A group of people sitting at a table

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PEAS Scheme of Work: Subject

Class: s4 mathematics

# SUBJECT: MATHEMATICS Class: S4 Term: 1

# Time allocation: 3 double periods per week

When planning your lessons use the structure: starter, I do, we do, you do, plenary. The starter is a written task that reviews previous learning. Ensure your lessons provide regular and extended opportunities for independent practice.

**YPR:**

Y= yes, I taught the lesson

P= I partially taught it e.g. I didn't get through all the content.

R= I taught the lesson, but I think students would benefit from a review

| **Week & Lesson**  **Subtopics** | **Learning outcome(s)**  *The learner should be able to:* | **Methodology** | **Teaching/ Learning resources** | **Y**  **P**  **R** |
| --- | --- | --- | --- | --- |
| **Theme: Patterns and Algebra**  **Topic: Linear Programming**  **Competency: *Learners should understand and use linear programming to solve problems.*** | | | | |
| **1.1**  **Review of Mappings and Relations** | Describe the function and non-function mappings.  (k, u) | * Uses relations in a family and clan to explain the concept of relations and mappings. * Learners pair up and draw mappings between different family and clan members. * Tasks learners to discuss the terms Dormain and Range as used in relations and mappings. * Task individual learners with more activities involving domain and range. | Flip charts & Markers for displaying the relations.  Longhorn Secondary Mathematics LB 4 pg.2  Mathematics LB 4 inline publishers pg.2 |  |
| **1.2** | Describe the function and non-function mappings.  (k, u) | * Uses a mapping and models to the learners how to determine the range from it. * Learners work in groups to determine the range set from the given domain. * Individual learners determine the domain when given a range. | Longhorn Secondary Mathematics LB 4 pg.3  Mathematics LB 4 inline publishers pg.3 |  |
| **1.3**  **Function notation** | Understand and use function notation (k u s) | * Use the concept of what the learner x’s age will be in the years to come to explain the meaning of a function. * The teacher shows a mapping describing the number of eggs produced (y) and the number of layers (x) at a poultry farm and asks learners to come up with a mathematical relationship. * Individual learners derive other possible relationships from the given diagrams. * Individual learners are given more tasks involving identifying mathematical relationships between various mappings. | Chart showing the mapping of eggs and layers.  Longhorn Secondary Mathematics LB 4 pg.2  Mathematics LB 4 inline publishers pg.5 |  |
| **2.1** | Understand and use function notation (k u s) | * Review function notation by asking the learners to find the number of cups of water they take in x days and use it to generate a function. * Learners use the expression to find the number of cups of water they take 5 days, a week, etc * Individual learners are given a function and asked to find the values of the unknowns. | Longhorn Secondary Mathematics LB 4 pg. 3 |  |
| **2.2**  **Graphs of functions and vertical line test** | Understands graphs of the functions and how to do the vertical line test.  (u, s) | |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | X | 1 | 2 | 3 | 4 | B | -2 | -1 | 0 | 1 | 2 | | y | 2 | 3 | 4 | 5 | 4 | 1 | 0 | 1 | 4 |  * Plots the points of the tables below on a graph board and models how to do the vertical line test. * Learners work in pairs and identify the relationship between the graphs. * Individual work on more tasks involving plotting of linear and quadratic functions. | Longhorn Secondary Mathematics LB 4 pg. 4 |  |
| **2.3**  **Plotting Linear graphs** | Understand graphs of linear functions. (k, u, s) | * Uses the amount of water (x) used to prepare the amount of rice in kg (y) to develop a linear function and use it to find the values of x and y. * Learners work in groups to plot the graphs of the given functions. * Individual learners find the value of x when the value of y is given and vice versa from the graph. | Graph paper/Graph board for plotting the graphs/Graph board for plotting the graphs.  Rulers to ensure straight lines are drawn.,  Longhorn Secondary Mathematics LB 4 pg. 5 |  |
