

# **DELHI PUBLIC SCHOOL BALCO**

Dear Parents

As school is closed on account of unfortunate global pandemic, we at DPS BALCO have decided to engage students in meaningful learning activities. We all are working from home and preparing assignments and worksheets besides study material.

We expect you to supervise your ward in completing these tasks. You may ask them to use any unused notebook for this purpose.

In days to come we will upgrade this process. You will be informed through SMS about these.

**YOU MAY ASK YOUR WARD TO USE ANY AVAILABLE NOTEBOOKS INCLUDING OLD OR UNUSED OR HALF USED NOTEBOOKS.**

Sd/-

**Kailash Pawar**  
**Principal**

## **SUBJECT: ENGLISH**

### **CLASS-VIII**

### **“READING AND WRITING SECTION”**

#### **1. Read the following passage carefully and answer the questions that follow:**

- 1- It is rightly said that work is worship. Work helps to lead a healthy and fit life. If we work sincerely, we will ultimately achieve success. Work is a reward of its own. Without feeling sad of the things happened in the past and without worrying about the future, just work for the present. This attitude will keep us cheerful in all circumstances.
- 2- Just as a living seed needs air, water and earth to fructify, so does nature promise every kind of help to a cheerful and active worker. The way to more light is the faithful use of what we have. “If we have to travel a long distance of twenty miles with a light in our hand, we have to cover the distance of ten feet that is illuminated and then the next ten feet will themselves be lighted. But an idle mind will lead to destruction. Evil thoughts will crowd around one’s mind that is empty. These evil thoughts are the root cause of insecurity, jealousy and hatred. Therefore, all evils of society can be removed if we follow the motto of “Work is Worship”.
- 3- It is rightly said that ‘Idle man’s brain is devil’s workshop.’ Work and only work can bring you fame and its lack notoriety. Some people opine that doing something bad is better than doing nothing. The sense of doing something bad can set the person right. I am personally convinced that wastage of time is a criminal wastage. Time once gone never comes back. Those people who depend on others’ work are called parasites or drones. But we must keep in mind that such designations are full of condemnation and scorn rather than liking or appreciation. So work should be worshipped.

#### **1.1 On the basis of your reading of the above passage, complete the following sentences by choosing your answers from the text. Write the answers in your answer sheet against the correct blank number:**

- (a) We will ultimately achieve success if .....
- (b) To fructify, a living seed needs .....
- (c) .....are the root cause of insecurity, jealousy and hatred.
- (d) All evils of society can be removed if .....

#### **2.2 Answer the following questions briefly.**

- (a) How does work help us?
- (b) Which attitude will keep us cheerful in all circumstances?

### **WRITING SECTION- LOOKING BACK ON WRITING “ INFORMAL LETTERS”**

**An informal letter, also referred to as a friendly letter, is a personal letter written to friends or relatives. It is written in personal fashion and casual tone.**

**The following points need to be followed while writing an Informal letter-**

- a) An Informal Letter does not strictly follow the prescribed Format.**
- b) The language of an Informal Letter must be friendly and casual.**
- c) An Informal Letter can have extra information.**
- d) The Subject line is not required in an Informal Letter.**

**The Format of an Informal Letter is as follows –**

**1. Sender's Address**

**2. Date: General Practice/Way of writing – ‘2 April 2020’**

**3. Salutation / Greeting- ‘Dear’ followed by Receiver's name, relation like Dear Amit, Dear Father, Dear Uncle etc.**

**4. Body: The matter of the letter is written here. It is divided into 3 paragraphs as follows -**

**a) Paragraph 1: Introduction– Purpose of writing the letter**

**b) Paragraph 2: Main content- All necessary details**

**c) Paragraph 3: Summary- summerising the information**

**5. Complimentary Close- Good Bye, Hope to see you soon etc followed by Yours Lovingly, Yours affectionately etc.**

**6. Name and Signature of the sender**

<b>Sender's Address</b>
<b>Date</b>
<b>Salutation/Greetings</b>
<b>Body of the letter</b>
<b>Complimentary Close</b>
<b>Sender's Name and signature</b>

**EXAMPLE-**

129, Navyug Apartments

Niharika,

Korba(C.G.)

2 April 2020

Dear Rudra

It's been a while since I've heard from you. Where have you been? I hope this letter finds you in the best of your health.

As summers are approaching, I was thinking if we could spend the summer break together at my place in Korba. I will introduce you to all my friends and close relatives. I will give you a city tour as well. We will spend some quality time in the evenings in Malls and Markets. To add cherry on the cake, we can spend the afternoons in the small water park near my house.

I am excited even at the thought of you and I spending the summer together after so long. I have to tell you a lot of things and expect the same from you. Give my regards to aunty and uncle!

Hope to see you soon.

Yours lovingly

Saksham

\*\*\*\*\*

Now write an Informal letter on the basis of information given in the question below-

**2. You are Amit /Amita living in 20/A, Friends Colony,Niharika,Korba. Write a letter to your elder brother who stays in a hostel in DPS,Bilaspur congratulating him on his selection in the school cricket team.**

हिंदी  
अभ्यास पत्र-02

Date: 02.04.20

www.navneel.com

Topic: Worksheet-2 पृष्ठ 6, 7, 8

Page: 1/3

\* निम्नलिखित वर्णों का संयोग कर शब्द बनाइस।

न + इ + र + म् + अ + र् + अ =

अ + त् + म् + अ + ध् + इ + क् + अ =

व् + इ + श् + व् + आ + स् + अ =

म् + आ + र् + म् + इ + क् + अ =

म् + ऋ + ह् + अ + स् + ध् + अ =

\* उच्चारण स्थान के आधार पर वर्ण लिखिए।

कण्ठ्य -

तालव्य -

मूर्धन्य -

दन्त्य -

औष्ठ्य -

\* निम्न लिखित शब्दों के तीन-तीन पर्यायवाची लिखिए।

सोना -

हवा -

शेवक -

गर्व -

चतुर -

जरीर -

अंग -

हाथ -

\* निम्नलिखित शब्दों के विलोम शब्द लिखिए।

उत्साह -

अनाथ -

अवनति -

आकर्षक -

आदर -

अतिवृष्टि -

उपयुक्त -

अयोग्य -

दुर्गम -

सुलभ -

\* निम्नलिखित शब्दों के अर्थ के अनुसार वाक्य बनाइए।

सूची -

शुचि -

पका -

पक्का -

पानी -

पाणि -

पवन -

पावन -



Date : 02.04.20

www.navneet.com

Page : 3/3

Topic : Worksheet-2 for 6, 7, 8

\* निम्नलिखित अनेक शब्दों के लिए एक शब्द लिखिए।

जिसके नीचे रेखा खिंची हो -  
जिसका कोई शत्रु न हो -  
अंडे से जन्म लेने वाला -  
जो आँखों के सामने न हो -  
जो मानव के विरुद्ध हो -

\* निम्नलिखित शब्दों के लिए उचित वाक्यांश लिखिए।

जिज्ञासु -  
अक्षम्य -  
शाश्वत -  
पारदर्शी -  
मीनाक्षी -

\* निम्नलिखित शब्दों से दो-दो ऐसे वाक्य बनाइं  
जिनसे अलग-अलग अर्थ प्रकट हों।  
अंबर -

शून्य -

उपचार -

AR, JK & PD



## मम, भवतः, भवत्याः

आचार्यः - सर्वेभ्यः स्वागतम् । नमस्काराः ।

मम नाम अरुणः । भवतः नाम किम् ?

गणेशः - मम नाम गणेशः ।

आचार्यः - भवत्याः नाम किम् ?

