

Syllabus of Science

Students appearing exam for 6th standard (5th class to 6th class)

1. **Matter** : - Definition and example; atoms and molecules; definition and difference; three states of matter; Elements and compounds – differences and definitions. Physical and chemical changes; Interchangeability of matter. Melting; evaporation; condensation and freezing. Miscible and immiscible liquids with examples; solute, solvent and solution; saturated solution – definition.
2. **Force, work and energy** : - Force and motion (definition); Effects of force on an objects. Work - definition and conditions to say that work is done; Simple machines (basic information)
Inclined plane, wheel and axle; screws: Wedges; Pully, lever and its kinds with examples; Types or forces; Muscular force, Gravitational force, Electrostatic force; Magnetic force and frictional force; Advantage and disadvantages of friction; Energy; Different forms of energy – Heat, light, sound; Electrical, Magnetic energy. Sources of energy – solar, wind and water energies; (hydroelectricity); Fuels - definition and examples.
3. **Air around Us** : - Atmosphere, layers or atmosphere, Uses of atmosphere; Composition of air, properties of air, Use of barometer – air pollution – its causes and ways of prevention, Land breeze and sea breeze.
4. **Water** : - Importance of water, sources of water, impurities found in Natural water; Underground water, saline water, percolation; Properties of water; Soluble and insoluble impurities in water; Causes of water pollution; Sedimentation and decantation; Filtration evaporation and distillation; Distilled water; Potable water; Water cycle; precipitation. Condensation of water vapor into clouds, dew, fog, frost, snow and hail.
5. **Light** : - What is light? Luminous and non - Luminous objects with examples. Rectilinear propagation light, bioluminescence (living light) examples, Transparent, Translucent and opaque bodies with examples.
6. **Sound** : - Bodies in vibration and production of sound. Sound cannot travel through Vacuum, speed or sound in air, liquids and solids. Reflection of sound and echo, musical instruments and Noise.
7. **Natural calamities** : - Earthquakes, Volcanoes, lava and magma; Tsunami; Hurricane/ Typhoon/ Cyclone. Droughts and floods.
8. **Our Universe** : - Solar system; Planets and their orbits; The sun; Stars; Planets V/s Stars; A few facts about 8 planets with their moons. The earth – its internal structure; Imaginary lines on the earth – axis , equator, northern and southern hemispheres ; Movements of earth – Rotation and Revolution. Formation of day and night and seasons.
9. **The Moon** : - Satellites; Conditions on the Moon; Surface of the Moon; The gravitational force of the Moon; Tides; movements of the Moon; Phases of the Moon: Eclipses solar and lunar; Journey to the Moon; Artificial Satellites and uses of artificial Satellites.
10. **Reproduction in plants**: Vegetative reproduction and artificial vegetative propagation - grafting and layering; sexual reproduction- parts of a flower- structure of a seed- Germination of a bean seed – transplantation- seed dispersal.
11. Habitat and adaptations: Terrestrial habitats- forest, desert, polar regions, ocean, fresh water- adaptations for movement, adaptations for breathing- body coverings; camouflage, eating habits.
12. Communicable diseases: Common germs of communicable diseases- bacterial, viral and protozoan diseases, spreading or communicable diseases- by air, through infected food and water by insects and by direct contact- preventions of diseases.

Students appearing exam for 7th standard (6th class to 7th class)

