



**REPUBLIC OF TRINIDAD AND TOBAGO
MINISTRY OF EDUCATION**

PRIMARY SCHOOL CURRICULUM

CURRICULUM GUIDES

MATHEMATICS

INFANTS 1 – STANDARD 5

**Curriculum Planning and Development Division
2013**

Contents

Infants 1	3
Infants 2	28
Standard 1	59
Standard 2	106
Standard 3	156
Standard 4	198
Standard 5	242

Primary School Curriculum

Mathematics

Infants 1

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
NUMBER				
Pre-Number				
1.1.1. Develop pre-number skills.	<p>1.2.1. Classify objects into groups and subgroups using different criteria.</p> <p>1.2.2. Use one-to-one correspondence to match objects in sets to determine more than, less than or equal to.</p> <p>1.2.3. Rote count to 20 in ascending and descending order.</p>	1.3.1. Display interest while exploring pre-number activities.	<p>1. Develop pre-number skills (classification and matching).</p> <p>2. Count sequentially to 20.</p>	<ul style="list-style-type: none"> • Sort objects according to different criteria (e.g. colour, size, shape, texture and name) using one or two attributes. [1.1.1, 1.2.1, 1.3.1] • Explain reasons for classification (student's criteria). [1.1.1, 1.2.1, 1.3.1] • Match objects (concrete and pictorial) in two groups and three groups using one-to-one correspondence and use appropriate vocabulary to compare groups e.g. more than, less than, as many as, most, least. [1.1.1, 1.2.2, 1.3.1] • Count to 20 in ascending order (starting at one and zero) and

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>count from 20 in descending order. [1.1.1, 1.2.3, 1.3.1]</p> <ul style="list-style-type: none"> Count using the ‘counting on’ and ‘back’ strategies starting from a given number. [1.1.1, 1.2.3,1.3.1]
<p>Number Concepts</p> <p>1.1.2. Develop number sense 1 to 10.</p>	<p>1.2.4. Count objects to demonstrate one-to-one correspondence (up to 10).</p> <p>1.2.5. Recognize that the number of objects remains the same when objects are rearranged.</p> <p>1.2.6. Connect number</p>	<p>1.3.2. Display interest while exploring number.</p> <p>1.3.3. Develop confidence in counting.</p> <p>1.3.4. Show collaboration while doing activities.</p>	<p>3. Understand the concept of numbers 1-10.</p> <p>4. Understand the position of objects.</p> <p>5. Demonstrate estimation skills using 5 as a benchmark.</p>	<ul style="list-style-type: none"> Count objects to demonstrate one-to-one correspondence (up to 10). [1.1.2, 1.2.4, 1.3.2, 1.3.3] Explain that the last count, when counting a set of objects, identifies how many objects are in the set. [1.1.2, 1.2.4, 1.3.3] Count objects to establish that a number is one more than the preceding number. [1.1.2, 1.2.4, 1.3.2]

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>names and numerals to quantities up to 10.</p> <p>1.2.7. Sequence number names and numerals.</p> <p>1.2.8. Read and write number names and numerals.</p> <p>1.2.9. Use comparison vocabulary to compare the number of objects in two sets (less than 10).</p> <p>1.2.10. Compare groups of objects and</p>		<p>6. Demonstrate an understanding of the value of coins and bills (1¢, 5¢, 10¢, \$1, \$5, \$10).</p>	<ul style="list-style-type: none"> • Count objects in different arrangements to demonstrate conservation of number. [1.1.2, 1.2.5, 1.3.3] • Match the number names and numerals to the quantities they represent up to 10 (concrete and pictorial). [1.1.2, 1.2.6, 1.3.4] • Sequence number names and numerals. [1.1.2, 1.2.7, 1.3.2] • Read and write number names and numerals. [1.1.2, 1.2.8, 1.3.2] • Match objects in two groups and use appropriate vocabulary to compare the number of objects e.g. 5 is more than 3. [1.1.2, 1.2.9,1.3.4] • Compare groups of objects and order numbers to 10. [1.1.2,

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>order numbers.</p> <p>1.2.11. Use 5 as a reference in forming numbers from 6 to 10 e.g. ‘seven is two more than five’.</p> <p>1.2.12. Use the language of ordinal numbers (first, second, third and last).</p> <p>1.2.13. Demonstrate skills in estimation of the number of objects in a set, using 5 as a benchmark and verify by</p>			<p>1.2.10,1.3.2]</p> <ul style="list-style-type: none"> • Use 5 as a reference or benchmark in the formation of numbers from 6 to 10 e.g. ‘seven is two more than five’. [1.1.2, 1.2.11, 1.3.2] • Order objects and use appropriate language to describe position (first, second, third and last). [1.1.2, 1.2.12, 1.3.4] • Estimate a given quantity using 5 as a benchmark and verify by counting. [1.1.2, 1.2.13, 1.3.4] • Explore the value of coins and bills (1¢, 5¢, 10¢, \$1, \$5, \$10) e.g. 10 cents is worth more than 5 cents (use the idea of purchase of items priced at 5 cents or 1 cent and how many can be bought). [1.1.2, 1.2.14, 1.3.2]

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	counting. 1.2.14. Explore the value of coins and bills (1¢, 5¢, 10¢, \$1, \$5, \$10) and their equivalence.			<ul style="list-style-type: none"> • Use the language of money in role-playing situations involving the exchange of goods for money (exact value of the coins and bills). [1.1.2, 1.2.14, 1.3.4] • State the equivalence of coins and bills up to 10 cents and 10 dollars. [1.1.2, 1.2.14, 1.3.2]
Number Patterns 1.1.3. Explore number patterns.	1.2.15. Recognize the arrangement of dots/objects in standard spatial arrangements of numbers up to 5 (subitize). 1.2.16. Explore patterns using repetitions	1.3.5. Show perseverance in finding solutions to problems that involve patterns.	7. Recognize and explore number patterns up to 10.	<ul style="list-style-type: none"> • Look at an arrangement of dots/objects in standard spatial arrangements and identify the number represented up to 5. [1.1.3, 1.2.15, 1.3.5] • Distinguish between repeating patterns and non-repeating patterns in a given set by identifying the part that repeats or

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	of 2-3 elements (name as 'number' pattern e.g. 'two' pattern).			errors. [1.1.3, 1.2.16, 1.3.5] <ul style="list-style-type: none"> • Describe a given repeating pattern containing two to three elements in its core. [1.1.3, 1.2.16, 1.3.5] • Determine the pattern rule and extend the repeating pattern using concrete materials, pictorial representation or symbols. [1.1.3, 1.2.16, 1.3.5] • Name a given repeating pattern with two to three elements in its core. [1.1.3, 1.2.16, 1.3.5] • Create number patterns using repetition of elements. [1.1.3, 1.2.16, 1.3.5]
Addition				<ul style="list-style-type: none"> • Solve one-step real-life addition

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>1.1.4. Solve real-life problems involving addition (concrete and pictorial modes only, no symbol).</p>	<p>1.2.17. Solve one-step real-life addition problems presented orally or pictorially (using concrete materials, whole number and money).</p>	<p>1.3.6. Develop confidence in computation involving addition.</p> <p>1.3.7. Show perseverance in finding solutions to problems involving addition.</p>	<p>8. Demonstrate a conceptual understanding of addition (concrete and pictorial modes only).</p>	<p>problems presented orally or pictorially (using concrete materials, whole number and money) using 2 sets of objects (joining structures - change, result unknown; part-part-whole structures (whole unknown) - combine, total set unknown) with a sum less than or equal to 10 and using a variety of problem solving strategies such as, use a model, act it out, look for a pattern and draw a picture. [1.1.4, 1.2.17, 1.3.7]</p> <ul style="list-style-type: none"> • Combine two groups of objects to model addition (count the amount in each group and the sum). [1.1.4, 1.2.17, 1.3.6] • Solve problems involving addition using concrete and pictorial representations in vertical and horizontal arrangements. [1.1.4,

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>1.2.17, 1.3.7]</p> <ul style="list-style-type: none"> • Record addition using pictorial representations/drawings, numerals and/or words e.g. 3 add 2 equal 5. [1.1.4, 1.2.17, 1.3.6] • Describe what happens to a group after addition is performed. [1.1.4, 1.2.17, 1.3.6] • Create number stories using appropriate vocabulary (including the language of money). [1.1.4, 1.2.17, 1.3.7]
<p>Subtraction</p> <p>1.1.5. Solve real-life problems involving subtraction (concrete and</p>	<p>1.2.18. Solve one-step real-life subtraction problems presented orally</p>	<p>1.3.8. Develop confidence in computation involving</p>	<p>9. Develop a conceptual understanding of subtraction (concrete and</p>	<ul style="list-style-type: none"> • Solve one-step real-life subtraction problems (separating structures - change, result unknown or deducting) presented orally or pictorially (using

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>pictorial modes only, no symbol).</p>	<p>or pictorially (using concrete materials, whole numbers and money).</p>	<p>subtraction.</p> <p>1.3.9. Show perseverance in finding solutions to problems involving subtraction.</p>	<p>pictorial modes only).</p>	<p>concrete materials, whole number and money) with a minuend less than 10 and using a variety of problem solving strategies such as, use a model, act it out, look for a pattern and draw a picture. [1.1.5, 1.2.18, 1.3.9]</p> <ul style="list-style-type: none"> • Take away from a group of objects to model subtraction (count the starting amount, count out a set, count how many are left). [1.1.5, 1.2.18, 1.3.8] • Solve problems involving subtraction using concrete and pictorial representations in vertical and horizontal arrangements. [1.1.5, 1.2.18, 1.3.9] • Record subtraction using pictorial representations/drawings, numerals and/or words e.g. 5 take away 2 equals 3. [1.1.5, 1.2.18,

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				1.3.8] <ul style="list-style-type: none"> • Describe what happens to a group after subtraction is performed. [1.1.5, 1.2.18, 1.3.8] • Create number stories using appropriate vocabulary (including the language of money). [1.1.5, 1.2.18, 1.3.9]
Mental Mathematics 1.1.6. Develop strategies to solve problems mentally.	1.2.19. Investigate connections between addition facts and corresponding subtraction facts. 1.2.20. Associate add-one and subtract-	1.3.10. Develop confidence in the use of Mental Mathematics strategies.	10. Develop strategies to solve problems mentally.	<ul style="list-style-type: none"> • Investigate connections between addition facts (with sum less than or equal to 10) and the corresponding subtraction facts (minuend less than or equal to 10). [1.1.6, 1.2.19, 1.3.10] • Solve problems using mental strategies such as:

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>one facts to forward (number after) and backward (number before) counting.</p> <p>1.2.21. Use the ‘Make Five’ (think addition) strategy to solve problems.</p>			<ul style="list-style-type: none"> ○ Addition and subtraction facts ○ Add-one and subtract-one as it relates to forward and backward counting ○ ‘Make Five’ (think addition). <p>[1.1.6, 1.2.20,1.2.21, 1.3.10]</p>
<p>Language</p> <p>1.1.7. Develop appropriate vocabulary associated with number.</p>	<p>1.2.22. Use appropriate vocabulary associated with number, orally and in writing.</p>	<p>1.3.11. Communicate with confidence using language related to number.</p>	<p>11. Communicate effectively using vocabulary associated with number.</p>	<ul style="list-style-type: none"> ● Use appropriate language associated with number, such as: same, equal, as many as, more than, less than, one to ten (1 to 10), join, altogether, add, take away, left, remove, remain, guess, before, after, between, repeating unit, first, second, third, last, buy,

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
		1.3.12. Demonstrate an appreciation for others by listening to their point of view.		sell, spend, how much?, coins, dollars, some, few, many, more, most, least, number and count. [1.1.7, 1.2.22, 1.3.11, 1.3.12]
GEOMETRY				
Solids and Plane Shapes				
2.1.1. Demonstrate familiarity with solids and plane shapes. 2.1.2. Distinguish between solids (3-D shapes) and plane shapes	2.2.1. Identify solids (using informal names) and plane shapes (using formal names) in the surroundings. 2.2.2. Describe solids and plane shapes using appropriate vocabulary	2.3.1. Display curiosity in the exploration of solids and plane shapes. 2.3.2. Show enjoyment as they manipulate the solids and	1. Describe solids and plane shapes based on their properties. 2. Construct models of objects using solids and/or	<ul style="list-style-type: none"> Identify solids (using informal names for cuboid, cube, sphere, cylinder, and cone) and plane shapes (squares, triangles, rectangles and circles) using formal names in the surroundings. [2.1.1, 2.2.1, 2.3.1] Match solids and plane shapes with familiar objects in the

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
(2-D shapes).	<p>related to geometric attributes (colour, size, shape, position).</p> <p>2.2.3. Classify solids and plane shapes according to one or more common attributes including students' own criteria.</p> <p>2.2.4. Compare:</p> <ul style="list-style-type: none"> ○ two solids ○ two plane shapes. <p>2.2.5. Build models with solids and plane shapes and describe</p>	<p>plane shapes.</p> <p>2.3.3. Demonstrate creativity when constructing models.</p>	<p>plane shapes.</p>	<p>surroundings. [2.1.1, 2.2.1, 2.3.1]</p> <ul style="list-style-type: none"> ● Match word names to solids and plane shapes. [2.1.2, 2.2.1, 2.3.1] ● Describe solids and plane shapes using appropriate vocabulary related to geometric attributes (size, shape, position) e.g. big, small, flat, round, thick, thin, pointed. [2.1.2, 2.2.2, 2.3.1] ● Classify solids (e.g. colour, size, shape, function) and plane shapes (e.g. size, shape), according to one or more common attributes including students' own criteria and explain reasons for classification. [2.1.2, 2.2.3, 2.3.1, 2.3.2] ● Compare: <ul style="list-style-type: none"> ○ Two solids ○ Two plane shapes

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	structures using appropriate language.			<p>by stating similarities and differences (size, shape, position). [2.1.2, 2.2.4, 2.3.1]</p> <ul style="list-style-type: none"> • Select from a given set of solids or plane shapes: <ul style="list-style-type: none"> ○ Solids or plane shapes that are the same ○ Solids or plane shapes that are alike/similar ○ Solids or plane shapes that are different <p>and explain reason(s) for selection. [2.1.2, 2.2.4, 2.3.1, 2.3.2]</p> <ul style="list-style-type: none"> • Build models using solids and plane shapes and describe compositions/structures. [2.1.1, 2.2.5, 2.3.3]
Geometrical Patterns				

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>2.1.3. Explore patterns using solids and plane shapes.</p>	<p>2.2.6. Explore patterns using repetitions of 2-3 elements (name as ‘number’ pattern e.g. ‘two’ pattern).</p> <p>2.2.7. Create patterns using solids or plane shapes (repeating – 2 to 3 elements).</p>	<p>2.3.4. Demonstrate creativity in the creation of patterns.</p>	<p>3. Recognize and explore repeating patterns using solids and plane shapes.</p>	<ul style="list-style-type: none"> • Distinguish between repeating and non-repeating patterns in a given set involving solids or plane shapes by identifying the part that repeats or errors. [2.1.3, 2.2.6] • Copy a given pattern and describe the pattern. [2.1.3, 2.2.6] • Identify the pattern rule in repeating patterns. [2.1.3, 2.2.6] • Use a pattern rule to extend repeating patterns. [2.1.3, 2.2.6, 2.3.4] • Create repeating patterns using solids or plane shapes. [2.1.3, 2.2.7, 2.3.4] • Describe a repeating pattern as a ‘number’ pattern, e.g. O, \square, O, \square,

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>O, \square is a 'two' pattern; \square, O, Δ, $\square, O, \Delta, , \square, O, \Delta$ is a 'three' pattern. [2.1.3, 2.2.6]</p>
<p>Language</p> <p>2.1.4. Develop appropriate vocabulary associated with geometry.</p>	<p>2.2.8. Use appropriate vocabulary associated with geometry, orally and in writing.</p>	<p>2.3.5. Communicate with confidence using language related to geometry.</p> <p>2.3.6. Demonstrate an appreciation for others.</p>	<p>4. Communicate effectively using vocabulary associated with geometry.</p>	<ul style="list-style-type: none"> • Use appropriate language associated with geometry, such as: ball, can, box, block, cone, flat, not flat, round, size, tall, short, thin, thick, broad, big, small, narrow, wide, on top of, next to, over, between, underneath, above, under, up, down, on, beside, in, shape, pointed, behind, in front of, near, far, below, same, square, circle, rectangle, triangle, bottom, pattern, repeat, inside, outside, in the middle, high/higher, low/lower, here, there, far from and close to. [2.1.4, 2.2.8, 2.3.5, 2.3.6]
MEASUREMENT				

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Linear</p> <p>3.1.1. Develop the concept of linear measures.</p>	<p>3.2.1. Investigate the lengths of objects.</p> <p>3.2.2. Use comparison vocabulary to compare two objects (direct comparison) in relation to length.</p>	<p>3.3.1. Build confidence in measuring.</p>	<p>1. Develop the concept of linear measure.</p> <p>2. Communicate effectively using vocabulary associated with linear measures.</p>	<ul style="list-style-type: none"> • Explore concrete materials and describe them using the language associated with length (e.g. long/short, thin/fat, wide/narrow) so as to develop the concept of length. [3.1.1, 3.2.1, 3.3.1] • Compare the lengths of two objects using direct comparison (placing side by side and aligning one end) and explain reasoning, using appropriate vocabulary e.g. longer/shorter. [3.1.1, 3.2.2, 3.3.1] • Describe length as the measure of an object from one end to the next. [3.1.1, 3.2.1, 3.3.1] • Describe the distance of objects using appropriate vocabulary. [3.1.1, 3.2.2]

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Mass/Weight</p> <p>3.1.2. Develop the concept of mass/weight.</p>	<p>3.2.3. Investigate the mass/weight of objects.</p> <p>3.2.4. Use comparison vocabulary to compare two objects (direct comparison) in relation to mass/weight (heft, push, pull).</p>	<p>3.3.2. Display curiosity in measuring.</p>	<p>3. Develop the concept of mass/weight.</p> <p>4. Communicate effectively using vocabulary associated with mass/weight.</p>	<ul style="list-style-type: none"> • Explore and describe objects using the language associated with mass/weight (e.g. heavy/ light) so as to develop the concept of mass/weight. [3.1.2, 3.2.3, 3.3.2] • Compare the mass/weight of two objects (including small heavy objects and big light objects) by hefting, pushing, pulling and explain reasoning using appropriate vocabulary e.g. heavier/lighter. [3.1.2, 3.2.4, 3.3.2] • Describe mass/weight as how heavy/light an object is. [3.1.2, 3.2.4, 3.3.2]

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Time</p> <p>3.1.3. Develop the concept of time.</p>	<p>3.2.5. Describe different times of the day and related activities.</p> <p>3.2.6. Sequence activities according to time of occurrence and duration of events.</p>	<p>3.3.3. Be reflective when measuring time.</p>	<p>5. Develop the concept of time.</p> <p>6. Communicate effectively using vocabulary associated with time.</p>	<ul style="list-style-type: none"> • Describe times of the day (e.g., night-time, daytime, lunchtime) and related activities (e.g. eating breakfast, going to sleep) using appropriate vocabulary. [3.1.3, 3.2.5, 3.3.3] • Sequence activities according to time of occurrence. [3.1.3, 3.2.6, 3.3.3] • Describe events/activities that take a long time or a short time. [3.1.3, 3.2.6, 3.3.3]
<p>Language</p> <p>3.1.4. Develop appropriate vocabulary associated</p>	<p>3.2.7. Use appropriate vocabulary associated with measurement,</p>	<p>3.3.4. Communicate with confidence using</p>	<p>7. Communicate effectively using vocabulary</p>	<ul style="list-style-type: none"> • Use appropriate language associated with measurement, such as: short/shorter, long/longer, tall/taller, as long as, wide/narrow,

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
with measurement.	orally and in writing.	language related to measurement.	associated with measurement.	thin/fat, deep/shallow, high/low, near/far, length, mass/weight, heavy/heavier, light/lighter, easy/hard to push, easy/hard to pull, time, morning, afternoon, midday, evening, day, night, early/earlier, late/later and short time/long time. [3.1.4, 3.2.7, 3.3.4]
STATISTICS				
Object Charts and Picture Charts				
4.1.1. Collect, display and analyse data to solve real-world problems. 4.1.2. Make decisions based on data.	4.2.1. Classify objects into groups and sub-groups using different criteria. 4.2.2. Collect and classify data about self and others to make	4.3.1. Display mathematical reasoning (logical thinking) when interpreting data.	1. Demonstrate the ability to collect, classify, organize, represent and interpret data. 2. Use analysed data to make	OBJECT CHARTS <ul style="list-style-type: none"> • Collect and classify data about objects (e.g. colour of lunch bags), self (e.g. short hair, long hair) and others to make decisions. [4.1.1, 4.2.1, 4.3.1] • Organize objects into rows so as

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>decisions.</p> <p>4.2.3. Construct and interpret object and picture charts based on real-life problems or situations.</p> <p>4.2.4. Make informed decisions based on data analysed.</p>	<p>4.3.2. Develop an appreciation for others when interpreting data.</p> <p>4.3.3. Appreciate the value of collaboration in decision-making.</p>	<p>decisions and solve problems.</p>	<p>to compare different subgroups (teacher guidance may be necessary e.g. in the identification of a starting line or baseline). [4.1.1, 4.2.3]</p> <ul style="list-style-type: none"> • Compare groups by counting and using one-to-one correspondence. [4.1.2, 4.2.3, 4.3.1] • Interpret and analyse the constructed object chart (and ones presented by the teacher, with and without grid) so as to make decisions about a real-life situation or problem. [4.1.2, 4.2.3, 4.3.1] • Participate in decision-making to solve problems. [4.1.2, 4.2.4, 4.3.2, 4.3.3] • Communicate findings using

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>appropriate vocabulary. [4.3.3]</p> <ul style="list-style-type: none"> • Explain the importance of the appropriate arrangement of objects for easy comparison. [4.1.1, 4.2.3] <p>PICTURE CHARTS</p> <ul style="list-style-type: none"> • Construct picture charts by replacing an object in an object chart by an appropriate picture or by sorting and arranging pictures (as would have been done for object charts). [4.1.1, 4.2.1, 4.2.3] • Construct picture charts (without and with grid) based on real-life problems or situations, using vertical and horizontal arrangements. [4.1.1, 4.2.3] • Explain reasons for using a grid.

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>[4.1.1, 4.2.3]</p> <ul style="list-style-type: none"> • Interpret picture charts based on a real-life problem or situation so as to make informed decisions. [4.1.2, 4.2.3, 4.3.1] • Participate in decision-making to solve problems. [4.1.2, 4.2.4, 4.3.2, 4.3.3] • Communicate findings using appropriate vocabulary. [4.3.3] • Explain how the pictures were arranged for easy comparison. [4.1.1, 4.2.3] <p>(Depending on the experiences of students teachers may decide to start with the interpretation of presented charts, which can then be used to identify the characteristics of charts. Charts can then be appropriately</p>

MATHEMATICS CONTENT STANDARDS: INFANT 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				constructed. Charts can also be transformed from one form to another and this idea can be used to initiate interpretation of the same data using different representations.)
<p>Language</p> <p>4.1.3. Develop appropriate vocabulary associated with statistics.</p>	<p>4.2.5. Use appropriate vocabulary associated with statistics, orally and in writing.</p>	<p>4.3.4. Communicate with confidence using language related to statistics.</p>	<p>3. Communicate effectively using vocabulary associated with statistics.</p>	<ul style="list-style-type: none"> • Use appropriate language associated with statistics, such as: sort, groups, object chart, picture chart, same, more/more than, less/less than, fewer, many, altogether, grid, across and down. [4.1.3, 4.2.5, 4.3.4]

Primary School Curriculum

Mathematics

Infants 2

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
NUMBER				
<p>Number Concepts</p> <p>1.1.1. Develop number sense from 0 to 20 and appropriate vocabulary.</p>	<p>1.2.1 Count to or from 100 in ascending and descending order (rote count).</p> <p>1.2.2 Count objects to demonstrate one-to-one correspondence (up to 20).</p> <p>1.2.3 Recognize that the number of objects remains the same when objects are rearranged.</p> <p>1.2.4 Connect number names and</p>	<p>1.3.1 Develop confidence in counting.</p> <p>1.3.2 Strive for accuracy in counting.</p>	<ol style="list-style-type: none"> 1. Count sequentially up to 100. 2. Understand the concept of numbers 0-20. 3. Understand the position of objects. 4. Demonstrate estimation skills using 10 as a benchmark. 5. Demonstrate an understanding of the value of 	<ul style="list-style-type: none"> • Count forward (counting on) and backward (counting back) by ones to or from 100 from any given number. (A hundred chart can be used). [1.1.1, 1.2.1, 1.3.1, 1.3.2] • Skip count in 2s (starting at zero and one) and 5s (starting at zero) to or from 20 in ascending and descending order. [1.1.1, 1.2.1, 1.3.1, 1.3.2] • Count objects to demonstrate one-to-one correspondence (up to 20). [1.1.1, 1.2.2, 1.3.2] • Explain that the last count, when counting a set of objects, identifies how many objects are in

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>numerals to quantities up to 20.</p> <p>1.2.5 Sequence number names and numerals.</p> <p>1.2.6 Read and write number names and numerals.</p> <p>1.2.7 Use comparison vocabulary to compare the number of objects in two sets (less than 20).</p> <p>1.2.8 Compare groups of objects and order numbers.</p> <p>1.2.9 Use 10 as a</p>		<p>coins and bills up to 25¢ and up to \$20.</p>	<p>the set. [1.1.1, 1.2.2, 1.3.1, 1.3.2]</p> <ul style="list-style-type: none"> • Count objects to establish that a number is one more than the preceding number. [1.1.1, 1.2.2, 1.3.1, 1.3.2] • Count objects in different arrangements to demonstrate conservation of number. [1.1.1, 1.2.3, 1.3.1, 1.3.2] • Match the number names and numerals to the quantities they represent up to 20 (concrete and pictorial). [1.1.1, 1.2.4, 1.3.2] • Count to 20 in ascending order (starting at one and zero) and count from 20 in descending order. [1.1.1, 1.2.5, 1.3.1] • Sequence number names and

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>reference in forming numbers from 11 to 20 e.g. 'seventeen is seven more than ten'.</p> <p>1.2.10 Use the language of ordinal numbers up to tenth.</p> <p>1.2.11 Demonstrate skills in estimation of the number of objects in a set, using 10 as a benchmark and verify by counting.</p> <p>1.2.12 Explore the value of coins</p>			<p>numerals. [1.1.1, 1.2.5, 1.3.2]</p> <ul style="list-style-type: none"> • Explain the meaning of zero (none, no one, empty, nothing) after solving related subtraction problems e.g. There are 5 birds on a tree. They all flew away. How many are left? [1.1.1, 1.2.2, 1.3.2] • Read and write number names and numerals. [1.1.1, 1.2.6, 1.3.2] • Identify the number before, the number after, and the number between, using a number line. [1.1.1, 1.2.5, 1.3.2] • Insert missing numbers on a number line. [1.1.1, 1.2.5, 1.3.2] • Match objects in two groups and use appropriate vocabulary to compare the number of objects e.g. 15 is more than 13. [1.1.1,

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	and bills (up to 25¢, up to \$20) and their equivalence.			1.2.7, 1.3.2] <ul style="list-style-type: none"> • Compare groups of objects and order numbers to 20. [1.1.1, 1.2.8, 1.3.2] • Use 10 as a reference or benchmark in the formation of numbers from 11 to 20 e.g. ‘seventeen is seven more than ten’. [1.1.1, 1.2.9, 1.3.2] • Order objects and use appropriate language to describe its position up to tenth. [1.1.1, 1.2.10, 1.3.2] • Estimate a given quantity using 10 as a benchmark and verify by counting. [1.1.1, 1.2.11, 1.3.2] • Explore the value of coins and bills (up to 25¢, up to \$20) e.g. 25 cents is worth more than 5 cents (use the idea of purchase of items

