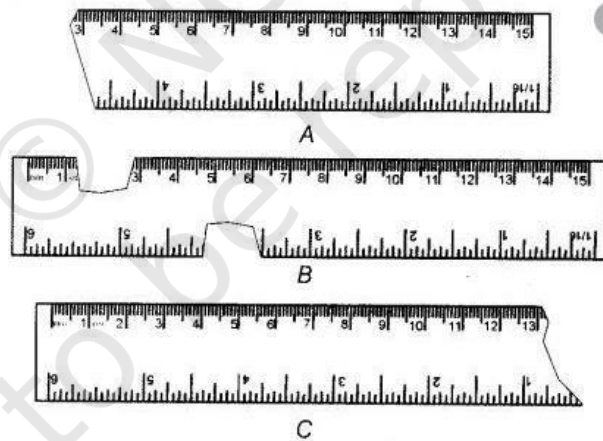
Learning Outcomes to be achieved:

Measures the physical quantity and expresses in SI units, e.g., length

- Q1. The SI unit of length is
- (a) Centimetres
 - (b) Meters
 - (c) Kilometers
 - (d) Hectares
- Q2. The standard unit of measurement is:
- (a) Muthi
 - (b) Foot
 - (c) Arm length
 - (d) Meter
- Q3. Height of a Ram is 1560 mm. This height in SI unit is equal to
- (a) 1.56 m
 - (b) 156 m
 - (c) 15.6 m
 - (d) 1560 m
- Q4. While measuring the length of a knitting needle, the reading on the scale at one end is 2 cm and at the other end is 22.1 cm. What is the length of the needle?
- (a) 20.1 cms
 - (b) 22.0 cms
 - (c) 12.1 cms
 - (d) 24.1 cms
- Q5. The length of a wooden stick was measured as 14 cms by Radha with the help of the scale which was broken. As a result the markings were starting from 1 cms instead of 0. The one end of a stick was at 1 cm. Where will be the other end of a stick on the scale?
- (a) 14 cms
 - (b) 15 cms
 - (c) 16 cms
 - (d) 14.1 cms



- Q6. (please remove the words correct position and wrong positions in the figure) The correct reading of the length of a black thread is
- 4.2 cm
 - 4.3 cm
 - 4.4 cm
 - All above
- Q7. You are provided with three scales A, B and C as shown in the figure to measure a length of 13 cm. For the correct measurement of length you will use the scale



- Only A
- Only B
- Only C
- Any of the scales

Worksheet: 31 (Mode: ONLINE)

Learning Outcomes to be achieved:

Measures the physical quantity and expresses in SI units, e.g., length

Q1. The distance between Ria's house and school is 1340m. Express this distance in kilometre.

- (a) 1.34km
- (b) 13.4km
- (c) 134km
- (d) .134km

Q2. Find the length of square in m.



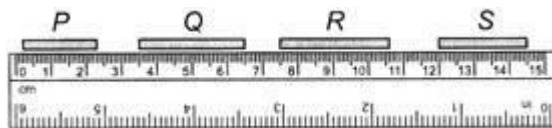
Check for this

- (a) 0.5m
- (b) 0.005m
- (c) 0.05m
- (d) 0.0005m

Q3. While measuring the length of a wooden box, the reading at one end is 1.5 cm and the other end is 4.7 cm. What is the length of the wooden box?

- (a) 4.7cm
- (b) 1.5cm
- (c) 3.2 cm
- (d) 6.2 cm

Q4. Four pieces of wooden sticks P, Q, R, and S are placed along the length of a 15 cm long scale as shown in figure. Length of these P, Q, R, and S are



- (a) $P=2.4\text{cm}$ $Q=6.5\text{cm}$ $R=10.5\text{cm}$ $S=14.5\text{cm}$
- (b) $P=2\text{cm}$ $Q=3\text{cm}$ $R=3\text{cm}$ $S=2.5\text{cm}$
- (c) $P=2.5\text{cm}$ $Q=3.5\text{cm}$ $R=3.5\text{cm}$ $S=2\text{cm}$
- (d) $P=2\text{cm}$ $Q=3.5\text{cm}$ $R=3.5\text{cm}$ $S=2.5\text{cm}$

Q5. Figure below shows a measuring scale which is usually supplied. Which of the following distance can be measured with this scale by geometry box using it only once?



- (a) 0.1m
- (b) 0.15m
- (c) 0.5m
- (d) 5m

© NCERT
not to be republished

Worksheet: 32 (Mode: ONLINE)

Learning Outcomes to be achieved:

Measures the physical quantity and expresses in SI units, e.g., length

Activity

Outstretch your right-hand (say, Fig. 1). The distance from the tip of the thumb to the tip of the little finger on your outstretched hand is called your handspan. It is typically about 16 cm (160 mm), but it depends how big your hands are!



Fig. 1



Fig. 2



Fig. 3

Measure your handspan with the help of a scale (see Fig. 2).

Observe the following items at your home and try to take their lengths, in terms of your handspans, as shown in Fig. 3). Record your observations in the following table.

Table – 1: Measurements taken by yourself

1 handspan = cm; or m (as you know that 1 cm = 0.001 m or 1 m = 100 cm)

S.N o.	Item	No. of handspans	Length in cm	Length in m
1.	Table			
2.	Bed			
3.	Door			
4.	Science Book			
5.	Pencil			

6.	Bag			
7.	Any other			

Ask your friend or your sibling to make the similar measurements of these items.

