Science	Category	Sub Category	Topics and Sub-topics
B	Botany	Getting To Know Plants	a. school, branch, root, flower, park b. Herbs, Shrubs, Trees, creeper, weeds, stem c. Leaf - petiole, Lamina, veins, midrib, leaf venation, transpiration, photosynthesis d. Root - Young plant, weed, tap root, fibrous roots, lateral roots e. Flower - Petals, sepals, bud, stamens, Pistil, ovary, ovules, flower, anther, filament, stigma
B	Botany	Reproduction in Plants	a. Modes of reproduction - asexual, vegetative, budding etc. b. Sexual reproduction - pollination, fertilisation c. Fruits and Seeds - fruit and seed formation, seed dispersal
B	Food and Nutrition	Components of Food	a. Components of food items - starch, protein, fats etc b. Nutrition - balanced diet, deficiency diseases
B	Food and Nutrition	Crop Production and Management	a. Agricultural practices b. Preparation of soil c. Sowing, Manure and Fertilisers d. Irrigation and its types e. Removal of weeds, harvesting, storage, food from animals
B	Food and Nutrition	Food: Where Does It Come From?	a. Origin of food b. Food for plants, animals c. Food from plants, animals
B	Food and Nutrition	Improvement in Food Resources	a. Food Resources - improvement in crop yields b. Animal Husbandry
B	Food and Nutrition	Nutrition in Animals	a. Different ways of taking food b. Human digestion c. Digestion in grass-eating animals, amoeba etc
B	Food and Nutrition	Nutrition in Plants	a. Mode of nutrition in plants b. Photosynthesis c. Saprotrophs d. Replensihment of nutrients
B	Human Body	Why Do We Fall Ill	a. Health Care - diseases and its causes, infectious diseases

B	Human Body	Reaching the Age of Adolescence	a. Adolescence and puberty; Changes at Puberty b. Secondary Sexual Characteristics c. Role of Hormones in Reproduction d. Reproduction Phase in Human Life; Sex Determination e. Reproductive Health
B	Living Organisms	Cell — Structure and Functions	a. Discovery of the cell b. Variety of cells in organisms c. Structure and function of the cell d. Parts of he cell e. Plant and animal cells
B	Living Organisms	Control and Coordination	a. Animal nervous systems b. Coordination in plants c. Hormones in animals
B	Living Organisms	Diversity in Living Organisms	a. Classification of living organisms b. Evolution of living organisms c. Hierarchy of living organisms d. Plantae e. Animalia f. Nomenclature
B	Living Organisms	Heredity and Evolution	a. Variation in reproduction b. Heredity c. Evolution, Speciation, Characteristics of Evolution, Evolution and progress
B	Living Organisms	How Do Organisms Reproduce?	a. Variation b. Single Organisms Reproduction - Fission, Fragmentation, Regenration, Budding, Vegetative propagation, Spore formation c. Sexual Reproduction - Why?, Flowers and sexual reproduction in plants d. Human Reproduction - Male and Female reproductive systems, reproductive health, family planning etc

B	Living Organisms	Life Processes	a. What are life processes b. Nutrition - autotrophic, heterotrophic, nutrition in human beings c. Respiration - plants and animals d. Transportation - plants, animals, human circulatory system e. Excretion - Plants, Human Beings
B	Living Organisms	Microorganisms: Friends and Foe	a. Habitat and role of microorganisms - friendly microorganisms (uses in fermentation, medicine, vaccines etc), harmful microorganisms (pathogens, diseases, food poisoning) b. Food Preservation - methods of preservation c. Nitrogen cycle and fixation
B	Living Organisms	Respiration in Organisms	a. Need of respiration b. Breathing - Inhale/exhale, in humans, other animals c. Breathing under water d. Breathing in plants
B	Living Organisms	The Fundamental Unit of Life	a. Components of living organisms b. Cell components and structure
B	Living Organisms	The Living Organisms and Their Surroundings	a. Organisms - Habitats and Adaptations b. Living Beings - Characteristics and Requirements
B	Living Organisms	Tissues	a. Plant Tissues - Merismatic tissues, permanent tissues b. Animal Tissues - Epithelial, Connective, Muscular, Nervous
B	Living Organisms	Transportation in Animals and Plants	a. Circulation System - Blood, vessels, heart b. Excretion in Animals c. Transportation in Plants - Transport of water and minerals, transpiration
B	Zoology	Body Movement	a. Human Body and its Movements - Types of joints b. Gait of Animals - Earthworm, snail, cockroach, birds, fish, snake, etc.
B	Zoology	Reproduction in Animals	a. Modes of reproduction b. Sexual reproduction - male and female reproductive organs, fertilisation, development of embryo c. Viviparous and oviparous animals, young ones to adults d. Asexual reproduction

