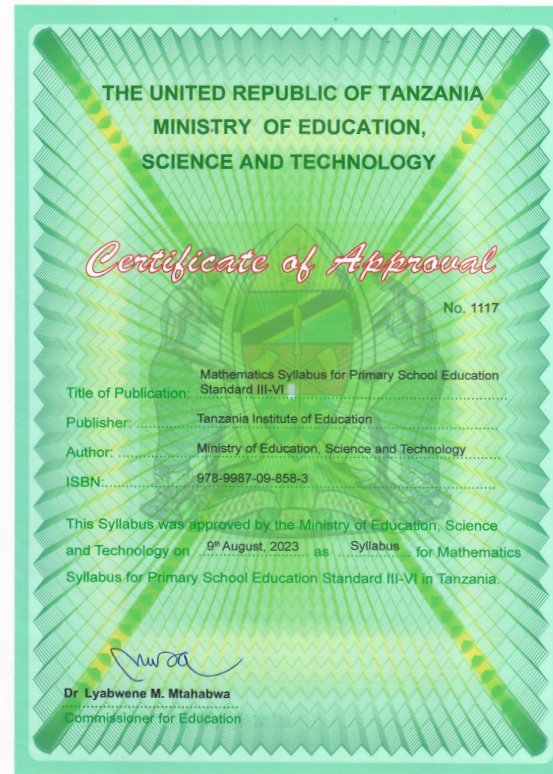


**THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY**



**MATHEMATICS SYLLABUS FOR PRIMARY SCHOOL EDUCATION
STANDARD III-VI
2023**

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Abbreviations

GCF	Greatest Common Factor
LCM	Lowest Common Multiple
TSL	Tanzania Sign Language
ICT	Information and Communication Technology
TIE	Tanzania Institute of Education

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Dr Aneth A. Komba
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1.0 Introduction

Mathematics is a compulsory subject for Primary Education pupils from Standard III to VI. The aim of teaching this subject is to enable the pupil have the ability to demonstrate mastery of elementary mathematical skills and mastery of elementary mathematical applications. In addition, this subject will enable the pupil demonstrate understanding of concepts and various mathematical skills including concept of numbers, basic numerical operations, measurements, financial mathematics and mathematics of time. The pupil will also be able to have understanding of elementary statistics and its applications, algebra, mathematical skills, and geometry. In general, the pupil will develop the ability to think logically in interpreting and solving problems in his or her environment.

This Syllabus has been prepared with the aim of guiding the teacher in the teaching and learning of Mathematics Standard III-VI in Tanzania Mainland. The Syllabus interprets the competences indicated in the 2023 Primary Education Curriculum. It provides information that will enable teachers to plan their teaching processes effectively and help learner to develop the intended competences. In addition, the Syllabus will enable the teacher to plan teaching and learning activities that build the pupil's skills of curiosity, creativity, cooperation, critical thinking, problem solving and communication

2.0 Main Objectives of Education in Tanzania

The main objectives of providing education in Tanzania are to enable every Tanzanian to:

- (a) Develop and improve his or her personality so that he or she values himself or herself and develops self-confidence;
- (b) Respect the culture, traditions and customs of Tanzania; cultural differences; dignity; human rights; attitudes and inclusive actions;
- (c) Apply science and technology, creativity, critical thinking, innovation, cooperation, communication and positive attitudes for his or her development and the sustainable development of the nation and the world at large;
- (d) Understand and protect national values, including dignity, patriotism, integrity, unity, transparency, honesty, accountability and the national language;
- (e) Develop life and work-related skills to increase efficiency in everyday life;

- (f) Develop a habit of loving and valuing work to increase productivity and efficiency in production and service provision;
- (g) Identify and consider cross-cutting issues, including the health and well-being of the society, gender equality, as well as the management and sustainable conservation of the environment; and
- (h) Develop national and international cooperation, peace and justice in accordance with the Constitution of the United Republic of Tanzania and international conventions.

3.0 Objectives of Primary Education

The objectives of Primary Education Standard III—VI are to:

- (a) Develop reading, writing, and arithmetic skills, communicate fluently, using Tanzanian Sign Language (TSL) and tactile communication;
- (b) Master, appreciate and use Kiswahili and English Language and at least one other foreign language;
- (c) Appreciate and maintain Tanzanian culture, and national unity and recognising other people's cultures;
- (d) Develop knowledge, the ability to inquire, think critically, design and solve problems.
- (e) Promote moral values, integrity, and respect for differences of /in faith;
- (f) Identify and develop talents, gifts, work skills, sports and arts;
- (g) Develop the habit of appreciating/valuing and loving work;
- (h) Recognise and use science and technology in learning and daily life;
- (i) Develop knowledge, skills and inclination to take care of the environment, respect gender equality and other cross-cutting issues; and
- (j) Develop the ability to socialise in an inclusive environment.