Table – 2: Measurements taken by your friend or your sibling

1 handspan = cm; or m (as you know that 1 cm = 0.001 m or 1 m = 100 cm)

S.N o.	Item	No. of handspans	Length in cm	Length in m
1.	Table			
2.	Bed			
3.	Door			
4.	Science Book			
5.	Pencil			
6.	Bag			
7.	Any other			

Compare these measurements with that of yours.

Table – 3: Comparison of measurements taken by you and taken by your friend or your sibling

1 handspan of yours = cm; or m

1 handspan of your friend or sibling = cm; or m

S.N o.	Item	Measurement taken by		
		Yourself (m)	Other Person (m)	Difference (m)
1.	Table			
2.	Bed			
3.	Door			
4.	Science			

	Book			
5.	Pencil			
6.	Bag			
7.	Any other			

Q1. Which one of the following could be the length of your table?

1. 10 cm
2. 30 cm
3. 100 cm
4. 500 cm

Q2. In which of the situation your shadow in sun will be the smallest?

1. At sunrise
2. At noon time
3. At sunset
4. Same at all the times.

Q3. The length of your shadow formed by the sun will be maximum at about

1. 6:30 in the morning
2. 12:00 noon
3. 10:00 pm
4. 10:00 am

Q4. Which one of the following object is in motion?

1. House
2. Table
3. Clock
4. Hour's hand of your clock

Q5. Which one of the following could be the thickness of human hair?

1. 1 cm
2. Less than one mm
3. 1 mm
4. 10 cm

Q6. Which one of the following used to be a common measurement unit in ancient times?

1. A meter scale
2. The length of a tortoise
3. The trunk of elephant
4. The length of a foot

Q7. Why do we use the SI system of units for measurement?

1. This is a very old system of units.
2. This is a very convenient system of units.
3. This system ensures the uniformity in measurement all over the world.
4. It is an Indian system of units of measurements.

Q8. Which one of the following object may be conveniently used to measure the length of a curved line?

1. A straight rod
2. A hollow pipe
3. A thread
4. A protractor (dee)

Worksheet: 33 (Mode: Face-to-Face) (LO-8)

Learning Outcomes to be achieved:

Draws labelled Diagrams/flow charts of organisms and processes, e.g., parts of flowers; joints; filtration; water cycle, etc.

Q1. Identify the structure seen in the picture and write three sentences about it.



- Q2. Name the male reproductive part of the flower. Draw its labeled diagram.
- Q3. Draw a labeled diagram of a leaf and label the following in the diagram.
- (a) Lamina
 - (b) Petiole
 - (c) Stem
- Q4. Draw a diagram of L.S. and T.S. of ovary to show ovules.
- Q5. Name the innermost part of the flower and identify its parts with the help of a diagram.

Worksheet: 34 (Mode: Face to Face)

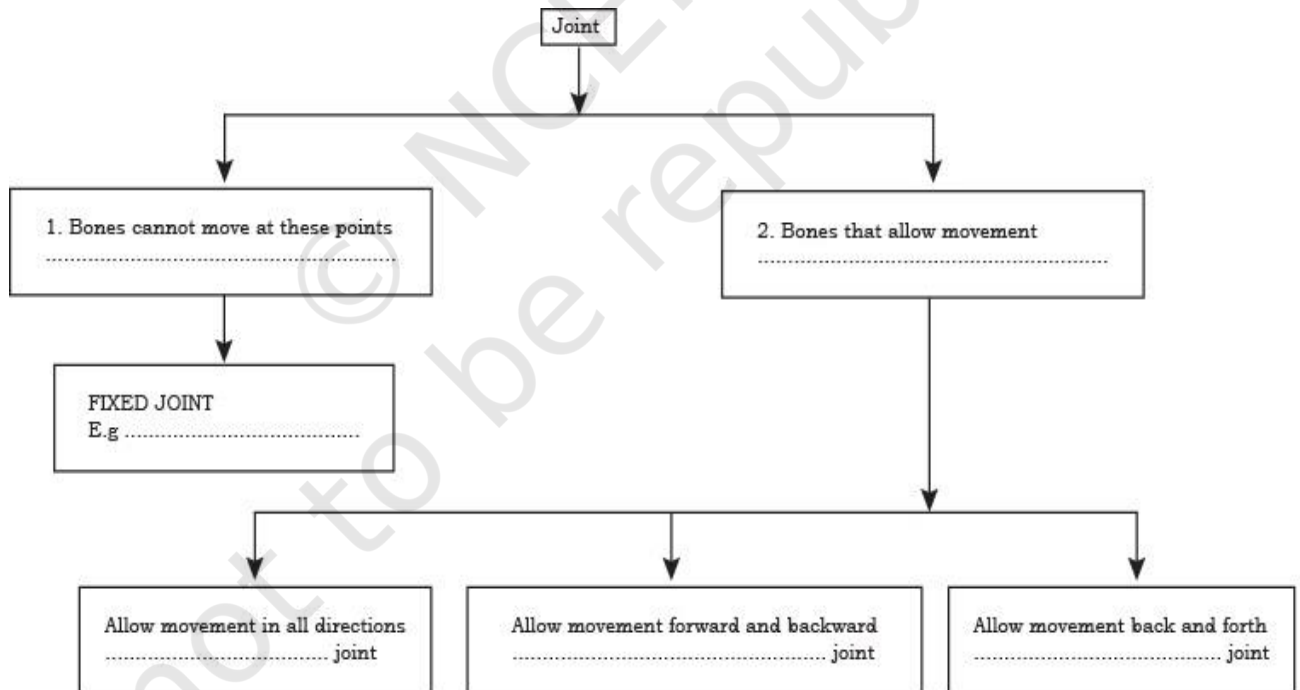
Learning Outcomes to be achieved:

Draws labelled Diagrams/flow charts of organisms and processes, e.g., parts of flowers; joints; filtration; water cycle, etc

Q1. Draw a diagram of ball and socket joint. Also specify which part forms ball and socket respectively.

