

REPUBLIC OF GHANA
MINISTRY OF EDUCATION, SCIENCE AND SPORTS



Republic of Ghana

TEACHING SYLLABUS FOR MATHEMATICS
(PRIMARY SCHOOL 1 - 6)

Enquiries and comments on this syllabus should be addressed to:

The Director
Curriculum Research and Development Division (CRDD)
P. O. Box GP 2739,
Accra.
Ghana.

September, 2007

PRIMARY SCHOOL MATHEMATICS SYLLABUS

RATIONALE

Primary School Mathematics curriculum emphasizes mathematical knowledge and skills that should help the young person to develop basic numeracy competence to be able to function effectively in society. Modern life demands that young people should be able to use numbers competently, read and interpret numeral data, reason logically, solve problems involving calculations and mathematical reasoning, as well as communicate effectively with other people using accurate mathematical data and interpretations. These are the necessary skills required of young people to enhance their chances for taking advantage of the numerous opportunities in the fields of science, engineering, technology and in other areas in manufacturing. The mathematics curriculum should further help the pupils to develop interest in the use of mathematics and the ability to conduct investigations using mathematical ideas. It is the acquisition of these qualities and the important quality of functional mathematics that education in Ghana aims to emphasize in the teaching and learning programmes in the school system. The syllabus hence puts a great deal of emphasis on the development and use of basic mathematical knowledge and skills.

GENERAL AIMS

This syllabus is designed to help the pupil to:

1. Develop basic ideas of quantity and space.
2. Use basic mathematics and necessary strategies for solving problems encountered in daily life by recognizing relationships between numbers.
3. Reason logically by selecting and applying criteria for classification and generalization.
4. Communicate effectively using mathematical terms and symbols.
5. Use appropriate instruments for various systems of measurement.
6. Carry out investigations using various mathematical ideas and operations.
7. Develop the habits of diligence, perseverance, confidence and precision as a result of their mathematical training.

SCOPE OF SYLLABUS

The major areas of content covered in all the primary grades are as follows:

- Numbers and Investigation with numbers
- Shape and Space
- Measurement
- Collecting and Handling Data
- Problem Solving
- Investigation with numbers

Numbers covers reading and writing numerals and the four operations on them - addition, subtraction, multiplication and division. Investigation with numbers leads pupils to discover number patterns and relationships of and to use the four operations meaningfully. The use of sets to introduce operations on numbers especially addition and subtraction has been omitted in the syllabus. Addition developed by using the union of sets consisting of like objects conflicts with the proper understanding of sets as collections of distinct objects. Rather, sets of numbers are introduced effectively and used in developing ideas of factors, multiples and prime numbers in the upper primary grades. Integers and rational numbers have also not been treated formally as topics. However, common fractions, decimal fractions and percentages have been given the same prominence as given whole numbers. Shape and space covers the content that used to be called geometry. The topic is dealt with in this syllabus using models and real objects. Measurement is intended to help pupils understand and use various units appropriately through practical activities. Collecting and Handling Data is introduced in a manner that requires pupils to collect data from various sources and then learn to organize, represent and interpret the information gathered. Problem-solving is not a topic by itself in the syllabus but nearly all topics include problem-solving activities. It is expected that teachers and respective textbooks will include appropriate and realistic problems that will require mathematical reasoning rather than mere recall and use of standard algorithms. The development and use of estimation skills are emphasized both in numerical operations and measurement of capacity, mass, time, money, length, area and volume.

The level of difficulty of the content of the syllabus is designed to be within the knowledge and ability of the majority of the primary school pupils in the various classes. It is possible to expect that some pupils will advance and study content meant for higher grades besides their own. The introduction of a number of mathematical terms have been delayed or omitted completely from this syllabus. These terms include sets, right angle, commutative, associative and distributive properties, statistics, sequence, geometry, axes, probability and symmetry. This has been done to help pupils avoid rote memorization and rather emphasize the proper development and use of mathematical concepts, skills and reasoning techniques in problem solving.

Teachers are advised to provide opportunities for pupils to work co-operatively in small groups to carry out activities and projects both during class time and out-of-school time when necessary.

ORGANIZATION OF THE SYLLABUS

The syllabus is structured to cover the first six years of the Primary School Education. Each year's work has been divided into units. The unit topics for each year have been arranged in the sequence in which teachers are expected to teach them. No attempt has been made to break each year's work into terms. This is desirable because it is quite difficult to predict, with any degree of certainty, the rate of progress of pupils during those early stages. Moreover, the syllabus developers wish to discourage teachers from forcing the instructional pace but would rather advise teachers to ensure that pupils progressively acquire a good understanding and application of the material specified for each year's class work. It is hoped that no topics will be glossed over for lack of time because it is not desirable to create gaps in pupils' knowledge. The unit topics for the six years' course are as follows:

GENERAL OBJECTIVES

The pupil will:

1. socialize.
2. adjust to and handle number words.
3. perform number operations.
4. make use of appropriate strategies of calculation.
5. recognize and use patterns, relationships and sequence and make generalizations.
6. recognize and use functions, formulae, equations and inequalities.
7. use graphical representations of equation and inequalities.
8. identify/recognize the arbitrary/standard units of measure.
9. use the arbitrary/appropriate unit to estimate and measure various quantities.
10. identify solid shapes in daily life.
11. collect, process and interpret data.

STRUCTURE AND ORGANIZATION OF THE SYLLABUS

PRIMARY	1	2	3	4	5	6
UNIT						
1	Pre-Number Work	Numbers and Numerals 0 - 100	Numbers and Numerals 0 - 10,000	Shape and Space	Numbers and 0 – 1,000,000	Sets of Numbers
2	Groups of Objects	Addition 0 - 18	Addition and Subtraction (Sum up to 9999)	Numbers and Numerals 0 - 100,000	Sets of Numbers I	Operations on Fractions
3	Counting Objects	Subtraction 0 - 18	Length and Area	Investigation With Numbers	Collecting and Handling Data	Addition and Subtraction(Sum 0 - 10,000,000)
4	Numbers and Numerals I	Numbers and Numerals 0 - 1,000	Fractions I	Addition and Subtraction (Sum up to 100,000)	Addition and Subtraction (Sum up to 1,000,000)	Decimal Fraction and Percentage
5	Addition (Up to 5)	Measurement of Length, Capacity and Mass(weight)	Collecting and Representing Data as graph	Measurement of Mass/weight and Time	Measurement of Length, Mass and Capacity	Measurement of Length, Capacity and Mass
6	Solid Shapes	Addition (Sums 0 - 99)	Estimating and Measuring Capacity and mass (weight)	Fractions I	Shape and Space I	Ratio and Proportion
7	Number and Numerals II	Subtraction With Numbers Less Than 100	Multiplication of numbers	Multiplication	Multiplication and Division	

PRIMARY	1	2	3	4	5	6
UNIT						
8	Addition Sums up to 9	Fractions	Division	Division	Shape and Space II	Shape and Space
9	Subtraction 0 - 9	Measurement of Time and Money	Plane Shapes	Fractions II	Area and Volume	Collecting and Handling Data
10	Ten and Ones	Addition (Sums 0 - 999)	Measurement of Time and Money	Measurement of Length and Area	Operations On Fractions	Multiplication and Division
11	Addition and Subtraction	Subtraction (Numbers Less Than 1000)	Fractions II	Shape and Space II	Decimal Fractions and Percentages	Investigation With Numbers
12	Measurement of Length, Capacity and Mass	Multiplication	-	Collecting and Handling Data	Collecting and Handling Data II	Measurement of Area and Volume
13	Measurement of Time and Money	Division	-	Investigation With Numbers	Number Plane	Money
14	Collecting and Handling Data	Collecting and Handling Data	-	Measurement of Capacity and Volume	Ratio	Chance
15	Addition and Subtraction of Number (0 - 99)	Shape and Space	-	-	Investigation With Numbers	Number Plane
16	-	-	-	-	Measurement of Time	-

TIME ALLOCATION

At the Lower Primary Level Mathematics is allocated eight periods a week, each period consisting of thirty (30) minutes. The eight periods should be divided into four double periods, each of one-hour duration for the week.

	<u>Lower Primary</u>	<u>Upper Primary</u>
Ø Physical Education	4	4
Ø Library Work (Reading and Research)	3	2
Ø SBA Project	2	2
Ø Worship	2	2

SUGGESTIONS FOR TEACHING THE SYLLABUS

A class may have some pupils of different physical problems and mental abilities. Some of the children may have high mental ability, while others may be slow learners; some may be dyslexic and not able to read well as the others in the class. All these are special needs children who need special attention. Ensure that you give equal attention to all pupils in your class to provide each of them equal opportunities for learning. Pupils with disabilities may have hidden talents that can only come to light if you provide them the necessary encouragement and support in class.

General Objectives

General Objectives for this syllabus have been listed on page iii of the syllabus. The general objectives flow from the general aims of mathematics teaching listed on the first page of this syllabus. The general objectives form the basis for the selection and organization of the units and their topics. Read the general objectives very carefully before you start teaching. After teaching all the units, go back and read the general aims and general objectives again to be sure you have covered both of them adequately in the course of your teaching.

Years and Units

The syllabus has been planned on the basis of Years and Units. Each year's work is covered in a number of units sequentially arranged and in a meaningful manner such that each unit's work will provide the necessary and enabling skills for the next unit. A description of the contents of each column is as follows:

Syllabus Structure

The syllabus is structured in five columns: Units, Specific Objectives, Content, Teaching and Learning Activities and Evaluation. A description of the contents of each column is as follows:

Column 1 - Units: The units in column 1 are the major topics of the year. You are expected to follow the unit topics according to the linear order in which they have been presented. However, if you find at some point that teaching and learning in your class will be more effective if you branched to another unit before coming back to the unit in the sequence, you are encouraged to do so.

Column 2 - Specific Objectives: Column 2 shows the Specific Objectives for each unit. The specific objectives begin with numbers such as 1.2.5 or 3.4.1. These numbers are referred to as "Syllabus Reference Numbers". The first digit in the syllabus reference number refers to the year/class; the second digit refers to the unit, while the third refer to the rank order of the specific objective. For instance 1.2.5 means Year 1 or Primary 1, Unit 2 (of Class 1) and Specific Objective 5. In other words 1.2.5 refers to Specific Objective 5 of Unit 2 of Primary 1. Similarly, the syllabus reference number 3.4.1 simply means Syllabus Objective number 1 of Unit 4 of Primary 3. Using syllabus reference numbers provide an easy way for communication among teachers and educators. It further provides an easy way for selecting objectives for test construction. For instance, if Unit 4 of Primary 3 has seven specific objectives 3.4.1 - 3.4.7, a teacher may want to base his/her test items/questions on objectives 3.4.4 to 3.4.7 and not use the other first three objectives. In this way, a teacher would sample the objectives within units to be able to develop a test that accurately reflects the importance of the various specific objectives and skills taught in class.

You will note also that specific objectives have been stated in terms of the pupil i.e. what the pupil will be able to do during and after instruction and learning in the unit. Each specific objective hence starts with the following "The pupil will be able to....." This in effect, means that you have to address the learning problems of each individual pupil. It means individualizing your instruction as much as possible such that the majority of pupils will be able to master the objectives of each unit of the syllabus.

Column 3 - Content: The "content" in the third column of the syllabus presents a selected body of information that you will need to use in teaching the particular unit. In some cases, the content presented is quite exhaustive. In some other cases, you could add some more information based upon your own training and based also on current knowledge and information.

Column 4 - Teaching/Learning Activities (T/LA): T/LA that will ensure maximum pupil participation in the lessons is presented in Column 4. The General Aims of the subject can only be most effectively achieved when teachers create learning situations and provide guided opportunities for pupils to acquire as much knowledge and understanding of mathematics as possible through their own activities. Pupils' questions are as important as teacher's questions. There are times when the teacher must show, demonstrate, and explain. But the major part of a pupil's learning experience should consist of opportunities to explore various mathematical situations in their environment to enable them make their own observations and discoveries and record them. Teachers should help pupils to learn to compare, classify, analyze, look for patterns, spot relationships and come to their own conclusions/deductions. Avoid rote learning and drill-oriented methods and rather emphasize participatory teaching and learning in your lessons. You are encouraged to re-order the suggested teaching/learning activities and also add to them where necessary in order to achieve optimum pupil learning.

A suggestion that will help your pupils acquire the capacity for analytical thinking and the capacity for applying their knowledge to problems and issues is to begin each lesson with a practical problem. Select a practical problem for each lesson. The selection must be made such that pupils can use knowledge gained in the previous lesson and other types of information not specifically taught in class. The learning of any skill considered important must start early. From age six, engage your pupils in analytical thinking and practical problem solving techniques.

Column 5 - Evaluation: Suggestions and exercises for evaluating the lessons of each unit are indicated in Column 5. Evaluation exercises can be in the form of oral questions, quizzes, class assignments, essays, project work, etc. Try to ask questions and set tasks and assignments, etc. that will challenge pupils to apply their knowledge to issues and problems as has already been said, and that will engage them in developing solutions, and in developing observational and investigative skills as a result of having undergone instruction in this subject. The suggested evaluation tasks are not exhaustive. You are encouraged to develop other creative evaluation tasks to ensure that pupils have mastered the instruction and behaviours implied in the specific objectives of each unit.

Lastly, bear in mind that the syllabus cannot be taken as a substitute for lesson plans. It is necessary that you develop a scheme of work and lesson plans for teaching the units of this syllabus.

DEFINITION OF PROFILE DIMENSIONS

The concept of profile dimensions was made central to the syllabuses developed from 1998 onwards. A 'dimension' is a psychological unit for describing a particular learning behaviour. More than one dimension constitutes a profile of dimensions. A specific objective may be stated with an action verb as follows: The pupil will be able to describe..... etc. Being able to "describe" something after the instruction has been completed means that the pupil has acquired "knowledge". Being able to explain, summarize, give examples, etc. means that the pupil has understood the lesson taught.

Similarly, being able to develop, plan, solve problems, construct, etc. means that the pupil can "apply" the knowledge acquired in some new context. Each of the specific objectives in this syllabus contains an "action verb" that describes the behaviour the pupil will be able to demonstrate after the instruction. "Knowledge", "Application", etc. are dimensions that should be the prime focus of teaching and learning in schools. It has been realized unfortunately that schools still teach the low ability thinking skills of knowledge and understanding and ignore the higher ability thinking skills. Instruction in most cases has tended to stress knowledge acquisition to the detriment of the higher ability behaviours such as application, analysis, etc. The persistence of this situation in the school system means that pupils will only do well on recall items and questions and perform poorly on questions that require higher ability thinking skills such as application of mathematical principles and problem solving. For there to be any change in the quality of people who go through the school system, pupils should be encouraged to apply their knowledge, develop analytical thinking skills, develop plans, generate new and creative ideas and solutions, and use their knowledge in a variety of ways to solve mathematical problems while still in school. Each action verb indicates the underlying profile dimension of each particular specific objective. Read each objective carefully to know the profile dimension toward which you have to teach.

In Mathematics, the two profile dimensions that have been specified for teaching, learning and testing at lower primary and upper primary are:

	Primary 1 - 3	Primary 4 - 6
Knowledge and Understanding	40%	30%
Application of knowledge	60%	70%

Each of the dimensions has been given a percentage weight that should be reflected in teaching, learning and testing. The weights indicated on the right of the dimensions, show the relative emphasis that the teacher should give in the teaching, learning and testing processes at the two primary levels. You will notice that the profile dimensions are weighted differently for P1-3 and P4-6. This is to indicate the change in emphasis as pupils move up in education and in maturity.

The explanation and key words involved in each of the profile dimensions are indicated on the next page.

Knowledge and Understanding (KU)

Knowledge the ability to remember, recall, identify, define, describe, list, name, match, state principles, facts and concepts. Knowledge is simply the ability to remember or recall material already learned and constitutes the lowest level of learning.

Understanding the ability to explain, summarize, translate, rewrite, paraphrase, give examples, generalize, estimate or predict consequences based upon a trend. Understanding is generally the ability to grasp the meaning of some material that may be verbal, pictorial, or symbolic.

Application of knowledge (AK)

The ability to use knowledge or apply knowledge, as implied in this syllabus, has a number of learning/behaviour levels. These levels include application, analysis, synthesis, and evaluation. These may be considered and taught separately paying attention to reflect each of them equally in your teaching. The dimension "Application of knowledge" is a summary dimension for all four learning levels.

Details of each of the four sub-levels of application are as follows:

Application the ability to apply rules, methods, principles, theories, etc. to concrete situations that are new and unfamiliar. It also involves the ability to produce, solve, plan, demonstrate, discover, etc.

Analysis the ability to break down material into its component parts; to differentiate, compare, distinguish, outline, separate, identify significant points, etc.; ability to recognize unstated assumptions and logical fallacies; ability to recognize inferences from facts, etc.

Synthesis the ability to put parts together to form a new whole. It involves the ability to combine, compile, compose, devise, plan, revise, design, organize, create, generate new ideas and solutions, etc.

Evaluation the ability to appraise, compare features of different things and make comments or judgement, compare, contrast, criticize, justify, support, discuss, conclude, make recommendations, etc. Evaluation refers to the ability to judge the worth or value of some material based on some criteria.

FORM OF ASSESSMENT

It must be emphasized again that it is important that both instruction and assessment be based on the profile dimensions of the subject. In developing assessment procedures, select specific objectives in such a way that you will be able to assess a representative sample of the syllabus objectives. Each specific objective in the syllabus is considered a criterion to be achieved by the pupil. When you develop a test that consists of items or questions that are based on a representative sample of the specific objectives taught, the test is referred to as a “Criterion-Referenced Test”. In many cases, a teacher cannot test all the objectives taught in a term, in a year etc. The assessment procedure you use i.e. class tests, home work, projects etc. must be developed in such a way that it will consist of a sample of the important objectives taught over a period.

End-of-Term Examination

The end-of-term examination is a summative assessment system and should consist of a sample of the knowledge and skills pupils have acquired in the term. The end-of-term test for Term 3 should be composed of items/questions based on the specific objectives studied over the three terms, using a different weighting system such as to reflect the importance of the work done in each term in appropriate proportions. For example, a teacher may build an end-of- Term 3 test in such a way that it would consist of the 20% of the objectives studied in Term 1, 20% of the objectives studied in Term 2, and 60% of the objectives studied in Term 3.

For Primary 1, until the children have been able to read and write, the teacher should select the important work they do in class to determine their performance at the end of Term 1 and possibly also at the end of Term 2. Formal tests could start from end of Term 2 where the teacher thinks the children are ready or could start from Term 3.

The diagram below shows the recommended examination structure in Mathematics for Primary 1-3 for the end-of-term test. The structure consists of one examination paper and the School Based Assessment (SBA) formally called Continuous Assessment.

Distribution of Examination Paper Weights and Marks

Dimensions	Test Paper	SBA	Total
Knowledge and Understanding	15	-	20
Application of Knowledge	5	-	20
Total	40	60	100

The end-of-term Test Paper will be a blend of computation items and word problems. The paper will test “knowledge and understanding” and “application of knowledge” in the proportions indicated. Primary 1 test paper could contain 5-10 items; Primary 2, 10 items, and Primary 3, about thirty items. The total marks for the test should be scaled to 40. The 60 marks left should be derived from SBA which focuses on “attitudes and process skills”. The suggested number of items for the end-of-term test is as follows:

- Primary 1: 5-10 items for 30-45 minutes depending on the number of items
- Primary 2: 10-20 items for 30-45 minutes depending on the number of items
- Primary 3: 30 items for 45 minutes

Combining SBA marks and End-of-Term Examination Marks

The new SBA system is important for raising pupils’ school performance. For this reason, the 60 marks for the SBA will be scaled to 50. The total marks for the end of term test will also be scaled to 50 before adding the SBA marks and end-of-term examination marks to determine pupils’ end of term results. The SBA and the end-of-term test marks will hence be combined in equal proportions of 50:50. The equal proportions will affect only assessment in the school system. It will not affect the SBA mark proportion of 30% used by WAEC for determining examination results at the BECE.

GUIDELINES FOR SCHOOL BASED ASSESSMENT

A new School Based Assessment system (SBA), formally referred to as Continuous Assessment, will be introduced into the school system from September 2008. SBA is a very effective system for teaching and learning if carried out properly. The new SBA system is designed to provide schools with an internal assessment system that will help schools to achieve the following purposes:

- Standardize the practice of internal school-based assessment in all schools in the country
- Provide reduced assessment tasks for each of the primary school subjects
- Provide teachers with guidelines for constructing assessment items/questions and other assessment tasks
- Introduce standards of achievement in each subject and in each class of the school system
- Provide guidance in marking and grading of test items/questions and other assessment tasks
- Introduce a system of moderation that will ensure accuracy and reliability of teachers’ marks
- Provide teachers with advice on how to conduct remedial instruction on difficult areas of the syllabus to improve pupil performance

The SBA system will consist of 12 assessments a year instead of the 33 assessments in the previous continuous assessment system. This will mean a reduction by 64% of the work load compared to the previous continuous assessment system. The 12 assessments are labeled as Task 1, Task 2, Task 3 and Task 4. Task 1-4 will be administered in Term 1; Tasks 5-8 will be administered in Term 2, and Tasks 9-12 administered in Term 3. Task 1 will be administered as an individual test coming at the end of the first month of the term. The equivalent of Task 1 will be Task 5 and Task 9 to be administered in Term 2 and Term 3 respectively. Task 2 will be administered as a Group Exercise and will consist of two or three instructional objectives that the teacher considers difficult to teach and learn. The selected objectives could also be those objectives considered very important and

which therefore need pupils to put in more practice. Task 2 will be administered at the end of the second month in the term. Task 3 will also be administered as individual test under the supervision of the class teacher at the end of the 11th or 12 week of the term.

Task 4 (and also Task 8 and Task 12) will be a project to be undertaken throughout the term and submitted at the end of the term. Schools will be supplied with 9 project topics divided into three topics for each term. A pupil is expected to select one project topic for each term. Projects for the second term will be undertaken by teams of pupils as Group Projects. Projects are intended to encourage pupils to apply knowledge and skills acquired in the term to write an analytic or investigative paper, write a poem 9 (as may be required in English and Ghanaian Languages), use science and mathematics to solve a problem or produce a physical three-dimensional product as may be required in Creative Arts and in Natural Science.

Apart from the SBA, teachers are expected to use class exercises and home work as processes for continually evaluating pupils' class performance, and as a means for encouraging improvements in learning performance.

Marking SBA Tasks

Pupils at Lower and Upper Primary Levels are expected to undertake assignments that may involve investigations and use of mathematics as part of the SBA work. The following guidelines are provided for making assignments of such nature.

1. Process	30%
2. Computations	40%
3. Word problems (Application and Reasoning)	30%

The process of arriving at answers is almost as important as the answer itself. Knowledge and Understanding will be tested by computations. Application of knowledge will be tested in word problems. At Primary 1 where the assignments, tests and SBA will consist of mainly computations, with very little word problems, the percentages shown above could be changed.

The marks derived from Mathematics projects, the end of month tests and home work specifically designed for the SBA should together constitute the School Based Assessment component and weighted 60 per cent. The emphasis is to improve pupils' learning by encouraging them to calculate and apply mathematical principles and procedures through reasoning. The SBA will consist of:

- Ø End-of-month tests
- Ø Home work assignments (specially designed for SBA)
- Ø Project

Other regulations for the conduct of SBA will reach schools from GES.

GRADING PROCEDURE

To improve assessment and grading and also introduce uniformity in schools, it is recommended that schools adopt the following grade boundaries for assigning grades:

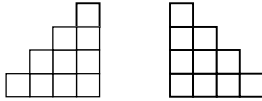
Grade A:	80 - 100%	-	Excellent
Grade B:	70 - 79%	-	Very Good
Grade C:	60 - 69%	-	Good
Grade D:	45 - 59%	-	Credit (Satisfactory)
Grade E:	35 - 44%	-	Pass
Grade F:	≤ 34%	-	Fail

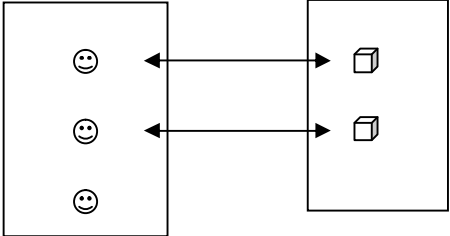
The grading system presented above shows the letter grade system and equivalent grade boundaries. In assigning grades to pupils' test results, or any form of evaluation, you may apply the above grade boundaries and the descriptors. The descriptors (Excellent, Very Good etc) indicate the meaning of each grade. For instance, the grade boundary for "Excellent" consists of scores between 80 - 89. Writing "80%" for instance, without writing the meaning of the grade, or the descriptor for the grade i.e. "Excellent", does not provide the pupil with enough information to evaluate his/her performance in the assessment. You therefore have to write the meaning of the grade alongside the score you write. Apart from the score and the grade descriptor, it will be important also to write a short diagnosis of the points the pupil should consider in order to do better in future tests etc. Comments such as the following may also be added to the grades:

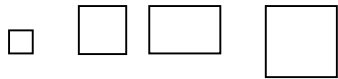
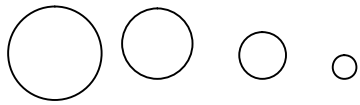
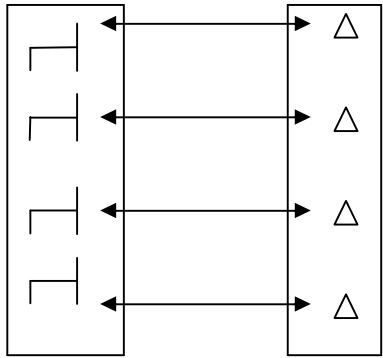
- Keep it up
- Has improved
- Could do better
- Hardworking
- Not serious in class
- More room for improvement, etc.

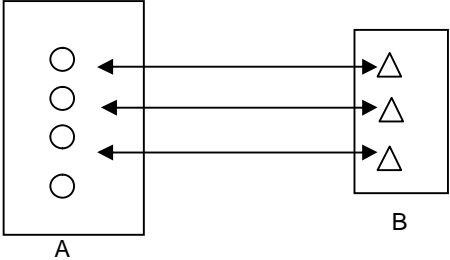
Note that the grade boundaries above are also referred to as grade cut-off scores. When you adopt a fixed cut-off score grading system as in this example, you are using the criterion-referenced grading system. By this system a pupil must make a specified score to earn the appropriate grade. This system of grading challenges pupils to study harder to earn better grades. It is hence very useful for achievement testing and grading.