4.0 General Competences for Primary Education

The general competences for Primary Education, Standard III—VI are to:

- (a) Develop reading, writing, and arithmetic skills and communicate fluently using Tanzanian Sign Language (TSL) and tactile communication;

- (b) Use and appreciate Kiswahili and English Language. Also, a student should be encouraged to develop competence in at least one other foreign language depending on the school situation;
- (c) Appreciate and maintain Tanzanian culture and national unity and acknowledge other people's cultures;
- (d) Develop knowledge, inquisitive mind, critical thinking, creativity and problem-solving skills;
- (e) Promote ethics, integrity, and respect for differences in faith;
- (f) Identify and develop talents, gifts, work skills, sports and arts;
- (g) Develop the habit of valuing and loving work;
- (h) Recognise and use science and technology in learning and daily life;
- (i) Develop knowledge, skills and attitude towards taking care of the environment and respect gender equality, as well as other cross-cutting issues; and
- (j) Develop the ability to interact in an inclusive environment.

5.0 Main and Specific Competences

Mathematics Syllabus for Primary Education Standard III-VI has main and specific competences as presented in Table 1.

Table 1: *Main and specific competences*

Main Competences	Specific Competences
1.0 Demonstrate mastery of elementary mathematical skills	1.1 Demonstrate an understanding of the concept of numbers 1.2 Demonstrate an understanding of basic numerical operations 1.3 Demonstrate an understanding of measurements 1.4 Demonstrate an understanding of elementary geometry 1.5 Demonstrate an understanding of elementary mathematical skills 1.6 Demonstrate an understanding of algebra
2.0 Demonstrate mastery of elementary application of mathematics	2.1 Demonstrate an understanding of the mathematics of time 2.2 Demonstrate an understanding of financial mathematics

6.0 Roles of Teacher, Pupil and Parent/Guardian in the Teaching and Learning

A good relationship between a teacher, pupil and parent or guardian is fundamental to ensuring successful learning. This section outlines the roles of each participant in facilitating effective teaching and learning mathematics subject.

6.1 The Teacher

The teacher is expected to:

- (a) Help the pupil to learn and acquire the intended competences in mathematics;
- (b) Use teaching and learning approaches that will allow the pupil with various needs and abilities to;
 - i. develop the competences needed in the 21st century;
 - ii. actively participate in the teaching and learning process;
- (c) Use learner centred instructional strategies that make the pupil a centre of learning including those which allow pupils to think, reflect and search information from various sources. Other strategies include practical work, research, scientific experiments, group discussion and project works. Projects should be those which are geared toward proposing solutions to real life problems;
- (d) Create a friendly teaching and learning environment;
- (e) Prepare and improvise teaching and learning resources;
- (f) Conduct formative assessment regularly by using tools that assess theory and practice including brainstorming, checklist, experiments, questionnaire, face to face questions, classroom exercises, individual and group practical, projects and portfolio. Other tools include tests, classroom presentations, mid-term, term and annual examinations;
- (g) Treat all pupils equally irrespective of their differences;
- (h) Protect the pupil while at school;
- (i) Keep track of the pupil's daily progress;
- (j) Identify individual pupil's needs and provide the right intervention;
- (k) Involve parents/guardians and the society at large in the pupil's learning process; and
- (l) Integrate cross-cutting issues and ICT in the teaching and learning process.

6.2 The Pupil

The pupil is expected to:

- (a) Develop the intended competences by participating in various learning activities inside and outside the classroom;
- (b) Actively engage in the teaching and learning process; and
- (c) Participate in the search for knowledge from various sources, including textbooks, reference books and other publications in online libraries.

6.3 Parent/Guardian

Parent/Guardian is expected to:

- (a) Managing and monitoring the child's progress in learning;
- (b) Supervising the child to carry out his or her duties where possible;
- (c) Ensuring that the home environment is friendly and safe that facilitates learning
- (d) Monitoring the behavior of the child;
- (e) Provide the child with all the equipment needed in learning;
- (f) Ensuring the student gets the necessary needs; and
- (g) Teaching the child about the importance and value of education as well as encouraging him or her to study hard.

