SBA GUIDELINES

Practical work:

* **Learners do TWO experiments (ONE Chemistry, ONE Physics) for SBA. Choose these experiments from this ATP.**
* **Term 1: Choose ONE experiment. Record in term one.**
* **Term 2 OR Term 3: Choose ONE experiment. Record the mark in term 3.**
* **The suggested formal experiments NOT chosen for SBA, should become informal experiments.**

**2025: Grade 12 Term 1: PHYSICAL SCIENCES**

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| **TERM 1**  **(52 days)** | **Week 1**  **15/1 – 17/1**  (3 days) | **Week 2**  **2/1 – 24/1**  (5 days) | **Week 3 27/1 – 31/1**  (5 days) | **Week 4**  **3/2 – 7/2**  (5 days) | **Week 5**  **10/2 – 14/2**  (5 days) | **Week 6 17/2 – 21/2**  (5 days) | **Week 7**  **24/2 – 28/2**  (5 days) | **Week 8**  **3/3 – 7/3**  (5 days) | **Week 9**  **10/3 – 14/3**  (5 days) | **Week 10 - 11**  **17/3 –28/3**  (9 days) |
| **CAPS Topics** | **MECHANICS:**  **Momentum &**  Impulse  **(2 hrs)** | **MECHANICS:**  **Momentum & Impulse (4 hrs)** | **MECHANICS:**  **Vertical projectile motion (4 hrs)** | **MECHANICS:**  **Vertical projectile motion**  **(4 hrs)** | **MATTER & MATERIALS:**  **Organic molecules (4 hrs)** | **MATTER &**  **MATERIALS: Organic molecules**  **(4 hrs)** | **MATTER & MATERIALS:**  **Organic molecules (4 hrs)** | **MATTER & MATERIALS:**  **Organic molecules (4 hrs)** | **MATTER & MATERIALS:**  **Organic molecules (4 hrs)** | **Consolidation of term 1 (2 hrs) CONTROL TEST**  **(2 hrs)**  **Discussion and remedial work on test**  **(2hrs)** |
| **Topics /Concepts, Skills and Values** | * Define & calculate the momentum of a moving object:   p = mv   * Describe the vector nature of momentum & draw vector diagrams. * State Newton’s second law in terms of momentum:   p  Fnet=  t   * Calculate the change in momentum when a resultant force acts on an object. | * Define impulse. * Use the impulse- momentum theorem (FnetΔt = mΔv) in calculations for a variety of situations (one dimension). * Impulse and safety considerations. * State the principle of conservation of linear momentum. * Explain what is meant by an isolated system, internal and external forces. * Apply conservation of momentum to collisions of two objects (one dimension). * Distinguish between elastic and inelastic collisions by calculation. | * Explain what is meant by a projectile. * Use equations of motion to determine the position, velocity and displacement of a projectile at any given time. * Sketch x vs t, v vs t and a vs t graph for a free-falling object, an object thrown vertically upwards, object thrown vertically downwards & bouncing objects. * Give equations for position versus time and velocity versus time for the graphs of 1D projectile motion. | * For given x vs t, v vs t or a vs t graphs, determine position, displacement and velocity or acceleration at any time t. * For given x vs t, v vs t or a vs t graphs, describe the motion of an object bouncing, thrown vertically upwards & thrown vertically downward and so on. | * Define organic molecules, functional group, hydrocarbon, homologous series, saturated, unsaturated, and structural isomer. * Write condensed, structural & molecular formulae (max 8 C   atoms, 1 functional group per molecule) for alkanes (no rings), alkenes (no rings), alkynes, alcohols, halo alkanes (no rings), carboxylic acids, aldehydes, ketones, esters.   * Write IUPAC names for structural/ condensed structural   formulae for compounds | * Write IUPAC names from structural or condensed structural formulae for compounds listed (one functional group per molecule, max. two functional groups for halo alkanes). * Identify alkyl substituents (methyl- and ethyl-); max. THREE alkyl substituents. * Identify compounds that are saturated, unsaturated, structural isomers (chain, positional, functional). * Physical properties: boiling point, melting point, vapour pressure | * Relationship between physical properties and strength of IMF, type of functional group, chain length and branching * Combustion of alkanes in excess oxygen and use as fuels. * Equation & reaction conditions for the formation of an ester and IUPAC names for reactant and products. * Classify reactions as elimination, addition or substitution. * Equations and reaction conditions for addition reactions of alkenes. | * Equations and reaction conditions for elimination reactions: dehydrohalogenation of halo alkanes, cracking of alkanes, dehydration of alcohols. | * Equations and reaction conditions for substitution reactions: hydrolysis of halo alkanes, halogenation of alkanes | **Revision (2 hours)**  **ONE PAPER (100 marks- 2**  **hours.)**  **50 marks – Physics**   * Newton’s laws of motion * Momentum and impulse * Vertical projectile motion   **50 marks - Chemistry**   * Organic molecules * Discussion and remedial work of control test. |
| **Requisite pre- knowledge** | Newton’s laws of motion | Newton’s laws of motion Equations of motion | Equations of motion | Equations of motion | Chemical bonding Valency | Chemical bonding Valency | Intermolecular forces | IUPAC naming, writing different formulae. | IUPAC naming, writing different formulae. | N/A |