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>priced at 5 cents and how many can be bought). [1.1.1, 1.2.12, 1.3.2]</p> <ul style="list-style-type: none"> • Use the language of money in role playing situations involving the exchange of goods for money (exact value of the coins and bills, one item and receive change). [1.1.1, 1.2.12, 1.3.2] • State the equivalence of coins and bills up to 25 cents and 20 dollars. [1.1.1, 1.2.12, 1.3.2]
<p>Number Patterns and Number Relationships</p> <p>1.1.2. Explore algebraic thinking (number</p>	<p>1.2.13 Recognize the arrangement of dots / objects in standard spatial</p>	<p>1.3.3 Be explorative when examining</p>	<p>6. Recognize and explore number patterns up to</p>	<p>NUMBER PATTERNS</p> <ul style="list-style-type: none"> • Look at an arrangement of dots/objects in standard spatial

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>patterns and number relationships).</p>	<p>arrangements of numbers up to 10 (subitize).</p> <p>1.2.14 Explore patterns using repetitions of 2 to 4 elements (name as ‘number’ pattern e.g. ‘two’ pattern).</p> <p>1.2.15 Use balance activities to demonstrate equality and inequality.</p> <p>1.2.16 Count objects in sets to demonstrate equality and inequality of</p>	<p>patterns.</p> <p>1.3.4 Take risks in solving problems.</p>	<p>20.</p> <p>7. Understand the concept of equality.</p> <p>8. Use the concept of equality to solve problems in addition and subtraction.</p>	<p>arrangements and identify the number represented up to 10. [1.1.2, 1.2.13, 1.3.3]</p> <ul style="list-style-type: none"> • Distinguish between repeating patterns and non-repeating patterns in a given set by identifying the part that repeats or errors. [1.1.2, 1.2.14, 1.3.3, 1.3.4] • Describe a given repeating pattern containing two to four elements in its core. [1.1.2, 1.2.14, 1.3.3] • Determine the pattern rule and extend the repeating pattern using concrete materials, pictorial representation or symbols. [1.1.2, 1.2.14, 1.3.4] • Name a repeating pattern containing two to four elements in its core (name as ‘number’ pattern e.g. ‘two’ pattern). [1.1.2, 1.2.14,

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>sets.</p> <p>1.2.17 Use the language and symbols associated with the concept of equality.</p> <p>1.2.18 Solve problems involving addition and subtraction and using balance activities and the concept of equality.</p>			<p>1.3.3]</p> <ul style="list-style-type: none"> • Identify the missing element(s) in a given repeating pattern. [1.1.2, 1.2.14, 1.3.4] • Create number patterns using repetition of elements. [1.1.2, 1.2.14, 1.3.4] <p>NUMBER RELATIONSHIPS</p> <ul style="list-style-type: none"> • Construct two equal sets using the same objects (same shape and mass/weight) and demonstrate their equality of number using a balance scale and counting. [1.1.2, 1.2.15, 1.2.16, 1.3.4] • Construct two unequal sets using the same objects (same shape and mass/weight) and demonstrate their inequality of number using a balance scale and counting. [1.1.2,

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>1.2.15, 1.2.16, 1.3.4]</p> <ul style="list-style-type: none"> • Explain the procedure used to determine if two given sets of objects are equal or unequal in number. E.g. use of the balance scale and counting. [1.1.2, 1.2.15, 1.2.17, 1.3.4] • Use the language of equality to describe the relationship between two sets. E.g. they have the same number of objects, they are equal in number. [1.1.2, 1.2.15, 1.2.16, 1.2.17, 1.3.4] • Match sets of objects that are equal (pictorial) and explain reasoning. [1.1.2, 1.2.16, 1.2.17, 1.3.4] • Draw sets to show equal and unequal amounts and record the number of items. [1.1.2, 1.2.16,

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>1.2.17, 1.3.4]</p> <ul style="list-style-type: none"> • Use the symbol to record equalities. [1.1.2, 1.2.17] • Explore the equality of sets involving addition and subtraction and using objects of the same size and mass/weight but different colours, and the balance scale, e.g. 2 red balls and 3 green balls are placed on one pan and students determine the amount of blue balls to place on the other side to show equality (verify by counting). [1.1.2, 1.2.18, 1.3.4] • Represent equality of sets in pictorial and symbolic form using the equal sign (=) to mean ‘the same as’ or ‘is equal to’. E.g. 000 and 00 is the same as or equals 00000; 000 and 00 = 00000, 3 + 2 = 5; or 000000 take away 00 =

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				0000; $6 - 2 = 4$. [1.1.2, 1.2.18, 1.3.4]
<p>Addition</p> <p>1.1.3. Solve real-life problems involving addition (concrete, pictorial and symbolic modes).</p>	<p>1.2.19 Solve one-step real-life addition problems presented orally, pictorially and symbolically (using concrete materials, whole number and money).</p> <p>1.2.20 Solve problems presented in horizontal and vertical arrangements</p> <p>1.2.21 Associate</p>	<p>1.3.5 Display confidence when solving problems related to addition.</p>	<p>9. Demonstrate a conceptual understanding of addition.</p> <p>10. Solve problems involving addition presented in different formats.</p>	<ul style="list-style-type: none"> • Solve one-step real-life addition problems presented orally, pictorially or symbolically (using concrete materials, whole number and money) involving 2 addends (joining structures - change, result unknown; part-part-whole structures (whole unknown) - combine, total set unknown) and 3 addends with a sum less than or equal to 20 and using a variety of problem solving strategies such as, use a model, act it out, draw a picture and look for a pattern. [1.1.3, 1.2.19, 1.3.5] • Solve problems involving addition represented in vertical and horizontal arrangements. [1.1.3,

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	addition to forward counting and use the count on strategy to solve problems.			1.2.20, 1.3.5] <ul style="list-style-type: none"> • Record addition pictorially and symbolically using number sentences (words and symbols). E.g. 13 plus 2 is 15; 13 add 2 is equal to 15; 13 add 2 equals 15; $13 + 2 = 15$. [1.1.3, 1.2.19, 1.3.5] • Describe what happens to a group after addition to. [1.1.3, 1.2.19, 1.2.20, 1.3.5] • Use the number line to solve addition problems. [1.1.3, 1.2.19, 1.2.20, 1.3.5] • Use the count on strategy to solve addition problems. [1.1.3, 1.2.21, 1.3.5] • Create number stories involving addition using appropriate vocabulary (including the

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				language of money). [1.1.3, 1.2.19, 1.3.5]
<p>Subtraction</p> <p>1.1.4. Solve real-life problems involving subtraction (concrete, pictorial and symbolic modes).</p>	<p>1.2.22 Solve one-step real-life subtraction problems presented orally, pictorially and symbolically (using concrete materials, whole number and money).</p> <p>1.2.23 Solve problems presented in horizontal and vertical arrangements.</p>	<p>1.3.6 Display confidence when solving subtraction problems.</p>	<p>11. Demonstrate a conceptual understanding of subtraction.</p> <p>12. Solve problems involving subtraction presented in different formats.</p>	<ul style="list-style-type: none"> • Solve one-step real-life subtraction problems (separating structures - change, result unknown or deducting; part-part-whole structures (part unknown) - combine, subset unknown) presented orally, pictorially or symbolically (using concrete materials, whole number and money) with minuend less than or equal to 20 and using a variety of problem solving strategies such as, use a model, act it out, draw a picture and look for a pattern. [1.1.4, 1.2.22, 1.3.6] • Solve problems involving subtraction represented in vertical and horizontal arrangements.

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	1.2.24 Associate subtraction to backward counting and use the count back strategy and the count on strategy to solve problems.			[1.1.4, 1.2.23, 1.3.6] <ul style="list-style-type: none"> • Record subtraction pictorially and symbolically using number sentences (words and symbols) e.g. 15 take away 2 equals 13, $15 - 2 = 13$. [1.1.4, 1.2.22, 1.3.6] • Describe what happens to a group after subtraction from. [1.1.4, 1.2.22, 1.2.23, 1.3.6] • Use the number line to solve subtraction problems. [1.1.4, 1.2.22, 1.2.23, 1.3.6] • Use the count back and count on strategies to solve subtraction problems. [1.1.4, 1.2.24, 1.3.6] • Create number stories involving subtraction using appropriate vocabulary (including the language of money). [1.1.4,

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				1.2.22, 1.3.6]
<p>Mental Mathematics</p> <p>1.1.5. Develop strategies to solve problems mentally.</p>	<p>1.2.25 Identify addition facts with sum less than or equal to 20.</p> <p>1.2.26 Identify subtraction facts, minuend less than or equal to 20.</p> <p>1.2.27 Investigate connections between addition facts and the corresponding subtraction facts.</p>	<p>1.3.7 Display confidence when solving problems mentally.</p>	<p>13. Develop strategies to solve problems mentally.</p>	<ul style="list-style-type: none"> • Explore addition facts with sums less than or equal to 20. [1.1.5, 1.2.25, 1.3.7] • Explore subtraction facts, minuends less than or equal to 20. [1.1.5, 1.2.26, 1.3.7] • Investigate connections between addition facts (with sum less than or equal to 20) and the corresponding subtraction facts (minuend less than or equal to 20). [1.1.5, 1.2.27, 1.3.7] • Associate addition and subtraction to forward and backward

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>1.2.28 Associate addition and subtraction to forward and backward counting.</p> <p>1.2.29 Associate add-one (one more than) and subtract-one (one less than) facts to forward (number after) and backward (number before) counting.</p> <p>1.2.30 Use the add-zero and subtract-zero facts.</p> <p>1.2.31 Use the count on and count back</p>			<p>counting. [1.1.5, 1.2.28, 1.3.7]</p> <ul style="list-style-type: none"> • Solve problems using mental strategies such as: <ul style="list-style-type: none"> ○ Addition and subtraction facts ○ Add-one and subtract-one as it relates to forward and backward counting ○ Add-zero and subtract-zero facts ○ Count on / count back ○ ‘Make Ten’ (think addition) [1.1.5, 1.2.29, 1.2.30, 1.2.31, 1.2.32, 1.3.7]

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	strategy to solve problems. 1.2.32 Use the ‘Make Ten’ (think addition) strategy to solve problems.			
Language 1.1.6. Develop appropriate vocabulary associated with number.	1.2.33 Use appropriate vocabulary associated with number, orally and in writing.	1.3.8 Communicate with confidence using language related to number. 1.3.9 Demonstrate an appreciation for others by listening to their point of	14. Communicate effectively using vocabulary associated with number.	<ul style="list-style-type: none"> • Use appropriate language associated with number, such as: altogether, unequal, zero to twenty (0 to 20), none, dollars, cents, buy, sell, pay, price, change, too much/too little, cost, value, core, repeating pattern, first to tenth, sign, beginning, end, position, ‘=’ equals or is the same as, forward and backward. [1.1.6, 1.2.33, 1.3.8, 1.3.9]

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
		view.		
GEOMETRY				
Solids and Plane Shapes				
2.1.1. Develop an understanding of classification of solids and plane shapes.	2.2.1 Describe solids and plane shapes using appropriate vocabulary related to geometric attributes (e.g. size, shape, position).	2.3.1 Demonstrate critical thinking when classifying solids and plane shapes.	1. Develop an understanding of the properties of solids and plane shapes.	<ul style="list-style-type: none"> Describe solids and plane shapes using appropriate vocabulary related to geometric attributes (e.g. size, shape, position, ability to roll, stack or stand) e.g. big, small, flat, round, thick, thin, pointed. [2.1.1, 2.2.1, 2.3.1]
2.1.2. Demonstrate familiarity with pictorial representations of solids/plane shapes.	2.2.2 Classify solids and plane shapes and give reasons for classification.	2.3.2 Show creativity in constructing models and solving problems.	2. Construct simple models using solids and plane shapes.	<ul style="list-style-type: none"> Classify solids and plane shapes (e.g. size, shape), according to one or more common attributes including students' own criteria and explain reasons for classification (e.g. colour, size, shape function). [2.1.1, 2.2.2, 2.3.1]
2.1.3. Solve problems	2.2.3 Compare solids		3. Recognize solids/plane shapes from pictorial	

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
involving solids and plane shapes.	and plane shapes. 2.2.4 Identify solids using formal names. 2.2.5 Construct models using solids and plane shapes and describe composition of model. 2.2.6 Recognize and name solids and plane shapes in pictorial representations. 2.2.7 Solve problems involving solids and plane shapes.		representations. 4. Solve problems involving solids or plane shapes.	<ul style="list-style-type: none"> • Compare solids and plane shapes by stating similarities and differences. [2.1.1, 2.2.3, 2.3.1] • Select from a given set of solids or plane shapes: <ul style="list-style-type: none"> ○ Solids or plane shapes that are the same ○ Solids or plane shapes that are alike/similar ○ Solids or plane shapes that are different and explain reason(s) for selection. [2.1.1, 2.2.2, 2.2.3, 2.3.1] • Use the formal names of solids: cube, cuboid, cylinder, cone and sphere. [2.1.1, 2.2.4] • Build models using solids and plane shapes and describe compositions/structures. [2.1.1,

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>2.2.5, 2.3.2]</p> <ul style="list-style-type: none"> • Identify different plane shapes in pictures. [2.1.2, 2.2.6, 2.3.1] • Match solids to their pictorial representations. [2.1.2, 2.2.6, 2.3.1] • Name solids represented in pictures. [2.1.2, 2.2.6, 2.3.1] • Colour solids with particular attributes e.g. those that can roll. [2.1.1, 2.1.2, 2.2.1, 2.2.2, 2.2.3, 2.2.6, 2.3.1] • Solve problems involving solids and plane shapes e.g. How many different shapes can you make using 6 blocks? [2.1.3, 2.2.7, 2.3.2]

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Geometrical Patterns</p> <p>2.1.4. Explore patterns using solids and plane shapes.</p>	<p>2.2.8 Explore patterns using repetitions of 2-4 elements (name as ‘number’ pattern e.g. ‘two’ pattern).</p> <p>2.2.9 Create patterns using solids or plane shapes (repeating 2 to 4 elements and growing/increasing patterns).</p>	<p>2.3.3 Demonstrate creativity in the creation of patterns.</p>	<p>5. Explore patterns using plane shapes or solids.</p>	<ul style="list-style-type: none"> • Distinguish between repeating and non-repeating patterns in a given set involving solids or plane shapes by identifying the part that repeats and errors. [2.1.4, 2.2.8] • Describe the pattern and identify the pattern rule in repeating pattern. [2.1.4, 2.2.8] • Use pattern rule to extend repeating patterns. [2.1.4, 2.2.8, 2.2.9, 2.3.3] • Create repeating patterns using solids or plane shapes (concrete and pictorial). [2.1.4, 2.2.9, 2.3.3] • Describe a repeating pattern as a ‘number’ pattern, e.g. $O, \square, O, \square,$

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>O, \square is a 'two' pattern; \square, O, Δ, $\square, O, \Delta, \square, O, \Delta$ is a 'three' pattern. [2.1.4, 2.2.8, 2.2.9]</p> <ul style="list-style-type: none"> • Describe growing/increasing patterns and identify the pattern rule. [2.1.4, 2.2.8, 2.2.9] • Use the pattern rule to extend the growing/increasing pattern. [2.1.4, 2.2.8, 2.2.9, 2.3.3] • Create growing/increasing patterns using solids or plane shapes (concrete and pictorial). [2.1.4, 2.2.8, 2.2.9, 2.3.3]
<p>Language</p> <p>2.1.5. Develop appropriate vocabulary associated</p>	<p>2.2.10 Use appropriate vocabulary associated with geometry, orally</p>	<p>2.3.4 Communicate with confidence using language</p>	<p>6. Communicate effectively using vocabulary associated with</p>	<ul style="list-style-type: none"> • Use appropriate language associated with geometry, such as: roll, stack, stand, pack, cube, cuboid, sphere, cone, cylinder,

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
with geometry.	and in writing.	related to geometry. 2.3.5 Demonstrate an appreciation for others.	geometry.	same/identical, different, alike, similar, moving in a straight line/curved line, left, right, growing pattern, solid and plane shape. [2.1.5, 2.2.10, 2.3.4, 2.3.5]
MEASUREMENT				
<p>Linear</p> <p>3.1.1 Demonstrate familiarity with comparison of the lengths of objects using appropriate vocabulary.</p> <p>3.1.2 Understand that linear measures can be quantified.</p>	<p>3.2.1. Use comparison vocabulary to compare objects (direct comparison) in relation to length.</p> <p>3.2.2. Measure lengths and distances using arbitrary/non-standard units.</p>	<p>3.3.1. Enjoy ordering activities.</p> <p>3.3.2. Take pride in measuring accurately.</p>	<p>1. Develop an understanding of the comparison of measures (length) using appropriate vocabulary.</p> <p>2. Understand that linear measures can be</p>	<ul style="list-style-type: none"> • Compare and order the lengths of three or more objects using direct comparison and explain reasoning, using appropriate vocabulary e.g. longer/shorter. [3.1.1, 3.2.1, 3.3.1] • Create repeating patterns using objects of various lengths. [3.1.1, 3.2.1, 3.2.3, 3.3.1] • Measure lengths and distances

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	3.2.3. Order objects and distances according to length.		quantified.	using multiple copies of non-standard units (by placing the same sized units end-to-end without leaving gaps, without overlapping and arranged in a straight line). [3.1.2, 3.2.2, 3.3.2] <ul style="list-style-type: none"> • Count the number of units used and record lengths. [3.1.2, 3.2.2, 3.2.3, 3.3.2] • Compare and order objects and distances according to length and explain reasoning using appropriate vocabulary. [3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.3, 3.3.1, 3.3.2]
Mass/Weight 3.1.3 Demonstrate familiarity with the comparison of the	3.2.4. Compare objects according to mass/weight	3.3.3. Demonstrate confidence when	3. Develop an understanding of the	<ul style="list-style-type: none"> • Compare the masses/weights of objects by using an equal arm balance (including small heavy

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
mass/weight of objects using appropriate vocabulary.	using an equal arm balance and appropriate vocabulary.	measuring.	comparison of measures (mass/weight) using appropriate vocabulary.	<p>objects and light big objects). [3.1.3, 3.2.4, 3.3.3]</p> <ul style="list-style-type: none"> • Discuss observations of the equal arm balance when objects are placed in the pans. [3.1.3, 3.2.4, 3.3.3] • Use pictorial representations of equal arm balances to determine which object is heavy or light. [3.1.3, 3.2.4, 3.3.3]
Time				
3.1.4 Develop an understanding of time.	<p>3.2.5. Use appropriate vocabulary when describing activities or events associated with time.</p> <p>3.2.6. Sequence activities or</p>	3.3.4. Demonstrate confidence when sequencing activities.	<p>4. Associate events with specific time periods.</p> <p>5. Understand that time can be quantified.</p>	<ul style="list-style-type: none"> • Sequence activities according to: <ul style="list-style-type: none"> ○ Time of occurrence ○ Chronological order e.g. daily schedule, preparing to come to school. [3.1.4, 3.2.5, 3.2.6, 3.3.4] • Answer questions based on the information presented on

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>events according to time of occurrence.</p> <p>3.2.7. Interpret calendars.</p> <p>3.2.8. Measure the duration of activities using non-standard units.</p> <p>3.2.9. Compare and order the duration of activities.</p>		<p>6. Develop an understanding of the comparison of measures (time) using appropriate vocabulary.</p>	<p>calendars such as:</p> <ul style="list-style-type: none"> ○ Name and sequence the days of the week and the months of the year ○ Identify the days, months, dates and number of days in each month on calendars ○ Distinguish between weekends and school days. [3.1.4, 3.2.6, 3.2.7, 3.3.4] <ul style="list-style-type: none"> ● Measure the passage of time it takes for various activities to occur or duration of activities (using a repeated non-standard unit) and record measure (e.g. the number of times you can clap your hand while a child does an activity). [3.1.4, 3.2.8, 3.3.4] ● Compare the time taken for activities or events to occur or the duration of activities (starting at the same time) and order the

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				duration of activities and explain reasoning using appropriate vocabulary. [3.1.4, 3.2.9, 3.3.4]
<p>Language</p> <p>3.1.5 Develop appropriate vocabulary associated with measurement.</p>	<p>3.2.10. Use appropriate vocabulary associated with measurement, orally and in writing.</p>	<p>3.3.5. Communicate with confidence using language related to measurement.</p>	<p>7. Communicate effectively using vocabulary associated with measurement.</p>	<ul style="list-style-type: none"> • Use appropriate language associated with measurement, such as: before, after, morning, night, lunchtime, bedtime, today, yesterday, tomorrow, past, present, future, soon, a long time, a short time, long/longer, short/shorter, same time as, more, less, days of the week, weekend, months of the year, year, in the past, calendar, date, birthdate, now, then, season, heavy/heavier, light/lighter, as heavy as, weigh, tallest, longest, shortest, as long/tall as and hand-span. [3.1.5, 3.2.10, 3.3.5]

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
STATISTICS				
<p>Picture Charts and Pictographs</p> <p>4.1.1. Collect, display and analyse data to solve real-world problems.</p> <p>4.1.2. Demonstrate an understanding about the features of graphs.</p> <p>4.1.3. Make decisions based on data.</p>	<p>4.2.1. Collect and classify data to make decisions based on a real-life situation or problem.</p> <p>4.2.2. Identify features of picture charts and pictographs (e.g. using one picture to represent one person, baseline/start line, labels (of sets) on baseline, same-sized symbols/pictures,</p>	<p>4.3.1. Develop mathematical reasoning (logical thinking) when interpreting data.</p> <p>4.3.2. Develop an appreciation for others when interpreting data.</p> <p>4.3.3. Appreciate the value of collaboration in decision-</p>	<p>1. Demonstrate the ability to collect, classify, organize, represent and interpret data.</p> <p>2. Demonstrate an understanding about the features of charts/graphs.</p> <p>3. Use analysed data to make sound decisions and solve problems.</p>	<p>PICTURE CHARTS</p> <ul style="list-style-type: none"> • Collect and classify data to make decisions based on a real-life situation or problem. [4.1.1, 4.2.1, 4.3.1] • Classify pictures into groups and sub-groups using different criteria. [4.1.1, 4.2.1, 4.3.1] • Construct picture charts (with and without grid, vertical and horizontal arrangements) based on information collected and after reviewing the features of picture charts. [4.1.2, 4.2.2, 4.2.3]

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>equal spacing and title).</p> <p>4.2.3. Construct picture charts and pictographs (with and without grid, vertical and horizontal arrangements) based on real-life problems or situations.</p> <p>4.2.4. Interpret picture charts and pictographs based on a real-life problem or situation.</p> <p>4.2.5. Make informed decisions based</p>	<p>making.</p> <p>4.3.4. Appreciate the value of using data in decision-making.</p>		<ul style="list-style-type: none"> • Interpret and analyse the data so as to make decisions about real-life situations or problems. [4.1.3, 4.2.4, 4.3.1, 4.3.2] • Participate in decision-making to solve problems. [4.1.3, 4.2.5, 4.3.3] • Communicate findings using appropriate vocabulary. [4.1.3, 4.2.5, 4.2.6, 4.3.4] <p>PICTOGRAPHS</p> <ul style="list-style-type: none"> • Explain the similarities and differences between a picture chart and a pictograph after replacing pictures on a picture chart with an appropriate symbol. [4.1.2, 4.2.2] • Construct pictographs (with and without grid, vertical and

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>on data analysed.</p> <p>4.2.6. Communicate findings and decisions using appropriate vocabulary.</p>			<p>horizontal arrangements) after collecting information based on problem situations. [4.1.2, 4.2.3]</p> <ul style="list-style-type: none"> • Interpret and analyse the data so as to make decisions about real-life situations or problems. [4.1.3, 4.2.4, 4.2.5, 4.2.6, 4.3.4] • Participate in decision-making to solve problems. [4.1.3, 4.2.5, 4.3.3] • Communicate findings using appropriate vocabulary. [4.1.3, 4.2.5, 4.2.6, 4.3.4] <p>(Depending on the experiences of students, teachers may decide to start with the interpretation of presented graphs, which can then be used to identify the characteristics of graphs. Graphs can then be appropriately</p>

MATHEMATICS CONTENT STANDARDS: INFANT 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				constructed. Graphs can also be transformed from one form to another and this idea can be used to initiate interpretation of the same data using different representations).
<p>Language</p> <p>4.1.4. Develop appropriate vocabulary associated with statistics.</p>	<p>4.2.7. Use appropriate vocabulary associated with statistics, orally and in writing.</p>	<p>4.3.5. Communicate with confidence using language related to statistics.</p>	<p>4. Communicate effectively using vocabulary associated with statistics.</p>	<ul style="list-style-type: none"> • Use appropriate language associated with statistics, such as: pictograph, most, least, more than, less than, same/equal to and altogether. [4.1.4, 4.2.7, 4.3.5]

Primary School Curriculum

Mathematics

Standard 1

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
NUMBER				
Number Concepts				
1.1.1 Develop number sense (up to 100) and appropriate vocabulary.	1.2.1. Count within 1 000 in ascending and descending order (rote count).	1.3.1 Strive for accuracy in counting.	1. Count sequentially within 1 000.	<ul style="list-style-type: none"> • Count forward (count on) and backward (count back) by ones within 1 000 from any given number.[1.1.1, 1.2.1, 1.3.1]
1.1.2 Develop an understanding of different types of numbers.	1.2.2. Skip count in ascending and descending order within a specified amount.	1.3.2 Appreciate the use of numbers in real life.	2. Demonstrate an understanding of numbers to 100. 3. Understand the position of objects.	<ul style="list-style-type: none"> • Skip count in ascending and descending order using various ways (such as, in 100s to or from 1 000; in 2s, 5s and 10s starting at zero, up to 100; in 2s starting at one; in 3s starting at zero and up to 30; off the decade by tens e.g. 43, 53, 63...) [1.1.1, 1.2.1, 1.2.2, 1.3.1]
1.1.3 Develop an understanding of our currency and the value of coins and bills.	1.2.3. Count objects to demonstrate one-to-one correspondence (up to 100). 1.2.4. Recognize that the number of		4. Demonstrate estimation skills using 20 as a benchmark. 5. Demonstrate an understanding	<ul style="list-style-type: none"> • Count objects to demonstrate one-to-one correspondence (up to 100). [1.1.1, 1.2.3, 1.3.1] • Explain that the last count, when

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>objects remains the same when objects are rearranged.</p> <p>1.2.5. Connect number names and numerals to quantities up to 100.</p> <p>1.2.6. Sequence number names and numerals.</p> <p>1.2.7. Read and write number names and numerals to 100.</p> <p>1.2.8. Describe the order or relative position of objects using</p>		<p>of our currency and the value of coins and bills.</p>	<p>counting a set of objects, identifies how many objects are in the set. [1.1.1, 1.2.3, 1.3.1]</p> <ul style="list-style-type: none"> • Count sequentially forward and backward to establish that a number is one more than or one less than the preceding number, starting at any number. [1.1.1, 1.2.3, 1.3.1] • Count objects in different arrangements to demonstrate conservation of number. [1.1.1, 1.2.4, 1.3.1] • Match the number names and numerals to the quantities (concrete and pictorial) they represent up to 100. [1.1.1, 1.2.5, 1.2.7, 1.3.1] • Sequence number names and numerals. [1.1.1, 1.2.5, 1.2.6,

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>ordinal numbers up to 20.</p> <p>1.2.9. Estimate the number of objects in a set using 20 as the benchmark and verify by counting.</p> <p>1.2.10. Differentiate between odd and even numbers.</p> <p>1.2.11. Explore the value of coins and bills/notes (up to \$100) and their equivalence (practical situations).</p> <p>1.2.12. Use money notation for</p>			<p>1.2.7, 1.3.1]</p> <ul style="list-style-type: none"> • Identify the number before, the number after, and the number between, using a hundred chart. [1.1.1, 1.2.6, 1.3.1] • Insert missing numbers on a number line, number chart and number sequence. [1.1.1, 1.2.6, 1.3.1] • Read and write number names and numerals to 100. [1.1.1, 1.2.5, 1.2.6, 1.2.7, 1.3.1] • Order objects, pictures and events and use appropriate language to describe positions up to twentieth. [1.1.1, 1.2.8, 1.3.2] • Estimate a given quantity using 20 as a benchmark and verify by

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	dollars and cents.			<p>counting. [1.1.1, 1.2.9, 1.3.2]</p> <ul style="list-style-type: none"> • Classify numbers as odd and even numbers using concrete materials (e.g. counters) or pictorial representations paired in two rows or groups of two. [1.1.2, 1.2.10, 1.3.1] • Identify even and odd numbers in a given sequence, such as in a hundred chart and explain reason(s) for selections. [1.1.2, 1.2.10, 1.3.1] • Explore the value of coins and bills up to \$100 e.g. \$25 is worth more than \$5 (use the idea of purchase of items priced at \$5 and how many can be bought). [1.1.1, 1.1.3, 1.2.11, 1.2.12, 1.3.2] • State the equivalence of coins

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>(only) and bills (only) up to 100 dollars using practical activities. [1.1.1, 1.1.3, 1.2.11, 1.2.12, 1.3.2]</p> <ul style="list-style-type: none"> • State that 100 cents is equivalent to one dollar. [1.1.1, 1.1.3, 1.2.11] • Shade coins and bills in pictorial representations to show equivalence. [1.1.3, 1.2.11, 1.2.12] • Write specified amounts of money using the notation for dollars and cents e.g. \$4 and 5c. [1.1.3, 1.2.11, 1.2.12]

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS				
Students will:								
<p>Place Value and Rounding</p> <p>1.1.4 Develop an understanding of place value up to 99 (concretely, pictorially and symbolically).</p> <p>1.1.5 Develop an understanding of rounding to tens.</p>	<p>1.2.13. Explore the place value of numbers to 99.</p> <p>1.2.14. Compare and order numerals up to 99.</p> <p>1.2.15. Round to tens.</p>	<p>1.3.3 Be explorative when examining relationships in numbers.</p> <p>1.3.4 Strive for accuracy in performing tasks.</p>	<p>6. Demonstrate an understanding of place value and value.</p> <p>7. Develop an understanding of rounding to tens.</p>	<ul style="list-style-type: none"> • Count a specified number of objects and use them to form groups of 10s and 1s. [1.1.4, 1.2.13, 1.3.3, 1.3.4] • Describe a specified number in various ways using language associated with place value e.g. 45 as four 10s and five 1s, forty and five, 45 ones. [1.1.4, 1.2.13, 1.3.3, 1.3.4] • Show, using various manipulatives (e.g. base ten materials, <table border="1" style="display: inline-table; margin: 5px;"> <tr> <td style="padding: 2px 10px;">Tens</td> <td style="padding: 2px 10px;">Ones</td> </tr> <tr> <td style="text-align: center; padding: 2px 10px;">4</td> <td style="text-align: center; padding: 2px 10px;">5</td> </tr> </table> <ul style="list-style-type: none"> place value mats) that a given numeral consists of a certain number of ‘tens’ and ‘ones’ and 	Tens	Ones	4	5
Tens	Ones							
4	5							

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>record as such, e.g. $45 = 4$ tens and 5 ones. [1.1.4, 1.2.13, 1.3.3, 1.3.4]</p> <ul style="list-style-type: none"> • Record the amounts shown in pictorial representations of base ten materials both in terms of place value and as a numeral. [1.1.4, 1.2.13, 1.3.3, 1.3.4] • Write the numeral to match objects grouped in tens and ones (concretely and pictorially). [1.1.4, 1.2.13, 1.3.3, 1.3.4] • Explain and show the equivalence of one ten and ten ones. [1.1.4, 1.2.13, 1.3.3, 1.3.4] • Explain the importance of grouping in tens. [1.1.4, 1.2.13, 1.3.3] • Write numbers using the

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>expanded notation form. [1.1.4, 1.2.13, 1.3.3, 1.3.4]</p> <ul style="list-style-type: none"> • Convert expanded notation into numeral. [1.1.4, 1.2.13, 1.3.3, 1.3.4] • Explain and write the place value and value represented by each digit in a numeral. [1.1.4, 1.2.13, 1.3.3, 1.3.4] • Use comparison vocabulary to compare the number of objects in groups. [1.1.4, 1.2.14, 1.3.3, 1.3.4] • Compare and order numerals up to 99 (in ascending and descending order). [1.1.4, 1.2.14, 1.3.3, 1.3.4] • Round numbers to the nearest “ten” (using a number line).

