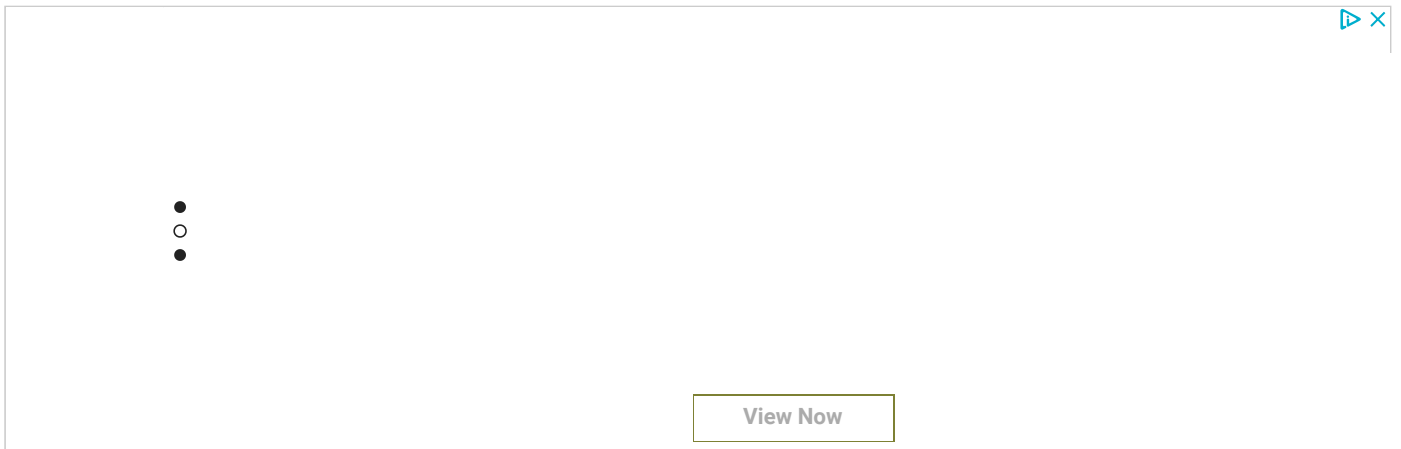


CBSE Class 9 Science Syllabus



CBSE Class 9 Science :

The subject of Science is very important for a growing child since it drives the thinking power among the children. It enhances the skills such as creativity, objectivity, aesthetic sensibility and enquiry. In the primary stage of the school, students observe, draw, record observation and experiment the science subjects, etc.,

In the secondary stage, students are expected to extract ideas from the principles of science subjects, answer quantitative reasoning questions to occupy more central place in the learning and teaching of science.

CBSE Class 9 and 10 syllabuses are divided into two terms such as Term 1 and Term 2.

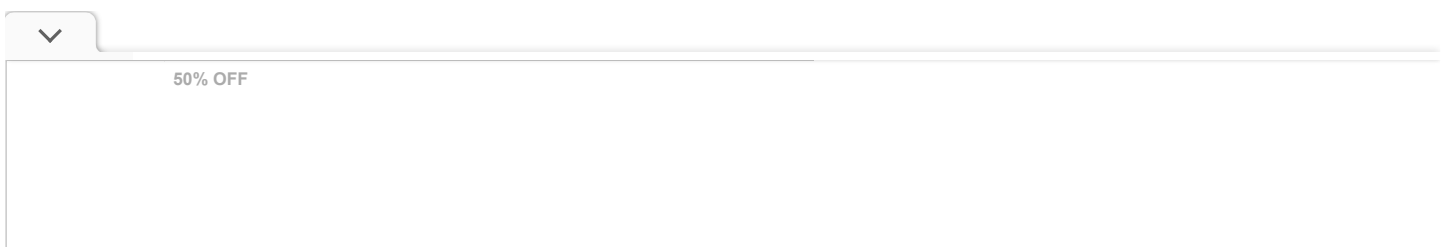
Term 1:

1. Matter-Its nature and behavior
2. Organization in living world
3. Motion, force and work
4. Food and Food production

Term 2:

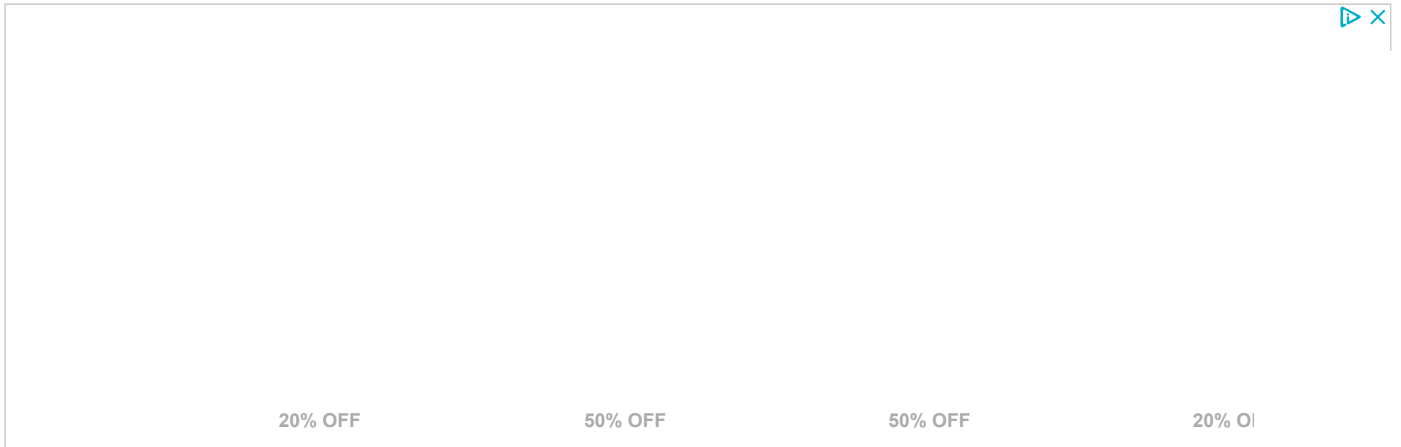
1. Matter-Its nature and behavior (Continued)
2. Organization in the living world (Continued)
3. Motion, force and work (Continued)
4. Our environment

The above syllabus is in detail below:



This chapter is covered in both first term and second term. Matter is commonly said to exist in four states such as solid, liquid, gas and plasma. In both Physics and Chemistry matter exhibits both wave like and particle like properties which is so called particle duality.

Term 1 covers the topics such as definition of matter, states of matter, characteristics, condensation and sublimation, Nature of matter.



Term 2 covers the topics such as Particle, nature and basic units, mole concepts and structure of atom.

Nature of matter:

A molecule consists of two or more atoms belonging to the same elements or different elements which are clinically bound together. In this way let us define elements, compounds and mixtures as below;

Elements:

An element is which cannot be broken down into simpler type of matter by either physical or chemical processes.

Compounds:

A compound can be broken into simpler types of matter by chemical means and not by physical means.

Mixtures:

It can be separated into its components by physical means.

Particles, nature and basic units:

An atom is the smallest particle which can exist independently and retain its chemical properties. A molecule is also a smallest particle of an element which can also exist independently and can exist even under ordinary conditions.

Structure of atom:



Examples:

1. What are canal rays?

Answer: E. Goldstein discovered positively charged rays which are called as canal rays.

2. If an atom contains one electron and one proton, will it carry any charge or not?

Answer: The atom will not contain any charge.

3. Hydrogen and Oxygen combine in the ratio 1:8 by mass to form water. What mass of oxygen gas would be required to react completely with 3g of hydrogen gas?

Answer: 24 g

4. Write any two characteristics of particles of matter?

Answer:

- Particles of matter have a gap between them
- Particles of matter are continuous in motion

5. What is a substance?

Answer: A substance can be defined as a matter where constituent particles cannot be separated from each other by any other physical process.