Science Syllabus

1. **FIBRE TO FABRIC :-**
Clothing material – history ; Types, properties, manufacture and uses of natural and synthetic fibres.
2. **SORTING MATERIALS INTO GROUPS :-**
What are things made of ? ; What is matter?; The concept of classification and its advantages; properties of materials; States of matter.
3. **SEPERATION OF SUBSTANCES :-**
Mixtures and pure substances; Why is separation necessary?; Methods of separation; Solubility; Importance of water as a solvent.
4. **CHANGES AROUND US :-**
Reversible and irreversible changes; Physical and chemical changes; Changes when different substances are mixed; Some more examples of physical and chemical changes.
5. **MEASUREMENT AND MOTION :-**
Physical quantities; What is measurement?; Standard units; Need for accurate measurements; Measurement of length; Importance of estimation; What is motion? Story of transport; Types of motion; Different motions at the same time.
6. **LIGHT, SHADOWS AND REFLECTIONS :-**
The importance of light to life on earth; Light travels in straight lines; Shadows ; Eclipses; Differences between shadows and images; Reflection of light by a plane mirror.
7. **ELECRICITY AND CIRCUITS :-**
Electric current; Electric circuits; conductors and insulators ; Electric cells.
8. **FUN WITH MAGNETS :-**
What is a magnet?; Magnetic and non-magnetic substances; Poles of a magnet; The earth's magnetism; Making magnets; Magnetic field; Uses of magnets.
9. **WATER :-**
Importance of water for sustaining life; States of water; Change of state; Water cycle; Sources of water; Droughts; Floods; Conservation of water.
10. **AIR AROUND US :-**
The atmosphere; The composition of air; Air supports life; The oxygen cycle.
11. Our food: Variety and sources: Functions of food- constituents of food, food from animals and food from plants.
12. Food and its components: Nutrients and their importance, Body- buildings; energy giving and protective foods; vitamins and minerals . Deficiency diseases; balanced diet, water and roughage, under nutrition and malnutrition. Tests for the detection of starch, proteins and sugars.
13. Getting to know plants: Different types of plants; structure of a plant- Root system and short system. Types of roots, functions of roots and their modifications. Stem-its functions and modifications; Leaf, its functions and its modifications . Flower- its structure and functions. Fruit- its structure and functions.
14. Movement of the body: Exoskeleton and endoskeleton; types of bones; skull, backbone and ribcage; joints and their types with examples. Movement in animals- movement of earthworm, cockroach, fish, birds and snakes.
15. Habitat of the living: Components of environment; Interaction between biotic and abiotic components; inter dependence; terrestrial habitat and aquatic habitat; polar and mountain habitat, aerial habitat grass lard habitat.

Students appearing exam for 8th standard (7th class to 8th class)

SCIENCE SYLLUBUS

- 01 **Chemicals And Chemical Changes:**
Atoms and molecules; Elements, Compounds and Mixtures; Chemical Symbols and formulae; Significance of a Symbol; Significance of a Formula; Atomicity; Writing Chemical Equations and its advantages; Physical and Chemical changes with examples;
Rusting of iron; Browning of vegetable and fruit surfaces; Reaction between Vinegar and Baking soda; Reaction between Copper Sulphate solution and iron filings; Crystallization and its application in purifying the Common salt.
- 02 **Acids, Bases And Salts :**
Acidic, Basic and Neutral substances; Mineral and Organic Acids with examples; Concentrated and dilute acids; Properties of Acids; Uses of some important acids— Hydrochloric Acid, Sulphuric acid, Nitric Acid and Acetic acid; Properties of Bases; Uses of Bases— Calcium hydroxide, Magnesium hydroxide, Sodium hydroxide and Ammonium hydroxide; Indicators; Universal and Natural indicators; Salts—Neutralization reaction; Acidic, Basic and Neutral salts; Properties of salts; Water of Crystallization, hydrated salts and anhydrous salts.
- 03 **Heat and Temperature :**
Measurement of Temperature; Temperature scales and Conversion formula; Mercury and Alcohol thermometers; Laboratory and Clinical thermometers;
Heat— a form of energy; Measuring heat; flow of heat— Conduction, convection and Radiation; Conductors and Insulators; Practical applications of Conduction, convection and Radiation; Preventing loss of heat an Thermos Flask.
- 04 **Time and Motion :**
Need to measure Time; Ancient and modern ways of measuring time; Measurement of Time using 'periodic motion'; Simple Pendulum; Laws of Simple Pendulum; Slow and Fast motion; Speed and Average speed; Units of speed; Distance and Time graphs.
- 05 **Electric Current And Its effects :**
Circuit diagrams and standard symbols used for basic components of electric circuits; Heating effect of Electric current; Electric Fuse; Principle of an Electric Fuse;
Magnetic Effect of Electric Current; Solenoid; Electro magnets and their uses; Construction and working of an electric bell.
- 06 **Wind And Storm :**
Movement of air— Wind and Storm; Uneven heating of earth causes wind; monsoon winds; Air pressure; Moving air can lift; Characteristics of wind;
Storms— Hurricanes/ Typhoons/ Cyclones; Cyclones and Tropical storms; Damage caused by a Cyclone; Tornadoes; Safety measures during a storm.
- 07 **Light :**
Light is a form of energy; Rectilinear propagation of light; Reflection of light; Reflecting surfaces; Regular and diffused reflection; Characteristics of an image formed by a plane mirror; Convex and Concave mirrors; Uses of Curved mirrors; lenses; Images formed by a Convex lens; Real and Virtual images; Colours and Visible Spectrum; Newton's Disc; Persistence of vision.