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| **TERM 1**  **(52 days)** | | **Week 1**  **15/1 – 17/1**  (3 days) | **Week 2**  **20/1 – 24/1**  (5 days) | **Week 3 27/1 – 31/1**  (5 days) | **Week 4**  **3/2 – 7/2**  (5 days) | **Week 5**  **10/2 – 14/2**  (5 days) | **Week 6**  **17/2 – 21/2**  (5 days) | **Week 7**  **24/2 – 28/2**  (5 days) | **Week 8**  **3/3 – 7/3**  (5 days) | **Week 9 10/3 – 14/3**  (5 days) | **Week 10 - 11**  **17/3 - 28/3**  (9 days) |
| **CAPS Topics** | | **MECHANICS:**  **Momentum &**  Impulse  **(2 hrs)** | **MECHANICS:**  **Momentum & Impulse (4 hrs)** | **MECHANICS:**  **Vertical projectile motion (4 hrs)** | **MECHANICS:**  **Vertical projectile motion**  **(4 hrs)** | **MATTER & MATERIALS:**  **Organic molecules (4 hrs)** | **MATTER &**  **MATERIALS: Organic molecules**  **(4 hrs)** | **MATTER & MATERIALS:**  **Organic molecules (4 hrs)** | **MATTER & MATERIALS:**  **Organic molecules (4 hrs)** | **MATTER & MATERIALS:**  **Organic molecules (4 hrs)** | **Consolidation of term 1 (2 hrs) CONTROL TEST**  **(2 hrs)**  **Discussion and remedial work on test**  **(2hrs)** |
| **Resources** (other than textbook) **to enhance learning** | | * Mind the Gap * Study guides * YouTube & Mindset videos * PhET simulations * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * PhET simulations * Previous question papers | * Apparatus for experiment below. * Mind the Gap * Study guides * YouTube & Mindset videos * PhET simulations * Previous   question papers | * Apparatus for experiment below. * Mind the Gap * Study guides * YouTube & Mindset videos * PhET simulations * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * Previous question papers | * Apparatus: Chemicals and apparatus for experiment below. * Mind the Gap * Study guides * YouTube & Mindset videos * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * Previous question papers | N/A |
| **Assessment** | **Informal Assessment:**  Remediation | * Homework | * Homework | * Homework * Informal test | Homework | Homework | * ​ | * Homework * Informal test | * Homework | Homework Informal test | N/A |
| **SBA**  **(Formal) Choose ONE experiment** | None | Formal practical (Physics): Determine the acceleration due to gravity | Formal practical (Physics): Conservation of linear momentum | None | None |  | None | Formal practical: (Chemistry)  Preparation of three esters.  **OR**  Reactions of alkanes and  alkenes with Br2 | None | Control test |

