



SCHOLASTIC COUNCIL FOR ACADEMIC EXCELLENCE

The All India Scholastic Quest Olympiads "Scholastic Science Olympiad"

Syllabus

Class 4

1. **Living things and non living things:** Differences between living and non living things
2. **Plant life:** Parts of plant, things that plants give us
3. **Animal life:** Human beings, Birds, Reptiles, Insects, Fish
4. **Human Body:** Heart, Lungs, Bones, Muscles
5. **Food:** Why do we need food, Sources of food, Parts of plants as food, Animal products as food
6. **Health & hygiene:** Personal hygiene, Community health
7. **Safety at home:** Handling electrical gadgets, Handling fire, Handling sharp objects
8. **Properties of substances:** States of matter, Other physical properties
9. **Water:** States of water, Sources of water. uses of water
10. **Natural resources and their conservation:** Air, Water, Soil, Minerals, Coal and other fossil fuels
11. **Seasons and Weather:** Precipitation, Weather forecasting
12. **Our environment:** Pollution of air and water, Waste disposal

Class 5

1. **Components of food:** Carbohydrates, Fats, Proteins, Vitamins, Minerals, Roughage, Water, Balanced diet
2. **Digestive system:** Digestion, components of digestive system and their functions
3. **Human Body - Bones and Muscles:** The skeleton, Types of bones, Cartilage, Joints, Muscles
4. **Diseases:** Micro organisms, Spread of diseases, through water, air, food, insects
5. **Animals and their habitats:**
6. **First aid:** Fractures, Burns, Wounds, Sunstroke, Snake bite
7. **Structure and function of parts of plants:** Root system, Stem, Leaf, Flower, Fruit
8. **Types of changes:** Fast/slow, Useful/harmful, Reversible/irreversible, Natural/manmade, Periodic/non periodic
9. **Good Habits:**
10. **Sources of water:** Rain, Ground water, Lakes
11. **Air pollution and its ill effects:** Causes and effects, measures to reduce air pollution
12. **Natural calamities:** Earthquakes, Tsunamis, Volcanoes, Lightening, Floods, Drought, Hurricanes, Tornados

Class 6

1. **Measurement:** Fundamental and derived quantities, Systems of Units, Methods and instruments for measuring various physical quantities, Conversion of units
2. **Motion:** Types, Rectilinear, Curvilinear, Circular, Rotational, Periodic, Random,
3. **Force and Pressure:** Effects of a force, Types of forces, Muscular, Mechanical, Frictional, Magnetic, Electrostatic, Gravitational, Contact and non contact force
4. **Work and energy:** Forms, Mechanical-Kinetic/Potential, Heat, Light, Sound, Chemical, Magnetic, Electric
5. **Simple machines:** Complex/ simple machines, pulley, wheel and axle, Inclined plane, Lever, Screw, Wedge
6. **Characteristics of living things:** Growth, Movement, Response to stimuli, Respiration, Excretion, Reproduction, Death
7. **Classification of Plants:** Flowering/non flowering, Based on height of stem and branches, Based on life cycle, Based on habitat, Based on food habits
8. **Classification of Animals:** Domestic/wild, Multicellular/unicellular, Based on habitat, Vertebrates/ invertebrates, Based on food habits, Based on mode of reproduction, Based on nature of body covering
9. **Respiration:** Respiration in animals, External and internal respiration, Human respiratory system
10. **Separation of Substances:** Separating solid-solid mixtures, Separating solid-liquid mixtures, Separating liquid-liquid mixtures
11. **Properties of substances:** Hardness, Brittleness, Transparent/Opaque, Thermal conductivity, Electrical conductivity, Magnetic properties
12. **Natural resources and their conservation:** Water, Air, Fuel, Forests, Metals and Minerals,
13. **Earth:** Why can life sustain on earth, Atmosphere, Hydrosphere, Lithosphere, Interior of the earth
14. **Stars and the solar system:** The sun, planets and their satellites, Asteroids, Comets, Meteorites

Class 7

1. **Organization in living things:** Lower levels, Organism level, Higher level, Plant Tissues, Animal Tissues
2. **Respiration and Transpiration:** Types of respiration, Aerobic/Anaerobic, Respiration in humans, in plants, Transpiration
3. **Human blood circulation system:** Heart, Blood vessels, Constituents of blood, Functions of blood, Blood pressure, Blood groups and blood transfusion
4. **Light:** Reflection, shadows, Sources of light, Rectilinear propagation, Transparent/translucent/opaque, Eclipses
5. **Heat:** Temperature and its measurement, Modes of heat transfer, Effects of heat, Change of state, Thermal expansion
6. **Sound:** Waves in a medium, Speed of sound, Musical instruments, Reflection of sound, Characteristics of sound
7. **Static electricity:** Charging a conductor, conduction, induction, Electroscope, Lightning
8. **Current Electricity:** Production of electricity, Electric cell, Conductors/insulators, circuits, Electric Machines and appliances
9. **Properties of water:** States of water: Solid/ liquid/gas, Physical properties of water
10. **Elements, Compounds and Mixtures:** Meaning of Elements, Compound, Mixture, examples of each
11. **Physical and chemical changes:** Examples of physical and chemical changes
12. **Acids, Bases and Salts:** Acids, Bases and alkalis, pH value, Indicators, Salts
13. **Our environment:** Air, Soil, Water, Pollution

Class 8

1. **Reflection and refraction of light:** Plane mirror, Laws of reflection, Real and virtual image, Refraction of light, Dispersion of light through a prism
2. **Friction:** What is friction, Static, Sliding, Rolling friction, Disadvantages of friction, Methods to reduce friction, Advantages of friction
3. **Current electricity:** Sources of electricity, Effects of electricity, Heat and light effects, Magnetic effect, Chemical effect, Circuit diagrams, Household electric wiring, Safety precautions
4. **Magnetism:** Discovery of magnets, Magnetic materials, Poles of magnet, Earth as a magnet, Magnetic field, Induced magnetism, Temporary and permanent magnets
5. **Pressure:** Meaning of Pressure, Pressure due to liquids, Atmospheric pressure, Measurement of atmospheric pressure: Barometer
6. **Earth and the Solar System:** The sun, planets, dwarf planets, satellites, moon, asteroids, comets
7. **Structure of Atoms, Molecules:** Atom, Theories of atomic structure, Atomic number, atomic weight, Molecule,
8. **Structure of Cells:** Unicellular and multicellular organisms, Types of cells, Parts of cell, Difference between plant and animal cells
9. **Microorganisms:** Types of microorganisms, Bacteria, Algae, Fungi, Protozoa, Virus, Uses of micro organisms
10. **Diseases:** Types of diseases, Based on the time for which the disease lasts, Based on the region and number of people affected, Based on cause of disease, Based on mode of spread of the disease, Some common diseases
11. **Metals and Non metals:** Physical properties of metals, Difference between metals and non metals, Chemical properties of metals and non metals, Uses of metals and nonmetals
12. **Chemical terminology and reactions:** Chemical Symbols of elements, Molecular formula, Types of chemical reactions, Combination, Decomposition, Single displacement, Neutralisation, Double displacement, Oxidation and reduction, Exothermic and endothermic
13. **Soil and Soil erosion:** Natural processes that cause soil erosion, Human activities causing soil erosion, Prevention
14. **Agriculture:** Food crops and cash crops, Kharif and Rabi crops, Agricultural activities: Ploughing, leveling, sowing, irrigation, fertilizers, weeding, crop protection, harvesting, threshing, winnowing, storage.
15. **Air and air pollution:** Composition of air, Air pollution