

1. Core Foundations from Grades 9–10

- Motion graphs
- Basic force concepts
- Energy transfer
- Heat transfer
- Wave behaviour
- Circuit basics
- Magnetism and safety
- Graph interpretation, units, significant figures, uncertainty, and physical models

2. Kinematics and Dynamics

- Linear motion
- Velocity and acceleration
- Motion equations at course level
- Force and acceleration relationships
- Free-body reasoning
- Friction and motion
- Projectile ideas at an introductory level where appropriate
- Motion graphs and quantitative interpretation

3. Energy, Work, and Momentum

- Work
- Kinetic and potential energy
- Conservation of energy
- Power and efficiency
- Momentum
- Impulse and collisions at an introductory course level
- Energy analysis of systems
- Energy transfer and real-world applications

4. Waves, Sound, and Light

- Wave relationships
- Mechanical waves
- Sound and resonance
- Reflection and refraction
- Lenses and image formation
- Wave applications in technology
- Interpreting wave data and diagrams
- Communication and optical technologies

5. Electricity and Magnetism

- Current, voltage, and resistance
- Circuit analysis
- Series and parallel systems
- Electrical power and energy use
- Magnetic fields
- Electromagnetism
- Induction at an introductory level
- Electrical and magnetic technologies
- Electrical safety and troubleshooting

6. Physics in Society and Applied Contexts

- Energy systems and efficiency
- Transportation and motion systems
- Communication technologies
- Physics and environmental issues
- Experimental error and modelling limits
- Evidence-based evaluation of physical claims
- Technology, safety, and responsible use

7. Shared Scientific Practices

- Investigable questions and hypotheses
- Variables, controls, assumptions, and limitations
- Measurement, units, significant figures, and unit consistency
- Uncertainty, error, reliability, and validity
- Data tables, graphs, diagrams, and model interpretation
- Claim-evidence-reasoning
- Method evaluation and improvement
- Safety, ethics, and responsible scientific practice