PRIMARY ONE

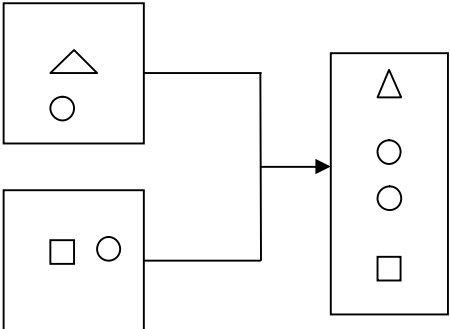
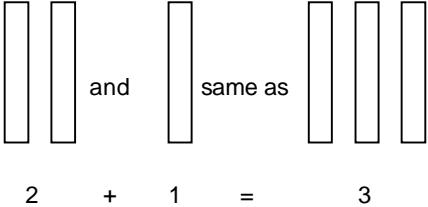
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.1 PRE-NUMBER WORK	<p>The pupil will be able to</p> <p>1.1.1 draw and/or colour objects/shapes.</p> <p>1.1.2 construct or model objects/shapes.</p> <p>1.1.3 copy and continue patterns made with objects and talk about them.</p>	<p>Drawing and colouring work</p> <p>Modeling and construction work</p> <p>Patterns with coloured shapes</p>	<p>TLMs: Common plane shapes such as rectangles, circles and triangles.</p> <p>Guide pupils to draw similar shapes and colour them.</p> <p>Assist pupils to construct/model objects such as a house, car, domestic animals using paper, clay/plasticine, empty packaging containers and/or straw.</p> <p>Assist pupils to build staircases and pyramids with match boxes, tins, wooden blocks and Cuisenaire rods.</p> <p>E.g. </p> <p>Help pupils to arrange coloured cut-outs/objects to make patterns and describe how the patterns can be continued.</p> <p>(a) ✦ ◂ ○ ✦ ◂ _____</p> <p>(b) △ □ ○ △ _____</p>	<p>Let pupils:</p> <p>carry out practical activities such as drawing and colouring objects/shapes E.g. rectangles, circles, triangles, tables, balls and fruits.</p> <p>carry out practical activities like building or making models.</p> <p>continue a given pattern made with concrete objects.</p> <p>mention the name of object that will continue the pattern.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.2 GROUPS OF OBJECTS	<p>The pupil will be able to:</p> <p>1.2.1 sort out objects into groups according to identifiable attributes such as colour, shape, size, length etc.</p> <p>1.2.2 match the objects in two groups and tell which group has less or more objects.</p>	<p>Collecting and making groups of objects</p> <p>Comparison of two groups of objects using “more than” and “less than”</p>	<p>TLMs: seeds, tins, pebbles, bottle tops, package boxes, leaves, sticks, etc</p> <p>Guide pupils to sort a collection of objects into groups of similar objects and describe the groups. E.g., a group of seeds, bottle tops and package boxes</p> <p>Assist pupils to match objects in two groups in a one-to-one correspondence.</p> <p>E.g.</p>  <p>Guide pupils to order objects such as tables and chairs, bottles and bottle tops and compare the two groups using words like “more than”, “less than”, etc.</p>	<p>Let pupils:</p> <p>sort objects into groups and describe them. E.g.</p> <ol style="list-style-type: none"> 1. a group of seeds 2. a group of bottle tops etc. <p>match two objects in two groups to find the group which has less/more objects. E.g. the red cars are <u>more than</u> the blue cars.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.2 (CONT'D) GROUPS OF OBJECTS	<p>The pupil will be able to:</p> <p>1.2.3 arrange objects in order using length, area, capacity and weight.</p>	<p>Ordering objects by their</p> <ul style="list-style-type: none"> - length - area - capacity - weight 	<p>Guide pupils to order physical sets of objects from the smallest to the largest</p> <p>E.g.</p>  <p>and vice versa.</p>  <p>Guide pupils to relate the orderly arrangement of the objects to develop the sense of order in pupils. Develop the lesson to allow pupils to arrange objects by length, area, capacity and weight.</p>	<p>Let pupils:</p> <p>order objects from the smallest to the largest or biggest to smallest etc. be it length, area, capacity or weight.</p> <p>Use questions such as</p> <ul style="list-style-type: none"> - which groups are the same? - which groups are different?
UNIT 1.3 COUNTING OBJECTS	<p>1.3.1 use one-to-one matching to find which group has as many objects as in a given group.</p>	<p>One-to-one matching</p>	<p>Guide pupils to use one-to-one matching to find whether a group of objects has many objects as a given group of objects.</p> 	

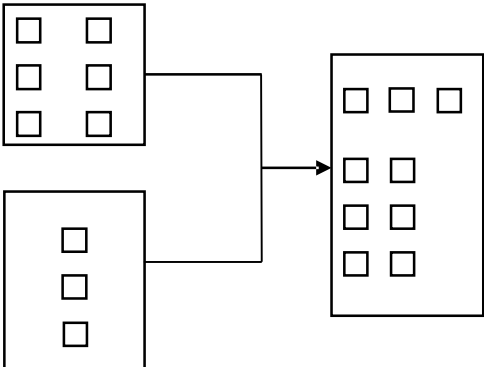
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.3 (CONT'D) COUNTING OBJECTS	The pupil will be able to: 1.3.2 use one-to-one matching to find which group has one more object than a given group. 1.3.3 count by matching number names to objects in a group up to 5. 1.3.4 use the last number name (or word) to find the number of objects in a group.	One more than Count up to 5 Counting groups of objects Counting up to 20	<p>TLMs: picture cards, pebbles, bottle tops, etc.</p> <p>Guide pupils to put groups of objects in the natural order by adding one more object to a group of objects to establish the one more than pattern up to five objects.</p>  <p>Guide pupils to put groups of objects in the natural order 1, 2, 3, 4 and 5.</p> <p>Let pupils match orally, number and word names with group of objects (Do not use written names at this stage).</p> <p>Guide pupils to match number names with objects in a group (use picture cards).</p> <p>Guide pupils to match number names with actions. E.g. clap/jump a number of times, count the number of claps/jumps made and say aloud the last number name.</p> <p>Guide pupils to match number names with given groups of objects orally up to 20. (Do not use written names at this stage).</p>	Let pupils: identify which group of objects has one-more than group A. match number names with given group of objects. find how many objects are in a group by counting.

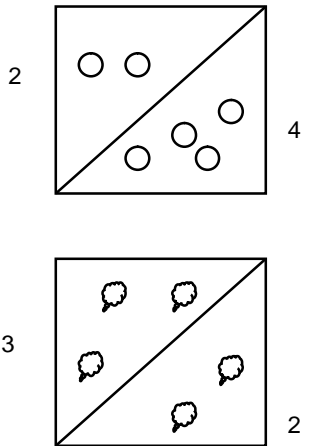
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.3 (CONT'D) COUNTING OBJECTS	The pupil will be able to:		<p>Guide pupils to match number names with groups of objects (use picture cards/flash cards).</p> <p>Guide pupils to match number of jumps, clap a number of times (Do this in groups). Count the number of jumps/claps and say aloud the last number name as the number of jumps/cards made.</p>	Let pupils: say number names for given group of objects
UNIT 1.4 NUMBER AND NUMERALS	<p>1.4.1 read and write numerals 1, 2, 3, ..., 9.</p> <p>1.4.2 read and write the numeral zero.</p> <p>1.4.3 read and write numerals 11 – 20.</p>	<p>Reading and writing numerals 1 – 9</p> <p>The numeral zero</p> <p>Numerals 11 – 20</p>	<p>TLMS: sand tray, sand paper numeral cards, slate...</p> <p>Guide pupils to read and write numerals 1, 2, 3, ..., 9 by using sand tray and tracing around sand paper numerals.</p> <p>Guide pupils to read and write the numerals 1 up to 9 in the sand. Do it one at a time.</p> <p>Guide pupils to read and write the numerals on an arm board (or board/slate) one at a time.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">3 </div> <div style="text-align: center;">2 </div> <div style="text-align: center;">1 </div> <div style="text-align: center;">0 </div> </div> <p>Explain the meaning of zero (nothing)</p> <p>Guide pupils to write and read the numeral zero.</p> <p>Guide pupils to read the numeral (11 – 20) in ascending order, descending order and mixed-up.</p> <p>Guide pupils to write the numerals 11 – 20 in the sand, on boards and on paper (sand paper numerals may be used).</p>	<p>read and write numerals 1 – 9.</p> <p>identify groups that have no objects in them.</p> <p>write and read numerals 0 – 9.</p> <p>write and read numerals 11 – 20.</p>

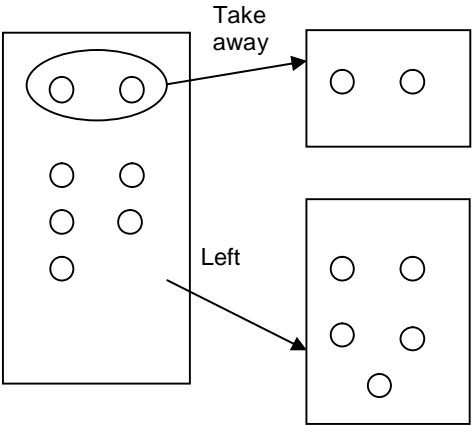
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.5 ADDITION: SUM UP TO 5	<p>The pupil will be able to:</p> <p>1.5.1 count and tell how many objects are in two groups of objects put together.</p> <p>1.5.2 write addition sentences for two groups of objects and put together using the 'plus' and 'equal to' symbols.</p>	<p>Putting two groups of objects together</p> <p>Addition sentences</p>	<p>TLMs: Bottle tops, seeds, sticks, shells, stones.</p> <p>Guide pupils to form groups for two given numbers (0 – 5), put the groups together and find how many they make altogether.</p> <p>E.g.</p>  <p>Guide pupils to identify the plus sign (+) as adding numbers and equal to (=) sign as the symbol for same as.</p> 	<p>Let pupils:</p> <p>find how many objects are there in two groups of objects put together.</p> <p>use the plus and equal to sign to perform operations.</p>

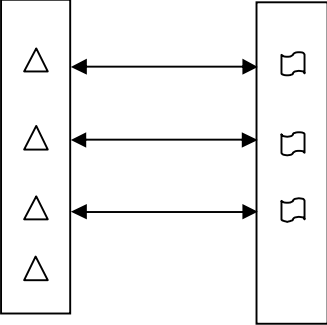
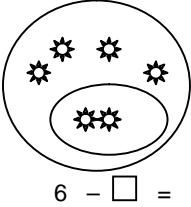
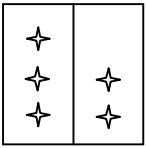
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.5 (CONT'D) ADDITION: SUM UP TO 5	The pupil will be able to:			Let pupils:
	1.5.3 find the sum of two numbers up to 5.	Addition of numbers 0 – 5	Guide pupils to find the sum of two numbers that sum up to 5 using concrete materials. E.g. $2 + 1 = \square$ $3 + 1 = \square$ $2 + 2 = \square$	complete addition sentences. find the sum of two numbers (sum up to 5).
UNIT 1.6 SOLID SHAPES	1.5.4 find missing numbers (addends) in addition sentences.	Missing Numbers (Addends) (sum not greater than 5)	find missing numbers in addition sentences using “counting-on” method. E.g. $3 + \square = 5$. Begin with 3 and count how many to be added to get 5.	find missing numbers in addition sentences. E.g. $2 + \square = 3$ $\square + 3 = 4$ $1 + \square = 5$
	1.6.1 sort out objects by their shapes.	Sorting objects by shapes	TLMS: Milk tin, Milo, match boxes, chalk boxes, cubes, magi cubes. Guide pupils to make a collection of solid shapes and group them according to similar shapes, those that can roll and those that cannot roll.	sort given objects by given criteria i.e. shapes etc. identify faces, edges and corners of objects.
	1.6.2 identify faces and edges of objects as round or straight.	Faces and edges	Let pupils identify the faces and edges of objects like milk tin, boxes and classify them as round or straight by testing with straight edge objects.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.6 (CONT'D) SOLID SHAPES	The pupil will be able to: sort objects with straight and those with round edges.	Sorting objects by edges	Guide pupils to collect and handle shapes E.g. tins of milk, boxes, balls, cowries and sort them into those with straight and those with round edges.	Let pupils: find objects which do not belong to a given group of objects.
UNIT 1.7 NUMBERS AND NUMERALS	1.7.1 use ordinal numbers to describe the positions of objects in a row up to the 9 th position. 1.7.2 recite simple rhythmic number patterns. 1.7.3 say or sing rhymes involving numbers up to 9.	Ordinal Numbers up to 9 th Position of objects Patterns with one-digit numbers Number rhymes and songs	Guide pupils to put objects in an order from a given reference point and indicate which comes first, second, third ..., ninth. Guide pupils to find the position of an object among others in a row. [Ensure the correct use of the position names to ensure the value of orderliness]. Guide pupils to repeat and continue simple rhythmic patterns involving 1-digit numbers E.g. (a) (1, 1, 1), (1,1,2), (1,1,3), (b) (5,5,1), (5,5,2), (5,5,3)..... (c) (2,1,1), (2,1,2), (2,1,3)..... say and/or sing number rhymes involving 1-digit numbers. say: One, two, three, four, five, Once I caught a fish alive. Six, seven, eight, nine, ten, Then, I let it go, again. Why did you let it go Because it bit my finger. Which finger did it bite? The little finger on the right. NB: The meaning of the rhyme should be explained to the pupils.	read and write the numerals from zero to 9- Fill in missing numerals in numbers in a given order identify objects in a given position up to 9 th . continue simple rhythmic number patterns. recite other number rhymes.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.8 ADDITION SUMS UP TO 9.	Pupil will be able to: 1.8.1 find the sum of two numbers (sum up to 9) and complete addition sentences.	Addition of numbers (0 – 9) sum not greater than 9	<p>TLMs: sticks, pebbles, bottle tops, stones, etc.</p> <p>Guide pupils to form groups for two given numbers (0 – 9) put the groups together and count how many they make altogether. E.g.</p> 	Let pupils: complete addition sentences, E.g. $6 + 3 = \square$ $4 + 2 = \square$
	1.8.2 find the missing numbers in addition sentences with sum not greater than 9.	Missing Numbers (Addends)	<p>Assist pupils to find the number that should be added to another number to complete addition sentences (sum not greater than 9).</p> <p>E.g. $3 + \square = 6$ $\square + 3 = \square 8$</p>	find missing addends in addition sentences in groups.
	1.8.3 solve simple story problems involving addition of two numbers (0 – 9)	Story problems on addition of numbers 0 - 9	<p>Pose story problems on addition of numbers 0 – 9 orally and solve. E.g.</p> <ul style="list-style-type: none"> - John has 2 socks and 1 pen. How many things does he/she have altogether? - Mother bought 2 tins of milk and 3 loaves of bread. How many things did she buy? 	solve simple story problems on addition of numbers (0 – 9).

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.9 SUBTRACTION 0 - 9	<p>The pupil will be able to:</p> <p>1.9.1 separate given collection of objects into two groups and find the number of objects in each group.</p>	<p>Idea of subtraction</p>	<p>TLMS: Countable objects like sticks, shells, seeds, tins etc.</p> <p>Guide pupils to form smaller groups, assist pupils to separate a given collection of objects into two groups and find how many objects there are in each group. E.g.</p> <div style="text-align: center;">  </div> <p>Encourage pupils to co-operate as they work in groups.</p>	<p>Let pupils:</p> <p>separate groups of objects into two groups and find how many are in each group.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.9 (CONT'D) SUBTRACTION 0 – 9	<p>The pupils will be able to:</p> <p>1.9.2 find how many objects are left if a number of objects are (removed) or taken away from the group of objects.</p> <p>1.9.3 use addition, take away and equal signs in mathematical sentences.</p>	<p>Subtraction as 'Take Away'</p>	<p>Guide pupils to remove a number of objects from a given group and find how many objects are left.</p> <p>E.g.</p>  <p>Guide pupils to recognise the minus sign (-) as the symbol for take away.</p> $7 - 2 = 5$ <p>Guide pupils to use addition, take away, and equal to signs in mathematical sentences such as</p> <p>i. $2 \square 1 = 3$</p> <p>ii. $4 \square 2 = 2$</p> <p>iii. $5 + 2 = 7$</p>	<p>Let pupils:</p> <p>take a given number of objects away from a bigger group of objects.</p> <p>i. $7 \square 4 = 3$</p> <p>ii. $8 \square 6 = 2$</p> <p>iii. $5 + 4 = \square$</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
<p>UNIT 1.9 (CONT'D) SUBTRACTION 0 – 9</p>	<p>The pupil will be able to:</p> <p>1.9.4 find how many more or less objects are in one group than another by comparison.</p> <p>1.9.5 Write and complete subtraction sentences</p>	<p>Subtraction as comparison</p> <p>Subtraction sentences</p>	<p>Guide pupils to match two groups of objects and find how many more or less, one is more or less than the other.</p>  <p style="text-align: center;">4 – 3 = 1</p> <p>Guide pupils to write and complete subtraction sentences for groups of objects using the minus (-) and equal to (=) signs</p> <p><u>Take away</u> <u>Matching</u></p>   <p>6 - <input type="text"/> = 4 3 - 2 = <input type="text"/></p> <p>Guide pupils to find the difference between two numbers by comparing/matching pupils. E.g. difference in the following pairs of numbers.</p> <p style="text-align: right;">5, 3 is 2: i.e. $5 - 3 = 2$ 4, 1 is 3: i.e. $4 - 1 = 3$ 7, 4 is 3: i.e. $7 - 4 = 3$</p>	<p>Let pupils:</p> <p>compare two groups of objects and find how many more or less one is than the other.</p> <p>write the minus and equal to sign and complete subtraction sentences.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION	
UNIT 1.9 (CONT'D) SUBTRACTION 0 – 9	The pupil will be able to:			Let pupils	
	1.9.6 solve simple story problems involving subtraction of two 1-digit numbers.	Word/Story Problems	Guide pupils to solve simple story problems involving subtraction of two 1-digit numbers. E.g. Mummy bought 7 oranges and Daddy ate 3 oranges. How many oranges are left?	solve simple story problems on subtraction from 0 – 9.	
	UNIT 1.10 TENS AND ONES	1.10.1 make a group of ten objects.	Tens as a unit <ul style="list-style-type: none"> Numbers 11 – 20 	TLMS: Bundle of sticks/straws, multi-base blocks. Guide pupils to discover 10 as one more than 9 Guide pupils to count objects in groups from 11 – 20 using straws or sticks in making bundled and loose sticks. Guide pupils to break numbers 11 – 20 into tens and ones.	bundle sticks into tens. count objects in tens and ones (11 – 20) and find how many sticks/straws are in a given set of bundled and loose sticks/straws.
		1.10.2 read two or more groups of ten objects as 20, 30, ..., 90 and read number names for 10 up 90.	Counting and reading in tens	Guide pupils to use base ten structured materials E.g. bundle of sticks. Count and read in tens, 10, 20, 30, 40, 50, 60, 70, 80 and 90.	bundle sticks/straws into groups of ten. read and write numbers 10, 20, ..., 90.
		1.10.3 break two-digit numbers into tens and ones.	Expanded form of 2-digit numbers	Assist pupils to find bundle and loose sticks to represent given numbers and write the expanded form of the number. E.g. 43 is 4-tens and 3-ones. Let pupils count bundled and loose sticks and say how many they are. [Orderliness as organisational skills].	express two-digit numbers into tens and ones. E.g. 43 = 4 tens 3 ones 28 = 2 tens 8 ones 52 = 5 tens 2 ones
1.10.4 read and write numbers 0 - 99	Reading and writing numerals 0 - 99	Guide pupils to read and write numbers from 0 – 99.	complete/continue a given sequence of numbers from 0 – 99. E.g. 1. 31, 32, ..., ..., 2. 53, ..., 55, 56, ..., ...		

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																								
<p>UNIT 1.11 ADDITION AND SUBTRACTION</p>	<p>The pupils will be able to:</p> <p>1.11.1 add any two 1-digit numbers.</p> <p>1.11.2 subtract a 1-digit number from number 0 up to 18.</p>	<p>Addition of two 1-digit numbers (sum up to 18)</p> <p>Subtraction Basic subtraction facts</p> <p>Difference between 2 numbers, the higher number not exceeding 18</p>	<p>TLMS: Bottle tops, sticks/straws, palm kernels, shells, pebbles etc.</p> <p>Guide pupils to find the sums of two 1-digit numbers using some of the materials above. (sum up to 18).</p> <p>Assist pupils to use materials to develop a table of the basic addition facts by finding pairs of 1-digit numbers that add up to 18 (or complete this table).</p> <table border="1" data-bbox="1234 549 1675 715"> <tr> <td>3</td> <td>5</td> <td>8</td> <td>13</td> </tr> <tr> <td>1 + 2</td> <td>1 + 4</td> <td>5 + 3</td> <td>6 + 7</td> </tr> <tr> <td>3 + 0</td> <td>3 + 2</td> <td>4 + 4</td> <td>9 + 4</td> </tr> </table> <p>Guide pupils to subtract a 1-digit number from any of the numbers 0 – 18 using some of the TLMS.</p> <table border="1" data-bbox="1223 906 1630 1145"> <tr> <td>3</td> <td>5</td> <td>8</td> <td>13</td> </tr> <tr> <td>3 – 0</td> <td>7 – 2</td> <td>12 – 4</td> <td>17 – 4</td> </tr> <tr> <td>4 – 1</td> <td>9 – 4</td> <td>13 – 5</td> <td>15 – 2</td> </tr> </table> <p>Guide pupils to find pairs of 1-digit numbers whose differences are the numbers 0 – 9. E.g. $9 - 0 =$, $9 - 1 =$, $9 - 2 =$, $8 - 1 =$, etc.</p>	3	5	8	13	1 + 2	1 + 4	5 + 3	6 + 7	3 + 0	3 + 2	4 + 4	9 + 4	3	5	8	13	3 – 0	7 – 2	12 – 4	17 – 4	4 – 1	9 – 4	13 – 5	15 – 2	<p>Let pupils:</p> <p>find the sum of pairs of 1-digit numbers mentally.</p> <p>complete addition sentences involving two 1-digit numbers.</p> <p>subtract 1-digit numbers from numbers 0 – 18.</p> <p>find pairs of 1-digit numbers whose differences are the numbers 0 – 9.</p>
3	5	8	13																									
1 + 2	1 + 4	5 + 3	6 + 7																									
3 + 0	3 + 2	4 + 4	9 + 4																									
3	5	8	13																									
3 – 0	7 – 2	12 – 4	17 – 4																									
4 – 1	9 – 4	13 – 5	15 – 2																									

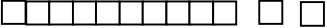
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.12 MEASUREMENTS OF LENGTHS, AREA, CAPACITY AND MASS	The pupil will be able to:			Let pupils:
	1.12.1 compare directly two objects and tell which is taller/longer/shorter.	Idea of length: Direct comparison of length of objects Developing awareness of differences between lengths and heights	TLMs: Sticks of different Lengths, Pencils, Pens, Exercise Books. Guide pupils to observe differences in length and height by putting the sticks side by side. Talk about short/long stick, a tall/short girl/boy (all on a common base).	tell which of two objects is taller, longer, as long as using the appropriate vocabulary or language. E.g. Stick A is longer than Stick B .
	1.12.2 use arbitrary units to compare the lengths and heights of various objects.	Indirect comparison of length and/or height of objects	Guide pupils to compare objects by placing them side by side on a common base to find which is taller, longer, as long as, etc. Guide pupils to use a “go between” when two objects cannot be put side by side for comparison E.g. the width of two different walls. Use pen/pencil to find out how many pens/pencils make the length of the teacher’s table, etc.	compare the lengths and heights of various objects.
	1.12.3 compare the size of two surfaces (areas) and tell which one is bigger/smaller.	Idea of area: Direct comparison of two surfaces Indirect comparison of two surfaces	Guide pupils to place two different surfaces side by side. Tell which is small and which is big. Guide pupils to use a “particular surface”. and place it on other surfaces (two) to find out how many of the “particular surface” covers the total surface area of the given surfaces.	compare two “Surfaces” using the words “small”, “big”.
	1.12.4 compare the capacities (sizes) of two containers and tell which holds more or less or equal amount of water or sand.	Idea of capacity: Comparing the capacities of objects	develop awareness of differences in the amount of material different containers can hold (E.g. sand or water) compare sizes of two containers by pouring water/dry sand from one container into another using the words : holds more, holds less, as much as etc.	compare the sizes of two containers using the words more/less, as much as etc.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.12 (CONT'D) MEASUREMENTS OF LENGTHS, AREA, CAPACITY AND MASS	The pupils will be able to:			Let pupils:
	1.12.5 compare the weights of objects by observing and feeling differences in weight. 1.12.6 compare the weights of objects using simple balance.	Idea of weight	Guide pupils to feel weights of two objects by handling the objects to find out which weighs more or less. Guide pupils to understand that small differences in weight cannot be determined by lifting. Guide pupils to use a simple balance to compare the weight of various objects to determine which is heavier/lighter or as heavy as another. Guide pupils to observe that a big inflated football could weigh less than a small piece of stone (i.e. big size does not necessarily mean heavier weight).	compare the weights of various objects using simple balance.
UNIT 1.13 MEASUREMENT OF TIME AND MONEY	1.13.1 identify events which take a short time and those which take a long time	Idea of Time	Guide pupils to develop awareness of passage of time or time taken by events E.g. sunrise, sunset, breakfast time, school closing time. Let pupils identify events which take a long time and those which take a short time.	tell when certain events occur or will occur. Tell events which take long time and those which take short time.
	1.13.2 identify currency in circulation up to GH¢10.	Money	Guide pupils to identify the coins and currency notes in circulation up to GH¢10 and record them using the symbol GH¢.	
	1.13.3 use token coins up to GH¢1 to buy items in a play-shop.	Value of Money	Guide pupils to put price tags on items in a play-shop and use token money to buy from the play-shop.	read prices of items and buy items from a class shop

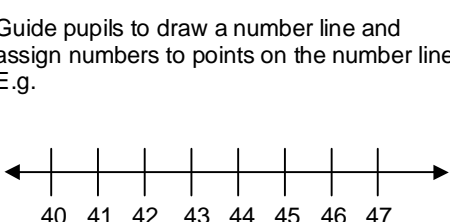
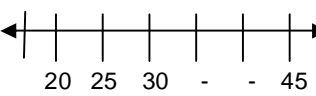
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.14 COLLECTING AND HANDLING DATA UNIT 1.15 ADDITION AND SUBTRACTION OF NUMBERS (0 – 99)	The pupil will be able to:			Let pupils:
	1.14.1 collect data by counting objects	Collecting data	TLMs: Countable objects (Tins, match boxes) Guide pupils to collect data in the classroom by using given description, counting and recording number of items such as the birthday of pupils, kinds of textbooks for the class, number of pupils staying at a particular area and kinds of bottle tops.	collect and record data collected from the environment.
	1.14.2 arrange the items collected in concrete form (rows and columns)	Representing data in concrete form	Guide pupils to represent the data they collect in visual form (rows and columns). Let pupils use countable objects such as milk tins, match boxes to represent the data.	represent data collected in concrete form.
	1.15.1 add two numbers expressed as tens and ones without renaming/regrouping.	Adding tens and ones without renaming/regrouping	TLMs: Countable objects, bundles of sticks in tens, dienes blocks Guide pupils to collect tins, boxes, etc. and guide pupils to arrange pupils in rows and columns. Guide pupils to add two numbers expressed as tens and ones without renaming/regrouping using bundles of sticks and dienes blocks. E.g. 2 tens and 3 ones + 3 tens and 4 ones 5 tens and 7 ones	add two digit numbers expressing pupils in tens and ones without remaining.
1.15.2 add two 2-digit numbers without renaming and regrouping.	Addition of two 2-digits numbers	Guide pupils to add two 2-digit numbers without renaming or regrouping $\begin{array}{r} 57 \\ + 22 \\ \hline 79 \end{array}$	add two 2-digit numbers.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1.15 (CONT'D) ADDITION AND SUBTRACTION OF NUMBERS (0 – 99)	The pupil will be able to: 1.15.3 subtract two-2 digit numbers expressed as tens and ones without regrouping.	Subtracting two 2-digit numbers expressed as tens and ones.	Guide pupils to subtract two 2-digit numbers expressed as tens and ones without regrouping. 5 ten and 7 ones - <u>2 ten and 3 ones</u> <u>3 tens and 4 ones</u>	Let pupils: express numbers as tens and ones and subtract without regrouping.
	1.15.4 subtract two 2-digit numbers without regrouping.	Subtraction of two 2-digit numbers.	Guide pupils to subtract two 2-digit numbers without regrouping. E.g. 57 - 22 ----- 35	subtract two 2-digit numbers without regrouping or regrouping
	1.15.5 solve simple story problems involving the use of basic addition and subtraction facts.	Word or story problem.	pose simple story problems involving addition and subtraction of two 2-digit numbers for pupils to solve.	solve story problems on addition and subtraction of two 2-digit numbers.

