



Week 5 10/2 – 14/2 (5 days)	Mechanics: Newton's laws (4hrs)	<ul style="list-style-type: none"> Apply Newton's laws of motion to a variety of equilibrium and non-equilibrium problems including: <ul style="list-style-type: none"> A single object: <ul style="list-style-type: none"> Moving in a horizontal plane with or without friction. Moving on an inclined plane with or without friction. Moving in the vertical plane (lifts, rockets, etc.) Two-body systems (joined by light inextensible string): <ul style="list-style-type: none"> Both on a horizontal plane with or without friction. One in a horizontal plane with or without friction, and a second hanging vertically from a string over a frictionless pulley. Both on an inclined plane with or without friction. Both hanging vertically from a string over a frictionless pulley 	64 – 65			54%	16%
		FORMAL PRACTICAL (SBA): Newton's 2nd law of motion					

2025 CUSTOMISED KZN Recovery ATP: Grade 11 – Term 1: PHYSICAL SCIENCES							
Week	Knowledge Area (Topic Duration)	Concepts for week	Page in CAPS doc	Date complete d	SMT Member Signature	% Curriculum coverage	
						Per term	Annual
Week 6 17/2 – 21/2 (5 days)	Mechanics: Newton's law of universal gravitation (4hrs)	<ul style="list-style-type: none"> State Newton's law of universal gravitation. Solve problems using $F = G \frac{m_1 m_2}{r^2}$, Calculate acceleration due to gravity on Earth using $g = G \frac{M_E}{R_E^2}$ and on another planet using $g = G \frac{M_P}{R_P^2}$ where M_P is the mass of the planet and R_P is the radius of the planet. Explain the difference between the terms weight and mass. Calculate weight using the $w = mg$. Calculate the weight of an object on other planets with different values of gravitational acceleration. Explain the term weightlessness INFORMAL TEST (NEWTON'S LAWS)	66			66%	20%
Week 7 24/2 – 28/2 (5 days)	ELECTRICITY & MAGNETISM: Electrostatics (4hrs)	REVISION (Gr 10): Positive and negative charges. Electrostatic forces. Conservation of charge. Vectors and scalars <ul style="list-style-type: none"> State Coulomb's law in words and in symbols. Solve problems using: $F = k \frac{Q_1 Q_2}{r^2}$, <ul style="list-style-type: none"> for charges in one dimension(1D) – restrict to three charges. for charges in two dimensions (2D) – for three charges in a right-angled formation (limit to calculation of net forces acting on the charge at the right- angle of the triangle'). 	84			90%	27%
Week 8 3/3 – 7/3 (5 days)	ELECTRICITY & MAGNETISM: Electrostatics (4 hrs)	<ul style="list-style-type: none"> Describe an electric field as a region in space in which an electric charge experiences a force. Draw electric field patterns for the following configurations: <ul style="list-style-type: none"> A single point charge Two point charges (one negative, one positive, both positive and both negative) A charged sphere (Restrict to charges identical in magnitude.) Define the electric field at a point. ($E = \frac{F}{q}$) Solve problems using the equation $E = \frac{kQ}{r^2}$ Calculate the electric field at a point due to a number of point charges, using the equation $E = \frac{kQ}{r^2}$ Determine the contribution to the field due to each charge. Restrict to three charges in a straight line. 	85			100	30%
Week 9 10/3 – 14/3 (5 days)		REVISION/CONTROLLED TEST – ONE PAPER (100 marks) <p>Mechanics:</p> <ul style="list-style-type: none"> Vectors in two dimensions, Different kinds of forces, Force diagrams, Free-body diagrams, Newton's First, Second and Third Laws. Newton's Law of Universal Gravitation. <p>Electricity and Magnetism:</p> <p>Electrostatics</p> <ul style="list-style-type: none"> Electric charge and charge transfer (grade 10) Coulomb's Law, Electric Fields. 					