- 08 **Water— A Precious Resource:**
Forms of Water; Uses of water; Sources of water; Surface water and underground water or subsoil water; Natural distribution of water in India; scarcity of water; Effects of water scarcity on plants; Conservation of water.
- 09 **Soil: Soil profile-** types of soil particles; composition of soil; soil types in India , soil erosion- causes and prevention.
- 10 **Breath in and out- Respiration:** Process of respiration; comparison between respiration and combustion. Aerobic and anaerobic respiration; Breathing and respiration; mechanism of breathing ; respiration in other organisms- respiration in plants.
- 11 **Transportation of Substances:** Transportation in plants. Circulatory system in human beings; blood and its composition. Excretory system.
- 12 **Reproduction in plants:** Asexual and sexual reproduction; methods of asexual reproduction; fission, fragmentation and spore formation. Vegetative propagation and sexual reproduction.

Students appearing exam for 9th standard (8th class to 9th class)

Science Syllabus

1. **METALS AND NON-METALS :-**
Physical properties – State, luster, Density, Ductility, Conductivity etc...
Chemical properties : - Formation of ions; Reactivity of metals; Reaction with oxygen; Reaction with water; Reaction with acids; Reaction with bases; Reaction with salt solution. Corrosion of Elements - their occurrence; Uses of metals and non metals. Alloys.
2. **COAL AND PETROLEUM :-**
Fossil fuels; Formation of coal; Types of coal; Processing of coal (coke, coal tar, coal gas and Ammonia liquor); Petroleum; Formation of petroleum; Refining petroleum; Fuels and chemicals obtained from crude oil; Advantage and disadvantages of using petroleum; Natural gas; care for natural resources – Conservation of natural fuels.
3. **COMBUSTION AND FLAME :-**
Conditions necessary Combustion; Ignition temperature; Supporter of Combustion; Products of Combustion; Types of Combustion; Fuels; Calorific value of fuels; CNG; LPG; and Ideal fuel; Flame; Four distinct zone of a candle flame; Fire fighting; Fire extinguishers;
4. **SYNTHETIC FIBRES AND PLASTICS :-**
Polymers and polymerization; Types of Synthetic fibers; Important man made fibers; Properties of synthetic fibers; Comparison between Synthetic and natural fibers;
Plastics : - Types of plastics and their uses; Thermoplastics and Thermosetting plastics with examples; Properties and Uses.
5. **SOUND :-**
How is Sound Produced?; How is sound heard? Sound needs a medium for its propagation ; Characteristics of sound – pitch, loudness and quality of sound. How we produce sound; Musical instruments; Audible and Inaudible sounds; Noise and Noise pollution; Harmful effects of noise pollution.