गीता - मम नाम गीता ।

आचार्यः - मम नाम किम् ?

छात्राः - भवतः नाम अरुणः ।

आचार्यः - मम पुस्तकम् । मम शाला । मम मुखम् । मम पादः । एवं सर्वे वदन्तु । शाला, गृहम्, लेखनी, हस्तः, चित्रम्, वृक्षः, मित्रम् ।

छात्राः - मम शाला । मम गृहम् । मम लेखनी । मम हस्तः । मम चित्रम् । मम वृक्षः । मम मित्रम् ।

आचार्यः - भवतः पुस्तकम् । भवतः शाला ... इत्येवं क्रमेण वदन्तु ।

छात्राः - भवतः शाला । भवतः गृहम् । भवतः लेखनी...

आचार्यः - भवत्याः पुस्तकम् । भवत्याः शाला ... इत्येवं क्रमेण वदन्तु ।

छात्राः - भवत्याः शाला । भवत्याः गृहम् । भवत्याः लेखनी... ।

### विशेषः

◆ भवतः - पुलिङ्गे । भवत्याः - स्त्रीलिङ्गे ।

◆ 'तव नाम किम् ?' इति प्रश्नः अपि कर्तुं शक्यते । किन्तु अग्रे क्रियापदप्रयोग-स्तरे क्लेशः भवति । अतः प्राथमिकस्तरे 'तव' इति प्रयोगः मास्तु । 'भवतः' 'भवत्याः' इत्येव प्रयोगः भवतु ।

◆ 'नाम' इत्यत्र विसर्गः (:) नास्ति । अनुस्वारः (ं) अपि नास्ति । 'नाम' इत्यस्य स्थाने केचन 'नामधेयम्' इत्यस्य अपि उपयोगं कुर्वन्ति ।



### अभ्यासः - १

नामानुगुणं प्रश्नं पृच्छत ।

उदा - १. नारायणः - भवतः नाम किम् ?

२. श्रीशः - ..... ?  
३. ललिता - ..... ?  
४. नलिनी - ..... ?  
५. दिवाकरः - ..... ?  
६. पद्मा - ..... ?  
७. तपनः - ..... ?

### अभ्यासः - २

उत्तरवाक्यं दृष्ट्वा रिक्तस्थानानि यथोचितं पूरयत ।

भवतः, भवत्याः, मम, नाम, किम्

- I. मम नाम अरुणः । ..... नाम किम् ?  
II. .... नाम दिनेशः ।  
III. .... नाम ..... ?  
IV. मम ..... गिरिजा ।  
V. .... नाम किम् ?  
VI. .... नाम अरुणः ।

### अभ्यासः - ३

मम गृहम् । भवतः गृहम् । भवत्याः गृहम् ।

एतेन क्रमेण अधः सूचितानां शब्दानाम् उपयोगं कृत्वा वाक्यानि रचयत ।

ग्रामः, देशः, राज्यम्, कुञ्चिका (Key), स्यूतः (Bag), कथा, पत्रिका,  
धनम्, आसन्दः (Chair), भगिनी ।

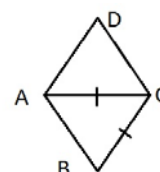
0. .... | ..... | ..... |

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# SUBJECT - MATHEMATICS

## MODULE- II (LOOKING BACK)

1. Find the cube root of .008.
2. By what the least number should 675 be multiplied so as to obtain a number which is a perfect cube?
3. Sheetal makes a cuboid of plastics of sides 5 cm, 2 cm, 5cm. How many such cuboids will be need to form a cube?
4. The diagonal AC of rhombus ABCD is equal to one of its sides BC.  
Find all the angles of rhombus
5. If each interior angle of a regular polygon is  $144^\circ$ .  
Find the number of sides of the polygon.
6. What is the sum of all the angles of a 11-sided polygon?
7. What will be the remainder when  $x^6 - 3x^2 - 10$  is divided by  $x^3 - 1$ ?
8. Find the value of  $\langle a \rangle$  if  $(2x-5)(x+3) = 2x^2 + x + a$ ?
9. The product of  $(x+y)(x-y)(x^2+y^2)$  is
10. The sides of a triangle are  $3x+1$ ,  $4x+2$  and  $5x$ . Find the perimeter of the triangle.
11. If  $x + y = 5$  and  $xy = 6$ . Find the value of  $x^2 + y^2$  and  $x - y$ .
12. If  $x + \frac{1}{x} = 5$ , find the value of  $x^2 + \frac{1}{x^2}$ .
13. Factorise using suitable identity: (a)  $49x^2 - 9^2$  (b)  $9x^2 - 6x + 1$
14. The sum of three consecutive even numbers is 30. Find the numbers.
15. The sum of three consecutive odd numbers is 63. Find the numbers.
16. The sum of two twin primes is 60. Find the two prime numbers.
17. Rena's mother is four times as old as Rena. After 5 years her mother will be three times as old as she will then be. Find their present ages.
18. In a quadrilateral ABCD,  $\angle A = (2x + 4)^\circ$ ,  $\angle B = (2x - 13)^\circ$ ,  $\angle C = (3x + 11)^\circ$  and  $\angle D = (4x - 5)^\circ$ . Find the measures of the angles.



**Subject: Science (Physics)**

**CLASS: VIII**

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Q1. Fill in the blanks.

- (i) A charged body \_\_\_\_\_ an uncharged body towards it.
- (ii) To move a loaded trolley we have to \_\_\_\_\_ it.
- (iii) Friction depends on \_\_\_\_\_ of the surfaces.
- (iv) Sliding friction is \_\_\_\_\_ than the static friction.
- (v) Sprinkling of powder on the carom board \_\_\_\_\_ friction.
- (vi) The unit of frequency is \_\_\_\_\_.
- (vii) Loudness is determined by the \_\_\_\_\_ of vibration.
- (viii) Night birds have \_\_\_\_\_ cones than rods in their eyes.
- (ix) \_\_\_\_\_ has both rods and cones.
- (x) Kaleidoscope is based on the principal of \_\_\_\_\_.

Q2. Give reason for the followings:

- (a) A car or scooter comes to rest once its engine is switched off.
- (b) Tools meant for cutting and piercing always has a sharp edge.
- (c) We slip when we step on a banana peel.
- (d) We should never put sharp, pointed or hard things into our ears.

Q3. What type of charges is there on a plastic straw and glass rod?

Q4. What is meant by state of motion and the state of rest?

Q5. Suggest three measures to protect ourselves from lightning.

Q6. Define frequency of oscillation.

Q7. List any two differences between regular and irregular reflection..

Q8. Describe an activity to show that the incident ray, reflected ray and normal at the point of incidence  
all lie in the same plane.

Q9. What do you mean by lateral inversion?

Q10. What do you mean by the terms : (a) Myopia (b) Hyperopia.

## Class 8 Chemistry( Metals and Non metals)

### Facts that Matter:

- Materials around us can be broadly grouped into metals and non-metals.

### (a) Physical Properties of Metals

- Lustre:** Metals in the pure state generally shine. The shine on the metallic surface is called the metallic lustre.
- Malleability:** The property of metals by which they can be beaten into thin sheets is known as malleability.

For example, silver metal is beaten to make silver foil used for decorating sweets.

- Ductility:** It is one of the properties of metals by virtue of which they can be drawn into wires. For example, copper and iron can be drawn into wires.

- Conductivity:** Metals are good conductor of heat and electricity. Heat and electricity can pass through them.

- Sonorous:** Metals produce a ringing sound when struck hard. So, they are called sonorous.