Week 10 & 11 17/3 – 28/3 (9 days)		CONTROLLED TEST CONTINUED						
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maximum four resistors excluding internal resistance 2025 CUSTOMISED KZN Recovery ATP: Grade 11 – Term 2: PHYSICAL SCIENCES							
Week	Knowledge Area (Topic Duration)	Concepts for week	Page in CAPS doc	Date completed	SMT Member Signature	% Curriculum coverage	
						Per term	Annual
Week 1 8/4 – 11/4 (4 days)	Discussion (3 hrs)	<ul style="list-style-type: none"> Discussion and review of March Controlled Test 				0%	30%
Week 2 14/4 – 17/4 (4 days)	ELECTRICITY & MAGNETISM: Electromagnetism (4 hrs)	REVISION (Gr 10): <ul style="list-style-type: none"> Positive & negative charges Electrostatics forces Electric fields Vectors & scalars Magnetic field near a current carrying wire Use the Right Hand Rule to determine the direction of the magnetic field associated with: (i) A straight current carrying wire (ii) A current carrying loop (single) of wire (iii) A solenoid Draw the magnetic field lines around: (i) A straight current carrying wire (ii) A current carrying loop (single) of wire. (iii) A solenoid Discuss qualitatively the environmental impact of overhead electrical cables. Define: The Magnetic flux, ($\phi = BA\cos\theta$, where for a loop of area A in the presence of a uniform magnetic field B, the magnetic flux (ϕ) passing through the loop is $\phi = BA\cos\theta$, where θ is the angle between the magnetic field B and the normal to the loop of area, A. The induced current flows in a direction so as to set up a magnetic field to oppose the change in magnetic flux. State Faraday's Law of electromagnetic induction. Calculate: Induced emf (ϵ) and induced current (I), for situations involving a changing magnetic field, use the equation for Faraday's Law, where $\phi = BA \cos \theta$ is the magnetic flux and $\epsilon = -N \frac{\Delta\phi}{\Delta t}$ is the induced emf. 	86			12%	34%
Week 3 22/4 – 25/4 (4 days)	ELECTRICITY & MAGNETISM: Electromagnetism (4hrs)	<ul style="list-style-type: none"> Use words and pictures to describe what happens when a bar magnet is pushed into or pulled out of a solenoid connected to a galvanometer. Use the Right Hand Rule to determine the direction of the induced current in a solenoid when the north or south pole of a magnet is inserted or pulled out. More calculations – Faraday's Law. INFORMAL TEST 	87			18%	35%
Week 4 5/5 – 9/5 (5 days)	ELECTRICITY & MAGNETISM: Electric circuits (4hrs)	REVISION (Gr 10): Electric circuits: Current, Potential difference, Resistance. <ul style="list-style-type: none"> State Ohm's law in words. Interpret data/graphs on the relationship between current, potential difference and resistance at constant temperature. State the difference between Ohmic and non-Ohmic conductors and give an example of each. Solve problems involving current, voltage and resistance for circuits containing arrangements of resistors in series and in parallel (maximum four resistors excluding internal resistance) Practical (Informal): Ohm's law				30%	39%
Week 5 12/5 – 16/5 (4 days)	ELECTRICITY & MAGNETISM: Electric circuits (4hrs)	<ul style="list-style-type: none"> Define power. Solve problems using $P = \frac{W}{\Delta t}$ Recall that $W = VQ$ and by substituting $Q = I\Delta t$ and $V = IR$, the following energy transfer equations are obtained: $W = VI\Delta t$ $W = I^2 R\Delta t$ $W = \frac{V^2}{R} \Delta t$ Deduce, by substituting $P = \frac{W}{\Delta t}$ into above equations, the following power equations: $P = VI$ $P = I^2 R$ $P = \frac{V^2}{R}$ Solve problems using the above energy transfer and power equations for components in a circuit. 	89			42%	43%



