IGCSE Physical Science 0652 Syllabus Breakdown & Weekly Lesson Plan

Assessment Structure

:

- **AO1 Knowledge with understanding**: 50%
- **AO2 Handling information and problem-solving**: 30%
- **AO3 Experimental skills and investigations**: 20%

Exam Components:

- Multiple Choice: Papers 1 & 2 (1h 15m, 40%)
- Theory: Papers 3 & 4 (1h 15m, 60%)
- Practical: Papers 5 & 6 (1h 30m, 20% of AO3)

Topic Weightings & Time Allocation

Section	Topics	Estimated Weighting	Weeks Allocated
Chemistry (C1-C12)	12 topics	~55%	9 weeks
Physics (P1-P5)	5 topics	~35%	5 weeks
Practical Skills & Revision	Integrated	~10%	2 weeks

Detailed Weekly Breakdown (16-Week Framework)

WEEK 1-3: CHEMISTRY - FUNDAMENTALS & PARTICULATE NATURE

Week 1: C1 - The Particulate Nature of Matter (Core Foundation)

- Day 1: States of matter, particle arrangement, kinetic particle theory
- Day 2: Diffusion, Brownian motion, evidence for particle theory
- Day 3: Changes of state, heating/cooling curves, latent heat
- Day 4: Past paper practice: Particle theory MCQs (Paper 1/2)
- Day 5: **Practical**: Investigating diffusion in liquids and gases
- Day 6: Review & consolidation: Drawing particle diagrams

Week 2: C2 - Elements, Compounds & Mixtures

- Day 1: Elements vs compounds, chemical formulas, mixtures

- Day 2: Separation techniques (filtration, distillation, chromatography)
- Day 3: Atomic structure, protons, neutrons, electrons, isotopes
- Day 4: Past paper practice: Separation methods & atomic structure
- Day 5: **Practical**: Paper chromatography and simple distillation
- Day 6: Review: Writing chemical formulas and equations

Week 3: C3 - Bonding & Structure

- Day 1: Ionic bonding, formation, properties of ionic compounds
- Day 2: Covalent bonding, simple molecules, giant covalent structures
- Day 3: Metallic bonding, properties of metals/alloys
- Day 4: Past paper practice: Bonding and structure questions
- Day 5: **Practical**: Investigating properties of ionic/covalent compounds
- Day 6: Review: Dot-and-cross diagrams and structure-property relationships

---

WEEK 4-6: CHEMISTRY - CHEMICAL REACTIONS & STOICHIOMETRY

Week 4: C4 - Stoichiometry & Chemical Calculations

- Day 1: Relative atomic mass, molecular mass, moles concept
- Day 2: Percentage composition, empirical & molecular formulas
- Day 3: Stoichiometric calculations, limiting reactants
- Day 4: Past paper practice: Mole calculations (Paper 3/4)
- Day 5: **Calculator skills**: Using scientific notation for large/small numbers
- Day 6: Review: Step-by-step calculation methods

Week 5: C5 - Electricity & Chemistry

- Day 1: Electrolysis, ions, electrolytes, inert electrodes
- Day 2: Products at electrodes, preferential discharge
- Day 3: Applications (electroplating, purification of copper)
- Day 4: Past paper practice: Electrolysis predictions and equations
- Day 5: **Practical**: Electrolysis of aqueous solutions
- Day 6: Review: Half-equations and electrode reactions

Week 6: C6 - Energy Changes & Reaction Rates

- Day 1: Exothermic & endothermic reactions, energy level diagrams
- Day 2: Bond breaking/forming, calculating energy changes
- Day 3: Factors affecting reaction rates, collision theory
- Day 4: Past paper practice: Energy calculation and rate questions
- Day 5: **Practical**: Investigating temperature/concentration on reaction rate
- Day 6: Review: Drawing energy profiles & interpreting rate graphs

---

WEEK 7-9: CHEMISTRY - ADVANCED TOPICS

Week 7: C7 - Acids, Bases & Salts + C8 - Periodic Table

- Day 1: Properties of acids & bases, pH scale, indicators
- Day 2: Neutralization reactions, titrations, salt formation
- Day 3: Periodic table trends (groups, periods, reactivity)
- Day 4: Past paper practice: Neutralization calculations & periodic trends
- Day 5: **Practical**: Titration technique and salt preparation
- Day 6: Review: Writing ionic equations and predicting properties

Week 8: C9 - Metals & C10 - Chemistry of the Environment

- Day 1: Reactivity series, extraction of metals
- Day 2: Corrosion prevention, galvanizing, sacrificial protection
- Day 3: Air pollution, greenhouse effect, acid rain
- Day 4: Past paper practice: Metal extraction & environmental chemistry
- Day 5: **Practical**: Investigating rusting conditions
- Day 6: Review: Redox reactions and environmental impacts