- Solid:** All metals are solid except Mercury, the only metal which is liquid at room temperature. We can cut sodium (Na) and potassium (K) metals with the help of a knife. Mercury, sodium and potassium are exceptional metals. Examples of metals: iron, copper, gold, aluminium, silver, calcium etc.

### (b) Physical Properties of Non-Metals

- Solid non-metals are soft and dull. They break down into a powdery mass on tapping with a hammer. For example, coal and sulphur.

- Non-metals are not sonorous.
- They are poor conductors of heat and electricity.
- They do not possess metallic lustre.
- They possess no malleability and ductility.

Examples of non-metals: phosphorus, sulphur, carbon, oxygen etc.

### (c) Chemical Properties of Metals

- Oxidation:** Metals except gold and silver (noble metals) react with oxygen to form basic oxides. Sodium also reacts vigorously with O<sub>2</sub>. A lot of heat generated in this reaction.

For Example,

Magnesium + Oxygen → Magnesium oxide



**i Rusting of Iron:** In presence of moisture and air rust gets deposited over iron.

Iron + oxygen + Water → Iron oxide (Rust)



**ii Greenish deposit on the surface of copper vessels:** The dull greenish material deposited on the surface of copper is a mixture of copper hydroxide [Cu(OH)<sub>2</sub>] and copper carbonate (CuCO<sub>3</sub>) .

**iii Metallic oxides** are basic in nature.

- Reaction of Metals with Water**

Some metals like sodium (Na) react vigorously with water at room temperature.

Sodium + water → sodium hydroxide + hydrogen



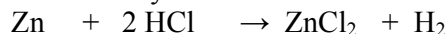
Potassium (K) and Calcium (Ca) are also active metals and react with water at room temperature. Such metals are stored in kerosene.

Some other metals do not do so. For example, iron reacts with water slowly.



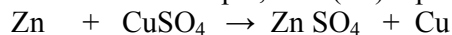
- Reaction with Acids: Acids react with metals to liberate hydrogen and corresponding salt of the metal.

Zinc + Hydrochloric acid → Zinc chloride + hydrogen gas



Hydrogen burns with a 'pop' sound, when a burning match-stick is brought near it.

- Reaction with Bases: Metals react with sodium hydroxide to produce hydrogen.
- Displacement Reactions: Certain metals are capable of displacing other metals from their solutions. For example, zinc (Zn) replaces copper from copper sulphate solution.



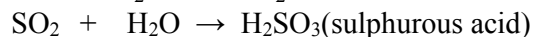
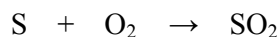
In general, more active metals displace less active metals from their solutions. In this case, Zinc is more reactive than Cu, so it replaces copper (Cu) from copper sulphate solution.

The rule is that 'a more reactive metal can replace a less reactive metal, but a less reactive one cannot replace a reactive metal'.

Thus, metals are arranged in the order of their decreasing activity. This arrangement is called the activity series.

#### **(d) Chemical Properties of Non-Metals**

- Oxidation. Non-metals react with oxygen to form oxides which are acidic in nature. For example, sulphur when reacts with oxygen forms sulphur dioxide and sulphur dioxide is dissolved in water to form sulphurous acid.



The sulphurous acid turns blue litmus paper red i.e. it is acidic in nature.

- Reaction of Non-Metals with Water: Generally, non-metals do not react with water though they may be very reactive in air.

Some non-metals such as phosphorus, react with the air. It catches fire if exposed to air. So, phosphorus is stored in water.

#### **(e) Uses of Metals**

- Metals are used in making wires and sheets, which are used for various purposes. For example, copper and aluminium wires are used for conduction of electricity, in electrical equipments etc. Iron wires are used for fencing and various other purposes. Iron sheets are often used for making roof sheds.

- Metals are used in making machinery, auto mobiles, utensils, industrial gadgets, water boilers etc.

#### **(f) Alloys**

- An alloy is a solid mixture of two or more metals or a metal and a non-metal. Alloys of metals are used in making coins, satellite, stainless steel, wooden ships sheathing and casting. (

Alloy like duralium has great strength. It is used in aircrafts, pressure cooker, automobiles etc. Naval brass is used for marine and engineering castings.

- Some metals like iron, sodium and calcium are essential parts of our body.

#### **(g) Uses of Non-Metals**

Non-metals are widely used in our daily life. Many non-metals like iodine, chlorine, sulphur are used in medicine. Phosphorus is essential for our bones and teeth.

Some of the interesting uses of non-metals are:

- Non-metal (oxygen) is essential for our life, as oxygen is required for respiration.
- Carbon dioxide (CO<sub>2</sub>) is essential for green plants to carry out photosynthesis.
- Non-metals like nitrogen and phosphorus are used in fertilisers for better plant growth.
- Non-metal like chlorine (Cl<sub>2</sub>) is used in water purification process.

- Non-metal ( $I_2$ ) is used in the purple coloured solution (Iodine solution) on wounds as antiseptic.
- Non-metal such as sulphur is used in crackers.

### Now Test Your Knowledge:

1. Which of the following can be beaten into thin sheets?

- (a) Zinc
- (b) Phosphorus
- (c) Sulphur
- (d) Oxygen

2. Which of the following statements is correct?

- (a) All metals are ductile.
- (b) All non-metals are ductile.
- (c) Generally, metals are ductile.
- (d) Some non-metals are ductile.

3. Fill in the blanks.

- (a) Phosphorus is a \_\_\_\_\_ non-metal.
- (b) Metals are conductors of heat and \_\_\_\_\_ .
- (c) Iron is \_\_\_\_\_ reactive than copper.
- (d) Metals react with acids to produce \_\_\_\_\_ gas.

4. Complete and balance these chemical equations:

- (a)  $Na + H_2O \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
- (b)  $H_2 + O_2 \rightarrow \underline{\hspace{2cm}}$
- (c)  $KOH + HCl \rightarrow \underline{\hspace{2cm}} + H_2O$

5. Some properties are listed in the following table. Distinguish between metals and non-metals on the basis of these properties.

Properties	Metals	Non-metals
1. Appearance		

- 2. Hardness**
- 3. Malleability**
- 4. Ductility**
- 5. Heat Conduction**
- 6. Conduction of Electricity**

**6. Give reasons for the following.**

- (a) Aluminium foils are used to wrap food items.**
- (b) Immersion rods for heating liquids are made up of metallic substances.**
- (c) Copper cannot displace zinc from its salt solution.**
- (d) Sodium and potassium are stored in kerosene**

**7. Can you store the lemon pickle in an aluminium utensil? Explain.**

**8. Match the substances given in Column A with their uses given in Column B.**

<b>A</b>	<b>B</b>
<b>(i) Gold</b>	<b>(a) Thermometers</b>
<b>(ii) Iron</b>	<b>(b) Electric wire</b>
<b>(iii) Aluminium</b>	<b>(c) Wrapping food</b>
<b>(iv) Carbon</b>	<b>(d) Jewellery</b>
<b>(v) Copper</b>	<b>(e) Machinery</b>
<b>(vi) Mercury</b>	<b>(f) Fuel</b>

**9. What happens when**

- (a) Dilute sulphuric acid is poured on a copper plate?**
- (b) Iron nails are placed in a copper sulphate solution?**

**10. Shweta took a piece of burning charcoal and collected the gas evolved in a test tube.**

- (a) How will she find the nature of the gas either acidic or basic?**
- (b) Write down word equation of the reaction taking place in this process.**



Paheli and Boojho went to their uncle's house during the summer vacation. Their uncle is a farmer. One day they saw some tools like *khurpi*, sickle, shovel, plough, etc., in the field.