7.0 Teaching and Learning Methods

This Syllabus emphasizes the use of learning and teaching methods that aim to enable the pupil to be the centre of learning and the teacher to be the facilitator. The teacher will use a collaborative and integrated approach in the entire learning process taking into account the age, different needs and abilities of the student. Those methods are those that enable the pupil to think outside the box, seek knowledge from various sources, investigate things in the environment, compare, plan, translate, present, do mathematical operations and use ICT to achieve learning.

8.0 Teaching and Learning Resources/materials

Learning and teaching resources/materials should be interactive and meet the needs, age and abilities of the pupil. The teacher should ensure that the pupil gets a chance to see, hear and handle the resources/materials during teaching and learning. Teaching and learning materials should help the pupil understand what is being taught. In addition, the teacher is advised to use the materials available in the environment around him or her, as well as textbooks, supplements and other teaching and learning materials that have been approved by the Tanzania Institute of Education (TIE). Some of the materials that will be used to facilitate teaching and learning are suggested in one of the columns of the teaching and learning content in Table 2.

9.0 Assessment

Assessment is an important process in the teaching and learning of mathematics to facilitate the construction of the intended competences. Assessment of the Mathematics subject will include continuous assessment and final assessment. Continuous assessment will consider the criteria defined in each learning activity and will enable the teacher to determine the pupil's ability and need in learning. In addition, the teacher will aim to measure changes in knowledge, skills and the tendency to act, appreciate, narrate and use the skills he or she learns in the environment around him or her. Likewise, the teacher will use the test information to improve teaching and enable the student to achieve the learning goal. Assessment tools that can be used during teaching and learning are brainstorming, checklists, class exercises, tests, practical tests, quizzes, face-to-face questions, exercises, practical work (individual work and group work), project work, portfolio and other such tools.

Final assessment will include weekly, monthly, semester and annual examination that will be used to measure student learning progress. Information from this assessment, along with being used to evaluate student progress, will be used to provide feedback to facilitate teaching and learning. There will be a national assessment in Standard Six that will contribute to the score 7.5 in the Form Four National Examinations.

10.0 Number of Periods

The Mathematics Syllabus for Primary Education provides an estimate of the time that will be spent in teaching and learning based on the weight of specific skills and activities to be performed by the pupil. These time estimates are based on a period system where each period is 40 minutes. The number of periods for this subject is six (6) per week.

11.0 Teaching and Learning Content

Mathematics Syllabus for Primary Education contains content that is organised into seven components which are the main competences, specific competences, learning activities, recommended methods, testing criteria, suggested resources and the number of periods. The content is shown in Table No. 2 to 5.

Standard III

Table 2: Contents for Standard III

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
1.0 Demonstrate mastery of elementary mathematical skills	1.1 Demonstrate an understanding of the concept of numbers	(a) Recognise the value of a digit in a multi-digit whole number	<p>Examples from Materials: Guide pupils, using materials like learning tablets with digits from 1 to 9 and 0, through creating multi-digit numbers and putting values on each digit</p> <p>Questions and discussion: Guide pupils through recognising the value of a digit in multi-digit whole number</p>	The value of a digit in multi-digit whole number is recognised	Cards of digits from 1 to 9 and 0, abacus, number tray, and online programmes related to value of a digit in multi-digit whole number	52
		(b) Read and write multi-digit whole numbers	<p>Group discussion: Guide the pupils through discussion on reading and writing multi-digit whole numbers</p>	Multi-digit whole numbers are correctly read and written	Cards of digits from 1 to 9 and 0, abacus, number tray and checklist	

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
		(c) Compare whole numbers using symbols =, <, and >	Examples from real objects: Guide pupils through using real objects comparing whole numbers and using correct comparison symbols =, <, and >	Whole numbers are correctly compared	Whole number cards, abacus, number tray and checklist	
		(d) Identify sequences in whole numbers	Group discussion: Guide pupils through identifying sequences of whole numbers by providing examples from real life situations, and discussing several questions on sequences in whole number	Sequence of whole numbers is correctly identified	Counters, abacus, number tray and checklist and online programmes related to identifying sequences in whole numbers	
	1.2 Demonstrate an understanding of basic numerical operations	(a) Addition and subtraction of whole numbers	Group discussion: Guide pupils through addition and subtraction of whole numbers while drawing examples from real life situations	Addition and subtraction of whole numbers is performed correctly	Counters, Abacus, number tray, and online programmes related to addition and subtraction of whole numbers	30