Q2. From the box given fill the flow chart given below.

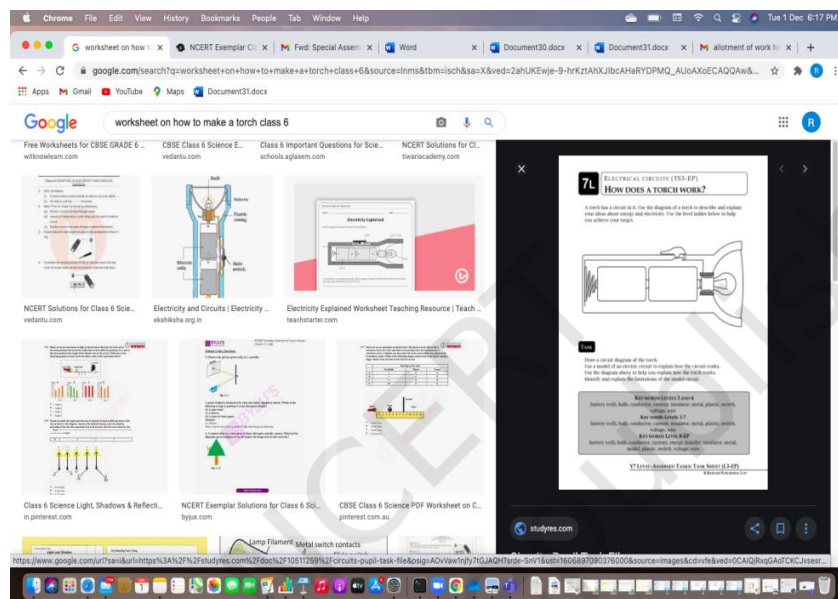
Movable	upper jaw	hinge joint
Pivot joint	immovable	fixed



Worksheet: 35 (Mode: Face to Face) (LO-9)

Learning Outcomes to be achieved:

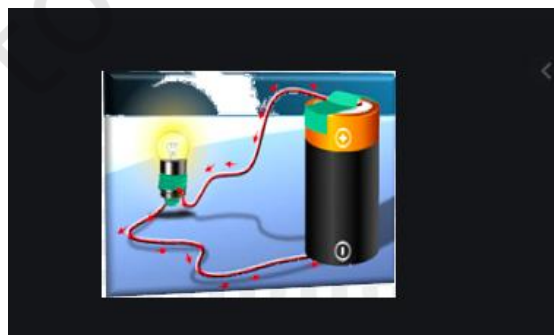
Constructs models using materials from surroundings and explains their working, e.g., pinhole camera, periscope, electric torch, etc.



Let's construct our own torch:

Q1. You are provided with a torch bulb, one cell, and pieces of wire with exposed ends.

Arrange the material as shown in the figure below:



I. What was your observation?

.....
.....

II. What makes the bulb glow?

.....
.....

III. Will the bulb continue to glow forever, give reason?

.....
.....

IV. Which part of the bulb gives light?

.....
.....

V. Does bulb have negative and positive terminal?

.....
.....

VI. If you had to put two cells in a torch, with the help of diagram show how cells are connected.

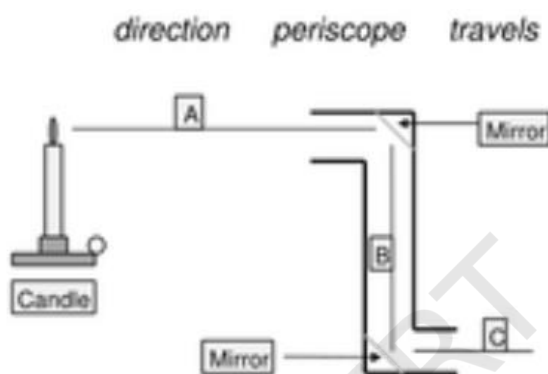
.....
.....

© NCERT
not to be republished

Worksheet: 36 (Mode: Face to Face)

Learning Outcomes to be achieved:

Constructs models using materials from surroundings and explains their working, e.g., pinhole camera, periscope, electric torch, etc.



Q1. Nikhil's group had made **Periscope, using** the idea that mirrors can change the direction of light. Draw one arrowhead on each of the lines A, B and C to show the direction of light travels to allow the person to see the candle in the above figure.

Q2. You can make a simple periscope by placing two mirrors in a Z type box as shown above. Answer the following questions based on the model you have made

(a) Type of mirrors used.....

(b) Angle at which the mirrors are placed.....

(c) Both the mirrors should have reflecting surface facing each other or polished surfaces facing each other-----

(d) Give one use of a periscope

.....

Worksheet: 37 (Mode: Face to Face)

Learning Outcomes to be achieved:

Constructs models using materials from surroundings and explains their working, e.g., pinhole camera, periscope, electric torch, etc.

Make your own camera without a lens which uses a very small hole pierced in one end to allow light to pass through.

Materials required: Two cardboard boxes fit into one another, a sheet of tracing paper and a pair of scissors.