Week 6 19/5 – 23/5 (5 days)	ELECTRICITY & MAGNETISM: Electric circuits (4hrs)	<ul style="list-style-type: none"> Deduce that the kilowatt-hour (kWh) refers to the use of 1 kilowatt of electricity for 1 hour. Know that 1 kWh is an amount of electrical energy known as one unit of electricity. Calculate the cost of electricity usage given the power specifications of the appliances used the duration and the cost of 1 kWh. INFORMAL TEST <ul style="list-style-type: none"> Explain the term internal resistance. Solve circuit problems using $\epsilon = IR_{ext} + Ir$ or $\epsilon = V_{load} + V_{lost}$ Solve problems, with internal resistance, for circuits containing arrangements of resistors in series and in parallel (maximum four resistors). 	89			54%	46%
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						Per term	Annual
Week 7 26/5 – 30/5 (5 days)	MATTER & MATERIAL: Atomic combinations (4hrs)	REVISION (Gr 10): Chemical bonding, Electron configuration, Writing of formulae <ul style="list-style-type: none"> Define a chemical bond. Draw Lewis dot diagrams of elements. Determine the number of valence electrons in an atom. Explain, in terms of electrostatic forces and in terms of energy, why: <ul style="list-style-type: none"> Two H atoms form an H₂ molecule He does not form He₂ Interpret the graph of potential energy versus the distance between nuclei for two approaching hydrogen atoms. Define: a covalent bond, a molecule Draw Lewis diagrams for simple molecules, e.g. H₂, F₂, H₂O, NH₃, CH₄, HF, OF₂, HOCℓ and molecules with multiple bonds, e.g. N₂, O₂ and HCN. Discuss molecular shapes of H₂ (linear) H₂O (angular), NH₃ (pyramidal), CO₂ (linear), CH₄ (tetrahedral). Describe rules for bond formation. Define a bonding pair and a lone pair. Describe the formation of the dative covalent bond 	67 – 68			66%	50%
Week 8 2/6 – 6/6 (5 days)	MATTER & MATERIAL: Atomic combinations (4hrs)	<ul style="list-style-type: none"> Define electronegativity. Describe, with examples, a non-polar covalent bond. Describe, with examples, a polar covalent bond. Show polarity of bonds using partial charges, e.g. H^{δ+}Cl^{δ-}. Compare the polarity of chemical bonds using a table of electronegativities. Explain that the character of a bond varies from non-polar covalent (ΔEN = 0) to polar covalent (0 < ΔEN ≤ 2,1) to ionic (ΔEN > 2,1). Use difference in electronegativity and molecular shape to explain that polar bonds do not always lead to polar molecules. Define bond energy and bond length. Explain the relationship between bond energy and bond length. Explain the relationship between the strength of a chemical bond and bond length, size of bonded atoms and number of bonds. INFORMAL TEST	70 – 71			78%	54%
Week 9 10/6 – 13/6 (5 days)	MATTER & MATERIAL: Intermolecular forces (4 hrs)	REVISION (GR 10): Chemical bonding, Writing of formulae, Valency, Periodic table. <ul style="list-style-type: none"> Describe the difference between intermolecular forces and interatomic forces (intramolecular forces) using a diagram of a group of small molecules & in words. Name and explain the different intermolecular forces (Van der Waals forces): <ul style="list-style-type: none"> Mutually induced dipole forces or London forces: <ul style="list-style-type: none"> Dipole-dipole forces Dipole induced dipole forces Hydrogen bonding Ion-dipole forces: Forces between ions and polar molecules. State the relationship between intermolecular forces and molecular mass. Explain the effect of intermolecular forces on boiling point, melting point, vapour pressure & solubility. 	72			90%	57%
		73			100%	60%	



Week 10 17/6 – 20/6 (4 days)	JUNE/MID YEAR EXAM	Revision/June Exams PAPER 1 (75 marks) <ul style="list-style-type: none"> • Vectors in two dimensions • Newton's laws • Electrostatics • Electromagnetism • Electric circuits 					
Week 11 23/6 – 27/6 (5 days)	JUNE/MID YEAR EXAM	PAPER 2 (75 marks) <ul style="list-style-type: none"> • Chemical bonding • Lewis diagrams and electron configuration • Writing of formulae • Molecular shapes • Electronegativity • Intermolecular forces 					