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
	1.3 Demonstrate an understanding of measurements	(a) Recognise measurements of length, mass and volume	Practical exercises: Lead pupils in groups to practice measuring different objects and identifying their units. Thereafter, each group presents its findings in class	Measurements of length, mass and volume are recognised accurately	Measurement chart, ruler, tape measure, scale, flask, beaker, measuring cylinder, string, jug, cup and bucket	22
	1.4 Demonstrate an understanding of elementary geometry	(a) Explain the concept of shape	Group discussion: Guide pupils through explaining the concept of shape Craft: Guide pupils through making different shapes to explain the concept of shapes and identifying their characteristics	The concept of shape is clearly explained	Drawn figures, photos, real objects, fabrics of different shapes, cards of different shapes and online programmes related to explaining the concept of shapes	

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
		(b) Explain a point, line, line segment, and a ray	Example from real objects: Lead pupils to explain the concept of point, line, line segment and a ray on real objects	Concept of a point, line, line segment and a ray are correctly explained	Drawn figures, photos, real objects, mathematical set, ruler, manila cards and marker pens	30
		(c) Construct plain figures using points, lines and line segments	Object diagrams: Guide pupils through constructing plane figures using points, lines and line segments	Plane figures are accurately constructed using point, line and line segment	Drawn figures, photos, real objects, mathematical set, ruler, manila cards, and marker pens and box	

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
	1.5 Demonstrate an understanding of elementary mathematical skills	(a) Use division of objects to explain the concept of fraction	<p>Object diagrams: Guide pupils through using simple diagrams to explain the concept of fractions</p> <p>Practical exercises: Lead pupils to practice using division of real objects like fruits, cakes and sugarcane to explain the concept of fraction</p>	The concept of fraction is clearly explained using division of objects	Physical objects, manila cards, and online programmes related explaining the concept of fractions	26
		(b) Addition and subtraction of fractions of the same denominator	<p>Group discussion: Guide pupils through adding and subtracting fractions of the same denominator using real objects and online programmes related to addition and subtraction of fractions of the same denominator</p>	Operations of addition and subtraction of fractions of the same denominator are performed correctly	Physical objects, manila card, and online programmes related to addition and subtraction of fractions of the same denominator	

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
2.0 Demonstrate mastery of elementary application of mathematics	2.1 Demonstrate an understanding of the mathematics of time	(a) Describe units of measuring time	Group discussion: Guide pupils through describing units of measuring time in real situations showing examples of activities related to time in everyday life	Units of measuring time is clearly described	Calendar, clock, time measurement chart, and online programmes related to units of measuring time	36
		(b) Describe time in 12-hour format	Real examples: Guide pupils through describing time in 12-hour format using real objects such as clocks and time charts Games and learning activities: Guide pupils through describing time in 12-hour format while playing games	Time in 12-hour format is accurately described	Clock, time measurement chart, and online programmes related to describing time in 12-hour format	
		(c) Describe time in 24-hour format	Real examples: Guide pupils through describing time in 24-hour format using real objects such as clocks and time charts	Time in 24-hour format is accurately described number of hours in a day, days in a week, weeks	Clock in 24-hour format, time measurement chart, and online programmes related to describing time in 24-hour format	

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
		(d) Recognise number of hours in a day, days in a week, weeks in a month, months in a year	Example of physical objects: Guide pupils through recognising number of hours in a day, days in a week, weeks in a month, months in a year using real objects such as calendars and clocks	in a month, months in a year are correctly recognised	Calendar, clock and time chart showing number of hours in a day, days in a week, weeks in a month and months in a year	
	2.2 Demonstrate an understanding of financial mathematics	(a) Recognise the denomination of Tanzanian currency in shillings and cents	Example from real objects: Guide pupils in recognising the domination of Tanzanian currency in shillings and cents	The denomination of Tanzanian currency in shillings and cents is clearly recognised	Real Tanzanian currency (coins and notes) photos of Tanzanian currency, banknotes specimen made of papers, and chart of money measurement	38