**2025 National Recovery ATP: Grade 12 – Term 2: PHYSICAL SCIENCES**

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| **TERM 2**  **(51 days)** | **Week 1**  **8/4 –11/4**  (4 days) | **Week 2**  **14/4 – 17/4**  (4 days) | **Week 3**  **22/4 – 25/4**  (4 days) | **Week 4**  **5/5 – 9/5**  (5 days) | **Week 5**  **12/5 – 16/5**  (5 days) | **Week 6**  **19/5 – 23/5**  (5 days) | **Week 7**  **26/5 – 30/5**  (5 days) | **Week 8**  **2/6 – 6/6**  (5 days) | **Week 9**  **9/6 – 13/6**  (5 days) | **Week 10**  **17/6 – 20/6**  (4 days) | **Week 11**  **23/6 – 27/6**  (5 days) |
| **CAPS Topics** | **MECHANICS:**  **Work, energy and power (2 hrs)** | **MECHANICS:**  **Work, energy and power**  **(4 hrs)** | **MECHANICS:**  **Work, energy and power (2 hrs)** | **WAVES, SOUND &**  **LIGHT: Doppler Effect**  **(3 hrs)** | **WAVES, SOUND &**  **LIGHT: Doppler Effect (2 hrs)**  **CHEMICAL CHANGE:**  **Rate and extent of reaction**  **(2 hrs)** | **CHEMICAL**  **CHANGE: Rate and extent of reaction (4 hrs)** | **CHEMICAL CHANGE:**  **Chemical equilibrium (4 hrs)** | **CHEMICAL CHANGE:**  **Chemical equilibrium (4 hrs)** | **CHEMICAL CHANGE:**  **Acids and bases (4 hrs)** | **CHEMICAL CHANGE:**  **Acids and bases**  **(3 hrs)** | **June examination OR**  **Control test (4 hrs)** |
| **Topics /Concepts, Skills and Values** | **Work**   * Define the work done on an object. * Draw force diagram & free-body diagrams. * Calculate the net work done on an object. * Distinguish between positive work and negative net work done on the system. | * State the work- energy theorem. * Apply the work-energy theorem on horizontal, vertical and inclined planes. * Define conservative and non- conservative forces and give examples. * State the principle of conservation of mechanical energy. * Solve problems using the equation Wnc = ΔEk + ΔEp * Show that Emech is conserved in the absence of non-   conservative forces. | * Define power and calculate the power involved when work is done. * Perform calculations using Pave= Fvave when an object moves at a constant speed along a rough horizontal surface or a rough inclined plane. * Calculate the minimum power required of an electric motor to pump water from a borehole of a particular depth at a particular rate using Wnc = ΔEk + ΔEp | * State the Doppler effect and explain (using illustrations) the change in pitch observed when a source moves toward or away from a listener (sound and ultrasound). * State applications of the Doppler effect. (Example ultrasound in medicine.) * Solve problems using   f  v  vL f  L v  v s  s  when EITHER source or listener moves. | **Doppler effect**   * With light, explain ‘red shifts’ & use the Doppler Effect to explain why we conclude that the universe is expanding.   **Rate of reaction**   * Define *reaction rate*. * Calculate reaction rate from given data. * List the factors that affect the rate of chemical reactions. | * Explain in terms of the collision theory how the various factors affect the rate of chemical reactions. * Answer questions and interpret data (tables or graphs) on different experimental techniques for measuring the rate of a given reaction. * Define the term   *positive catalyst.*   * Interpret graphs of distribution of molecular energies to explain how a catalyst, temperature and concentration affect rate. | * Explain: open & closed systems; reversible reactions; dynamic equilibrium * List the factors which influence the position of an equilibrium. * State Le Chatelier’s principle and use it to explain changes in equilibria. * Interpret simple graphs of equilibrium. * List the factors which influence the value of the equilibrium constant Kc | * Write an expression for the equilibrium constant from a given equation. * Perform calculations based on Kc values. * Explain the significance of high and low values of the equilibrium constant. | * Define acids and bases according to Arrhenius and Lowry-Brønsted. * Distinguish between strong and weak acids/bases with examples. * Distinguish between concentrated and dilute acids/bases. * Identify conjugate acid- base pairs for given compounds. * Write neutralisation reactions of common laboratory acids and bases. * Perform calculations based on titration reactions & motivate the   choice of an indicator. | * Determine the approximate pH of salts in salt hydrolysis. * Explain the pH scale and calculate pH values of strong acids and strong bases. * Define the concept of Kw and explain the auto- ionisation of water. * Compare the Ka and Kb values of strong and weak acids and bases. * Compare strong and weak acids by looking at pH, conductivity & reaction rate. | **June examination**   * **TWO PAPERS**   **Paper 1 – 150**  **marks 3 hrs AND**  **Paper 2 – 150**  **marks 3 hrs**  **OR CONTROL TEST**   * **(150 marks-**   **3 hours.)**   * **75 marks – Physics** * **75 marks - Chemistry** |
| **Requisite pre- knowledge** | * Gravitational potential and kinetic energy * Equations of motion * Force and free- body diagrams | * Gravitational potential and kinetic energy * Equations of motion * Newton’s 2nd law of motion | * Gravitational potential and kinetic energy * Equations of motion * Newton’s 2nd law of motion | * Wave properties: frequency, wavelength, amplitude * Graphical representation of waves | * Wave properties: frequency, wavelength, amplitude * Writing of formulae and balanced equations * Energy in chemical reactions – gr 11 | * Writing of formulae and balanced equations * Energy in chemical reactions – gr 11 | * Writing of formulae and balanced equations * Energy in chemical reactions – gr 11 | * Writing of formulae and balanced equations * Stoichiometry | * Writing of formulae and balanced equations * Stoichiometry | * Writing of formulae and balanced equations * Stoichiometry | * Writing of formulae and balanced equations * Stoichiometry |
| **Resources** (other than textbook) **to enhance learning** | * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Apparatus for experiment below. * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Apparatus: Chemicals and apparatus for experiment below. * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Apparatus: Chemicals and apparatus for experiment below. * Mind the Gap * Study guides * YouTube & Mindset videos * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * Previous question papers | * Apparatus: Chemicals and apparatus for experiment below. * Mind the Gap * Study guides * YouTube & Mindset videos | * Mind the Gap * Study guides * YouTube & Mindset videos * Previous question papers |