C	Acids, Bases and Salts	Acids, Bases and Salts	a. Chemical Properties of Acids and Bases - reaction with metals, metallic carbonates, each other, metal and non-metal oxides etc b. Common properties of acids and bases c. Strength of Acids and Bases d. Salts - Family, pH e. Chemicals from Common Salt - sodium hydroxide, bleaching powder, baking soda, washing soda f. Salt crystals - are they really dry?
C	Air	Air Around Us	a. Is air all around us? b. Components of air - nitrogen, oxygen and the rest c. Oxygen in Water and Soil; Oxygen in the Atmosphere
C	Elements, Compounds and Mixtures	Periodic Classification of Elements	a. Classification of Elements - Döbereiner's Triads, Newland's Law of Octaves b. Mendeleev's Periodic Table - Achievements and limitation of his classification c. Modern Periodic Table - Position of elements, trends, metallic and non-metallic properties
C	Elements, Compounds and Mixtures	Separations of Substances	a. Methods of Separation - Hand picking, winnowing, sieving, threshing b. Sedimentation, decantation and filtration c. Evaporation, sublimation
C	Fibres	Fibre to Fabric	a. Wool, Silk, their production etc
C	Fibres	Synthetic Fibres and Plastics	a. Synthetic Fibres - types and characteristics b. Plastics - Uses, advantages and disadvantages (impact on environment etc)
C	Matter	Atoms and Molecules	a. Laws of chemical combination b. Atoms - size, atomic mass, element symbols c. Molecules - of elements, of compounds; Ions d. Chemical formulae e. Molecular mass and concept of Mole

C	Matter	Is Matter Around Us Pure	a. What is a mixture?; Type of mixtures b. Solutions c. Components of a mixture and separation d. pH indicators, elements, compounds
C	Matter	Matter in Our Surroundings	a. Physical Nature of Matter; Particles of Matter b. States of Matter; Change of States of Matter, e.g. Evaporation
C	Matter	Sorting Materials into Groups	a. Properties of Materials - appearance, hardness, solubility, density, transparency etc
C	Matter	Structure of The Atom	a. Atomic Structure - Charged Particles in Matter b. Thomson's, Rutherford's and Bohr's model c. Neutrons, Electrons, Protons d. Electronic Shells and Valency e. Atomic number and mass f. Isotopes and Isobars
C	Metals and Non-metals	Carbon and Its Compounds	a. Bonding in Carbon - the covalent bond b. Versatile nature of carbon; carbon bonds etc c. Chemical Properties of Carbon - combustion, oxidation and other reactions d. Ethanol and ethanoic acid e. Soaps and detergents
C	Metals and Non-metals	Coal and Petroleum	a. Coal - story of coal; coke, coal tar, coal gas etc b. Petroleum - refining, limits, damage to the environment etc
C	Metals and Non-metals	Materials: Metals and Non-metals	a. Physical properties b. Chemical properties - reactions with oxygen, water, acids, bases, displacement reactions c. Uses
C	Metals and Non-metals	Metals and Non-metals	a. Reactivity Series b. Properties of Ionic Compounds c. Extraction of Metals d. Corrosion
C	Physical and Chemical Changes	Changes Around Us	a. Reversible and non-reversible changes
C	Physical and Chemical Changes	Chemical Effects of Electric Current	a. Electricity through liquids, electric current, electroplating

C	Physical and Chemical Changes	Chemical Reaction and Equation	a. Chemical equations b. Type of Chemical Reactions - Combination, Decomposition, Displacement, Double Displacement reactions, Oxidation and Reduction c. Oxidation - Corrosion, Rancidity
C	Physical and Chemical Changes	Combustion and Flame	a. Combustion - Types, Fire control b. Flame and its Structure c. Fuel Efficiency
C	Physical and Chemical Changes	Physical and Chemical Changes	a. Physical Changes - E.g. Crystallisation b. Chemical Changes - E.g. Iron Rusting
C	Water	Water	a. Water - Usage, Sources, Water Cycle, Ocean b. Rainfall; Water Harvesting and Conservation
E	Earth and Environment	Conservation of Plants and Animals	a. Deforestation - causes, consequences b. Wildlife Conservation - Biosphere Reserve, National Park, Wildlife Sanctuary, Flora and Fauna, Endemic Species c. Migration d. Recycling, Reforestation
E	Earth and Environment	Garbage in, Garbage Out	a. Dealing with Garbage, Vermicomposting, Disposal b. Paper and its recycling c. Plastics - Boon or Curse?
E	Earth and Environment	Management of Natural Resources	a. Forests and Wildlife b. Water Resources c. Coal and Petroleum
E	Earth and Environment	Natural Resources	a. Air b. Water c. Biogeochemical Cycles - Water, Nitrogen, Carbon, Oxygen d. Ozone
E	Earth and Environment	Our Environment	a. Waste materials added to environment b. Components of Eco-system c. Ozone Layer and Waste Disposal

