



CLASS 10 SCIENCE — LO's Aligned Monthly Split-up Syllabus (April 2026–March 2027) + Portion Boundaries + Exams + Weightage + Question Paper Design + Blueprint (For CM SoE & NON-SoE)



Developed by:- Jharkhand Council Of Educational Research & Training (Curriculum Division)

Month	Teaching Days (Available)	NCERT Chapter Titles	Sub-topics / Portion Boundary	LOs (*LO Mapping - IDs) (NCERT Secondary Stage LO-2019)	Practicals / Activities (Minimum)	Assessment / Exams (प्रश्न पत्र एवं उत्तर कुंजिका निर्माण)
Apr 2026		CHEM: Chapter 1 Chemical Reactions and Equations; PHYS: Chapter 9 Light – Reflection and Refraction (Start); BIO: Chapter 5 Life Processes (Start)	CHEM: chemical reaction evidences; balanced chemical equations; types (combination/decomposition/displacement/double displacement); oxidation & reduction (intro). PHYS: reflection basics; spherical mirrors intro; New Cartesian Sign Convention (intro); ray diagrams (basic). BIO: nutrition in human beings (overview); autotrophic vs heterotrophic (intro); photosynthesis conditions (intro).	LO1, LO3, LO5, LO6, LO9	CHEM demo: observe 3–4 reactions + classify; balancing practice set. PHYS activity: ray diagram drill + sign convention cards. BIO activity: nutrition flowchart + photosynthesis discussion/ICT.	Project RAIL (April portion): 04-05-2026 DIET Godda एवं DIET Gumla
May 2026	14	CHEM: Chapter 2 Acids, Bases and Salts (Start); PHYS: Chapter 9 Light – Reflection and Refraction (Continue); BIO: Chapter 5 Life Processes (Continue)	CHEM: acids/bases; indicators; neutralisation; pH (intro). PHYS: refraction basics; glass slab (qualitative); lens intro; ray diagrams (convex/concave) basic. BIO: respiration (aerobic/anaerobic concept); human respiratory system (overview); exchange of gases (intro).	LO1, LO4, LO5, LO6, LO7, LO10	CHEM practical: pH paper/universal indicator (given solutions). PHYS activity: lens ray-diagram workbook + slab refraction demo. BIO activity: breathing rate before/after exercise + reporting.	Project RAIL (May portion): 15-06-2026 DIET Khunti एवं DIET Kodarma
Jun 2026	12	CHEM: Chapter 2 Acids, Bases and Salts (Finish); PHYS: Chapter 9 Light – Reflection and Refraction (Complete core) + Chapter 10 The Human Eye and the Colourful World (Start); BIO: Chapter 5 Life Processes (Continue)	CHEM: pH applications; common salts—baking soda, washing soda, bleaching powder, plaster of Paris (uses + preparation idea). PHYS: mirror/lens formula & magnification (basic numericals); power of lens (basic); human eye—structure, power of accommodation, near/far point and common defects (intro). BIO: transportation in human beings (heart/blood vessels/blood components overview); double circulation (intro).	LO5, LO6, LO8, LO9, LO10, LO12	CHEM activity: salt-use mapping (home/school examples). PHYS practical (if lab): focal length / lens formula numericals set; eye diagram and accommodation activity. BIO diagram: heart labeling + circulation flowchart.	Project RAIL (June portion): 06-07-2026 DIET Pakur एवं DIET Palamu
