**MATHEMATICS - GRADE 9 2023**

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| **TOPIC** | **ASSESSMENT STANDARDS** | **PORTFOLIO ASSESSMENT TASKS** |
| **PHASE 1 (18 January 2023 – 31 March 2023)** | | |
| **Numbers, Operations and Relationships** | Real and Rational numbers: representation and use | **Task 1:** Assignment: Number pattern  20 – 24 Feb    **Task 2:** Control test:  6 – 10 Mar |
| Fractions, integers, order of operations |
| Solution of problems with regard to ratio and rate |
| Proportion (direct and indirect) and related graphs |
| **Relationships and modelling** | Investigate patterns and functions in Algebra |
| Recording and representation: flow charts and tables |
| Solution as a rule or formula |
| **Algebra** | Exponents: laws and definitions |
| Binomial products |
| **Numbers, Operations and Relationships** | Scientific notation |
| Using exponential laws in calculations |
| **PHASE 2 (12 April 2023 – 23 June 2023)** | | |
| **Algebraic methods** | Equations and word problems | **Task 3:** Investigation: Similarity & congruency  15 – 19 May    **Task 4:** June Exams  12 – 23 June |
| Equations: algebraic solution, brackets and fractions, substitution |
| **Theorem of Pythagoras** | Finding unknown lengths in figures and solids |
| Application to irrational numbers: surd form and irrational approximation |
| **Geometric properties** | Congruency: 4 axioms, simple proofs and deductions |
| Similarity: fundamental basics |
| Classification of quadrilaterals |
| **PHASE 3 (18 July 2023 – 24 November 2023)** | | |
| **Algebra** | Factorisation: common factor, difference of two squares, trinomials | **Task 5:** Project:  Graphs  4 – 8 Sep    **Task 6:** Controlled Test  21 – 25 Aug  **Task 7:** Year-end Exams (Paper 1 and paper 2)  13 – 24 Nov |
| Using factorisation to simplify fractions |
| **Graphs and interpretations** | Cartesian plane and coordinates |
| Drawing graphs using tables and rules |
| Straight line graphs: drawing, features (gradient, y-intercept), finding rule from graph and table |
| **Data Handling** | Collection, Central tendencies, graphical representations and analysis |
| **Transformations** | Review of concepts: translation, rotation and reflection |
| Translations with coordinates |
| Reflections with axes |
| Rotations about the origin |
| **Finance** | Simple and compound interest, Hire purchase |
| **Probability** | Listing possible outcomes |
| Probability of an outcome by definition |
| Relative frequency of an outcome |
| Comparing relative frequency to theoretical probability |
| Compound events : tree diagrams |