| **3.1**  **Plotting quadratic graphs.** | Understand graphs of quadratic functions.  (k, u, s) | * Uses the flight of the ball and the path it takes to introduce the the concept a quadratic function. * Works out an example involving a quadratic function (f(x) = y = ax2 + bx) and asks learners to find the values of x and y. * Learners work in groups to plot the graphs of the given functions. * Individual learners find the value of x when the value of y is given and vice versa from the graph. | Graph paper/Graph board for plotting the graphs.  Rulers to ensure straight lines are drawn. to ensure straight lines are drawn.  Baroque NLSC Mathematics Bk 4 pg 10. |  |
| **3.2**  **Composite functions** | Describe and understand a composite function. (k, u, s) | * Uses the process of making fine maize flour to explain composite functions. * gives learners two functions and asks them to combine them i.e. getting f(gx) or g(fx). * Tasks individual learners to solve more problems involving composite functions. | Longhorn Secondary Mathematics LB 4 pg. 7 |  |
| **3.3**  **Inverse functions** | Work out the inverse of a function and recognise the graphical relationship between a function and its inverse. (k u s) | * The teacher uses the relationship between speed and travel time and expresses it as a function. * Uses another real-life example and asks learners to express it as a function. * Tasks learners in groups to study and create an inverse chart for the given inputs. * The teacher gives a linear function and asks the learners to determine the inverse and show it on the graph. * Individual learners determine the inverse of functions. | Chart displaying speed vs travel time.  Graph paper/Graph board for plotting the graphs.  Rulers to ensure straight lines are drawn.,  Longhorn Secondary Mathematics LB 4 pg. 15  Baroque NLSC Mathematics Bk 4 pg 7 |  |
| **4.1**  **Activity of integration** |  | * Assigns the activity of integration and sets expectations for the learners. |  |  |
| *(These rows should be moved to the appropriate place)*  **Theme: Patterns and Algebra**  **Topic: Equation and Inequalities**  **Competency: Learners should be able to understand, use, and solve problems using equations and inequalities.** | | | | |
| **4.2**  **Review of linear equations** | Solve linear equations using substitution, Elimination, and graphical methods.  (k,u,s) | * Using a word problem the teacher models how to form an equation and solve it. * Learners are tasked to solve simultaneous equations in groups using the substitution and elimination methods. * Tasks individual learners to graphically solve the above equations. | Chart with the equations.  Baroque NLSC Mathematics bk 4 page 19 |  |
| **4.3**  **Inequality equations** | Solve inequality equations. (u, s) | * Using a see-saw, demonstrates the concept of inequalities by balancing loads in class and discussing with learners each situation. * Asks learners to complete inequality equations by inserting the correct inequality sign. * Learners work in groups to solve inequality equations. * Individual learners solve more problems on inequality equations. | A metre rule, Stones, knife edge, and threads for making a see-saw.  Longhorn Secondary Mathematics LB 4 pg. 28 – 29 |  |
| **5.1**  **Rewriting a given formula by changing the subject** | Re-write a given formula by changing the subject. (u s) | * Shows the learners how to determine the length of the table given its area and width, and the radius of the cylinder given the formula for the volume of the cylinder. * Gives learners in groups, equations and asks them to make a given term the subject of the formula. * Individual learners work on more tasks involving changing the subject of the formula. | Measuring tape for determining the dimensions of the table.  Longhorn Secondary Mathematics LB 4 pg. 26 |  |
| **5.2**  **Building a formula from a word statement** | Build formula from word statements. (u s) | * Using a word problem, model to the learners how to form algebraic expressions from the given statement. * Task learners in groups to form equations from statements are solve them. * Each learner solves more word problems involving one variable or unknown. | A Chart containing mathematical operations.  Table books  Longhorn Secondary Mathematics LB 4 pg. 21 |  |
| **5.3**  **Building a formula from a word statement** | Build formula from word statements. (u s) | * Solves more complex word problems involving real-life situations. * Tasks learners in groups to work on more problems. * Each learner is given more problems for independent practice. |  |  |