2025 CUSTOMISED KZN Recovery ATP: Grade 11 – Term 3: **PHYSICAL SCIENCES**

Week	Knowledge Area (Topic Duration)	Concepts for week	Page in CAPS doc	Date completed	SMT Member Signature	%Curriculum Coverage	
						Per term	Annual
Week 1 22/7 – 25/7 (4 days)	JUNE CONTROL TEST: Discussion (3 hrs)	<ul style="list-style-type: none"> • Discussion and corrections of the June Examination. • INFORMAL TEST (REMEDIAL) 					
Week 2 28/7 – 1/8 (5 days)	CHEMICAL CHANGE: Quantitative aspects of chemical change (4hrs)	REVISION (Gr 10): Mole concept, Molar mass, Molar vol, Concentration, Writing of formulae and balanced eqns. <ul style="list-style-type: none"> • Describe the mole as the SI unit for amount of substance. • Define one mole. • Describe Avogadro's number, N_A, as the number of particles (atoms, molecules, formula-units) present in one mole. • Define molar mass. • Calculate the molar mass of a substance given its formula. • State Avogadro's Law. • Know: molar gas vol, V_m, at STP is $22,4 \text{ dm}^3 \cdot \text{mol}^{-1}$. • Do calculations using $n = \frac{m}{M}$, $n = \frac{V}{V_m}$, $n = \frac{\text{no. of particles}}{N_A}$ 	50 – 53 (Gr 10 work)			11%	64%
Week 3 4/8 – 8/8 (5 days)	CHEMICAL CHANGE: Quantitative aspects of chemical change (4hrs)	<ul style="list-style-type: none"> • Interpret balanced equations in terms of volume relationships for gases. • Define concentration. • Calculate concentration, in $\text{mol} \cdot \text{dm}^{-3}$, using $c = \frac{n}{V}$ • Determine percentage composition of a compound. • Determine the empirical formulae and molecular formulae of compounds. • Do stoichiometric calculations including limiting reagents. 	82 – 83			22%	67%
Week 4 11/8 – 15/8 (5 days)	CHEMICAL CHANGE: Quantitative aspects of chemical change (4 hrs)	<ul style="list-style-type: none"> • Determine the percentage yield in a reaction. • Determine the percentage CaCO_3 in an impure sample of seashells (purity or percent composition). • Stoichiometric calculations with explosions as reactions e.g. $2\text{NH}_4\text{NO}_3 \rightarrow 2\text{N}_2(\text{g}) + 4\text{H}_2\text{O}(\text{g}) + \text{O}_2(\text{g})$ $2\text{C}_8\text{H}_{18} + 25\text{O}_2 \rightarrow 16\text{CO}_2 + 18\text{H}_2\text{O}$ • Stoichiometric calculations using reaction in airbags (sodium azide): $2\text{NaN}_3(\text{s}) \rightarrow 2\text{Na}(\text{s}) + 3\text{N}_2(\text{g})$ • INFORMAL TEST 	82 – 83			34%	71%
Week 5 18/8 – 22/8 (5 days)	CHEMICAL CHANGE: Energy and chemical change (4hrs)	REVISION (Gr10): Chemical reactions <ul style="list-style-type: none"> • Define heat of reaction (ΔH). • Define an exothermic reaction. • Define and endothermic reaction. • Classify, with reason, reactions as exothermic or endothermic. • State the sign of ΔH for exothermic and endothermic reactions. • Define activation energy. • Define an activated complex. • Draw or interpret fully labelled sketch graphs (potential energy versus course of reaction graphs) of catalysed and uncatalysed endothermic and exothermic reactions. 	83			42%	74%