Jul 2026	23	CHEM: Chapter 3 Metals and Non-metals (Start/Continue); PHYS: Chapter 11 Electricity (Start); BIO: Chapter 5 Life Processes (Finish)	CHEM: physical properties; reactions with oxygen/water/acids/bases; reactivity series (intro). PHYS: current, potential difference; Ohm's law (concept); circuit symbols; V–I graph (intro). BIO: digestion (sequence + key organs); excretion (kidney/nephron intro); transport in plants (xylem/phloem overview).	LO3, LO5, LO6, LO7, LO10	CHEM demo: metal + dilute acid (safe demo) + observation. PHYS practical/demo: verify Ohm's law (V–I graph). BIO diagram practice: digestive system + nephron (basic).	Project RAIL (July portion): 03-08-2026 DIET Sahibganj एवं DIET Saraikela Kharsawan
Aug 2026	22	CHEM: Chapter 3 Metals and Non-metals (Finish); PHYS: Chapter 10 The Human Eye and the Colourful World (Finish) + Chapter 11 Electricity (Continue); BIO: Chapter 6 Control and Coordination (Start)	CHEM: ionic compounds properties (concept); corrosion & prevention; reactivity series applications (basic). PHYS: defects of vision and their correction; refraction through a prism; dispersion, rainbow, atmospheric refraction and scattering of light; resistance, factors affecting resistance and series/parallel combination (intro). BIO: nervous system; reflex action & reflex arc; neuron (basic).	LO4, LO5, LO6, LO7, LO8, LO10, LO13	CHEM: corrosion-prevention case study (painting/galvanising/oiling). PHYS: eye-defect correction/ray-diagram practice + prism/dispersion activity; resistance and series/parallel worksheet. BIO: reflex actions list + reflex arc diagram labeling.	Half Yearly Examination: 07-09-2026 to 12-09-2026 (covers Apr–Aug taught portion)
Sep 2026	14	CHEM: Chapter 4 Carbon and its Compounds (Start); PHYS: Chapter 11 Electricity (Finish); BIO: Chapter 6 Control and Coordination (Finish)	CHEM: covalent bonding; tetravalency & catenation; saturated/unsaturated; homologous series (intro). PHYS: heating effect of electric current; electric power and commercial unit of electrical energy; related numericals and safety links. BIO: endocrine glands & hormones overview; tropism; plant hormones (overview).	LO4, LO5, LO6, LO8, LO12, LO13, LO16	CHEM: hydrocarbon model (ball-stick/clay). PHYS: heating-effect/power numericals + household energy-use audit. BIO: tropism observation task + short report.	Project RAIL (September portion): 05-10-2026 DIET Bokaro एवं DIET Chatra
Oct 2026	21	CHEM: Chapter 4 Carbon and its Compounds (Finish); PHYS: Chapter 12 Magnetic Effects of Electric Current (Start/Continue); BIO: Chapter 7 How do Organisms Reproduce? (Start/Continue)	CHEM: functional groups; reactions (combustion/oxidation/addition/substitution); ethanol/ethanoic acid; soaps vs detergents. PHYS: magnetic field and field lines; field due to current-carrying straight conductor, circular loop and solenoid; right-hand thumb rule; electromagnet (intro); force on a current-carrying conductor and Fleming's left-hand rule (intro). BIO: asexual reproduction; sexual reproduction in plants: pollination/fertilisation (basic).	LO3, LO4, LO6, LO12, LO16	CHEM: soap vs detergent discussion + cleansing activity. PHYS: magnetic-field/iron-filings or electromagnet activity + force-rule diagram practice. BIO: vegetative propagation examples + flower-part diagram drill.	Project RAIL (October portion): 02-11-2026 DIET Dumka एवं DIET E-Singhbhum