I want to know where and how we use these tools.

You have learnt that all living organisms require food. Plants can make their food themselves. Can you recall how green plants synthesise their own food? Animals including humans can not make their own food. So, where do animals get their food from?

But, first of all why do we have to eat food?

You already know that energy from the food is utilised by organisms for carrying out their various body functions, such as digestion, respiration and excretion. We get our food from plants, or animals, or both.



Since we all need food, how can we provide food to a large number of people in our country?

Food has to be produced on a large scale.



In order to provide food for a large population—regular production, proper management and distribution is necessary.

### 1.1 Agricultural Practices

Till 10,000 B.C.E. people were nomadic. They were wandering in groups from place to place in search of food and shelter. They ate raw fruits and vegetables and started hunting animals for food. Later, they could cultivate land and produce rice, wheat and other food crops. Thus, was born 'Agriculture'.

When plants of the same kind are cultivated at one place on a large scale, it is called a **crop**. For example, crop of wheat means that all the plants grown in a field are that of wheat.

You already know that crops are of different types like cereals, vegetables and fruits. These can be classified on the basis of the season in which they grow.

India is a vast country. The climatic conditions like temperature, humidity and rainfall vary from one region to another. Accordingly, there is a rich

variety of crops grown in different parts of the country. Despite this diversity, two broad cropping patterns can be identified. These are:

**(i) Kharif Crops :** The crops which are sown in the rainy season are called kharif crops. The rainy season in India is generally from June to September. Paddy, maize, soyabean, groundnut and cotton are kharif crops.

**(ii) Rabi Crops :** The crops grown in the winter season (October to March) are called rabi crops. Examples of rabi crops are wheat, gram, pea, mustard and linseed.

Besides these, pulses and vegetables are grown during summer at many places.

## 1.2 Basic Practices of Crop Production



Why paddy can not be grown in the winter season?



Paddy requires a lot of water. Therefore, it is grown only in the rainy season.

Cultivation of crops involves several activities undertaken by farmers over a period of time. You may find that these activities are similar to those carried out by a gardener or even by you when you grow ornamental plants in your house. These activities or tasks are referred

to as **agricultural practices** which are listed below:

- (i) Preparation of soil
- (ii) Sowing
- (iii) Adding manure and fertilisers
- (iv) Irrigation
- (v) Protecting from weeds
- (vi) Harvesting
- (vii) Storage

## 1.3 Preparation of Soil

The preparation of soil is the first step before growing a crop. One of the most important tasks in agriculture is to turn the soil and loosen it. This allows the roots to penetrate deep into the soil. The loose soil allows the roots to breathe easily even when they go deep into the soil. Why does the loosening of soil allow the roots to breathe easily?

The loosened soil helps in the growth of earthworms and microbes present in the soil. These organisms are friends of the farmer since they further turn and loosen the soil and add humus to it. But why the soil needs to be turned and loosened?

You have learnt in the previous classes that soil contains minerals, water, air and some living organisms. In addition, dead plants and animals get decomposed by soil organisms. In this way, various nutrients in the dead organisms are released back into the soil. These nutrients are again absorbed by plants.

Since only a few centimetres of the top layer of soil supports plant growth, turning and loosening of soil brings the nutrient-rich soil to the top so that plants can use these nutrients. Thus,



turning and loosening of soil is very important for cultivation of crops.

The process of loosening and turning of the soil is called **tilling** or **ploughing**. This is done by using a plough. Ploughs are made of wood or iron. If the soil is very dry, it may need watering before ploughing. The ploughed field may have big clumps of soil called crumbs. It is necessary to break these crumbs. Levelling the field is beneficial for sowing as well as for irrigation. Levelling of soil is done with the help of a leveller.

Sometimes, manure is added to the soil before tilling. This helps in proper mixing of manure with soil. The soil is moistened before sowing.

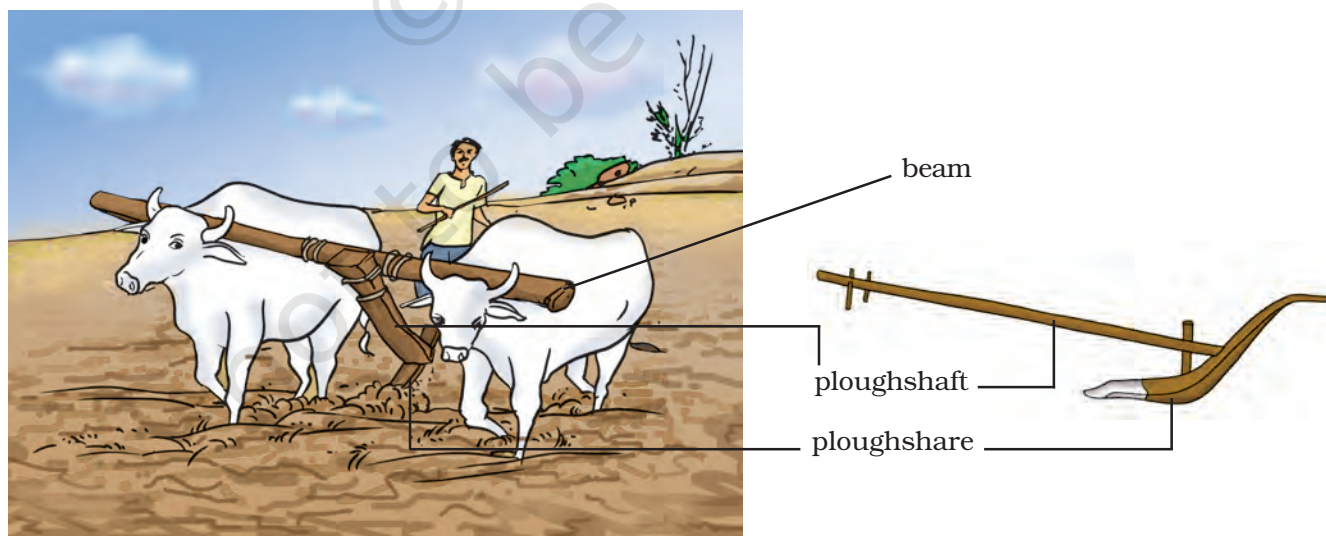
### Agricultural Implements

Before sowing the seeds, it is necessary to break soil clumps to get better yield. This is done with the help of various tools. The main tools used for this purpose are the plough, hoe and cultivator.

**Plough** : This is being used since ancient times for tilling the soil, adding fertilisers to the crop, removing the weeds and turning the soil. This is made of wood and is drawn by a pair of bulls or other animals (horses and camels). It contains a strong triangular iron strip called ploughshare. The main part of the plough is a long log of wood which is called a ploughshaft. There is a handle at one end of the shaft. The other end is attached to a beam which is placed on the bulls' necks. One pair of bulls and a man can easily operate the plough [Fig. 1.1 (a)].

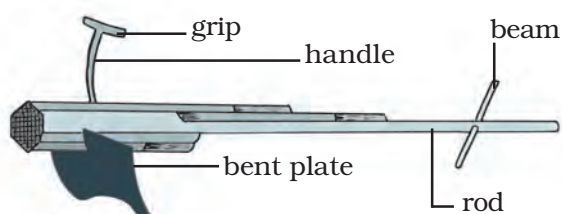
The indigenous wooden plough is increasingly being replaced by iron ploughs nowadays.

**Hoe** : It is a simple tool which is used for removing weeds and for loosening the soil. It has a long rod of wood or iron. A strong, broad and bent plate of iron is fixed to one of its ends and



**Fig. 1.1 (a) : The plough**

works like a blade. It is pulled by animals [Fig. 1.1 (b)].