6. **LIGHT** :-
Reflection of light; Laws of reflection; Nature of image formed by a plane mirror; Regular and diffused reflection; Multiple reflections; Kaleidoscope; Refraction; The human eye; Defects of vision; Care for the eyes.
7. **FORCE AND PRESSURE** :-
Force - Effects of force: magnitude and direction of force; Balanced forces; Resultant forces; Types of forces; Contact and non – contact forces; Weight and mass.
Pressure – Applications of pressure; Pressure exerted by fluids; air pressure; measuring pressure of fluid and drag.
8. **FRICTION** :-
What causes friction?; Magnitude of frictional force; Sliding and Rolling friction; Fluid friction;
Effects of friction – advantages and disadvantages; Increasing and reducing friction; lubricants.
9. **THE UNIVERSE** :-
The beginning of the universe; measuring distances in space; Constellations – Ursa major, Ursa minor, Orion and Cassiopeia; Galaxy;
Solar System – Sun and Sunspots; Planets – 8 planets and facts about them; Satellites Asteroids; meteors and meteorites; Comets and Artificial Satellites; and their uses.
10. **CHEMICAL EFFECTS OF ELECTRIC CURRENT** :-
Conductivity of Electric current in liquids; What makes certain liquids conduct electricity; Chemical effects of electric current; Uses of electrolysis; Electroplating and uses of electroplating.
11. **SOME NATURAL PHENOMENA** :-
Electric Charge; How does something become charged? Different ways of charging a body; Gold – leaf electroscope; Flow of charges; Thunder and Lightning; Effects and Precautionary measures.
Earthquake – How earthquakes are caused?; Measuring the intensity of earthquake; Effects of earthquake and Earthquake safety tips.
12. Food production: Agricultural practices, irrigation; use of manures and fertilizers, crop- protection, weeds; and biological control of weeds-harvesting; animal husbandry.
13. The cell: Cell and cell organelles, basic structure and functions of cell organelles.
14. Micro organisms: Kinds of micro organisms algae, fungi, bacteria, viruses and protozoans, useful and harmful micro organisms, Decomposes, antibiotics and nitrogen cycle.
15. Reproduction: Sexual reproduction in animals Internal and external fertilization . Human male and female reproductive systems, fertilization pregnancy frequency and child birth, menstrual cycle, secondary sexual characteristics and endocrine system.

Students appearing exam for 9th standard (9th class to 10th class)

IX CBSE Science Syllabus

1. Matter in our surroundings
2. Is matter around us pure
3. Atoms and molecules

4. Structure of the atom
5. The fundamental unit of life
6. Tissues
7. Diversity in living organisms
8. Motion
9. Force and laws of motion
10. Gravitation
11. Work and energy
12. Sound
13. Why do we fall ill
14. Natural resources
15. Improvement in food resources

Students appearing exam for 9th standard (9th class to 10th class)

Physics Syllabus

1. Motion
2. Laws of motion
3. Gravitation
4. Floating bodies
5. Work and energy
6. Sound

Chemistry Syllabus

1. Matter around us
2. Is matter pure ?
3. Atoms and molecules
4. What is inside the atom ?

Biology Syllabus

1. Cell its structure and functions
2. Plant tissues
3. Animal tissues
4. Movement of material across cell membranes
5. Diversity in living organisms

6. Sense organs
7. Animal behavior
8. Challenges in improving agriculture products
9. Adaptations
10. Soil protection
11. Biogeochemicals

Students appearing exam for 10th standard (10th class to 11th class)

Physics Syllabus

1. Light : Reflection and Refraction.
2. Human Eye and colourful world
3. Electricity
4. Magnetic effects of electric current
5. Sources of energy

Chemistry Syllabus

1. Chemical reactions and equations
2. Acids, Bases and Salts
3. Metals and non-metals
4. Carbon and its Compounds
5. Periodic classification of elements

Biology Syllabus

1. Life processes
2. Control and coordination
3. How do organisms reproduce ?
4. Heredity and Evolution
5. Our Environment
6. Management of Natural resources