Nov 2026	16	CHEM: Ch 1–4 Revision; PHYS: Chapter 12 Magnetic Effects of Electric Current (Finish); BIO: Chapter 7 How do Organisms Reproduce? (Finish) + Chapter 8 Heredity + Chapter 13 Our Environment	CHEM: Ch 1–4 revision. PHYS: force on a current-carrying conductor; Fleming’s left-hand rule; domestic circuits—live, neutral and earth wires; parallel connection; fuse, short-circuiting, overloading and safety. BIO: human reproduction and reproductive health; variation and inherited traits; Mendel’s contribution; dominant/recessive traits; sex determination; ecosystem components; food chains/webs and trophic levels; biological magnification; ozone depletion; biodegradable/non-biodegradable waste and management.	LO4, LO6, LO12, LO14, LO15, LO17, LO18, LO19	PHYS: circuit-safety chart + Fleming-rule worksheet. BIO: Mendelian trait activity; food-web + waste-segregation plan. CHEM: Ch 1–4 revision quiz/concept maps.	Syllabus completion target for Class 10: Nov 2026
Dec 2026	15	Full Syllabus Revision + Competency-Based Practice + Practical / Viva Consolidation	Complete revision of Chemistry, Physics and Biology portions from the prescribed Class 10 syllabus with diagrams, numericals, reasoning, assertions, case-based items and remedial support. Syllabus completion target: Dec 2026.	LO18, LO7, LO8, LO12, LO13	Minimum: 2 full mock papers + item-wise analysis; practical file completion + viva drill; remedial groups for equations/types, optics/electricity numericals, diagrams and environment-based concepts.	Pre-Board + Remedial + Practice: 07-12-2026 to 12-12-2026 (Full syllabus)
Jan 2027	17	FULL REVISION + SAMPLE PAPERS + REMEDIAL				
Feb 2027	18					
Mar 2027	20					
LOs (*LO Mapping - IDs) (NCERT Secondary Stage LO-2019)						
LO ID	NCERT Learning Outcome					
LO1	differentiates materials, objects, organisms, phenomena, and processes, based on, properties and characteristics, such as, autotrophic and heterotrophic nutrition, biodegradable and non-biodegradable substances, various types of reactions, strong and weak acids and bases, acidic, basic, and neutral salts using different indicators, real and virtual images, etc.					
LO2	classifies materials, objects, organisms, phenomena, and processes, based on properties and characteristics, such as, metals and non-metals, acid and bases on the basis of their physical and chemical properties.					
LO3	plans and conducts investigations and experiments to arrive at and verify the facts, principles, phenomena, or to seek answers to queries on their own, such as, investigates conditions necessary for rusting, tests the conductivity of various solutions, compares the foaming capacity of different types of soap samples, verifies laws of reflection and refraction of light, Ohm’s law, etc.					
LO4	relates processes and phenomena with causes and effects, such as, hormones with their functions, tooth decay with pH of saliva, growth of plants with pH of the soil, survival of aquatic life with pH of water, blue colour of sky with scattering of light, deflection of compass needle due to magnetic effect of electric current, etc.					
LO5	explains processes and phenomena, such as, nutrition in human beings and plants, transportation in plants and animals, extraction of metals from ores, placement of elements in modern periodic table, displacement of metals from their salt solutions on the basis of reactivity series, working of electric-circuit safety model, twinkling of stars, advanced sunrise and delayed sunset, formation of rainbow, etc.					
LO6	draws labelled diagrams, flow charts, concept maps, and graphs, such as, digestive, respiratory, circulatory, excretory, and reproductive systems, electrolysis of water, electron dot structure of atoms and molecules, flow chart for extraction of metals from ores, ray diagrams, magnetic field lines, etc.					
LO7	analyses and interprets data, graphs, and figures, such as, melting and boiling points of substances to differentiate between covalent and ionic compounds, pH of solutions to predict the nature of substances, V-I graphs, ray diagrams, etc.					
LO8	calculates using the data given, such as, number of atoms in reactants and products to balance a chemical equation, resistance of a system of resistors, power of a lens, electric power, etc.					
LO9	uses scientific conventions to represent units of various quantities, symbols, formulae, and equations, such as, balanced chemical equation by using symbols and physical states of substances, sign convention in optics, SI units, etc.					
LO10	handles tools and laboratory apparatus properly; measures physical quantities using appropriate apparatus, instruments, and devices, such as, pH of substances using pH paper, electric current and potential difference using ammeter and voltmeter, etc.					
LO11	applies learning to hypothetical situations, such as, what will happen if all herbivores are removed from an ecosystem? What will happen if all non-renewable sources of energy are exhausted?					
LO12	applies scientific concepts in daily life and solving problems, such as, suggest precautions to prevent sexually transmitted infections, uses appropriate electrical plugs (5/15A) for different electrical devices, uses vegetative propagation to develop saplings in gardens, performs exercise to keep in good health, avoids using appliances responsible for ozone layer depletion, applies concept of decomposition reaction of baking soda to make spongy cakes, etc.					
LO13	derives formulae, equations, and laws, such as, equivalent resistance of resistors in series and parallel, etc.					
LO14	draws conclusion, such as, traits or features are inherited through genes present on chromosomes, a new species originates through evolutionary processes, water is made up of hydrogen and oxygen, properties of elements vary periodically along the groups and periods in periodic table, potential difference across a metal conductor is proportional to the electric current flowing through it, etc.					
LO15	takes initiative to know about scientific discoveries and inventions, such as, Mendel’s contribution in understanding the concept of inheritance, Dobereiner for discovering triads of elements, Mendeleev for the development of the periodic table of elements, Oersted’s discovery that electricity and magnetism are related, discovery of relation between potential difference across a metal conductor and the electric current flowing through it by Ohm, etc.					
LO16	exhibits creativity in designing models using eco-friendly resources, such as, working model of respiratory, digestive, and excretory systems, soda acid fire extinguisher, periodic table, micelles formation, formation of diamond, graphite, and Buckminsterfullerene, human eye, electric-circuit safety model, etc.					
LO17	exhibits values of honesty, objectivity, rational thinking, and freedom from myth and superstitious beliefs while taking decisions, respect for life, etc., such as, reports and records experimental data accurately, says no to consumption of alcohol and drugs, sensitises others about its effect on physical and mental health, sensitises for blood and organ donations, understands the consequences of pre-natal sex determination, etc.					