Week 9: C11 - Organic Chemistry + C12 - Experimental Techniques

- Day 1: Alkanes, alkenes, functional groups, homologous series
- Day 2: Crude oil, fractional distillation, cracking
- Day 3: Experimental design, apparatus, safety, fair testing
- Day 4: Past paper practice: Organic chemistry & experimental design

- Day 5: **Practical**: Cracking hydrocarbons or testing organic compounds
- Day 6: **Chemistry consolidation**: Mixed topic review & Paper 3/4 practice

---

WEEK 10-12: PHYSICS - MECHANICS & ENERGY

Week 10: P1 - Motion & P2 - Forces

- Day 1: Speed, velocity, acceleration, distance-time & speed-time graphs
- Day 2: Forces, resultant forces, friction, Hooke's Law
- Day 3: Newton's Laws, momentum, impulse
- Day 4: Past paper practice: Motion calculations & force diagrams
- Day 5: **Practical**: Investigating Hooke's Law or motion on ramps
- Day 6: Review: Drawing free-body diagrams and graph analysis

Week 11: P3 - Energy, Work & Power

- Day 1: Kinetic & potential energy, energy transfers, conservation
- Day 2: Work done, power, efficiency calculations
- Day 3: Energy resources (renewable/non-renewable), electricity generation
- Day 4: Past paper practice: Energy calculation and efficiency problems
- Day 5: **Practical**: Investigating energy efficiency of devices
- Day 6: Review: Sankey diagrams and energy conversion calculations

Week 12: P4 - Thermal Physics + Physics Consolidation

- Day 1: Thermal expansion, conduction, convection, radiation
- Day 2: Specific heat capacity, latent heat calculations
- Day 3: Pressure in solids, liquids, gases, atmospheric pressure
- Day 4: Past paper practice: Thermal physics & pressure questions
- Day 5: **Practical**: Measuring specific heat capacity
- Day 6: **Full Physics review**: Mixed Paper 3/4 questions

WEEK 13: PHYSICS - ELECTRICITY & WAVES

Week 13: P5 - Electricity & Basic Wave Properties

- Day 1: Current, voltage, resistance, Ohm's Law, circuits
- Day 2: Series & parallel circuits, power, electrical safety
- Day 3: Wave properties (transverse/longitudinal), electromagnetic spectrum
- Day 4: Past paper practice: Electricity calculations & wave questions
- Day 5: **Practical**: Investigating I-V characteristics or wave properties
- Day 6: **Cross-topic integration**: Chemistry-Physics connections

---

WEEK 14: PRACTICAL SKILLS INTENSIVE

Week 14: AO3 Experimental Skills & Investigations

- Day 1: Planning experiments, identifying variables, risk assessment
- Day 2: Recording observations, measurement techniques, significant figures
- Day 3: Drawing graphs, interpreting data, calculating gradients
- Day 4: Evaluating methods, identifying errors, suggesting improvements
- Day 5: **Full Paper 5/6 mock** (practical questions)
- Day 6: Review: Common practical exam pitfalls

WEEK 15-16: PAST PAPER PRACTICE & EXAM PREPARATION

Week 15: Mock Exams & Targeted Revision

- Day 1: **Full Paper 1 & 3 mock** (Multiple Choice & Theory Core)
- Day 2: **Full Paper 2 & 4 mock** (Multiple Choice & Theory Extended)
- Day 3: Detailed review of theory papers, identify weak topics
- Day 4: Targeted revision: Chemistry weak areas
- Day 5: Targeted revision: Physics weak areas
- Day 6: Formula and equation recall practice

Week 16: Final Preparation

- Day 1: Command words workshop (state, describe, explain, calculate)
- Day 2: Exam technique: Time management (1.5 min per mark)
- Day 3: **Final Full Mock** (all papers) under exam conditions

- Day 4: Review of final mock, common misconceptions
- Day 5: Light revision, confidence building, exam day checklist
- Day 6: Q&A session, addressing last-minute concerns

Past Paper Integration Strategy

1. **Daily practice**: 3-5 questions per sub-topic from topic-wise compilations
2. **Weekly full paper sections**: 1 hour dedicated to timed practice
3. **Practical integration**: Every practical lesson includes past Paper 5/6 questions
4. **Calculator skills**: Separate practice for complex calculations (moles, energy, etc.)
5. **Cross-topic questions**: Weekly practice of integrated Chemistry-Physics problems

Resource Recommendations:

- **Official Cambridge syllabus**:

for 2025-2026

- **Past papers**: 2019-2024 series from Cambridge International
- **Practical workbook**: Cambridge IGCSE Physical Science Practical Skills
- **Calculation practice**: Topic-specific numerical problem sets

Assessment Schedule:

- Week 4: Chemistry fundamentals test (C1-C3)
- Week 8: Chemical calculations & reactions test (C4-C6)
- Week 11: Chemistry mid-term assessment (C1-C9)
- Week 13: Physics section test (P1-P5)
- Week 15: Full mock exams
- Week 16: Final assessment

This plan ensures comprehensive coverage of both Chemistry and Physics content with integrated practical skills and exam preparation throughout the 16-week period.