| **6.1**  **Using equations in problem-solving** | Solve equations and inequalities. (k u s) | * Uses the scenario of two taxis, Taxi A charging Ugx: 10000 for the first 50km + Ugx: 500 for each extra km, Taxi B charging Ugx: per Km to form two simultaneous equations and determine what distance it would cost the same to travel on both taxis. * Asks the learners to work in pairs and form simultaneous equations from given statements and solve them. * Tasks individual learners with more problem sets. | Longhorn Secondary Mathematics LB 4 pg. 23 |  |
| **6.2**  **Solving linear equations on a number line** | Represents the solutions on a number line. (u,s) | * Using more word problems and scenarios, guides learners to form and solve simple inequality equations. * Learners work in groups to solve the given simple inequality equations. And show the answers on the number line. * Tasks individual learners with more problem sets. | Longhorn Secondary Mathematics LB 4 pg. 28  Inline Mathematics Bk 4 pg 26 |  |
| **6.3**  **Solving linear equations on a number line** | Solve linear equations on a number line. (k, u, s) | * Using a relevant real-life example, the teacher guides learners to form and solve fractional inequality equations. * Learners work in groups to solve the given fractional inequality equations. And show the answers on the number line. * Tasks individual learners with more problem sets. | Longhorn Secondary Mathematics LB 4 pg. 28  Inline Mathematics Bk 4 pg 26 |  |
| **7.1**  **Plotting linear inequalities on a graph.** | Understand the nature of inequality lines of axis values and represent the solutions graphically.  (k, u, s) | * Ask learners to discuss how the boundaries of land are demarcated in their communities. * Tasks learners to plot the lines of x = a and y = b. * Asks the learners to shade the region for X>a, x ≥ a, y >b, y ≥ b, showing the boundary lines. * Task learners in groups to plot the inequalities of lines having constant values. * Each learner works on more problems. | Graph paper/Graph board for plotting the graphs.,  Ruler,  Coloured Chalk to distinguish between shaded regions  Baroque NLSC mathematics bk 4 pg. 26 |  |
| **7.2** | Understand the nature of inequality lines of axis values and represent the solutions graphically.  (k, u, s) | * Uses a relevant example and guides the learners to plot the lines of y = mx +c. * Learners work in groups to show the regions of y≥ mx + c * Learners plot more than one line and state the points that solve the inequalities. * Each learner is tasked with more problems for individual practice. | Graph paper/Graph board for plotting the graphs.,  Ruler,  Coloured Chalk  Baroque NLSC mathematics bk 4 pg. 26 |  |
| **7.3**  **Showing Inequalities on quadratic graphs** | Representing solutions of inequalities on a number line. (k, u,s) | * Guides the learners to plot the lines y = ax2 + bx + c, with the use of a relevant example. * Learners work in groups to show the regions of y = ax2 + bx + c * Each learner is tasked with more problems for individual practice. | Graph paper/Graph board for plotting the graphs.,  Ruler,  Coloured Chalk |  |
| **8.1** | Representing solutions of inequalities on a number line. (k, u,s) | * Models to the learners how to plot graphs of y = x2 + bx + c and y = mx +c on the same axes. * Learners work in groups and state the values for the inequality ax2+bx+c ∩ mx + c. * Each learner is tasked with more problem sets. | Graph paper/Graph board for plotting the graphs.,  Ruler,  Coloured Chalk |  |
| **8.2**  **Activity of Integration** |  | * Teacher assigns activity of integration and sets expectations. |  |  |
| **Theme: Data and Probability**  **Topic: Linear Programming**  **Competency: The learner understands and uses linear programming to solve problems.** | | | | |
| **8.3**  **Terms used in linear programming** | Understand the terms used in linear programming and then form inequalities. (u, k) | * The teacher provides a table and asks the learners to put the correct inequality signs. * Asks learners to form inequality equations from statements involving numbers only. * Individual learners write inequality statements from given equations. | Pictures of farmers  Longhorn Secondary Mathematics LB 4 pg. 34 |  |
| **9.1**  **Linear inequalities based on real-life situations.** | Understand the terms used in linear programming and then form inequalities. (u, k) | * Gives a shopping scenario and forms an inequality from the scenario involving one unknown. * Learners use another shopping scenario and form many inequalities from it. * Individual learners are tasked to form more inequalities from more scenarios. | Longhorn Secondary Mathematics LB 4 pg. 34  Baroque NLSC Mathematics Bk 4 pg. 24 |  |