PRIMARY 2

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.1 NUMBERS AND NUMERALS 0 - 100	The pupil will be able to: 2.1.1 assign numbers to groups of objects up to 100 objects.	Numbers 0 – 100 Structured Base Ten Materials	Guide pupils to make groups of tens and ones using the following objects: <ul style="list-style-type: none"> - bundles of ten sticks/straws and loose ones, - bags, seeds (beans, maize, palm kernel, flamboyant etc) and loose ones, - strips of ten squares and one-squares, - longs in base ten and ones-cubes. - assign numbers from 0 – 99 to groups of objects made of tens and ones. <div style="text-align: center;">  </div> 1 long and 2 cubes is 12.	Let pupils: use objects to make groups of tens and ones for given numbers.
	2.1.2 break 2-digit numbers into tens and ones, read and write pupils.	Reading and writing 2-digit numbers using expanded form	Guide pupils to regroup numerals 10 – 99 as so many tens and so many ones; read and write numbers expressed as tens and ones as numbers 10, 11, 12, ..., 99 E.g. 3 tens and 4 ones is 34.	write a numeral to represent the number of objects in a given group (11 – 99).

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.1 (CONT'D) NUMBERS AND NUMERALS 0 - 100	<p>The pupil will be able to:</p> <p>2.1.3 make ten groups of 10 objects and name them as a group of one-hundred objects.</p> <p>2.1.4 use the symbols > and < correctly to compare two 2-digit numbers up to 100.</p>	<p>Hundred as a unit</p> <p>Comparing numbers 10 – 100 by using symbols: > and <.</p>	<p>Guide pupils to assign the number 100 (one-hundred) to groups made of the following:</p> <ul style="list-style-type: none"> - ten groups of bundles of 10 sticks. - ten groups of bags of 10 seeds (a box of seeds). - ten strips each with 10 small squares (a flat of squares). - ten longs (a flat in base ten blocks). <p>Let pupils use a hundred chart to state numbers that increase by ten E.g. 10, 20, 30, ..., 100; 11, 21, 31, ..., 91; 13, 23, 33, ..., 93; etc.</p> <p>Let pupils assign structured groups of objects to numbers and find which one is large.</p> <p>Let pupils insert the symbols for greater than ">" and less than "<" between pairs of numbers E.g. 43 > 39 or 39 < 43.</p> <p>NOTE: Explain that the bigger number is found at the open end of the symbols. The smaller number is also found at the close end of the symbols.</p>	<p>Let pupils:</p> <p>identify a group of hundred objects.</p> <p>make groups of tens of objects for the number 100.</p> <p>complete sequences of numbers that increase by 10.</p> <p>put the symbols > or < between the following pairs of numbers.</p> <ol style="list-style-type: none"> i. 35.....46 ii. 60.....80 iii. 60.....52 iv. 65.....62 v. 71.....69

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.1 (CONT'D) NUMBERS AND NUMERALS 0 - 100	<p>The pupil will be able to:</p> <p>2.1.5 use the ordinal numbers up to 50th correctly.</p> <p>2.1.6 assign numbers 0 – 50 to points on the number line.</p>	<p>Ordinal numbers</p> <p>Number line</p>	<p>Guide pupils to arrange themselves in a row and assign the ordinals 1st, 2nd, 3rd, ..., 50th position</p> <p>Guide pupils to assign the ordinals to days of the month, weeks of the year.</p> <p>Guide pupils to assign numbers to points on the number line.</p> <p>Guide pupils to draw a number line and assign numbers to points on the number line E.g.</p> 	<p>Let pupils:</p> <p>name the position of an object in a row.</p> <p>complete assigning numbers to points on the number line.</p> 
UNIT 2.2 ADDITION (0 – 18)	<p>2.2.1 discover that the order of the addends does not change the sum.</p> <p>2.2.2 write addition sentences from word problems and solve them.</p>	<p>Sums 0 – 18 (order of addends)</p> <p>Word problems (sum 0 – 18)</p>	<p>Guide pupils to join groups of objects and relate it to addition of numbers.</p> <p>Guide pupils to change the position of numbers in addition sentences to discover the commutative property of addition. E.g. $4 + 5 = 5 + 4$</p> <p>Guide pupils to make addition sentences from word problems and solve.</p>	<p>add two numbers, summing up to 18.</p> <p>use commutative property to complete addition sentences.</p> <p>solve word problems involving addition with sum up to 18.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.3 SUBTRACTION (0 - 18)	<p>The pupil will be able to:</p> <p>2.3.1 write subtraction sentences with none of the numbers greater than 18.</p> <p>2.3.2 complete subtraction sentences with none of the numbers greater than 18.</p> <p>2.3.3 relate addition sentences to their corresponding subtraction sentences.</p> <p>2.3.4 write subtraction sentences relating to word problems and solve them.</p>	<p>Subtraction as comparison of two groups of objects</p> <p>Subtraction sentences</p> <p>Solving subtraction sentences using corresponding addition sentences</p> <p>Word problems involving subtraction (0 - 18)</p>	<p>Let pupils revise subtraction as separation of objects from group(s).</p> <p>Guide pupils to write subtraction sentences to show how many more and how many less objects there are in a group.</p> <p>Guide pupils to complete subtraction sentences by writing different subtraction names for numerals 0 – 18 E.g. 18 – 10, 17 – 9, 16 – 8, 15 – 7, etc.</p> <p>relate addition and subtraction sentences E.g. $3 + 5 = 8$ and $8 - 5 = 3$ and $8 - 3 = 5$</p> <p>use objects to act out word problems and discuss.</p> <p>Write subtraction sentences from word problems and solve.</p>	<p>Let pupils:</p> <p>write subtraction sentences for story problems and find the answers.</p> <p>find the difference of pairs of numbers 0 – 18 mentally.</p> <p>subtract two numbers.</p> <p>use subtraction sentence to solve word problems.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION						
UNIT 2.4 NUMBER AND NUMERALS 0 - 1000	<p>The pupil will be able to:</p> <p>2.4.1 assign numbers to groups of objects up to groups of 1000 objects.</p> <p>2.4.2 make ten groups of 100 objects and name it as a thousand (1000) objects.</p> <p>2.4.3 locate numbers 0 – 1000 to points on the number line and compare numbers using “<” and “>”.</p>	<p>Numbers 0 – 1000</p> <p>Thousand as a unit</p> <p>Comparing numbers on the number line</p>	<p>Guide pupils to assign structured groups of objects to given numbers E.g. 2 flats, 4 longs and 5 cubes is 2 hundred and forty-five or 245.</p> <p>Guide pupils to write numbers for given structured group of objects.</p> <p>Guide pupils to break 3-digit numbers in hundreds, tens and ones, and read and write them.</p> <p>Guide pupils to put numerals in the correct places in a place value chart.</p> <table border="1" data-bbox="1303 699 1514 810"> <tr> <td>H</td> <td>T</td> <td>O</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table> <p>Guide pupils to identify ten flats as a thousand units/cubes.</p> <p>Guide pupils to assign structured groups of objects to given numbers E.g. 2349 is 2 blocks, 3 flats, 4 longs and 9 cubes.</p> <p>Guide pupils to assign numbers 0 – 1000 to points on the number line and insert the symbols “<” and “>” between pairs of numbers.</p>	H	T	O				<p>Let pupils:</p> <p>write the number that represents the objects in a given group of structured materials.</p> <p>express the numerals 100 – 999 as hundreds, tens and ones.</p> <p>identify and write the numeral 1000 for a group of one thousand objects.</p> <p>write the numbers that represent objects in a given group of structured materials.</p> <p>fill in missing numbers in the number line.</p> <p>Insert the correct symbol (< or >) to compare two numbers.</p>
H	T	O								

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.5 MEASUREMENT OF LENGTH, CAPACITY AND WEIGHT	The pupil will be able to: 2.5.1 compare lengths and heights of objects with a metre rule.	Comparing lengths and heights with a metre stick	Take pupils to a textiles shop and let the storekeeper measure 3 or 4 metres of cloth for pupils to observe the use of the metre rule or invite the shopkeeper to come and demonstrate it in the classroom.	Let pupils: identify objects whose lengths or heights are longer or shorter than a metre rule.
	2.5.2 estimate and measure lengths and heights in metres.	Measuring lengths and heights in metres	Guide pupils to identify sticks whose lengths or heights are longer or shorter than a metre by comparing them with a metre rule. Guide pupils to estimate and measure lengths and heights in metres and record pupils.	estimate, measure and record given lengths and heights in metres. determine the capacity of a container in relation to the litre container.
	2.5.3 state whether or not a given container can take more or less than a litre, or it is about a litre.	Capacity (litre)	Let pupils pour water from a given container into a litre container and determine whether the given container is more or less than or it is about a litre.	determine the weight of a given object in relation to a kilogram weight.
	2.5.4 compare weights of objects with the kilogram.	Weight (kilogram)	Let pupils compare the weights of given objects with a kilogram sand-bag (or kilogram bean/seed bag) and sort them according to whether they are heavier than or lighter than or as heavy as the kilogram.	
UNIT 2.6 ADDITION (SUMS 0 – 99)	2.6.1 find the sum of three or four 1-digit numbers.	Adding three or four 1-digit numbers	Guide pupils to use the number line to add three or four 1-digit numbers. add three 1-digit numbers in horizontal or vertical form E.g. $2 + 3 + 5 =$ $\begin{array}{r} 5 \\ 3 \\ + 4 \\ \hline \end{array}$	find the sum of three or four 1-digit numbers.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.6 (CONT'D) ADDITION (SUMS 0 – 99)	<p>The pupil will be able to:</p> <p>2.6.2 find the sum of two 2-digit numbers which does not involve renaming.</p> <p>2.6.3 find the sum of three 2-digit numbers.</p>	<p>Addition of 2-digit numbers</p> <p>Sum of three 2-digit numbers (no regrouping)</p>	<p>Guide pupils to revise groupings in tens using structured base ten materials as follows:</p> <ul style="list-style-type: none"> - add objects grouped in tens E.g. - 3 bundles of ten sticks and 4 bundles of ten sticks make 7 bundles of ten sticks. - 5 longs and 3 longs make 8 longs. <p>Guide pupils to add two numbers with 2-digit numerals using structured base ten materials and expanded form E.g. $23 + 15 = 2 \text{ longs and } 3 \text{ cubes plus } 1 \text{ long and } 5 \text{ cubes. This makes } 8 \text{ longs and } 8 \text{ cubes by putting together cubes and then longs.}$</p> $23 + 15 = (20 + 3) + (10 + 5). \\ = (20 + 10) + (3 + 5). \\ = 30 + 8 = 38.$ <p>Guide pupils to add three 2-digit numerals using structured base ten materials in expanded form.</p> <p>E.g. $24 \rightarrow 2 \text{ longs and } 4 \text{ cubes} \rightarrow 20 + 4$</p> $11 \rightarrow 1 \text{ long and } 1 \text{ cube} \rightarrow 10 + 1$ $+ 32 \rightarrow 3 \text{ longs and } 2 \text{ cubes} \rightarrow 30 + 2$ $\underline{67} \leftarrow 6 \text{ longs and } 7 \text{ cubes} \rightarrow 60 + 7$	<p>Let pupils:</p> <p>add two 2-digit numbers (no regrouping/renameing).</p> <p>add three 2-digit numbers (no regrouping).</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.6 (CONT'D) ADDITION (SUMS 0 – 99)	<p>The pupil will be able to:</p> <p>2.6.4 add two or three numbers using the commutative (order) property of addition.</p> <p>2.6.5 find the sum of two 2-digit numbers which involves renaming.</p>	<p>Addition of two or three numbers using the commutative (order) property</p> <p>Addition of two 2-digit numbers (with renaming)</p>	<p>Guide pupils to change the order of addends and compare sum of two or three numbers E.g.</p> $16 + 21 = 21 + 16 = 37$ $(7 + 4) + 5 = 11 + 5 = 16$ $7 + (4 + 5) = 7 + 9 = 16$ <p>find missing addends using the commutative (order) property of addition.</p> <p>E.g. $17 + 22 = \square + 17$</p> $(8 + 6) + \square = 8 + (6 + 9)$ <p>Guide pupils to use structured base ten materials to find the sums of two 2-digit numbers (with renaming). Guide pupils to add two 2-digit numbers with renaming/regrouping/carrying. Guide pupils to add three 2-digit numbers with renaming.</p> <p>E.g. $35 \rightarrow 30 + 5$</p> $43 \rightarrow 40 + 3$ $+ 17 \rightarrow 10 + 7$ $\begin{array}{r} 94 \\ \underline{\quad} \end{array} \quad \begin{array}{r} 80 \\ \underline{\quad} \end{array} + \begin{array}{r} 14 \\ \underline{\quad} \end{array}$ $80 + (10 + 4)$ $(80 + 10) + 4$ $90 + 4 = 94$ <p>(This should be demonstrated if possible with the structured base ten materials).</p>	<p>Let pupils:</p> <p>identify the missing addends using the commutative (order) property.</p> <p>add two and/or three 2-digit numbers (with regrouping).</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.6 (CONT'D) ADDITION (SUMS 0 – 99) UNIT 2.7 SUBTRACTION (NUMBERS LESS THAN 100)	The pupil will be able to: 2.6.6 solve simple word problems on addition of 2-digit numbers which does not involve renaming.	Story problems	Guide pupils to solve story problems on addition of two 2-digit numbers	Let pupils: solve word problems involving two 2-digit numbers.
	2.7.1 perform subtraction operations involving 2-digit numbers using the expanded and short forms without renaming/regrouping.	Subtraction of 2-digit numbers using the expanded form and short form without renaming/regrouping.	Guide pupils to perform subtraction of 2-digit numbers using the expanded and short forms without renaming/regrouping.	solve problems using the expanded and short forms without renaming/regrouping.
	2.7.2 perform subtraction operations involving 2-digit numbers using the expanded and short forms with renaming/regrouping.	Subtraction of 2-digit numbers using the expanded form and the short forms with renaming/regrouping.	Guide pupils to perform subtraction of 2-digit numbers using the expanded and short forms with renaming.	Solve problems using the expanded and short forms with renaming/regrouping.

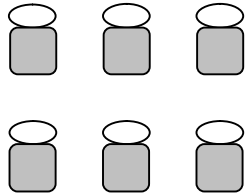
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.8 FRACTION	<p>The pupil will be able to:</p> <p>2.8.1 recognise half of a whole object.</p>	<p>One-half</p>	<p>Give examples of one whole objects in everyday life. E.g. – a loaf of bread.</p> <ul style="list-style-type: none"> - an orange. - a bar of soap. - a piece of string. <p>Give real situation which involves taking parts of a whole object. E.g. (i) two pupils sharing a loaf of bread equally.</p> <p>(ii) cutting a piece of string into two equal parts.</p> <p>(iii) folding a sheet of paper into two equal parts.</p> <p>Call each of two equal parts of a whole object as one-half.</p>	<p>Let pupils:</p> <p>identify one-half of a whole object.</p>
	<p>2.8.2 find the number of halves in a given number of objects (up to 5).</p>	<p>The number of halves in a given number of objects</p>	<p>Give real situations which involve halving (making halves) of whole objects and count the number of halves.</p> <p>i.e.</p> <p>Cut whole objects into two equal parts each and count the halves in the wholes.</p> <p>Fold sheets of paper each into two equal parts, and count the halves in the sheets.</p> <p>E.g. 1 sheet = 2 halves. 2 sheets = 4 halves.</p>	<p>find the number of halves in a given number of whole objects.</p> <p>How many halves will there be if I cut each of the following into two equal parts?</p> <ul style="list-style-type: none"> i. a strip of paper ii. pencil iii. loaf of bread


UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.8(CONT'D) FRACTION	<p>The pupil will be able to:</p> <p>2.8.3 recognise one-fourth or one quarter of a whole object.</p> <p>2.8.4 find the number of fourths or quarters in a given number of whole objects (up to 5).</p> <p>2.8.5 identify a fraction of a group of objects.</p>	<p>One-fourth</p> <p>The number of fourths in a given number of objects</p> <p>Fraction as part of a group</p>	<p>Guide pupils to give real situations which involve making fourths.</p> <p>E.g. Folding a sheet of paper into fourths.</p> <p>call each of the four equal parts of a whole object as one-fourth (one-quarter).</p> <p>Guide pupils to fold sheets of paper each into four equal parts, and count the fourths (quarters) in the sheet.</p> <p>Guide pupils to separate a group of four and eight objects into two equal groups of objects, and call each group by its fractional name, i.e. half.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>p π</p> <p>p π</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>○ ○ ○ ○</p> <p>● ● ● ●</p> </div> </div> <p>In each box the objects in the loop are half of the objects in the box.</p> <p>Guide pupils to separate a group of four and eight objects into four equal groups of objects each and call each group by its fractional name, i.e. one-fourth.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>p p</p> <p>p P</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>○ ○ ○ ○</p> <p>● ● ○ ○</p> </div> </div> <p>One-fourth of the objects in each box is enclosed in the loop.</p>	<p>Let pupils:</p> <p>Identify one-fourth of an object.</p> <p>find the number of fourths in a given number of whole objects.</p> <p>identify fractions represented by groups of objects.</p>

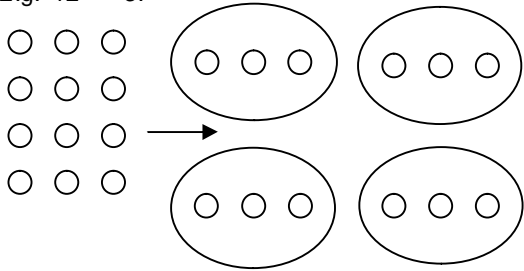
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.9 MEASUREMENT OF TIME AND MONEY	The pupil will be able to:			Let pupils:
	2.9.1 use arbitrary units to measure time taken to complete simple events.	Measuring time using arbitrary time measures	Guide pupils to find the time it takes to complete an event or activity using arbitrary time measures, E.g. number of hand claps it takes to sing a song. Guide pupils to compare times taken to complete two events or activities and tell which takes longer or shorter time.	find the time an event or activity takes using arbitrary time measures – hand claps, steps, jumps, etc. tell which of two events takes longer or shorter time to complete.
	2.9.2 tell the time by the hour, half-hour and quarter-hour.	Telling the time on the clock	Revise the concept of half and quarter of a whole and relate it to half and quarter of an hour. Guide pupils to use a toy clock and tell the time by the hour, half-hour and quarter-hour, E.g. 8 o'clock, half-past 8 o'clock, quarter-past 8 o'clock and quarter to 8 o'clock.	
	2.9.3 identify events which take an hour, half-hour or quarter-hour to complete.	Measuring the time using the clock	Guide pupils to give examples of events which take an hour, half-hour or quarter-hour to complete. E.g. (i) Mathematics lesson takes an hour. (ii) P.E. lesson takes half-hour. (iii) Morning assembly takes a quarter-hour to complete.	tell the time shown on the toy clock. Show a given time on the toy clock. tell how long an event takes to complete.
	2.9.4 identify currency in circulation up to GH¢50.	Money	Guide pupils to identify the coins and currency notes in circulation up to GH¢50 and record them using the symbol GH¢.	tell the values of given coins and currency notes up to GH¢50.
2.9.5 use token coins up to GH¢1 to buy items in a play-shop.	Value of money	Guide pupils to put price tags on items in a play-shop and use token money to buy from the play-shop.	tell the items a coin or a combination of coins can buy, and tell the total amount of items purchased.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION		
UNIT 2.10 ADDITION (SUM 0 – 999)	<p>The pupil will be able to:</p> <p>2.10.1 add numbers which sum up to 999.</p>	<p>Addition of 3-digit numbers</p> <p>Expanded form of a numeral as Hundreds, tens, and ones</p> <p>Adding two 3-digit numbers involving renaming (carrying)</p> <p>The expanded form. The short form</p>	<p>TLMs: Abacus, colour-coded and counters.</p> <p>Guide pupils to revise the values of each digit in a 3-digit numeral.</p> <p>Guide pupils to revise the expanded form of a numeral as hundreds, tens, and ones.</p> <p>Guide pupils to use objects grouped in hundreds, tens and ones to illustrate addition of two 3-digit numbers.</p> <p>Guide pupils to use non-proportional structural materials to add two 3-digit numbers. E.g. (i) abacus (ii) coloured-coded counters.</p> <p>Add two 3-digit numbers involving renaming (carrying) from ones to tens only; E.g. (i) using the expanded form. (ii) using the short form (i.e. no expansion).</p> <table border="0" style="margin-left: 20px;"> <tr> <td style="border: 1px solid black; padding: 2px;">Short form</td> <td style="border: 1px solid black; padding: 2px; margin-left: 10px;">Expanded form</td> </tr> </table> $\begin{array}{r} 428 \rightarrow (400 + 20 + 8) \\ + 263 \rightarrow (200 + 60 + 3) \\ \hline 691 \end{array}$ <p style="margin-left: 40px;">$\xrightarrow{\text{Expanded form}} (600 + 80 + 10 + 1)$ $\xrightarrow{\text{Short form}} (600 + 90 + 1)$</p> <p>Add two 3-digit numbers involving renaming from tens to hundreds only; (i) using the expanded form. (ii) using the short form.</p> <p>Add two 3-digit numbers from ones to tens and from tens to hundreds. (i) using the expanded form. (ii) using the short form.</p>	Short form	Expanded form	<p>Let pupils:</p> <p>add 2- or 3-digit numbers (i) using the expanded form. (ii) short form.</p>
Short form	Expanded form					