**Fig. 1.1 (b) :** A hoe

**Cultivator :** Nowadays ploughing is done by tractor-driven cultivator. The use of cultivator saves labour and time. [Fig. 1.1 (c)].



**Fig. 1.1 (c) :** Cultivator driven by a tractor

## 1.4 Sowing

Sowing is an important part of crop production. Before sowing, good quality, clean and healthy seeds of a good variety—are selected. Farmers prefer to use seeds which give high yield.

### Selection of Seeds



One day I saw my mother put some gram seeds in a vessel and pour some water on them. After a few minutes some seeds started to float on top. I wonder why some seeds float on water!

## Activity 1.1

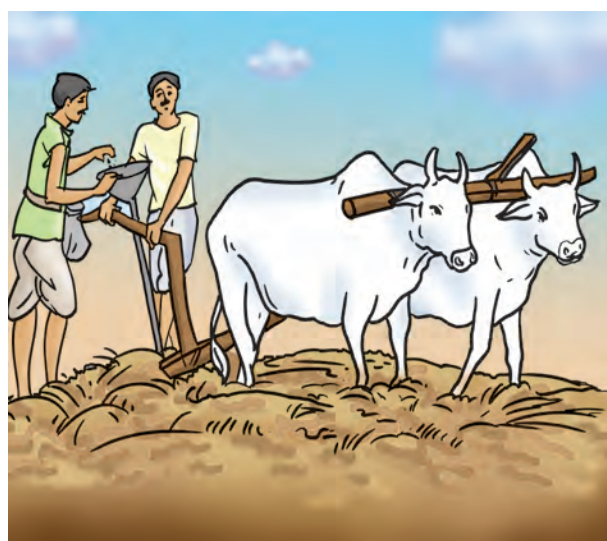
Take a beaker and fill half of it with water. Put a handful of wheat seeds and stir well. Wait for some time.

Are there seeds which float on water? Would those be lighter or heavier than those which sink? Why would they be lighter? Damaged seeds become hollow and are thus lighter. Therefore, they float on water.

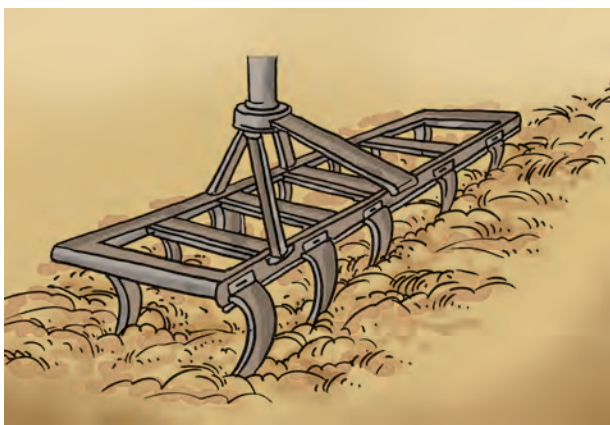
This is a good method for separating good, healthy seeds from the damaged ones.

Before sowing, one of the important tasks is to know about the tools used for sowing seeds [Fig. 1.2 (a), (b)].

**Traditional tool :** The tool used traditionally for sowing seeds is shaped like a funnel [Fig. 1.2 (a)]. The seeds are filled into the funnel, passed down through two or three pipes having sharp ends. These ends pierce into the soil and place seeds there.



**Fig. 1.2 (a) :** Traditional method of sowing



**Fig. 1.2 (b) : A seed drill**

**Seed drill** : Nowadays the seed drill [Fig. 1.2 (b)] is used for sowing with the help of tractors. This sows the seeds uniformly at equal distance and depth. It ensures that seeds get covered by the soil after sowing. This protects seeds from being eaten by birds. Sowing by using a seed drill saves time and labour.

There is a nursery near my school. I found that little plants were kept in small bags. Why are they kept like this?



Seeds of a few plants such as paddy are first grown in a nursery. When they grow into seedlings, they are transplanted to the field manually. Some forest plants and flowering plants are also grown in the nursery.

Appropriate distance between the seeds is necessary to avoid overcrowding of plants. This allows plants to get

sufficient sunlight, nutrients and water from the soil. At times a few plants may have to be removed to prevent overcrowding.

## 1.5 Adding Manure and Fertilisers

The substances which are added to the soil in the form of nutrients for the healthy growth of plants are called **manure** and **fertilisers**.

I saw a healthy crop growing in a farm. In the neighbouring farm, the plants were weak. Why do some plants grow better than others?



Soil supplies mineral nutrients to the crop plants. These nutrients are essential for the growth of plants. In certain areas, farmers grow crop after crop in the same field. The field is never left uncultivated or fallow. Imagine what happens to the nutrients?

Continuous cultivation of crops makes the soil poor in nutrients. Therefore, farmers have to add manure to the fields to replenish the soil with nutrients. This process is called manuring. Improper or insufficient manuring results in weak plants.

Manure is an organic substance obtained from the decomposition of plant or animal wastes. Farmers dump plant and animal waste in pits at open places and allow it to decompose. The decomposition is caused by some microorganisms. The decomposed matter is used as organic manure. You have already learnt about vermicomposting in Class VI.

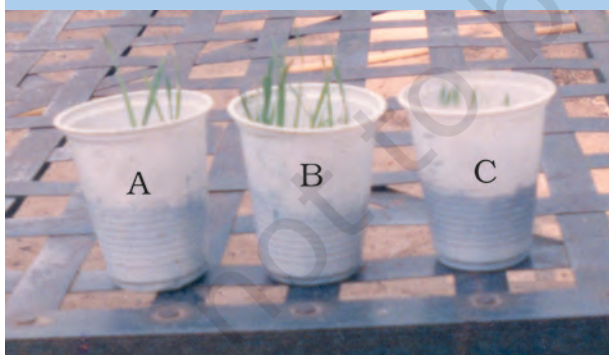


## Activity 1.2

Take *moong* or gram seeds and germinate them. Select three equal sized seedlings. Take three empty glasses or similar vessels. Mark them A, B and C. To glass A add little amount of soil mixed with a little cow dung manure. In glass B put the same amount of soil mixed with a little urea. Take the same amount of soil in glass C without adding anything [Fig. 1.3(a)]. Now pour the same amount of water in each glass and plant the seedlings in them. Keep them in a safe place and water them daily. After 7 to 10 days observe their growth [Fig. 1.3(b)].



**Fig. 1.3 (a) :** Preparation of the experiment



**Fig. 1.3 (b) :** Growing seedlings with manure and fertiliser

Did plants in all the glasses grow at the same pace? Which glass showed

better growth of plants? In which glass was the growth fastest?

Fertilisers are chemicals which are rich in a particular nutrient. How are they different from manure? Fertilisers are produced in factories. Some examples of fertilisers are— urea, ammonium sulphate, super phosphate, potash, NPK (Nitrogen, Phosphorus, Potassium).

The use of fertilisers has helped farmers to get better yield of crops such as wheat, paddy and maize. But excessive use of fertilisers has made the soil less fertile. Fertilisers have also become a source of water pollution. Therefore, in order to maintain the fertility of the soil, we have to substitute fertilisers with organic manure or leave the field uncultivated (fallow) in between two crops.

The use of manure improves soil texture as well as its water retaining capacity. It replenishes the soil with nutrients.

Another method of replenishing the soil with nutrients is through **crop rotation**. This can be done by growing different crops alternately. Earlier, farmers in northern India used to grow legumes as fodder in one season and wheat in the next season. This helped in the replenishment of the soil with nitrogen. Farmers are being encouraged to adopt this practice.