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				[1.1.5, 1.2.15, 1.3.3, 1.3.4]
<p>Number Patterns</p> <p>1.1.6 Explore algebraic thinking (number patterns and number relationships).</p>	<p>1.2.16. Explore patterns using repetitions of 3-5 elements (name as 'number' pattern e.g. 'three' pattern or using a letter code e.g. ABCABC).</p> <p>1.2.17. Explore increasing and decreasing patterns up to 100.</p> <p>1.2.18. Develop number</p>	<p>1.3.5 Be explorative when examining patterns and relation-ships.</p> <p>1.3.6 Take risks in solving problems.</p>	<p>8. Recognize and explore number patterns up to 100 (using appropriate resources such as base ten materials, counters, number lines and hundred charts).</p>	<ul style="list-style-type: none"> • Distinguish between repeating patterns and non-repeating patterns in a given set by identifying the part that repeats or errors. [1.1.6, 1.2.16, 1.3.5] • Describe a given repeating pattern containing three to five elements in its core (using manipulatives, pictures/drawings, sounds and actions). [1.1.6, 1.2.16, 1.3.5] • Determine the pattern rule and extend the repeating pattern using concrete materials, pictorial representation or symbols. [1.1.6,

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>patterns involving addition and subtraction facts, add-zero/subtract-zero, the commutative property for addition, the associative property for addition, add-two/subtract-two, double facts, ten facts and odd and even numbers.</p>			<p>1.2.16, 1.3.5]</p> <ul style="list-style-type: none"> • Name a repeating pattern containing three to five elements in its core (name as ‘number’ pattern e.g. ‘three’ pattern or using a letter code e.g. ABCABC). [1.1.6, 1.2.16, 1.3.5] • Identify and describe patterns when counting forward or backward by ones, twos, fives, or tens (using a number line and chart). [1.1.6, 1.2.16, 1.2.17, 1.3.5] • Describe and extend simple number patterns that increase or decrease e.g. 1, 2, 3, 4, ...; 15, 14, 13, 12, ...; 2, 4, 6, 8, ...; 5,10,15, 20.....; 90,80,70,60...., using the pattern rule (to 100). [1.1.6, 1.2.16, 1.2.17, 1.2.18,

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>1.3.5, 1.3.6]</p> <ul style="list-style-type: none"> • Recognize when an error occurs in a pattern and explain what is wrong. [1.1.6, 1.2.16, 1.2.17, 1.2.18, 1.3.5, 1.3.6] • Create repeating, increasing and decreasing number patterns (using pictures, diagrams, words or symbols) and explain the pattern rule. [1.1.6, 1.2.16, 1.2.17, 1.2.18, 1.3.5, 1.3.6] • Insert the missing elements in given patterns (concrete, pictorial or symbolic) and explain the reasoning. [1.1.6, 1.2.16, 1.2.17, 1.2.18, 1.3.5, 1.3.6] • Relate addition and subtraction facts for numbers to 20 (concretely, pictorially and symbolically) e.g. $6 + 3 = 9$; so 9

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>– 3 = 6 and 9 – 6 = 3 and describe patterns. [1.1.6, 1.2.18, 1.3.5, 1.3.6]</p> <ul style="list-style-type: none"> • Explore, describe and record patterns related to the basic addition and subtraction facts (up to 99) and explain generalizations e.g. $6 + 3 = 9$ is related to $16 + 3 = 19$, $5 - 2 = 3$ is related to $50 - 20 = 30$. [1.1.6, 1.2.18, 1.3.5, 1.3.6] • Explain why addition and subtraction are inverse (opposite) operations. [1.1.6, 1.2.18, 1.3.6] • Describe and record the patterns for addition and subtraction facts for individual numbers. E.g. $0 + 4 = 4$ $5 - 0 = 5$ $1 + 3 = 4$ $5 - 1 = 4$ $2 + 2 = 4$ $5 - 2 = 3$ $3 + 1 = 4$ $5 - 3 = 2$ etc.

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p align="center">$4 + 0 = 4.$ [1.1.6, 1.2.18, 1.3.5, 1.3.6]</p> <ul style="list-style-type: none"> • Recall basic addition and subtraction facts from memory (up to 10). [1.1.6, 1.2.18, 1.3.5] • Explore, describe and record patterns related to add-zero/subtract-zero, the commutative property for addition, the associative property for addition, add-two/subtract-two, double facts, ten facts, odd and even numbers and explain generalizations about number relationships e.g. adding zero does not change the number, as in $8 + 0 = 8$; the order in which numbers are added does not affect the sum (commutative and associative laws). [1.1.6, 1.2.18, 1.3.5, 1.3.6]

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> Describe and record patterns created by adding combinations of odd and even numbers e.g. odd + odd = even, odd + even = odd. [1.1.6, 1.2.18, 1.3.5, 1.3.6]
<p>Number Relationships</p> <p>1.1.7 Explore algebraic thinking (number patterns and number relationships).</p>	<p>1.2.19. Use balance activities to demonstrate equality and inequality.</p> <p>1.2.20. Count objects in sets to demonstrate equality and inequality of sets.</p>	<p>1.3.7 Collaborate while doing activities.</p> <p>1.3.8 Take risks in solving problems.</p>	<p>9. Demonstrate an understanding of equality and inequality.</p> <p>10. Represent equality and inequality using manipulatives and pictures.</p> <p>11. Use the concept of equality to</p>	<ul style="list-style-type: none"> Construct two equal sets using the same objects (same shape and mass/weight) and demonstrate their equality of number using a balance scale and counting. [1.1.7, 1.2.19, 1.2.20, 1.3.7] Construct two unequal sets using the same objects, same shape and mass/weight and demonstrate their inequality of number using a balance scale and counting.

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>1.2.21. Use the language and symbols associated with equality and inequality.</p> <p>1.2.22. Solve problems involving addition and subtraction using balance activities and counting.</p> <p>1.2.23. Determine whether a given number sentence is true or false.</p> <p>1.2.24. Use the equal sign to record equivalent number relationships e.g.</p>		<p>solve problems involving addition and subtraction.</p> <p>12. Explore equality involving addition and subtraction using equivalent number relationships.</p>	<p>[1.1.7, 1.2.19, 1.2.20, 1.3.7]</p> <ul style="list-style-type: none"> • Explain the procedure used to determine if two given sets of objects are equal or unequal in number. E.g. use of the balance scale and counting. [1.1.7, 1.2.19, 1.2.20, 1.2.21, 1.3.7] • Match sets of objects that are equal (pictorial) and explain reasoning. [1.1.7, 1.2.20, 1.2.21] • Draw sets to show equal and unequal amounts and record the number of items. [1.1.7, 1.2.20, 1.2.21] • Use the language of equality and inequality to describe the relationship between two sets. E.g. they are unequal, they have the same number of objects, they are equal in number and they

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	$6+4=7+3$. 1.2.25. Use the unequal sign to record number relationships that are not equivalent e.g. $3+2 \neq 1+6$.			balance. [1.1.7, 1.2.19, 1.2.20, 1.2.21, 1.3.7] <ul style="list-style-type: none"> • Explain the meaning of equality and inequality by using manipulatives and drawings. [1.1.7, 1.2.19, 1.2.20, 1.2.21, 1.3.7] • Use the equal symbol (=) or the not equal symbol (\neq) to record equalities and inequalities. [1.1.7, 1.2.21] • Explore the equality of sets involving addition and subtraction and using objects of the same size and mass/weight but different colours and the balance scale. e.g. 2 red balls and 3 green balls are placed on one pan and students determine the amount of blue balls to place on the other side to show equality

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>(verify by counting). [1.1.7, 1.2.22, 1.3.7, 1.3.8]</p> <ul style="list-style-type: none"> • Represent equality of sets involving addition and subtraction in pictorial and symbolic form using the equal sign (=) to mean ‘is the same as’ or ‘equal to’. E.g. 000 and 00 is the same as or equals 00000; 000 and 00 = 00000, $3 + 2 = 5$, or 000000 take away 00 = 0000 (cross out two circles from the group of six); $6 - 2 = 4$ (a variety of problems can be explored involving subtraction, e.g. start with 6 objects on one pan and 4 on the other). [1.1.7, 1.2.22, 1.3.7, 1.3.8] • Determine whether a given number sentence is true or false using a balance scale and counting objects. E.g. $5 + 4 = 9$

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>(Is $5 + 4$ equal to 9?); $5 + 4 = 8$ (true or false); (use objects of the same size and mass/weight but different colours on the balance scale; verify by counting). [1.1.7, 1.2.23, 1.3.7, 1.3.8]</p> <ul style="list-style-type: none"> • Explore the equality of sets using equivalent number relationships involving addition and subtraction and record using the equal or unequal sign e.g. Is $6 + 4$ equal to $7 + 3$? (use objects of the same size and mass/weight but different colours on the balance scale; verify by counting); Is $7 - 2$ equal to $8 - 4$? (start with 7 and 8 objects in the pans). [1.1.7, 1.2.24, 1.2.25, 1.3.7, 1.3.8] • Determine whether two sides of a given number sentence are equal ($=$) or not equal (\neq) using a scale

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				balance and counting. E.g. Is $5+8=9+5$ true or false? Explain your reasoning. [1.1.7, 1.2.23, 1.2.24, 1.2.25, 1.3.7, 1.3.8]
<p>Addition and Subtraction</p> <p>1.1.8 Solve real-life problems (concrete, pictorial and symbolic modes) involving addition and subtraction.</p>	<p>1.2.26. Solve one-step and two-step real-life problems involving addition and subtraction presented orally, pictorially or symbolically (using concrete materials – such as base ten manipulatives, whole number</p>	<p>1.3.9 Exhibit perseverance in solving problems.</p> <p>1.3.10 Display confidence when solving problems related to addition and subtraction.</p>	<p>13. Solve problems involving addition and subtraction presented in different formats.</p>	<ul style="list-style-type: none"> • Solve one-step and two-step real-life problems involving addition and subtraction presented orally, pictorially and symbolically (using concrete materials, whole number and money) and using a variety of problem solving strategies such as, use a model, act it out, draw a picture, look for a pattern, work backwards and guess and check. [1.1.8, 1.2.26, 1.3.9, 1.3.10] • Solve problems involving addition (joining structures -

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>and money).</p> <p>1.2.27. Perform addition up to 3 addends within 99 (vertical and horizontal arrangements, no algorithm).</p> <p>1.2.28. Perform subtraction within 99 (vertical and horizontal arrangements, no algorithm).</p> <p>1.2.29. Explain or demonstrate how an answer was obtained when solving</p>			<p>change, result unknown; part-part-whole structures (whole unknown) - combine, total set unknown; separating structures - change, start/initial unknown) and subtraction (joining structures - change, start/initial unknown and change unknown; separating structures - change, result unknown (or deducting) and change unknown; part-part-whole structures (part unknown) - combine, subset unknown; compare structures - compare, difference unknown) using concrete, pictorial and symbolic representations in vertical and horizontal arrangements. (up to 99, no algorithm). [1.1.8, 1.2.26, 1.2.27, 1.2.28, 1.3.9, 1.3.10]</p> <ul style="list-style-type: none"> • Use the language of money in role playing situations involving the exchange of goods for money

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>problems.</p> <p>1.2.30. Record solutions to problems using a variety of formats and appropriate notation (e.g. $\\$5 + \\$6 + \\$8 = \\19).</p> <p>1.2.31. Create number stories.</p>			<p>(one item, more than one item, without and with change, limited to dollars only or cents only). [1.1.8, 1.2.26, 1.2.27, 1.2.28, 1.3.9, 1.3.10]</p> <ul style="list-style-type: none"> • Describe what happens to a group after addition to or subtraction from. [1.1.8, 1.2.26, 1.2.27, 1.2.28, 1.3.10] • Check answers to addition and subtraction problems by using the reverse operation. [1.1.8, 1.2.26, 1.2.27, 1.2.28, 1.3.10] • Explain or demonstrate how an answer was obtained when solving problems. [1.1.8, 1.2.26, 1.2.27, 1.2.28, 1.2.29, 1.3.10] • Record solutions to problems using drawings, numerals, symbols and together with the

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				related number sentences. [1.1.8, 1.2.26, 1.2.27, 1.2.28, 1.2.30, 1.3.10] <ul style="list-style-type: none"> • Create and solve number stories using appropriate vocabulary (including the language of money). [1.1.8, 1.2.31, 1.3.10]
Multiplication and Division 1.1.9 Solve real-world problems involving repeated addition (multiplication) and repeated subtraction (division).	1.2.32. Solve problems involving repeated addition (concept of multiplication, no symbol, up to 10 addends). 1.2.33. Solve problems involving	1.3.11 Display confidence when solving problems related to multiplication and division. 1.3.12 Take risks in solving	14. Demonstrate a conceptual understanding of multiplication and division.	<ul style="list-style-type: none"> • Solve problems involving repeated addition by forming equal groups of 2s, 3s, 5s and 10s up to 20 (concrete and pictorial, no symbol for multiplication, with and without arrays). [1.1.9, 1.2.32, 1.3.11, 1.3.12] • Solve problems involving sharing and grouping, using equal groups of 2s, 3s, 5s and 10s up to 20

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>sharing and grouping (concept of division, no symbol).</p> <p>1.2.34. Explain or demonstrate how answers were obtained when solving problems.</p> <p>1.2.35. Record solutions to problems using a variety of formats.</p> <p>1.2.36. Create number stories.</p>	<p>problems.</p>		<p>(concrete and pictorial, no symbol for division, with and without arrays). [1.1.9, 1.2.33, 1.3.11, 1.3.12]</p> <ul style="list-style-type: none"> • Use counting of objects, skip counting, repeated subtraction and the number line to determine solutions. [1.1.9, 1.2.32, 1.2.33, 1.3.11, 1.3.12] • Explain or demonstrate how answers were obtained when solving problems. [1.1.9, 1.2.34, 1.3.11] • Record solutions to problems using drawings, numerals, symbol, (no symbol for multiplication and division) and words together with the related number sentences. [1.1.9, 1.2.32, 1.2.33, 1.2.35, 1.3.11]

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> • Create and solve number stories using appropriate vocabulary (including the language of money). [1.1.9, 1.2.36, 1.3.11]
<p>Mental Mathematics</p> <p>1.1.10 Develop strategies to solve problems mentally.</p>	<p>1.2.37. Use a variety of mental math strategies and recording strategies to solve problems involving addition and subtraction.</p>	<p>1.3.13 Develop an appreciation for the need for accuracy and efficiency in computation.</p> <p>1.3.14 Take risks in solving problems.</p>	<p>15. Develop mental math strategies.</p>	<ul style="list-style-type: none"> • Explore, describe and use a range of mental strategies and recording strategies for addition and subtraction, including: <ul style="list-style-type: none"> ○ The commutative property for addition ○ The associative property for addition ○ Add-two/subtract-two ○ Double facts ○ Ten facts (combining numbers that add to 10 e.g. $6 + 8 + 2$; group 8 and 2 first) ○ Related addition and subtraction facts, e.g. $15 + 3$

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>= 18, so $18 - 15 = 3$; $5 - 2 = 3$, so $50 - 20$ is 30</p> <ul style="list-style-type: none"> ○ Thinking of addition e.g. make ten ○ The jump strategy, e.g. $53 + 25$; $53 + 20 = 73$, $53 + 5 = 78$ ○ The split strategy e.g. $43 + 52 = 40 + 50 + 3 + 2$ ○ Bridging to tens strategy e.g. $18 + 6$; 18 and 2 is 20 and add 4 more ○ Counting on and back ○ Skip counting. [1.1.10, 1.2.37, 1.3.13, 1.3.14]
<p>Language</p> <p>1.1.11 Develop appropriate vocabulary associated with number.</p>	<p>1.2.38. Use appropriate vocabulary associated with number, orally and in writing.</p>	<p>1.3.15 Communicate with confidence using language</p>	<p>16. Communicate effectively using vocabulary associated with</p>	<ul style="list-style-type: none"> ● Use appropriate language associated with number, such as: fewer than, ones/units, tens, place value, digit, value, total, sum, word names and numerals to one hundred, difference, order, round,

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
		<p>related to numbers.</p> <p>1.3.16 Demonstrate an appreciation for others by listening to their point of view.</p>	<p>numbers.</p>	<p>estimate, plus, minus, count forward, count backward, odd, even, first to twentieth (1st to 20th), equivalent, repeat, equal groups, share, solve problem, answer, compare, leftover, remainder, addition, subtraction, symbol, combine, separate, sequence, balance, '\neq' read as 'is not equal to' or 'is not the same as'. [1.1.11, 1.2.38, 1.3.15, 1.3.16]</p>
GEOMETRY				
<p>Solids and Plane Shapes</p> <p>2.1.1 Develop spatial sense in relation to solids and plane shapes.</p>	<p>2.2.1. Classify, describe, compare and name solids and give reasons for classification (cube, cuboid,</p>	<p>2.3.1 Display curiosity while exploring the properties of solids and plane</p>	<p>1. Develop an understanding of the properties of solids and plane shapes.</p>	<ul style="list-style-type: none"> Classify solids according to one or more common attributes (e.g. colour, size, shape, function) including students' own criteria and explain reasons for

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>2.1.2 Recognize spatial relationships.</p> <p>2.1.3 Solve problems involving solids and plane shapes.</p>	<p>cylinder, cone, sphere and pyramid – with a focus on naming the different types of pyramids).</p> <p>2.2.2. Describe and compare solids and plane shapes in concrete and pictorial forms using formal language.</p> <p>2.2.3. Identify plane shapes as faces of solids in the environment and in an assortment of solids.</p> <p>2.2.4. Use plane shapes to create solids</p>	<p>shapes.</p> <p>2.3.2 Develop confidence in their spatial understanding.</p>	<p>2. Solve problems involving solids and plane shapes.</p>	<p>classification. [2.1.1, 2.2.1, 2.3.1]</p> <ul style="list-style-type: none"> • Sort solids into appropriate groups to represent same, similar or alike and different, stating reasons for classification. [2.1.1, 2.2.1, 2.3.1] • Identify and name different types of pyramids. [2.1.1, 2.2.1, 2.3.1] • Describe and compare solids and plane shapes using appropriate vocabulary related to geometric attributes (concrete and pictorial). [2.1.2, 2.2.2, 2.3.1, 2.3.2] • Identify plane shapes as faces of solids in the environment and in an assortment of solids. [2.1.2, 2.2.3, 2.3.1, 2.3.2] • Match cut-outs of plane shapes to faces of solids. [2.1.2, 2.2.3,

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>and state the relationship between solids and plane shapes.</p> <p>2.2.5. Identify solids and plane shapes in different orientations (concrete and pictorial) and via the sense of touch.</p> <p>2.2.6. Construct plane shapes and compare and describe their sides and corners and deduce the relationship between the number of sides and corners of</p>			<p>2.3.1, 2.3.2]</p> <ul style="list-style-type: none"> • Trace the faces of solids and name the shapes drawn. [2.1.2, 2.2.3, 2.3.1, 2.3.2] • Construct solids using cut outs of plane shapes. [2.1.2, 2.1.3, 2.2.4, 2.3.1, 2.3.2] • Predict the solid that can be formed given an assortment of plane shapes (pictorial). [2.1.2, 2.1.3, 2.2.4, 2.3.1, 2.3.2] • State the relationship between solids and plane shapes. [2.1.2, 2.1.3, 2.2.4, 2.3.1, 2.3.2] • Name solids and plane shapes in different orientations (concrete and pictorial) and explain the effects of orientation. [2.1.2,

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>plane shapes (not limited to triangles, squares and rectangles).</p> <p>2.2.7. Solve problems involving solids and plane shapes.</p>			<p>2.2.5, 2.3.1, 2.3.2]</p> <ul style="list-style-type: none"> • Name solids and plane shapes via the sense of touch only. [2.1.2, 2.2.5, 2.3.1, 2.3.2] • Construct plane shapes (using geo-strips, geo-boards and geo-paper) of varying types and sizes (not limited to triangles, squares and rectangles). [2.1.2, 2.1.3, 2.2.6, 2.3.1, 2.3.2] • Compare the sides and corners of plane shapes (not limited to triangles, squares and rectangles). [2.1.2, 2.2.6, 2.3.1, 2.3.2] • Describe the sides and corners of the constructed plane shapes. [2.1.2, 2.2.6, 2.3.1, 2.3.2] • State the relationship between the number of sides and number of

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				corners of the constructed plane shapes. [2.1.2, 2.2.6, 2.3.1, 2.3.2] <ul style="list-style-type: none"> • Solve problems involving solids and plane shapes. [2.1.3, 2.2.7, 2.3.1, 2.3.2]
<p>Geometrical Patterns</p> <p>2.1.4 Explore patterns using solids and plane shapes.</p>	<p>2.2.8. Recognize and complete patterns using solids or plane shapes (repeating – 3 to 5 elements, growing or increasing and decreasing patterns).</p> <p>2.2.9. Create patterns using solids or</p>	<p>2.3.3 Be explorative when examining patterns.</p> <p>2.3.4 Demonstrate inventiveness in the creation of patterns.</p>	<p>3. Explore patterns using plane shapes and solids.</p>	<ul style="list-style-type: none"> • Distinguish between repeating and non-repeating patterns in a given set involving solids or plane shapes by identifying the part that repeats or errors. [2.1.4, 2.2.8, 2.3.3] • Describe a given repeating pattern containing three to five elements in its core (using manipulatives, pictures/drawings) e.g. My pattern is made using circles. The colours repeat –

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	plane shapes (repeating, growing or increasing and decreasing patterns).			<p>green, red, yellow, green, red, yellow, green, red, yellow. [2.1.4, 2.2.8, 2.3.3]</p> <ul style="list-style-type: none"> • Determine the pattern rule and extend the repeating pattern using concrete materials or pictorial representations. [2.1.4, 2.2.8, 2.2.9, 2.3.3, 2.3.4] • Name a repeating pattern containing three to five elements in its core (name as ‘number’ pattern e.g. ‘three’ pattern or using a letter code e.g. ABCABC).[2.1.4, 2.2.8, 2.3.3] • Describe growing/increasing or decreasing patterns and extend the pattern using the pattern rule. [2.1.4, 2.2.8, 2.3.3] • Create repeating, increasing and decreasing patterns using solids

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				or plane shapes (concrete and pictorial) and explain the pattern rule. [2.1.4, 2.2.9, 2.3.4] <ul style="list-style-type: none"> • Insert the missing elements in given patterns (concrete or pictorial) and explain reasoning. [2.1.4, 2.2.8, 2.3.3]
Language 2.1.5 Develop appropriate vocabulary associated with geometry.	2.2.10. Use appropriate vocabulary associated with geometry, orally and in writing.	2.3.5 Communicate with confidence using language related to geometry. 2.3.6 Demonstrate an appreciation for others.	4. Communicate effectively using vocabulary associated with geometry.	<ul style="list-style-type: none"> • Use appropriate language associated with geometry, such as: surface, face, curved, flat, pointed, cube, cuboid, sphere, cone, cylinder, pyramid, horizontal, vertical, side, corner, straight line, curved line, increasing and decreasing. [2.1.5, 2.2.10, 2.3.5, 2.3.6]
MEASUREMENT				

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Linear</p> <p>3.1.1. Understand that length can be quantified.</p> <p>3.1.2. Demonstrate familiarity with comparison of length using appropriate vocabulary.</p> <p>3.1.3. Apply measurement techniques to quantify length.</p> <p>3.1.4. Solve problems involving length.</p>	<p>3.2.1. Measure, record, compare and order length, using non-standard units.</p> <p>3.2.2. Estimate length using non-standard units and verify results.</p> <p>3.2.3. Perform tasks demonstrating the conservation of length.</p> <p>3.2.4. Solve practical problems involving length.</p>	<p>3.3.1. Display a sense of competence in selecting units when measuring.</p> <p>3.3.2. Take pride in measuring accurately.</p>	<p>1. Develop an understanding that measures of length can be quantified.</p> <p>2. Develop an understanding of the comparison of measures of length using appropriate vocabulary.</p> <p>3. Demonstrate an understanding of measurement techniques.</p> <p>4. Solve problems involving</p>	<ul style="list-style-type: none"> • Measure lengths and distances using multiple copies of large and small non-standard units (by placing the same sized units end-to-end without leaving gaps, without overlapping and arranged in a straight line) and using a single copy of a unit (unit iteration). [3.1.1, 3.1.3, 3.2.1, 3.3.1, 3.3.2] • Count and record the number of units used to measure lengths. [3.1.1, 3.1.3, 3.2.1, 3.3.2] • Compare and order objects and distances according to length and explain reasoning using appropriate vocabulary (ascending and descending order). [3.1.2, 3.2.1, 3.3.1]