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.11 SUBTRACTION OF NUMBERS LESS THAN 1000.	<p>The pupil will be able to:</p> <p>2.11.1 subtract a 2-digit number from a 3-digit number.</p>	<p>Subtraction of 3-digit numbers</p>	<p>Guide pupils to use proportional structured materials to subtract 2- or 3-digit numbers from a 3-digit number: E.g. multi-base blocks, sticks, or seeds:- Grouped in hundreds, tens and ones – i.e. structured base ten materials.</p> <p>Guide pupils to use non-proportional structured materials to subtract 2- or 3-digit numbers: E.g., abacus, colour-coded counters.</p> <p>use the expanded form to subtract two 3-digit numbers:</p> <p>Short form Expanded form</p> $\begin{array}{r} 458 \\ -263 \\ \hline 195 \end{array} \rightarrow \begin{array}{r} (400 + 50 + 8) \\ (200 + 60 + 3) \\ \hline (100 + 90 + 5) \end{array}$ <p><u>Note:</u> Regrouping/borrowing from a number with 0 or 1 in the tens column should not be taught at this level.</p> <p>E.g. $\begin{array}{r} 401 \\ -245 \\ \hline \end{array}$ $\begin{array}{r} 813 \\ -547 \\ \hline \end{array}$ $\begin{array}{r} 400 \\ -236 \\ \hline \end{array}$</p> <p>Guide pupils to use the short form to subtract two 3-digit numbers.</p>	<p>Let pupils:</p> <p>subtract two or three-digit numbers using expanded form and/or short form.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.12 MULTIPLICATION	<p>The pupil will be able to:</p> <p>2.12.1 write a multiplication sentence for groups of two.</p>	<p>Multiplication sentences for array of objects</p>	<p>Guide pupils to make groups of two objects and find the total number of objects in each case.</p> <p>Guide pupils to make rectangular arrays and find the number of objects in each case.</p>  <p>Guide pupils to write a multiplication sentence to describe an array of objects.</p> <p>E.g. $h \quad h \quad h$</p> <p>$h \quad h \quad h$</p> <p>means $3 \times 2 = 6$, and reads as three times two equals six.</p>	<p>Let pupils:</p> <p>match multiplication sentences with pictures of array of objects.</p>
	<p>2.12.2 build the multiplication table for 2 up to the product 18.</p>	<p>Two Times Table</p> <p>Skip counting in twos</p>	<p>Guide pupils to make groups of two from 1 group, 2 groups, 3 groups up to 9 groups of two and count to find the number of objects in various groups.</p> <p>Guide pupils to complete a table of number facts for multiplication by 2.</p> <p>skip count in twos, up to 18.</p>	<p>complete multiplication sentences up to product 18.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.12 (CONT'D) MULTIPLICATION	The pupil will be able to: 2.12.3 state the product if the order of factors in a multiplication sentence is changed.	Commutative (order) property of multiplication	Guide pupils to use arrays of objects to show that the order of the factors does not change the product of two numbers. That is <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; margin-right: 20px;"> 3×2 </div> <div style="text-align: center; margin-right: 20px;"> when rotated becomes </div> <div style="text-align: center; margin-right: 20px;"> or </div> <div style="text-align: center;"> 2×3 </div> </div>	Let pupils: use order property to complete multiplication sentences match multiplication sentences with pictures of array of object.
	2.12.4 state the product of any number and 1 (one).	Multiplication by 1	Guide pupils to use array of one row only to show that the product of any number and one is equal to the number. E.g.  5 columns by 1 row is $5 \times 1 = 5$.	find the product of a given number and 1.
	2.12.5 state the products of any number and 0 (zero) is zero.	Multiplication by 0	Guide pupils to make a row of a given number of empty containers to represent a multiplication sentence involving zero. Guide pupils to find the number of objects in a row of a given number of empty containers. E.g. a row of 5 empty containers represent 5×0 .	find the product of a given number and zero.
	2.12.6 solve simple word problems involving multiplication.	Word problems involving multiplication	Guide pupils to make multiplication sentences for word problems.	solve word problems using multiplication facts.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.13 DIVISION	<p>The pupil will be able to:</p> <p>2.13.1 illustrate division as sharing</p> <p>2.13.2 illustrate division as making equal groups.</p> <p>2.13.3 convert a division sentence to a multiplication sentence involving a missing factor.</p>	<p>Division as sharing</p> <p>Division as grouping</p> <p>Division as missing factor in multiplication sentence</p>	<p>Guide pupils to perform activities to represent division as sharing</p> <p>Guide pupils to form groups of equal size.</p> <p>Guide pupils to count the number of equal groups formed.</p> <p>E.g. $12 \div 3$.</p>  <p>there are four groups of three from 12, therefore $12 \div 3 = 4$.</p> <p>Revision Revise multiplication facts up to 18 with pupils.</p> <p>Guide pupils to find missing factor in a multiplication sentence to solve division problems.</p> <p>E.g. $3 \times \square = 12$ $\therefore 12 \div 3 = \square$</p> <p>Guide pupils to identify that the missing factor in the multiplication sentence will be the answer for the division problem.</p>	<p>Let pupils:</p> <p>solve problems involving sharing</p> <p>solve problems involving grouping.</p> <p>solve problems involving sharing.</p> <p>solve problems involving finding the missing factors.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.13 (CONT'D) DIVISION	<p>The pupil will be able to:</p> <p>2.13.4 build the basic division facts up to product 18.</p> <p>2.13.5 solve simple problems involving division.</p>	<p>Division by 2</p> <p>Story problems involving division</p>	<p>Guide pupils to recall the division fact with 2 as a factor.</p> <p>Guide pupils to solve problems involving division by 2 by skip counting backward in twos.</p> <p>Guide pupils to pose word problems involving division and guide pupils to solve them.</p>	<p>Let pupils:</p> <p>recall facts for division by 2.</p> <p>solve story problems involving division.</p>
UNIT 2.14 COLLECTING AND HANDLING DATA	<p>2.14.1 collect data by counting different objects with specific attributes or characteristics.</p> <p>2.14.2 collect data by measuring lengths/capacities of similar objects.</p> <p>2.14.3 represent data as simple block graphs.</p>	<p>Collecting data by counting</p> <p>Collecting data by measuring</p> <p>Simple Block Graphs</p>	<p>Guide pupils to find the number of objects or pupils satisfying a given criteria or description. E.g. Pupils born on each day of the week.</p> <p>Guide pupils to find the number of pupils or items satisfying a criterion involving measurement.</p> <p>Guide pupils to draw boxes to represent data collected/recorded.</p>	<p>find the number of pupils/items satisfying a given description.</p> <p>draw appropriate boxes to represent data collected or recorded.</p>
UNIT 2.15 SHAPE AND SPACE	<p>2.15.1 identify common plane shapes.</p> <p>2.15.2 identify line segments.</p>	<p>Common Plane Shapes</p> <p>Line Segments.</p>	<p>Guide pupils to sort cut-out shapes; identify and name common plane shapes. - rectangles, squares, triangles and circles; trace around cut-out shapes;</p> <p>Guide pupils to identify faces of common solids as rectangles, squares, triangles and circles, and draw squares; rectangles; triangles and circles.</p> <p>Guide pupils to associate the idea of straightness with line segments by identifying objects with straight edges in the classroom.</p> <p>Test straightness with a folded sheet of paper, a string, and a straight edged object;</p> <p>Pupils to draw plane shapes using line segments.</p>	<p>name some common plane shapes</p> <p>identify faces that are rectangles and circles.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2.15 (CONT'D) SHAPE AND SPACE	<p>The pupil will be able to:</p> <p>2.15.3 identify plane shapes with straight sides.</p> <p>2.15.4 identify plane shapes by their name and the number of sides.</p>	<p>Sides of plane shapes</p> <p>Naming Plane Shapes.</p>	<p>Guide pupils to identify rectangles and squares as having four straight sides,</p> <p>Guide pupils to identify a triangle as having three straight sides;</p> <p>Guide pupils to make plane shapes with straight sides on a nail board (geo-board).</p> <p>Guide pupils to name and identify plane shapes by their number of sides: squares; rectangles, triangles, and circles.</p>	<p>Let pupils:</p> <p>identify the number of sides of given plane shapes;</p> <p>draw a triangle, a rectangle, or a square.</p> <p>name plane shapes.</p>

PRIMARY 3

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.1 NUMBERS AND NUMERALS 0 – 10,000	The pupil will be able to:			Let pupils:
	3.1.1 count objects in thousands.	Thousand as a unit	<p>TLMs: bundle of sticks, Dienes base ten materials, place value chart, abacus, colour coded bottle tops.</p> <p>Let pupils use structured base ten materials to illustrate the number of hundreds in a thousand.</p> <p>Let pupils use abacus and colour coded counters to count in</p> <ul style="list-style-type: none"> (i) hundreds. (ii) thousands. 	use colour-coded counters to count in hundreds and thousands.
	3.1.2 state the place-value of digits in numbers 0 – 9999.	Place value	Guide pupils to discover place value as the value of a digit in a numeral	put a digit in a place value chart and find the value.
	3.1.3 break 4-digit numbers into thousands, hundreds, tens and ones, and read and write them.	Numbers up to 10,000	<p>Guide pupils to read and write numbers using digits in a place value chart.</p> <p>Guide pupils to find the missing numbers of a sequence of numbers which are multiples of:</p> <ul style="list-style-type: none"> (i) tens. (ii) hundreds. (iii) thousands. <p>Guide pupils to use non-proportional structured materials to represent the thousands, hundreds, tens and ones in a 4-digit number.</p>	write a numeral for a number in expanded form.
3.1.4 find missing numerals on the number line.	Numerals on a number line	Guide pupils to find missing numerals on a number line.	find the missing numbers on a number line.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
<p>UNIT 3.1 (CONT'D) NUMBERS AND NUMERALS 0 – 10,000</p>	<p>The pupil will be able to:</p> <p>3.1.5 use the symbol > and < correctly to compare two numbers up to 10,000.</p>	<p>Numerals 0 – 10,000. Comparing numbers 100 – 9999 using the symbols > and <</p>	<p>Guide pupils to write numerals for number names up to 1000.</p> <p>Assist pupils to use the place value chart to compare two numbers.</p> <p>Let pupils compare two numbers written in expanded form (orally).</p> <p>Let pupils use the symbols >, < or = to compare two numbers E.g. 1. 438 ... 389 2. 3448 ... 3459</p>	<p>Let pupils:</p> <p>write a numeral for a given number name.</p> <p>compare two numbers using >, < or =.</p>
<p>UNIT 3.2 ADDITION AND SUBTRACTION (SUM UP TO 9999)</p>	<p>3.2.1 use the basic addition facts.</p>	<p>Addition and Subtraction</p>	<p>TLMs: base ten materials.</p> <p>Revise basic addition and subtraction facts.</p> <p>write a given sum using different combinations of 1-digit numbers. E.g. (1) $5 + 2 = 7$ (2) $4 + 3 = 7$ (3) $6 + 1 = 7$</p>	<p>write given sums using different combinations of 1-digit numbers.</p>

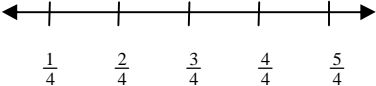
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.2 (CONT'D) ADDITION AND SUBTRACTION (SUM UP TO 9999)	The pupil will be able to: 3.2.2 add numbers up to sums 9,999.	Adding 2, 3 and 4-digit numbers. Expanded and short form.	Guide pupils to add 2-digit numbers involving renaming. E.g. 49 + 37. $\begin{array}{r} 49 \\ + 37 \\ \hline 86 \end{array}$ Guide pupils to add 3-digit numbers involving renaming (carrying) from ones to tens and also from tens to hundreds. E.g. 457 + 364. Guide pupils to add 4-digit numbers using the expanded and short forms. E.g. 4532 + 3246 <u>Expanded Form</u> $\begin{array}{r} 4000 + 500 + 30 + 2 \\ 3000 + 200 + 40 + 6 \\ \hline 7000 + 700 + 70 + 8 \\ = 7778 \end{array}$ <u>Short Form</u> $\begin{array}{r} 4532 \\ + 3246 \\ \hline 7778 \end{array}$	Let pupils: add 2-or 3-digit numbers. add 4-digit numbers using (a) expanded form. (b) short form.

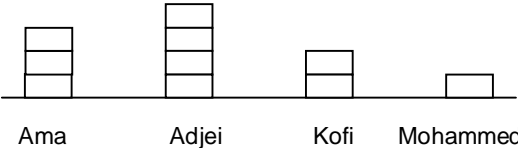
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.2 (CONT'D) ADDITION AND SUBTRACTION (SUM UP TO 9999)	<p>The pupil will be able to:</p> <p>3.2.3 subtract numbers (0 – 9,999).</p> <p>3.2.4 compare two expressions involving addition or subtraction.</p> <p>3.2.5 solve word problems involving addition and subtraction.</p>	<p>Subtracting from 2- to 4-digit numbers using (1) expanded form. (2) short form</p> <p>Comparing two expressions involving addition or subtraction</p> <p>Word Problems and Investigations</p>	<p>Guide pupils to subtract 2-digit numbers from 3- or 4-digit numbers involving regrouping. E.g. $\begin{array}{r} 302 & 415 \\ - 45 & - 135 \\ \hline & \hline \end{array}$</p> <p>Guide pupils to subtract 2-, 3- and 4- from 4-digit numbers using the expanded form and short form.</p> <p>Guide pupils to compare two expressions involving addition or subtraction and insert the symbols <, > or =. E.g. $(16 + 7) > (12 - 6)$. $(34 + 18) = (16 + 36)$.</p> <p>Guide pupils to pose story problems involving addition and subtraction for pupils to solve.</p> <p>Guide pupils to use the numbers 1, 2, 3, ..., 6 without repetition to make the smallest or largest sum of two 2-digit numbers.</p> <p>E.g. the smallest sum of two 2-digit numbers using the digits 0, 1, 2, 3, 4 is</p> $\begin{array}{r} \boxed{1} & \boxed{0} \\ + & \boxed{2} & \boxed{3} \\ \hline & 3 & 3 \end{array}$	<p>Let pupils:</p> <p>subtract 2- to 4-digit numbers using: (1) expanded form. (2) short form.</p> <p>insert >, < or = to compare two expressions involving addition or subtraction.</p> <p>solve story problems involving addition and subtraction up to 4-digit numbers.</p> <p>give investigation tasks as home work.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.3 LENGTH AND AREA	<p>The pupil will be able to:</p> <p>3.3.1 measure distances and lengths (or heights) in metres and centimetres.</p> <p>3.3.2 compare surfaces (regions) of plane shapes.</p>	<p>Measuring lengths</p> <p>Introducing a metre stick as a measure</p> <p>Introducing centimetre as one-hundredth of a metre</p> <p>Measuring distances in metres and centimetres</p> <p>Introducing the symbol “m” for metre and “cm” for the centimetre</p> <p>Introducing the symbol “m” for metre and “cm” for the centimetre</p> <p>Comparing surfaces</p>	<p>TLMs: Metre stick, objects etc.</p> <p>Guide pupils to compare lengths and heights with 1-metre stick.</p> <p>Guide pupils to use the 10-centimetre stick to measure distances or lengths/heights of objects.</p> <p>Guide pupils to find the number of centimeters in a metre.</p> <p>Guide pupils to measure distances in metres and centimetres. E.g. the lengths of the chalkboard.</p> <p>Guide pupils to measure heights of pupils in metres and centimetres.</p> <p>Guide pupils to write the symbol “m” for metre and “cm” for the centimetre.</p> <p>Guide pupils to put one shape on top of another and tell which of two surfaces is larger or smaller.</p> <p>Let pupils order 3 or 4 shapes according to the sizes of the surfaces.</p>	<p>Let pupils:</p> <p>measure and record given lengths, distances or heights in metres and centimetres.</p> <p>identify shapes which have equal surfaces.</p>

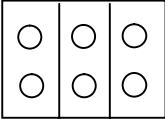
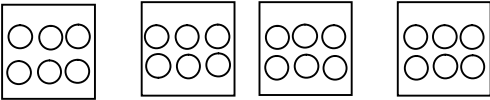
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.3 (CONT'D) LENGTH AND AREA	<p>The pupil will be able to:</p> <p>3.3.3 state that re-arranging the parts of the same shape does not change the size of the surface.</p>	<p>Shapes with equal sides</p>	<p>Guide pupils to cut one of two identical squares into two triangles and rearrange them to form other shapes as shown below.</p> <div style="text-align: center;"> <p>The diagram illustrates the process of rearranging a square. Shape A is a square with a diagonal line from the top-left corner to the bottom-right corner, with the bottom-left triangle shaded black. Shape B is a parallelogram formed by moving the top-right triangle to the right, with the right triangle shaded black. Shape C is a trapezoid formed by moving the top-right triangle to the left, with the right triangle shaded black.</p> </div> <p>Let pupils find out that the size of the surface of the square and the other shapes formed from the square are the same.</p>	<p>Let pupils:</p> <p>match shapes with equal sizes of surface.</p> <p>identify a shape whose surface is larger or smaller than the surface of a given shape.</p>

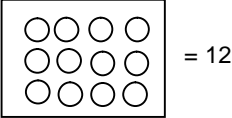
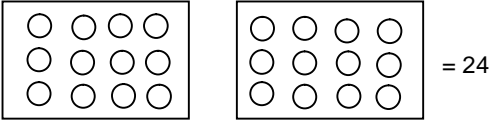
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																
UNIT 3.4 FRACTIONS	The pupil will be able to: 3.4.1 identify one out of eight equal parts as one-eighth.	One-eighth	<p>TLMs: strips of paper fraction chart, Cuisenaire rods fraction cards, countable objects.</p> <p>Revision: Assist pupils to use practical activities like paper folding and fraction charts to revise the fractions $\frac{1}{2}$ and $\frac{1}{4}$</p> <p>Guide pupils to use paper folding, fraction charts, Cuisenaire rods etc. to guide pupils to identify one out of eight equal parts as one-eighth.</p> <p>Assist pupils to group countable objects into eight equal parts and identify one part as one-eighth.</p> <p>Guide pupils to divide two or more wholes (up to five) to find the number of eighths in two or more wholes E.g., using paper folding 16 eighths are obtained in two wholes as shown below.</p> <table border="1" data-bbox="1480 847 1738 999" style="margin-left: auto; margin-right: auto;"> <tr> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> </tr> <tr> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> </tr> </table> <table border="1" data-bbox="1193 1026 1451 1177" style="margin-left: auto; margin-right: auto;"> <tr> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> </tr> <tr> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> </tr> </table>	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	Let pupils: find one-eighth out of eight equal parts. find the number of eighths in a given number of wholes.
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$																	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$																	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$																	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$																	

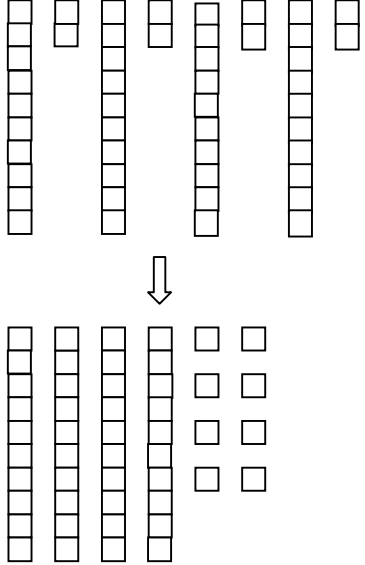
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.4 (CONT'D) FRACTIONS	<p>The pupil will be able to:</p> <p>3.4.2 identify and write the symbol for one-eighth $\left(\frac{1}{8}\right)$</p> <p>3.4.3 identify and write symbols for multiples of half, fourth and eighth.</p> <p>3.4.5 identify and write the fractions one-third and one-sixth.</p> <p>3.4.6 compare two like fractions.</p>	<p>The symbol for one-eighth</p> <p>Multiples of half, fourth and eighth</p> <p>One-third and one-sixth</p> <p>Comparing like fractions (fractions with the same denominator)</p>	<p>Guide pupils to use materials to illustrate one-eighth, write the symbol $\frac{1}{8}$ for one eighth.</p> <p>Guide pupils to find that the 8 (denominator) in $\frac{1}{8}$ represents the number of divisions of the whole and the 1 (numerator) represents the number of parts under consideration.</p> <p>Assist pupils to use paper folding and shading and let pupils identify multiples of half, fourth and eighth and write their symbols E.g. $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, etc.</p> <p>Guide pupils to locate multiples of half, fourth and eighth on the number line. E.g.</p>  <p>Guide pupils to use materials to divide a whole into three equal parts, identify one-third and write its symbols. E.g. folding strip of paper into three equal parts and Guide pupils to shade one part to show $\frac{1}{3}$ or divide a group of countable objects into three equal parts and picking one.</p> <p>Guide pupils to divide objects into six equal parts and identify one part as one-sixth and write its symbol.</p> <p>Guide pupils to compare fractions with the same denominator (not greater than 8), using</p> <ol style="list-style-type: none"> (i) paper folding. (ii) Cuisenaire rods (iii) the number line (iv) fraction chart. 	<p>Let pupils:</p> <p>write the symbol for one part out of eight equal parts of a whole.</p> <p>write the symbol for one shaded part out of a shape divided into three or six parts.</p> <p>compare like fractions using the symbol < and > to make a sentence true. E.g. $\frac{5}{8} > \frac{3}{8}$</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.5 COLLECTING AND HANDLING DATA	<p>The pupil will be able to:</p> <p>3.5.1 collect data and record the results.</p> <p>3.5.2 represent data as simple block graph.</p>	<p>Collecting and recording data</p> <p>Block graph</p>	<p>Let pupils collect data in the school environment and perform various activities involving</p> <p>(a) counting. (b) measuring.</p> <p>E.g. counting the number of textbooks for each subject, day of the week each pupil was born, number of pupils in each class, measuring heights, capacities of containers.</p> <p>Perform experiments like throwing the die.</p> <p>Guide pupils to draw squares as block graphs to represent data collected. E.g.</p>  <p>The block graph represents the number of books Ama, Adjei, Kofi and Mohammed have.</p> <p>Assist pupils to do a project involving collecting data and representing as block graph..</p> <p>Encourage pupils to ensure accuracy in recording data.</p>	<p>Let pupils:</p> <p>record the number of pupils who attend classes for a given period of time.</p> <p>collect data in the school and record the results.</p> <p>collect data and represent it as block graph.</p>

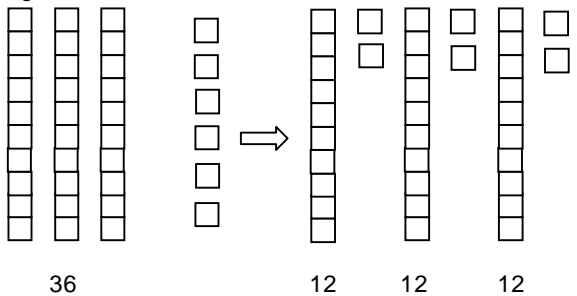
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION								
UNIT 3.6 ESTIMATING AND MEASURING CAPACITY AND WEIGHT	<p>The pupil will be able to:</p> <p>3.6.1 estimate and measure the capacities of containers in litres.</p>	Capacity	<p>TLMs: Containers of different sizes, 1-litre bottle (Fanta and Coca-Cola bottles, improvised 1 litre container, etc), Water and beam balance</p> <p>Revision: Assist pupils to compare the capacities of containers with a litre.</p> <p>Guide pupils to estimate and verify by measuring the capacities of containers in litres by filling the containers with water from the litre container, to find the number of times the litre container fills that container to the brim.</p> <p>Some of the containers to measure are; paint buckets, mineral water bottles, washing bowls, etc. Use the table below for the recording</p> <table border="1" data-bbox="1187 683 1738 901"> <thead> <tr> <th>Container</th> <th>Estimate</th> <th>Measurement</th> <th>Difference</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Container	Estimate	Measurement	Difference					<p>Let pupils:</p> <p>measure the capacities of containers in litres and record the results.</p>
	Container	Estimate	Measurement	Difference								
<p>3.6.2 estimate and measure the weights of objects.</p>	Estimating and measuring weights	<p>Measure in kilograms.</p> <p>Let pupils to estimate weights of objects and measure to verify using beam balance or scale balance.</p> <p>Guide pupils to record their results using the table below.</p> <table border="1" data-bbox="1187 1145 1738 1391"> <thead> <tr> <th>Object</th> <th>Estimate</th> <th>Measurement</th> <th>Difference</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Object	Estimate	Measurement	Difference					<p>measure the weights of given objects in kilograms and record results using a table.</p>	
Object	Estimate	Measurement	Difference									

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
<p>UNIT 3.6 (CONT'D) ESTIMATING AND MEASURING CAPACITY AND WEIGHT</p> <p>UNIT 3.7 MULTIPLICATION OF NUMBERS</p>	<p>The pupils will be able to:</p> <p>3.6.3 compare weights of objects using the symbols < or >.</p> <p>3.6.4 find the total weights of two or three objects.</p> <p>3.7.1 show that the product of three numbers does not change if the factors in the multiplication sentence is regrouped.</p>	<p>Comparing weights</p> <p>Finding the total weights of objects</p> <p>Regrouping property of multiplication</p>	<p>Guide students to weigh common household items such as vegetables using scale balance</p> <p>Guide pupils to weigh 2 objects and compare pupils by using the symbol < or >.</p> <p>Guide pupils to weigh two or three objects on the scale and find their sum in kilograms</p> <p>TLMs: countable objects such as bottle tops, seeds, beads, marbles, etc.</p> <p>Revision: Using countable objects help pupils to revise the commutative (order) property of multiplication involving two factors E.g. $3 \times 5 = 5 \times 3$.</p> <p>Guide pupils to perform practical activities using countable objects like bottle tops to show that the product of three numbers does not change when the factors are regrouped (1-digit factors only).</p> <p>E.g. $4 \times (3 \times 2) = (4 \times 3) \times 2$</p> <p>(i) Make an array of 3 groups of 2 objects giving altogether 6 objects.</p>  <p>(ii) Make an array of 4 by 6 objects.</p>  <p>count to find the result i.e. 24</p> <p>(iii) regroup the factors for pupils to find the results by following the same procedure i.e. $2 \times (3 \times 4)$.</p>	<p>Let pupils:</p> <p>compare weights of deferent objects using scale balance</p> <p>find the total weight of two or three objects.</p> <p>use the order property to complete multiplication sentences.</p> <p>complete multiplication sentences by re-grouping factors.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.7 (CONT'D) MULTIPLICATION OF NUMBERS	<p>The pupil will be able to:</p> <p>3.7.2 find the product of three 1-digit numbers up to product of 36.</p>	<p>Multiplying three 1-digit numbers.</p>	<p>Guide pupils to make an array of 3 x 4 objects.</p>  <p>Guide pupils to make an array of 2 groups of 12 objects 2 x (3 x 4)</p>  <p>$2 \times (3 \times 4) = 24$</p> <p>using regrouping in a multiplication sentence.</p> <p>Assist pupils to multiply three 1-digit numbers</p> <p>E.g. $3 \times 5 \times 2 = (3 \times 5) \times 2$ or $3 \times (5 \times 2)$ $= 15 \times 2$ $= 3 \times 10$ $= 30$ $= 30$</p> <p>using regrouping, help pupils to compare two multiplication sentences involving three 1-digit numbers.</p> <p>E.g. $(2 \times 4) \times 3 = 2 \times (4 \times 3)$ $8 \times 3 = 2 \times 12$ $24 = 24$</p>	<p>Let pupils:</p> <p>complete multiplication sentence involving three 1-digit numbers by regrouping the factors. E.g. $3 \times 4 \times 5$</p> <p>multiply three 1-digit numbers.</p> <p>find the number in <input type="text"/></p> <p>$(3 \times 4) \times 5 = 3 \times (\text{ } \times 5)$</p>


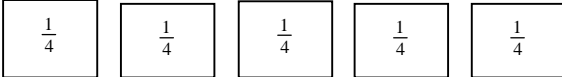
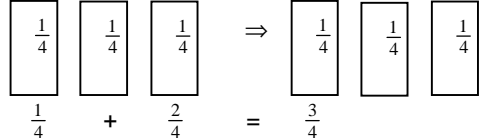
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.7 (CONT'D) MULTIPLICATION OF NUMBERS	<p>The pupil will be able to:</p> <p>3.7.3 find missing factors in multiplication sentences involving three 1-digit numbers.</p> <p>3.7.4 multiply 2-digit numbers by a 1-digit number without renaming/regrouping.</p>	<p>Missing factors in multiplication sentences involving three 1-digit numbers</p> <p>Multiplying a 2-digit number by a 1-digit number</p>	<p>Guide pupils to find missing factors in multiplication sentences involving three 1-digit numbers together with the product.</p> <p>E.g. $4 \times 2 \times \square = 24$</p> <p>Guide pupils to represent 2-digit numbers as groups of tens and ones using base ten materials such as dienes and bundle of sticks.</p> <p>use countable objects such as dienes blocks to illustrate multiplication of 2-digit numbers by 1-digit number.</p> <p>E.g. 4×12 means 4 groups of 12 objects.</p>  <p>4 tens and 8 one = 48 This means $4 \times 12 = 48$</p>	<p>Let pupils:</p> <p>find missing factors in multiplication sentences involving three 1-digit numbers.</p> <p>multiply 2-digit numbers by 1-digit numbers horizontally E.g. 23×3</p>

