OSWAAL CBSE QUESTION BANK with complete solutions

Class 8

SCIENCE

HIGHLIGHTS

- Strictly as per the NCERT Curriculum
- Chapterwise Synopsis for clarity of concepts
- Variety of questions from NCERT Textbooks
- Typology of Questions includes MCQs, VSA, SA and Long Answer types
- Include HOTS & Value Based Questions
- Answers follow the marking scheme and the prescribed word limit
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### Science Syllabus Class-VIII

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<tr>
<td><strong>1. FOOD</strong>&lt;br&gt;Crop production&lt;br&gt;Crop production: How are different food crops produced? What are the various foods we get from animal sources?</td>
<td><strong>Crop production</strong>&lt;br&gt;Soil preparation, selection of seeds, sowing, applying fertilizers, irrigation, weeding, harvesting and storage; nitrogen fixation, nitrogen cycle.</td>
<td>Interaction and discussion with local men and women farmers about farming and farm practices; visit to cold storage, go-downs; visit to any farm/nursery/garden.</td>
<td>(Periods - 22)&lt;br&gt;Preparing herbarium specimens of some crop plants; collection of some seeds etc; preparing a table/chart on different irrigation practices and sources of water in different parts of India; looking at roots of any legume crop for nodules, hand section of nodules.</td>
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<tr>
<td><strong>Micro-organisms</strong>&lt;br&gt;What living organisms do we see under a microscope in a drop of water? What helps make curd? How does food go bad? How do we preserve food?</td>
<td><strong>Micro organisms – useful and harmful.</strong></td>
<td>Microscope, kit materials; information about techniques of food preservation.</td>
<td>Making a lens with a bulb; Observation of drop of water, curd, other sources, bread mould, orange mould under the microscope; experiment showing fermentation of dough – increase in volume (using yeast) – collect gas in balloon, test in lime water.</td>
</tr>
<tr>
<td><strong>2. Materials</strong>&lt;br&gt;Materials in daily life&lt;br&gt;Are some of our clothes synthetic? How are they made? Where do the raw materials come from? Do we use other materials that are synthetic? Do we use cloth (fabric) for purposes other than making clothes to wear? What kind of fabric do we see around us? What are they used for?</td>
<td><strong>Synthetic clothing materials.</strong>&lt;br&gt;Other synthetic materials, especially plastics; usefulness of plastics and problems associated with their excessive use. There are a variety of fibrous materials in use. A material is chosen based on desired property.</td>
<td>Sharing of prior knowledge, source materials on petroleum products.</td>
<td>(Periods - 26)&lt;br&gt;Survey on use of synthetic materials. Discussion. Testing various materials – for action of water, reaction on heating, effect of flame, electrical conductivity, thermal conductivity, tensile strength.</td>
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<tr>
<td><strong>Different kinds of materials and their reactions.</strong>&lt;br&gt;Can a wire be drawn out of wood? Do copper or aluminium also rust like iron? What is the black material inside a pencil? Why are electrical wires made of aluminium or copper?</td>
<td><strong>Metals and non metals.</strong>&lt;br&gt;Combustion, flame.</td>
<td>Kit items.</td>
<td>Simple observations relating to physical properties of metals and non-metals, displacement reactions, experiments involving reactions with acids and bases. Introduction of word equations.</td>
</tr>
<tr>
<td><strong>How things change/react with one another</strong>&lt;br&gt;What happens to the wax when a candle is burnt? Is it possible to get this wax back?</td>
<td></td>
<td>“The Chemical History of a Candle”, by M. Faraday, 1860.</td>
<td>Experiments with candles.</td>
</tr>
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</table>
### Questions

What happens to kerosene/natural gas when it is burnt? Which fuel is the best? Why?

### Key Concepts

All fuels release heat on burning. Fuels differ in efficiency, cost etc. Natural resources are limited. Burning of fuels leads to harmful by products.

### Resources

Collecting information from home and other sources.

### Activity/Processes

Collecting information.