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
		(b) Addition and subtraction of Tanzanian currency	Discussion and real examples: Guide pupils through adding and subtracting amounts of money in shillings and cents using real currency	Operations of addition and subtraction of amounts of money in shillings and cents are performed correctly	Real currency (coins and notes), banknotes specimen made of papers, cards in different values of Tanzanian coins, and chart of money measurements	

Standard IV

Table 3: *Contents for Standard IV*

Main competences	Specific competences	Learning Activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
1.0 Demonstrate mastery of elementary mathematical skills	1.1 Demonstrate an understanding of the concept of numbers	(a) Recognise Roman numbers (up to M)	Real objects: Guide pupils through demonstrating different applications of roman numbers (up M) in real life using real objects such as watches, clocks, tables and books	Roman numbers are correctly recognised	Number cards, charts of roman numbers, roman number watches and clocks	12
	1.2 Demonstrate an understanding of basic numerical operations	(a) Multiplication and division of whole numbers	Online programmes: Guide pupils through multiplication and division of whole numbers using online programmes Scenarios: Guide pupils through scenarios to multiply and divide whole numbers	Whole numbers are correctly multiplied and divided	Multiplication chart, number tray, online programmes related to multiplication and division of whole numbers, Calculators and abacus	26

Main competences	Specific competences	Learning Activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
	1.3 Demonstrate an understanding of measurements	(a) Convert between the various components of the measures of length, mass, and volume (<i>millimetres to kilometres, miligrams to tonnes, and millilitres to litres</i>)	Real objects: Guide pupils through discussing and converting between the various components of measures of length, mass, and volume of real objects using digital weighing balance	Various components of the measures of length, mass, and volume are correctly converted	Measurement chart, rulers, tape measure, weighing balance, bottles, beakers, cylinders, rope, mathematical set and online programmes related to converting measures of length, mass and volume	38
		(b) Addition and subtraction of measurements for length, mass and volume	Real objects: Guide students through addition and subtraction of measurement for length, mass and volume of real objects	Addition and subtraction of measurement for length, mass and volume are correctly performed	Measurement chart, rulers, tape measure, weighing balance, bottles, beakers, cylinders, rope and mathematical set	
	1.4 Demonstrate an understanding of elementary geometry	(a) Calculate the perimeters and areas of plane figures (<i>rectangle, square and triangle</i>)	Real objects: Guide pupils through calculating the perimeters and areas of plane figures of real objects and calculation of perimeters and areas of plane figures questions	Perimeters and areas of plane figures are calculated correctly	Real objects like board and tables, various plane figures made of manila cards, photos, and online programmes related to calculating perimeters and areas of plane figures	32

Main competences	Specific competences	Learning Activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
	1.5 Demonstrate an understanding of elementary mathematical skills	(a) Compare fractions by using =, <, and > signs	Questions and discussions: Guide pupils through comparing fractions by using =, < and > signs	Comparing fractions by using =, <, and > is performed correctly	Real objects, different coloured objects, equality and inequality signs chart, and online programmes related to comparing fractions	66
		(b) Multiplication and division of fractions	Questions and discussions: Guide pupils through multiplication and division of fractions	Multiplication and division of fractions are correctly performed	Real objects like fruits and sweets, objects drawn papers, fraction number cards, and online programmes related to multiplication and divisions of fractions	
		(c) Explain the concept of decimals	Questions and discussions: Guide pupils through explain the concept of decimals	Concept of decimals is explained correctly	Decimal number charts, real objects, and online programmes related to decimals	

Main competences	Specific competences	Learning Activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
		(d) Addition and subtraction of decimals	Questions and discussions: Guide pupils through addition and subtraction of decimals	Addition and subtraction of decimals are performed correctly	Decimal number charts, real objects, and online programmes related to addition and subtraction of decimals	
2.0 Demonstrate mastery of elementary application of mathematics	2.1 Demonstrate an understanding of the mathematics of time	(a) Convert between the components of measures of time (seconds to hours)	Real objects: Guide pupils through converting time using digital watches	Measures of time between their component are correctly converted	Clocks, watches, clock specimen, time unit chart, and online programmes related to time and their components	34
		(b) Addition and subtraction of time	Questions and Discussions: Guide pupils through addition and subtraction of time	Addition and subtraction of time is done correctly	Clock and online programmes related to addition and subtraction of time	
	2.2 Demonstrate an understanding of financial mathematics	(a) Multiplication and division of Tanzanian currency	Questions and discussions: Guide pupils through multiplication and division of Tanzanian currency	Multiplication and division of Tanzanian currency is performed correctly	Real money (coins and notes), money unit chart and online programmes related to multiplication and division of Tanzanian currency	26