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| **TERM 2**  **(51 days)** | | **Week 1**  **8/4 –11/4**  (4 days) | **Week 2**  **14/4 – 17/4**  (4 days) | **Week 3**  **22/4 – 25/4**  (4 days) | **Week 4**  **5/5 – 9/5** (5 days) | **Week 5 12/5 – 16/5**  (5 days) | **Week 6**  **19/5 – 23/5** (5 days) | **Week 7**  **26/5 – 30/5**  (5 days) | **Week 8**  **2/6 – 6/6**  (5 days) | **Week 9**  **9/6 – 13/6**  (5 days) | **Week 10**  **17/6 – 20/6**  (4 days) | **Week 11**  **23/6 – 27/6**  (5 days) |
| **CAPS Topics** | | **MECHANICS:**  **Work, energy and power (2 hrs)** | **MECHANICS:**  **Work, energy and power**  **(4 hrs)** | **MECHANICS:**  **Work, energy and power (2 hrs)** | **WAVES, SOUND &**  **LIGHT: Doppler Effect**  **(3 hrs)** | **WAVES, SOUND &**  **LIGHT: Doppler Effect (2 hrs)**  **CHEMICAL CHANGE:**  **Rate and extent of reaction**  **(2 hrs)** | **CHEMICAL**  **CHANGE: Rate and extent of reaction (4 hrs)** | **CHEMICAL CHANGE:**  **Chemical equilibrium (4 hrs)** | **CHEMICAL CHANGE:**  **Chemical equilibrium (4 hrs)** | **CHEMICAL CHANGE:**  **Acids and bases (4 hrs)** | **CHEMICAL CHANGE:**  **Acids and bases**  **(3 hrs)** | **June examination OR**  **Control test (4 hrs)** |
|  | |  |  |  |  |  |  |  |  |  | * Previous question papers |  |
| **Assessment** | **Informal Assessment:** Remediation | * Homework | Homework | * Homework * Informal test | * Homework | * Homework * Informal test | * Homework * Informal test | * Homework * Practical: Demonstrate factors that influence the equilibrium of CoCℓ2 & H2O or   NO2 & N2O4  (demo) | * Homework | * Homework * Informal test | * Homework * Practical: Titration of a weak acid against a strong base to determine the concentration of the strong base. * Informal test | * Homework * Informal test |
| **SBA (Formal)** | None | None | Formal practical (Physics): Perform simple experiments to determine the work done and power expended in walking up (or running up) a flight of stairs | None | None | Formal Practical (Chemistry): Determine the effect of temperature and concentration on the rate of reaction between Na2S2O3 and HCℓ  OR Determine factors (any factor) affecting the rate of a reaction. | None | None | None | Formal practical: (Chemistry) Determine the unknown concentration of an acid or base by titration against a standard solution. | Control test or June examination |