<table>
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Discussion on whether we find as many diverse plants/animals in a ‘well kept area’ like a park or cultivated land, as compared to any area left alone. Discussion on depletion of wild life, why it happens, on poaching, economics.

Use of a microscope, preparation of a slide, observation of onion peel and cheek cells, other cells from plants e.g. Hydrilla leaf, permanent slides showing different cells, tissues, blood smear; observation of T.S. stem to see tissues; observing diverse types of cells from plants and animals (some permanent slides).

Discussion with counsellors on secondary sexual characters, on how sex of the child is determined, safe sex, reproductive health; observation on eggs, young ones, life cycles.

Discussion on Gender issues and social taboo’s.

Observing and analysing the relation between force and motion in a variety of daily-life situations.

Demonstrating change in speed of a moving object, its direction of motion and shape by applying force. Measuring the weight of an object, as a force (pull) by the earth using a spring balance.
### Friction

**What makes a ball rolling on the ground slow down?**

- Factors affecting friction: sliding and rolling friction.
- Advantages and disadvantages of friction for the movement of automobiles, airplanes, and boats/ships.
- Increasing and reducing friction.

### Pressure

**Why are needles made pointed? Why does a balloon burst if too much air is blown into it? Why does an inverted glass/bottle/pitcher resist being pushed down into water? How can air/liquids exert pressure?**

- Idea of pressure; pressure exerted by air/liquid; atmospheric pressure.
- Daily-life experiences; experimentation-improvised manometer and improvised pressure detector.

### Sound

**How do we communicate through sound? How is sound produced? What characterises different sounds?**

- Various types of sound; sources of sound; vibration as a cause of sound; frequency; medium for propagation of sound; idea of noise as unpleasant and unwanted sound and need to minimise noise.
- Daily-life experiences; kit items; musical instruments.
- Demonstrating that vibration is the cause of sound.
- Identifying various sources of noise. (unpleasant and unwanted sound) in the locality and thinking of measures to minimise noise and its hazards (noise-pollution).

### Key Concepts

- Friction – factors affecting friction, sliding and rolling friction, moving; advantages and disadvantages of friction for the movement of automobiles, airplanes and boats/ships; increasing and reducing friction.
- Idea of pressure; pressure exerted by air/liquid; atmospheric pressure.
- Various rough and smooth surfaces, ball bearings.

### Resources

- Rubber cap, pins, water, bulb or LED, cells, various liquids.
- Daily-life experiences; kit items; musical instruments.
- Various rough and smooth surfaces, ball bearings.

### Activity/Processes

- Demonstrating friction between rough/smooth surfaces of moving objects in contact, and wear and tear of moving objects by rubbing (eraser on paper, cardboard, sand paper).
- Activities on static, sliding and rolling friction. Studying ball bearings. Discussion on other methods of reducing friction and ways of increasing friction.
- Observing the dependence of pressure exerted by a force on the surface area of an object.
- Demonstrating that air exerts pressure in a variety of situations.
- Demonstrating that liquids exert pressure.
- Designing an improvised manometer and measuring pressure exerted by liquids.
- Designing improvised pressure detector and demonstrating increase in pressure exerted by a liquid at greater depths.
- Demonstrating and distinguishing different types (loud and feeble, pleasant/musical and unpleasant/noise, audible and inaudible) of sound.
- Producing different types of sounds, using the same source. Making a 'Jal Tarang'. Demonstrating that vibration is the cause of sound.
- Designing a toy telephone.
- Identifying various sources of noise. (unpleasant and unwanted sound) in the locality and thinking of measures to minimise noise and its hazards (noise-pollution).

### Questions

- How do we get a shock when we touch an electric appliance with wet hands?

### 5. How Things Work

**Electric current and circuits**

- Why do we get a shock when we touch an electric appliance with wet hands?
- Water conducts electricity depending on presence/absence of salt in it. Other liquids may or may not conduct electricity.

### Periods - 14

Activity to study whether current flows through various liquid samples (tap water, salt solution, lemon juice, kerosene, distilled water if available).
### Questions

What happens to a conducting solution when electric current flows through it?