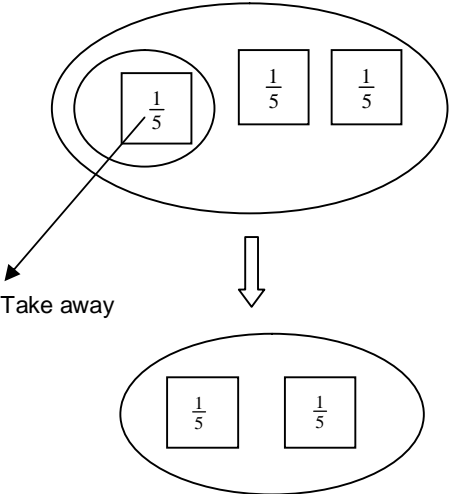
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.7 (CONT'D) MULTIPLICATION OF NUMBERS	<p>The pupil will be able to:</p> <p>3.7.5 use the symbols =, < and> to compare two multiplication sentences.</p> <p>3.7.6 solve simple word problems involving multiplication up to three factors.</p>	<p>Comparing two multiplication sentences</p> <p>Word problems involving multiplication</p>	<p>Guide pupils to multiply vertically E.g. $\begin{array}{r} 12 \\ \times 4 \\ \hline 48 \end{array}$</p> <p>Guide pupils to write two multiplication sentences and by inserting one of the symbols =, < or >.</p> <p>E.g. (i) $5 \times 7 \dots 4 \times 10$ $5 \times 7 < 4 \times 10$.</p> <p>(ii) $4 \times 3 \times 3 \dots 9 \times 3$ $4 \times 3 \times 3 > 9 \times 3$.</p> <p>Guide pupils to pose word problems involving multiplication of two 1-digit and three 1-digit factors for pupils to solve.</p>	<p>Let pupils:</p> <p>multiply 2-digit number by 1-digit number vertically.</p> <p>E.g. $\begin{array}{r} 18 \\ \times 4 \\ \hline \end{array}$</p> <p>use the appropriate symbol (=, < or >) to compare two multiplication sentences.</p> <p>solve problems involving multiplication of two and three 1-digit numbers.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.8 DIVISION	<p>The pupil will be able to:</p> <p>3.8.1 build basic division facts up to product 36.</p>	<p>Basic division facts (dividing 2-digit number by a divisor not more than 5</p>	<p>TLMs: multi-base blocks Revision: Lead pupils to solve problems involving division up to the product 18.</p> <p>Guide pupils to use structured base ten materials such as dienes blocks to illustrate division of 2-digit number by a number not more than 5 E.g. $36 \div 3$.</p>  <p style="text-align: center;">36 12 12 12</p> <p>This means that $36 \div 3 = 12$</p> <p>Use the basic division facts to divide two digit numbers up to 36 by divisors not more than 5.</p>	<p>Let pupils:</p> <p>divide 2-digit numbers by 1-digit number.</p> <p>divide two digit numbers by divisors up to five.</p>
	<p>3.8.2 find missing factors in division sentences.</p>	<p>Missing factors</p>	<p>use division facts to find missing factors in division sentences. E.g. $28 \div \square = 7$ $\square \times 7 = 28$ $4 \times 7 = 28$</p> <p>Therefore $\square = 4$</p>	<p>find missing factors in division sentences.</p>
	<p>3.8.3 show that the result of dividing any number by one (1) is that number.</p>	<p>Dividing by 1</p>	<p>Guide pupils to use activities to discover that any number divided by 1 gives the same number. E.g. $12 \div 1 = 12$</p>	<p>divide 1- or 2-digit numbers by 1.</p>
	<p>3.8.4 use the symbols =, < or > to complete two division sentences.</p>	<p>Comparing division sentences</p>	<p>Guide pupils to compare two division sentences by using the symbols =, < or >.</p>	<p>use the appropriate symbol =, < or > to compare two division sentences.</p>
	<p>3.8.5 solve simple word problems involving division.</p>	<p>Word problems involving division</p>	<p>Pose word problems involving division of 2-digit numbers by a divisor not more than 5 for pupils to solve.</p>	<p>solve word problems involving division of a 2-digit number by a divisor not more than 5.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.9 PLANE SHAPES	<p>The pupil will be able to:</p> <p>3.9.1 draw plane shapes from cut-out and solid shapes.</p> <p>3.9.2 identify corners of rectangles/squares as right-angles.</p> <p>3.9.3 identify equal line segments of rectangles.</p>	<p>Drawing Plane Shapes</p> <p>Corners (angles) of plane shapes</p> <p>Equal line segment of rectangles</p>	<p>TLMs: Solid objects, Cut-out shapes (circles, triangles and rectangles)</p> <p>Revise the names of plane shapes.</p> <p>Guide pupils to draw and name plane shapes such as circles, triangles, rectangles from cut-out shapes and objects such as milo tins, milk tins, pepsodent containers, etc.</p> <p>Help pupils to identify corners of plane shapes as angles using cut-out shapes.</p> <p>Help pupils to identify corners (angles) from real objects like the corners of room, blackboard, tables, books, etc.</p> <p>Help pupils to classify plane shapes by type of corners and identify the corners of rectangles/squares as right-angles.</p> <p>Guide pupils to examine plane shapes and find the number of right-angles.</p> <p>Let pupils identify plane shapes with four right-angles as rectangles and squares.</p> <p>Let pupils identify line segments of plane shape.</p> <p>Let pupils observe rectangles and identify the equal line segments.</p> <p>Let pupils to name the longer lines as length and the shorter lines as breadth.</p>	<p>Let pupils</p> <p>draw given plane shapes and name them.</p> <p>identify and name plane shapes with right-angles.</p> <p>draw right-angles from different position.</p> <p>describe the properties of a rectangle/square.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.10 MEASUREMENT OF TIME AND MONEY	<p>The pupil will be able to:</p> <p>3.10.1 tell time in minutes.</p> <p>3.10.2 estimate and measure time in minutes.</p> <p>3.10.3 tell time in hours and minutes.</p> <p>3.10.4 read the calendar and dates.</p> <p>3.10.5 use currency notes and coins up to GH¢50 in a play shop.</p>	<p>Measuring time in minutes</p> <p>Estimating and measuring time in minutes</p> <p>Tell the time in hours and minutes</p> <p>Reading calendar and dates</p> <p>Using coins and notes up to GH¢50</p> <p>Giving and checking change</p>	<p>TLMs: miniature clock or real clock, token notes and coins.</p> <p>Assist pupils to read time in hours and find the duration between two times. E.g. from 8 o'clock to 10 o'clock is 2 hours.</p> <p>Assist pupils to measure the time in minutes by reading the clock.</p> <p>Guide pupils to estimate and verify by measuring time in minutes. E.g. the time a pupil takes to walk to the office, the time a pupil takes to write a sentence, time a pupil takes to read a passage, etc.</p> <p>Let pupils read time in hours, half-hour and quarter hour using the clock. E.g. half past ten, or 11.15, quarter to six, etc. Read the clock by the hour and minutes. E.g. 10.30, 4.20, etc.</p> <p>Assist pupils to read dates from the calendar.</p> <p>Let pupils tell their dates of birth and mark their birthdays on the calendar.</p> <p>Let pupils find the number of hours in a day, number of days in a week and number of weeks in a month.</p> <p>Let pupils use token notes and coins in a play shop. The total sum of each buying and selling should not be more than GH¢50.</p> <p>Guide pupils to give and check change given.</p>	<p>Let pupils:</p> <p>calculate the duration between two times in minutes.</p> <p>Show and read given time in hours and minutes on the clock.</p> <p>tell dates of special days in Ghana. E.g. Independence.</p> <p>express time in a given unit in another unit E.g. How many days are in two weeks?</p> <p>find the change when the money given is more than the cost of item bought.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
<p>UNIT 3.10 (CONT'D) MEASUREMENT OF TIME AND MONEY</p> <p>UNIT 3.11 FRACTION II</p>	<p>The pupil will be able to:</p> <p>3.10.6 find the total cost of two or more items.</p> <p>3.11.1 write multiples of fractions and locate pupils on the number line.</p> <p>3.11.2 add like fractions.</p>	<p>Total cost of two or more items</p> <p>Locating multiples of fractions on the number line</p> <p>Addition of fractions with the same denominator (like fractions)</p>	<p>Let pupils find the total cost of two or more items from a corner shop or school canteen.</p> <p>TLM: strips of paper, Cuisenaire rods, etc.</p> <p>Guide pupils to write multiples of $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{6}$ and $\frac{1}{8}$</p> <p>Lead pupils to locate multiples of fractions ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{6}$ and $\frac{1}{8}$) on the number line.</p> <p>E.g. </p> <p>using Cuisenaire rods or paper cutting guide pupils to add fractions which have the same denominator.</p> <p>E.g. $\frac{1}{4} + \frac{2}{4}$</p> <p>(i) cut or tear strips of paper into fourth and label them as such.</p> <p></p> <p>(ii) represent $\frac{3}{4} + \frac{2}{4}$ by fraction paper.</p> <p>i.e. </p> <p>Help pupils to express their answers verbally in a meaningful way E.g. Ask pupils; the sum of one-quarter and two quarters gives <u>how many quarters?</u> Response: <u>Three quarters</u></p>	<p>Let pupils:</p> <p>find the cost of two or more items</p> <p>locate multiples of given fractions whose denominator is not more than 8 on the number line.</p> <p>add two like fractions.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3.11 (CONT'D) FRACTION II	The pupil will be able to: 3.11.3 subtract two like fractions.	Subtraction of fractions	Assist pupils to use Cuisenaire rods and paper cutting/folding to subtract fractions with the same denominator E.g. $\frac{3}{5} - \frac{1}{5}$  <p style="text-align: center;">i.e. $\frac{3}{5} - \frac{1}{5} = \frac{2}{5}$</p>	Let pupils: subtract two like fractions.

PRIMARY 4

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4.1 SHAPE AND SPACE I	The pupil will be able to: 4.1.1 identify a point, a line and a vertex.	Points, Lines, Vertices	Guide pupils to identify a point by using real objects such as the tip of a pen, pencil, stars in the atmosphere in the night. Assist pupils to identify lines from sides (edges) of real objects like tables, books, and cut-out shapes. Assist pupils to make points and join to a vertex.	Let pupils: Points from real life objects.
	4.1.2 identify points of intersection of lines.	Intersection of Lines Intersecting Planes	Guide pupils to draw intersecting lines and help pupils to identify the points of intersection. Using real object count the number of vertices of real object. Assist pupils to identify the intersection of plane shapes as edges. Identify the point of intersection of two or more edges of plane shapes as vertices. Using real objects, guide pupils to count the number of vertices of a given real object/solid shape.	mark points of intersection of lines.
	4.1.3 show that only one line can be drawn through any two given points.	Straight Lines	Guide pupils to mark two points and draw a line through them and find out the number of lines that can be drawn between them.	draw a line joining any two given points.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4.2 NUMBERS AND NUMERALS 0 - 100,000	<p>The pupil will be able to:</p> <p>4.2.1 count objects in ten thousands.</p> <p>4.2.2 state the place-values of digits in numbers 0 – 100,000.</p> <p>4.2.3 write the multiples of one thousand and ten thousand up to 100,000.</p> <p>4.2.4 write numerals for number names up to ten thousand.</p> <p>4.2.5 compare numbers up to 100,000 using the symbols $>$, $<$, $=$</p>	<p>Counting in ten thousands</p> <p>Place-value of 4- or 5-digit numerals</p> <p>Multiplying thousands and ten thousands up to 100,000</p> <p>Reading and writing numerals for number names up to 10,000</p> <p>Comparing two numbers up to 100,000</p> <p>Write number names up to 1000</p>	<p>TLMs: abacus, colour-coded, counters and base ten blocks.</p> <p>Let pupils find the number of thousands in ten thousand.</p> <p>Assist pupils to use non-proportional structured materials to count in thousands and in ten thousands E.g. abacus and colour-coded counters to count in (a) thousands (b) ten thousands.</p> <p>Let pupils find the place-value of a digit in a 4- or 5-digit numeral.</p> <p>Let pupils read and write a numeral using digits in a place-value chart.</p> <p>Guide pupils to find multiples of (a) thousand and (b) ten thousand using abacus and colour-coded counters up to 100,000.</p> <p>Let pupils find missing numerals on a number line.</p> <p>Let pupils write numerals for number names up to ten thousand using number cards, numeral cards, number/numeral chart.</p> <p>Let pupils use the place-value chart to compare two numbers.</p> <p>Let pupils compare two numbers written in the expanded form using the symbols $=$, $>$, or $<$.</p> <p>Let pupils write number names for numerals up to 1000. E.g. 345 is three hundred and forty-five.</p>	<p>Let pupils:</p> <p>complete a sequence of numbers in thousands and ten thousands. E.g. 5000, 6000, ..., ..., 9000.</p> <p>find the value of a digit in a given 4- or 5-digit numeral.</p> <p>find missing numerals on a number line.</p> <p>write number names for given numerals up to 1000.</p>

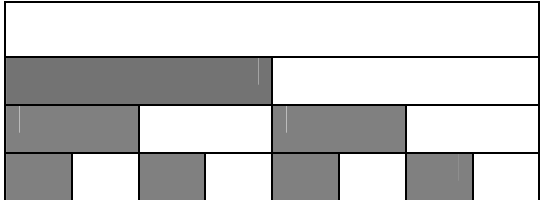
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4.3 INVESTIGATIONS WITH NUMBERS	<p>The pupil will be able to:</p> <p>4.3.1 use properties of basic operations.</p> <p>4.3.2 use basic operation to write number sentences.</p>	<p>Properties of Operations</p> <p>Number Combinations</p>	<p>TLMs: bottle tops, pebbles, shells, etc.</p> <p>Let pupils find missing operations in number sentences E.g. (a) $3 \times 5 = 5 \square 3$ (b) $2 \square (3 \square 5) = (2 \times 3) + (2 + 5)$.</p> <p>Assist pupils to use the commutative property of operations to find a number which completes a number sentence.</p> <p>E.g. $3 + 4 = 4 + \square$ $6 \times \square = 5 \times 6$</p> <p>Guide pupils to determine the property of operation which is used in a number sentence..</p> <p>E.g. (a) $3 + 4 = 4 + 3$ $4 \times n = 6 \times 4$, n is.....</p> <p>In this example n = 6 using the commutative (order) property.</p> <p>(b) let pupils use properties of operations to find out whether a mathematical sentence is true or false.</p> <p>(i) $(4 + 5) \times 2 = (4 \times 2) + (5 \times 2)$ is true. (ii) $(3 \times 2) + 5 = (3 + 5) \times 2$ is false.</p> <p>use only addition with some given numbers to make a given sum. E.g. different ways of filling a 17 litre bottle with a 2 litre, 5 litre and 8 litre bottles. i.e. $17 = (2 + 2 + 5 + 8)$ litres $17 = (2 + 5 + 5 + 5)$ litres, etc.</p> <p>use two or more operations with 1-digit numbers to make given sums E.g. $15 = (2 + 3) \times 3$ $15 = 3 \times (7 - 4) + 6$</p> <p>find combinations of three numbers that will add up to a given sum from the list of numbers 1,2,3,...9 E.g. $8 = 1 + 3 + 4$ $8 = 1 + 2 + 5$ $15 = 4 + 5 + 6$, etc.</p>	<p>Let pupils:</p> <p>complete given number sentences by putting operations into number sentences to make them true.</p> <p>write different number sentences for a given number with one or more operations.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																								
UNIT 4.3 (CONT'D) INVESTIGATIONS WITH NUMBERS	<p>The pupil will be able to:</p> <p>4.3.3 write numbers that can be divided by 2 and those that cannot.</p>	<p>Even and Odd Numbers</p>	<p>Guide pupils to use counters such as bottle tops, pebbles or shells to find numbers that can be grouped in twos and those that cannot.</p> <p>1. ○</p> <p>no group (not possible)</p> <p>2. ○ ○</p> <p>one group (possible)</p> <p>3. ○ ○ ○ ○</p> <p> ○ ○ ○</p> <p>one group and one two groups (possible) etc more (not possible)</p> <p>sort numbers that can be grouped in twos and name these as even numbers.</p> <p>sort numbers that cannot be grouped in twos and name them as odd numbers.</p> <p>let pupils write numbers 1 – 100 in a 10 x 10 grid and shade/colour even numbers and odd numbers differently.</p> <p>list end digits of both even and odd numbers separately.</p> <table border="1" data-bbox="1328 1061 1753 1174"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td></tr> </table>	1	2	3	4	5	6	11	12	13	14	15	16	21	22	23	24	25	26	31	32	33	34	35	36	<p>Let pupils:</p> <p>find even or odd numbers in a list of numbers.</p> <p>write even or odd numbers from numbers 1 to 100.</p>
1	2	3	4	5	6																							
11	12	13	14	15	16																							
21	22	23	24	25	26																							
31	32	33	34	35	36																							

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																														
UNIT 4.4 ADDITION AND SUBTRACTION (SUM UP TO 100,000)	<p>The pupil will be able to:</p> <p>4.4.1 add 4-, 5-digit numbers with sums less than 100,000.</p> <p>4.4.2 subtract 4-digit numbers and 5-digit number</p> <p>4.4.3 solve word problems involving addition and subtraction.</p>	<p>Adding 4- or 5-digit numbers up to sum 99,999</p> <p>Subtracting 4- or 5-digit numbers</p> <p>Word problems involving Addition and Subtraction</p>	<p>TLMs: place value chart.</p> <p>Let pupils revise basic addition and subtraction facts.</p> <p>Let pupils revise addition of 2-, 3- and 4-digit numbers.</p> <p>Assist pupils to use the place value chart to add 4-, and 5-digit numbers. E.g.</p> <table border="1" data-bbox="1249 523 1653 810"> <thead> <tr> <th>Tth</th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>4</td> <td>8</td> <td>5</td> <td>7</td> </tr> <tr> <td>+ 4</td> <td>7</td> <td>1</td> <td>9</td> <td>3</td> </tr> <tr> <td colspan="5"><hr/></td> </tr> <tr> <td>7</td> <td>11</td> <td>9</td> <td>14</td> <td>10</td> </tr> <tr> <td>8</td> <td>2</td> <td>0</td> <td>5</td> <td>0</td> </tr> </tbody> </table> <p>Guide pupils to add 4-, and 5 digit numbers using the short form.</p> <p>Subtract from 4 or 5-digit numbers using (a) place-value chart (b) short form</p> <p>Pose a word problem involving addition and subtraction of 4 and 5-digit numbers for pupils to solve.</p>	Tth	Th	H	T	O	3	4	8	5	7	+ 4	7	1	9	3	<hr/>					7	11	9	14	10	8	2	0	5	0	<p>Let pupils:</p> <p>add 5-digit numbers using (a) place value chart (b) short form.</p> <p>Subtract from 5-digit numbers using (a) place-value chart (b) short form.</p> <p>Solve word problems involving subtraction up to 5-digit numbers.</p>
Tth	Th	H	T	O																														
3	4	8	5	7																														
+ 4	7	1	9	3																														
<hr/>																																		
7	11	9	14	10																														
8	2	0	5	0																														

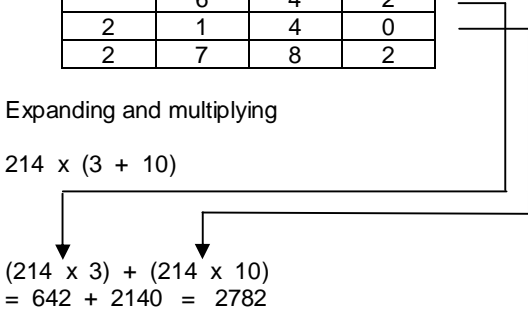
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4.5 MEASUREMENT OF MASS/WEIGHT AND TIME	<p>The pupil will be able to:</p> <p>4.5.1 measure and record the mass of an object in kilograms and grams.</p> <p>4.5.2 find the total mass of 2 or 3 objects.</p>	<p>Mass/Weight</p> <p>Measuring mass to the nearest 100 grams</p> <p>Total mass of 2 or 3 objects in kilograms and grams</p>	<p>TLMs: smaller sand/seed bags of masses 500 grams, 200 grams and 100 grams, clock, digital watch/clock.</p> <p>Let pupils compare the 1 kilogram sand/seed bag with the smaller sand/seed bags to determine the number of grams in a kilogram using a simple balance.</p> <p>i.e. 1000 gms = 1kg</p> <p>Introduce the smaller sand/seed bags of masses 500 grams, 200 grams and 100 grams and assist pupils to measure and record the mass of an object in kilograms and grams (to the nearest 100 grams).</p> <p>Let pupils estimate the mass of an object and verify it by measuring.</p> <p>Put pupils in groups and let pupils measure the masses of 2 or 3 objects using a simple balance/beam balance and find the sum. [Encourage pupils to co-operate with each other while working]</p> <p>Let pupils record the masses of objects from the label and add them.</p>	<p>Let pupils:</p> <p>find the number of grams in a kilogram and vice versa.</p> <p>find the mass of a given object in kilograms and grams.</p> <p>add the masses of 2 or 3 objects.</p> <p>find the duration of an event.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION						
<p>UNIT 4.5 (CONT'D) MEASUREMENT OF MASS/WEIGHT AND TIME</p>	<p>The pupil will be able to:</p> <p>4.5.3 estimate the time an event takes in minutes.</p> <p>4.5.4 find the duration between two given times in hours and minutes.</p> <p>4.5.5 relate the various time units to each other.</p>	<p>Estimating and measuring time in minutes</p> <p>Calculating the duration between two given times</p> <p>The relationship between the various time units</p>	<p>Revision: Help pupils to revise reading the clock by the hour and minute hands.</p> <p>Guide pupils to estimate the duration of an event in minutes and verify by measuring with ordinary or digital clock/watch.</p> <p>Let groups record their result in a table as shown below</p> <table border="1" data-bbox="1211 483 1749 675"> <thead> <tr> <th data-bbox="1211 483 1361 555">EVENT</th> <th data-bbox="1361 483 1561 555">ESTIMATED DURATION</th> <th data-bbox="1561 483 1749 555">MEASURED DURATION</th> </tr> </thead> <tbody> <tr> <td data-bbox="1211 555 1361 675"></td> <td data-bbox="1361 555 1561 675"></td> <td data-bbox="1561 555 1749 675"></td> </tr> </tbody> </table> <p>[Encourage pupils to be time conscious and punctual in their activities].</p> <p>Allow members in the group to estimate the duration before timing the event or activity.</p> <p>The activities should include reading a passage, writing a passage, walking to the office and back, running around the school field, etc.</p> <p>Let pupils find the duration between two given times in hours and minutes.</p> <p>Change the time in a given unit to another E.g. how many days are in two weeks?</p>	EVENT	ESTIMATED DURATION	MEASURED DURATION				<p>Let pupils:</p> <p>find how many minutes it takes to complete an activity.</p> <p>find the duration between two times in hours and minutes.</p> <p>Change the time in a given unit to another E.g. how many days are in two weeks?</p>
EVENT	ESTIMATED DURATION	MEASURED DURATION								

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
<p>UNIT 4.5 (CONT'D) MEASUREMENT OF MASS/WEIGHT AND TIME)</p> <p>UNIT 4.6 FRACTIONS I</p>	<p>The pupil will be able to:</p> <p>4.5.6 write the date and time.</p> <p>4.6.1 write different names for a fraction.</p>	<p>Writing date and time</p> <p>Equal Fractions</p>	<p>Assist pupils to write the date in different forms. E.g. 02/05/07, 17-05-2007, Monday, 02 April 2007, 2 – Apr – 07 [Writing the time E.g. 9.30 a.m. (i.e. on a 12-hour clock)].</p> <p>TLMs: paper cut-out/A4 paper, fraction chart.</p> <p>Revision: revise the representation of whole numbers on the number line.</p> <p>Guide pupils to find fractions that represent the same part of a given whole E.g. using</p> <p>(a) paper folding. (b) fraction chart/board. (c) number line.</p> <p>Fraction chart</p>  <p>from the chart one-half is the same as two one-fourths $= \frac{2}{4}$ and four one-eighths $= \frac{4}{8}$</p> <p>Guide pupils to use cut-out shapes, paper folding activities and fraction chart to find a third.</p> <p>Let pupils find the name for two equal fractions.</p>	<p>Let pupils:</p> <p>write and record date for given days.</p> <p>write three different names for a given fraction.</p> <p>find the number of a certain fraction that can be obtained from a given fraction.</p> <p>identify equal fractions from a given list.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4.6 (CONT'D) FRACTIONS I	<p>The pupil will be able to:</p> <p>4.6.2 compare unit fractions and order fractions in ascending and descending order.</p> <p>4.6.3 add and subtract fractions with different denominators.</p>	<p>Comparing Fractions</p> <p>Ordering fractions in ascending or descending order</p> <p>Addition and subtraction of fractions.</p> <p>Changing fractions into similar units.</p>	<p>Guide pupils to use the paper folding, fraction chart and number line to compare two unit fractions and use the symbols > or < to compare them. E.g. $\frac{1}{2} > \frac{1}{3}, \frac{1}{4} < \frac{1}{2}$</p> <p>Guide pupils to order 3, 4 or 5 unit fractions in ascending or descending order.</p> <p>Revision: Guide pupils to revise the addition and subtraction of two like fractions using paper folding, fraction chart and shading plane shapes.</p> <p>Let pupils add and subtract fractions by changing them into similar units (i.e. by first changing them to fractions of the same denominator).</p> <p>Let pupils write different names for fractions with the same denominator for the fractions $\frac{1}{2}$ and $\frac{1}{3}$ i.e. $\frac{1}{2} = \frac{3}{6}$ and $\frac{1}{3} = \frac{2}{6}$</p> <p>So $\frac{1}{2} - \frac{1}{3} = \frac{3}{6} - \frac{2}{6} = \frac{1}{6}$ and $\frac{1}{2} + \frac{1}{3} = \frac{3}{6} + \frac{2}{6} = \frac{5}{6}$</p>	<p>Let pupils:</p> <p>compare and order three given unit fractions in ascending and descending order.</p> <p>add or subtract two given fractions with different denominators.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																				
UNIT 4.7 MULTIPLICATION	<p>The pupil will be able to:</p> <p>4.7.1 build multiplication facts up to product 100 and factors up to 10.</p> <p>4.7.2 multiply 2- or 3-digit numbers by 1-digit number with regrouping.</p>	<p>Multiplication facts up to 100</p> <p>Multiplication of 2- or 3-digit numbers by 1-digit number</p> <p>Building 10 times table</p>	<p>TLMs: bottle tops, paper with array of dots, place value chart.</p> <p>Guide pupils to build multiplication facts up to product 100 using factors up to 10. (i.e. 2, 3, 4, 5, 6, 7, 8, 9 and 10).</p> <p>Guide pupils to make groups of objects/array of dots to build multiplication facts up to 100 (Pupils should do this in smaller groups).</p> <p>Guide pupils to use objects to illustrate multiplication of 3-digit numbers by a 1-digit number.</p> <p>Guide pupils to use the place-value chart to multiply 2- or 3-digit numbers by a 1-digit number.</p> <p>E.g. 236×4 is</p> <table border="1" data-bbox="1256 746 1541 1023"> <tr> <td></td> <td>H</td> <td>T</td> <td>O</td> </tr> <tr> <td></td> <td>2</td> <td>3</td> <td>6</td> </tr> <tr> <td>X</td> <td></td> <td></td> <td>4</td> </tr> <tr> <td></td> <td>8</td> <td>12</td> <td>24</td> </tr> <tr> <td></td> <td>9</td> <td>4</td> <td>4</td> </tr> </table> <p>Guide pupils to use the short form to multiply 2- or 3-digit numbers by a 1-digit number.</p> <p>Guide pupils to build 10 times table.</p> <p>Pupils find out that the product of any number and ten is the number and an extra zero.</p> <p>E.g. $28 \times 10 = 280$</p>		H	T	O		2	3	6	X			4		8	12	24		9	4	4	<p>Let pupils:</p> <p>Find the products of two numbers up to 100.</p> <p>complete number sentences which involve multiplication by 2, 3, 4, 5, 6, 7, 8, 9 and 10.</p> <p>multiplying a 2-digit or 3-digit number by a 1-digit number.</p> <p>find the product of any number and 10.</p>
	H	T	O																					
	2	3	6																					
X			4																					
	8	12	24																					
	9	4	4																					