**2025 ATP: Grade 12 – Term 3: PHYSICAL SCIENCES**

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| **TERM 3**  **(53 days)** | **Week 1 22/7 – 25/7**  (4 days) | **Week 2 28/7 – 1/8**  (5 days) | **Week 3 4/8 – 8/7**  (5 days) | **Week 4 11/8 – 15/8**  (5 days) | **Week 5 18/8 – 22/8**  (5 days) | **Week 6 25/8 – 29/8**  (5 days) | **Week 7 1/9 – 5/9**  (5 days) | **Week 8, 9, 10, 11 8/9 –03/10**  (19 days) |
|  | **CONTROL TEST:** | **ELECTRICITY &** | **ELECTRICITY &** | **ELECTRICITY &** | **MATTER &** | **CHEMICAL CHANGE:** | **CHEMICAL CHANGE:** | **TRIAL EXAMINATION** |
| **CAPS Topics** | **Discussion, corrections,**  **remedial work (1 hr) ELECTRICITY & MAGNETISM:**  **Electric circuits (2 hrs)** | **MAGNETISM:**  **Electric circuits (4 hrs)** | **MAGNETISM:**  **Electrodynamics (4 hrs)** | **MAGNETISM:**  **Electrodynamics (1 hr)**  **M & M: Optical phenomena and properties of** | **MATERIALS: Optical phenomena and properties of materials**  **(4 hrs)** | **Electrochemical reactions (4 hrs)** | **Electrochemical reactions (4 hrs)** | **P1: 3 hrs**  **P2: 3 hrs** |
|  |  |  |  | **materials (2 hrs)** |  |  |  |  |
|  | * Discussion, corrections, remedial work of June control test or exam.   **Electric circuits**   * Solve problems involving current, voltage and resistance for circuits containing arrangements of resistors in series and in parallel (maximum four resistors excluding internal resistance). | * Explain the term internal resistance. * Solve circuit problems using ε =IRext+ Ir or   *ε* = Vload + Vint resistance.   * Solve problems, with internal resistance, for circuits containing arrangements of resistors in series and in parallel (maximum four resistors). | * State the energy conversion in generators & use principle of electro-magnetic induction to explain how generators work. * Give examples of uses of AC & DC generators & functions of components. * State the energy conversion in motors & use motor effect to explain how motors work. * Explain the functions of components of motors and give examples of uses of motors. * State the advantages of alternating current over direct current. * Draw and interpret sketch graphs of voltage vs time and current vs time for an AC circuit. | * Define the term *rms* for an alternating voltage or an alternating current. * Solve problems using I = Imax   rms  √2  V = Vmax  rms  √2  Pave=I2 R  rms  V2  Pave= rms  R  Pave=VrmsIrms  Pave=VrmsIrms (For purely resistive  circuit).  **Optical phenomena and properties of materials**   * Describe the photoelectric effect and state its significance. * Define threshold frequency, fo. * Define work function, Wo. | * Perform calculations using the photoelectric equation: * E =Wo+ Kmax, where E = hf and Wo= hfo and   Kmax = ½ m(vmax)2   * Explain the effect of intensity and frequency on the photoelectric effect. * Understand that the photo-electric effect demonstrates the particle nature of light. * Explain the formation of atomic spectra by referring to energy transition. * Explain the difference between atomic absorption spectra and atomic emission spectra | * Define oxidation & reduction in terms of electron transfer & oxidation numbers. * Define oxidising & reducing agents in terms of oxidation and reduction. * Define an anode and cathode in terms of oxidation and reduction. * Define an *electrolyte.* * Define a galvanic cell. * State the function of salt bridge. * Predict the movement of ions and the direction of electron flow in external circuit. * Write half-reactions at each electrode & the overall cell reaction. * Predict in which half- cell oxidation / reduction takes place. * Use cell notation or diagrams to represent a galvanic cell. * Calculate emf for a galvanic cell. * Explain that Vcell decreases as [product ions] increases and [reactant ions] decreases and Vcell = 0 when equilibrium is reached, (the cell is ‘flat’). * State the standard conditions under which standard electrode potentials are   determined. | * Describe the standard hydrogen electrode and explain its role as the reference electrode. * Explain how standard electrode potentials can be determined using the reference electrode; state the convention regarding positive and negative values.   **Electrolytic cells**   * Define an electrolytic cell. * Describe the movement of ions in the solution. * State the direction of electron flow in the external circuit. * Write equations for the half- reactions at the anode and cathode. * Write down the overall cell reaction. * Describe, using half- reactions and the equation for the overall cell reaction as well as the layout of the particular cell using a schematic diagram, the following electrolytic processes:   + The decomposition of copper(II) chloride   + Electroplating, e.g. the electroplating of an iron spoon with silver/nickel   + Refining of copper   + The electrolysis of a concentrated solution of sodium chloride. | **PAPER 1: 150 marks**   * Mechanics (65) * Waves, Sound and light (15) * Electricity and magnetism (55) * Matter & Materials (15)   **PAPER 2: 150 marks**   * Chemical Change (92) * Matter & Materials (58) |
| **Topics / Concepts, Skills and Values** |  | The following **gr 10 and 11 topics** will form part of the two papers:  **Paper 1:**   * Newton’s laws (Gr 11) * Electrostatics (Gr 11) * Electric circuits (Gr 11)   **Paper 2**   * Representing chemical change (Gr 10) * Intermolecular forces * Energy and chemical change (Gr 11) * Stoichiometry (application only) (Gr 11) |
| **Requisite pre- knowledge** | Electric circuits from grade 11 | * Electric circuits from grade 11 | * Electromagnetic induction * Hand rules for direction of induced current. | * Electrical power | * Wave properties: frequency, wavelength, amplitude * Graphical representation of waves | * Redox reactions | * Redox reactions |  |