How can we coat an object with a layer of metal?

6. Natural Phenomena

**Rain, thunder and lightning**

What is lightning? What safety measures should we take against lightning strikes?

### Key Concepts

- Chemical effects of current.
- Basic idea of electroplating.
- Clouds carry electric charge. Positive and negative charges, attraction and repulsion. Principle of lightning conductor.
- Laws of reflection.
- Characteristics of image formed with a plane mirror.
- Regular and diffused reflection. Reflection of light from an object to the eye.
- Multiple reflection.
- Dispersion of light.
- Structure of the eye.
- Lens becomes opaque, light not reaching the eye. Visually challenged use other senses to make sense of the world around. Alternative technology available. Role of nutrition in relation to blindness.

### Resources

- Carbon rods, beaker, water, bulb, battery.
- Improvised electrolytical cell, CuSO₄.
- Articles on clouds and lightning; kit items.
- Mirror, source of light, ray source (mirror covered with black paper with a thin slit).
- Plane glass, candle, scale.
- Experience.
- Mirrors and objects to be seen.
- Plane mirror, water.
- Model or chart of the human eye.
- Experiences of children; case histories.
- Samples of Braille sheets.

### Activity/Processes

- Simple experiment to show electroplating.
- Discussion on sparks. Experiments with comb and paper to show positive and negative charge. Discussion on lightning conductor.
- Locating the reflected image using glass sheet and candles.
- Discussion with various examples.
- Activity of observing an object through an object through a straight and bent tube; and discussion.
- Observing multiple images formed by mirrors placed at angles to each other. Making a kaleidoscope.
- Observing spectrum obtained on a white sheet of paper/wall using a plane mirror inclined on a water surface at an angle of 45°.
- Observing reaction of pupil to a shining torch. Demonstration of blind spot.
- Description of case histories of visually challenged people who have been doing well in their studies and careers.
- Activities with Braille sheet.
### Questions

#### Night sky
What do we see in the sky at night? How can we identify stars and planets?

#### Earthquakes
What happens during an earthquake? What can we do to minimise its effects?

### Key Concepts

#### Night sky
Idea about heavenly bodies/celestial objects and their classification—moon, planets, stars, constellations. Motion of celestial objects in space; the solar system.

#### Earthquakes
Phenomena related to earthquakes.

### Resources

#### Night sky
Observation of motion of objects in the sky during the day and at night; models, charts, role-play and games, planetarium.

#### Earthquakes
Earthquake data; visit to seismographic centre.

### Activity/Processes

Observing and identifying the objects moving in the sky during the day and at night. Observing and identifying some prominent stars and constellations. Observing and identifying some prominent planets, visible to the naked eye, (Venus, Mars, Jupiter) in the night sky and their movement. Design and preparing models and charts of the solar system, constellations, etc. Roleplay and games for understanding movement of planets, stars etc.

Looking at structures/large objects and guessing what will happen to them in the event of an earthquake; activities to explore stable and unstable structures.

### 7. Natural Resources

#### Man’s intervention in phenomena of nature
What do we do with wood? What if we had no wood? What will happen if we go on cutting trees/grass without limit?

What do we do with coal and petroleum? Can we create coal and petroleum artificially?

#### Pollution of air and water
What are the various activities by human beings that make air impure? Does clear, transparent water indicate purity?

Consquences of deforestation: scarcity of products for humans and other living beings, change in physical properties of soil, reduced rainfall. Reforestation; recycling of paper.

Formation of coal and petroleum in nature. (fossil fuels?). Consequences of over extraction of coal and petroleum.

Water and air are increasingly getting polluted and therefore become scarce for use. Biological and chemical contamination of water; effect of impure water on soil and living beings; effect of soil containing excess of fertilizers and insecticides on water resources. Potable water.

Consequences of deforestation and on movements to protect forests.

Description of some specific examples of extremely polluted rivers.

### Activity/Processes

Narration and discussions. Project—Recycling of paper.

Discussion.