E	Earth and Environment	Pollution of Air and Water	a. Air Pollution - pollutants, effect on Taj Mahal, Greenhouse effect, pollution control b. Water Pollution - pollutants, potable water and water purification, pollution control
E	Earth and Environment	Soil	a. Soil - Life in Soil, Profile, Types, Properties b. Moisture in Soil c. Soil and Crops; Soil Erosion
E	Earth and Environment	Wastewater Story	a. Water, Sewage, Sewerage Systems b. Wastewater Treatment Plants c. House Keeping Practices d. Sanitation - Sewage disposal, Public Sanitation
E	Water	Water: A Precious Resource	a. Availability and Forms of Water b. Groundwater, Depletion of Water Table c. Distribution of Water d. Water Management; What role can you play? e. Effect of water scarcity on plants
E	Weather and Climate	Some Natural Phenomena	a. Lightning; Charging by rubbing; types and transfer of charge; lightning safety b. Earthquakes - Causes, Protection Against
E	Weather and Climate	Weather, Climate, and Adaptations of Animals To Climate	a. Weather b. Climate c. Cimate and Adaptation - Rainforests, Polar Regions etc
E	Weather and Climate	Wind, Storms and Cyclones	a. Air Exterts Pressure; Air Expands on Heating b. Wind Currents c. Thunderstorms and Cyclones d. Destruction and Safety
P	Astronomy	Stars and The Solar System	a. Moon b. Stars c. Constellations d. The Solar System - Sun, Planets, Asteroids, Comets, Other Solar System Objects

P	Electricity and Magnetism	Electric Current and Its Effects	a. Symbols of electric components b. Heating effect of electric current c. Magnetic effect of electric current - electromagnet, electric bell
P	Electricity and Magnetism	Electricity	a. Electric current and circuit; Electric potential and potential difference; Circuit diagram b. Ohm's Law c. Resistance and resistors d. Heating effect e. Electric Power
P	Electricity and Magnetism	Electricity and Circuits	a. Electric Cell b. Flow of Current c. Electric Circuit; Switch d. Conductors and Insulators
P	Electricity and Magnetism	Fun with Magnets	a. Magnetic and Non-magnetic materials b. Poles, Magnetic Direction, Compass c. Attraction and Repulsion
P	Electricity and Magnetism	Magnetic Effects of Electric Current	a. Magnetic Field b. Current Carrying Conductors c. Force on Current Carrying Conductors - Motor d. Electromagnetic Induction - Generator e. Domestic Electric Circuit
P	Force	Force and Laws of Motion	a. Balanced and Unbalanced forces b. Newton's Laws of Motion - Inertia and Mass; Conservation of Momentum
P	Force	Force and Pressure	a. Push and Pull b. Force due to an Interaction c. Force can change the state of motion or shape of an object d. Contact Forces - muscular, friction e. Non-contact Forces - Magnetic, Electrostatic, Gravitational f. Pressure exerted by liquids and gases g. Atmospheric Pressure

P	Force	Friction	a. Factors affecting friction b. Necessity of Friction c. Increasing and reducing friction, e.g. wheels d. Fluid friction
P	Force	Gravitation	a. Gravitation b. Gravitational Force of Earth - Free Fall
P	Kinematics	Motion	a. Motion of an Object; Rate of Motion; Velocity b. Graphical Representation of Motion - Distance and Velocity time graphs c. Equations of Motion d. Uniform Circular Motion
P	Kinematics	Motion and Measurments of Distance	a. Distance - Story of transport, measurement, length of a curved line b. Types of Motion
P	Kinematics	Motion and Time	a. Speed b. Measurement of Time c. Graphs
P	Optics	Light	a. Travels along a straight line; Reflection; b. Mirrors, Spherical Mirrors, Lenses c. Sunlight
P	Optics	Light, Shadows and Reflections	a. Transparent, Opaque and Translucent Objects b. Shadows c. Pinhole Camera d. Mirror and Reflections
P	Optics	Reflection and Refraction	a. Mirrors - reflection by spherical mirrors, concave, convex, magnification b. Refraction - Snell's Law; Refraction in Glass, Water etc, Refractive index c. Refraction by Lenses, Image formation, real, virtual, magnification, power of a lens

P	Optics	The Human Eye and The Colourful World	a. Power of Accommodation b. Vision Defects - Myopia, Hypermetropia, Presbyopia etc c. Refraction through a prism - dispersion d. Atmospheric refraction - twinkling of stars e. Scattering of light - Tyndall Effect; Colour of Sky, Setting and Rising Sun
P	Sound	Sound	a. Vibrating Body Sound, Human Sound, Medium of Propagation for Sound b. Ears and Sound - audible and inaudible c. Noise and Music; Noise Pollution d. Production and Propagation of Sound e. Reflection of Sound f. Ultrasound g. Human Ear - Structure, Range of Hearing
P	Thermodynamics (Heat)	Heat	a. Hot and Cold b. Measuring Temperature; Lab Thermometer c. Transfer of Heat d. Summer and Winter Clothing
P	Work	Sources of Energy	a. Good Sources b. Conventional Sources - Fossil Fuels, Thermal, Hydro, Biomass, Wind c. Non-conventional Sources - Solar, Geothermal, Tidal, Wave d. Nuclear e. Environmental Consequences f. Renewable and Non-renewable Sources
P	Work	Work and Energy	a. Work b. Energy - Forms; Kinetic, Potential etc c. Conversion of Forms of Energy d. Conservation of Energy e. Rate of Doing Work; Power