LO18	communicates the findings and conclusions effectively, such as, those derived from experiments, activities, and projects orally and in written form using appropriate figures, tables, graphs, and digital forms, etc.				
LO19	makes efforts to conserve environment realising the inter-dependency and inter-relationship in the biotic and abiotic factors of environment, such as, appreciates and promotes segregation of biodegradable and non-biodegradable wastes, minimises the use of plastics, takes appropriate steps to promote sustainable management of resources in day-to-day life, advocates use of fuels which produce less pollutants, uses energy efficient electric devices, uses fossil fuels judiciously, etc.				
QUESTION PAPER DESIGN / BLUEPRINT					

A. THEORY BLUEPRINT (SUGGESTED SCHOOL-READY)			
S.No.	Unit / Section / Chapter Block	Marks	Prescribed Chapters / Scope
1	Chemical Substances — Nature and Behaviour	25	Chemical Reactions and Equations; Acids, Bases and Salts; Metals and Non-metals; Carbon and its Compounds.
2	World of Living	25	Life Processes; Control and Coordination; How do Organisms Reproduce?; Heredity.
3	Natural Phenomena	12	Light – Reflection and Refraction; The Human Eye and the Colourful World.
4	Effects of Current	13	Electricity; Magnetic Effects of Electric Current.
5	Natural Resources / Environment	5	Our Environment.
	TOTAL	80	Suggested annual written paper.

B. COMPETENCY-WISE QUESTION PAPER DESIGN	
Competency	Weightage
Knowledge / Understanding	50%
Application of Knowledge / Concepts	30%
Formulate / Analyse / Evaluate / Create	20%
TOTAL	100%

C. QUESTION TYPOLOGY	
Component	Details
Objective / VSA	Facts, definitions, diagrams, equation-based and concept-based items.
Short Answer	Experiment-linked, numerical, explanation-based and process-based responses.
Long Answer	Integrated chapter questions, diagram / case / reasoning-based responses.
Internal Choice	As per school / board-style annual pattern.

D. INTERNAL ASSESSMENT / SCHOOL-BASED COMPONENTS		
S.No.	Component	Marks
1	Periodic Test	5
2	Multiple Assessment	5
3	Portfolio / Notebook	5
4	Practical / Activity / Subject Enrichment	5
	TOTAL	20