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| **TERM 3**  **(53 days)** | | **Week 1**  **22/7 – 25/7**  (4 days) | **Week 2 28/7 – 1/8**  (5 days) | **Week 3 4/8 – 8/8**  (5 days) | **Week 4 11/8 – 15/8**  (5 days) | **Week 5 18/8 – 22/8**  (5 days) | **Week 6 25/8 – 29/8**  (5 days) | **Week 7 1/9 – 5/9**  (5 days) | **Week 8, 9, 10, 11**  **8/9 –03/10**  (19 days) |
| **CAPS Topics** | | **CONTROL TEST:**  **Discussion, corrections, remedial work (1 hr) ELECTRICITY & MAGNETISM:**  **Electric circuits (2 hrs)** | **ELECTRICITY & MAGNETISM:**  **Electric circuits (4 hrs)** | **ELECTRICITY & MAGNETISM:**  **Electrodynamics (4 hrs)** | **ELECTRICITY & MAGNETISM:**  **Electrodynamics (1 hr)**  **M & M: Optical phenomena and properties of materials (2 hrs)** | **MATTER &**  **MATERIALS: Optical phenomena and properties of materials**  **(4 hrs)** | **CHEMICAL CHANGE:**  **Electrochemical reactions (4 hrs)** | **CHEMICAL CHANGE:**  **Electrochemical reactions (4 hrs)** | **TRIAL EXAMINATION**  **P1: 3 hrs**  **P2: 3 hrs** |
| **Resources** (other than textbook) **to enhance learning** | | * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Apparatus for experiment below. * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Apparatus: Chemicals and apparatus for experiment below. * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers | * Mind the Gap * Study guides * YouTube & Mindset videos * pHET simulations * Previous question papers |
| **Assessment** | **Informal Assessment:** Remediation | * Corrections * Homework | * Homework * Informal test | * Homework * Practical: Functioning of a simple electric motor (demonstration) | * Homework * Informal test | * Homework * Informal test | * Homework | * Homework * Informal test | N/A |
| **SBA (Formal)** | None | Formal practical (Physics): Internal resistance of a battery and equivalent resistance of resistors in series &  parallel | None | None | None | None | Formal practical (Chemistry): Verify the reactions that take place in a galvanic cell and an electrolytic cell | Trial examination |