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
			length.	<ul style="list-style-type: none"> • Explore activities to explain that the size of the unit used in measuring relates to the number of units used. [3.1.1, 3.1.3, 3.2.4, 3.3.1] • Explain why one non-standard unit may be a better choice for measuring than the other. [3.1.1, 3.2.4, 3.3.1] • Compare and order the lengths of objects and lines in different orientations) in pictorial representations. [3.1.2, 3.2.1, 3.3.2] • Estimate lengths of objects and verify lengths by measuring. [3.1.3, 3.2.2, 3.3.1] • Explore activities associated with conservation of length. [3.1.3,

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				3.2.3, 3.3.1] <ul style="list-style-type: none"> Solve practical problems involving length. [3.1.4, 3.2.4, 3.3.2]
Mass/Weight 3.1.5. Understand that mass/weight can be quantified. 3.1.6. Demonstrate familiarity with comparison of mass/weight using appropriate vocabulary. 3.1.7. Apply measurement	3.2.5. Measure, record, compare and order mass/weight, using non-standard units. 3.2.6. Solve practical problems involving mass/weight.	3.3.3. Appreciate measures in everyday use. 3.3.4. Demonstrate confidence when measuring.	5. Develop an understanding that mass/weight can be quantified. 6. Develop an understanding of the comparison of measures of mass/weight using appropriate	• Measure the mass/weight of objects using non-standard units (e.g. marbles, blocks) and an equal arm balance. [3.1.5, 3.2.5, 3.3.3, 3.3.4] • Count and record the number of units used to measure the mass/weight of objects. [3.1.5, 3.2.5, 3.3.4] • Compare and order the objects according to mass/weight and explain reasons using appropriate vocabulary (ascending and

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>techniques to quantify mass/weight.</p> <p>3.1.8. Solve problems involving mass/weight.</p>			<p>vocabulary.</p> <p>7. Demonstrate an understanding of measurement techniques.</p> <p>8. Solve problems involving mass/weight.</p>	<p>descending order). [3.1.6, 3.2.5, 3.3.4]</p> <ul style="list-style-type: none"> • Explore activities to explain that the size of the unit used in measuring relates to the number of units used. [3.1.7, 3.2.6, 3.3.3] • Explain why one non-standard unit may be a better choice for measuring than the other. [3.1.7, 3.2.6, 3.3.3] • Solve practical problems involving mass/weight. [3.1.8, 3.2.6, 3.3.4]
<p>Time</p> <p>3.1.9. Understand that time can be quantified.</p>	<p>3.2.7. Measure, record, compare and order duration of activities (time) using non-</p>	<p>3.3.5. Demonstrate confidence in justifying their</p>	<p>9. Develop an understanding that time can be</p>	<ul style="list-style-type: none"> • Measure the passage of time it takes for various activities to occur or duration of activities (using a repeated non-standard unit) and record the number of

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>3.1.10. Demonstrate familiarity with comparison of time using appropriate vocabulary.</p> <p>3.1.11. Apply measurement techniques to quantify time.</p> <p>3.1.12. Solve problems involving time.</p>	<p>standard and standard units.</p> <p>3.2.8. Identify the features of the analog clock and the function of its parts.</p> <p>3.2.9. Measure the duration of events in minutes and seconds.</p> <p>3.2.10. Compare the duration of events using minutes and seconds and order.</p> <p>3.2.11. Solve practical problems involving time</p>	<p>responses.</p> <p>3.3.6. Demonstrate confidence when measuring time.</p>	<p>quantified.</p> <p>10. Develop an understanding of the comparison of time using appropriate vocabulary.</p> <p>11. Demonstrate an understanding of measurement techniques.</p> <p>12. Solve problems involving time.</p>	<p>units used to measure). [3.1.9, 3.2.7, 3.3.6]</p> <ul style="list-style-type: none"> • Compare and order the duration of activities (related to the use of non-standard units) and explain reasoning using appropriate vocabulary. [3.1.10, 3.2.7, 3.3.5] • Explore activities to explain that the size of the unit used in measuring relates to the number of units used. [3.1.11, 3.2.11, 3.3.5] • Explain why one non-standard unit may be a better choice for measuring than the other. [3.1.11, 3.2.11, 3.3.5] • Explain the need for and the importance of a standard unit of measure for time. [3.1.9, 3.2.11,

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	(including the interpretation of calendars).			<p>3.3.5]</p> <ul style="list-style-type: none"> • State units of measure of time that they are familiar with e.g. minutes, hours and the instrument used to measure (clock). [3.1.9, 3.2.7, 3.2.8, 3.3.5] • Identify the features of the analog clock and the function of the hands (second, minute and hour). [3.1.9, 3.2.8, 3.3.5] • Explain the meaning of the movement of the hands on a clock (seconds and minutes). [3.1.9, 3.2.8, 3.3.5] • Measure the duration of events in minutes and seconds using a clock with a second hand and a minute hand. [3.1.9, 3.1.11, 3.2.9, 3.3.6]

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> • Count and record the number of seconds or minutes taken for the duration of events/activities. [3.1.9, 3.1.11, 3.2.9, 3.3.6] • Compare and order the activities according to time taken and explain reasons using appropriate vocabulary. [3.1.10, 3.2.10, 3.3.5] • State/name activities/events which occur in seconds and minutes (up to 5 minutes). [3.1.12, 3.2.11, 3.3.5] • Solve practical problems involving time (including the interpretation of calendars). [3.1.12, 3.2.11, 3.3.5]
Capacity				

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>3.1.13. Develop the concept of capacity.</p> <p>3.1.14. Demonstrate familiarity with comparison of objects using appropriate vocabulary.</p> <p>3.1.15. Understand that measures can be quantified.</p> <p>3.1.16. Apply measurement techniques to quantify capacity.</p> <p>3.1.17. Demonstrate</p>	<p>3.2.12. Investigate objects according to their capacity.</p> <p>3.2.13. Classify objects into groups of given criteria associated with capacity.</p> <p>3.2.14. Use comparison vocabulary to compare the capacity of two objects (direct comparison).</p> <p>3.2.15. Measure, record, compare and order capacity using non-standard units.</p>	<p>3.3.7. Display a sense of competence in selecting units when measuring capacity.</p> <p>3.3.8. Demonstrate confidence when measuring.</p>	<p>13. Demonstrate an understanding of capacity.</p> <p>14. Develop an understanding of the comparison of measures of capacity using appropriate vocabulary.</p> <p>15. Develop an understanding that capacity can be quantified.</p> <p>16. Demonstrate appropriate techniques when</p>	<ul style="list-style-type: none"> • Sort objects into “can put things into” (containers) and “cannot put things into” and explain reasons. [3.1.13, 3.2.12, 3.2.13] • Explore containers by filling and emptying and describe using the language associated with capacity (e.g. empty/full, nearly full) so as to develop the concept of capacity. [3.1.13, 3.2.12, 3.2.13] • Compare the capacity of two containers by filling and emptying (using materials such as water and sand) into each other (or by filling and emptying into a larger container and marking each level) and give reasons using appropriate language. [3.1.14, 3.2.14] • Describe capacity as the measure

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>an understanding of conservation of capacity.</p> <p>3.1.18. Solve problems involving capacity.</p>	<p>3.2.16. Perform tasks demonstrating the conservation capacity.</p> <p>3.2.17. Solve practical problems involving capacity.</p>		<p>measuring.</p> <p>17. Demonstrate an understanding of conservation of capacity.</p> <p>18. Solve problems involving capacity.</p>	<p>of the amount a container can hold. [3.1.13, 3.2.12, 3.2.13]</p> <ul style="list-style-type: none"> • Measure the capacity of containers using non-standard units (by filling the container with non-standard units such as cubes or by counting the number of times a smaller container was filled and emptied into the container to be measured). [3.1.15, 3.2.15, 3.3.7, 3.3.8] • Count and record the number of units used to measure the capacity of containers. [3.1.15, 3.1.16, 3.2.15, 3.3.8] • Compare and order containers according to capacity and explain reasons using appropriate vocabulary (ascending and descending order). [3.1.14,

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>3.2.15, 3.3.7, 3.3.8]</p> <ul style="list-style-type: none"> • Explore activities to explain that the size of the unit used in measuring capacity relates to the number of units used. [3.1.18, 3.2.17, 3.3.7] • Explain why one non-standard unit may be a better choice for measuring capacity than the other (e.g. a cup may be better than a spoon when measuring the capacity of a bucket; cubes may be better than cones when measuring capacity as they pack and stack better and leave no gaps). [3.1.18, 3.2.17, 3.3.7] • Explore activities associated with conservation of capacity. [3.1.17, 3.2.16] • Solve practical problems

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				involving capacity. [3.1.18, 3.2.17, 3.3.7, 3.3.8]
<p>Language</p> <p>3.1.19. Develop appropriate vocabulary associated with measurement.</p>	<p>3.2.18. Use appropriate vocabulary associated with measurement, orally and in writing.</p>	<p>3.3.9. Communicate with confidence using language related to measurement.</p>	<p>19. Communicate effectively using vocabulary associated with measurement.</p>	<ul style="list-style-type: none"> Use appropriate language associated with measurement, such as: fast/slow, faster/slower, fastest/slowest, quickly/slowly, minute, second, longer/shorter time, clock, long hand, short hand, second hand, capacity, full, empty, holds more/less/same or as much as, container, nearly full, capacity, liquid, straight, slant, length, width, height, depth, heavier/heaviest, lighter/lightest, weight/mass, measure, order and compare. [3.1.19, 3.2.18, 3.3.9]
STATISTICS				
<p>Tally Charts and Pictographs</p>				

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>4.1.1. Use statistical techniques to investigate real-life problems.</p> <p>4.1.2. Demonstrate the ability to organize and represent data.</p> <p>4.1.3. Demonstrate an understanding of the features of graphs and charts.</p> <p>4.1.4. Make decisions based on interpretation</p>	<p>4.2.1. Collect data (using observation and frequency counts) and classify data through investigation of a problem/question based on a real-life situation.</p> <p>4.2.2. Identify features of tally charts and pictographs (e.g. using one stroke/tally mark or picture to represent one person, grouping of strokes/tally marks in fives, baseline/start line, labels (of sets) on</p>	<p>4.3.1. Demonstrate awareness that numerical data could be communicated visually.</p> <p>4.3.2. Demonstrate creativity and enjoyment in representing data.</p> <p>4.3.3. Collaborate in teams to find solutions to problems.</p> <p>4.3.4. Show the usefulness of data analysis to problem</p>	<p>1. Demonstrate the ability to collect, classify, organize, represent and interpret data.</p> <p>2. Demonstrate an understanding about the features of charts/graphs.</p> <p>3. Use analysed data to make sound decisions and solve problems.</p>	<ul style="list-style-type: none"> • Collect and classify data to make decisions based on a real-life situation or problem. [4.1.1, 4.2.1, 4.3.3] • Construct tally charts (including the frequency column) with guidance from the teacher, noting features. [4.1.2, 4.1.3, 4.2.2, 4.2.3, 4.3.3] • Construct pictographs (with and without grid, vertical and horizontal arrangements) based on information collected and after reviewing the features of pictographs. [4.1.2, 4.1.3, 4.2.2, 4.2.3, 4.3.1, 4.3.2, 4.3.3] • Interpret and analyse the data so as to make decisions about a real-life situation or problem. [4.1.4,

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
of data.	baseline, same-sized symbols/pictures, equal spacing and title). 4.2.3. Construct tally charts and pictographs using appropriate symbolic representations. 4.2.4. Interpret data from tally charts and pictographs based on a real-life problem or situation. 4.2.5. Make informed decisions based on data analysed.	solving situations.		4.2.4, 4.2.5, 4.3.3, 4.3.4] • Participate in decision-making to solve problems. [4.1.4, 4.2.5, 4.2.6, 4.3.3, 4.3.4] • Communicate findings and justify decisions made using appropriate vocabulary (orally or in writing). [4.1.4, 4.2.5, 4.2.6, 4.3.3, 4.3.4]

MATHEMATICS CONTENT STANDARDS: STANDARD 1

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	4.2.6. Justify decisions made using data collected in writing and/or oral presentations.			
Language 4.1.5. Develop appropriate vocabulary associated with statistics.	4.2.7. Use appropriate vocabulary associated with statistics, orally and in writing.	4.3.5. Communicate with confidence using language related to statistics.	4. Communicate effectively using vocabulary associated with statistics.	<ul style="list-style-type: none"> Use appropriate language associated with statistics, such as: horizontal, vertical, same size, same space, tally, most frequent, classify, label, title, information and data. [4.1.5, 4.2.7, 4.3.5]

Primary School Curriculum

Mathematics

Standard 2

INTERIM

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
NUMBER				
Number Concepts				
<p>1.1.1. Develop number sense up to 1 000 with appropriate vocabulary.</p> <p>1.1.2. Develop an understanding of our currency and the value of coins and bills.</p>	<p>1.2.1. Count within 1 000 in ascending and descending order (rote count).</p> <p>1.2.2. Skip count in ascending and descending order within a specified amount.</p> <p>1.2.3. Count objects in a set up to 1 000.</p> <p>1.2.4. Connect number names and numerals to quantities up to</p>	<p>1.3.1. Demonstrate curiosity while understanding number concepts.</p>	<p>1. Count sequentially within 1 000.</p> <p>2. Demonstrate an understanding of numbers to 1 000.</p> <p>3. Understand the position of objects.</p> <p>4. Demonstrate estimation skills using 50 as a benchmark.</p> <p>5. Demonstrate an understanding of money</p>	<ul style="list-style-type: none"> • Count forward (count on) and backward (count back) by ones within 1 000 from any given number. [1.1.1, 1.2.1] • Skip count in ascending and descending order using various ways (such as, in 100s to or from 1 000; in 10s, 25s and 50s starting at zero, up to 200; in 2s starting at one; in 3s starting at zero and up to 30; on and off the decade by tens and hundreds e.g. 43, 53, 63...; 340, 350, 360...; 43, 53, 63... ; 174, 274, 374.... [1.1.1, 1.2.2, 1.3.1] • Count the number of objects in a set up to 1 000 using one-to-one correspondence together with skip counting (up to 1 000 and

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>1 000.</p> <p>1.2.5. Sequence number names and numerals.</p> <p>1.2.6. Read and write number names and numerals to 1 000.</p> <p>1.2.7. Describe the order or relative position of objects using ordinal numbers up to 100.</p> <p>1.2.8. Estimate the number of objects in a set using 50 as the benchmark and verify by</p>		<p>notations (dollars only and cents only) and the value of coins and bills.</p>	<p>using materials such as base ten manipulatives). [1.1.1, 1.2.3, 1.3.1]</p> <ul style="list-style-type: none"> • Match the number names and numerals to the quantities they represent up to 1 000 (concrete and pictorial representations of base ten materials). [1.1.1, 1.2.4, 1.3.1] • Sequence number names and numerals to 1 000. [1.1.1, 1.2.5, 1.3.1] • Insert missing numbers on a number line, number chart and number sequence. [1.1.1, 1.2.5, 1.3.1] • Read and write number names and numerals to 1 000. [1.1.1, 1.2.6, 1.3.1]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	counting. 1.2.9. Develop an understanding of money notation (dollars only, cents only) and the value of money.			<ul style="list-style-type: none"> • Use pictorial representations and appropriate language to describe position up to hundredth. [1.1.1, 1.2.7, 1.3.1] • Estimate a given quantity of items using 50 as a benchmark (using ‘mental grouping’) and verify by counting. [1.1.1, 1.2.8, 1.3.1] • Use money notation to record amounts of money, dollars only and cents only (e.g. \$7, 25c), used in money transactions. [1.1.2, 1.2.9]
Place Value and Rounding 1.1.3. Develop an understanding of place value up to 999	1.2.10. Explore the place value of numbers to 999 (hundreds, tens	1.3.2. Collaborate while doing activities.	6. Demonstrate an understanding of place value and value up to	<ul style="list-style-type: none"> • Count a specified number of objects and use them to form groups of 100s, 10s and 1s. [1.1.3, 1.2.10, 1.3.2]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS						
Students will:										
<p>(concretely, pictorially and symbolically).</p> <p>1.1.4. Develop an understanding of the comparison of numbers.</p> <p>1.1.5. Develop an understanding of rounding to tens and hundreds and rounding to the nearest dollar.</p>	<p>and ones) including expanded notation.</p> <p>1.2.11. Compare and order numerals up to 1 000.</p> <p>1.2.12. Round numbers to the nearest ten or hundred.</p> <p>1.2.13. Round to the nearest dollar (e.g. \$5 and 35c is close to \$5).</p>		<p>999.</p> <p>7. Compare and order numerals up to 1 000 with reference to place value.</p> <p>8. Develop an understanding of rounding to tens and hundreds and rounding to the nearest dollar.</p>	<ul style="list-style-type: none"> Describe a specified number in various ways using language associated with place value e.g. 245 as two 100s, four 10s and five 1s; two hundred and forty-five; 245 ones; 24 tens and 5 ones. [1.1.3, 1.1.4, 1.2.10, 1.2.11] Show, using various manipulatives (e.g. base ten materials, place value mats) that a given numeral consists of a certain number of ‘hundreds’, ‘tens’ and ‘ones’, and record as <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">Hundreds</th> <th style="padding: 5px;">Tens</th> <th style="padding: 5px;">Ones</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">2</td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">5</td> </tr> </tbody> </table> Record the amounts shown in pictorial representations of base ten materials both in terms of 	Hundreds	Tens	Ones	2	4	5
Hundreds	Tens	Ones								
2	4	5								

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>place value and as a numeral. [1.1.3, 1.2.10, 1.3.2]</p> <ul style="list-style-type: none"> • Write the numeral to match objects grouped in hundreds, tens and ones (concretely and pictorially). [1.1.3, 1.2.10, 1.3.2] • Explain and show the equivalence of 1 ten and 10 ones, 10 tens and 1 hundred, 100 ones and 1 hundred. [1.1.3, 1.2.10, 1.3.2] • Explain the importance of grouping in tens and hundreds. [1.1.3, 1.2.10, 1.3.2] • Write numbers using expanded notation (up to 999). [1.1.3, 1.2.10, 1.3.2] • Convert expanded notation into numerals. [1.1.3, 1.2.10, 1.3.2]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> • Explain and write the place value and value represented by each digit in a numeral up to three-digit numbers. [1.1.3, 1.2.10, 1.3.2] • Write the largest and smallest number given any three digits. [1.1.3, 1.1.4, 1.2.10, 1.2.11, 1.3.2] • Compare and order numerals up to 1 000 (in ascending and descending order). [1.1.3, 1.1.4, 1.2.10, 1.2.11, 1.3.2] • Use the symbols for more than (>) and less than (<) to show the relationship between two numbers. [1.1.4, 1.2.11, 1.3.2] • Round numbers to the nearest 'ten' or 'hundred' (using a number line and the rule). [1.1.5,

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				1.2.12, 1.3.2] <ul style="list-style-type: none"> • Round to the nearest dollar (e.g. \$5 and 35c is close to \$5). [1.1.5, 1.2.13, 1.3.2]
Number Patterns 1.1.6. Develop algebraic thinking (number patterns and number relationships).	1.2.14. Explore increasing and decreasing patterns up to 1 000. 1.2.15. Develop number patterns involving addition, subtraction, multiplication, division, commutative property for	1.3.3. Be explorative when examining patterns and relationships.	9. Recognize and explore number patterns up to 1 000 (using appropriate resources such as base ten materials, counters, number lines and hundred charts).	<ul style="list-style-type: none"> • Describe number patterns on a number line and hundred chart. e.g. add 10: 13, 23, 33, 43... [1.1.6, 1.2.14, 1.3.3] • Describe and extend simple number patterns that increase or decrease e.g. 1,2,3,4...; 15,14,13,12 ...; 2,4,6,8 ...; 5,10,15,20...; 90,80,70,60....using the pattern rule (to 1 000). [1.1.6, 1.2.14, 1.3.3] • Recognize when an error occurs

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	addition and multiplication, the associative property for addition and multiplication, add-two/subtract-two, double facts, near double facts, compatible numbers within ten, addends which differ by 2 and the zero property. 1.2.16. Use pattern recognition to solve problems.			in a pattern and explain what is wrong. [1.1.6, 1.2.14, 1.3.3] <ul style="list-style-type: none"> • Insert the missing elements in a given pattern and explain the reasoning. [1.1.6, 1.2.14, 1.3.3] • Create increasing and decreasing number patterns and explain the pattern rule. [1.1.6, 1.2.14, 1.2.15, 1.2.16, 1.3.3] • Explore, describe and record patterns related to the addition and subtraction facts (up to 999) and explain generalizations e.g. $6 + 3 = 9$ is related to $600 + 300 = 900$; $5 - 2 = 3$ is related to $500 - 200 = 300$. [1.1.6, 1.2.14, 1.2.15, 1.2.16, 1.3.3] • Explain why addition and subtraction are inverse (opposite) operations. [1.1.6, 1.2.15, 1.2.16,

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>1.3.3]</p> <ul style="list-style-type: none"> • Explore, describe and record the patterns for multiplication and division facts (up to 5 times table and the 10 times table with a focus on the patterns related to the 2, 5 and 10 times table). E.g. $1 \times 2 = 2$ $2 \div 2 = 1$ $2 \times 2 = 4$ $4 \div 2 = 2$ etc. [1.1.6, 1.2.14, 1.2.15, 1.2.16, 1.3.3] • Explain why multiplication and division are inverse (opposite) operations. [1.1.6, 1.2.15, 1.2.16, 1.3.3] • Recall basic addition and subtraction facts, and multiplication and division facts, from memory. [1.1.6, 1.2.15, 1.3.2]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> • Explore, describe and record patterns related to the commutative property for addition and multiplication, the associative property for addition and multiplication, add-two/subtract-two, double facts, near double facts, compatible numbers within ten, addends which differ by 2 and the zero property, and explain generalizations about number relationships e.g. the order in which numbers are added does not affect the sum (commutative and associative laws). [1.1.6, 1.2.14, 1.2.15, 1.2.16, 1.3.3] • Solve problems involving the use of patterns. [1.1.6, 1.2.14, 1.2.15, 1.2.16, 1.3.3]
Number				

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Relationships</p> <p>1.1.7. Explore algebraic thinking (number patterns and number relationships).</p> <p>1.1.8. Make sense of addition and subtraction sentences involving one unknown (initial, change or result).</p>	<p>1.2.17. Count objects in sets to demonstrate equality and inequality of sets.</p> <p>1.2.18. Determine whether a given number sentence is true or false.</p> <p>1.2.19. Use the equal sign to record equivalent number relationships e.g. $6+4=7+3$.</p> <p>1.2.20. Use the unequal sign to record</p>	<p>1.3.4. Collaborate while doing activities.</p> <p>1.3.5. Exhibit perseverance in solving problems.</p>	<p>10. Represent equality and inequality using manipulatives, pictures and symbols and using equivalent relationships.</p> <p>11. Use the concept of equality to solve problems involving addition and subtraction with one unknown.</p>	<ul style="list-style-type: none"> • Determine whether two sides of a given number sentence are equal (=) or not equal (\neq) using manipulatives, drawings and counting e.g. Is $3+4=9$ true or false? Is $5+8=9+5$ true or false? Is $5 \times 4 = 20$, true or false? Is $5 \times 2 = 6 \times 2$? and explain reasoning using appropriate vocabulary. [1.1.7, 1.2.17, 1.2.18, 1.2.19, 1.2.20, 1.3.4] • Insert the = or \neq symbols in number sentences e.g. $3 \times 4 \square 4 \times 5$. [1.1.7, 1.2.19, 1.2.20, 1.3.4] • Create equal sets of objects on a balance by removing from one side or adding to one side after starting with unequal sets and record the solutions by writing the two number sentences using a

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>number relationships that are not equivalent e.g. $3+2 \neq 1+6$.</p> <p>1.2.21. Solve problems involving addition and subtraction number sentences with one unknown (initial, change or result).</p>			<p>box frame to represent the unknown. e.g. Starting with 5 and 7 objects on the balance, pupils will add 2 to 5 or subtract 2 from 7 to form equal sets : $5+\square=7$ and $5=7-\square$; $5+2=7$ and $5=7-2$. [1.1.7, 1.1.8, 1.2.21, 1.3.5]</p> <ul style="list-style-type: none"> • Explain and model how to solve problems involving one unknown number in addition and subtraction sentences without using the balance (e.g. by counting on or back mentally or using the number line, by drawing and counting, by guess and check, by recalling facts, by using counters). [1.1.7, 1.1.8, 1.2.21, 1.3.5] • Solve problems involving addition and subtraction sentences involving one

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				unknown number (initial, change or result) and where the given sum or difference is on either the left or right side of the equal symbol using a variety of strategies. [1.1.7, 1.1.8, 1.2.21, 1.3.5]
<p>Addition and Subtraction</p> <p>1.1.9. Develop an understanding of the algorithms for addition and subtraction.</p> <p>1.1.10. Solve real-life problems (concrete, pictorial and symbolic</p>	<p>1.2.22. Develop the algorithms for addition and subtraction.</p> <p>1.2.23. Perform addition (up to 3 addends) and subtraction using the algorithms (up</p>	<p>1.3.6. Appreciate the use of algorithms in solving problems involving the operations.</p> <p>1.3.7. Develop confidence in solving problems</p>	<p>12. Demonstrate an understanding of the algorithms for addition and subtraction.</p> <p>13. Solve a variety of word problems from real-life, using problem</p>	<ul style="list-style-type: none"> • Explore the development of, and describe the procedures used in, adding and subtracting numbers using base ten manipulatives (including the place value mat). [1.1.9, 1.2.22, 1.3.6] • Perform addition and subtraction using the algorithms. [1.1.10, 1.2.23, 1.3.7] • Solve one-step and two-step real-

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>modes, including money) involving addition and subtraction.</p> <p>1.1.11. Develop estimation skills.</p> <p>1.1.12. Demonstrate an understanding of the relationship between addition and subtraction.</p> <p>1.1.13. Create number stories.</p>	<p>to 999).</p> <p>1.2.24. Solve one-step and two-step real-life addition and subtraction problems.</p> <p>1.2.25. Solve different types of addition and subtraction problems.</p> <p>1.2.26. Use estimation skills to check solutions to problems.</p> <p>1.2.27. Determine the reasonableness of answers by using</p>	<p>involving addition and subtraction.</p> <p>1.3.8. Exhibit perseverance in solving problems.</p>	<p>solving strategies and mental strategies.</p> <p>14. Demonstrate an understanding of estimation skills.</p> <p>15. Use the relationship between addition and subtraction to check answers.</p> <p>16. Create number stories using appropriate language.</p>	<p>life addition and subtraction problems (including bills up to \$100.00, dollars only, and cents only, with and without change) using a variety of problem solving strategies such as: use a model, act it out, draw a picture, look for a pattern, guess and check, work backwards, logical reasoning, make a table or chart and make an organized list. [1.1.10, 1.2.24, 1.2.25, 1.3.7, 1.3.8]</p> <ul style="list-style-type: none"> • Solve different types of addition problems (as for Std. 1 and compare structures (larger unknown) – compare, compared quantity unknown and referent unknown) and subtraction problems (as for Std. 1 and compare structures (smaller unknown) -compare, compared quantity unknown and referent

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>estimation.</p> <p>1.2.28. Use the inverse operations to check answers.</p> <p>1.2.29. Record solutions to problems using a variety of formats.</p> <p>1.2.30. Explain or demonstrate how an answer was obtained when solving problems.</p> <p>1.2.31. Create number stories involving addition and subtraction and</p>			<p>unknown; and measurement structures (difference unknown) - equalize meaning) within 999 (using the algorithm). [1.1.10, 1.2.25, 1.3.6, 1.3.7, 1.3.8]</p> <ul style="list-style-type: none"> • Create number sentences with one unknown to aid in solving real-life problems. [1.1.10, 1.2.24, 1.2.25, 1.3.7, 1.3.8] • Use estimation skills to check solutions to problems. [1.1.11, 1.2.26, 1.3.7] • Explain the reasonableness of answers by using estimation. [1.1.11, 1.2.27, 1.3.7] • Check answers to addition and subtraction problems, by using the reverse operation or another strategy. [1.1.12, 1.2.28, 1.3.7]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	using appropriate vocabulary.			<ul style="list-style-type: none"> • Record solutions to problems using drawings, numerals, symbols and words. [1.1.10, 1.2.29, 1.3.7] • Explain or demonstrate how an answer was obtained when solving problems. [1.2.30, 1.3.7] • Create number stories using appropriate vocabulary (including the language of money). [1.1.13, 1.2.31, 1.3.7]
<p>Multiplication and Division</p> <p>1.1.14. Solve one-step real-life multiplication and division problems presented</p>	1.2.32. Solve one-step, real-life problems involving repeated	1.3.9. Strive for accuracy in computation involving the operations.	17. Demonstrate a conceptual understanding of multiplication	<ul style="list-style-type: none"> • Solve one-step, real-life problems involving repeated addition by forming equal groups of objects (concrete and pictorial, with and without arrays) and explain solution process using

