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:

pFnet=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 andalkenes 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 fL v  v sswhen 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 HCℓOR 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√2V = Vmaxrms√2Pave=I2 Rrms V2Pave= rmsRPave=VrmsIrmsPave=VrmsIrms (For purely resistivecircuit).**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% (Minimum50 marks and minimum 2- hour duration) | **June examination** | (20%)2 x 150 marks)Paper 1: 150 marksPaper 2: 150 marks3 hours duration for each of Papers | **Experiment** | 15% (Minimum50 marks and minimum 2- hour duration) |
| **Control Test** | 20%(1 x 100 marks)2 hours duration50 marks for Physics topics and 50 marks for Chemistry topics | **Preliminary Examination** | 30%(2 x 150 marks)Paper 1: 150 marksPaper 2: 150 marks3 hours duration for each of Papers |
| Total Weighting: 35% | Total Weighting: 20% | Total Weighting: 45% |
| **FINAL MARK = 25% (ASSESSMENT TASKS) +75% (FINAL EXAM)=100%** |