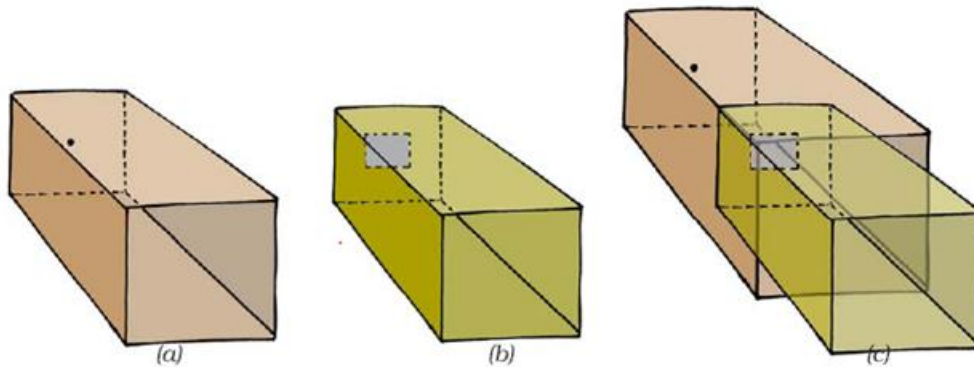
METHOD

- (1) Take two boxes so that one can slide into another with no gap in between them. Cut open one side of each box.
- (2) On the opposite face of the larger box, make a small hole in the middle.
- (3) In the smaller box, cut out from the middle a square with a side of about 5 to 6 cm.
- (4) Cover this open square in the box with tracing paper (translucent screen).
- (5) Slide the smaller box inside the larger one with the hole, in such a way that the side with the tracing paper is inside. Now it is ready to use.

Hold the pin hole camera look through the open face of the smaller box. You should use a piece of black cloth to cover your head and the pinhole camera.

(i) Now focus on the object you want to capture in the camera. Make sure that the objects you wish to look at through your pinhole camera are in bright sunshine.

(ii) Move the smaller box forward or backward till you get a picture on the tracing paper pasted at the other end.



After making the model explore the answers to the following questions:

Q1. On what principal does the Pin hole camera works?

.....

Q2. Discuss the properties of the image formed by the pin hole camera?

.....

.....

Q3. Where is the picture of the object to be viewed seen in the pin holecamera (screen of the camera)

.....

Q4. What happens to the size and brightness of the image if the distance between the pin hole and screen is increased?

.....

.....

Q5. What happens to the size of the image if the distance between the object to be viewed kept in front of the camera and the pin hole is increased?

.....

.....

Worksheet: 38 (Mode: Online)

Learning Outcomes to be achieved:

Constructs models using materials from surroundings and explains their working, e.g., pinhole camera, periscope, electric torch, etc.

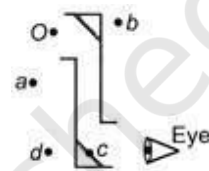
- Q1. When we pass under a tree covered with large number of leaves, we notice small patches of sun light under it. These circular images are, in fact, pin hole images of the Sun. The gaps between the leaves, act as the pin holes. These gaps are all kinds of irregular shapes, but, we can see circular images of the Sun. This is called Natural Pinhole Camera
- (I) which of the following act as pinhole in the Natural Pinhole Camera?
- (a) Leaves acts as pinhole
 - (b) Gaps between the leaves
 - (c) Water droplets
 - (d) Sun acts as pin hole camera
- Q2. Pinhole camera always produces an -----
- (a) An erect and small image
 - (b) An erect and enlarged image
 - (c) An Inverted and small image
 - (d) An inverted and enlarged image
- Q3. If the hole of the pin hole camera is made bigger, the image formed would be
- (a) two
 - (b) Blurred
 - (c) many
 - (d) Sharp
- Q4. Which of the following statements is true?
- (a) The image formed by a pinhole camera is inverted because light travels in a straight line.
 - (b) Light does not change its direction on reflection.

- (c) As we move the object away from the light source, the shadow of the object becomes smaller.
- (d) Reflection is possible only from polished surface.

Q5. In a periscope two plane mirrors are fitted at its two ends in such a way that:

- (a) They intersect each other.
- (b) They are parallel to one another.
- (c) They make an angle of 90° with each other.
- (d) They make an angle of 30° with each other.

Q6. The diagram shows an object O viewed using two mirrors. A person looks into the mirrors as shown. At which position is the image of O seen?

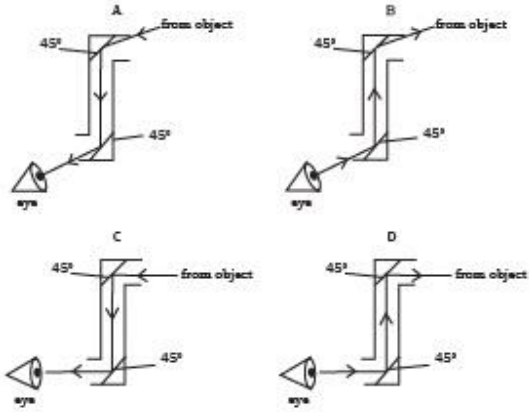
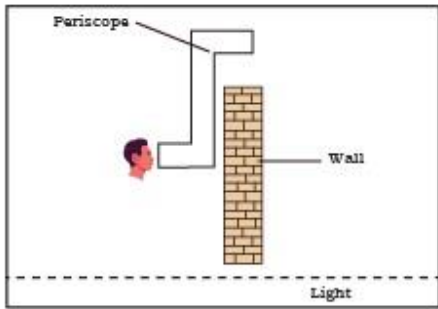


- (a) (a)
- (b) (b)
- (c) (c)
- (d) (d)

Q7. When the switch of the electric torch is in ON position electric current flows from the electric cell to the filament of the electric bulb due to which it gets-----and the bulb gets-----

- (a) Cooled, doesn't glow
- (b) Heated, doesn't glow
- (c) heated, glows
- (d) Cooled, glows

Q8. The following diagram shows a child using a periscope to look at an object on the other side of the wall. Which diagram shows a correctly drawn ray of light from the object?