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>orally, pictorially or symbolically (using concrete materials, whole number and money).</p> <p>1.1.15. Develop an understanding of multiplication and division.</p> <p>1.1.16. Solve computational problems involving multiplication and division.</p> <p>1.1.17. Demonstrate an</p>	<p>addition.</p> <p>1.2.33. Recognize multiplication as repeated addition and recognize the multiplication symbol.</p> <p>1.2.34. Multiply a one digit number by a one digit number using multipliers up to 5.</p> <p>1.2.35. Build multiplication tables.</p> <p>1.2.36. Solve one-step, real-life problems</p>		<p>and division.</p> <p>18. Solve problem involving multiplication and division.</p> <p>19. Demonstrate an understanding of the relationship between multiplication and division.</p> <p>20. Use estimation skills to determine reasonableness of answers.</p>	<p>concrete materials, drawings, words, numerals and symbols.</p> <p><i>E.g. A farmer plants three rows of tomato plants. In each row there are four plants. How many tomato plants are there altogether? Three rows of four (three groups of four), $4+4+4=12$, $4 \times 3=12$. [1.1.14, 1.1.15, 1.2.32, 1.2.33, 1.3.9]</i></p> <ul style="list-style-type: none"> Solve problems involving the multiplication of a one digit number by a one digit number, using a variety of problem solving strategies such as: use a model, act it out, draw a picture, look for a pattern, guess and check, work backwards, logical reasoning, make a table or chart and make an organized list and explain solution process. [1.1.14, 1.1.15, 1.1.16, 1.2.34, 1.3.9]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>understanding of the relationship between multiplication and division.</p> <p>1.1.18. Develop estimation skills.</p>	<p>involving sharing and grouping.</p> <p>1.2.37. Recognize division as sharing and grouping and recognize the division symbol.</p> <p>1.2.38. Divide a one digit number by a one digit number (without remainder).</p> <p>1.2.39. Build division tables.</p> <p>1.2.40. Investigate the relationship</p>			<ul style="list-style-type: none"> • Build multiplication tables by using concrete materials and drawings.[1.1.15, 1.2.35, 1.3.9] • Solve one-step, real-life problems involving sharing and grouping (concrete and pictorial, with and without arrays) and explain solution process using concrete materials, drawings, words, numerals and symbols. <i>E.g. Eight sweets are shared between two friends. How many does each get? 8 sweets shared equally between 2 persons = $8 \div 2 = 4$. I have 12 mangoes and each child is to be given four, how many children will receive mangoes? 12 mangoes grouped in 4s= $12 \div 4 = 3$.</i> [1.1.14, 1.1.15, 1.2.36, 1.2.37, 1.3.9] • Solve problems involving the division of a one digit number by

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>between multiplication and division.</p> <p>1.2.41. Use estimation skills to check solutions to problems.</p> <p>1.2.42. Determine the reasonableness of answers by using estimation.</p>			<p>a one digit number using a variety of problem solving strategies such as: use a model, act it out, draw a picture, look for a pattern, guess and check, work backwards, logical reasoning, make a table or chart and make an organized list and explain solution process. [1.1.14, 1.1.15, 1.1.16, 1.2.36, 1.2.37, 1.2.38, 1.3.9]</p> <ul style="list-style-type: none"> • Build division tables by using concrete materials and drawings. [1.1.15, 1.2.39, 1.3.9] • Explore the relationship between multiplication and division and explain findings using concrete materials, drawings, words, numerals and symbols e.g. <div style="text-align: center;"> <p>00000</p> <p>00000</p> <p>00000</p> </div>

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p><i>3 groups of 5 is 15</i> $5 \times 3 = 15$ <i>15 shared among 3 is 5</i> $15 \div 3 = 5$ [1.1.17, 1.2.40, 1.3.9]</p> <ul style="list-style-type: none"> • Use estimation skills to check solutions to problems. [1.1.18, 1.2.41, 1.3.9] • Explain the reasonableness of answers by using estimation. [1.1.18, 1.2.41, 1.2.42, 1.3.9]
<p>Mental Mathematics</p> <p>1.1.19. Develop strategies to solve problems mentally.</p>	<p>1.2.43. Investigate and use a variety of mental math strategies and recording strategies to solve problems involving the</p>	<p>1.3.10. Develop an appreciation for the need for accuracy and efficiency in computation.</p>	<p>21. Demonstrate skills and competencies in mental strategies in problem solving.</p>	<ul style="list-style-type: none"> • Explore, describe and use a range of mental strategies and recording strategies for solving problems, including: <ul style="list-style-type: none"> ○ The commutative property for addition and multiplication ○ The associative property for

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	four operations.			addition and multiplication <ul style="list-style-type: none"> ○ Add-two/subtract-two ○ Double facts ○ Near double facts ○ Addends which differ by 2 (e.g. $5+7=6 \times 2$) ○ Compatible numbers within ten ○ Related addition and subtraction facts e.g. $15 + 3 = 18$, so $18 - 15 = 3$; $5 - 2 = 3$, so $50 - 20$ is 30, so $500 - 200$ is 300 ○ Related multiplication and division facts (up to 5 times table and the 10 times table) ○ Count on and back, skip counting ○ The compensation strategy e.g. $84+18$ is 84 add 20 subtract 2. [1.1.19, 1.2.43, 1.3.10] <ul style="list-style-type: none"> ● Select appropriate mental

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>strategies for solving problems and justify their selection. [1.1.19, 1.2.43, 1.3.10]</p> <ul style="list-style-type: none"> • Explain verbally, in writing or through modelling the mental process used to arrive at an answer. [1.1.19, 1.2.43, 1.3.10] • Examine various mental strategies employed by others to determine which was best suited for solving problems. [1.1.19, 1.2.43, 1.3.10]
<p>Fractions</p> <p>1.1.20. Develop an understanding of fractions using area models.</p>	<p>1.2.44. Identify wholes and parts of wholes.</p> <p>1.2.45. Differentiate between equal</p>	<p>1.3.11. Be explorative when examining relationships in numbers.</p>	<p>22. Develop conceptual understanding of fractions and its related</p>	<ul style="list-style-type: none"> • Differentiate between wholes and parts. [1.1.20, 1.2.44, 1.3.11] • Differentiate between equal and unequal parts of a whole. [1.1.20, 1.2.45, 1.3.11]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>1.1.21. Become aware of the names associated with fractions to tenths using area models.</p> <p>1.1.22. Demonstrate an understanding of equivalent fractions.</p>	<p>and unequal parts of the whole.</p> <p>1.2.46. Explore the relationship among concrete (area model), pictorial and symbolic representations of fractions up to tenths.</p> <p>1.2.47. Compare and order fractions by direct comparison.</p> <p>1.2.48. Explore equivalent forms of fractions with denominators</p>		<p>vocabulary.</p> <p>23. Compare and order fractions.</p> <p>24. Understand equivalent fractions.</p>	<ul style="list-style-type: none"> • Explore and describe relationships between wholes and parts (equal and unequal) by: <ul style="list-style-type: none"> ○ Dividing whole shapes into parts (using activities such as folding and cutting) ○ Assembling whole using parts ○ Matching parts to their respective wholes ○ Matching parts to determine if they are the same ○ Stating the number of equal parts that a whole has been divided into ○ Counting the number of parts that make up the whole and the number shaded ○ Colouring pictorial representations of fractions. [1.1.20, 1.2.46, 1.3.11] • Name and record fractions using

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>up to ten.</p> <p>1.2.49. Compare and order fractions using the concept of equivalence.</p>			<p>words and symbols. [1.1.21, 1.2.46, 1.3.11]</p> <ul style="list-style-type: none"> • Connect word/number names to models and symbolic representations. [1.1.21, 1.2.46, 1.3.11] • State the uses of fractions in everyday situations. [1.1.20, 1.1.21, 1.2.46, 1.3.11] • Compare and order fractions by: <ul style="list-style-type: none"> ○ Matching/overlying different fractional parts related to a common whole and explain reasons (ascending and descending order) using unit fractions and non-unit fractions ○ Using a benchmark (e.g. more than or less than one half). [1.1.20, 1.2.47, 1.3.11]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> • Explore the equivalent relationships between fractions by matching different fractional parts related to a common whole and describing the relationship. [1.1.22, 1.2.48, 1.3.11] • Record equivalent relationships using the equal symbol (and non-equivalent relationships using the not equal to symbol). [1.1.22, 1.2.48, 1.3.11] • Compare and order fractions using equivalent relationships. [1.1.22, 1.2.49, 1.3.11]
<p>Language</p> <p>1.1.23. Develop appropriate vocabulary associated</p>	<p>1.2.50. Use appropriate vocabulary associated with number, orally</p>	<p>1.3.12. Communicate with confidence using language</p>	<p>25. Communicate effectively using vocabulary</p>	<ul style="list-style-type: none"> • Use appropriate language associated with number, such as: word names and numerals to one thousand, first to one hundredth

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
with number.	and in writing.	related to number. 1.3.13. Demonstrate an appreciation for others by listening to their point of view.	associated with number.	(1 st to 100 th), hundreds, trade, regroup, equal groups, repeated addition, multiply by, share, group, shared equally, grouped in, divide, verify, whole, part, equal, unequal, fraction, half ($\frac{1}{2}$), quarter ($\frac{1}{4}$), fifth ($\frac{1}{5}$), tenth ($\frac{1}{10}$), approximate, increase, decrease, bill, ascending, descending, expanded notation and equivalent. [1.1.23, 1.2.50, 1.3.12, 1.3.13]
GEOMETRY				
Solids and Plane Shapes 2.1.1 Develop spatial sense in relation to solids and	2.2.1. Classify, describe, compare and name solids and give reasons for classification	2.3.1 Display curiosity while exploring the properties of	1. Develop an understanding of the properties of solids and	<ul style="list-style-type: none"> Classify solids according to one or more common attributes (e.g. colour, size, shape, function) including students' own criteria and explain reasons for

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>plane shapes.</p> <p>2.1.2 Recognize spatial relationships.</p> <p>2.1.3 Solve problems involving solids and plane shapes.</p>	<p>(cube, cuboid, cylinder, pyramid, cone, sphere and triangular-based prism – with a focus on the triangular-based prism).</p> <p>2.2.2. Identify and name the triangular-based prism concretely and in pictorial representations (in different orientations).</p> <p>2.2.3. Identify the plane shapes or faces of the triangular-based prism and create triangular-</p>	<p>solids.</p> <p>2.3.2 Display collaboration while working in groups.</p>	<p>plane shapes.</p> <p>2. Solve problems involving solids and plane shapes.</p>	<p>classification. [2.1.1, 2.2.1, 2.3.1]</p> <ul style="list-style-type: none"> • Sort solids into appropriate groups to represent same, similar or alike and different, stating reasons for classification. [2.1.1, 2.2.1, 2.3.1, 2.3.2] • Describe and compare the triangular-based prism with other solids using appropriate vocabulary related to geometric attributes (concrete and pictorial). [2.1.1, 2.1.2, 2.2.1, 2.2.2, 2.3.1, 2.3.2] • Identify and name the triangular-based prism concretely and in pictorial representations (in different orientations). [2.1.2, 2.2.2, 2.3.1] • Identify the plane shapes or faces of the triangular-based prism by:

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>based prisms and other solids using plane shapes.</p> <p>2.2.4. Explore the properties of solids in terms of faces, edges and vertices and compare and classify solids according to their properties related to faces, edges and vertices (cube, cuboid, cylinder, pyramid, cone and triangular-based prism).</p> <p>2.2.5. Name plane shapes and solids used to create</p>			<ul style="list-style-type: none"> ○ Matching cut-outs of plane shapes to faces ○ Tracing the faces of solids and naming the shapes drawn. [2.1.2, 2.2.3, 2.3.1, 2.3.2] ● Construct solids, including the triangular-based prism using cut-outs of plane shapes. [2.1.2, 2.2.3, 2.3.1, 2.3.2] ● Predict the solid that can be formed given an assortment of plane shapes (concrete and pictorial). [2.1.3, 2.2.3, 2.3.1, 2.3.2] ● Describe the properties of solids in relation to number and types of faces, edges and vertices. [2.1.2, 2.2.4, 2.3.1] ● Compare and classify solids

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>compound shapes (pictorial representation) and name solids and plane shapes from verbal or written descriptions.</p> <p>2.2.6. Create and draw plane shapes of varying sizes and in different orientations.</p> <p>2.2.7. Solve problems involving solids and plane shapes.</p>			<p>according to the properties related to faces, edges and vertices. [2.1.2, 2.2.4, 2.3.1]</p> <ul style="list-style-type: none"> • Name solids and plane shapes used to create compound shapes (pictorial representation). [2.1.2, 2.2.5, 2.3.1, 2.3.2] • Name solids and plane shapes from verbal or written descriptions (e.g. People say I am flat and made of straight lines. You can find 6 of me on a cube. What am I?). [2.1.3, 2.2.5, 2.3.1] • Create and draw plane shapes of varying sizes and in different orientations. [2.1.3, 2.2.6, 2.3.1, 2.3.2] • Solve problems involving solids and plane shapes. [2.1.3, 2.2.7,

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				2.3.2]
<p>Geometrical Patterns</p> <p>2.1.4 Explore patterns using solids and plane shapes.</p>	<p>2.2.8. Explore and create patterns using solids or plane shapes.</p>	<p>2.3.3 Demonstrate their use of imagination while creating patterns.</p>	<p>3. Explore patterns using solids and plane shapes.</p>	<ul style="list-style-type: none"> • Describe a given pattern (repeating, increasing or decreasing), determine the pattern rule and extend the pattern using concrete materials or pictorial representation. [2.1.4, 2.2.8, 2.3.3] • Insert the missing elements in given patterns (concrete or pictorial) and explain the reasoning. [2.1.4, 2.2.8, 2.3.3] • Create repeating, increasing and decreasing patterns using solids or plane shapes (concrete and pictorial)) and explain the pattern rule. [2.1.4, 2.2.8, 2.3.3]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Language</p> <p>2.1.5 Develop appropriate vocabulary associated with geometry.</p>	<p>2.2.9. Use appropriate vocabulary associated with geometry, orally and in writing.</p>	<p>2.3.4 Communicate with confidence using language related to geometry.</p> <p>2.3.5 Demonstrate an appreciation for others.</p>	<p>4. Communicate effectively using vocabulary associated with geometry.</p>	<ul style="list-style-type: none"> Use appropriate language associated with geometry, such as: face, edge, straight, curved, vertex, cube, cuboid, cone, cylinder, pyramid, triangular-based prism, base and prism. [2.1.5, 2.2.9, 2.3.4, 2.3.5]
MEASUREMENT				
<p>Linear</p> <p>3.1.1. Understand that measures can be quantified.</p> <p>3.1.2. Distinguish</p>	<p>3.2.1. Use non-standard units for measuring length.</p> <p>3.2.2. Explain the</p>	<p>3.3.1. Demonstrate confidence in one's abilities to estimate and measure.</p>	<p>1. Develop an understanding that measures can be quantified using non-standard</p>	<ul style="list-style-type: none"> Determine the length of objects using non-standard units. [3.1.1, 3.2.1, 3.3.1] Explain the need for and the importance of a standard unit of

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>between standard and non-standard units of measure (for length).</p> <p>3.1.3. Apply measurement techniques to quantify measures.</p> <p>3.1.4. Understand the relationship between units of measure.</p> <p>3.1.5. Solve problems involving measures.</p>	<p>need for and the importance of a standard unit of measure for length and related sub-units.</p> <p>3.2.3. Use the standard units for measuring length.</p> <p>3.2.4. Measure, record, compare and order measurements using multiple and sub-units of length.</p> <p>3.2.5. Approximate lengths to the nearest metre</p>		<p>and standard units.</p> <p>2. Distinguish between standard and non-standard units of measure for length.</p> <p>3. Demonstrate appropriate techniques when measuring (such as use of instrument, estimation, approximation).</p> <p>4. Develop an understanding of the relationship</p>	<p>measure for length and related sub-units. [3.1.2, 3.2.2, 3.3.1]</p> <ul style="list-style-type: none"> • Demonstrate the appropriate use of the measuring instrument for length (ruler). [3.1.3, 3.2.3, 3.3.1] • Measure lengths and distances using standard units (metre, $\frac{1}{2}$ and $\frac{1}{4}$ metre and centimetre) and record as metres only, centimetres only or metres and centimetres. [3.1.3, 3.2.4, 3.3.1] • Compare and order the lengths of objects and lines in different orientations and distances and explain reasoning using appropriate vocabulary (ascending and descending order, concrete or pictorial representations). [3.1.3, 3.2.4, 3.3.1]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>and centimetre.</p> <p>3.2.6. Explain the suitability of the unit as it relates to the length to be measured.</p> <p>3.2.7. Draw lines of various lengths.</p> <p>3.2.8. Estimate lengths in metres and verify results.</p> <p>3.2.9. Determine reasonableness of estimates.</p> <p>3.2.10. State the relationship between the metre and the</p>		<p>between units of measures.</p> <p>5. Solve problems involving measures.</p>	<ul style="list-style-type: none"> • Approximate the length of objects to the nearest metre or centimetre. [3.1.3, 3.2.5, 3.3.1] • Select the appropriate unit of measure when measuring objects of varying lengths and explain the suitability of the unit. [3.1.4, 3.2.6, 3.3.1] • Draw lines of various lengths. [3.1.3, 3.2.7, 3.3.1] • Estimate lengths of objects in metres and verify lengths by measuring. [3.1.3, 3.2.8, 3.3.1] • Explain the reasonableness of estimations. [3.1.3, 3.2.9, 3.3.1] • State the relationship between the metre and the centimetre. [3.1.4,

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	centimetre. 3.2.11. Convert metres to centimetres. 3.2.12. Solve problems in real-life situations involving length.			3.2.10, 3.3.1] <ul style="list-style-type: none"> • Convert metres to centimetres. [3.1.4, 3.2.11, 3.3.1] • Solve problems in real-life involving length. [3.1.5, 3.2.12, 3.3.1]
Mass/Weight 3.1.6. Understand that measures can be quantified. 3.1.7. Distinguish between standard and non-standard units of measure for	3.2.13. Use non-standard units for measuring mass/weight. 3.2.14. Explain the need for and the importance of a standard unit of measure for mass/weight	3.3.2. Display a sense of inventiveness in selecting units when measuring.	6. Develop an understanding that measures can be quantified using standard units (kg). 7. Distinguish between standard and	<ul style="list-style-type: none"> • Determine the mass/weight of objects using non-standard units. [3.1.6, 3.1.7, 3.2.13, 3.3.2] • Explain the need for and the importance of a standard unit of measure for mass/weight. [3.1.6, 3.1.7, 3.2.14, 3.3.2] • Demonstrate the appropriate use of the measuring instrument

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
mass/weight. 3.1.8. Apply measurement techniques to quantify measures. 3.1.9. Understand the relationship between units of measure. 3.1.10. Demonstrate an understanding of conservation of mass/weight. 3.1.11. Solve problems in real-life	and its related sub-units. 3.2.15. Use the standard units for measuring mass/weight. 3.2.16. Measure, record, compare and order measurements using multiple units and sub-units for mass/weight. 3.2.17. Approximate mass/weight to the nearest kilogram, $\frac{1}{2}$ kilogram or $\frac{1}{4}$ kilogram.		non-standard units of measure for mass/weight. 8. Demonstrate appropriate techniques when measuring (such as use of instrument, approximation). 9. Develop an understanding of the relationship between units of measures. 10. Demonstrate an understanding of conservation	(such as bathroom scale, equal arm balance). [3.1.7, 3.1.8, 3.1.9, 3.2.15, 3.2.16, 3.3.2] <ul style="list-style-type: none"> • Measure the mass/weight of objects using the standard unit (kilograms, $\frac{1}{2}$ and $\frac{1}{4}$ kilogram and multiple units of kg) and approximate the measure to the nearest kilogram, $\frac{1}{2}$ kilogram or $\frac{1}{4}$ kilogram). [3.1.6, 3.1.8, 3.1.9, 3.2.15, 3.2.16, 3.2.17, 3.3.2] • Compare and order the objects according to mass/weight and explain reasons using appropriate vocabulary (ascending and descending order). [3.1.6, 3.1.8, 3.2.16, 3.3.2] • Explain the suitability of the unit as it relates to the mass/weight to be measured. [3.1.9, 3.2.18,

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>situations involving measures.</p>	<p>3.2.18. Explain the suitability of the unit as it relates to the mass/weight to be measured.</p> <p>3.2.19. Perform tasks demonstrating the conservation of mass/weight.</p> <p>3.2.20. Solve problems involving mass/weight.</p>		<p>of mass/weight.</p> <p>11. Solve problems involving mass/weight.</p>	<p>3.3.2]</p> <ul style="list-style-type: none"> • Explore activities associated with conservation of mass/weight and state findings/generalizations. [3.1.10, 3.2.19, 3.3.2] • Solve problems involving mass/weight. [3.1.11, 3.2.20, 3.3.2]
<p>Time</p> <p>3.1.12. Understand that measures can be</p>	<p>3.2.21. Describe the features of analog and</p>	<p>3.3.3. Demonstrate confidence in one's abilities</p>	<p>12. Develop an understanding that measures</p>	<ul style="list-style-type: none"> • Describe the features of the analog clock and digital clocks and the function of the parts.

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>quantified.</p> <p>3.1.13. Apply measurement techniques to quantify measures for time.</p> <p>3.1.14. Understand the relationship between units of measure.</p> <p>3.1.15. Demonstrate an understanding that events or activities occur at specific time periods.</p>	<p>digital clocks.</p> <p>3.2.22. Tell and record time on digital and analog clocks to the hour, half past the hour, quarter past and quarter to the hour.</p> <p>3.2.23. Match occurrences with time shown on clocks.</p> <p>3.2.24. Measure the duration of activities.</p> <p>3.2.25. Compare and order</p>	<p>to tell the time and solve problems involving time.</p>	<p>can be quantified using standard units.</p> <p>13. Demonstrate appropriate techniques when measuring.</p> <p>14. Develop an understanding of the relationship between the units of measure.</p> <p>15. Demonstrate an understanding that events/activities occur at specific</p>	<p>[3.1.12, 3.2.21]</p> <ul style="list-style-type: none"> • Explain the meaning of the movement of the hands on an analog clock (hour, minutes and seconds). [3.1.12, 3.1.13, 3.2.21] • Tell time on digital and analog clocks to the hour, half past the hour, quarter past the hour and quarter to the hour. [3.1.13, 3.2.22, 3.3.3] • Record and read times, shown on both analog and digital clocks, using the appropriate format (time is read in three ways: eight fifteen, fifteen minutes past eight and quarter past eight). [3.1.13, 3.2.22, 3.3.3] • Compare the related times on the analog and digital clock. [3.1.13,

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>3.1.16. Solve problems in real-life situations involving measure.</p>	<p>activities/events according to time taken.</p> <p>3.2.26. Relate seconds to minutes, minutes to hours, hours to days, days to weeks, days/weeks to months, and months to years.</p> <p>3.2.27. Identifying personal referents for: Minutes, Hours, Days, Weeks, Months, Years by exploring activities related to different time</p>		<p>time periods.</p> <p>16. Solve problems involving time.</p>	<p>3.2.22, 3.3.3]</p> <ul style="list-style-type: none"> • Match times displayed on analog and digital clocks. [3.1.13, 3.2.22, 3.3.3] • Name some occurrences or events that match with time shown on clocks (e.g. school begins at 8:30). [3.1.15, 3.2.23, 3.3.3] • Measure the duration of events in hours, quarter of an hour and half of an hour using analog and digital clocks. [3.1.13, 3.2.24, 3.3.3] • Compare and order activities/events according to time taken and explain reasons using appropriate vocabulary. [3.1.13, 3.2.25, 3.3.3]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	periods. 3.2.28. Solve and complete practical tasks and problems involving time.			<ul style="list-style-type: none"> • Distinguish between activities that can/cannot be completed in seconds, minutes, hours, months and years. [3.1.15, 3.2.25, 3.3.3] • Relate seconds to minutes, minutes to hours, hours to days, days to weeks, days/weeks to months, and months to years and use the relationships to solve problems. [3.1.14, 3.2.26, 3.3.3] • State/name personal activities/events associated with specific time periods – minutes, hours, days, weeks, months, years (e.g. Last year I was 6 years old; I take half an hour to reach to school). [3.1.15, 3.2.27, 3.3.3] • Solve practical problems involving time (e.g. determine if a specified number of days are

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				more/less than a week; determine the previous and upcoming month, interpretation of calendars). [3.1.16, 3.2.28, 3.3.3]
<p>Capacity</p> <p>3.1.17. Understand that measures can be quantified.</p> <p>3.1.18. Distinguish between standard and non-standard units of measure for capacity.</p> <p>3.1.19. Apply measurement techniques to quantify</p>	<p>3.2.29. Use non-standard units for measuring capacity.</p> <p>3.2.30. Explain the need for and the importance of a standard unit of measure for capacity.</p> <p>3.2.31. Use the standard units (litres) for measuring the capacity of</p>	<p>3.3.4. Appreciate measures in everyday use.</p>	<p>17. Develop an understanding that measures can be quantified using standard units (litres).</p> <p>18. Distinguish between standard and non-standard units of measure for capacity.</p> <p>19. Apply</p>	<ul style="list-style-type: none"> • Determine the capacity of containers using non-standard units. [3.1.17, 3.2.29, 3.3.4] • Explain the need for and the importance of a standard unit of measure for capacity. [3.1.18, 3.2.30, 3.3.4] • Measure the capacity of containers using the standard unit (litre) and record measure. [3.1.19, 3.2.31, 3.3.4] • Compare and order the containers according to capacity and explain reasons using appropriate

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
measures. 3.1.20. Solve problems in real-life situations involving measures.	containers. 3.2.32. Measure, record, compare and order measurements using multiple units. 3.2.33. Solve problems in real-life situations involving measures.		measurement techniques to quantify measures. 20. Solve problems involving capacity.	vocabulary (ascending and descending order). [3.1.19, 3.2.32, 3.3.4] • Solve problems in real-life situations involving capacity. [3.1.20, 3.2.33, 3.3.4]
Area 3.1.21. Develop the concept of area. 3.1.22. Demonstrate familiarity	3.2.34. Touch, colour and cover surfaces to develop the concept of area.	3.3.5. Demonstrate confidence in one's abilities to measure and compare.	21. Demonstrate an understanding of area. 22. Develop an understanding	• Explore flat surfaces by touching, colouring, covering and describing using the language associated with area (so as to develop the concept of area).