Standard V

Table 4: *Contents for Standard V*

Main Competences	Specific Competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
1.0 Demonstrate mastery of elementary mathematical skills	1.1 Demonstrate an understanding of measurements	(a) Multiplication of measurements for length, mass and volume	Group discussion: Guide pupils through multiplication of measurements for length, mass and volume	Measurements for length, mass and volume are correctly multiplied	Measurements for length, weight and volume charts and online programmes related to multiplication of measurements for length, mass and volume	44
		(b) Division of measurements for length, mass and volume	Group discussion: Guide pupils through division of measurements for length, mass and volume using examples	Measurements for length, mass and volume are correctly divided	Measurements for length, mass and volume charts, and online programmes related to division of measurements for length, mass and volume	

Main Competences	Specific Competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
	1.2 Demonstrate an understanding of elementary geometry	(a) Explain the concept of pi	Real objects: Guide pupils through explaining the concept of pi using real circular objects Project: Guide pupils through calculating the value of pi using real circular objects of a circle	Concept of pi is correctly explained	Circular figures. String, ruler, manila card, maker pen, and mathematical set and online programmes related to concept of pi	62
		(b) Calculate the circumference of a circle	Real objects: Guide pupils through explaining the concept of pi by using real circular objects Group discussion: Guide pupils through using examples to calculate circumference of a circle	The circumference of a circle is correctly calculated	Circular figures, string, ruler, manila card, maker pen, and mathematical set	
		(c) Calculate the area of a circle	Real objects: Guide pupils through calculating the area of a circle by using real circular objects Online programmes: Guide pupils through calculating the area of a circle by using digital programmes	Area of a circle is correctly calculated	Circular figures, string, ruler, manila card, maker pen, mathematical set and online programmes related to calculating area of a circle	

Main Competences	Specific Competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
	1.3 Demonstrate an understanding of elementary of mathematical skills	(a) Identify even, odd and prime numbers	Questions and answers: Guide pupils through discussions to identify even, odd and prime numbers Online programmes: Guide pupils through digital learning to identify even, odd and prime numbers	Even, odd and prime numbers are correctly identified	Even, odd and prime number cards and online programmes related to even, odd and prime numbers	68
		(b) Calculate factors and multiples of numbers not exceeding three digits	Questions and discussion: Guide pupils through calculating the factors and multiples of numbers not exceeding three	Factors and multiples of numbers not exceeding three digits are correctly calculated	Number cards, number tray, and online programmes related to factors and multiples of numbers not exceeding three digits	
		(c) Calculate the Lowest Common Multiple (LCM) and Greatest Common Factor (GCF) of whole numbers	Questions and discussion: Guide pupils through calculating the Lowest Common Multiple (LCM) and Greatest Common Factor (GCF) of whole numbers	Lowest Common Multiple (LCM) and Greatest Common Factor (GCF) of whole numbers are correctly calculated	Number cards, number tray and online programmes related to LCM and GCF	

Main Competences	Specific Competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
		(d) Addition and subtraction of fractions with different denominators	<p>Questions and discussion: Guide pupils through addition and subtraction of fractions with different denominator</p> <p>Online programmes: Guide pupils through adding and subtracting fractions with different denominators</p>	Fractions with different denominators are correctly added and subtracted	Real objects, example of addition and subtraction of fraction chart, and online programmes related to addition and subtraction of fraction with different denominator	
		(e) Addition and subtraction of mixed fractions	<p>Real objects: Guide pupils through addition and subtraction of mixed fractions using real objects</p> <p>Online programmes: Guide pupils through adding and subtracting mixed fractions using online programmes</p>	Mixed fractions are correctly added and subtracted	Different denominator fraction cards, real objects, and online programmes related to addition and subtraction of mixed fractions	
		(f) Multiplication of decimals	<p>Questions and discussion: Guide pupils through multiplication of decimals</p>	Decimals are correctly multiplied	Real objects and online programmes related to multiplication of decimals	