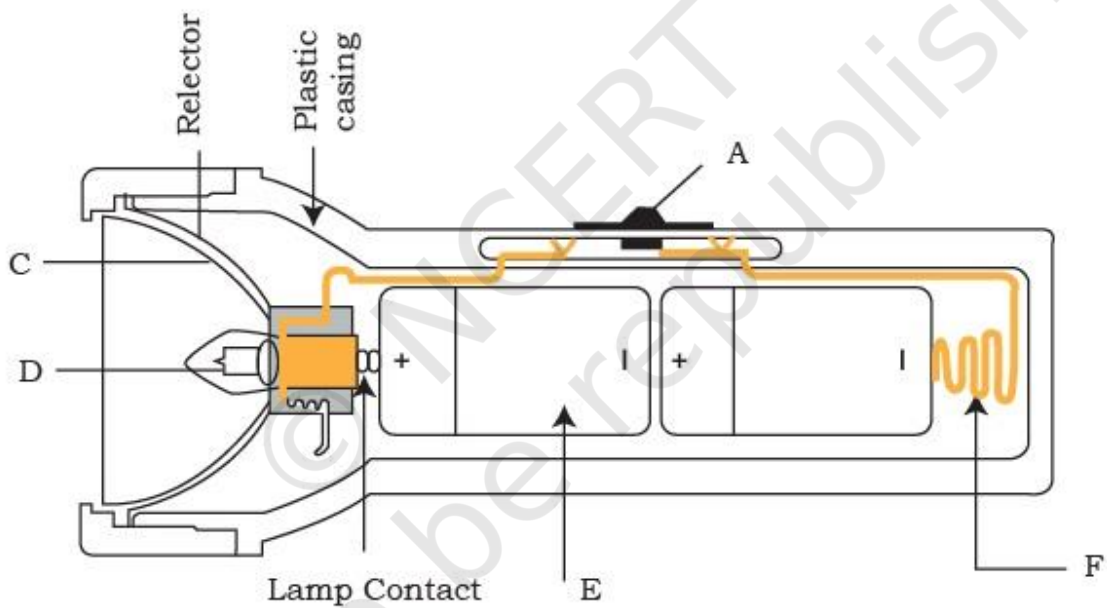
© NCERT
not to be republished

Worksheet: 39 (Mode: ONLINE)

Learning Outcomes to be achieved:

Constructs models using materials from surroundings and explains their working, e.g., pinhole camera, periscope, electric torch, etc.

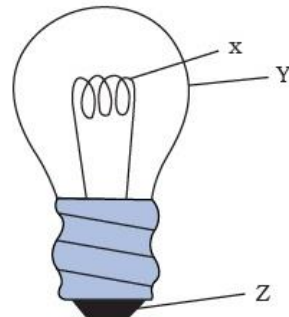
Q1. Radha was playing with an electric torch. She wanted to see the various parts of the torch and how do they join up to give light. The cross-section of the torch is as follows



Label the parts marked in the figure and also write its function.

NAME	FUNCTION
A-----	-----
C-----	-----E-
-----	-----D--
-----	-----

Q2. Ram was very curious to know what's inside the bulb. Below is the figure given of a bulb which we use it in torch? Please label its parts

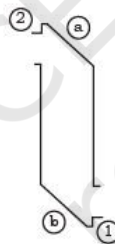


X-----

Y-----

Z-----

Q3. See the figure shown below and answer the following questions



(a) Draw the object which you would like to see,also include the face with the eyes too

(b)What needs to be placed inside the periscope at (a) and (b) Draw theses and label them in the figure above?

(c) Draw arrows to show how light moves through the periscope so that the person can see the object.

(d) Describe the journey that light takes through the periscope.

.....

Worksheet: 40 (Mode: Face to Face) (LO-10)

Learning Outcomes to be achieved:

Applies learning of scientific concepts in day to day life e.g., selecting food items for a balanced diet; separating materials; selecting season appropriate fabrics; using compass needle for finding directions; suggesting ways to cope with heavy rain/drought etc.

Q1. A compass is a simple device that is used to find geographic directions by means of a magnetised needle that is free to rotate. However, if a magnetic compass is brought near bar magnet then will it still now the geographic direction correctly? Give reason for your answer.

.....
.....

Q2. Scuba diving is an incredible extreme sport in which the diver goes deep into the ocean water using a special breathing apparatus called SCUBA. Why scuba divers need to carry a breathing apparatus with them?

.....
.....

Q3. Explain formation of circular images, when we pass under a tree covered with large number of leaves?

.....
.....

Q4. Small iron pieces in food products pose a safety risk to consumers and can damage processing equipment. Suggest a method to detect and remove iron contaminants from food.

.....

Q5. One day after performing the experiment in Science laboratory, Soham observed that his class mates had left a lot of all pins scattered on the tables in the laboratory. He wanted to collect all of them but was also getting late for his next class. Suggest a method using which he can quickly complete this task?

.....
.....

© NCERT
not to be republished

Worksheet: 41 (Mode: Face to Face)

Learning Outcomes to be achieved:

Applies learning of scientific concepts in day to day life e.g., selecting food items for a balanced diet; separating materials; selecting season appropriate fabrics; using compass needle for finding directions; suggesting ways to cope with heavy rain/drought etc.