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>with comparison of objects using appropriate vocabulary.</p> <p>3.1.23. Understand that measures can be quantified.</p> <p>3.1.24. Apply measurement techniques to quantify measures.</p> <p>3.1.25. Solve problems involving measures.</p>	<p>3.2.35. Compare and order the area of surfaces using direct comparison.</p> <p>3.2.36. Measure, record, compare and order area of surfaces using non-standard units.</p> <p>3.2.37. Investigate which plane shapes are appropriate for measuring area.</p> <p>3.2.38. Calculate the area of shapes by counting squares.</p>		<p>of the comparison of measures.</p> <p>23. Develop an understanding that measures can be quantified using non-standard units of measure for area.</p> <p>24. Demonstrate appropriate techniques when measuring.</p> <p>25. Solve problem involving measures.</p>	<p>[3.1.21, 3.2.34]</p> <ul style="list-style-type: none"> • Compare and order the area of two or more surfaces (by matching or placing one on the other) and explain reasons using appropriate language. [3.1.22, 3.2.35, 3.3.5] • Describe area as the measure of the amount of surface. [3.1.21, 3.2.34] • Measure the area of surfaces using non-standard units (by placing the same sized units e.g. cut-outs of shapes, end-to-end without leaving gaps and without overlapping). [3.1.23, 3.2.36, 3.3.5] • Count and record the number of units used to measure the area of

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	3.2.39. Solve problems involving area.			<p>surfaces. [3.1.23, 3.2.36, 3.3.5]</p> <ul style="list-style-type: none"> • Compare and order surfaces according to area and explain reasons using appropriate vocabulary (ascending and descending order). [3.1.22, 3.2.36, 3.3.5] • Investigate which plane shapes are appropriate for measuring area through tessellation activities and explain findings. [3.1.25, 3.2.37] • Calculate the area of shapes by counting squares (of different sizes). [3.1.24, 3.1.25, 3.2.38, 3.3.5] • Solve problems involving area. [3.1.25, 3.2.39]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Language</p> <p>3.1.26. Develop appropriate vocabulary associated with measurement.</p>	<p>3.2.40. Use appropriate vocabulary associated with measurement, orally and in writing.</p>	<p>3.3.6. Communicate with confidence using language related to measurement.</p>	<p>26. Communicate effectively using vocabulary associated with measurement.</p>	<ul style="list-style-type: none"> Use appropriate language associated with measurement, such as: metre (m), centimetre (cm), estimate, approximate, round, square centimetre, kilogram (kg), gram (g), hour, half past, quarter to, quarter past, verify, area, surface, convert/change, litre, digital clock, analog clock, calendar, non-standard unit, standard unit and o'clock. [3.1.26, 3.2.40, 3.3.6]
STATISTICS				
<p>Tally Charts and Block Graphs</p> <p>4.1.1. Use statistical techniques to</p>	<p>4.2.1. Formulate a</p>	<p>4.3.1. Demonstrate awareness that</p>	<p>1. Demonstrate the ability to</p>	<p>TALLY CHARTS</p>

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>investigate real-life problems.</p> <p>4.1.2. Demonstrate the ability to collect, classify, organize and represent data.</p> <p>4.1.3. Demonstrate an understanding about the features of graphs and charts.</p> <p>4.1.4. Make decisions based on analysis or interpretation</p>	<p>problem situation.</p> <p>4.2.2. Collect data (using observation and frequency counts) and classify data through investigation of a problem/question based on a real-life situation.</p> <p>4.2.3. Identify features of tally charts and block graphs (e.g. using one stroke/tally mark, grouping of strokes/tally marks in fives, baseline/start line, labels (of sets) on axis, equal</p>	<p>numerical data can be communicated visually.</p> <p>4.3.2. Show the usefulness of data analysis to problem solving situations.</p>	<p>formulate a problem.</p> <p>2. Demonstrate the ability to collect, classify, organize, represent and interpret data.</p> <p>3. Demonstrate an understanding about the features of graphs and charts.</p> <p>4. Use analysed data to make sound decisions and solve problems.</p> <p>5. Demonstrate the</p>	<ul style="list-style-type: none"> • Formulate a problem to be investigated e.g. A school plans to purchase equipment for various sports. What type of equipment should be purchased? What amount of material should be purchased? [4.1.1, 4.2.1] • Collect and classify data to make decisions based on a real life situation or problem. [4.1.2, 4.2.2] • Identify the features of tally charts. [4.1.3, 4.2.3, 4.3.1] • State the advantages of recording data using tally marks. [4.1.3, 4.2.3, 4.3.1] • Construct, interpret and make decisions based on information on tally charts (including the frequency column). [4.1.2, 4.1.4,

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>of data.</p> <p>4.1.5. Demonstrate the ability to present findings orally or in writing.</p> <p>4.1.6. Demonstrate an understanding of the methods used to address the problem.</p>	<p>spacing, title, scale factors).</p> <p>4.2.4. Choose an appropriate scale factor in the construction of the block graph.</p> <p>4.2.5. Construct tally charts and block graphs using appropriate symbolic representations.</p> <p>4.2.6. Interpret data from tally charts and block graphs based on a real-life problem or situation.</p> <p>4.2.7. Make informed</p>		<p>ability to present findings orally or in writing.</p> <p>6. Demonstrate an understanding of the methods used to address the problem.</p>	<p>4.2.5, 4.2.6, 4.2.7, 4.3.2]</p> <p>BLOCK GRAPHS</p> <ul style="list-style-type: none"> • Determine the features of block graphs either through transformation of a pictograph to a block graph or by identifying features from presented (and interpreted) block graphs. [4.1.3, 4.2.3, 4.3.1] • Use the frequency counts from tally charts to determine the appropriate scale factor to be used in the construction of block graphs and justify choice of scale factor. [4.1.2, 4.2.4] • Calculate the amounts to be represented on the block graph using the scale factor. [4.1.2, 4.2.4]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>decisions based on data analysed.</p> <p>4.2.8. Justify decisions made using data collected in writing and/or oral presentations.</p>			<ul style="list-style-type: none"> • Construct block graphs (vertical or horizontal arrangements) on grid paper based on information collected and using different scale factors (scale factor 1: 1, 2, 5 and 10). [4.1.2, 4.2.5, 4.3.1] • Label axes and name the graph. [4.1.2, 4.1.3, 4.2.5, 4.3.1] • Interpret and analyse the data so as to make decisions about a real-life situation or problem. [4.1.4, 4.2.6, 4.2.7, 4.3.2] • Participate in decision-making to solve problems. [4.1.4, 4.2.7, 4.3.2] • Communicate findings and justify decisions made using appropriate vocabulary (orally or in writing). [4.1.5, 4.2.8, 4.3.2]

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> Describe the method used to solve the problem or address the situation. [4.1.6, 4.2.8, 4.3.2] <p>(Depending on the experiences of students, teachers may decide to start with the interpretation of presented graphs, which can then be used to identify the characteristics of graphs. Graphs can then be appropriately constructed. Graphs can also be transformed from one form to another and this idea can be used to initiate interpretation of the same data using different representations).</p>
<p>Language</p> <p>4.1.7. Develop appropriate vocabulary</p>	<p>4.2.9. Use appropriate vocabulary associated with</p>	<p>4.3.3. Communicate with confidence using language</p>	<p>7. Communicate effectively using vocabulary</p>	<ul style="list-style-type: none"> Use appropriate language associated with statistics, such as: block graph, blocks, title, scale,

MATHEMATICS CONTENT STANDARDS: STANDARD 2

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
associated with statistics.	statistics, orally and in writing.	related to statistics.	associated with statistics.	and key, most frequent, axis and survey. [4.1.7, 4.2.9, 4.3.3]

INTERIM

Primary School Curriculum

Mathematics

Standard 3

INTERIM

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
NUMBER				
<p>Number Concepts</p> <p>1.1.1. Understand the concept of numbers up to 10 000.</p>	<p>1.2.1 Count in sequence within 10 000 in ascending and descending order.</p> <p>1.2.2 Skip count in ascending and descending order within a specified amount.</p> <p>1.2.3 Count objects in a set up to 10 000.</p> <p>1.2.4 Connect number names and</p>	<p>1.3.1 Display a sense of confidence as they explore number concepts.</p>	<p>1. Count sequentially within 10 000.</p> <p>2. Demonstrate an understanding of numbers to 10 000.</p> <p>3. Demonstrate estimation skills using 100 as a benchmark.</p>	<ul style="list-style-type: none"> • Count forward (count on) and backward (count back) by ones within 10 000 from any given number. [1.1.1, 1.2.1, 1.3.1] • Skip count in ascending and descending order using various ways (such as, in 100s to or from 2 000 starting at zero or 2 000; by thousands 1 340, 2 340, 3 340, starting at a specified number). [1.1.1, 1.2.2, 1.3.1] • Count the number of objects in a set using one-to-one correspondence together with skip counting, using base ten materials. [1.1.1, 1.2.2, 1.2.3, 1.3.1]

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>numerals to quantities up to 10 000.</p> <p>1.2.5 Sequence number names and numerals.</p> <p>1.2.6 Read and write number names and numerals to 10 000.</p> <p>1.2.7 Estimate the number of objects in a set using 100 as the benchmark and verify by counting.</p>			<ul style="list-style-type: none"> • Match the number names and numerals to the quantities they represent up to 10 000. [1.1.1, 1.2.4, 1.3.1] • Sequence number names and numerals to 10 000. [1.1.1, 1.2.5, 1.3.1] • Insert missing numbers in a number sequence. [1.1.1, 1.2.5, 1.3.1] • Read and write number names and numerals to 10 000. [1.1.1, 1.2.6, 1.3.1] • Estimate a given quantity of items using 100 as a benchmark (using ‘mental grouping’) and verify by counting. [1.1.1, 1.2.7, 1.3.1]

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Place Value and Rounding</p> <p>1.1.2. Develop an understanding of place value to 9 999 (concretely, pictorially and symbolically).</p> <p>1.1.3. Develop an understanding of the comparison of numbers.</p> <p>1.1.4. Develop an understanding of rounding to tens, hundreds and thousands.</p>	<p>1.2.8 Explore the place value of numbers to 9 999 including expanded notation.</p> <p>1.2.9 Compare and order numerals up to 10 000.</p> <p>1.2.10 Round numbers to the nearest tens, hundreds and thousands.</p>	<p>1.3.2 Be explorative when examining relationships in numbers.</p>	<p>4. Demonstrate an understanding of place value to 9 999.</p> <p>5. Compare and order numerals up to 10 000 with reference to place value.</p> <p>6. Develop an understanding of rounding to tens, hundreds and thousands.</p>	<ul style="list-style-type: none"> • Show, using various manipulatives (e.g. base ten materials, place value mats) that a given numeral consists of a certain number of thousands, ‘hundreds’ ‘tens’ and ‘ones’ and record as such, e.g. 1 245 = 1 thousand, 2 hundreds, 4 tens and 5 ones. [1.1.2, 1.2.8, 1.3.2] • Describe a specified number in various ways using language associated with place value e.g. 6 245 as six 1 000s, two 100s, four 10s and five 1s; six thousands, two hundred, forty and five; 6 245 ones; 624 tens and 5 ones etc., and explain with reasons. [1.1.2, 1.2.8, 1.3.2] • Write numbers using the

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>expanded notation form. [1.1.2, 1.2.8, 1.3.2]</p> <ul style="list-style-type: none"> • Convert expanded notation into numerals. [1.1.2, 1.2.8, 1.3.2] • Explain and write the place value and value represented by each digit in a numeral up to four-digit numbers. [1.1.2, 1.2.8, 1.3.2] • Write the largest and smallest number given any four digits. [1.1.3, 1.2.8, 1.2.9, 1.3.2] • Use the symbols for more than ($>$) and less than ($<$) to show the relationship between two numbers. [1.1.3, 1.2.9, 1.3.2] • Compare and order numerals up to 9 999 (in ascending and descending order). [1.1.3, 1.2.9,

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				1.3.2] <ul style="list-style-type: none"> • Round numbers to the nearest tens, hundreds or thousands. [1.1.4, 1.2.10, 1.3.2]
<p>Number Patterns</p> <p>1.1.5. Develop algebraic thinking (number patterns and number relationships).</p>	<p>1.2.11 Explore number patterns involving the four operations using whole numbers.</p> <p>1.2.12 Explore patterns involving fractions.</p> <p>1.2.13 Create number patterns.</p>	<p>1.3.3 Be explorative when examining patterns.</p>	<p>7. Demonstrate an understanding of patterns using whole numbers and involving the four operations.</p> <p>8. Explore patterns involving fractions.</p> <p>9. Create number patterns.</p>	<ul style="list-style-type: none"> • Describe and extend whole number patterns involving the four operations e.g. 1, 6, 11, 16... and patterns involving fractions, by using the pattern rule. [1.1.5, 1.2.11, 1.2.12, 1.3.3] • Explore, describe and record patterns for: <ul style="list-style-type: none"> ○ Multiplication and division facts up to the 10 times table (using concrete materials, pictorial representations, symbols, hundred chart) ○ Compatible numbers within

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>1 000. [1.1.5, 1.2.11, 1.3.3]</p> <ul style="list-style-type: none"> • Recognize when an error occurs in a pattern and explain what is wrong. [1.1.5, 1.2.11, 1.2.12, 1.3.3] • Insert missing elements in number patterns and explain reasoning. [1.1.5, 1.2.11, 1.2.12, 1.3.3] • Create number patterns and state the pattern rule. [1.1.5, 1.2.13, 1.3.3]
<p>Number Relationships</p> <p>1.1.6. Explore algebraic thinking (number</p>	<p>1.2.14 Calculate the unknown in number sentences</p>	<p>1.3.4 Show perseverance in finding solutions to</p>	<p>10. Explore number relationships involving the</p>	<ul style="list-style-type: none"> • Solve problems involving number sentences with one unknown number (represented by a symbol) e.g. $42 \div \square = 7$; the

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>patterns and number relationships).</p> <p>1.1.7. Make sense of addition, subtraction, multiplication and division number sentences involving one unknown.</p>	<p>involving addition, subtraction, multiplication and division of whole numbers and involving one unknown.</p>	<p>problems.</p>	<p>four operation using number sentences with one unknown.</p>	<p>idea of the inverse operation can be used: $7 \times ? = 42$, and explain reasoning. [1.1.6, 1.1.7, 1.2.14, 1.3.4]</p> <ul style="list-style-type: none"> Solve number sentences when the unknown is on the left or right side of the equal symbol. [1.1.6, 1.1.7, 1.2.14, 1.3.4]
<p>Whole Number (Operations): Addition and Subtraction</p> <p>1.1.8. Solve real-life problems (concrete, pictorial and symbolic</p>	<p>1.2.15 Solve problems involving addition (up to 4 digit numbers with sum less</p>	<p>1.3.5 Appreciate the use of algorithms in solving problems</p>	<p>11. Demonstrate an understanding of the algorithm for</p>	<ul style="list-style-type: none"> ADDITION AND SUBTRACTION Solve one-step and multi-step addition and subtraction

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>modes, including money) involving addition and subtraction.</p> <p>1.1.9. Develop estimation skills.</p> <p>1.1.10. Demonstrate an understanding of the relationship between addition and subtraction.</p> <p>1.1.11. Create number stories.</p>	<p>than 10 000) and up to 4 addends and subtraction (with minuend up to 4 digits).</p> <p>1.2.16 Determine the reasonableness of answers by using estimation.</p> <p>1.2.17 Use the inverse operation to check answers.</p> <p>1.2.18 Explain or demonstrate how an answer was obtained when solving problems.</p>	<p>involving the operations (addition and subtraction).</p>	<p>addition and subtraction.</p> <p>12. Solve a variety of word problems using problem solving strategies including mental strategies.</p> <p>13. Demonstrate an understanding of estimation skills.</p> <p>14. Use the relationship between addition and subtraction to</p>	<p>problems involving whole numbers and money (including bills, best buy, profit and loss, using dollars only and cents only) by:</p> <ul style="list-style-type: none"> ○ Using a variety of problem solving strategies, such as: use a model, act it out, draw a picture, look for a pattern, guess and check, work backwards, logical reasoning, make a table or chart, make an organized list and try a simpler form of the problem ○ Using the algorithm ○ Using mathematical games ○ Creating number sentences with one unknown ○ Using estimation skills to check solutions to problems ○ Using the reverse operation to check answers ○ Recording solutions to problems using drawings,

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	1.2.19 Create number stories involving addition and subtraction and using appropriate vocabulary.		check answers. 15. Create number stories using appropriate language.	numerals, symbols and words. [1.1.8, 1.1.9, 1.1.10, 1.2.15, 1.2.16, 1.2.17, 1.3.5] <ul style="list-style-type: none"> • Explain or demonstrate how an answer was obtained when solving problems. [1.1.8, 1.2.18, 1.3.5] • Create number stories involving addition and subtraction using appropriate language. [1.1.11, 1.2.19, 1.3.5]
Whole Number (Operations): Multiplication and Division 1.1.12. Develop and apply procedures to multiply and divide whole	1.2.20 Develop and use the algorithm for multiplication and division of	1.3.6 Appreciate the use of algorithms in solving problems	16. Develop and apply procedures to multiply and divide whole	MULTIPLICATION AND DIVISION <ul style="list-style-type: none"> • Model the multiplication of whole numbers, concretely or pictorially (using an area

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>numbers to solve problems.</p> <p>1.1.13. Solve real-life problems (concrete, pictorial and symbolic modes, including money) involving multiplication and division.</p> <p>1.1.14. Develop estimation skills.</p> <p>1.1.15. Demonstrate an understanding of the</p>	<p>whole numbers.</p> <p>1.2.21 Solve real-life problems involving multiplication (up to 2 digit by 2 digit numbers) and division (up to 4 digit divided by 1 digit).</p> <p>1.2.22 Determine the reasonableness of answers by using estimation.</p> <p>1.2.23 Use the inverse operation to check answers.</p> <p>1.2.24 Explain or</p>	<p>involving the operations (multiplication and division).</p>	<p>numbers to solve problems.</p> <p>17. Solve a variety of word problems using problem solving strategies including mental strategies.</p> <p>18. Demonstrate an understanding of estimation skill.</p> <p>19. Use the relationship between multiplication</p>	<p>model/arrays) and record the process (using drawings, numerals, symbols and words and the distributive property). [1.1.12, 1.2.20, 1.3.6]</p> <ul style="list-style-type: none"> • Explain through the use of words and diagrams the procedures involving multiplication using whole numbers. [1.1.12, 1.2.20, 1.3.6] • Generalize and apply rules (algorithms) for multiplication involving whole numbers. [1.1.12, 1.2.20, 1.3.6] • Model division of whole numbers concretely or pictorially and explain and record the process. [1.1.12, 1.2.20, 1.3.6] • Explain through the use of words and diagrams division involving

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>relationship between multiplication and division.</p> <p>1.1.16. Create number stories.</p>	<p>demonstrate how an answer was obtained when solving problems.</p> <p>1.2.25 Create number stories involving multiplication and division and using appropriate vocabulary.</p>		<p>and division to check answers.</p> <p>20. Create number stories using appropriate language.</p>	<p>whole numbers. [1.1.12, 1.2.20, 1.3.6]</p> <ul style="list-style-type: none"> • Generalize and apply rules (algorithms) for division involving whole numbers. [1.1.12, 1.2.20, 1.3.6] • Solve one-step and multi-step multiplication and division problems (including problems involving the unitary method) involving whole numbers and money (including bills, best buy, profit and loss, rate (weekly, hourly, daily, monthly, yearly and by the minute - using dollars only and cents only) by: <ul style="list-style-type: none"> ○ Using a variety of problem solving strategies, such as: use a model, act it out, draw a picture, look for a pattern, guess and check, work backwards, logical

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>reasoning, make a table or chart, make an organized list and try a simpler form of the problem</p> <ul style="list-style-type: none"> ○ Using the algorithm ○ Using mathematical games ○ Creating number sentences with one unknown ○ Using estimation skills to check solutions to problems ○ Using the reverse operation to check answers ○ Recording solutions to problems using drawings, numerals, symbols and words. [1.1.13, 1.1.14, 1.1.15, 1.2.21, 1.2.22, 1.2.23, 1.3.6] <ul style="list-style-type: none"> ● Explain or demonstrate how an answer was obtained when solving problems. [1.1.13, 1.2.21, 1.2.24, 1.3.6]

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> • Explain why a remainder is obtained for some division problems e.g. $18 \div 4 = 4$ remainder 2. [1.1.13, 1.2.21, 1.2.24, 1.3.6] • Interpret the remainder in relation to the context of the word problem. [1.1.13, 1.2.21, 1.2.24, 1.3.6] • Create number stories involving multiplication and division and using appropriate language. [1.1.16, 1.2.25, 1.3.6]
Mental Mathematics 1.1.17. Develop strategies to solve	1.2.26 Investigate and use a variety of mental math	1.3.7 Develop confidence in using a variety	21. Demonstrate skills in mental	<ul style="list-style-type: none"> • Explore, describe and use a range of mental strategies for solving problems, including:

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
problems mentally.	strategies to solve problems involving the four operations.	of mental strategies to solve problems.	strategies.	<ul style="list-style-type: none"> ○ Compatible numbers within 1 000 ○ Multiplication and related division facts up to 10 times tables ○ Decomposition method ○ Equal addend method ○ Using place value concepts e.g. $4 \times 20 = 4 \times 2 \text{ tens} = 8 \text{ tens} = 80$ ○ Factoring e.g. $4 \times 20 = 4 \times 2 \times 10 = 8 \times 10 = 80$ ○ Multiplying the tens and then the units. [1.1.17, 1.2.26, 1.3.7] <ul style="list-style-type: none"> ● Solve problems using mental math strategies and explain the mental process used to arrive at an answer. [1.1.17, 1.2.26, 1.3.7]
Fractions 1.1.18. Extend the	1.2.27 Explore	1.3.8 Develop	22. Develop an	<ul style="list-style-type: none"> ● Represent fractions using area,

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
concept of fractions to include multiple representations, equivalence, ordering and simple computation.	fractions using area, linear and set models. 1.2.28 Recognize and generate equivalent fractions using a variety of models. 1.2.29 Use the algorithm for finding equivalent fractions. 1.2.30 Compare and order proper fractions with unlike denominators using equivalent	confidence in working independently in using a variety of strategies to solve problems involving fractions.	understanding of fractions by using concrete, pictorial and symbolic representations 23. Demonstrate an understanding of proper and improper fractions and mixed numbers. 24. Solve problems involving the addition and subtraction of fractions.	linear and set models. [1.1.18, 1.2.27, 1.3.8] <ul style="list-style-type: none"> • Name and record fraction using words and symbols. [1.1.18, 1.2.27, 1.3.8] • Connect word/number names to models and symbolic representations. [1.1.18, 1.2.27, 1.3.8] • Explore the equivalent relationships between fractions by matching/overlying different fractional parts related to a common whole and describing the relationship. [1.1.18, 1.2.28, 1.3.8] • Record equivalent relationships using the equal symbol (and non-equivalent relationships using the not equal to symbol)

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>forms.</p> <p>1.2.31 Distinguish between proper, improper and mixed number and convert from one form to another.</p> <p>1.2.32 Add and subtract proper fractions with same denominators.</p>			<p>e.g. $\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$. [1.1.18, 1.2.28, 1.3.8]</p> <ul style="list-style-type: none"> • Describe the pattern observed in equivalent relationships and state the pattern rule. [1.1.18, 1.2.29, 1.3.8] • Create equivalent fractions using the rule. [1.1.18, 1.2.29, 1.3.8] • Reduce a fraction to its lowest equivalent form. [1.1.18, 1.2.29, 1.3.8] • Compare and order fractions using equivalent relationships and by positioning a given set of fractions with like and unlike denominators on a number line and explain reasons. [1.1.18, 1.2.30, 1.3.8]

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> • Explain the meanings of the terms numerator and denominator. [1.1.18, 1.2.31, 1.3.8] • Differentiate between proper fractions, improper fractions and mixed numbers. [1.1.18, 1.2.31, 1.3.8] • Explore and explain, using models, the equivalent relationship of fractions that represent more than one and one e.g. 5 quarters = one whole and a quarter; $\frac{5}{4} = 1$ and $\frac{1}{4} = 1 \frac{1}{4}$; 2 halves = $\frac{2}{2} = 1$. [1.1.18, 1.2.31, 1.3.8] • Describe the pattern observed in the relationship between improper and mixed number.

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>[1.1.18, 1.2.31, 1.3.8]</p> <ul style="list-style-type: none"> • Express improper fractions as mixed numbers. [1.1.18, 1.2.31, 1.3.8] • Express mixed numbers as improper fractions. [1.1.18, 1.2.31, 1.3.8] • Place a given set of fractions, including mixed numbers and improper fractions, on a number line and explain strategies used to determine position. [1.1.18, 1.2.31, 1.3.8] • Model addition and subtraction of fractions involving the same denominator using concrete and pictorial representations, record symbolically and explain pattern observed. [1.1.18, 1.2.32, 1.3.8]

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> Develop and use the algorithm for solving problems involving the addition and subtraction of fractions involving the same denominator (including solving problems mentally). [1.1.18, 1.2.32, 1.3.8]
<p>Language</p> <p>1.1.19. Develop appropriate vocabulary associated with number.</p>	<p>1.2.33 Use appropriate vocabulary in oral and written communication.</p>	<p>1.3.9 Communicate with confidence using language related to number.</p> <p>1.3.10 Demonstrate an appreciation for others by listening to their point of</p>	<p>25. Communicate effectively using vocabulary associated with number.</p>	<ul style="list-style-type: none"> Use appropriate language associated with number, such as: numbers up to ten thousand, expanded notation, thousands, halves ($\frac{1}{2}$) to tenths ($\frac{1}{10}$), proper fraction, improper fraction, mixed number, convert, equivalent, numerator, denominator, profit, loss, vocabulary associated with rate such as weekly, hourly, daily, monthly, yearly and by the minute, extend and rule. [1.1.19,

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
		view.		1.2.33, 1.3.9, 1.3.10]
GEOMETRY				
Solids				
<p>2.1.1 Develop spatial sense through explorations in relation to solids.</p> <p>2.1.2 Investigate properties of solids through exploration activities, building of frames and drawing.</p> <p>2.1.3 Solve problems involving</p>	<p>2.2.1 Compare and classify solids according to their properties (cube, cuboid, cylinder, pyramid, cone and triangular-based prism) and give reasons for classification.</p> <p>2.2.2 Differentiate between regular and irregular solids.</p> <p>2.2.3 Construct frames of solids and draw/sketch solids</p>	<p>2.3.1 Demonstrate creativity while exploring solids.</p> <p>2.3.2 Display perseverance in solving problems.</p>	<p>1. Describe, name and compare the properties of solids including pyramids, prisms, cylinders, cones and spheres and represent them in frames and drawings.</p> <p>2. Solve problems involving solids.</p>	<ul style="list-style-type: none"> • Examine and describe the properties of regular and irregular solids. [2.1.1, 2.1.2, 2.2.1, 2.3.1] • Compare and classify solids according to one or more common attributes including students' own criteria and explain reasons for classification. [2.1.1, 2.1.2, 2.2.1, 2.3.1] • Differentiate between regular and irregular solids. [2.1.1, 2.1.2, 2.2.2, 2.3.1] • Build and describe frames of

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
solids.	to explore the properties of solids in terms of faces, edges and vertices. 2.2.4 Solve problems involving solids.			solids (cubes, cuboids, pyramids, triangular-based prism) focusing on the properties of the solids constructed (e.g. edges, vertices). [2.1.1, 2.1.2, 2.2.3, 2.3.1] <ul style="list-style-type: none"> • Draw or sketch solids and label to show faces, edges and vertices. [2.1.1, 2.1.2, 2.2.3, 2.3.1] • Solve problems involving solids. [2.1.3, 2.2.4, 2.3.2]
Plane Shapes 2.1.4 Develop spatial sense through explorations in	2.2.5 Compare and classify plane shapes according	2.3.3 Display confidence in exploring	3. Demonstrate an understanding	<ul style="list-style-type: none"> • Examine and describe the properties of regular and irregular polygons. [2.1.4, 2.1.5,

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>relation to plane shapes.</p> <p>2.1.5 Investigate properties of plane shapes.</p> <p>2.1.6 Solve problems involving plane shapes.</p>	<p>to their properties.</p> <p>2.2.6 Differentiate between regular and irregular polygons (triangles, quadrilaterals, pentagons, hexagons, octagons).</p> <p>2.2.7 Explore the effects of orientation change on plane shapes.</p> <p>2.2.8 Solve problems involving plane shapes.</p>	<p>plane shapes.</p>	<p>of the properties of plane shapes.</p> <p>4. Solve problems involving plane shapes.</p>	<p>2.2.5, 2.3.3]</p> <ul style="list-style-type: none"> • Compare and classify polygons according to one or more common attributes including students' own criteria and explain reasons for classification. [2.1.4, 2.1.5, 2.2.5, 2.3.3] • Differentiate between regular and irregular polygons (triangles, quadrilaterals, pentagons, hexagons, octagons). [2.1.4, 2.1.5, 2.2.6, 2.3.3] • Investigate the effects of changing the orientation of a shape by first measuring the shape and then changing its orientation and then measuring again. [2.1.4, 2.1.5, 2.2.7, 2.3.3] • Solve problems involving plane