In the previous classes, you have learnt about *Rhizobium* bacteria. These are present in the nodules of roots of leguminous plants. They fix atmospheric nitrogen.

**Table 1.1 : Differences between Fertiliser and Manure**

S. No.	Fertiliser	Manure
1.	Fertiliser is a man-made inorganic salt.	Manure is a natural substance obtained by the decomposition of cattle dung and plant residues.
2.	Fertiliser is prepared in factories.	Manure can be prepared in the fields.
3.	Fertiliser does not provide any humus to the soil.	Manure provides a lot of humus to the soil.
4.	Fertilisers are very rich in plant nutrients like nitrogen, phosphorus and potassium.	Manure is relatively less rich in plant nutrients.

Table 1.1 gives the differences between a fertiliser and manure.

**Advantages of Manure :** The organic manure is considered better than fertilisers. This is because

- it enhances the water holding capacity of the soil.
- it makes the soil porous due to which exchange of gases becomes easy.
- it increases the number of friendly microbes.
- it improves the texture of the soil.

## 1.6 Irrigation

All living beings need water to live. Water is important for proper growth and development. Water is absorbed by the plant roots. Along with water, minerals and fertilisers are also absorbed. Plants contain nearly 90% water. Water is essential because germination of seeds does not take place under dry conditions. Nutrients dissolved in water are transported to each part of the plant. Water also

protects the crop from both frost and hot air currents. To maintain the moisture of the soil for healthy crop growth, fields have to be watered regularly.

The supply of water to crops at regular intervals is called **irrigation**. The time and frequency of irrigation varies from crop to crop, soil to soil and season to season. In summer, the frequency of watering is higher. Why is it so? Could it be due to the increased rate of evaporation of water from the soil and the leaves?

I am very careful this year about watering the plants. Last summer my plants dried up and died.



**Sources of irrigation :** The sources of water for irrigation are— wells, tubewells, ponds, lakes, rivers, dams and canals.





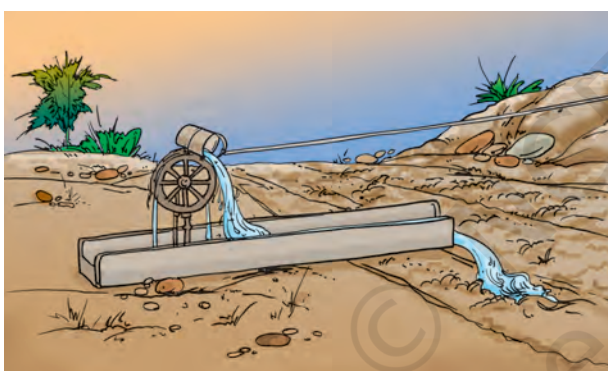
**Fig. 1.4 (a) : Moat**

## Traditional Methods of Irrigation

The water available in wells, lakes and canals is lifted up by different methods in different regions, for taking it to the fields.

Cattle or human labour is used in these methods. So these methods are cheaper, but less efficient. The various traditional ways are:

- (i) moat (pulley-system)
- (ii) chain pump



**Fig. 1.4 (b) : Chain pump**



**Fig. 1.4 (c) : Dhekli**



**Fig. 1.4 (d) : Rahat**

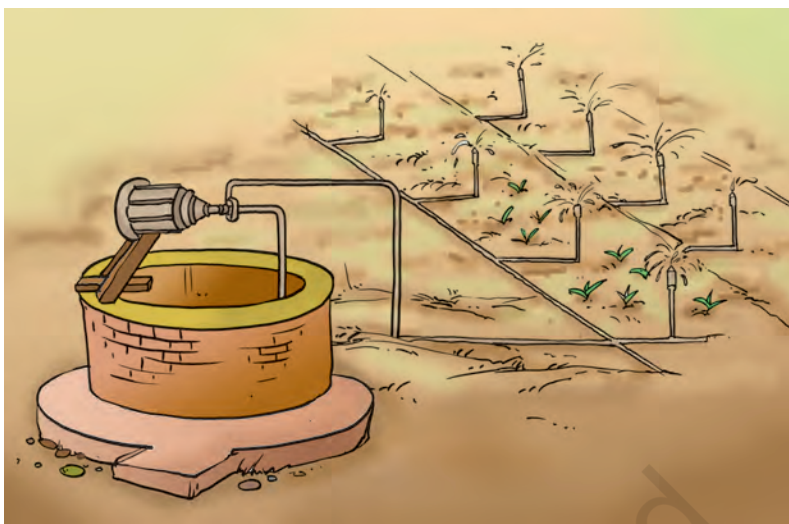
- (iii) dhekli, and
  - (iv) rahat (Lever system)
- [Figs. 1.4 (a)- (d)].

Pumps are commonly used for lifting water. Diesel, biogas, electricity and solar energy is used to run these pumps.

## Modern Methods of Irrigation

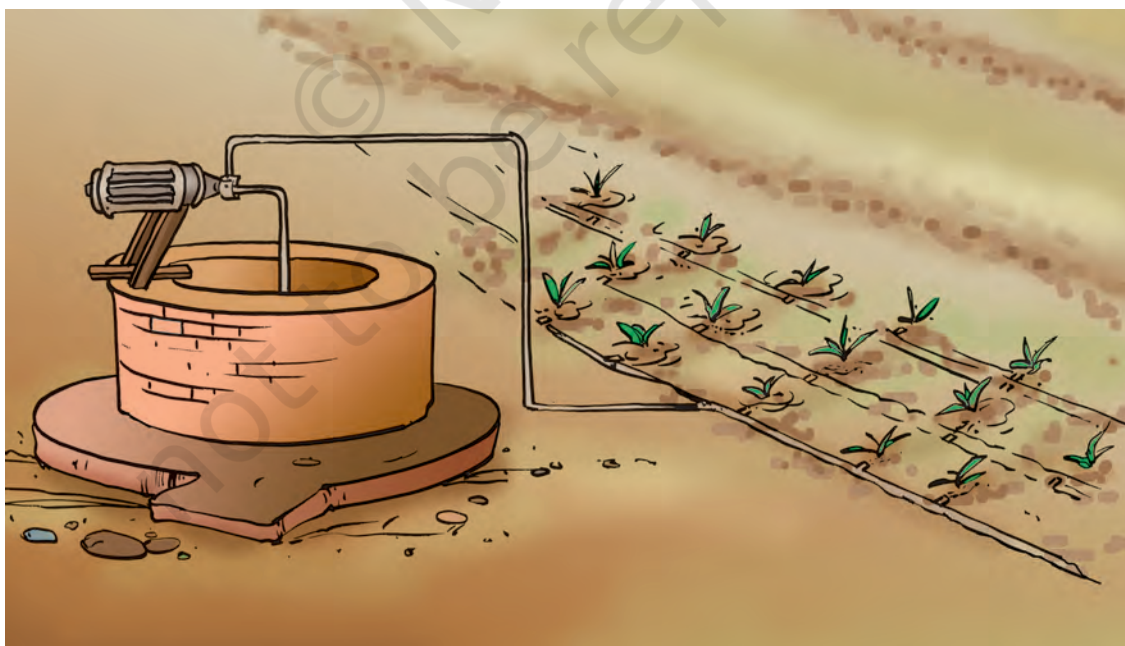
Modern methods of irrigation help us to use water economically. The main methods used are as follows:

**(i) Sprinkler System:** This system is more useful on the uneven land where sufficient water is not available. The perpendicular pipes, having rotating nozzles on top, are joined to the main pipeline at regular intervals. When water is allowed to flow through the main pipe under pressure with the help of a pump, it escapes from the rotating nozzles. It gets sprinkled on the crop as if it is raining. Sprinkler is very useful for lawns, coffee plantation and several other crops [Fig. 1.5 (a)].