| **9.2**  **Forming inequalities having two variables.** | Understand how to form inequalities having two variables. (k,u) | * Introduce the concept stating the condition in business that makes a person make a net profit. * Using a party scenario, the teacher asks the learner to form inequalities on soda and beers served to the guests. * Tasks in groups to form at least two linear inequalities from a given scenario involving a tour or farming. * Individual learners form more inequalities from the given scenarios. | Longhorn Secondary Mathematics LB 4 pg. 35  Baroque NLSC Mathematics Bk 4 pg. 25 |  |
| **9.3**  **Representing inequalities on a graph and identifying the required region.** | Represent the inequalities on the graph and identify the required region. (u, s) | * Review the lesson by asking the learners to plot the inequality equations. * Tasks learners to plot graphs of inequalities with large numbers. * Individual learners form and plot more linear inequalities on a graph. | Longhorn Secondary Mathematics LB 4 pg. 38  Inline Mathematics Pg 40  Graph paper/Graph board for plotting the graphs. |  |
| **10.1**  **Non-negative inequalities.** | Represent the inequalities on the graph and identify the required region. (u, s) | * By using a budget, the teacher illustrates non-negative inequalities, say, “If you have a budget of Ugx: 10000, the inequality c ≤ 10000 represents the cost (C) of your groceries not exceeding your budget.” * Ask the learners to plot the non-negative lines like y≥0 and x≥0. * Learners work in groups to form and plot inequalities stating all the points that satisfy the given inequalities. * Individual learners form, plot, and find the feasible regions from the given inequalities. | Longhorn Secondary Mathematics LB 4 pg. 38  Ruler  Graph paper/Graph board for plotting the graphs.  Charts |  |
| **10.2**  **Finding and interpreting the optimum solution of a set of linear inequalities**  **Minimising** | The learners determine the minimum possible solution to an inequality.  (k, u, s) | * Using a scenario of a school football club, the teacher asks the learner to form inequalities and guides them to identify the objective function. * Learners in groups plot the inequalities and find the feasible region. * Each learner is given to substitute the lower points of the feasible regions and determine the one with the lowest cost. * Each learner is given more tasks to work on. | Inline Mathematics bk 4 Pg 40  A square piece of paper/Manilla.  Rulers to ensure straight lines are drawn. |  |
| **10.3**  **Minimising** | The learners determine the minimum possible solution to an inequality.  (k, u, s) | * Uses more scenario-based examples to explain how to get the minimum values from an inequality. * Uses another scenario to reinforce learners’ understanding of the least values. * Tasks individual learners with more trial problems involving minimizing. | Longhorn Secondary Mathematics LB 4 pg. 34  Baroque NLSC Mathematics Bk 4 pg. 24 |  |
| **11.1**  **Finding and interpreting the optimum solution of a set of linear inequalities**  **Maximising** | The learners determine the maximum possible solution to an inequality.  (k, u, s) | * Using a scenario of a transport company, the teacher asks the learners to form inequalities and identify the objective function. * Learners in groups plot the inequalities and find the feasible points. * Each learner is given to substitute the top points into the objective function and determine the one with the highest cost * Each learner is given more tasks to work on. | Longhorn Secondary Mathematics LB 4 pg. 34  Baroque NLSC Mathematics Bk 4 pg. 24 |  |
| **11.2**  **Maximising** | The learners determine the maximum possible solution to an inequality.  (k, u, s) | * Uses more scenario-based examples to explain how to get the maximum values from an inequality. * Uses another scenario to reinforce learners’ understanding of the least values. * Tasks individual learners with more trial problems involving minimizing. | Longhorn Secondary Mathematics LB 4 pg. 52  Baroque NLSC Mathematics Bk 4 pg. 24 |  |
| **11.3**  **Activity of integrations** |  | * The teacher assigns an activity of integration and set expecations from the learners. |  |  |
| **12** | Week 12 should be used to catch up on delayed content, for marking, or for reviewing and preparing for assessment | | |  |