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				shapes. [2.1.6, 2.2.8, 2.3.3]
<p>Symmetry</p> <p>2.1.7 Develop an understanding of line symmetry.</p> <p>2.1.8 Solve problems involving line symmetry.</p>	<p>2.2.9 Classify shapes into those that are symmetrical and those that are not.</p> <p>2.2.10 Determine the number of lines of symmetry in plane shapes – regular, irregular and curved, and in numerals and letters.</p> <p>2.2.11 Create symmetrical shapes.</p> <p>2.2.12 Solve problems involving line</p>	<p>2.3.4 Display curiosity while investigating lines of symmetry.</p>	<p>5. Demonstrate an understanding of the concept of line symmetry.</p> <p>6. Solve problems involving line symmetry.</p>	<ul style="list-style-type: none"> • Determine whether or not plane shapes are symmetrical by folding and superimposing (and/or by using a Mira). [2.1.7, 2.2.9, 2.3.4] • Investigate plane shapes, letters and numerals to determine whether or not they are symmetrical and to determine the number of lines of symmetry. [2.1.7, 2.2.10, 2.3.4] • Create symmetrical shapes. [2.1.8, 2.2.11, 2.3.4] • Complete a symmetrical shape given half of the shape and a line of symmetry. [2.1.8, 2.2.11,

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	symmetry.			2.3.4] <ul style="list-style-type: none"> • Solve problems involving line symmetry. [2.1.8, 2.2.12, 2.3.4]
<p>Language</p> <p>2.1.9 Develop appropriate vocabulary associated with geometry.</p>	<p>2.2.13 Use appropriate vocabulary in oral and written communication.</p>	<p>2.3.5 Communicate with confidence using language related to geometry.</p> <p>2.3.6 Demonstrate an appreciation for others by listening to their point of view.</p>	<p>7. Communicate effectively using vocabulary associated with geometry.</p>	<ul style="list-style-type: none"> • Use appropriate language associated with geometry, such as: regular, irregular, polygon, quadrilateral, pentagon, hexagon, octagon, line symmetry and frame. [2.1.9, 2.2.13, 2.3.5, 2.3.6]
MEASUREMENT				

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Linear</p> <p>3.1.1 Develop measurement sense and apply appropriate techniques when measuring, making comparisons and estimates.</p> <p>3.1.2 Understand that measures can be quantified using standard units (kilometres, metres and centimetres).</p> <p>3.1.3 Understand the relationship between units of measure (km and</p>	<p>3.2.1. Explain the suitability of the unit as it relates to the length to be measured.</p> <p>3.2.2. Convert units and sub-units of measures of length.</p> <p>3.2.3. Approximate lengths to the nearest metre and distances to the nearest kilometre.</p> <p>3.2.4. Estimate lengths in centimetres and metres and verify results</p>	<p>3.3.1. Appreciate the functional role of the linear measures in their everyday lives.</p> <p>3.3.2. Demonstrate confidence in their abilities to estimate and measure and in solving problems related to linear measure.</p>	<p>1. Apply measurement principles, including using an instrument, estimation and approximation to solve a wide variety of practical problems.</p> <p>2. Develop a conceptual understanding of perimeter.</p> <p>3. Solve problem involving linear measure.</p>	<ul style="list-style-type: none"> • Explain the need for and the importance of a larger or longer standard unit of measure for length. [3.1.1, 3.2.1, 3.3.1] • State the relationship between the kilometre and the metre. [3.1.3, 3.2.2, 3.3.1] • Convert kilometres to metres and vice versa. [3.1.3, 3.2.2, 3.3.1, 3.3.2] • Convert metres to centimetres and vice versa. [3.1.3, 3.2.2, 3.3.1, 3.3.2] • Select and use the most appropriate standard unit for measuring various lengths/distances. [3.1.1, 3.1.2,

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>m; m and cm)</p> <p>3.1.4 Develop concept of perimeter using regular and irregular shapes.</p> <p>3.1.5 Solve problems involving measures.</p>	<p>and determine reasonableness of estimates.</p> <p>3.2.5. Solve computational problems and real-life problem involving length.</p> <p>3.2.6. Differentiate between area and perimeter.</p> <p>3.2.7. Measure and calculate the perimeter of regular and irregular shapes and compare and order.</p>			<p>3.2.1, 3.3.1, 3.3.2]</p> <ul style="list-style-type: none"> • Approximate distances to the nearest kilometre or metre. [3.1.1, 3.2.3, 3.3.1] • Estimate lengths in centimetres and metres and verify lengths by measuring. [3.1.1, 3.1.2, 3.2.4, 3.3.1, 3.3.2] • Explain the reasonableness of estimations. [3.1.1, 3.2.4, 3.3.2] • Solve computational problems involving the metre and the centimetre by using the relationship between them. [3.1.3, 3.1.5, 3.2.5, 3.3.2] • Solve real-life problems involving length, number and

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	3.2.8. Solve problems involving perimeter.			money. [3.1.5, 3.2.5, 3.3.2] <ul style="list-style-type: none"> • Investigate the distance around shapes to determine the perimeter of shapes. [3.1.4, 3.2.6, 3.3.1] • Explain the difference between area and perimeter. [3.1.4, 3.2.6, 3.3.1] • Measure the perimeter of shapes using standard units. [3.1.4, 3.2.7, 3.3.1] • Count and record the number of units used to measure the perimeter of a shape. [3.1.4, 3.2.7, 3.3.1] • Compare and order the perimeter of two or more shapes and explain reasons using appropriate

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				language. [3.1.4, 3.2.7, 3.3.1] <ul style="list-style-type: none"> • Calculate the perimeter of regular and irregular plane shapes. [3.1.5, 3.2.8, 3.3.2] • Solve problems involving perimeter. [3.1.5, 3.2.8, 3.3.2]
Mass/Weight 3.1.6 Develop measurement sense and apply appropriate techniques when measuring, making comparisons and estimates. 3.1.7 Understand that measures can be	3.2.9. Identify grams as a standard unit for measuring mass/weight and measure mass/weight of objects in grams. 3.2.10. Compare, measure and	3.3.3. Demonstrate the need for accuracy and precision with respect to measure. 3.3.4. Develop a sense of inventiveness and collaboration in solving real-life	4. Demonstrate appropriate techniques when measuring, estimating, and quantifying mass/weight. 5. Solve problems involving	<ul style="list-style-type: none"> • Recognize the need for a unit smaller than the kilogram to measure mass/weight. [3.1.6, 3.1.7, 3.2.9, 3.3.3] • Measure the mass/weight of objects in grams. [3.1.6, 3.1.7, 3.2.9, 3.3.3] • Measure and compare the masses/weights of objects in

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>quantified using standard units.</p> <p>3.1.8 Understand the relationship between units of measure (kg and g).</p> <p>3.1.9 Solve problems involving mass/weight.</p>	<p>estimate mass/weight in kilograms and grams and determine the reasonableness of answers or estimates.</p> <p>3.2.11. State the relationship between the kilogram and gram and select and use the most appropriate standard unit for measuring mass/weight.</p> <p>3.2.12. Solve problems involving the measure of</p>	<p>problems in relation to measures.</p>	<p>measures of mass/weight.</p>	<p>kilograms and grams using a set of scales. [3.1.6, 3.1.7, 3.2.9, 3.2.10, 3.3.3]</p> <ul style="list-style-type: none"> • Recognize that 1 000 grams is equal to one kilogram. [3.1.8, 3.2.11, 3.3.3] • Estimate the mass/weight of objects, verify their mass/weight by measuring and determine reasonableness of estimate. [3.1.6, 3.1.7, 3.2.10, 3.3.3] • Convert units of measure (grams to kilograms, kilograms to grams). [3.1.8, 3.2.11, 3.3.3] • Interpret statements, and discuss the use of grams and kilograms, on commercial packaging. [3.1.8, 3.2.11, 3.3.3] • Solve real-life problems

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	mass/weight.			involving mass/weight, number and money. [3.1.9, 3.2.12, 3.3.4]
<p>Time</p> <p>3.1.10 Develop measurement sense and apply appropriate techniques when measuring using instruments.</p> <p>3.1.11 Read, interpret and record calendar dates in a variety of formats.</p> <p>3.1.12 Solve problems</p>	<p>3.2.13. Read and tell time in five minute intervals on analog and digital clocks.</p> <p>3.2.14. Recognize and use a.m. and p.m. in communication of information on time.</p> <p>3.2.15. Tell time using a 24 hour clock.</p>	<p>3.3.5. Appreciate the functional role of the measurement of time in their everyday lives.</p> <p>3.3.6. Demonstrate confidence in ones abilities to estimate and measure time.</p>	<p>6. Apply measurement principles, including using an instrument, to solve a wide variety of problems.</p> <p>7. Read, interpret and record calendar dates in a variety of formats.</p>	<ul style="list-style-type: none"> • Tell time in five minute intervals using the digital and analog clocks. [3.1.10, 3.2.13, 3.3.5, 3.3.6] • Match times shown on digital and analog clocks and record the time. [3.1.10, 3.2.13, 3.3.5] • State the time after given intervals on analog and digital clocks. [3.1.10, 3.2.13, 3.3.5] • Read and record time using the a.m. and p.m. notation and justify the need for such records. [3.1.10, 3.2.14, 3.3.5]

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
involving time.	<p>3.2.16. Compare the duration of various events.</p> <p>3.2.17. Read, interpret and record calendar dates in a variety of formats.</p> <p>3.2.18. Solve real-life problems involving the measure of time.</p>			<ul style="list-style-type: none"> • Read times from a 24 hour clock and match to the analog and digital times. [3.1.10, 3.2.15, 3.3.5] • Compare the duration of a variety of events by noting the starting and ending times and calculating the difference. [3.1.10, 3.2.16, 3.3.5] • Use the calendar to identify and read dates. [3.1.11, 3.2.17, 3.3.5] • Write, read and interpret dates in a variety of formats, e.g. yyyy/mm/dd, dd/mm/yyyy, March 21, 2006, dd/mm/yy. [3.1.11, 3.2.17, 3.3.5] • Solve problems involving time. [3.1.12, 3.2.18, 3.3.6]

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Capacity</p> <p>3.1.13 Develop measurement sense and apply appropriate techniques when measuring, approximating, estimating and verifying capacity.</p> <p>3.1.14 Understand that measures can be quantified using standard units.</p> <p>3.1.15 Understand the</p>	<p>3.2.19. Explain the need for and the importance of a smaller standard unit of measure for capacity.</p> <p>3.2.20. Measure capacity using standard units (litres, sub-units (millilitres (ml), $\frac{1}{2}$ litre and $\frac{1}{4}$ litre) and multiple units (e.g. 3 litres).</p> <p>3.2.21. Estimate</p>	<p>3.3.7. Appreciate the functional role of the measurement of capacity in their everyday lives.</p> <p>3.3.8. Demonstrate confidence in solving problems related to the measurement of capacity.</p>	<p>8. Demonstrate appropriate techniques when measuring capacity.</p> <p>9. Solve problems involving measures of capacity.</p>	<ul style="list-style-type: none"> • Explain the need for and the importance of a smaller standard unit of measure for capacity. [3.1.13, 3.1.14, 3.2.19, 3.3.7] • Measure the capacity of containers using sub-units and multiple units of the litre and justify choice of unit. [3.1.13, 3.1.14, 3.2.20, 3.3.7] • Measure the capacity of containers using the litre and the millilitre. [3.1.13, 3.1.14, 3.2.20, 3.3.7] • Estimate the capacity of containers in litre and millilitre, verify by measuring and determine reasonableness of

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>relationship between units of measure.</p> <p>3.1.16 Solve problems involving capacity.</p>	<p>capacity and determine the reasonableness of the answers or estimation.</p> <p>3.2.22. Establish the relationship between the litre and millilitre.</p> <p>3.2.23. Approximate measures to the nearest litre.</p> <p>3.2.24. Solve real-life problems involving the measure of capacity.</p>			<p>estimate. [3.1.14, 3.2.21, 3.3.7]</p> <ul style="list-style-type: none"> • State the relationship between the litre and millilitre and convert from one to the other. [3.1.15, 3.2.22, 3.3.7] • Approximate measure of capacity to the nearest litre. [3.1.14, 3.2.23, 3.3.7] • Solve problems involving capacity, number and money. [3.1.16, 3.2.24, 3.3.8]
Area				

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>3.1.17 Understand that measures can be quantified using standard units.</p> <p>3.1.18 Develop measurement sense and apply appropriate techniques when measuring, making comparisons, approximating and estimating.</p> <p>3.1.19 Demonstrate an understanding</p>	<p>3.2.25. Explain the need for and the importance of a standard unit of measure for area.</p> <p>3.2.26. Select and use the most appropriate standard unit for measuring area (square centimetre - cm^2, square metre - m^2) for small and large surfaces.</p> <p>3.2.27. Develop skills in the comparison of area and</p>	<p>3.3.9. Appreciate measures in everyday use.</p> <p>3.3.10. Display a sense of inventiveness in selecting standard units when measuring area.</p> <p>3.3.11. Demonstrate confidence in their abilities to calculate and compare area.</p>	<p>10. Demonstrate an understanding of measures of area.</p> <p>11. Solve problems involving measures of area.</p>	<ul style="list-style-type: none"> • Explain the need for and the importance of a standard unit of measure for area. [3.1.17, 3.2.25, 3.3.9] • Measure area using standard units (cm^2, m^2) and record measure. [3.1.17, 3.2.26, 3.3.9, 3.3.10] • Compare and order area of surfaces and explain reasoning using appropriate vocabulary. [3.1.18, 3.2.27, 3.3.11] • Approximate the area of surfaces to the nearest square metre or square centimetre. [3.1.18, 3.2.27, 3.3.10] • Select the appropriate unit of measure when measuring

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>about the conservation of area.</p> <p>3.1.20 Solve problems involving area.</p>	<p>approximation of area to the nearest square metre (m²) and square centimetre (cm²).</p> <p>3.2.28. Calculate area of plane shapes on a grid with unit squares.</p> <p>3.2.29. Explore the conservation of area.</p> <p>3.2.30. Solve problems involving area.</p>			<p>surfaces of varying sizes and explain the suitability of the unit. [3.1.18, 3.2.26, 3.3.10]</p> <ul style="list-style-type: none"> • Calculate area of shapes drawn on a cm² grid. [3.1.20, 3.2.28, 3.3.11] • Draw different shapes on grids that have the same area. [3.1.20, 3.2.28, 3.3.11] • Explore activities associated with conservation of area and state findings/generalizations. [3.1.19, 3.2.29, 3.3.11] • Solve problems involving area, number and money. [3.1.20, 3.2.30, 3.3.11]

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Language</p> <p>3.1.21 Develop appropriate vocabulary associated with measurement.</p>	<p>3.2.31. Use appropriate vocabulary in oral and written communication</p>	<p>3.3.12. Communicate with confidence using language related to measurement.</p> <p>3.3.13. Demonstrate an appreciation for others by listening to their point of view.</p>	<p>12. Communicate effectively using vocabulary associated with measurement.</p>	<ul style="list-style-type: none"> Use appropriate language associated with measurement, such as: kilometre (km), perimeter, square metre/s (m^2), square centimetre/s (cm^2), millilitre (ml), distance around, calculate, reasonable answer, solve problems, approximation, width, breadth, a.m. and p.m. notation. [3.1.21, 3.2.31, 3.3.12, 3.3.13]
STATISTICS				
<p>Tally Charts and Bar Graphs</p> <p>4.1.1. Use statistical techniques to</p>	<p>4.2.1. Formulate a</p>	<p>4.3.1. Demonstrate awareness that</p>	<p>1. Demonstrate the ability to</p>	<p>TALLY CHARTS</p>

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>investigate real-life problems.</p> <p>4.1.2. Demonstrate the ability to collect, classify, organize and represent data.</p> <p>4.1.3. Demonstrate an understanding about the features of graphs and charts.</p> <p>4.1.4. Make decisions based on analysis or interpretation</p>	<p>problem situation.</p> <p>4.2.2. Collect data (using observation and frequency counts) and classify data through investigation of a problem/question based on a real-life situation.</p> <p>4.2.3. Identify characteristics of tally charts and bar graphs.</p> <p>4.2.4. Choose an appropriate scale factor in the construction of the bar graph.</p>	<p>numerical data can be communicated visually.</p> <p>4.3.2. Demonstrate a willingness to predict outcomes based on the interpretation of data.</p> <p>4.3.3. Display objectivity in collecting data so as to eliminate bias when making decisions.</p>	<p>formulate a problem, collect, organize, represent and interpret data on tally charts and bar graphs (using different scale factors) to make sound decisions and solve problems.</p> <p>2. Demonstrate an understanding about the features of graphs and charts.</p> <p>3. Demonstrate an understanding of the methods</p>	<ul style="list-style-type: none"> • Formulate a problem to be investigated e.g. A school plans to purchase equipment for various sports. What type of equipment should be purchased? What amount of material should be purchased? [4.1.1, 4.2.1] • Collect and classify data to make decisions based on a real-life situation or problem. [4.1.1, 4.1.2, 4.2.2, 4.3.3] • Identify the features of tally charts. [4.1.3, 4.2.3, 4.3.1] • State the advantages of recording data using tally marks. [4.1.3, 4.2.3, 4.3.1] • Construct, interpret and make decisions based on information on tally charts. [4.1.2, 4.1.4,

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>of data.</p> <p>4.1.5. Demonstrate the ability to present findings orally or in writing.</p> <p>4.1.6. Demonstrate an understanding of the methods used to address the problem.</p> <p>4.1.7. Make comparisons of the bar graphs with block graphs.</p>	<p>4.2.5. Construct tally charts and bar graphs using appropriate symbolic representations.</p> <p>4.2.6. Interpret data from tally charts and bar graphs based on a real-life problem or situation.</p> <p>4.2.7. Make informed decisions on data analysed.</p> <p>4.2.8. Justify decisions made using data collected in writing and/or oral</p>		<p>used to address the problem.</p>	<p>4.2.6, 4.2.7, 4.3.2]</p> <p>BAR GRAPHS</p> <ul style="list-style-type: none"> • Determine the features of bar graphs either through transformation of a block graph to a bar graph or by identifying features from presented (and interpreted) bar graphs. [4.1.3, 4.1.7, 4.2.3, 4.3.1] • Use the frequency counts from tally charts to determine the appropriate scale factor to be used in the construction of bar graphs and justify choice of scale factor. [4.1.3, 4.2.4] • Calculate the amounts to be represented on the bar graph using the scale factor. [4.1.3, 4.2.4]

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>presentations.</p> <p>4.2.9. Compare and contrast block graphs and bar graphs.</p>			<ul style="list-style-type: none"> • Construct bar graphs (vertical or horizontal arrangements) on grid paper based on information collected and using different scale factors (scale factor 1: 1, 2, 5 and 10). [4.1.2, 4.1.3, 4.2.4, 4.2.5, 4.3.1] • Label axes and name the graph. [4.1.3, 4.2.3, 4.2.5] • Interpret and analyse the data so as to make decisions about a real-life situation or problem. [4.1.4, 4.2.6, 4.2.7, 4.3.1, 4.3.2] • Participate in decision-making to solve problems. [4.1.4, 4.2.7, 4.2.8, 4.3.3] • Communicate findings and justify decisions made using appropriate vocabulary (orally or

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>in writing). [4.1.5, 4.2.8, 4.3.3]</p> <ul style="list-style-type: none"> • Describe the method used to solve the problem or address the situation. [4.1.6, 4.2.8, 4.2.9, 4.3.3] • Discuss the appropriateness of the type of graph used by comparing and contrasting it with a block graph. [4.1.7, 4.2.9, 4.3.3] <p>(Depending on the experiences of students, teachers may decide to start with the interpretation of presented graphs, which can then be used to identify the characteristics of graphs. Graphs can then be appropriately constructed. Graphs can also be transformed from one form to another and this idea can be used to initiate interpretation of the</p>

MATHEMATICS CONTENT STANDARDS: STANDARD 3

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				same data using different representations).
<p>Language</p> <p>4.1.8. Develop appropriate vocabulary associated with statistics.</p>	<p>4.2.10. Use appropriate vocabulary in oral and written communication.</p>	<p>4.3.4. Communicate with confidence using language related to statistics.</p> <p>4.3.5. Demonstrate an appreciation for others by listening to their point of view.</p>	<p>4. Communicate effectively using vocabulary associated with statistics.</p>	<ul style="list-style-type: none"> Use appropriate language associated with statistics, such as: bar, most frequent and survey. [4.1.8, 4.2.10, 4.3.4, 4.3.5]

Primary School Curriculum

Mathematics

Standard 4

INTERIM

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
NUMBER				
<p>Number Concepts, Place Value and Rounding</p> <p>1.1.1 Understand the concept of numbers up to 1 000 000.</p> <p>1.1.2 Develop an understanding of different types of numbers.</p> <p>1.1.3 Develop an understanding of place value up to 1 000 000 (concretely, pictorially and symbolically).</p>	<p>1.2.1 Represent whole numbers to 1 000 000 using multiple models and connect to numerals and number names.</p> <p>1.2.2 Differentiate between (a) factors and multiples and (b) prime and composite numbers, and identify square numbers.</p> <p>1.2.3 Express numbers</p>	<p>1.3.1 Display interest while engaging in activities related to number concepts.</p>	<p>1. Recognize, represent, model, compare and order numbers up to 1 000 000 with reference to place value.</p> <p>2. Demonstrate an understanding of different types of numbers.</p> <p>3. Develop an understanding of rounding to</p>	<p>NUMBER CONCEPTS</p> <ul style="list-style-type: none"> • Represent numbers up to one million concretely, pictorially and symbolically, using multiple models and connect to numerals and number names. [1.1.1, 1.2.1, 1.31] • Sequence number names and numerals. [1.1.1, 1.2.1, 1.31] • Describe the use of large numbers in real-life situations e.g. population, money applications. [1.1.1, 1.2.1, 1.3.1] • Explore factors and multiples of numbers (using resources, such as:

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>1.1.4 Develop an understanding of the comparison of numbers.</p> <p>1.1.5 Develop an understanding of rounding to thousands.</p>	<p>to one million in expanded notation.</p> <p>1.2.4 Compare and order whole numbers to millions.</p> <p>1.2.5 Round whole numbers to the nearest thousand.</p>		<p>thousands.</p>	<p>multiplication and division tables and calculators). [1.1.2, 1.2.2, 1.3.1]</p> <ul style="list-style-type: none"> • Classify numbers as prime or composite (up to 100) by determining the number of factors. [1.1.2, 1.2.2, 1.3.1] • Explain why the array model of a prime number has only one row. [1.1.2, 1.2.2, 1.3.1] • Represent composite numbers as a product of their prime factors concretely, pictorially and symbolically. [1.1.2, 1.2.2, 1.3.1] • List square numbers (up to 144). [1.1.2, 1.2.2, 1.3.1] <p>PLACE VALUE</p> <ul style="list-style-type: none"> • Represent a given numeral using

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>diagrams or a place value chart. [1.1.3, 1.2.3, 1.3.1]</p> <ul style="list-style-type: none"> • State the place value of any digit in large numbers. [1.1.3, 1.2.3, 1.3.1] • Describe the pattern of adjacent place positions moving from right to left and left to right. [1.1.3, 1.2.3, 1.2.4, 1.3.1] • Describe the meaning of each digit in a given numeral. [1.1.3, 1.2.3, 1.3.1] • Express a given numeral in expanded notation, • e.g. $45\,321 = (4 \times 10\,000) + (5 \times 1\,000) + (3 \times 100) + (2 \times 10) + (1 \times 1)$ or $40\,000 + 5\,000 + 300 + 20 +$

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>1. [1.1.3, 1.2.3, 1.3.1]</p> <ul style="list-style-type: none"> • Write the numeral represented by a given expanded notation. [1.1.3, 1.2.3, 1.3.1] • State the value of each digit in a numeral. [1.1.3, 1.2.3, 1.2.4, 1.3.1] • Apply an understanding of place value to read, write and order numbers of any size up to 1 000 000. [1.1.3, 1.1.4, 1.2.3, 1.2.4, 1.3.1] • Compare whole numbers up to million and use the symbols $>$ or $<$ to show the relationship between them. [1.1.4, 1.2.3, 1.2.4, 1.3.1] • Order a given set of numbers in ascending or descending order and explain the order by making references to place value. [1.1.3,

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>1.1.4, 1.2.3, 1.2.4, 1.3.1]</p> <ul style="list-style-type: none"> • Identify the missing numbers in an ordered sequence or on a number line. [1.1.3, 1.1.4, 1.2.3, 1.2.4, 1.3.1] • Identify incorrectly placed numbers in an ordered sequence or on a number line. [1.1.3, 1.1.4, 1.2.3, 1.2.4, 1.3.1] <p>ROUNDING</p> <ul style="list-style-type: none"> • Round whole numbers to the nearest thousand. [1.1.5, 1.2.5, 1.3.1]
<p>Number Patterns</p> <p>1.1.6 Develop algebraic thinking</p>	<p>1.2.6 Explore repeating, increasing and</p>	<p>1.3.2 Show perseverance in finding</p>	<p>4. Recognize and explore number patterns up to</p>	<ul style="list-style-type: none"> • Describe repeating, increasing or decreasing patterns with fractions, decimals and whole numbers

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>(number patterns and number relationships).</p> <p>1.1.7 Develop an understanding of different types of numbers by exploring their patterns.</p> <p>1.1.8 Understand that pattern recognition can assist in solving problems.</p>	<p>decreasing patterns.</p> <p>1.2.7 Explore patterns involving the effects of adding or subtracting zero to/from a number and multiplying or dividing a number by one, factors and multiples of numbers, prime and composite numbers, square numbers and square roots, compatible numbers within 1 000, double and half facts, use of related</p>	<p>solutions to problems that involve patterns.</p> <p>1.3.3 Display perseverance while exploring properties of numbers.</p>	<p>1 000.</p> <p>5. Develop an understanding of different types of numbers by exploring their patterns.</p> <p>6. Develop an understanding that pattern recognition can aid in problem solving.</p>	<p>resulting from addition, subtraction, multiplication and division by stating the pattern rule which includes the starting point and a description of how the pattern continues. [1.1.6, 1.1.7, 1.2.6, 1.3.2]</p> <ul style="list-style-type: none"> • Use a pattern rule to determine missing elements for a given pattern and to extend or predict subsequent elements in patterns. [1.1.6, 1.1.7, 1.1.8, 1.2.6, 1.2.7, 1.3.2] • Describe (verbally or written) a given pattern and explain how each element differs from the proceeding one. E.g. one more, five less. [1.1.6, 1.1.7, 1.1.8, 1.2.6, 1.2.7, 1.3.2] • Recognize when an error occurs in a pattern and explain what is

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>facts and multiplication and related division facts up to 12 times table.</p> <p>1.2.8 Use pattern recognition to solve problems.</p>			<p>wrong. [1.1.6, 1.1.7, 1.1.8, 1.2.6, 1.2.7, 1.3.2]</p> <ul style="list-style-type: none"> • Use calculators to assist in determining the pattern rule and extending patterns. [1.1.6, 1.1.7, 1.1.8, 1.2.6, 1.2.7, 1.3.2] • Create repeating, increasing and decreasing number patterns and explain the pattern rule. [1.1.6, 1.1.7, 1.1.8, 1.2.6, 1.2.7, 1.3.2, 1.3.3] • Explore, describe and record patterns related to the effects of adding/subtracting zero to/from a number and multiplying/dividing a number by one, factors and multiples of numbers, prime and composite numbers, square numbers and square roots, compatible numbers within 1 000, double and half facts, use of

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>related facts and multiplication and related division facts up to 12 times table and explain generalizations about number relationships. [1.1.6, 1.1.7, 1.2.7, 1.3.2, 1.3.3]</p> <ul style="list-style-type: none"> • Solve problems involving the use of patterns. [1.1.6, 1.1.7, 1.1.8, 1.2.6, 1.2.7, 1.2.8, 1.3.2, 1.3.3]
<p>Number Relationships</p> <p>1.1.9 Explore algebraic thinking (number patterns and number relationships).</p> <p>1.1.10 Make sense of number</p>	<p>1.2.9 Calculate the unknown in number sentences involving the four operations and explain procedures used.</p>	<p>1.3.4 Show perseverance in finding solutions to problems.</p>	<p>7. Solve problems involving number sentences with one unknown.</p>	<ul style="list-style-type: none"> • Calculate the missing values in number sentences with one unknown involving addition, subtraction, multiplication and division of whole numbers, by using various strategies, such as guess and check, using the inverse operation and recalling memorized facts. [1.1.9, 1.1.10,