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																								
UNIT 4.7 (CONT'D) MULTIPLICATION	<p>The pupil will be able to:</p> <p>4.7.3 multiply 2- and 3-digit number by multiples of 10 up to 100.</p> <p>4.7.4 multiply 2- or 3-digit numbers by 2-digit numbers.</p> <p>4.7.5 solve word problems on multiplication.</p>	<p>Multiplying 2-, 3-digit numbers by multiples of 10</p> <p>Multiplying 2- or 3-digit numbers by 2-digit numbers</p> <p>Word problems on multiplication</p>	<p>Guide pupils to use regrouping property to multiply by multiples of 10. E.g. $452 \times 20 = 452 \times (2 \times 10)$ $= (452 \times 2) \times 10$ $= 904 \times 10$ $= 9040$</p> <p>Guide pupils to use the distributive property to find the product of 3-digit numbers by a 2-digit numbers.</p> <p>find out that multiplication by a 2-digit number requires expanding it and multiplying the tens and ones separately.</p> <table border="1" data-bbox="1256 582 1630 753"> <thead> <tr> <th></th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td>2</td> <td>1</td> <td>4</td> </tr> <tr> <td></td> <td>X</td> <td>1</td> <td>3</td> </tr> <tr> <td></td> <td>6</td> <td>4</td> <td>2</td> </tr> <tr> <td>2</td> <td>1</td> <td>4</td> <td>0</td> </tr> <tr> <td>2</td> <td>7</td> <td>8</td> <td>2</td> </tr> </tbody> </table> <p>Expanding and multiplying</p> $214 \times (3 + 10)$  $(214 \times 3) + (214 \times 10)$ $= 642 + 2140 = 2782$ <p>write multiplication sentences for word problems for pupils to solve. pose word problems for multiplication sentences.</p>		H	T	O		2	1	4		X	1	3		6	4	2	2	1	4	0	2	7	8	2	<p>Let pupils:</p> <p>find the product of a multiple of 10 and any number.</p> <p>find the result of multiplying a 2-, 3-digit number by a 2-digit number using the place value chart or expanded form.</p> <p>solve word problems on multiplication.</p>
	H	T	O																									
	2	1	4																									
	X	1	3																									
	6	4	2																									
2	1	4	0																									
2	7	8	2																									

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4.8 DIVISION	The pupil will be able to: 4.8.1 Division facts up to product 72.	Building division facts up to 72	<p>TLMs: Tables of multiplication facts. Revise division as writing multiplication sentences with missing factors and/or solving division by finding missing factors in multiplication sentences.</p> <p>use the idea of grouping and multiplication tables to build division facts.</p>	Let pupils: recall facts in dividing numbers less than 72 by 2, 3, 4, 5 and 6 (without remainder).
	4.8.2 divide 2-digit numbers by divisors up to 6 to 10.	Dividing 2-digit numbers by divisors up to 10	<p>Use the idea of repeated subtraction (grouping) of objects to build division facts.</p> <p>Guide pupils to use the idea of repeated subtraction of small multiples of the divisor to work out division problems as follows:</p> $ \begin{array}{r} 84 \\ \underline{-24} \leftarrow 4 \times 6 \\ 60 \\ \underline{-24} \leftarrow 4 \times 6 \\ 36 \\ \underline{-24} \leftarrow 4 \times 6 \\ 12 \\ \underline{-12} \leftarrow 2 \times 6 \\ 0 \quad 14 \times 6 \end{array} $ <p>In the above, 6 was subtracted (4 + 4 + 4 + 4 + 2) times. So $84 \div 6 = 4 + 4 + 4 + 4 + 2 = 14$</p>	divide 2-digit numbers by 2, 3, 4, 5, 6 and 10.
	4.8.3 identify and recognise that all multiples of 10 are divisible by 10.	Multiples of 10 and numbers divisible by 10	use groups of ten objects to show division by 10 (repeated subtraction of multiples of ten).	divide 2-digit numbers by 10.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4.9 (CONT'D) FRACTIONS II) UNIT 4.10 MEASUREMENTS OF LENGTH AND AREA	The pupil will be able to: 4.9.5 change fifths and tenths to percentages.	Changing fifths and tenths to hundredths and to percentages	Guide pupils to change fifths and tenths to percentages by first changing them to hundredths. (i) $\frac{2}{5} = \frac{\square}{100}$ i.e. $\square = 40$ (ii) $\frac{2}{5} = \frac{40}{100}$ (iii) $\frac{40}{100} = 40\%$	Let pupils: change halves, fifths and tenths to hundredths and write their percent names.
	4.10.1 measure lengths of line segments in centimetres.	Measuring Line Segments	TLMs: 30 centimetre rulers, tape measures, geoboard. Guide pupils to measure lines along edges of real objects with the ruler or tape measure marked in centimetres.	Measure lengths of objects in centimetres.
	4.10.2 estimate and verify the lengths of given line segments.	Estimating and measuring line segments in centimetres	Let pupils estimate the lengths of line segments and verify by measuring using rulers and tape measures. Guide pupils to find out the number of cm in a metre using the 30 centimetre rule and the metre rule i.e. 100cm – 1m	estimate and measure the lengths of given line segments.
	4.10.3 add measures of lengths in metres and centimetre.	Total measures of lengths in metres and centimetres Writing metres and centimeters in decimal form	Guide pupils to measure in centimetres all the sides of a rectangular shape and add them up. Pupils measure the length of a string that fits exactly the distance round a circle or a circular object. Pupils write lengths given in metres and centimetres in decimal notation E.g. 2m 15cm = 2.15m. Pupils use cut-outs or small square tiles to build rectangles and larger squares and find the number of cut-outs or tiles used.	
	4.10.4 find the number of unit squares that will cover a square/rectangular region.	Area of plane shapes (rectangular and square region)	Pupils to take a small square of any dimension as a unit square and find the number of unit squares that will cover given rectangles and larger squares.	find number of unit squares that cover given rectangles and squares.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4.11 SHAPE AND SPACE II	<p>The pupil will be able to:</p> <p>4.11.1 recognise that an angle is the amount of turning done when a line is moved about a point.</p> <p>4.11.2 identify right angled triangles.</p>	<p>Angles as amount of turning about a point</p> <p>Right-angled triangles</p>	<p>TLMs: Book, window & door, two strips bolted together, interlocking circles, geoboards.</p> <p>Use interlocking circles, windows, doors, bolted strips of paper for pupils to determine angles which are less than, more than and equal to a right angle E.g. turning interlocking circles, opening a door, turning the arms of a bolted-strip of paper.</p> <p>Guide pupils to identify and make angles which are equal to, more than or less than right-angle using geoboards and cut-out shapes.</p> <p>Fold along the diagonals of squares to make triangles and name them right-angled triangles.</p> <p>Pupils identify angles in objects in everyday life which are less than, more than or equal to a right angle. E.g. (i) opening a door/window/book, etc. (ii) swinging an arm up and down. (iii) the angle made when the direction of a stick is changed by turning it about a point.</p>	<p>Let pupils:</p> <p>identify everyday life objects which have angles more/less than a right angle and equal to a right-angle.</p> <p>mark right angles in a given triangle.</p> <p>identify right-angle triangles among different triangles.</p> <p>find the number of right angles in a given turn.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4.13 INVESTIGATIONS WITH NUMBERS	The pupil will be able to: 4.13.1 find different numbers from a given list of numbers that will add up to a given sum	Different Numbers with same sum	Guide pupils to select three different numbers at a time from a given list to make the same sum. E.g. from the list of counting numbers up to 9, select any three different numbers whose sum is fifteen as below. $1 + 5 + 9 = 15$ $1 + 6 + 8 = 15$ $4 + 5 + 6 = 15$	Let pupils: select three numbers from a given list to make a given sum.
	4.13.2 write multiples of numbers up to multiples of 10.	Multiples of numbers up to 10	Guide pupils to write multiples for each of numbers 2, 3, 4, 5, ..., 10. E.g. multiples of 4 are 4, 8, 12, 16, 20, ... Guide pupils to write the multiples of 5 and find the end digits. Guide pupils to write multiples of 10 and find the end digits.	identify numbers that are multiples of 5 or 10 from a given list. identify a number whose multiples are given E.g. 24, 30, 36, ...
	4.13.3 write a relationship using different operations involving only one-digit.	Different operations on a given digit	Guide pupils to write a relationship using only the digit 4 to represent a given number E.g. $3 = (4 + 4 + 4) \div 4$.	use only a given digit and the operations to write a relationship for a given number.
	4.13.4 continue a pattern of numbers.	Number patterns	Lead pupils to recognise and continue the pattern of numbers in a given order.	find the next two or three numbers in a given list.

PRIMARY 5

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.1 NUMBERS AND NUMERALS UP TO 10,000	The pupil will be able to:	Number names for numerals up to 10,000 Comparing numbers up to 1,000,000	Guide pupils to write number names for numerals up to 10,000. E.g., 7,463 is seven thousand, four hundred and sixty-three.	Let pupils: write the number names for given numerals. E.g. 6459 is..... 9999 is.....
	5.1.1 write the number names for numerals up to 10,000. 5.1.2 use the symbols =, < or > to compare numbers up to 1,000,000.		Guide pupils to use the place-value chart to compare two numbers up to 1,000,000. Guide pupils to tell which of the two numbers written in the expanded form is greater than or less than the other and to compare and insert the symbol =, < or > between two numbers.	insert the symbol =, < or > to compare two numbers. compare two numbers using the appropriate symbol.
UNIT 5.2 SET OF NUMBERS	5.2.1 describe a group or a collection of distinct objects as a set.	Describing a set Introducing the curly brackets {...}	Guide pupils to make collections of any distinct objects and describe them as sets E.g. "spoon, fork and knife" form a set of cutlery. Let pupils write a sentence or phrase to describe a collection of objects or number E.g. 0, 1, 2, 3, 4 is described as a set of whole numbers less than 5. Let pupils use curly brackets { }, to enclose the set as a list of objects or their description. E.g. {0, 1, 2, 3, 4} or {whole numbers less than 5}.	Describe a collection of objects. List the members of a set using curly bracket. write a list of numbers that fit a description.

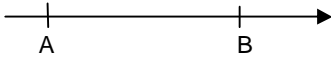
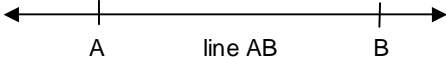
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.2 (CONT'D) (SET OF NUMBERS)	<p>The pupil will be able to:</p> <p>5.2.2 write a set of numbers.</p> <p>5.2.3 find factors of numbers</p> <p>5.2.4 find the multiples of numbers.</p> <p>5.2.5 find prime numbers.</p>	<p>Sets of Numbers</p> <p>Factors of Numbers up to 50</p> <p>Multiples</p> <p>Prime Numbers</p>	<p>Guide pupils to list numbers in a set E.g. {11, 12, 13, 14, 15}.</p> <p>Assist pupils to describe a collection of numbers E.g. whole numbers between 10 and 16.</p> <p>Guide pupils to find all the counting numbers that divide a counting number. E.g. 1, 2, 3, 4, 6 and 12 are factors of 12 and hence can divide 12.</p> <p>Guide pupils to build multiples of 2, 3, 4, 5, 6, 7, 8, 9 and 10.</p> <p>Let pupils continue a list of numbers that are multiples of a given number. E.g. 12, 24, 36, 48 are multiples of 12.</p> <p>Help pupils to use the sieve of Erasthothene to find prime numbers up to 50. E.g. 1 (2) (3) 4 (5) 6 (7) 8 9 10 (11) 12 (13) 14 15 16 (17) 18 (19) 20 Assist pupils to discover that prime number are numbers with only two factors. E.g. 2, 3, 5, 7, 11, 13, ...</p> <p>Find factors of counting numbers from 1 to 50. E.g. 1, 2, 3, 4, 6 and 12 are factors of 12.</p> <p>Write counting numbers as a product of prime numbers. E.g. $24 = 2 \times 2 \times 2 \times 3$.</p>	<p>Let pupils:</p> <p>List the numbers in a given set. describe a given collection of numbers.</p> <p>write the factors of given numbers.</p> <p>write four or more multiples of a given number.</p> <p>select prime numbers from a given list of numbers.</p> <p>indicate if a given number is a prime number or not.</p> <p>find a counting number using prime numbers.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.2 (CONT'D) (SET OF NUMBERS)	The pupil will be able to: 5.2.6 identify numbers that can be divided by 2, 3, 4, 5 or 6 without actual division.	Testing for factors	Assist pupils to test for numbers that are divisible by 2, 3, 4, 5 or 6. Let pupils find out that a given number is divisible by 2 if the end digit is divisible by 2. If the sum of the digits of a number can be divided by 3 then 3 is a factor of that number, If the two end digits can be divided by 4 then 4 is a factor of that number.. If the end digit of a number is 0 or 5 then the number 5 is a factor of that number. If both 2 and 3 are factors of a number then 6 is also a factor of that number.	Let pupils: identify numbers that can be divided by 2, 3, 4, 5 or 6, without performing the division.
	5.2.7 write subsets from a given set of numbers.	Subsets of Numbers	Help pupils to list portions of a set to build other sets and describe them as subsets. E.g. {1, 2, 3, 4, 5} is part of the set {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. write a description that applies to only part of a set. E.g. {factors of 6} is part of {factors of 12}.	write subsets from a given set of numbers.
	UNIT 5.3 COLLECTING AND HANDLING DATA 5.3.1 represent data using block graph.	Block Graph	Guide pupils to represent data collected as block graph.	draw a block graph from a given data.
	5.3.2 represent data using bar graph. 5.3.3 represent data using the stem and leaf plot.	Bar Graph Stem-and-leaf plot	Guide pupils to draw bar graphs to represent number of objects, people and quantities measured. Guide pupils to make a stem-and-leaf plot with numbers to represent numerical data. E.g. 12 23 14 35 29 25 34 31 16 27 25 16 26 25 19 20 21 18 is presented as stem-and leaf plot below $\begin{array}{c ccccccc} 1 & 2 & 4 & 6 & 9 & 8 & & & \\ 2 & 3 & 9 & 5 & 7 & 6 & 5 & 0 & 1 \\ 3 & 5 & 4 & 1 & & & & & \end{array}$ Key: 1 2 means 12.	draw a bar graph from a given data. draw a stem-and-leaf plot for given data.

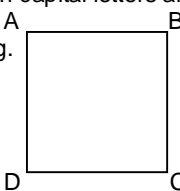
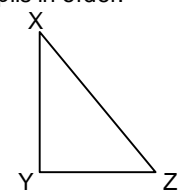
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																													
UNIT 5.3 (CONTD) COLLECTING AND HANDLING DATA	The pupil will be able to:			Let pupils:																													
	5.3.4 read and write information from graphs.	Reading and Interpreting Graphs	TLMs: abacus, place-value chart. Assist pupils to read graphs and write answers to questions on pupils. E.g. from the stem-and-leaf plot, find how many members are in the 20s?	read and answer questions on the graph.																													
	5.4.1 add numbers with sums more than 10,000	Adding 5- , 6-digit numbers	Guide pupils to add 5- and 6-digit numbers using; (i) abacus. (ii) place-value chart. E.g. <table style="margin-left: 40px;"> <thead> <tr> <th>Hth</th> <th>Tth</th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>6</td> <td>5</td> <td>3</td> <td>4</td> <td>6</td> </tr> <tr> <td>+ 3</td> <td>2</td> <td>6</td> <td>3</td> <td>6</td> <td>1</td> </tr> <tr> <td>5</td> <td>8</td> <td>11</td> <td>6</td> <td>10</td> <td>7</td> </tr> <tr> <td>5</td> <td>9</td> <td>1</td> <td>7</td> <td>0</td> <td>7</td> </tr> </tbody> </table>	Hth	Tth	Th	H	T	O	2	6	5	3	4	6	+ 3	2	6	3	6	1	5	8	11	6	10	7	5	9	1	7	0	7
Hth	Tth	Th	H	T	O																												
2	6	5	3	4	6																												
+ 3	2	6	3	6	1																												
5	8	11	6	10	7																												
5	9	1	7	0	7																												
UNIT 5.4 ADDITION AND SUBTRACTION (SUMS UP TO 999,999)	5.4.2 subtract numbers (0 – 999,999).	Subtraction from 4-, 5-, or 6-digit numbers	Help pupils to subtract numbers from 4, 5 or 6-digit numbers using the; (i) abacus. (ii) place-value chart.	Subtract from 4, 5 or 6-digit numbers using; (i) place-value chart. (ii) short form.																													
	5.4.3 solve word problems involving addition and subtraction.	Word problems involving addition and subtraction	Guide pupils to write addition and subtraction sentences for given word problems and solve them.	solve word problems involving addition and subtraction up to 6-digit numbers.																													
	UNIT 5.5 MEASUREMENT, LENGTH, MASS AND CAPACITY	5.5.1 measure lengths of line segments in centimetres and Millimetres.	Length of line segments	TLMs: Rulers, tape measure, containers, household items, etc.	find lengths of given line segments in cm and mm																												
5.5.2 estimate and verify the length of given line segments in centimetres.		Estimating lengths of line segments	Guide pupils to measure line segments with ruler or tape-measure marked in centimetres and millimetres. Assist pupils to estimate lengths of line segments and verify pupils by measuring.	estimate the lengths of line segments..																													

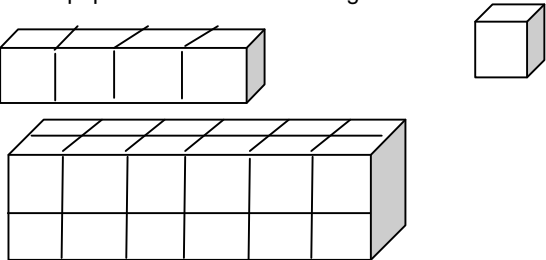
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.5 (CONT'D) MEASUREMENT, LENGTH, MASS AND CAPACITY	The pupil will be able to: 5.5.2 write lengths given in m, cm and mm, using decimal notation.	Changing lengths given in metres and centimeters to one unit using decimals	Revision: recall the number of centimeters in a metre and millimeters in a centimeter. find the number of millimeters in a metre and write the relation $10\text{mm} \rightarrow 1\text{cm}$ $100\text{cm} \rightarrow 1\text{m}$ $1000\text{mm} \rightarrow 1\text{m}$ Guide pupils to write lengths given in metres and centimeters in decimal notation.	Let pupils: change lengths from cm to mm and metres and vice versa.
	5.5.3 add and subtract measures of lengths given in m, cm and mm.	The sum of two or more given lengths in m, cm, mm. -difference between two lengths	Guide pupils to add measures of lengths in metres, centimetres and millimetres. subtract measures of lengths in m, cm and mm.	change given lengths to one unit using decimals.
	5.5.5 find the perimeter of given shapes in m, cm and mm.	Perimeter of plane shapes	Let pupils measure all sides of given shapes in m, cm and mm and add them to find the perimeter.	find the perimeter of given shapes in m, cm, mm.
	5.5.6 measure the capacities of containers in litres and millilitres.	measuring and recording the capacities of containers	Assist pupils to estimate and verify by measuring and recording the capacities of containers in litres and milliliters (to the nearest 100 ml) using containers whose capacities are recorded on their labels E.g. canned drinks.	find the capacities of containers in [and m] (to the nearest 100 ml).
	5.5.7 estimate and verify the capacity of containers in millilitres.	Estimating the capacities of containers in millilitres	estimate the capacities of containers in millilitres and verify by measurement.	estimate the capacity of a given container in millilitres.

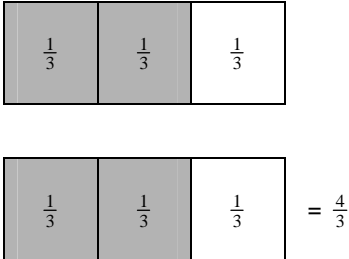
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION								
UNIT 5.5 (CONT'D) MEASUREMENT, LENGTH, MASS AND CAPACITY	<p>The pupil will be able to:</p> <p>5.5.8 write capacities given in l and ml using decimal notation.</p> <p>5.5.9 find the sum/difference of the capacities of two containers in ml and l.</p> <p>5.5.10 estimate, measure and record the mass of an object in “kg” and “g”.</p> <p>5.5.11 write masses given in “kg” and “g” using decimal notation.</p> <p>5.5.12 find the sum/difference of masses of two objects.</p>	<p>Changing capacities given in “l” and “ml” to common units using decimal form</p> <p>Find the sum/differences in the capacities of two or more containers</p> <p>Estimating and measuring the masses of common objects in kilograms</p> <p>Changing mass given in “kg” and “g” to common units using decimal form</p> <p>Finding the sum/difference in the masses of two or more objects</p>	<p>write capacities given in litres and millilitres in decimal form.</p> <p>E.g. 1250ml = 1.25l 660ml = 0.66l</p> <p>Let pupils express the capacities of containers whose labels are recorded on their labels in litres using decimal notation E.g. mineral water bottles, mineral bottles/containers, bottles/containers for oil, etc.</p> <p>find the total capacities of two or more containers by adding their measurements. Let pupils make a collection of containers which have capacities on labels and let pupils add the capacities of 2 or 3 of such containers.</p> <p>Find the difference in the capacities of two containers by subtracting.</p> <p>Guide pupils to estimate, measure and record the masses of objects in kilograms and grams (to the nearest 100g) using simple balance or scale. E.g. tuber of yam, a bowl of maize or gari; orange, books, etc. Let pupils record their findings in a tabular form.</p> <table border="1" data-bbox="1218 1011 1756 1107"> <thead> <tr> <th>Object</th> <th>Estimate</th> <th>Measure</th> <th>Difference</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>Pupils to write masses given in kilograms and grams in decimal form. E.g. 1kg 250g = 1.25kg.</p> <p>Pupils find the total mass of two or more objects by adding their measurements in “kg” and “g”.</p> <p>Let pupils record the masses of containers whose masses/weights are on their labels and find the sum. Pupils find the difference between two given masses of objects.</p>	Object	Estimate	Measure	Difference					<p>Let pupils:</p> <p>change given capacities from litres to millilitres using decimal and vice versa.</p> <p>add and subtract given capacities in “l” and “ml”</p> <p>find the mass of a given object in kg and g.</p> <p>change given masses to one unit using decimal notation.</p> <p>add and subtract given masses in “kg” and “g”</p>
Object	Estimate	Measure	Difference									

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.6 SHAPE AND SPACE	<p>The pupil will be able to:</p> <p>5.6.1 identify and draw rays and lines.</p> <p>5.6.2 state if an angle is greater or less than a right angle.</p> <p>5.6.3 identify isosceles, equilateral and right-angled triangle.</p>	<p>Lines and Rays</p> <p>Finding points of intersection of lines</p> <p>Angles greater than or less than right-angle</p> <p>Isosceles, Equilateral and Right-angled triangles</p>	<p>Guide pupils to draw line segments of given lengths and extend them from one end point to form a ray.</p>  <p>Guide pupils to extend a line segment from both ends to form a line.</p>  <p>Let pupils draw two lines and find their point of intersection.</p> <p>Guide pupils to use cut-out right-angle to determine if an angle is greater or less than a right-angle by fitting angles less than or greater than on right angles.</p> <p>Guide pupils to observe and sort triangles with two equal sides and name these as isosceles triangle.</p> <p>Guide pupils to fold two shapes to make the two equal sides lie on each other and find out if the angles facing the two congruent sides of an isosceles triangle are also congruent.</p> <p>Introduce the idea of</p> <ul style="list-style-type: none"> (i) congruence (ii) equilateral <p>Provide pupils with various triangular cut-outs. Let pupils fold to determine whether they are isosceles, equilateral or right angled triangles.</p>	<p>Let pupils:</p> <p>draw line segments of given lengths.</p> <p>find points of intersection of lines.</p> <p>mark the angles less than a right-angle in the given angles.</p> <p>classify triangles as isosceles, equilateral and right-angled triangle.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.7 (CONT'D) MULTIPLICATION AND DIVISION	The pupil will be able to:			Let pupils:
	5.7.3 find good estimate for products of two numbers.	Estimating the product of two numbers	Guide pupils to use high and low estimates to find good estimates for product of two numbers. E.g. to multiply 143×16 . high estimate $150 \times 20 = 3000$ low estimate $140 \times 10 = 1400$ good estimate $140 \times 15 = 2100$	find the good estimate for product of two numbers. E.g. 232×24 4574×30
	5.7.4 divide 3-digit numbers by 1-digit numbers.	Division Dividing a 3-digit number by 1-digit number	Assist pupils to divide a 3-digit number by 1-digit number using; (i) objects in bundles of hundreds, tens and ones. (ii) multi-base blocks. (iii) colour-coded counters. Help pupils to divide 3-digit numbers by 1-digit number using the scaffolding method. $\overline{20 + 10 + 10 + 6} = 46$ $\begin{array}{r} 6 \overline{) 276} \\ \underline{-120} \\ 156 \\ \underline{-60} \\ 96 \\ \underline{-60} \\ 36 \\ \underline{-36} \\ 0 \end{array} \quad \text{or} \quad \begin{array}{r} 6 \overline{) 276} \\ \underline{-120} \\ 156 \\ \underline{-60} \\ 96 \\ \underline{-60} \\ 36 \\ \underline{-36} \\ 0 \end{array} \begin{array}{l} 20 \\ 10 \\ 10 \\ 6 \end{array}$ so $276 \div 6 = 46$	divide 3-digit numbers by 1-digit numbers. estimate the result of dividing a 3-digit number by 2-digit number.
	5.7.4 round off numbers and find estimates for their quotients.	Rounding off numbers and estimating their quotients	Guide pupils to use rounding-off of numbers to the nearest ten or hundred to estimate them quotients. E.g. to find $242 \div 23$, we find $240 \div 20$ and the result is 12	
5.7.6 solve world problems involving multiplication and division.	Word problems involving multiplication and division	Pupils solve and pose word problems using multiplication and division sentences.	solve word problems on multiplication and division.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																
UNIT 5.8 SHAPE AND SPACE II	<p>The pupil will be able to:</p> <p>5.8.1 identify plane shapes by the labels of their vertices.</p> <p>5.8.2 identify faces, edges and vertices of solid shapes.</p> <p>5.8.3 identify edges which are right angles in solid shapes.</p>	<p>Plane Shapes: Labeling of vertices of plane shapes</p> <p>Solid Shapes</p> <p>Faces, edges and vertices of cube, rectangular block, cone and cylinder</p> <p>Number of faces, edges and vertices of solid shapes</p> <p>Edges Meeting at Right-angles</p>	<p>Guide pupils to label the vertices of plane shapes with capital letters and read pupils in order.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>E.g.</p>  <p>Rectangle ABCD,</p> </div> <div style="text-align: center;">  <p>Triangle XYZ</p> </div> </div> <p>Guide pupils to draw solid shapes and label vertices with letters.</p> <p>Let pupils classify real objects into cubes/cuboids, and cylinders.</p> <p>Help pupils to count and find the number of faces, edges and vertices.</p> <p>Let pupils record their findings in a tabular form as shown below.</p> <table border="1" data-bbox="1205 954 1753 1093" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Solid shape</th> <th style="padding: 5px;">No. of faces</th> <th style="padding: 5px;">No. of edges</th> <th style="padding: 5px;">No. of vertices</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Cube</td> <td style="width: 40px;"></td> <td style="width: 40px;"></td> <td style="width: 40px;"></td> </tr> <tr> <td style="padding: 5px;">Cuboid</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px;">Cylinder</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Guide pupils to identify objects whose edges meet at right angles. E.g. a match box, chairs, tables, books, etc.</p>	Solid shape	No. of faces	No. of edges	No. of vertices	Cube				Cuboid				Cylinder				<p>Let pupils:</p> <p>Name plane shapes using the letters at their vertices.</p> <p>identify and name vertices of solid shapes.</p> <p>identify and write the number of faces, edges and vertices of cubes, cuboids and cylinders.</p> <p>List objects whose edges meet at right angles.</p>
Solid shape	No. of faces	No. of edges	No. of vertices																	
Cube																				
Cuboid																				
Cylinder																				

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION						
UNIT 5. AREA AND VOLUME	The pupil will be able to: 5.9.1 find the number of centimetre squares that will cover a given rectangular region (area)	Areas of plane shapes	Guide pupils to cut cards of 1cm^2 and use them to cover given rectangular surfaces such as books, tables, match boxes, etc. Let pupils find the number of the squares that cover each surface completely.	Let pupils: Find the number of unit squares that cover a given rectangular region completely.						
	5.9.2 find the relation between area, length and width of a given rectangle.	Finding the number of unit squares in a given rectangular region	Guide pupils to form rectangles on geoboard and count the number of squares obtained in each rectangle and record in a tabular form as shown below <table border="1" data-bbox="1256 497 1727 593"> <thead> <tr> <th>L</th> <th>W</th> <th>No. of squares</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> Guide pupils to compare the area to the product of the length (L) and the width (W) of the rectangle and discover that $L \times W = \text{Area}$. Let pupils use the relation to find the area of rectangular shapes.	L	W	No. of squares				Find the area of a rectangle with given dimensions.
	L	W	No. of squares							
5.9.3 make cuboids using small cubes.	Volume: Building cuboids using cubes	Guide pupils to build cuboids using cubes. 	Build cuboids with a given number of cubes.							
5.9.3 find the number of cubes in a given cuboid.	Volume: Number of cubes in a given cuboid	Count the number of wooden cubes in any given cuboid as volume of the cube.	Find the volume of cuboids made with cubes.							