Q1. The diagrams given below show magnetic separation using two different types of magnetic separators. Observe these diagrams carefully and fill in the blanks that follow.

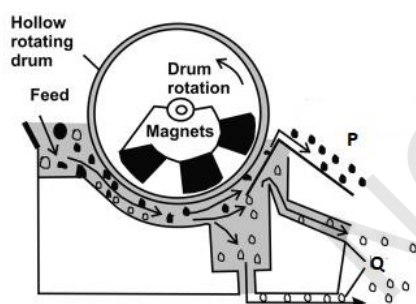


Figure 1

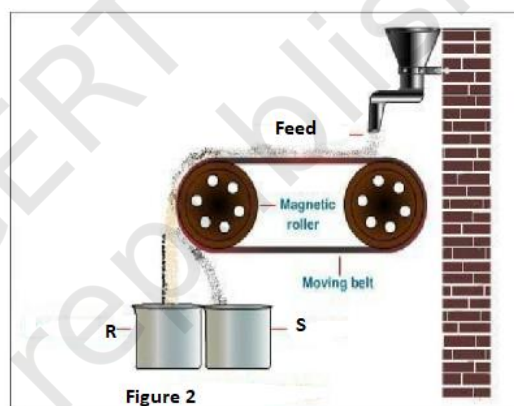
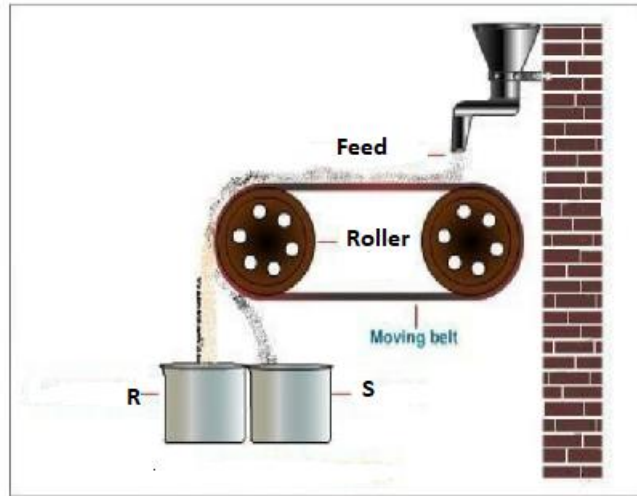


Figure 2

- (a) Material P is _____ and material Q is _____.
(b) Material R is _____ and material S is _____.

Q2. In the diagram shown in below, when scraps of different metallic substances were sent through the belt then the machine was able to separate them into two containers R and S. It was found that metals in container R were non magnetic whereas ones in S were magnetic.



What is the nature of the material of the rollers?

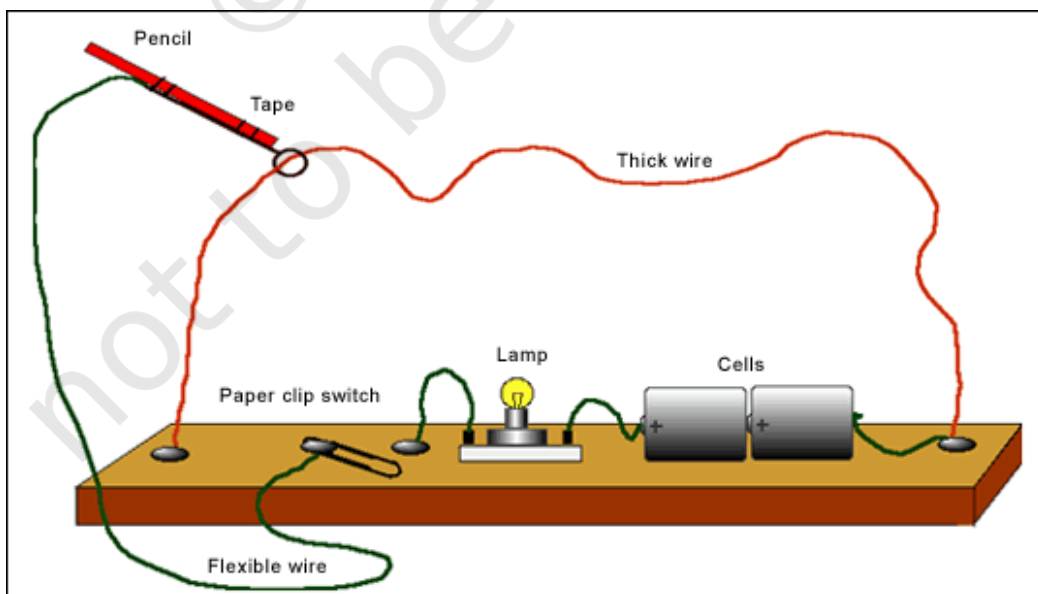
.....

Q3. Complete the following passage using suitable words

_____ metal is often used for making domestic wires as it is a _____ of electricity. However, in smart phones _____ metal is used as connector in place of _____.

It is because it doesn't rust or corrode and helps to transmit digital data at a faster pace.

Q4.



(a) Name the material that can used to make thick wire and the flexible wire as shown in the diagram

.....

(b) When the switch is on, then under what conditions the bulb will begin to glow and why?

.....

(c) Name another material / object that can be used to replace the pencil shown in the diagram. Give reason for your answer.

.....