Case study and discussion. Purification of water by physical and chemical methods including using sunlight. Discussion on other methods of water purification.
To provide food for a large population, regular production, proper management and distribution of food is necessary.

When nomadic people settled and cultivated lands, produced rice, wheat and other crops, then agriculture was born.

Crop: When plants of same kind are grown and cultivated at one place on a large scale, it is called crop.

In India, two cropping patterns are found:

- Kharif crops: Grown from June to September (Rainy Season) e.g., paddy, maize, soyabean, etc.
- Rabi crops: Grown from October to March (Winter Season) e.g., gram, pea, mustard, linseed etc.

Agricultural implements: Tools used for the purpose of various agricultural activities.

Main agricultural implements are:

- Plough
- Hoe
- Cultivator
- Tools used for sowing seeds:
  - Traditional tool: It is shaped like a funnel passed down through pipes having sharp ends, which pierce into the soil and place seeds there.
  - Seed drill: Seed drill tools sow seeds uniformly at proper distance and depth.

Agricultural practices:

General activities undertaken by the farmers over a period of time to cultivate crops are called agricultural practices. They are as follow:

1. Preparation of soils:
   - It is the first step before growing a crop. Soil has to be loosened (The process of loosening and turning of the soil in called tilling or ploughing).
   - This also helps in growth of earthwarms and microbes that add humus to it.
   - The ploughed field have big pieces of soil called crumbs.

2. Sowing: Before sowing, good quality seeds are selected. Farmers are advised to use good, healthy and high yielding seeds.
3. **Adding manures and fertilizers**: The substances that are added to the soil in the form of nutrients for the healthy growth of plants are called manures and fertilizers.

   **Manure**: Is an organic substance obtained from the decomposition of plant or animal wastes.

   **Fertilizers**: Are chemical substances which are rich in a particular nutrient. *e.g.*, urea, ammonium sulphate, super phosphate, Potash, NPK.

4. **Irrigation**: The supply of water to crops at different intervals is called irrigation. Sources of irrigation are—wells, tubewells, ponds, lakes, rivers, dams and canals.

   - **Methods of irrigation**.
     
     (A) **Traditional methods**: Water available in wells, lakes and canal is lifted up by different methods.
     
     (i) Moat (Pulley system)
     (ii) Chain pump
     (iii) Dhekli and
     (iv) Rahat (Lever system)

     (B) **Modern methods**:
     
     (i) **Sprinklers system**: Rotating nozzles sprinkle water as if it is raining. (Useful for sandy soil)
     (ii) **Drip irrigation**: Water falls drop by drop. (Best for fruits and vegetables).

5. **Protection from weeds**:
   
   (i) Undesirable plants that naturally grow with plants are called **weeds**.
   
   (ii) Removal of weeds is called **weeding**. It can be done by different methods as follows:
   
   (a) Manually (Uprooting or cutting them close to ground).
   (b) Using weedicide, *e.g.*, 2, 4 – D.

6. **Harvesting**: The cutting of crop after its maturity is called **harvesting**.

   In the harvested crop, the grain seeds are separated from the chaff. This process is called **threshing**: (It is done by machine called **Combine**).

7. **Storage**: Before storing, grains are properly dried in the Sun to reduce the moisture in them. This prevents the attack by pests, bacteria and fungi.

   (i) Farmers store grains in jute bags or metallic bins.
   (ii) Largescale storage of grain in done is **silos** and **granaries**.

   ▶ **Animal husbandry**: Animals, reared at home or in farms, have to be provided with proper food, shelter and care. When it is done on large scale, it is called animal husbandry.

### Objective Type Questions (1 mark)

(A) **Multiple Choice Questions**

1. Which is not a Kharif crop?
   
   (a) Paddy  
   (b) Gram  
   (c) Maize  
   (d) Soya bean

2. Sometimes, manure is added to the soil before filling because:
   
   (a) less manure is used.  
   (b) it helps in proper mixing of manure with soil.  
   (c) save labour and time.  
   (d) none of above.
CROP PRODUCTION AND MANAGEMENT

3. Process of separating grain seeds from the chaff is called:
   (a) threshing (b) harvesting (c) weeding (d) sowing.

4. Which of the following is not a traditional method of irrigation?
   (a) Moat (b) Chain pump (c) Drip system (d) Rahat.