Week 6 25/8 – 29/8 (5 days)	CHEMICAL CHANGE: Types of reaction (Acid-Base Reactions) (4 hrs)	<ul style="list-style-type: none"> Write names and formulae of common acids: hydrochloric acid, nitric acid, sulphuric acid and ethanoic acid (acetic acid). Write names and formulae of common bases: ammonia, sodium carbonate (washing soda), sodium hydrogen carbonate, sodium hydroxide (caustic soda) and potassium hydroxide. Define acids and bases according to the Arrhenius & Bronsted-Lowrey theories. Identify conjugate acid-base pairs. Describe the term amphiprotic or ampholyte. Write equations to show how an amphiprotic substance can act as acid or base. Write reaction equations for the dissolution of acids and bases in water. Distinguish between strong and weak and concentrated and dilute acids & bases with examples. Explain the pH scale and calculate pH values of strong and weak acids and bases. Write the overall equations for the reactions of acids with metal hydroxides, metal oxides and metal carbonates. 	90 – 92			65%	81%
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Week	Knowledge Area (Topic Duration)	Concepts for week	Page in CAPS doc	Date completed	SMT Member Signature	%Curriculum Coverage	
						Per term	Annual
Week 7 1/9 – 5/9 (5 days)	CHEMICAL CHANGE: Acids and bases (4 hrs)	<p>REVISION(Gr 10): Writing of formulae and balanced equations</p> <ul style="list-style-type: none"> Describe an acid- base indicator as a weak acid, or a weak base, whose colour changes as the H⁺ ion or the OH⁻ ion concentration in a solution change. Know the colours of litmus, methyl orange, Phenolphthalein and bromothymol blue in acids and in bases. Volumetric analysis (Neutralisation Reactions) Stoichiometric calculations using acid-base reactions. Identify the acid and the base needed to prepare a given salt and write an equation for the reaction. Write down neutralisation reactions of common laboratory acids and bases. <p>Practical (Informal): Preparation of a standard solution</p> <p>Practical FORMAL (SBA): Titration</p> <p>INFORMAL TEST</p>	125 - 126			77%	85%
Week 8 8/9 -12/9 (5 days)	MATTER AND MATERIAL: Ideal gases and thermal properties (4hrs)	<ul style="list-style-type: none"> Describe the motion of individual molecules i.e. - collisions with each other and the walls of the container <ul style="list-style-type: none"> molecules in a sample of gas move at different speeds Explain the idea of <i>average speeds</i> in the context of molecules of a gas. Describe an ideal gas in terms of the motion of molecules. Explain how a real gas differs from an ideal gas. State the conditions under which a real gas approaches ideal gas behaviour. 	80 – 81			87.8	96.1
Week 9 15/9-19/9 (5 days)	MATTER AND MATERIAL: Ideal gases and thermal properties (4 hrs)	<ul style="list-style-type: none"> Describe the relationship between volume and pressure for a fixed amount of gas at constant temperature (Boyle's law): <ul style="list-style-type: none"> Practically By interpreting table of results Using graphs Using symbols ('∝') and the words inversely proportional. Writing a relevant equation. Explain the temperature of a gas in terms of the average kinetic energy of the molecules of the gas. Explain the pressure exerted by a gas in terms of the collision of the molecules with the walls of the container. <p>Practical FORMAL(SBA): BOYLE'S LAW</p>	80 - 89			100%	92%
Week 10 22/9-26/9 (5 days)	REVISION / CONTROLLED TEST	<p>REVISION/CONTROLLED TEST – ONE PAPER (100 marks)</p> <ul style="list-style-type: none"> Quantitative aspects of chemical change Energy and chemical change Acids and bases Ideal gases and thermal properties 					
Week 11 29/9-3/10 (4 days)	CONTROLLED TEST	CONTROLLED TEST CONTINUED					



2025 CUSTOMISED KZN Recovery ATP: Grade 11 – Term 4: PHYSICAL SCIENCES							
Week	Knowledge Area (Topic Duration)	Concepts for week	Page in CAPS doc	Date completed	SMT Member Signature	%Curriculum Coverage	
						Per term	Annual
Week 1 13/10 –17/10 (4 days)	SEPTEMBER CONTROL TEST: Discussion (2hrs) CHEMICAL CHANGE: Types of reaction (1hr)	<ul style="list-style-type: none"> Discussion of the control test INFORMAL TEST (REMEDIAL WORK) Redox reactions Explain the meaning of <i>oxidation number</i>. Assign oxidation numbers to atoms in various ions and molecules, e.g. H₂O, CH₄, CO₂, H₂O₂, and HOCl by using oxidation number guidelines or rules. 					
Week 2 20/10 –24/10 (5 days)	CHEMICAL CHANGE: Types of reaction (4hrs)	<ul style="list-style-type: none"> Describe a redox (oxidation-reduction) reaction as involving an electron transfer. Describe a redox (oxidation-reduction) reaction as always involving changes in oxidation numbers. 	92			11%	93%
			92 – 93			55%	96%
Week 3 27/10 –31/10 (5 days)	CHEMICAL CHANGE: Types of reaction (4 hrs)	<p>Redox reactions</p> <ul style="list-style-type: none"> Identify a redox reaction and apply the correct terminology to describe all the processes i.e. oxidation, reduction, reducing agent, oxidizing agent. Balance redox reactions by using half-reactions from the Table of Standard Reduction Potentials 	93 – 94			100%	100%
Week 4 - 5 3/11 – 14/11 (10 days)	CONSOLIDATION AND REVISION (16hrs)	<ul style="list-style-type: none"> All topics 					
Week 6 -9 17/11 – 10/12 (18 days)	FINAL EXAMINATION P1: 3 hrs P2: 3 hrs	<p>Physics Paper 1 (150 marks)</p> <ul style="list-style-type: none"> Vectors in two dimensions Newton's laws Electrostatics Electromagnetism Electric circuits <p>Chemistry Paper 2 (150 marks)</p> <ul style="list-style-type: none"> Atomic combinations Intermolecular forces Ideal gases and thermal properties Quantitative aspects of chemical change Energy and chemical change Acid – base reactions Redox reactions 					