Main Competences	Specific Competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
		(g) Divide numbers to obtain an answer with no more than three decimal places	<p>Real examples: Guide pupils through dividing decimals to get answer with no more than three decimal places by using various tools and real objects</p> <p>Questions and answers: Guide pupils through dividing decimals to get answer with no more than three decimal places</p>	Decimals to get answer with no more than three decimal places are correctly divided	Examples of division of number to obtain decimal chart, abacus and online programmes related to dividing numbers to obtain an answer with no more than three decimal places	
		(h) Convert percentages into fractions and decimals	<p>Real objects: Guide pupils through converting percentages into fractions and decimals using real objects</p> <p>Questions and answers: Guide pupils through converting percentages in fractions and decimals</p>	Percentages into fractions and decimals are correctly identified	Various percentage cards, abacus and online programmes related to convert percentages into fractions and decimals	

Main Competences	Specific Competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
	1.4 Demonstrate an elementary understanding of algebra	(a) Explain the concept of algebra	Real objects: Guide pupils through explaining the concept of algebra	Concept of algebra is correctly explained	Alphabet chart, abacus, alphabet cards and online programmes related to algebra	54
		(b) Identify term, variables, and coefficients in algebraic expressions	Questions and answers: Guide pupils through identifying term, variables and coefficients of algebraic expressions	Term, variables, and coefficients of algebraic expressions are correctly identified	Term, variables, and coefficients chart, term, variables, and coefficients cards and online programmes related to algebra	
		(c) Write algebraic equations	Questions and discussions: Guide pupils through writing algebraic equations	Algebraic equations are correctly written	Algebraic expression chart, alphabet chart and online	

Main Competences	Specific Competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
					programmes related to writing algebraic equations	
		(d) Simplify algebraic expressions using the right sequence of mathematical operations	Questions and discussions: Guide pupils through simplifying algebraic expressions using the right sequence of mathematical operations related to real life	Algebraic expressions using the right sequence of mathematical operations are correctly simplified	Alphabet chart, abacus, number tray and online programmes related to Simplify algebraic expressions	
		(e) Calculate simple equations	Real objects: Guide pupils through using real objects to calculate simple algebraic equations	Simple algebraic equations are correctly calculated	Alphabet chart, cards, sticks, abacus, number tray and online programmes related to calculating simple equations	

Main Competences	Specific Competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	Number of periods
2.0 Demonstrate mastery of elementary application of mathematics	2.1 Demonstrate an understanding of financial mathematics	(a) Solve problems involving sale and purchase	<p>Games: Guide pupils through solving problems involving sale and purchase using money specimen or playing cards</p> <p>Group discussion: Guide pupils through solving problems involving sale and purchase then each group present to the class.</p>	Problems involving sale and purchase correctly solved	Money (specimen), real money, various objects, and online programmes related to solving problems involving sale and purchase	12

Standard VI

Table 5: *Contents for Standard VI*

Main competences	Specific Competences	Learning Activities	Suggested Teaching and Learning Methods	Assessment Criteria	Suggested Resources	Number of Periods
1.0 Demonstrate mastery of elementary mathematical skills	1.1 Demonstrate an understanding of measurements	(a) Solve problems involving distance and time	<p>Drawn examples from real objects: Guide pupils through solving problems involving distance and time using real objects</p> <p>Group discussion: Guide pupils through discussing questions on solving problems involving distance and time</p>	Problems involving distance and time are adequately solved	Clock, simple maps, tape measure, online programmes related to solving problems involving distance and time	18
	1.2 Demonstrate an understanding of elementary geometry	(a) Calculate the area and volume of three dimensional figures (rectangular parallelepiped, square parallelepiped and cylinder)	<p>Drawings of objects: Guide pupils through calculating surface areas and volumes of three-dimensional figures using drawings in boards and manila cards</p>	Area and volume of three-dimensional figures are correctly calculated	Real objects, photos, drawings of objects on manila cards, marker pen, box, and online programmes related to calculating the area and volume of three-dimensional figures	102

Main competences	Specific Competences	Learning Activities	Suggested Teaching and Learning Methods	Assessment Criteria	Suggested Resources	Number of Periods
		(b) Calculate degree of angles in plane figures (triangle, rectangle and circle)	Drawings of objects: Guide pupils through calculating degrees of angles in plane figures using drawings of objects on boards and manila cards	Degree of angles in plane figures are correctly calculated	Protractors, manila cards with drawings of objects, and online programmes related to calculating degree of angles in plane figures	
		(c) Describe types of triangles and Pythagoras' theorem	Drawings of objects: Guide pupils through using drawings of triangular objects on board and manila cards to describe types of triangles and formula of Pythagoras' theorem	Types of triangles and Pythagoras' theorem are correctly described	Protractors, manila cards, marker pens, and online programmes related to describing types of triangles and Pythagoras' theorem	