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# SUBJECT: Mathematics Class: S.4 Term: 2

# Time allocation: 6 periods per week

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week & Lesson**  **Subtopics** | **Learning outcome(s)** | **Methodology** | **Teaching/ Learning resources** | **Y**  **P**  **R** |
| **Theme: Patterns and Algebra**  **Topic: Loci**  **Competency: The learner understands and applies loci.** | | | | |
| **1.1**  **Review of loci** | Learners should be able to describe a loci. | * Using the example of a tethered goat, the teacher reminds the learners how to describe a loci. (movement of the minute hand of a clock). * Task learners to work in pairs and describe the locus made by the hub of the turning wheel of a bicycle. * Individual learners are asked to construct polygons and plot some points. | Wall clock to demonstrate circular loci.  Wheel of a bike to demonstrate linear loci.  Inline Mathematics LB 4 page 57. |  |
| **1.2**  **Drawing of parallel lines equidistant** | The learner should be able to describe the common types of loci.  (k,u) | * The teacher draws two parallel lines using ropes in the playground and asks learners to stand in one line and make two steps forward. Use the new line formed to explain the concept of locus.(demarcation on tarmac road) * Asks learners to describe what happens when the parallel lines are brought together or moved further apart and also how the distance between the lines affects the region where the learners are standing. * Individual learners in pairs, draw two parallel lines in their books and bisect them to form a locus. | 2 ropes to make adjustable parallel lines in the field.  Pair of compasses for bisecting lines.  Tape measures for determining distances beteen lines.  Inline Mathematics LB 4 page 60. |  |
| **1.3**  **Drawing of bisectors** | The learner should be able to describe the loci of bisectors. (k, u, s) | * Using two ropes of equal length fixed at a common point, and another shorter rope to determine the intersecting lines   The teacher demonstrates how to draw a bisector of two intersecting lines.   * Learners are tasked in groups to bisect angles formed by two lines. * Individual learners are tasked to determine the locus formed by the equidistant points between two lines. | 2 ropes to make adjustable parallel lines in the field.  Pair of compasses for bisecting lines.  Inline Mathematics LB 4 page 61 |  |
| **2.1**  **Triangles** | The learner should be able to describe the loci of triangles. (k, u, s) | * Review how the nearest points to the vertices or sides of the triangle can determined. * Task the learners in groups to find the equidistant distance of the triangle from the center. ( in &ciircumscribing) * Individual learner tasked to construct and shade locus of points(regions) formed at given distance from appoint on triangle | Rulers to ensure straight lines are drawn.  Graph paper/Graph board for plotting the graphs.  Baroque NLSC LB 4 pg 41 |  |
| **2.2**  **Loci using graphs.** | The learner should be able to describe the loci using graphs. (k, u, s) | * Plots points on a cartesian plane that forms a plane like a rectangle, square, or triangle. * Task learners in groups to construct a locus from a point and label them. * Learners are given practical work to determine the locus from a given point on the cartesian plane formed by the rectangle or rectangular points. | Graph paper/Graph board for plotting the graphs.  Rules  Baroque NLSC LB 4 pg 41 |  |
| **2.3**  **Intersecting loci** | The learner should be able to construct intersecting loci. (u, s) | * The teacher draws two circles on the blackboard and uses the point where two circles intersect to describe intersecting loci. * Tasks learners to work in groups and find the locus of a composite figure i.e. a rectangle and a circle. * Tasks individual learners to construct two figures, say, a triangle and a circle so that they have a common point. And then use it to determine the locus of the two figures. | A pair of compasses for bisecting.  Baroque NLSC LB 4 pg 40  Longhorn secondary mathematics bk 4 page 59 |  |
| **3.1**  **Circles and lines** | The learner should be able to construct loci between circles and lines. (u, s) | * Draws a circle of a known radius and then translates two parallel lines from the center. * Tasks the learners to determine the distance each line is from the center. Join the points of intersection of the line and the circle. * Individual learners are asked to state the dimensions and name the figure formed. * Individual learners are given to draw circles from a common point of 3 cm from each circumference and asked to state the distance between them and the center. | Pair of compasses for bisecting.  A ruler  Inline mathematics LB 4 page 63. |  |