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.10 OPERATIONS ON FRACTIONS	<p>The pupil will be able to:</p> <p>5.10.1 add and subtract fractions with different denominators.</p> <p>5.10.2 multiply a whole number by a fraction.</p>	<p>Addition of fractions with different denominators</p> <p>Subtraction of fraction with different denominators</p> <p>Multiplication of a whole number by fraction</p>	<p>Guide pupils to add fractions with different denominators by renaming the fractions to have the same denominator</p> <p>E.g. $\frac{1}{3} + \frac{1}{5} = \frac{5}{15} + \frac{3}{15} = \frac{8}{15}$</p> <p>Guide pupils to subtract fractions with different denominators by renaming the fractions to have the same denominator</p> <p>E.g. $\frac{2}{3} - \frac{1}{4} = \frac{8}{12} - \frac{3}{12} = \frac{5}{12}$</p> <p>Using strips of paper guide pupils to multiply a whole number by a fraction</p> <p>E.g. $2 \times \frac{2}{3}$ means two groups of $\frac{2}{3}$ as shown in the diagram below</p> <div style="text-align: center;">  </div> <p>Let pupils brainstorm on the results to find the rule for multiplying a whole number by a fraction i.e. multiplying the whole number by the numerator and maintain the denominator.</p>	<p>Let pupils:</p> <p>add and subtract fractions with different denominators.</p> <p>write three different names for a given fraction.</p> <p>multiply a given whole number by a given fraction.</p>

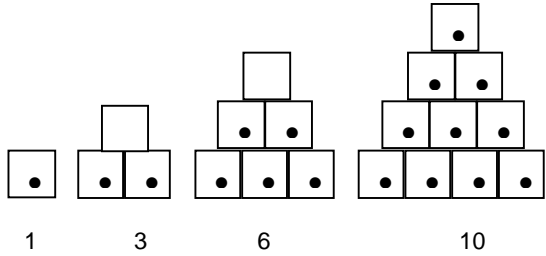
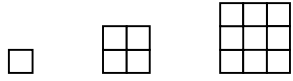
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.11 DECIMAL FRACTIONS AND PERCENTAGES	The pupil will be able to:			Let pupils:
	5.11.1 write decimal names for simple fractions.	Decimal Fractions	Guide pupils to use the Dienes blocks to express to simple fractions – tenths, hundredths and write pupils as decimal fractions. E.g. using flat as a whole, 4 cubes is $\frac{4}{100}$ (four hundredths) this is expressed as 0.04.	change percentages to simple fractions.
	5.11.2 change simple fractions to percentages.	Changing fractions to percentages	Guide pupils to find hundredth and percent names which are equal to halves, fourths and tenths. Help pupil to change fractions to hundredths and relate them to percentages. E.g. $\frac{2}{5} = \frac{2 \times 20}{5 \times 20} = \frac{40}{100} = 40\%$ NB: use fractions whose denominator is 100.	
UNIT 5.12 COLLECTING AND HANDLING DATA II	5.11.3 change percentages to simple fractions and simplify.	Changing percentages to simple fractions	Guide pupils to change percentages to simple fractions by expressing the percentage in hundredth. (i) $40\% = \frac{40}{100} = \frac{4}{10} = \frac{2}{5}$ (ii) $60\% = \frac{60}{100} = \frac{3}{5}$	
	5.12.1 find mode of a set of numbers or objects.	Mode	Lead pupils to collect data and guide pupils to find the mode, which is, the item that occurs most. E.g. 2,2, 2, 3, 4, 5, 7, 7, 8 has 2 as the mode.	find the mode of a given data.
	5.12.2 find the median of a set of numbers.	Median.	Guide pupils to arrange the numbers in a data in ascending or descending order and select the middle number as the median. E.g. 2, 2, 2, 3, 4, 5, 7, 7, 8 has 4 as the median. Lead pupils to arrange the numbers in the leaf part of the stem-and-leaf plot in ascending order. E.g. 11,12,16,22,23,23,23,28,32,34,35, 37,37,38.	find the median of a given set of numbers.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																														
UNIT 5.12 (CONT'D) COLLECTING AND HANDLING DATA II	<p>The pupil will be able to:</p> <p>5.12.3 find the mode and median from the stem-and-leaf plot.</p>	<p>Mode and median from the stem-and-leaf plot</p>	<p>Guide pupils to build a stem-and-leaf plot from given data and guide pupils to determine the mode and median.</p> <table border="1" data-bbox="1211 368 1514 504"> <tr> <td>1</td> <td>1</td> <td>2</td> <td>6</td> </tr> <tr> <td>2</td> <td>2</td> <td>3</td> <td>3</td> </tr> <tr> <td>3</td> <td>2</td> <td>4</td> <td>5</td> </tr> </table> <p>Select the number that occurs most in the plot as the mode, that is, 23. Select the middle number starting from the first number in the stem-and-leaf plot from the top, as the median, that is, 23.</p>	1	1	2	6	2	2	3	3	3	2	4	5	<p>Let pupils:</p> <p>find the mode and the median from a given stem-and-leaf plot.</p>																		
1	1	2	6																															
2	2	3	3																															
3	2	4	5																															
UNIT 5.13 NUMBER PLANE	<p>5.13.1 use row and columns numbers to locate positions of objects in a rectangular array.</p> <p>5.13.2 draw and label the horizontal and vertical lines of the number plane and locate points on the number plane.</p>	<p>Positions of objects in rows and columns</p> <p>Points in the number plane</p>	<p>Help pupils to locate positions of objects arranged in a rectangular form using the numbers for the rows and columns.</p> <table border="1" data-bbox="1368 807 1733 1190"> <tr> <td>r</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>o</td> <td>3</td> <td></td> <td>A</td> <td></td> <td></td> </tr> <tr> <td>w</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>s</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> <p>E.g. A is in (rows 3, column 2) or (3,2).</p> <p>Guide pupils to draw a horizontal line and vertical line on paper with square grid or graph sheet and label their point of intersection as O (the origin). mark and label equal divisions on the horizontal and vertical lines (axes) with numbers.</p>	r	4					o	3		A			w	2					s	1							1	2	3	4	<p>locate positions of objects in a rectangular array.</p>
r	4																																	
o	3		A																															
w	2																																	
s	1																																	
		1	2	3	4																													

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.13 (CONT'D) NUMBER PLANE	The pupil will be able to: 5.13.3 locate and describe a point in the number plane by ordered pair.	Ordered pairs	Guide pupils to describe the positions of points on the number plane with reference to their distances away from O on the horizontal and vertical lines (axes) and represent them as ordered pairs. E.g. the ordered pair for A is (3, 5), for B is (6, 4) and C is (1, 3). <div style="text-align: center;"> <p>Number Plane</p> </div>	Let pupils: find the ordered pairs of numbers for points shown on the number plane.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.14 RATIO	<p>The pupil will be able to:</p> <p>5.14.1 express two numbers or quantities as ratio.</p> <p>5.14.2 find and simplify the ratio of two numbers or quantities.</p>	<p>Ratio</p> <p>Finding ratio in simplest form</p>	<p>Guide pupils to compare two numbers or quantities by finding the number of times one is contained in the other and write as ratio.</p> <p>E.g. twelve is three times as many as four because there are three fours in twelve. i.e. the ratio of 12 to 4 is $12 : 4 = 3 : 1$</p> <p>Assist pupils to find the ratio of one number or quantity to another and write this in the simplest form. E.g. Ratio of 12 boys to 8 girls is $12 : 8 = 6 : 4 = 3 : 2$</p>	<p>Let pupils:</p> <p>express two numbers as ratio.</p> <p>find the ratio of one number or quantity to another in its simplest form.</p>
UNIT 5.15 INVESTIGATION WITH NUMBERS	<p>5.15.1 use properties of basic operations to find missing numbers.</p> <p>5.15.2 use two or more of the basic operations with the digits 1, 2, 3, ..., 9 to write number sentence for a given sum.</p>	<p>Properties of Operations</p> <p>Using different operations with numbers</p>	<p>Help pupils to use properties of operations to find missing numbers in number sentences. E.g. $4 \times (3 + 2) = (4 \times \square) \div (4 \times 2)$.</p> <p>Let pupils use properties of operations to find out whether a number sentence is true or false. E.g. True/False. $(8 - 5) + 2 = 8 - (5 + 2)$.</p> <p>The sentence is false because $8 - 5 + 2 = 5$ and $8 - (5 + 2) = 1$.</p> <p>Guide pupils to use two or more operations with three or four 1-digit numbers to make given sums. E.g. $21 = (1 + 2) \times (3 + 4)$.</p>	<p>complete number sentences.</p> <p>find which number sentences are True/False.</p> <p>use different operations on different numbers to make a given sum.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																																										
UNIT 5.15 (CONT'D) INVESTIGATION WITH NUMBERS	<p>The pupil will be able to:</p> <p>5.15.3 write a relationship involving only one-digit number to represent a given number.</p> <p>5.15.4 find the possible combinations of four numbers with the same sum in a 4 x 4 square of numbers arranged as in the calendar.</p>	<p>Relationship involving only one-digit number to represent a given number</p> <p>Patterns in Calendar Numbers</p>	<p>write a relationship involving different operations on one digit number to represent a given number. E.g. $5 = \{3 + 3\} - \{3 \div 3\}$.</p> <p>find combinations of four numbers in a 4 x 4 square of numbers in a calendar that give the same sum as sum of numbers in the diagonal. E.g.</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>SUN</th> <th>MON</th> <th>TUE</th> <th>WED</th> <th>THU</th> <th>FRI</th> <th>SAT</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td>2</td> </tr> <tr> <td>3</td> <td style="background-color: #cccccc;">4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> </tr> <tr> <td>10</td> <td>11</td> <td style="background-color: #cccccc;">12</td> <td>13</td> <td>14</td> <td>15</td> <td>16</td> </tr> <tr> <td>17</td> <td>18</td> <td>19</td> <td style="background-color: #cccccc;">20</td> <td>21</td> <td>22</td> <td>23</td> </tr> <tr> <td>24</td> <td>25</td> <td>26</td> <td>27</td> <td style="background-color: #cccccc;">28</td> <td>29</td> <td>30</td> </tr> </tbody> </table> <p>Guide pupils to find from the 4 x 4 square other 4 numbers which give the same sum as $4+12+20+28$.</p>	SUN	MON	TUE	WED	THU	FRI	SAT						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	<p>Let pupils:</p> <p>write a relationship involving different operations on one digit number to represent a given number.</p> <p>find combinations of 4 numbers that add up to numbers in the diagonal.</p>
SUN	MON	TUE	WED	THU	FRI	SAT																																								
					1	2																																								
3	4	5	6	7	8	9																																								
10	11	12	13	14	15	16																																								
17	18	19	20	21	22	23																																								
24	25	26	27	28	29	30																																								

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.15 (CONT'D) INVESTIGATION WITH NUMBERS	<p>The pupil will be able to:</p> <p>5.15.5 find the pattern in triangular numbers up to the 10th number and find the sum.</p> <p>5.15.6 write the relation between a set of pairs of numbers.</p>	<p>Triangular Numbers</p> <p>Ordered Pairs and Relations</p>	<p>Assist pupils to arrange objects in triangular shapes and find the number of objects in each. E.g.</p>  <p>1 3 6 10</p> <p>Guide pupils to observe the pattern and continue to the 10th triangular number by drawing.</p> <p>Guide pupils to make triangles or squares of various sizes using sticks (or strokes) and record the pairs of numbers made. E.g. count the number of sticks on one side. Count the number of sticks around the whole square (perimeter).</p>  <p>(i) (sticks in one side, sticks in perimeter). i.e. (1, 4), (2, 8), (3, 12).</p> <p>(ii) (sticks in one side, unit square in shape). i.e. (1, 1), (2, 4), (3, 9).</p> <p>The rule for (i) is "times four". The rule for (ii) is "times itself". Write other ordered pairs and state their rules. E.g. for (4, 9), (5, 11), (9, 19), ... the rule is a times 2 plus 1.</p>	<p>Let pupils:</p> <p>draw the next two terms in a pattern of triangular numbers given any three numbers and find the sum.</p> <p>write the rule for a set of ordered pairs.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5.15 (CONT'D) INVESTIGATION WITH NUMBERS	<p>The pupil will be able to:</p> <p>5.15.7 write a set of ordered pairs that obey a given rule (or relation).</p>	<p>Ordered pairs that obey a given rule</p>	<p>Guide pupils to write numbers that complete ordered pairs for a given rule.</p> <p>E.g. given a rule "plus 3", and the first numbers 2, 5, 6 and 10, will yield the following ordered pairs: (2, 5), (5, 8), (6, 9), and (10, 13).</p> <p>Let pupils find the set of ordered pairs for a given rule.</p> <p>E.g.</p> <p>(i) the pairs for the rule "plus 1" are (1, 2), (2, 3), (5, 6), etc.</p> <p>(ii) the pairs for the rule "times 2" plus 1 are (1, 3), (2, 5), (3, 7), etc.</p>	<p>Let pupils:</p> <p>find the rule and complete a set of ordered pairs.</p>
UNIT 5.16 MEASUREMENT OF TIME	<p>5.16.1 estimate the time of an event in minutes and seconds and verify by measuring.</p> <p>5.16.2 determine the number of months, weeks, days, hours and minutes between two events.</p>	<p>Measuring the time of an event in minutes and seconds with a clock or a stopwatch</p> <p>Finding the number of months, weeks days, hours and minutes between two events</p>	<p>Guide pupils to measure the time of an event in minutes and seconds using the ordinary/digital clock/watch.</p> <p>E.g. time taken to drink half litre of water.</p> <p>Guide pupils to estimate the time an event takes in minutes and seconds and verify it by measuring with a clock or stop watch.</p> <p>E.g. walking 100 metres, 400 metres.</p> <p>running a 100 or 400 metre race. reading a passage. drawing an object working.</p> <p>Assist pupils to find the number of months, weeks, days, hours and minutes between two events.</p> <p>E.g.</p> <p>(a) the number of days between two market days.</p> <p>(b) the number of months or years between celebrations (Christmas, birthdays).</p>	<p>find the time of an event in minutes and seconds.</p> <p>find the duration between two events.</p>

PRIMARY 6

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.1 SETS OF NUMBERS	<p>The pupil will be able to:</p> <p>6.1.1 write sets of multiples of counting numbers up to 10.</p> <p>6.1.2 identify numbers that can be divided by 2, 3, 4, 5, 6, 8, 9 and 10.</p> <p>6.1.3 find the lowest common multiple of two numbers.</p>	<p>Multiples of numbers up to ten</p> <p>Numbers divisible by 2, 3, 4, 5, 6, 8, 9 and 10</p> <p>Lowest Common Multiple (L.C.M)</p>	<p>TLMs: countable objects like bottle tops, sticks etc.</p> <p>Let pupils find multiples of counting numbers up to 10. E.g. Multiples of 2 = 2, 4, 6, 8, 10, ... Multiples of 3 = 3, 6, 9, 12, ... Guide pupils to write sets of multiples of numbers – using set notation. E.g. a set of multiples of 2 {2, 4, 6, 8, 10, ...}.</p> <p>Revision: Revise the tests for numbers divisible by 2,3,4,5 and 6</p> <p>Assist pupils to test for numbers divisible by 8, 9 and 10.</p> <p>For 8, if the last three digits is divisible by 8 then 8 is a factor.</p> <p>For 9, if the sum of the digits of the number can be divided by 9, then 9 is a factor of that number.</p> <p>For 10, if the end digit is 0, then 10 is a factor.</p> <p>Guide pupils to find the Lowest Common Multiple (L.C.M) of two numbers using sets. (a) list the set of multiples of the two numbers. (b) list the set of common multiples of the two numbers. (c) select the least among the common multiples. E.g. Find the L.C.M. of 2 and 3. The set of multiples of 2 = {2,4,6,8,10,12,...} The set of multiples of 3 = {3,6,9,12,...} The set of common multiples of 2 and 3 = {6,12,18,...} LCM of 2 and 3 = 6</p>	<p>Let pupils:</p> <p>write set of multiples of given counting numbers up to 10.</p> <p>complete number pattern that are multiples of numbers.</p> <p>test to find if a given numbers can be divided by 4,6,8,9 and 10.</p> <p>find the L.C.M. of two numbers.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.1 (CONT'D) SETS OF NUMBERS	<p>The pupil will be able to:</p> <p>6.1.4 list prime numbers up to 100.</p> <p>6.1.5 find factors of numbers up to 100.</p> <p>6.1.6 find the H.C.F. of two numbers.</p>	<p>Prime numbers and factors of counting numbers up to 100</p> <p>Factors of counting numbers up to 100</p> <p>Greatest Common Factor (G.C.F) or Highest Common Factor (HCF)</p>	<p>TLMs: charts/tables.</p> <p>Help pupils to use the sieve of Eratosthenes to list prime numbers up to 100.</p> <p>Guide pupils to find factors of counting numbers up to 100 and complete tables.</p> <p>Write sets of numbers made up of factors of given numbers.</p> <p>Guide pupils to find the H.C.F of two numbers. (a) List the set of factors of two numbers. (b) List the set of common factors of the two numbers. (c) Select the highest among the common factors. E.g. Find the H.C.F. of 8 and 12. Set of factors of 8 = {1,2,4,8} Set of factors of 12 = {1,2,3,4,6,12} Set of common factors of 8 and 12 = {1,2,4} ∴ HCF of 8 and 12 = 4</p>	<p>Let pupils:</p> <p>list counting numbers up to 100 and indicate if a number is prime or not.</p> <p>write down factors of given numbers.</p> <p>find the HCF of 2 numbers.</p>
UNIT 6.2 OPERATIONS ON FRACTIONS	<p>6.2.1 compare two proper fractions.</p>	<p>Comparing proper fractions</p>	<p>TLMs: Fraction chart, paper folding, geoboard, cut-out shapes.</p> <p>Help pupils rename different fractions by rewriting them using the same denominator and compare them by using the symbols =, < or >.</p> <p>E.g. $\frac{3}{4} = \frac{9}{12}$, $\frac{1}{2} = \frac{6}{12}$ so $\frac{3}{4} > \frac{1}{2}$ and $\frac{1}{2} < \frac{3}{4}$</p>	<p>compare two proper fractions using the symbols =, < or >.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.2 (CONT'D) OPERATIONS ON FRACTIONS)	<p>The pupil will be able to:</p> <p>6.2.4 add and subtract unlike fractions.</p> <p>6.2.4 solve word problems involving addition and subtraction of fractions.</p> <p>6.2.5 multiply a fraction by a fraction.</p> <p>6.2.6 divide a whole number by a fraction.</p> <p>6.2.7 solve word problems on multiplication and division of fractions.</p>	<p>Addition and subtraction of unlike fractions.</p> <p>Word problems on addition and subtraction of fractions</p> <p>Multiplication of a fraction by a fraction</p> <p>Dividing a whole number by a fraction</p> <p>Word problems on multiplication and division of fractions</p>	<p>Guide pupils to rename different fractions and rewrite them with the same denominator before adding or subtracting.</p> <p>E.g. (i) $\frac{2}{3} + \frac{1}{2} = \frac{4}{6} + \frac{3}{6} = \frac{7}{6}$</p> <p>(ii) $\frac{3}{4} - \frac{1}{8} = \frac{6}{8} - \frac{1}{8} = \frac{5}{8}$</p> <p>Pose story/word problem involving addition and subtraction of fractions for pupils to solve.</p> <p>Revision: Revise multiplication of a fraction by a whole number.</p> <p>Guide pupils to use cut-out shapes, number line and fraction chart to illustrate multiplication of a fraction by a fraction.</p> <p>E.g. $\frac{2}{3} \times \frac{1}{2} = \frac{2}{6} = \frac{1}{3}$</p> <p>Guide pupils to use cut-out shapes, fraction chart or number line to show division by a fraction.</p> <p>Guide pupils to solve word problems involving multiplication and division of fractions.</p>	<p>Let pupils:</p> <p>add and subtract two or three fractions with different denominators.</p> <p>solve word problems involving addition and subtraction of fractions.</p> <p>find the result of multiplication of two fractions.</p> <p>find the result of dividing a given whole number by a fraction.</p> <p>solve word problems involving multiplication and division of fractions.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.3 Numbers and Numeral 0 - 10,000,000	<p>The pupil will be able to:</p> <p>6.3.1 count in millions.</p> <p>6.3.2 state the place value of digits in numerals 0 - 10,000,000.</p> <p>6.3.3 write numerals for number names up to ten million.</p> <p>6.3.4 round off numbers to the nearest ten, hundred and thousand.</p>	<p>Counting in millions</p> <p>Place values of digits in 6- or 7-digit numerals</p> <p>Writing numerals for number names up to ten million</p> <p>Rounding off numbers</p>	<p>TLMs: abacus, colour-coded counter and place value chart.</p> <p>Guide pupils to use the abacus and colour-coded counter to count in millions up to 10,000,000.</p> <p>Guide pupils to identify the place value and value of digit in 6 or 7-digit numeral and compare numbers up to 10,000,000 using the symbols $>$, $<$ or $=$.</p> <p>Guide pupils to write numerals for number names up to ten million.</p> <p>Assist pupils to read and round off numbers to the nearest ten, hundred and thousand. E.g. 15279 to the nearest hundred is 15300.</p>	<p>Let pupils:</p> <p>count and write numbers and numerals in millions.</p> <p>(i) find the value of a digit in a numeral.</p> <p>(ii) compare two numbers using the symbols $=$, $<$ or $>$</p> <p>write numerals for a given number names.</p> <p>Round off given numbers to the nearest tens hundreds and thousands.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																																			
UNIT 6.4 ADDITION AND SUBTRACTION (SUMS 0 – 9,999,999	<p>The pupil will be able to:</p> <p>6.4.1 add numbers with sums more than 100,000.</p> <p>6.4.2 subtract numbers.</p> <p>6.4.3 solve word problems involving addition and subtraction.</p>	<p>Adding 6- and 7-digit numbers</p> <p>Subtracting from 6- and 7-digit numbers</p> <p>Addition and Subtraction</p>	<p>TLMs: abacus, colour-coded counters, place-value chart</p> <p>Guide pupils to add 6-digit and 7-digit numbers, using abacus, colour-coded counters and place-value chart.</p> <p>E.g.</p> <table border="1" data-bbox="1211 523 1727 667"> <thead> <tr> <th>M</th> <th>Hth</th> <th>Tth</th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>6</td> <td>6</td> <td>5</td> <td>3</td> <td>4</td> <td>2</td> </tr> <tr> <td>1</td> <td>2</td> <td>3</td> <td>6</td> <td>6</td> <td>3</td> <td>3</td> </tr> <tr> <td>5</td> <td>8</td> <td>3</td> <td>11</td> <td>9</td> <td>7</td> <td>10</td> </tr> <tr> <td>5</td> <td>8</td> <td>4</td> <td>1</td> <td>9</td> <td>8</td> <td>0</td> </tr> </tbody> </table> <p>Add 7-digit numbers using the short form.</p> <p>Guide pupils to subtract from 6-, 7-digit numbers using</p> <ul style="list-style-type: none"> (i) abacus (ii) colour-coded counters (iii) place-value chart <p>Guide pupils to write addition and subtraction sentences for given word problems and solve them.</p>	M	Hth	Tth	Th	H	T	O	4	6	6	5	3	4	2	1	2	3	6	6	3	3	5	8	3	11	9	7	10	5	8	4	1	9	8	0	<p>Let pupils:</p> <p>add 6- and 7-digit numbers using place-value chart and short form.</p> <p>subtract from 6- and 7-digit numbers using place-value chart and short form.</p> <p>solve word problems involving addition and subtraction up to 7-digit numbers.</p>
M	Hth	Tth	Th	H	T	O																																	
4	6	6	5	3	4	2																																	
1	2	3	6	6	3	3																																	
5	8	3	11	9	7	10																																	
5	8	4	1	9	8	0																																	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
6.5.1 DECIMAL FRACTIONS AND PERCENTAGES	<p>The pupil will be able to:</p> <p>6.5.1 order decimal fraction.</p> <p>6.5.2 change common fractions to decimal fractions and vice versa.</p> <p>6.5.3 add and subtract decimal fractions up to three decimal places.</p>	<p>Writing and ordering decimal fractions</p> <p>Changing common fractions to decimal fractions and vice versa</p> <p>Addition and subtraction of decimal fractions</p>	<p>TLMs: dienes blocks, charts, colour-coded counters.</p> <p>Guide pupils to order decimal fractions by changing them to fractions with the same denominator fractions. E.g. order 0.5, 0.16, 0.25 First change all to hundredths.</p> $0.5 = \frac{50}{100}$ $0.16 = \frac{16}{100}$ $0.25 = \frac{25}{100}$ <p>Hence the ascending order is 0.16, 0.25, 0.5</p> <p>The decimal fractions should be up to 2 decimal places.</p> <p>Assist pupils to change common fractions to decimal fractions. E.g. $\frac{1}{4} = \frac{1 \times 25}{4 \times 25} = \frac{25}{100} = 0.25$</p> <p>Assist pupils to change decimal fractions to common fraction E.g. change 0.75 to common fraction $0.75 = \frac{75}{100} = \frac{25 \times 3}{25 \times 4} = \frac{3}{4}$</p> <p>Guide students to add and subtract decimal fractions using the dienes blocks.</p> <p>E.g. 0.35 <u>+0.28</u> -----</p> <p>E.g. (i) $\begin{array}{r} 0.351 \\ + 0.232 \\ \hline 0.583 \end{array}$ (ii) $\begin{array}{r} 0.563 \\ - 0.420 \\ \hline 0.143 \end{array}$</p> <p>Using the flat as a whole 0.35 = 3 longs, 5 cubes. 0.28 is 2 long and 8 cubes.</p>	<p>Let pupils:</p> <p>order given decimal fractions.</p> <p>convert common fractions to decimals and vice versa.</p> <p>add and subtract decimal fractions.</p>