• Organization in living world:

Just like the first chapter, this chapter is also covered in both term 1 and term 2. In term 1 the topics which are covered are Basic units of life, tissues, organs, organ system, organism, etc. In term 2 the topics which are covered are biological diversity, health and diseases.

Structure and function of cell:

All living organisms such as plants, humans and animals are made up of small structures called as cells. If the organism has single cell it is called as single cellular organism whereas if the organism has multiple cell it is called as multi-cellular organism.

Tissues:

The group of cells performing similar type of functions is called as tissues. These tissues can be classified as plant and animal tissues. Plant tissue can be divided into two types Meristematic, permanent tissue. ✓ Animal tissue can be divided into Epithelial tissue, connective tissue, muscular tissue and nervous tissue.

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Health and diseases:

This chapter deals with various health related topic and diseases caused to the living organisms due to several factors. It covers diseases caused by the microbes, bacteria, virus and the prevention tips to safeguard from those harmful microbes.

Examples:

1. What is a tissue?

Answer: A group of cells that are same in origin and can perform some specialized function is called as tissue.

2. In what basis plants and animals are put into different categories?

Answer: On the basis of mode of nutrition

- **Motion, force and work:**

In term 1 it covers the topics such as Motion, Newton's law, force and gravitation. In term 2 it covers floatation, work, energy and power, sound.

Laws of Motion:

The study of relationships between motion, force and energy is called as mechanics.

Force: Force is a push or pull that can change the current state of motion of an object

Motion: It can be defined as an action or the process of moving or being moved.



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Energy: Energy can be defined as the ability to do work or elicit change in matter.

There are three important Newton's Laws of motion such as below:

First law of motion: This is called as law of inertia. This states that any object will stay in motion until acted upon by an outside force.

Second law of motion: The second law can be defined as Force equals to mass and inertia. $F = ma$

Third law of motion: For every action there is equal and opposite reaction.

Work, energy, power:

Work results when a force acts upon the object to cause the displacement. Energy is the capability of doing work. Power is the ability to do something or act in a particular way.

Sound:

This is a form of energy which comes from the vibrations. These vibrations create sound waves that can travel through the air and water before reaching our ears.

Examples:

1. Distinguish between speed and velocity?

Answer: Speed is the distance travelled by it per unit time.

Velocity is the displacement per unit time of the body during movement.

2. From a riffle of mass 4 kg, a bullet of mass 50g is fired with an initial velocity of 35ms^{-1} . Calculate the initial recoil velocity of the riffle.

Answer: $v = -0.44\text{m/s}$

- ✓ 3. Why sound waves are called as mechanical waves?

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- **Food and food production:**

This chapter deals with the importance of food and food production, increase in crop production and animal food.

Improvement in the crop yield:

The improvement of the crop yield can be made in number of ways by harvesting, weeding crop protection, preparation of qualified soil, harvesting and finally storage.

Food from the animals:

The breeding, feeding and caring animals for food is called as animal husbandry which includes sericulture, apiculture, pisciculture, poultry farming and livestock farming, etc.,

Examples:

1. Name few macronutrients?

Answer: Nitrogen, phosphorous, potassium, sulphur, magnesium.

2. What are the factors responsible for the losses of grains during storage?

Answer: Abiotic factors which are unfavourable conditions of humidity and temperature

Biotic factors are factors such as insects, rodents, bacteria, fungi that feed affect the grains.

- **Our environment:**

This chapter is covered in the second term of the CBSE Class 10 Science subject. The topics which are covered under this are Physical resources, bio-geo chemical cycles in nature.

Physical resources:

Air, water and soil are the physical resources which are very important factors for our environment.

This module explains about the classification, consumption of these resources and factors that deplete our environment.

Examples:

1. What is the major source of fresh water in village, city and town?

✓ Answer: Rain water, water from lakes, ponds, pools, dams, etc.,

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Thus, the above are the topics which are covered under the syllabus of **CBSE Class 9 Science** .

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