5. An agricultural implement used since ancient times for tilling the soil, adding fertilizers, removing weeds etc. is:
   (a) hoe (b) combine (c) plough (d) seed drill.

6. The use of manure (which in not correct):
   (a) Enhances the water-holding capacity of the soil.
   (b) Improves soil texture.
   (c) Increases the number of friendly microbes.
   (d) Also becomes a source of water pollution.

Ans. 1. (b) Gram.
      2. (b) it helps in proper mixing of manure with soil.
      3. (a) threshing.
      4. (c) drip system.
      5. (c) plough.
      6. (d) also becomes the source of water pollution.

(B) Fill in the blanks:
1. ........... and ........... are the examples of Rabi crops.
2. The ploughed field may have big pieces of soil called ........... .

(C) Match the Columns:
1. Granaries       A. NPK
2. Kharif crop     B. 2, 4 – D
3. Weedicide       C. Dhekli
4. Traditional method of Irrigation D. Silos
5. Fertilizers.    E. Ground nut.

Ans. 1. → (D), 2. → (E), 3. → (B), 4. → (C), 5. → (A).

Very Short Answer Type Questions (1 mark)

Q. 1. Write full form of NPK.
Ans. Nitrogen, Phosphorus, Potassium.

Q. 2. What is winnowing?
Ans. Winnowing is a process by which small farmers do the separation of grains by chaff.

Q. 3. When was agriculture born?
Ans. When nomadic people cultivated land and produced rice, wheat and other food crops, agriculture was born.

Q. 4. What are the crops grown generally from June to September called?
Ans. Crops grown generally from June to September are called Kharif crops. e.g., maize, groundnut, soyabean.
Q. 5. What is the first step before growing a crop?<br>Ans. The first step before growing a crop is the preparation of soil.

Q. 6. What are the main tools used for agriculture practices?<br>Ans. The main tools are plough, hoe and cultivator.

Q. 7. What will happen if freshly harvested grains are stored without drying?<br>Ans. Grains should be properly dried to reduce the moisture and this prevents the attack by insects, pests, bacteria and fungi.

Q. 8. Where is the sprinkler water system useful?<br>Ans. Sprinkle water system is useful on the uneven land and at the land where water is not available. It is good for sandy soil.

Q. 9. Why traditional irrigation methods are cheaper?<br>Ans. Cattle or human labour is used in these methods so they are cheaper.

Q. 10. Name two harvest festivals celebrated in India.<br>Ans. Pongal, Baisakhi.

Q. 11. What is the process of loosening and turning of the soil called?<br>Ans. Tilling or ploughing.

Q. 12. What is a strong triangular iron strip of plough called?<br>Ans. Plough share.

Q. 13. Who increases the number of friendly microbes?<br>Ans. The loosened soil.

Q. 14. The irrigation system that sprinkles water on the crops as if it is raining?<br>Ans. Sprinkle water system.

Q. 1. Why is the process of loosening and turning of the soil an important task in agriculture?<br>Ans. This allows the roots to penetrate deep into soil. The loose soil allows the roots to breathe easily deep into the soil and also helps in the growth of earthworms and microbes present in soil as they add humus to it.

Q. 2. Why is levelling of soil essential?<br>Ans. The field is levelled for sowing and for irrigation purposes.

Q. 3. What are the advantages of using seed drill?<br>Ans. Seed drill sows the seeds uniformly at proper distance and depth.

Q. 4. Why fields have to be watered regularly?<br>Ans. Water is essential because germination of seeds does not take place under dry conditions.

Q. 5. How can a farmer increase the fertility of the soil?<br>Ans. Farmers can increase the fertility of the soil by:
   — adding manure and fertilizers.
   — crop rotation.
   — leaving the field uncultivated in between two crops.