Q5. Sia observed shadows of four flowers - (A) a red rose, (B) a yellow rose, (C) a hibiscus flower (China rose) and (D) a marigold flower. Answer the following questions based on Sia's observations.

(a) What is the colour of each shadow?

.....

(b) State True or False?

(i) Red rose and yellow rose both have shadow of same shape.

(ii) If shadow of Hibiscus flower is observed from different angles and sides then the shape of the shadow is found to be different at different angles. _____.

(iii) Colour of the shadow is same as the colour of the flower.
_____.

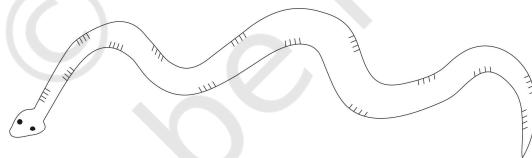
Worksheet: 42 (Mode: Face to Face mode)

Learning Outcomes to be achieved:

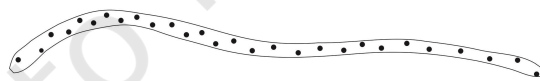
Applies learning of scientific concepts in day to day life e.g., selecting food items for a balanced diet; separating materials; selecting season appropriate fabrics; using compass needle for finding directions; suggesting ways to cope with heavy rain/drought etc.

- Q1. Ankur doesn't like green vegetables but likes to eat cakes, noodles, cookies and pasta. He often complains of constipation. Please suggest the food items that he must include in his diet to get rid of the problem. Give reason for your answer.
- Q2. Shivani has prepared Rahr dal and Rice for lunch. She soaked dal and rice after washing them repeatedly. She discarded the water in which dal and rice were soaked and added fresh water to both of them before cooking. Is this method right? What do you suggest?
- Q3. In the figure shown below, there are two snakes of the same size (moving) slithering on sand. Can you tell which one of them would move faster and why?

Snake A



Snake B



- Q4. Kirit was sitting in the classroom. He could not see the blackboard clearly so he breathed out on his glasses. Why did he do so?
- Q5. Sumer, a farmer clears his field daily. He burns dry fallen leaves and small twigs regularly. His friend Anupam told him not to burn them. Who among the two is right? Can you suggest an environment friendly way to dispose the dry leaves?

Worksheet: 43 (Mode: ONLINE)

Learning Outcomes to be achieved:

Applies learning of scientific concepts in day to day life e.g., selecting food items for a balanced diet; separating materials; selecting season appropriate fabrics; using compass needle for finding directions; suggesting ways to cope with heavy rain/drought etc.

Q1. Match column I with column II and select the correct answers using the codes given below both the columns.

Column I

- A. Vitamin A
- B. Phosphorus
- C. Vitamin B
- D. Iodine

Column II

- w. sea weeds, fish and shrimp
- x. liver, whole grains and legumes
- y. banana, milk and whole grains
- z. Fish oil ,papaya and carrots

- (a) A-z; B-y; C-x; D-w
- (b) A-y; B-z; C-w; D-x
- (c) A-x; B-w; C-z; D-y
- (d) A-w; B-x; C-y; D-z

Q2. Read the statements given below carefully and choose the correct options.

1. Fresh fruits and vegetables are main source of roughage.
2. Most food items, usually, have more than one nutrient.
3. Rice is a “carbohydrate rich” source of food.

- (a) Statement 1 is correct while statements 2 and 3 are incorrect.
- (b) Statement 2 is correct while statements 1 and 3 are incorrect.
- (c) Statement 3 is correct while statements 1 and 2 are incorrect.
- (d) All the three statements are correct.

Q3. Fast food like burger, pizza and French fries taste good but they contain a huge amount of fat. Eating too much of fat rich foods may result in a condition called –

- (a) Goiter
- (b) Obesity
- (c) Rickets
- (d) Anaemia

Q4. All the deficiency diseases can be prevented by-

- (a) maintaining good personal hygiene
- (b) getting vaccinated
- (c) taking balanced diet
- (d) taking medicine

Q5. Anita went to a dentist with a complaint of bleeding gums. In your opinion, which of the following food items should she add to her diet-

- (a) Eggs
- (b) Milk
- (c) Fresh fruits
- (d) Whole grains

© NCERT
not to be republished

Worksheet: 44 (Mode: ONLINE)

Learning Outcomes to be achieved:

Applies learning of scientific concepts in day to day life e.g., selecting food items for a balanced diet; separating materials; selecting season appropriate fabrics; using compass needle for finding directions; suggesting ways to cope with heavy rain/drought etc.

Q1. The diagrams given below show magnetic separation using two different types of magnetic separators.

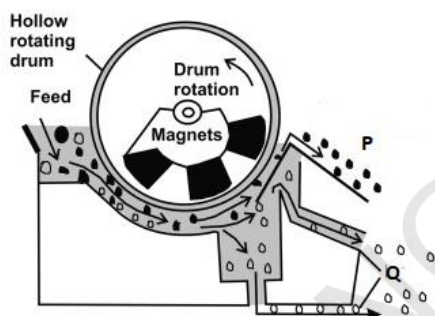


Figure 1

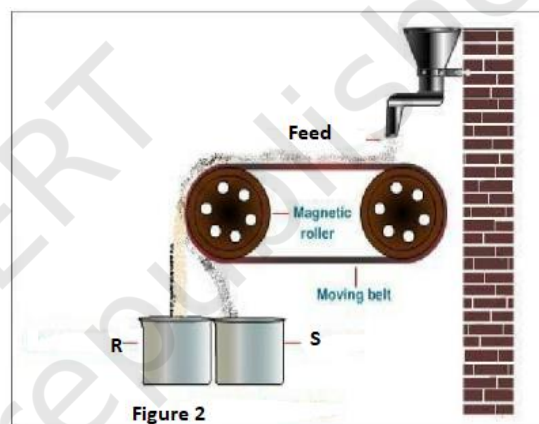


Figure 2

Which of the following statements is true with respect to the diagrams given above?