| **3.2**  **Locus on the cartesian plane** | The learner should be albe to construct loci on the cartesian plane (u, s) | * Begins the lesson by reviewing the concept of bisectors. * Uses the demarcation of a football pitch to explain locus on a cartesian plane and emphasize that distances of points are related to distances from other points or lines. * Learners work in groups and discuss real world examples where loci on a cartesian plane are applicable such as boundary lines. * Tasks learners to plot a given line satisfying certain conditions along the x and y axes on Graph paper/Graph board for plotting the graphs.. And bisect the line. | Graph paper/Graph board for plotting the graphs.  Pair of compasses,  Rulers to ensure straight lines are drawn.  Inline mathematics LB 4 page 65.  Longhorn secondary mathematics bk 4 page 58 |  |
| **3.3**  **Locus of inequalities** | Construct loci involving inequalities.  (u, s, v/a) | * Using flight paths for an aeroplane with a given range, the teacher uses the longest possible routes, the aeroplane can take to explain the locus of inequalities. * Tasks learners to determine the locus of all points that at a certain distance from a given point. * Individual learners are asked to plot certain points on a cartesian plane within a given range, say, 5 < x ≤ 7. | A simulation showing plane routes (Video)  Graph paper/Graph board for plotting the graphs.  Longhorn secondary mathematics bk 4 page 61 |  |
| **4.1**  **Activity of integration.** |  | * Teacher assigns an activity of integration to the learners and sets expectations for them. |  |  |
| **Theme: Geometry and measurements**  **Topic: Linear and Planes in Three Dimensions**  **Competency: The learner understands and applies lines and planes in 3D to solve problems.** | | | | |
| **4.2**  **Review of planes and shapes** | Understanding 2D and 3D objects. (u, s) | * Using the objects in the learners’ book the teacher reviews the planes used for making the classroom. * Tasks the learners to identify the different flat surfaces that make up the classroom. * Each learners differentiates between 2D and 3D objects. * Learners determine the area of 2D objects and the volume of 3D objects. | Boxes, Classroom, Chairs, Tables to act planes and 3D objects.  Longhorn Secondary Mathematics book 4 page 66 |  |
| **4.3**  **Nets** | The learner forms 3d objects from nets.  (u, s, k) | * Provide a chart with 3D objects and ask the learners to identify and name them. * Ask the learners to study the given nets and form 3D objects from them in groups. * Using a picture of 3D objects, ask individual learners to form nets. | Charts showing 3D objects.  Graph paper/Graph board for plotting the graphs.  A box, hard cardboard, scissors, ruler, and pencil for making nets and 3d objects.  Longhorn Secondary Mathematics book 4 page 66  Inline Mathematics LB 4 page 73. |  |
| **5.1**  **Parallel lines,**  **Perpendicular and equal lines** |  | * Using the classroom, the teacher asks the learners to identify parallel lines, and perpendicular lines and also uses tiles on a floor to explain the concept of equal lines. * Tasks learners to work in pairs and identify other real-life situations where parallel, perpendicular, and equal lines are applied. * The teacher gives learners 3D objects say, a box, a pyramid, a table, etc., and asks the individual learners to identify the parallel and perpendicular lines. | Classroom, boxes, tiles, Pictures of railway track, Lanes on a road, etc. to demonstrate parallel and perpendicular lines.  Longhorn Secondary Mathematics book 4 page 67 |  |
| **5.2**  **Length of the line using Pythagoras theorem.** | Applies Pythagoras theorem in 3D to calculate the distance between two points. (u s) | * Uses the right-angled triangle to illustrate Pythagoras' theorem (**A2 + B2 = C2**) * Draw a right-angled triangle and ask the learners to use Pythagoras theorem to find the length of the line. * Tasks the learners to identify the right angle triangles in 3D objects. * Tasks individual learners to determine the length of the lines on the 3D objects using Pythagoras theorem. | A box, a right-angled prism to demonstrate Pythagora’s theorem.  Inline Mathematics LB 4 page 75.  Baroque NLSC Mathematics Bk 4 pg. 25 |  |
| **5.3**  **The angle between two lines** | The learner should be able to find the angle between two lines. (u, s) | * Using a pair of scissors, the teachers demonstrate how to identify the angle between two lines. * Provides learners in pairs with three sticks and asks them to form triangles, and then determine the angles between the lines. * Provides the learners with 3D objects, say, a cuboid, or a wooden knife edge, and tasks individual learners to determine the angles between the lines using trigonometric ratio. | A pair of scissors for showing the angel between two lines.  A knife edge to act as a triangular prism  A box to act as a cuboid. |  |