Q. 6. Why is weeding necessary?<br>Ans. Weeding is necessary since weeds compete with the crops plants for water, nutrients, space and light. They affect growth of the crop. Some weeds may be poisonous for animals and human beings.
Manure is a natural substance obtained by the decomposition of cattle dung, human waste and plant residues. Manure can be prepared in the fields. Manure provides a lot of humus to the soil. Manure is relatively less rich in plant nutrients.

<table>
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<tr>
<th>S. No.</th>
<th>Fertilizer</th>
<th>Manure</th>
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<tbody>
<tr>
<td>1.</td>
<td>A fertilizer is an inorganic salt.</td>
<td>Manure is a natural substance obtained by the decomposition of cattle dung, human waste and plant residues.</td>
</tr>
<tr>
<td>2.</td>
<td>A fertilizer is prepared in factories.</td>
<td>Manure can be prepared in the fields.</td>
</tr>
<tr>
<td>3.</td>
<td>A fertilizer does not provide any humus to the soil.</td>
<td>Manure provides a lot of humus to the soil.</td>
</tr>
<tr>
<td>4.</td>
<td>Fertilizers are very rich in plant nutrients such as nitrogen, phosphorus and potassium.</td>
<td>Manure is relatively less rich in plant nutrients.</td>
</tr>
</tbody>
</table>

Q. 2. List all the activities practiced during cultivation of crops.

**Ans.** The activities practiced during cultivation of crops are:

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

Q. 3. Explain the structure of plough.

**Ans.** Plough is a tool used since ancient times for tilling soil, adding manure etc. This implement is made of wood. It contains a strong triangular iron strip called ploughshare.

![Fig. Plough](image)

The main part of the plough is a long wood called ploughshare. There is a handle at one end. Other end is attached to beam, placed on the bullock’s neck.

Q. 4. What are the advantages of manure?

**Ans.** Advantages of manure:

(i) It enhances the waterholding capacity of the soil.
(ii) It makes the soil porous due to which exchange of gases becomes easy.
(iii) It increases the number of friendly microbes.
(iv) It improves the texture of the soil.

Q. 5. What are the disadvantages of fertilizers?

**Ans.** Disadvantages of using fertilizers:

(i) They become source of water pollution.
(ii) They make soil less fertile.
(iii) They do not provide any humus to the soil.

Q. 1. Discuss various systems of irrigation.

**Ans.** The supply of water to crops at different intervals is called irrigation. Various systems of irrigation are:

(i) Traditional methods: The water available in wells, lakes and canals is lifted up by:
   (a) Moat (Pulley system);
   (b) Chain pump
   (c) Dheki and;
   (d) Rahat (Lever system)

Pumps are commonly used for lifting water.

(ii) Modern methods:

(a) Sprinkler system: This system is more useful on uneven land. The perpendicular pipes, having rotating nozzles on top, are jointed to the main pipeline at regular intervals. When
water flows through main pipes, it gets sprinkled on the crop as if it is raining.

(b) **Drip system**: In this system water falls drop by drop just at the position of the roots. It is the best technique for watering fruit plants, garden and trees.

Q. 2. Explain the main tools used to prepare soil.

**Ans.** Main tools used to prepare soil are as follows:

(a) **Plough**: This implement is made of wood and is drawn by a pair of bulls or other animals. It is used for tilling the soil, adding manure, removing the weeds, scraping of soil etc.

(b) **Hoe**: It is a simple tool that is used for removing weeds and for loosening the soil.

(c) **Cultivator**: Ploughing is done by tractor-driver cultivator. It uses same labour and time.

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**Value Based Questions (5 marks)**

Q. 1. What is the importance of using manure and fertilizers as an agricultural practice?

**Ans.** Using manure and fertilizers as an agriculture practice is important as continuous growth of crops makes the soil poorer in certain nutrients. These both are added to the soil in the form of nutrients for the healthy growth of plants. Manure replenishes the soil with nutrients and also improves water retaining capacity whereas fertilizers make soil rich in a particular nutrient. They also help farmers to get better yield of crops.