- (a) P and R are magnetic materials whereas Q and S are non-magnetic materials.
- (b) P and S are magnetic materials whereas Q and R are non-magnetic materials.
- (c) Q and P are magnetic materials whereas S and R are non-magnetic materials.
- (d) Q and R are magnetic materials whereas P and S are non-magnetic materials.

- Q2. Magnetic separation is not used in which the following cases?
- (a) Separation of metallic contaminants from food
 - (b) Separation of magnetic material from scraps
 - (c) Recycling centres separate iron objects from other metals
 - (d) Separation of all components of a liquid mixture
- Q3. which of the following can act as a magnetic compass
- (a) A piece of load stone floating on a stick in water.
 - (b) An iron needle freely floating with the help of a cork piece
 - (c) A steel needle freely floating with the help of a foam piece.
 - (d) A bar magnet immersed in water
- Q4. Gold is used in smart phones because
- (a) It can be beaten into sheets
 - (b) It has a brilliant shimmer
 - (c) It is a good conductor of electricity
 - (d) It can reflect light
- Q5. Simar observed shadows of four flowers - (A) a red rose, (B) a yellow rose, (C) a hibiscus flower (China rose) and (D) a marigold flower. Which of the following statements represents correct observation?
- (a) Shadows of flowers A and C were red whereas shadows of flowers B and D were yellow.
 - (b) All shadows were of same colour but different shape.
 - (c) Shadows of flowers A, B and C were of same shape but shadow of flower D was different in shape
 - (d) Shadow of a flower remains of same shape and colour even if a flower is turned around a little.

Worksheet: 45 (Mode: ONLINE) (LO-11)

Learning Outcomes to be achieved:

Make efforts to protect environment, e.g., minimising wastage of food, water, electricity and generation of waste; spreading awareness to adopt rain water harvesting; care for plants etc.

Q1. Why it is not advisable to burn dried leaves and other plant wastes anywhere in any parts of the country? The following are the probable reasons:

- A. It cleans the environment
- B. It produces smoke and harmful gases
- C. It can be used as a compost
- D. It helps in reducing waste pollution

Choose the correct options:

- i. A and B
- ii. B and C
- iii. C and D
- iv. A and D

Q2. Awareness to adopt rain water harvesting is necessary because....

- A. In order to avoid flood mitigation
- B. In order to use at the time of water scarcity
- C. In order to decharge ground water
- D. In order to pour the rain water directly to the sewage

Select the correct answer from the following options.

- i. A and B
- ii. B and C
- iii. A and C
- iv. A and D

Q3. What are the effective ways to spread awareness to adopt rain water harvesting at home or schools?

- A. Through workshop
- B. Through exhibition
- C. Through essay, drawing, debate or rangoli competition
- D. All of the above

Q4. Paheli is very fond of plants where she planted plants on pots. His brother, Boojho accidentally coated Vaseline on one of the healthy plant, what will happen to the healthy plants?

- A. Gaseous exchange will continue
- B. Photosynthesis will not take place
- C. Transpiration will stop
- D. Plant will die

Choose the correct options:

- i. A, B, C
- ii. B, C, D
- iii. A, C, D
- iv. A, B, D

Q5. How will you reduce/minimise wastage of water in school? Suggest three effective ways.

Worksheet: 46 (Mode: Face to Face) (LO-12)

Learning Outcomes to be achieved:

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

While having lunch, Boojho wonders what components may contain in the food he is eating. The food may consist of nutrients such as carbohydrates, proteins, fats, vitamins and minerals. Suppose you want to help Boojho to test and confirm all components present in the food, how will you design the experiment?

1. What are the chemicals or solutions require to test presence of
 - a) Starch
 - b) Protein

.....
.....
.....
.....

2. Explain the preparation method of the following solutions.
 - a) Iodine solution
 - b) Copper sulphate solution
 - c) Caustic soda solution

.....
.....
.....
.....
.....
.....

3. What are the Steps involved and observation in color changes while testing the following components?

- i. Starch
- ii. Protein
- iii. Fats

.....

.....

.....

.....

.....

.....

© NCERT
not to be republished

Worksheet: 47 (Mode: ONLINE) (LO-13)

Learning Outcomes to be achieved:

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

In order to make students understand the value of cleanliness, a clean drive was organized by a school. In the same, teachers along with 20 students were asked to visit a locality and clean the place by disposing the random waste properly into green bin and blue bin.

Based on above, answer the following:

- Q1. Which value mentioned below is **NOT** exhibited in given incident?
- (a) Co-operation
 - (b) Efforts to conserve environment
 - (c) Objectivity
 - (d) Justice
- Q2. Green bin is used to decompose
- (a) Tin cans
 - (b) Fruits and vegetables peels
 - (c) Newspaper
 - (d) Disposable Glasses
- Q3. What would you do when you will find thermocol waste lying around your house?
- (a) Ignore and leave the waste there
 - (b) Dump the waste in green bin
 - (c) Dump the waste in blue bin
 - (d) Pick the waste and throw it somewhere else
- Q4. Where would you dispose the plastic waste?
- (a) In the blue bin
 - (b) In the green bin
 - (c) Dump anywhere



विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

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