| **6.1** |  | * The teacher models the use of the cosine rule (C2 = A2 + B2 – 2ABCos C) to determine the angles between two lines. * Gives learners a pyramid and asks the learners in pairs to determine the angle formed between two slant lines/edges. * Individual learners are given more problems for independent practice. | A pyramid to be used in determining the angles between two lines.,  A box  Longhorn Secondary Mathematics book 4 page 67 |  |
| **6.2**  **The angle between a line and a plane** | The learner should be able to find the angle between a line and a plane. (u, s) | * Using the blackboard to represent the plane, the one-meter rule to represent the normal to the blackboard, and the one-meter rule to represent the line, the teacher explains the angle between a line and a plane (Alternatively the teacher can use a book and a pencil.) * Ask the learners to identify the angle formed between a line and the plane and then complete the triangle. * Individual learners determine the different angles and various planes using trigonometric ratios. | A blackboard, 2-metre rules, A book, Prisms, and a pencil to demonstrate the angle between a line and a plane  Inline Mathematics LB 4 page 80. |  |
| **6.3 The angle between a line and a plane** | The learner should be able to find the angle between a line and a plane. ( u, s) | * Review the previous lesson on the angle between a line and a plane. * Do more worked examples with the learners. * Tasks learners in pairs to solve more problems. * Each learner works on more problems in their exercise book. | A blackboard, 2-metre rules, A book, and a pencil to demonstrate the angle between a line and plane  Prisms,  Inline Mathematics LB 4 page 80. |  |
| **7.1**  **The angle between two planes.** | The learner should be able to find the angle between two planes.  (u, s) | * Using two cardboard to represent the planes, then a-meter rule to divide the cardboard in the middle, so where the rules meet forms the angle between planes. (Alternatively, the teacher can use two planes in the book and pencils to divide each in the middle.) * Ask the learners to identify the angle formed between planes and then complete the triangle to find the angle. * Individual learners determine the different angles between various planes using trigonometric ratios. | Cardboards, Rulers to ensure straight lines are drawn., a book, a laptop etc.  Inline Mathematics LB 4 page 87. |  |
| **7.2** | The learner should be able to find the angle between two planes.  (u, s) | * Does more worked examples on how to determine the angles between two planes using more worked examples. * Tasks the learners to get angles between planes of pyramids, cuboids, and cones. * Individual learners are given more problems for practice. | Inline Mathematics LB 4 page 89. |  |
| **7.3**  **The activity of integrations.** |  | * The teacher assigns an activity of Integration and sets expectations for the learners. |  |  |
| **SCENARIO-BASED REVISION** | | | | |
| **8.1**  **Algebra –**  **Number Bases** |  | * Gives learners a task on a number base for discussing in groups. * Tasks each learner with another problem to solve. * Consolidates key points on Number Bases |  |  |
| **8.2**  **Algebra –**  **Equation of a straight line.** |  | * Gives learners a task on a Equation of a line in real life. * Tasks each learner with another problem to solve. * Consolidates key points on the equation of a straight line. |  |  |
| **8.3**  **Geometry**  **2D and 3D** |  | * Tasks learners with a scenario problem on the construction of 2D objects. * Each learner is asked to solve another problem on Bearings. * Highlights key ideas and points in construction. |  |  |
| **9.1**  **Geometry**  **2D and 3D** |  | * Tasks learners with a scenario problem on the construction of 2D objects. * Each learner is asked to solve another problem on Bearings. * Highlights key ideas and points in construction. |  |  |
| **9.2**  **Geometry**  **2D and 3D** |  | * Tasks learners with a scenario problem on the construction of 2D objects. * Each learner is asked to solve another problem on Bearings. * Highlights key ideas and points in construction. |  |  |
| **9.3**  **Geometry**  **2D and 3D** |  | * Testing of learners using scenario-based questions on geometrical construction and prism analysis |  |  |
| **10.1**  **Business Mathematics** |  | * Give tasks a sorted on business mathematics * Discount interest (simple and compound) appreciation and depreciation * Profit and loss |  |  |
| **10.2**  **Business Mathematics** |  | * Hire purchase and taxation * Commission * Projects study on business maths |  |  |
| **10.3**  **Sets and Probability** |  | * Probability application * Set of items * Sets of three items |  |  |
| **11.1**  **Statistics** |  | * Statistical use of data * Forming frequency tables * Graphical presentation of data |  |  |
| **11.2**  **Miscellaneous exercise.** |  | * Assign a miscellaneous exercise. |  |  |
| **11.2**  **Miscellaneous exercise.** |  | Assign a miscellaneous exercise. |  |  |
| **12** | Week 12 should be used to catch up on delayed content, for marking, or for reviewing and preparing for assessment | | |  |