**2025 National Recovery ATP: Grade 12 – Term 4: PHYSICAL SCIENCES**

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| **TERM 4**  **(42 days)** | | **Week 1**  **13/10 –17/10**  (4 days) | **Week 2**  **20/10 –24/10**  (5 days) | **Week 3 27/10 –31/10**  (5 days) | **Week 4**  **03/11 – 07/11**  (5 days) | **Week 5 -10 10/11 – 10/12**  (23 days) |
| **CAPS Topics** | | **TRIAL EXAM:**  **Discussion (3 hrs)** | **TRIAL EXAM: Discussion (4 hrs)** | **CONSOLIDATION AND REVISION**  **(4 hrs)** | **CONSOLIDATION AND REVISION**  **(4 hrs)** | **FINAL EXAMINATION**  **P1: 3 hrs**  **P2: 3 hrs** |
| **Topics**  **/Concepts,**  **Skills and Values** | | Discussion, corrections, and remedial work of trial examination | Discussion, corrections, and remedial work of trial examination | All topics | All topics | **PAPER 1: 150 marks**   * **Mechanics (65)**   Momentum and impulse; Vertical projectile motion, Work, energy and power, Newton’s laws (Gr 11)   * **Waves, Sound and light (15)**   Doppler effect   * **Electricity and magnetism (55)**   Electric circuits, Electrodynamics, Electrostatics (Gr 11), Electric circuits (Gr 11)   * **Matter & Materials (15**)   Optical phenomena and properties of materials  **PAPER 2: 150 marks**   * **Chemical Change (92)**   Rate and extent of reaction, Chemical equilibrium, Acids and bases, Representing chemical change (Gr 10), Energy and chemical change (Gr 11), Stoichiometry (application only) (Gr 11)   * **Matter & Materials (58)**   Organic molecules, Intermolecular forces (Gr 11) |
| **Requisite pre- knowledge** | | N/A | N/A | N/A | N/A | N/A |
| **Resources** (other than textbook) **to enhance learning** | | * Trial exam question papers | * N/A | * Study guides * Previous question papers; * Mindset & YouTube videos * Simulations | * Study guides * Previous question papers; * Mindset & YouTube videos * Simulations | N/A |
| **Assessment** | **Informal Assessment:** Remediation | * Trial exam question papers | * Trial exam question papers | * Homework * Informal test | * Homework * Informal test | N/A |
| **SBA (Formal)** | None | None | None | None | Final Examination |
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| **Annual Assessment plan and weighting of tasks in the programme of assessment for grade 12** | | | | | | |
| **PROGRAMME OF ASSESSMENT FOR GRADE 12** | | | | | | |
| **INTERNAL ASSESSMENT (SBA)** | | | | | | **EXTERNAL ASSESSMENT** |
| **ASSESSMENT TASKS (25%)** | | | | | | **END-OF-YEAR ASSESSMENT (75%)** |
| **TERM 1** | | **TERM 2** | | **TERM 3** | | **TERM 4** |
| **Type** | **Weighting and duration** | **Type** | **Weighting and duration** | **Type** | **Weighting and duration** | **Final Examination**  **(2 x 150 marks giving a total of 300 marks for papers 1 and 2) 3-hour duration for each of Papers 1and 2** |
| **Experiment** | 15% (Minimum  50 marks and minimum 2- hour duration) | **June examination** | (20%)  2 x 150 marks)  Paper 1: 150 marks  Paper 2: 150 marks  3 hours duration for each of Papers | **Experiment** | 15% (Minimum  50 marks and minimum 2- hour duration) |
| **Control Test** | 20%  (1 x 100 marks)  2 hours duration  50 marks for Physics topics and 50 marks for Chemistry topics | **Preliminary Examination** | 30%  (2 x 150 marks)  Paper 1: 150 marks  Paper 2: 150 marks  3 hours duration for each of Papers |
| Total Weighting: 35% | | Total Weighting: 20% | | Total Weighting: 45% | |
| **FINAL MARK = 25% (ASSESSMENT TASKS) +75% (FINAL EXAM)=100%** | | | | | | |