**Fig. 1.5 (a) :** Sprinkler system

**(ii) Drip system :** In this system, the water falls drop by drop directly near the roots. So it is called drip system. It is the best technique for watering fruit plants, gardens and trees [Fig. 1.5(b)]. Water is not wasted at all. It is a boon in regions where availability of water is poor.



**Fig. 1.5 (b) :** Drip System



## 1.7 Protection from Weeds

Boojho and Paheli went to a nearby wheat field and saw that there were some other plants in the field, growing along with wheat plants.

Have these other plants been planted purposely?



In a field many other undesirable plants may grow naturally along with the crop. These undesirable plants are called **weeds**.

The removal of weeds is called weeding. Weeding is necessary since weeds compete with the crop plants for water, nutrients, space and light. Thus, they affect the growth of the crop. Some weeds interfere even in harvesting and may be poisonous for animals and human beings.

Farmers adopt many ways to remove weeds and control their growth. Tilling before sowing of crops helps in uprooting and killing of weeds, which may then dry up and get mixed with the soil. The best time for the removal of weeds is before they produce flowers and seeds. The manual removal includes physical removal of weeds by uprooting or cutting them close to the ground, from time to time. This is done with the help of a *khurpi*. A seed drill [Fig. 1.2(b)] is also used to uproot weeds.

Weeds are also controlled by using certain chemicals, called **weedicides**, like 2,4-D. These are sprayed in the fields to kill the weeds. They do not damage the crops. The weedicides are diluted with water to the extent required and sprayed in the fields with a sprayer. (Fig. 1.6).



Fig. 1.6 : Spraying weedicide

Do weedicides have any effect on the person handling the weedicide sprayer?



As already mentioned, the weedicides are sprayed during the vegetative growth of weeds before flowering and seed formation. Spraying of weedicides may affect the health of farmers. So they should use these chemicals very carefully. They should cover their nose and mouth with a piece of cloth during spraying of these chemicals.

## 1.8 Harvesting

Harvesting of a crop is an important task. The cutting of crop after it is mature is called **harvesting**. In harvesting, crops are pulled out or cut close to the ground. It usually takes 3 to 4 months for a cereal crop to mature.

Harvesting in our country is either done manually by sickle (Fig. 1.7) or by a machine called harvester. In the harvested crop, the grain seeds need to be separated



Fig. 1.7 :  
Sickle

from the chaff. This process is called **threshing**. This is carried out with the help of a machine called 'combine' which is in fact a harvester as well as a thresher (Fig. 1.8).



**Fig. 1.8 :** Combine



After harvesting, sometimes stubs are left in the field, which are burnt by farmers. Paheli is worried. She knows that it causes pollution. It may also catch fire and damage the crops lying in the fields.

Farmers with small holdings of land do the separation of grain and chaff by **winnowing** (Fig. 1.9). You have already studied this in Class VI.



**Fig. 1.9 :** Winnowing machine

### Harvest Festivals

After three or four months of hard work there comes the day of the harvest. The sight of golden fields of standing crop, laden with grain, fills the hearts of farmers with joy and a sense of well-being. The efforts of the past season have borne fruit and it is time to relax and enjoy a little. The period of harvest is, thus, of great joy and happiness in all parts of India. Men and women celebrate it with great enthusiasm. Special festivals associated with the harvest season are Pongal, Baisakhi, Holi, Diwali, Nabanya and Bihu.

### 1.9 Storage

Storage of produce is an important task. If the harvested grains are to be kept for longer time, they should be safe from moisture, insects, rats and microorganisms. Harvested grains have more moisture. If freshly harvested grains (seeds) are stored without drying, they may get spoilt or attacked by organisms, making them unfit for use or for germination. Hence, before storing them, the grains are properly dried in the sun to reduce the moisture in them. This prevents the attack by insect pests, bacteria and fungi.



I saw my mother putting some dried neem leaves in an iron drum containing wheat. I wonder why?



**Fig. 1.10 (a) :** Silos for storage of grains



**Fig. 1.10 (b) :** Storage of grains in gunny bags in granaries

Farmers store grains in jute bags or metallic bins. However, large scale storage of grains is done in **silos** and **granaries** to protect them from pests like rats and insects [Fig. 1.10 (a) and (b)].

Dried neem leaves are used for storing food grains at home. For storing large quantities of grains in big godowns, specific chemical treatments are required to protect them from pests and microorganisms.

## 1.10 Food from Animals

### Activity 1.3

Make the following Table in your note book and complete it.

S.No.	Food	Sources
1.	Milk	Cow, Buffalo, She-goat, She-camel . . .
2.		
3.		
4.		

After completing this Table, you must have seen that, like plants, animals also provide us with different kinds of food. Many people living in the coastal areas consume fish as a major part of their diet. In the previous classes you have learnt about the food that we obtain from plants. We have just seen that the process of crop production involves a number of steps like selection of seeds, sowing, etc. Similarly, animals reared at home or in farms, have to be provided with proper food, shelter and care. When this is done on a large scale, it is called **animal husbandry**.



Fish is good for health.  
We get cod liver oil from fish  
which is rich in vitamin D.



## KEYWORDS

**AGRICULTURAL  
PRACTICES**

**ANIMAL HUSBANDRY**

**CROP**

**FERTILISER**

**GRANARIES**

**HARVESTING**

**IRRIGATION**

**KHARIF**

**MANURE**

**PLOUGH**

**RABI**

**SEEDS**

**SILO**

**SOWING**

**STORAGE**

**THRESHING**

**WEEDS**

**WEEDICIDE**

**WINNOWNING**

## WHAT YOU HAVE LEARNT

- In order to provide food to our growing population, we need to adopt certain agricultural practices.
- Same kind of plants cultivated at a place constitute a crop.
- In India, crops can be broadly categorised into two types based on seasons - rabi and kharif crops.
- It is necessary to prepare soil by tilling and levelling. Ploughs and levellers are used for this purpose.
- Sowing of seeds at appropriate depths and distances gives good yield. Good variety of seeds are sown after selection of healthy seeds. Sowing is done by seed drills.
- Soil needs replenishment and enrichment through the use of organic manure and fertilisers. Use of chemical fertilisers has increased tremendously with the introduction of new crop varieties.
- Supply of water to crops at appropriate intervals is called irrigation.
- Weeding involves removal of unwanted and uncultivated plants called weeds.
- Harvesting is the cutting of the mature crop manually or by machines.
- Separation of the grains from the chaff is called threshing.
- Proper storage of grains is necessary to protect them from pests and microorganisms.
- Food is also obtained from animals for which animals are reared. This is called animal husbandry.

## Exercises

1. Select the correct word from the following list and fill in the blanks.  
float, water, crop, nutrients, preparation
  - (a) The same kind of plants grown and cultivated on a large scale at a place is called \_\_\_\_\_.
  - (b) The first step before growing crops is \_\_\_\_\_ of the soil.

- (c) Damaged seeds would \_\_\_\_\_ on top of water.  
 (d) For growing a crop, sufficient sunlight and \_\_\_\_\_ and \_\_\_\_\_ from the soil are essential.