# SUBJECT: Class: Term: 3

# Time allocation: \_\_ periods per week

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week & Lesson**  **Subtopics** | **Learning outcome(s)** | **Methodology** | **Teaching/ Learning resources** | **Y**  **P**  **R** |
| **Theme:**  **Topic:**  **Competency:** | | | | |
| **1.1**  **Corrections to Mock Exams** |  | * Correction of mathematics mock examination |  |  |
| **1.2**  **Correction to Mock Examinations** |  | * Correction of mathematics mock examination |  |  |
| **1.3**  **Corrections to Mock Examinations** |  | * Correction of mathematics mock examination |  |  |
| **2.1** |  | * Doing projects and seating of final standard maths examination(post mock) |  |  |
| **2.2**  **Student Guided Seminar** |  | * Students guided maths seminar |  |  |
| **2.3**  **Teacher Guided Seminar** |  | * Students discussion activities on the numbers set by the teacher * Uneb-guided discussion teacher-based assessment |  |  |
| **3.1**  **Uneb Facilitation** |  | * External assessment and resource persons guide the learners * Final delivery of learners' assessment papers |  |  |
| **3.2**  **Personal Revision** |  | * Students do personal revision. |  |  |
| **3.3**  **Personal Revision** |  | * Personel learners revision in preparation for seat UNEB examination. |  |  |
| **UNEB EXAMINATIONS** | | | | |