Main competences	Specific Competences	Learning Activities	Suggested Teaching and Learning Methods	Assessment Criteria	Suggested Resources	Number of Periods
	1.3 Demonstrate an understanding of elementary mathematical skills	(a) Calculate the square of a number	Group discussion: Lead the pupils' discussion on calculating square of a number	The square of a number is correctly calculated	Number chart and symbol of squares, online programmes related to calculating the square of a number	52
		(b) Calculate the square root of a number	Group discussion: Guide pupils through calculating the square root of a number	Square root of a number is calculated correctly	Number chart and symbol of square roots, online programmes related to calculating the square root of a number	
		(c) Explain the concept of integers	Real examples: Guide pupils through explaining the concept of integers using real examples	Concept of integers is correctly explained	Coloured papers, coloured learning tablet, money, books, pens and counters	

Main competences	Specific Competences	Learning Activities	Suggested Teaching and Learning Methods	Assessment Criteria	Suggested Resources	Number of Periods
		(d) Perform operations in integers	<p>Games and learning activities: Guide pupils through using different coloured cards to play a game of comparing cards to perform basic operations in integers while considering zero pair</p> <p>Questions and discussions: Guide pupils through discussion on performing operations in integers</p>	Operations with integers are correctly performed	Number tray number chart, abacus and online programmes related to performing mathematical operations in integers	

Main competences	Specific Competences	Learning Activities	Suggested Teaching and Learning Methods	Assessment Criteria	Suggested Resources	Number of Periods
2.0 Demonstrate mastery of elementary application of mathematics	2.1 Demonstrate an understanding of elementary statistics and its applications	(a) Explain the concept of statistics	<p>Group discussion: Guide pupils through collecting and listing objects in order using mixed object groups</p> <p>Practical exercises: Guide pupils through practising drawing statistical diagrams showing various data</p>	Concept of statistics is clearly explained	Groups of mixed objects, maps showing real statistics, geographical illustrations explaining statistical information from different places, photo and video showing data and statistical information	62

Main Competences	Specific Competences	Learning Activities	Suggested Teaching and Learning Methods	Assessment Criteria	Suggested Resources	Number of Periods
		(b) Find the mean, median and mode of ungrouped data	<p>Real examples: Guide pupils through finding average, median and mode of ungrouped data</p> <p>Online programmes: Guide pupils through using online programs to find average, median and mode of ungrouped data</p>	The mean, median and mode of ungrouped data is correctly calculated	Groups of different objects, and online programmes related to finding mean, median and modes of ungrouped data	
		(c) Interpretation and presentation of data using statistical diagrams (pie charts and histograms)	<p>Real examples: Guide pupils through interpreting and presenting information in a pie chart and histogram using real data</p> <p>Project: Guide pupils through finding various information in the community and present that information in a pie charts and histograms</p>	Data in statistical diagrams are correctly interpreted and presented	Real statistical data charts in pie and histograms, online programmes related to creating charts, graphs, and geographical drawings showing statistical information	

Bibliography

- Cambridge Assessment International Education (2020). *Curriculum framework: Cambridge Primary Mathematics 0096*. Cambridge Assessment International Education.
- Mauritius Institute of Education (2015). *National curriculum framework grades 1 to 6*. Ministry of Education and Human Resources, Tertiary Education and Scientific Research.
- National Curriculum Development Center (NCDC) (2005). *Mathematics curriculum for upper primary education (P4, P5, P6)*. Ministry of Education.
- Tanzania Institute of Education. (2020). *Mathematics syllabus for primary school education standard III-VII*. Ministry of Education, Science and Technology.
- Tanzania Institute of Education (2020). *Mathematics pupil's book standard seven*. Tanzania Institute of Education.
- Tanzania Institute of Education (2019). *Mathematics pupil's book standard six*. Tanzania Institute of Education.
- Tanzania Institute of Education (2018). *Mathematics pupil's book standard five*. Tanzania Institute of Education.
- Tanzania Institute of Education (2018). *Mathematics pupil's book standard four*. Tanzania Institute of Education.
- Tanzania Institute of Education (2018). *Mathematics pupil's book standard three*. Tanzania Institute of Education.
- Tanzania Institute of Education (2016). *Teacher's guide for teaching mathematics subject*. Tanzania Institute of Education.