2. Match items in column **A** with those in column **B**.

**A**

- (i) Kharif crops  
 (ii) Rabi crops  
 (iii) Chemical fertilisers  
 (iv) Organic manure

**B**

- (a) Food for cattle  
 (b) Urea and super phosphate  
 (c) Animal excreta, cow dung urine and plant waste  
 (d) Wheat, gram, pea  
 (e) Paddy and maize

3. Give two examples of each.

- (a) *Kharif* crop  
 (b) *Rabi* crop

4. Write a paragraph in your own words on each of the following.

- (a) Preparation of soil      (b) Sowing  
 (c) Weeding      (d) Threshing

5. Explain how fertilisers are different from manure.

6. What is irrigation? Describe two methods of irrigation which conserve water.

7. If wheat is sown in the *kharif* season, what would happen? Discuss.

8. Explain how soil gets affected by the continuous plantation of crops in a field.

9. What are weeds? How can we control them?

10. Arrange the following boxes in proper order to make a flow chart of sugarcane crop production.

Sending crop to  
sugar factory

1

Irrigation

2

Harvesting

3

Sowing

4

Preparation of  
soil

5

Ploughing the  
field

6

Manuring

7

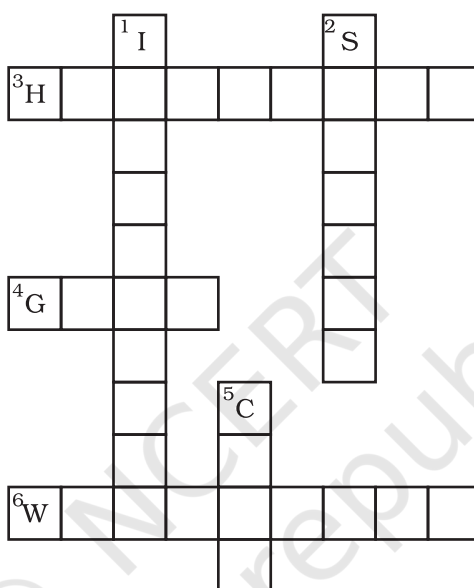
11. Complete the following word puzzle with the help of clues given below.

**Down**

1. Providing water to the crops.
2. Keeping crop grains for a long time under proper conditions.
5. Certain plants of the same kind grown on a large scale.

**Across**

3. A machine used for cutting the matured crop.
4. A *rabi* crop that is also one of the pulses.
6. A process of separating the grain from chaff.



### Extended Learning — Activities and Projects

1. Sow some seeds in the soil and arrange to water them by drip irrigation. Observe daily.
  - (i) Do you think it can save water?
  - (ii) Note the changes in the seed.
2. Collect different types of seeds and put them in small bags. Label them.
3. Collect pictures of some other agricultural machines and paste them in a file. Write their names and uses.
4. Project Work
 

Visit a farm, nursery or a garden nearby. Gather information about

  - (i) importance of seed selection.
  - (ii) method of irrigation.

- (iii) effect of extreme cold and extreme hot weather on the plants.
- (iv) effect of continuous rain on the plants.
- (v) fertilisers/manure used.

### **An Example for Field Trip Work**

Himanshu and his friends were very anxious and curious to go to Thikri village. They went to Shri Jiwan Patel's farmhouse. They had taken bags to collect some seeds and other things.

Himanshu : Sir *namaskar*, I am Himanshu. Here are my friends Mohan, David and Sabiha. We want some information about crops. Please guide us.

Shri Patel : *Namaskar* and welcome all of you. What are your queries?

Sabiha : When did you start this work and what are the main crops that you grow?

Shri Patel : About 75 years ago, my grandfather started this work. The main crops that we grow are wheat, gram, soyabean and *moong*.

David : Sir, can you tell us the difference between traditional and modern agricultural practices?

Shri Patel : Earlier we used traditional tools like sickle, bullock plough, trowel, etc., and depended on rain water for irrigation. But now we use modern methods of irrigation. We use implements like tractors, cultivators, seed drill and harvester. We get good quality seeds. We carry out soil testing and use manure and fertilisers. New information about agriculture is obtained through radio, T.V. and other sources. As a result we are able to get good crops on a large scale. This year we got 9 to 11 quintals of gram crop/acre and 20 to 25 quintals of wheat/acre. In my opinion awareness of new technology is important for better crop yield.

Mohan : Sabiha, come here and see some earthworms. Are they helpful to the farmers?

Sabiha : Oh Mohan! we learnt about it in Class VI.

Shri Patel : Earthworms turn the soil and loosen it for proper aeration, so they help the farmer.

David : Can we have some seeds of the crops you grow here?

[They put some seeds, fertilisers and soil sample in the bags.]

Himanshu : Sir, we are thankful to you for making this visit pleasant and for providing useful information.

Class –VIII BIOLOGY

1. Define these:-

- a. Horticulture                      b. Animal husbandry

2. What is transplantation? How is transplantation a better method of sowing?
3. What is crop rotation? How does crop rotation maintain the fertility of soil?
4. Why is ploughing essential in agriculture?
5. What is leveling? Write two advantages of leveling.
6. Distinguish between Kharif crops and Rabi crops.
7. Write three differences between manures and fertilizers.
8. Write two differences between macronutrients and micronutrients.

**NOTE: All questions given from Chapter 1( Crop Production and Management)**

## **SUBJECT- HISTORY**

### **WHEN, WHERE AND HOW**

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#### **PERIODISATION OF HISTORY**

Historians categorise the past into the ancient, medieval and modern periods, for ease of study. The transition from one period to the other is usually a gradual and continuous process. But for the purpose of study, certain important events are taken to mark the beginning and the end of a period.

The modern period of Indian history is believed to have begun with the decline of the Mughal Empire and the establishment of British rule in India in the 1750s. It continued till India won its independence in 1947. Thus, India was a colony of the British Empire for most part of the modern period. For this reason, this period is also known as the colonial period.

Colonialism is the practice of one country politically controlling and governing another country. People from the colonizing country usually settle in the colonized country and exploit it for economic gain.

#### **AN OVERVIEW OF THE MODERN PERIOD IN INDIA**

In the course of this year, we will learn about all the major events that marked the modern period of Indian history. We will study:

- How the decline of the Mughal Empire and the rivalry between the rulers of the various Indian states helped the British gain a foothold in India.
- About the way in which the British came to power—how they annexed many princely states and formed laws and policies of their own
- About the impact of their rule on the economy, society and culture of India
- About the independence movement, starting from the uprising in 1857 till the day India gained independence on 15 August 1947
- About the partition of the colonial India into India and Pakistan.

#### **SOURCES OF MODERN HISTORY**

The sources of modern history are richer and more varied than those of the ancient and medieval periods. They can be classified into primary and secondary sources.

Primary sources are first-hand accounts of an event in history compiled by people who had witnessed the event. They are original materials. Monuments, coins, inscriptions, paintings, sculptures and artifacts are some examples of primary sources.

Secondary sources are those which are based on the study of primary sources. They are created by scholars who study a variety of primary sources and analyze them. Secondary sources mainly include scholarly books and journals.

#### **COLONIAL SURVEYS**

When the British established their rule in India, they realized the importance of knowing the country well in order to administer it effectively. Thus, they introduced the practice of surveys, through which they made detailed studies of everything new they encountered here. This

included a thorough study of its history, languages, culture, topography, natural vegetation, wildlife and natural resources. They also made a detailed study of the different kinds of people inhabiting the land and classified them on the basis of caste, religion, ethnicity and occupation.

**Q1. Answer in one or two sentences.**

- a. How have historians divided Indian history?
- b. Why do many historians refer to modern period as colonial?
- c. What is the extent of the modern period of Indian history?

**Q2. Answer in 50-60 words.**

- a. Distinguish between primary and secondary sources of information of Indian history.
- b. How did surveys become important under the colonial administration?

**Q3. Think and answer.**

**Explain the major events that shaped the modern period of Indian history.**