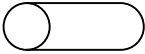
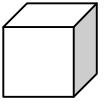
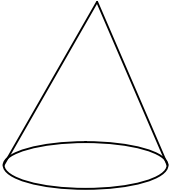
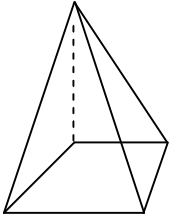
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
6.5.1 (CONT'D) DECIMAL FRACTIONS AND PERCENTAGES	<p>The pupil will be able to:</p> <p>6.5.4 multiply a decimal fraction by 1-digit whole number.</p> <p>6.5.5 divide a decimal fraction by 1-digit whole number.</p> <p>6.5.6 order combinations of common fractions, decimal fractions and percentages.</p> <p>6.5.7 find a percentage of a given quantity.</p>	<p>Multiplication of a decimal fraction by 1-digit number</p> <p>Division of a decimal fraction by 1-digit number</p> <p>Ordering combinations of common fractions, decimal fractions and percentages</p> <p>Percentage of a quantity of objects</p>	<p>Multiply decimal fractions in tenths, hundredths and thousandths by 1-digit number. E.g. 0. 243</p> $\begin{array}{r} \times \quad 2 \\ \hline 0.486 \end{array}$ <p>Guide pupils to divide a decimal fraction by 1-digit number.</p> <p>Guide pupils to recognise and write combinations of common fractions, decimal fractions and percentages in ascending and descending order. E.g. Arrange 0.25, $\frac{3}{5}$ and 40% in order of size starting with the smallest. First express them as hundredths E.g. $0.25 = \frac{25}{100}$, $40\% = \frac{40}{100}$ $\frac{3}{5} = \frac{3 \times 20}{5 \times 20} = \frac{60}{100}$ Hence the ascending order is 0.25, 40%, $\frac{3}{5}$</p> <p>Assist pupils to find the percentage of a quantity of objects. E.g. (i) 20% of 2000 oranges $\frac{20}{100} \times 2000$ $= 400$ oranges (ii) 5% of ₦1000 $\frac{5}{100} \times 1000$ $= ₦50$ using the short form $\begin{array}{r} 0.35 \\ +0.28 \\ \hline 0.63 \end{array}$</p> <p>Let pupils use the same process as above.</p>	<p>Let pupils:</p> <p>multiply a decimal fraction by 1-digit number.</p> <p>dividing a decimal fraction by 1-digit whole number.</p> <p>arrange given combinations of fractions and percentages in order of size.</p> <p>order combination of fractions.</p> <p>find a given percentage of a quantity.</p>


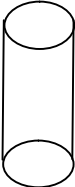
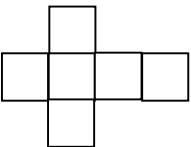
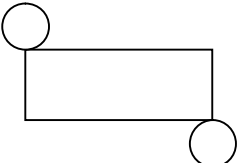
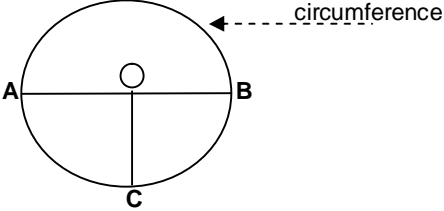
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.6 MEASUREMENTS OF LENGTH, CAPACITY AND MASS	The pupil will be able to: 6.6.1 estimate distance between two points in kilometres.	Estimating distances in kilometres	Develop awareness of the kilometre as a distance covered by going round a 400m track two and a half times, or do activities that will help pupils to see how long it takes to walk a kilometre. Explain to pupils that longer distances are measured in kilometres and that 1000 metres (m) = 1 kilometre (km) Let pupils estimate long distances in km. E.g. distance between two schools/towns, villages.	Let pupils: estimate distances in kilometres.
	6.6.2 change distances in kilometres to metres.	Changing distances in kilometres to metres	Guide pupils to change distances from kilometres to metres.	change distances in kilometres to metres and vice versa making use of the decimal notation.
	6.6.3 convert distances given in metres to kilometres.	Changing distances in metres to kilometres	Assist pupils to convert lengths in metres to kilometres expressing the result in decimal notation. E.g. $800\text{m} = \frac{800}{1000} = 0.8\text{km}$; $\frac{1500}{1000} = 1.5\text{km}$	change distances in metres to kilometres and vice versa making use of the decimal notation
	6.6.4 add and subtract measures of length in km, m and cm.	Adding and subtracting distances	Help pupils to add and subtract distances in km, m and cm.	finding total length of distances.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.6 (CONT'D) MEASUREMENTS OF LENGTH, CAPACITY AND MASS	The pupil will be able to: 6.6.5 add and subtract capacities of containers in l and ml.	Addition and subtraction of capacities	Review measuring of capacities of containers in litres and millilitres using different containers. Pupils undertake a project by looking for at least twenty containers whose capacities are indicated on their labels and record them. Assist pupils to add and subtract capacities in l and ml containers whose capacities have been indicated on them.	Let pupils: find the capacity of containers in ml and ml find the total capacity of two or more containers.
	6.6.6 add and subtract given masses in kilograms and grams.	Addition and subtraction of masses	Let pupils measure the masses of two or three objects and add them up. Help pupils to find the difference between the masses of two different objects.	Add and subtract masses of objects.
	6.6.7 solve word problems involving capacity and mass	Word problems involving capacity and mass	Pose word problems involving capacity and mass and let pupils solve them.	solve word problems involving capacities and masses.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.7 RATIO AND PROPORTION	<p>The pupil will be able to:</p> <p>6.7.1 find missing numbers in equal ratios.</p> <p>6.7.2 explain equal ratios as proportion.</p> <p>6.7.3 solve problems on direct proportion using unitary method.</p>	<p>Equal ratios</p> <p>Proportion as equal ratios</p> <p>Direct Proportion by Unitary Method</p>	<p>TLM: countable objects.</p> <p>(ii) Guide pupils to find missing numbers in equal ratios. E.g. $2 : 3 = n : 12$ i.e. $\frac{2}{3} = \frac{n}{12}$ $2 \times 4 = n \times 1$ (multiplying both sides by 12) $n = 8$</p> <p>Find if two pairs of numbers or quantities are in proportion E.g. 5 litres, 3 litres and 10 hours, 6 hours 5 litres; 3 litres = 5 : 3 10 hours; 6 hours = 10 : 6 = 5 : 3 Hence the quantities are in proportion.</p> <p>Assist pupils to solve problems on direct proportion using unitary method. E.g. Two books cost GH¢10. Find the cost of 5 of the books.</p> <p>Solution: The cost of 2 books = GH¢10 The cost of 1 book = GH¢5 The cost of 5 books = GH5 x 5 = GH¢25</p>	<p>Let pupils:</p> <p>find missing numbers that make the given ratios equal.</p> <p>find if two ratios are in proportion.</p> <p>solve problems on direct using unitary method.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.7 (CONT'D) RATIO AND PROPORTION	The pupil will be able to: 6.7.4 use ratio method to solve direct proportion problems.	Direct Proportion by Ratio Method	Guide pupils to solve problems using ratio method. E.g. six oranges cost 30Gp. What is the cost of 15 oranges? Let x Gp be the cost of 15 oranges. Then $30 : x = 6 : 15$ $\frac{30}{x} = \frac{6}{15}$ $6x = 30 \times 15$ $x = 5 \times 15$ $= 75$ Therefore, 15 oranges cost 75 GP	Let pupils: solve problems on direct proportion using ratio method.
	6.7.5 share quantities into two in a given ratio	Sharing quantities in a given ratio	Guide pupils to divide quantities of objects into two using ratio. E.g. Esi and Abu share 15 oranges in the ratio 2 : 3. Find their shares. Total number of parts = 5 Esi's share = $\frac{2}{5} \times 15 = 6$ Abu's share = $\frac{3}{5} \times 15 = 9$ ∴ Esi's share is 6 oranges and Abu's is 9 oranges.	share quantities of objects in given ratio.
UNIT 6.8 SHAPE AND SPACE	6.8.1 classify solid shapes according to a given criteria	Classification of solid shapes	TLMs: pencils, cuboids, cones, pyramids, match box, milk tin, manila cards. Help pupils to revise the number of faces, vertices and edges of real objects. Assist pupils to classify solid shapes by the number of faces, vertices and edges using real objects. N.B: Let pupils work in groups and encourage pupils to be tolerant with each other.	state the shape and write the number of faces and edges in tabular form.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.8 (CONT'D) SHAPE AND SPACE	<p>The pupil will be able to:</p> <p>6.8.2 identify solids whose cross section have the same shape and size.</p> <p>6.8.3 identify solid shapes whose cross section have similar shape but different sizes.</p>	<p>Prisms.</p> <p>Pyramids</p>	<p>Guide pupils to identify and name solid shapes with uniform cross section as prisms.</p> <p>E.g.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>cylinder</p> </div> <div style="text-align: center;">  <p>cuboid</p> </div> </div> <p>Guide pupils to identify solid shapes whose cross sections have similar shapes but different sizes as pyramids. Such solid shapes have non- uniform cross sections.</p> <p>E.g.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>cone</p> </div> <div style="text-align: center;">  <p>pyramid</p> </div> </div>	<p>Let pupils:</p> <p>give examples of real objects that are prisms.</p> <p>give examples of real objects that are pyramids.</p>


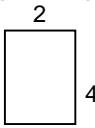
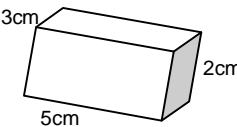
UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
<p>UNIT 6.8 (CONT'D) SHAPE AND SPACE</p>	<p>The pupil will be able to:</p> <p>6.8.4 make and identify nets of cube, cuboid and cylinder.</p> <p>6.8.5 draw a circle and name the parts.</p>	<p>Nets of common solids</p> <p>Parts of a circle</p>	<p>TLMs: cuboids, cylinder, cubes of real object chalk box, middle of toilet roll, match boxes.</p> <p>Guide pupils to cut open solid shapes to form their nets. Assist pupils to use manila cards to make nets of solids.</p> <p>Solid</p>  <p>Cube</p>  <p>Cylinder</p> <p>Net</p>  <p>Net of a cube</p>  <p>Net of cylinder</p> <p>Let pupils to make nets of a cuboid and a cylinder using manila cards and fold pupils to make the solids.</p> <p>Let pupils draw a circle with a convenient radius and label the diameter, radius, centre and circumference.</p>  <p>AB is diameter OC is radius O is centre</p>	<p>Let pupils: draw nets of given solids.</p> <p>draw a circle and show the parts.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION					
UNIT 6.9 COLLECTING AND HANDLING DATA	The pupil will be able to: 6.9.1 collect data that involve counting, measuring and accessing information from text.	Collecting Data	TLMs: countable objects, newspapers, magazines, milk tins, milo tins, match boxes, etc Help pupils to collect data by counting and measuring. Guide pupils to access information from newspapers, magazines, books and other records.	Let pupils: count and record data accessed from books, magazines, etc.					
	6.9.2 read and write information from data presented in tables.	Reading and interpreting data from tables	Guide pupils to build tables from data, read and interpret it or answer questions on information from tables. E.g. (i) finding number of pupils born on each day. (ii) month with highest rainfall in the year.	Read and answer questions on data presented in a table.					
	6.9.3 represent data using block graph, bar graph and pictograph.	Block graph, bar graph and pictograph	Guide pupils to draw block graph, bar graph and pictogram to represent number of objects and people.	draw block, bar graphs and pictogram.					
	6.9.4 represent data using stem and leaf plot.	Stem and leaf plot	Guide pupils to make stem and leaf plot with 3-digit numbers. E.g. 112 123 114 135 134 131 116 127 127 125 120 121 displayed as <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding-right: 5px;">11</td> <td style="padding-left: 5px;">2 4 6</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 5px;">12</td> <td style="padding-left: 5px;">3 7 7 5 0 1</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 5px;">13</td> <td style="padding-left: 5px;">1 4 5</td> </tr> </table>	11	2 4 6	12	3 7 7 5 0 1	13	1 4 5
11	2 4 6								
12	3 7 7 5 0 1								
13	1 4 5								

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																																										
<p>UNIT 6.9 (CONT'D) COLLECTING AND HANDLING DATA</p> <p>UNIT 6.10 MULTIPLICATION AND DIVISION</p>	<p>The pupil will be able to:</p> <p>6.9.5 find the mode and median of a set of data</p> <p>6.9.6 find the mean of a set of data</p> <p>6.10.1 multiply 5 digit numbers by a 1-digit number</p>	<p>Mode and Median</p> <p>Mean</p> <p>Multiplication of 5 digit numbers by a 1-digit number</p>	<p>Guide pupils to review finding the mode as the most frequent occurring item in data.</p> <p>Revise finding the median as the middle value of a set of data when arranged in ascending or descending order.</p> <p>Lead pupils to find the mean of data by adding the values and dividing the sum by number of items. E.g. the mean of 3, 2, 3, 4, 6, 8, 9, is</p> $\frac{3+2+3+4+6+8+9}{7} = \frac{35}{7} = 5$ <p>TLMs: multiplication charts and tables.</p> <p>Revision: Assist pupils to revise multiplication fact up to product 1000. E.g. $9 \times 7 = 63$</p> $\begin{array}{r} 38 \\ \times 5 \\ \hline \end{array}$ <p>Guide pupils to multiply a 5-digit number by 1-digit number using colour-coded objects and the place value chart.</p> <p>E.g. 64027×7 is shown in the place value chart below.</p> <table border="1" data-bbox="1211 1082 1597 1412"> <thead> <tr> <th>M</th> <th>Hth</th> <th>Tth</th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>6</td> <td>4</td> <td>0</td> <td>2</td> <td>3</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>x</td> <td>7</td> </tr> <tr> <td></td> <td></td> <td>42</td> <td>28</td> <td>0</td> <td>14</td> <td>21</td> </tr> <tr> <td></td> <td></td> <td>44</td> <td>8</td> <td>0</td> <td>16</td> <td>1</td> </tr> <tr> <td></td> <td>4</td> <td>4</td> <td>8</td> <td>1</td> <td>6</td> <td>1</td> </tr> </tbody> </table>	M	Hth	Tth	Th	H	T	O			6	4	0	2	3						x	7			42	28	0	14	21			44	8	0	16	1		4	4	8	1	6	1	<p>Let pupils:</p> <p>find the mode and median of a given data.</p> <p>find the mean of given data.</p> <p>find products and missing factors in multiplication and division sentences.</p> <p>multiply 5-digit numbers by 1-digit numbers.</p>
M	Hth	Tth	Th	H	T	O																																								
		6	4	0	2	3																																								
					x	7																																								
		42	28	0	14	21																																								
		44	8	0	16	1																																								
	4	4	8	1	6	1																																								

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.10 (CONT'D) MULTIPLICATION AND DIVISION	<p>The pupil will be able to:</p> <p>6.10.2 multiply a 4-digit number by a 2-digit number</p> <p>6.10.3 find high , low and good estimates for products of a 4- digit number and a 2-digit number.</p> <p>6.10.4 divide a 3-digit number by 1-digit number</p>	<p>Multiplication of 4-digit number by 2-digit number</p> <p>Estimating the product of a 4-digit number and a 2-digit number.</p> <p>Division of a 3-digit by a 1-digit number</p>	<p>use the distributive property to perform multiplication of a 4-digit number by a 2-digit number.</p> <p>E.g. $3457 \times 28 = 3457 \times (20 + 8)$ $= (3457 \times 20) + (3457 \times 8)$ $= 69140 + 27656$ $= 96796$</p> <p>Guide pupils to multiply in the vertical form.</p> $\begin{array}{r} 3457 \\ \times 28 \\ \hline 27656 \\ 6914 \\ \hline 96796 \end{array}$ <p>Guide pupils to use rounding off numbers to the nearest thousand, hundred and ten to estimate products of 4-digit numbers and 2-digit numbers. E.g. 1756×18 High estimate $2000 \times 20 = 4000$ Low estimate $1700 \times 15 = 25500$ Good estimate $1760 \times 20 = 35200$</p> <p>Revise with pupils division of a 3-digit number by a 1-digit number using the scaffolding method. E.g. $432 \div 3$ $100 + 10 + 10 + 10 + 10 + 10 + 4 = 144$</p> $\begin{array}{r} 3 \overline{) 432} \\ \underline{-300} \\ 132 \\ \underline{-30} \\ 102 \\ \underline{-30} \\ 72 \\ \underline{-30} \\ 42 \\ \underline{-30} \\ 12 \\ \underline{-12} \\ 0 \end{array}$ <p>so $432 \div 3 = 144$</p> $\begin{array}{r} 3 \overline{) 432} \\ \underline{-300} \\ 132 \\ \underline{-30} \\ 102 \\ \underline{-30} \\ 72 \\ \underline{-30} \\ 42 \\ \underline{-30} \\ 12 \\ \underline{-12} \\ 0 \end{array} \quad \begin{array}{l} \text{or} \\ 3 \overline{) 432} \\ \underline{-300} \\ 132 \\ \underline{-30} \\ 102 \\ \underline{-30} \\ 72 \\ \underline{-30} \\ 42 \\ \underline{-30} \\ 12 \\ \underline{-12} \\ 0 \end{array} \quad \begin{array}{l} 100 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 4 \end{array}$	<p>Let pupils:</p> <p>find the product of 4-digit number by a 2-digit number.</p> <p>estimate the products of 4-digit numbers and two digit numbers.</p> <p>divide 3-digit numbers by 1-digit number using the scaffolding method.</p>

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.10 (CONT'D) MULTIPLICATION AND DIVISION	The pupil will be able to: 6.10.5 find estimates for quotients.	using rounding off numbers to the nearest ten and hundred to estimate their quotients	Guide pupils to use rounding off numbers to the nearest hundred and tens to estimate their quotients. E.g. $1678 \div 14$ $1678 = 1700$ to the nearest hundred $14 = 10$ to the nearest ten The estimate is $1700 \div 10 = 170$	Let pupils: round off number and estimate their quotient.
	6.10.6 solve word problems involving multiplication and division.	Solving word problems involving multiplication and division	Pose word problems on multiplication and division for pupils to solve.	solve word problems involving multiplication and division.
UNIT 6.11 INVESTIGATIONS WITH NUMBERS	6.11.1 use properties of basic operations.	Properties of operations	Guide pupils to use the following properties of basic operations to complete number sentences. - commutative properties of addition and multiplication - associative properties of addition and multiplication - distributive property of multiplication over addition Identify the appropriate operation to complete number sentences. Use the properties to test for true or false sentences which are true or false.	write different number sentences for given sum using given numbers
	6.11.2 find the pattern of triangular and square numbers up to the 10 th term	Triangular and square numbers	Guide pupils to arrange countable objects to develop patterns in triangular and square numbers.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION																			
UNIT 6.12 MEASUREMENTS OF AREA AND VOLUME	<p>The pupil will be able to:</p> <p>6.12.1 calculate the area of a rectangle with given dimensions</p>	<p>Area of a rectangle</p>	<p>TLMs: cubes, boxes, sugar box. square cut-outs, geoboard</p> <p>Assist pupils to cover given rectangular regions with square cut-outs to determine the number of squares that can cover a given rectangle.</p> <p>Let pupils in groups make rectangles of any dimensions and count the number of squares in each. Let pupils record the results in a table as shown in the example below.</p> <div style="text-align: right;">  </div> <table border="1" data-bbox="1214 598 1608 710"> <thead> <tr> <th>L</th> <th>B</th> <th>No. of square</th> <th>L x B</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>2</td> <td>8</td> <td>8</td> </tr> <tr> <td>5</td> <td>3</td> <td>15</td> <td>15</td> </tr> <tr> <td>6</td> <td>4</td> <td>24</td> <td>24</td> </tr> </tbody> </table> <p>Let pupils determine the relationship between length, breadth and the number of square i.e. $L \times B =$ Number of squares. Area is 15 squares i.e. $5 \times 3 = 15\text{cm}^2$</p> <p>assist pupils to use the rule $L \times B$ to calculate the area of a rectangle with given dimensions E.g.</p> <div style="text-align: center;">  </div> <p style="text-align: right;">Area = $L \times B$ $4 \times 2 = 8\text{ cm}^2$</p>	L	B	No. of square	L x B	4	2	8	8	5	3	15	15	6	4	24	24	<p>Let pupils:</p> <p>find the area of rectangles with given dimensions.</p>			
	L	B	No. of square	L x B																			
4	2	8	8																				
5	3	15	15																				
6	4	24	24																				
<p>6.12.2 find the volume of cuboids.</p>	<p>Volume of cuboid</p>	<p>Fill a box with 1-cm cubes to determine its volume.</p> <div style="text-align: center;">  </div> <table border="1" data-bbox="1214 1260 1724 1372"> <thead> <tr> <th>L</th> <th>B</th> <th>H</th> <th>No. of cubes</th> <th>L x B x H</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>2</td> <td>3</td> <td>24</td> <td>24</td> </tr> <tr> <td>5</td> <td>3</td> <td>2</td> <td>30</td> <td>30</td> </tr> <tr> <td>6</td> <td>2</td> <td>4</td> <td>48</td> <td>48</td> </tr> </tbody> </table>	L	B	H	No. of cubes	L x B x H	4	2	3	24	24	5	3	2	30	30	6	2	4	48	48	<p>calculate volume of cuboids and cubes of given dimensions.</p>
L	B	H	No. of cubes	L x B x H																			
4	2	3	24	24																			
5	3	2	30	30																			
6	2	4	48	48																			

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.13 MEASUREMENT MONEY	The pupil will be able to: 6.13.1 solve simple problems involving transactions with money.	Transactions involving money	Volume of cuboid, $V = L \times B \times H$ Guide pupils to use the formula $V = L \times B \times H$ to find the volume of cuboids $\text{Volume} = 5 \times 3 \times 2$ $= 30\text{cm}^3$ TLMs: Currency notes and coins solve problems that involve the use of money in everyday life activity E.g. trading in market, post office activity, etc. Let pupil find (i) The sum of the cost of 3 or 4 items. (ii) Changes in the transactions.	Let pupils: solve problems involving transaction in money.
	6.13.2 solve simple problems involving profit and loss.	Profit and Loss	Guide pupils to solve problems involving profit and loss using selling price (S.P.) and cost price (C.P.) Create a corner shop for pupils to buy and sell.	solve problems on profit and loss.
UNIT 6.14 CHANCE	6.14.1 list all possible outcomes of a situation.	Possible Outcomes	TLMs: coins, dice Guide pupils to perform experiments and record all the possible outcomes. Toss a coin or die several times and record the possible outcomes. Possible out comes of tossing a die are 1, 2, 3, 4, 5, 6.	list the possible outcomes of a given experiment.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6.14 (CONT'D) CHANCE	The pupil will be able to: 6.14.2 identify an event from outcomes of a situation.	Idea of Event	Guide pupils to identify an event as an outcome or a number of outcomes of a situation. E.g. (i) The event "6" will occur if a die is tossed. (ii) The event "2,4 or 6" will occur if a die is tossed	Let pupils: Find the number of events in an experiment
	6.14.3 find the chance of an event.	Finding Chance	Assist pupils to perform an experiment and find the chance of an event occurring. E.g. Pupils use the rule. Chance of an event occurring = $\frac{\text{Number of outcomes giving rise to the event}}{\text{Number of all possible outcomes}}$ E.g. To find the chance of an event of an odd number appearing in a toss of a die. The possible outcomes are 1,2,3,4,5,6. The number of possible outcomes is 6. The event consists of 1,3,5. Number of outcomes giving event is 3. The chance of odd number occurring = $\frac{3}{6} = \frac{1}{2}$	find the chance of events.
UNIT 6.15 THE NUMBER PLANE	6.15.1 draw a number plane.	Number Plane	TLMs: graph sheets, rulers. Revise drawing and labeling the horizontal and vertical axes.	draw the horizontal and vertical axes and label them.
	6.15.2 plot and join points for a pair of numbers related by a rule.	Plotting points related by a rule on a number plane	Guide pupils to find, plot and join a set of ordered pairs of numbers for a given rule. E.g. Rule: take a number and add 2 to get a second number (2, 4), (3, 5), (4, 6).	plot and join sets of points related by a given rule.