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
sentences involving one unknown.				1.2.9, 1.3.4] • Explain procedures used in solving problems. [1.1.9, 1.1.10, 1.2.9, 1.3.4]
<p>Whole Number (Operations)</p> <p>1.1.11 Create and solve problems using whole numbers involving the four operations.</p> <p>1.1.12 Develop and apply mental mathematics strategies to solve</p>	<p>1.2.10 Solve problems in addition (sum less than 10 000) and subtraction (minuend less than 10 000).</p> <p>1.2.11 Multiply 2, 3 and 4 digit numbers by 2 digit numbers.</p> <p>1.2.12 Divide 2, 3 and 4 digit numbers by</p>	<p>1.3.5 Develop confidence in working independently in using a variety of strategies to solve problems.</p>	<p>8. Solve problems using whole numbers involving the four operations.</p> <p>9. Demonstrate an understanding of algorithms, mental strategies and estimation strategies.</p>	<p>FOUR OPERATIONS – ADDITION, SUBTRACTION, MULTIPLICATION AND DIVISION</p> <p>• Create and solve problems in addition (sum less than 10 000), subtraction (minuend less than 10 000), multiplication (two, three or four-digit numbers by two-digit numbers) and division (two, three or four digits by a two-digit number) by using appropriate written algorithm and mental</p>

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>problems involving whole numbers.</p> <p>1.1.13 Use estimation strategies in problem solving contexts with whole numbers.</p>	<p>2 digit numbers (with and without remainder).</p> <p>1.2.13 Investigate and apply mental mathematics strategies in solving problems.</p> <p>1.2.14 Use estimation strategies (front-end rounding, compensation and compatible numbers) to check and justify answers in problem solving contexts and to determine the reasonableness</p>			<p>strategies. [1.1.11, 1.1.12, 1.2.10, 1.2.11, 1.2.12, 1.2.13, 1.3.5]</p> <ul style="list-style-type: none"> • Use different notations to indicate division e.g. $240 \div 12$, $12 \overline{)240}$ [1.1.11, 1.2.12, 1.3.5] • Record remainders in division problems as fractions e.g. $25 \div 4 = 6\frac{1}{4}$. [1.1.11, 1.2.12, 1.3.5] • Explore, describe and use a range of mental strategies and recording strategies for solving problems, including: <ul style="list-style-type: none"> ○ Compatible numbers within 1 000 ○ Double and half facts ○ Use of related facts ○ Multiplication and related division facts up to 12 times table ○ Square numbers and square

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>of answers.</p> <p>1.2.15 Check solutions to problems by using the inverse operations.</p> <p>1.2.16 Determine the approximate solution to a problem that does not require an exact answer.</p>			<p>roots. [1.1.11, 1.1.12, 1.2.10, 1.2.11, 1.2.12, 1.2.13, 1.3.5]</p> <ul style="list-style-type: none"> • Use estimation strategies such as: <ul style="list-style-type: none"> ○ Front-end rounding (e.g. Addition: $456 + 729$ is greater than $400 + 700$; Subtraction: $805 - 210$ is close to $800 - 200$; Multiplication: the product of 13×25 is more than 10×20; Division: the quotient of $645 \div 15$ is less than $600 \div 10$) ○ Compensation (e.g. $173 + 282 + 368 + 189 + 572$ is close to $200 + 300 + 400 + 200 + 500 = 1\ 600$; because 572 is rounded down to compensate for all the other numbers being rounded up) ○ Compatible numbers (e.g. $3\ 248 \div 16$; think of a basic fact that relates to the

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>problem: $32 \div 16 = 2$; divide: $3\ 200 \div 16 = 200$; $3\ 248 \div 16$ is about 200) to check solutions to addition, subtraction, multiplication and division problems, including those involving money, and determine reasonableness of answers. [1.1.13, 1.2.14, 1.3.5]</p> <ul style="list-style-type: none"> • Use the inverse operations to check the solutions to problems. [1.1.11, 1.2.15, 1.3.5] • Determine the approximate solution to a problem that does not require an exact answer. [1.1.11, 1.2.16, 1.3.5]
<p>Fractions</p> <p>1.1.14 Demonstrate an understanding</p>	<p>1.2.17 Add a fraction to a whole number.</p>	<p>1.3.6 Develop confidence in working</p>	<p>10. Develop and apply procedures to</p>	<p>FRACTIONS – ADDITION AND SUBTRACTION</p>

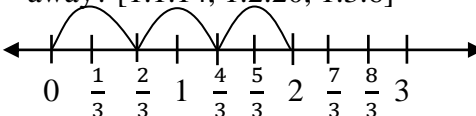
MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>of solving problems involving fractions and the four operations.</p>	<p>1.2.18 Subtract a fraction from a whole number.</p> <p>1.2.19 Add and subtract fractions involving same denominator and one denominator a multiple of the other.</p> <p>1.2.20 Multiply fractions by whole numbers.</p> <p>1.2.21 Calculate the whole given a part as a unit fraction.</p> <p>1.2.22 Divide whole numbers by fractions.</p>	<p>independently in using a variety of strategies to solve problems involving fractions.</p>	<p>solve problems involving fractions and the four operations.</p>	<ul style="list-style-type: none"> • Model addition of a fraction to a whole number using concrete and pictorial representations and record symbolically, and explain findings. [1.1.14, 1.2.17, 1.3.6] • Model subtraction of a fraction from a whole number using concrete and pictorial representations and record symbolically, and explain findings. [1.1.14, 1.2.18, 1.3.6] • Develop and apply the algorithm for subtracting a fraction from a whole number to solve problems. [1.1.14, 1.2.18, 1.2.23, 1.3.6] • Model addition and subtraction of fractions involving the same denominator using concrete and pictorial representations, record symbolically and explain pattern observed. [1.1.14, 1.2.19, 1.3.6]

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	1.2.23 Solve real-life problems involving fractions and using the algorithms developed.			<ul style="list-style-type: none"> • Develop and use the algorithm for solving problems involving the addition and subtraction of fractions involving the same denominator. [1.1.14, 1.2.19, 1.2.23, 1.3.6] • Model addition and subtraction of fractions involving one denominator a multiple of the other using concrete and pictorial representations, record symbolically and explain pattern observed. [1.1.14, 1.2.19, 1.3.6] • Develop and use the algorithm for solving problems involving the addition and subtraction of fractions involving one denominator a multiple of the other by utilizing equivalent fractions. [1.1.14, 1.2.19, 1.2.23, 1.3.6]

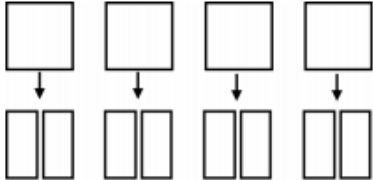
MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>FRACTIONS – MULTIPLICATION</p> <ul style="list-style-type: none"> Model the multiplication of proper fractions by whole numbers concretely, pictorially and symbolically and record the process. E.g. You gave your 3 friends $\frac{2}{3}$ of a sandwich each. How many sandwiches did you give away? [1.1.14, 1.2.20, 1.3.6]  <ul style="list-style-type: none"> Multiply proper fractions by whole numbers using strategies such as, repeated addition, proceeding to a rule e.g. $3 \times \frac{2}{5} = \frac{2}{5} + \frac{2}{5} + \frac{2}{5} = \frac{6}{5}$ will lead to $3 \times \frac{2}{5} = \frac{3 \times 2}{5} = \frac{6}{5}$. [1.1.14, 1.2.20, 1.3.6]

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> • Calculate fractions of a collection or set. E.g. What is $\frac{1}{2}$ of 30? [1.1.14, 1.2.20, 1.3.6] • Calculate the whole given a part expressed as a unit fraction. [1.1.14, 1.2.21, 1.3.6] • Derive and describe patterns resulting from the multiplication of fractions by whole numbers. [1.1.14, 1.2.20, 1.2.21, 1.3.6] • Develop and use the algorithm to solve a variety of real-life problems involving multiplication of fractions. [1.1.14, 1.2.23, 1.3.6] <p>FRACTIONS – DIVISION</p> <ul style="list-style-type: none"> • Model the concept of division concretely or pictorially to develop the skill of dividing a

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>whole number by a fraction and record the process e.g. I have 4 crackers that I want to divide into halves. How many pieces would I have?</p>  <p>[1.1.14, 1.2.22, 1.3.6]</p> <ul style="list-style-type: none"> • Derive and describe patterns resulting from the division of whole numbers by fractions. [1.1.14, 1.2.22, 1.3.6] • Develop and use the algorithm to solve a variety of real-life problems involving division of whole numbers by fractions. [1.1.14, 1.2.22, 1.2.23, 1.3.6]

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Decimals</p> <p>1.1.15 Demonstrate an understanding of decimals up to hundredths.</p> <p>1.1.16 Develop an understanding of the comparison of decimals.</p> <p>1.1.17 Develop an understanding of rounding.</p> <p>1.1.18 Develop an understanding of the algorithm for addition and subtraction of</p>	<p>1.2.24 Explore the place value of decimals to hundredths including expanded notation.</p> <p>1.2.25 Compare and order decimals up to hundredths.</p> <p>1.2.26 Round decimals to the nearest whole number and tenth.</p> <p>1.2.27 Relate decimals to fractions and money.</p>	<p>1.3.7 Display curiosity while engaging in activities related to decimals.</p>	<p>11. Demonstrate an understanding of decimals up to hundredths.</p> <p>12. Develop an understanding of the comparison of decimals.</p> <p>13. Develop an understanding of rounding to whole numbers and tenths.</p> <p>14. Develop and apply procedures to solve problems</p>	<p>PLACE VALUE – TENTHS AND HUNDREDTHS</p> <ul style="list-style-type: none"> • Explore concrete (base ten blocks, fraction models) and pictorial representations (number lines and fraction charts) to introduce base ten fractions (tenths). [1.1.15, 1.2.24, 1.3.7] • Extend place value chart to include decimal fractions (tenths). [1.1.15, 1.2.24, 1.3.7] • Use decimal notation as another form of writing base ten fractions (tenths). E.g. 0.1 is the same as $\frac{1}{10}$. [1.1.15, 1.2.24, 1.3.7] • Represent decimals (tenths) concretely on a place value mat,

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
decimals. 1.1.19 Solve one-step problems involving decimals. 1.1.20 Develop estimation skills.	1.2.28 Solve real-world problems involving the addition and subtraction of decimals to hundredths using the algorithm. 1.2.29 Use estimation skills to check solutions to problems and determine reasonableness of answer.		involving the addition and subtraction of decimals. 15. Develop estimation skills.	pictorially and symbolically and read the amount represented. [1.1.15, 1.2.24, 1.3.7] <ul style="list-style-type: none"> • Match the number names (e.g. Two and five tenths) and decimal fractions (e.g. 2.5) to the quantities they represent. [1.1.15, 1.2.24, 1.3.7] • Write decimal fractions using the expanded notation form. [1.1.15, 1.2.24, 1.3.7] • Convert expanded notation to decimal fractions. [1.1.15, 1.2.24, 1.3.7] • State the place value and value of digits in decimal fractions. [1.1.15, 1.2.24, 1.3.7] • Compare decimal fractions and use the symbols $>$ or $<$ or $=$ to

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>show the relationship between them. [1.1.16, 1.2.25, 1.3.7]</p> <ul style="list-style-type: none"> • Compare and order decimal fractions in ascending and descending order. [1.1.16, 1.2.25, 1.3.7] <p>(REPEAT THE ABOVE FOR HUNDREDTHS)</p> <ul style="list-style-type: none"> • Explain that ten tenths is equivalent to one whole and that ten hundredths is equivalent to one tenth. [1.1.15, 1.2.24, 1.3.7] • Round decimal fractions to the nearest whole number or to the nearest tenth. [1.1.17, 1.2.26, 1.3.7] • Express common fractions (halves, quarters, fifths and tenths) as decimal fractions (tenths and

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>hundredths). [1.1.5, 1.2.27, 1.3.7]</p> <ul style="list-style-type: none"> • Express decimals as common fractions. [1.1.5, 1.2.27, 1.3.7] • Record money values using decimals. [1.1.5, 1.2.27, 1.3.7] <p>ADDITION AND SUBTRACTION</p> <ul style="list-style-type: none"> • Solve problems involving the addition and subtraction of decimals by using concrete and pictorial representations of base ten materials, and explain the procedure used. [1.1.18, 1.2.28, 1.3.7] • Record the procedure used for solving addition and subtraction problems involving decimals, symbolically, and explain the

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				algorithm. [1.1.18, 1.2.28, 1.3.7] <ul style="list-style-type: none"> • Explain why keeping track of place value positions is important when adding and subtracting decimals. [1.1.18, 1.2.28, 1.3.7] • Solve problems involving the addition and subtraction of decimals, including money. [1.1.18, 1.1.19, 1.2.28, 1.3.7] • Use estimation skills to check solutions to problems and determine reasonableness of answers. [1.1.20, 1.2.29, 1.3.7]
Problem Solving 1.1.21 Solve multi-step problems involving whole	1.2.30 Solve one-step and multi-step problems involving whole numbers,	1.3.8 Develop confidence in working independently in selecting and	16. Solve multi-step problems involving whole numbers,	<ul style="list-style-type: none"> • Solve one-step and multi-step problems involving whole numbers, fractions and decimals (including money transactions, bills, best buy, profit and loss,

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>numbers, fractions and decimals using a variety of strategies.</p>	<p>fractions and decimals (including money transactions, bills, best buy, profit and loss) using the four operations and a variety of strategies.</p> <p>1.2.31 Use estimation strategies (front-end rounding, compensation and compatible numbers) to check and justify answers in problem solving contexts and to determine the reasonableness</p>	<p>using various mental and written strategies to solve problems.</p>	<p>fractions and decimals using algorithms, mental strategies and other problem solving strategies.</p> <p>17. Solve problems involving direct proportion.</p>	<p>involving dollars and cents together –e.g. \$4.50) using the four operations. [1.1.21, 1.2.30, 1.3.8]</p> <ul style="list-style-type: none"> • Solve routine and non-routine problems using a variety of strategies such as: use a model, act it out, draw a picture, look for a pattern, guess and check, work backwards, logical reasoning, make a table or chart, make an organized list and try a simpler form of the problem. [1.1.21, 1.2.30, 1.3.8] • Solve problems in mathematical games. [1.1.21, 1.2.30, 1.3.8] • Select and use appropriate estimation strategies to check for reasonableness of answers and use calculators to check answers/solutions. [1.1.21, 1.2.31,

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>of answers.</p> <p>1.2.32 Investigate and apply mental mathematics strategies and skills to solve problems.</p> <p>1.2.33 Solve real-world problems involving direct proportion.</p> <p>1.2.34 Determine the approximate solution to a problem that does not require an exact answer.</p>			<p>1.3.8]</p> <ul style="list-style-type: none"> • Investigate and apply mental mathematics strategies and skills to solve problems, such as, the use of related facts, compatible numbers within 1 000, multiplication and related division facts up to 12 times table and squares and square roots. [1.1.21, 1.2.32, 1.3.8] • Pose and solve problems involving direct proportions e.g. ‘If the cost of 6 apples is \$30, what would be the cost of 4 apples?’ [1.1.21, 1.2.33, 1.3.8] • Determine the approximate solution to a problem that does not require an exact answer. [1.1.21, 1.2.34, 1.3.8]

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Language</p> <p>1.1.22 Develop appropriate vocabulary associated with number.</p>	<p>1.2.35 Use appropriate vocabulary associated with number, orally and in writing.</p>	<p>1.3.9 Communicate with confidence using language related to number.</p> <p>1.3.10 Demonstrate an appreciation for others by listening to their point of view.</p>	<p>18. Communicate effectively using vocabulary associated with number.</p>	<ul style="list-style-type: none"> Use appropriate language associated with number, such as: hundred, thousand, million, divisor, dividend, quotient, multiple, factor, prime, composite, decimal, tenths, hundredths, best buy, square, square root, calculate, decimal point read as “and” e.g. 2.35 – 2 and 35 hundredths, also read as two point three five, product, reasonable answer and approximate. [1.1.22, 1.2.35, 1.3.9, 1.3.10]
GEOMETRY				
<p>Solids and Plane Shapes</p> <p>2.1.1 Develop an understanding of the</p>	<p>2.2.1 Draw the faces of solids and explore</p>	<p>2.3.1 Display collaboration while working</p>	<p>1. Demonstrate an understanding of the</p>	<ul style="list-style-type: none"> Draw faces of solids and describe their properties (e.g. shape of faces, number of faces, parallel

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>properties of solids and plane shapes.</p> <p>2.1.2 Solve problems involving solids and plane shapes.</p>	<p>their properties.</p> <p>2.2.2 Construct and draw regular and irregular polygons given their properties using the principles of parallel and perpendicular lines, angles and number of sides.</p> <p>2.2.3 Solve problems involving solids and plane shapes.</p>	<p>in groups.</p>	<p>properties of solids and plane shapes.</p> <p>2. Solve problems involving solids and plane shapes.</p>	<p>and perpendicular lines, angles – right, non-right and equal, number of sides). [2.1.1, 2.2.1, 2.3.1]</p> <ul style="list-style-type: none"> • Construct and draw plane shapes given a description of its properties and using appropriate resources including computer software. [2.1.1, 2.2.2, 2.3.1] • Solve problems involving solids and plane shapes. [2.1.2, 2.2.3, 2.3.1]
<p>Angles</p> <p>2.1.3 Explore angles in solids and plane shapes.</p>	<p>2.2.4 Recognize an angle as an amount of turn (whole turn, three quarter turn, half</p>	<p>2.3.2 Display curiosity through the exploration of angles.</p>	<p>3. Demonstrate an understanding of angles.</p>	<ul style="list-style-type: none"> • Explore and describe turns in the environment, such as the opening and closing of doors and the movement of hands of a clock.

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>turn, and quarter turn).</p> <p>2.2.5 Describe the right angle as a quarter turn.</p> <p>2.2.6 Investigate angles (right angle, angles greater than and smaller than right angles) in regular and irregular polygons and faces of solids.</p> <p>2.2.7 Draw shapes with angles of various sizes.</p>			<p>[2.1.3, 2.2.4, 2.3.2]</p> <ul style="list-style-type: none"> • Describe an amount of turn (e.g. whole turn, three quarter turn, half turn or quarter turn) using geo-strips to model the turns. [2.1.3, 2.2.4, 2.2.5, 2.3.2] • Describe an angle as a measure of turn and name the quarter turn as a right angle or the angle formed when perpendicular lines meet. [2.1.3, 2.2.5, 2.2.6, 2.3.2] • Identify angles on faces of solids or plane shapes that are right angles, greater than right angles or smaller than right angles. [2.1.3, 2.2.6, 2.3.2] • Draw shapes with angles of various sizes and describe the angles. [2.1.3, 2.2.7, 2.3.2]

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Triangles</p> <p>2.1.4 Explore the properties of triangles.</p>	<p>2.2.8 Classify triangles (same, similar or different) based on properties of sides and angles.</p> <p>2.2.9 Recognize and name types of triangles: scalene, right, isosceles, equilateral.</p>	<p>2.3.3 Display curiosity in the exploration of triangles.</p>	<p>4. Demonstrate an understanding of the different types of triangles based on properties of sides and angles.</p>	<ul style="list-style-type: none"> • Sort a given set of triangles into groups and explain the sorting rule. [2.1.4, 2.2.8, 2.3.3] • Match triangles that are the same, similar or different and explain reasoning. [2.1.4, 2.2.8, 2.3.3] • Classify triangles based on their properties of sides and angles. [2.1.4, 2.2.8, 2.3.3] • Identify and name triangles as scalene, right angled, isosceles and equilateral. [2.1.4, 2.2.9, 2.3.3] • Compare and describe the properties of the sides and angles of the scalene, right angled, isosceles and equilateral

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				triangles. [2.1.4, 2.2.9, 2.3.3]
<p>Language</p> <p>2.1.5 Develop appropriate vocabulary associated with geometry.</p>	<p>2.2.10 Use appropriate vocabulary associated with geometry, orally and in writing.</p>	<p>2.3.4 Communicate with confidence using language related to geometry.</p>	<p>5. Communicate effectively using vocabulary associated with geometry.</p>	<ul style="list-style-type: none"> Use appropriate language associated with geometry, such as: angle, turn, rotation, clockwise, anti-clockwise, point, right angle, parallel, perpendicular, scalene, isosceles, and equilateral. [2.1.5, 2.2.10, 2.3.4]
MEASUREMENT				
<p>Linear</p> <p>3.1.1 Understand that measures can be quantified using standard units and their</p>	<p>3.2.1. Identify the millimetre as a unit for measuring length.</p> <p>3.2.2. Measure lengths in millimetre.</p>	<p>3.3.1. Appreciate the functional role of measurement in their everyday lives.</p>	<p>1. Demonstrate an understanding of the relationship between standard units and their sub-parts to solve</p>	<ul style="list-style-type: none"> Recognise the need for a unit smaller than the centimetre (cm) to measure length. [3.1.1, 3.2.1, 3.3.1] Measure and record lengths of objects and lines using the millimetre. [3.1.1, 3.1.2, 3.2.1,

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
sub-parts. 3.1.2 Apply measurement techniques to quantify measures for length. 3.1.3 Solve problems involving linear measure.	3.2.3. Measure lengths using combinations of millimetres, centimetres and metres. 3.2.4. Convert linear measures expressed as mm, cm and m. 3.2.5. State the meaning of the prefixes used in measurement. 3.2.6. Draw plane shapes given the perimeter. 3.2.7. Solve problems involving linear		practical problems involving linear measure. 2. Demonstrate appropriate techniques when measuring. 3. Solve problems involving linear measure.	3.2.2, 3.3.1] <ul style="list-style-type: none"> • Measure and record lengths or distances using combinations of millimetres, centimetres and metres. [3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.3, 3.3.1] • Convert linear measure from one form to the other (millimetres, centimetres and metres). [3.1.1, 3.2.4, 3.3.1] • Recognise the significance of the prefixes (milli, centi, kilo) in units of measurement. [3.1.1, 3.2.5, 3.3.1] • Apply decimal knowledge to record measurements e.g. 123 cm = 1.23 m. [3.1.1, 3.2.4, 3.3.1] • Construct or draw two or more rectangles for a given perimeter

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	measure.			<p>in a problem-solving context. [3.1.3, 3.2.6, 3.3.1]</p> <ul style="list-style-type: none"> • Measure and record the perimeter of a given irregular shape, and explain the strategy used. [3.1.1, 3.1.3, 3.2.6, 3.2.7, 3.3.1] • Solve problems involving length. [3.1.1, 3.1.3, 3.2.7, 3.3.1]
<p>Mass/Weight</p> <p>3.1.4 Understand that measures can be quantified using units and sub-units for mass/weight.</p> <p>3.1.5 Understand</p>	<p>3.2.8. Identify the kilogram and gram as standard units for measuring mass/weight.</p> <p>3.2.9. Measure mass/weight in kilograms and</p>	<p>3.3.2. Show perseverance in solving problems related to measurement of mass/weight.</p>	<p>4. Demonstrate an understanding of the relationship between standard units and their sub-parts to solve problems involving</p>	<ul style="list-style-type: none"> • Recognise the need for a unit smaller than the kilogram (gram) to measure mass/weight. [3.1.4, 3.2.8] • Measure the mass/weight of familiar objects in grams. [3.1.4, 3.2.8, 3.2.9] • Measure and compare the

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>the relationship between units and their sub-parts.</p> <p>3.1.6 Solve problems involving mass/weight.</p>	<p>grams.</p> <p>3.2.10. Convert measures of mass/weight involving grams and kilograms.</p> <p>3.2.11. Solve computational and real-life problems involving grams and kilograms.</p>		<p>mass/weight.</p>	<p>masses/weights of objects in kilograms and grams using a set of scales. [3.1.4, 3.1.5, 3.2.8, 3.2.9, 3.3.2]</p> <ul style="list-style-type: none"> • Recognise that 1 000 grams equal one kilogram. [3.1.4, 3.1.5, 3.2.10] • Convert kilograms to grams and vice versa. [3.1.4, 3.1.5, 3.2.10, 3.3.2] • Solve problems involving different units of mass/weight e.g., Find the total mass/weight of three items weighing 50 g, 750 g and 2.5 kg. [3.1.6, 3.2.11, 3.3.2] • Solve computational and real-life problems involving mass/weight. [3.1.6, 3.2.10, 3.2.11, 3.3.2]

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Time</p> <p>3.1.7 Understand that time can be quantified.</p> <p>3.1.8 Solve problems in real-life situations involving time.</p> <p>3.1.9 Demonstrate an understanding of time schedules.</p>	<p>3.2.12. Tell time to the minute.</p> <p>3.2.13. Calculate the duration of events.</p> <p>3.2.14. Estimate and verify the duration of events in minutes (up to one hour), and determine reasonableness of answer.</p> <p>3.2.15. Convert hours to minutes and vice versa.</p>	<p>3.3.3. Be reflective when measuring.</p> <p>3.3.4. Demonstrate confidence in their abilities to estimate and measure time.</p>	<p>5. Accurately read and record time to the minute and solve practical problems involving time.</p> <p>6. Develop an understanding of time schedules.</p>	<ul style="list-style-type: none"> • Describe time as “minutes to” or “minutes after or past” the hour and tell time to the minute. [3.1.7, 3.2.12, 3.3.3, 3.3.4] • Match times shown on standard digital clocks, 24 hour digital clocks and analog clocks to the minute, and record time. [3.1.7, 3.2.12, 3.3.4] • Calculate the duration of events using starting and finishing times (elapsed time). [3.1.7, 3.2.13, 3.3.3, 3.3.4] • Estimate the duration of an event in minutes and up to one hour, verify by measuring, and determine the reasonableness of estimates. [3.1.7, 3.2.14, 3.3.3,

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	3.2.16. Solve computational and real-life problems involving hours and minutes. 3.2.17. Interpret time schedules.			3.3.4] <ul style="list-style-type: none"> • Convert minutes to hours and vice versa. [3.1.7, 3.2.15, 3.3.3, 3.3.4] • Solve computational and real-life problems involving hours and minutes. [3.1.8, 3.1.9, 3.2.16, 3.2.17, 3.3.3, 3.3.4] • Interpret simple time schedules (e.g. the calendar). [3.1.9, 3.2.17, 3.3.3, 3.3.4]
Capacity and Volume 3.1.10 Develop the concept of	3.2.18. Investigate the space occupied	3.3.5. Demonstrate confidence in their abilities	7. Demonstrate an understanding of the concept	<ul style="list-style-type: none"> • Explore the space occupied by boxes and other objects. [3.1.10, 3.2.18]

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>volume.</p> <p>3.1.11 Demonstrate familiarity with comparison of the volume of objects using appropriate vocabulary.</p> <p>3.1.12 Understand that volume can be quantified.</p> <p>3.1.13 Apply measurement techniques to quantify volume.</p> <p>3.1.14 Explore</p>	<p>by objects.</p> <p>3.2.19. Use comparison vocabulary to compare two objects in relation to volume.</p> <p>3.2.20. Measure volume using non-standard units.</p> <p>3.2.21. Investigate to determine the most appropriate solid for measuring volume.</p> <p>3.2.22. Measure, record, compare</p>	<p>to estimate and measure.</p>	<p>of volume.</p> <p>8. Understand that volume can be quantified.</p> <p>9. Understand conservation of volume.</p> <p>10. Understand that capacity and volume are related.</p> <p>11. Solve problems involving capacity and volume.</p>	<ul style="list-style-type: none"> • Compare the size of the space occupied by two objects visually and describe volume as the space occupied by objects. [3.1.11, 3.2.19, 3.3.5] • Measure the volume of boxes by filling with non-standard units of measure and counting the number of units used. [3.1.12, 3.2.20, 3.3.5] • Investigate to determine which solid is appropriate for measuring volume and explain reasons for selection (e.g. packs and stacks easily and leaves no space). [3.1.13, 3.2.21, 3.3.5] • Measure the volume of boxes by stacking and packing cubic blocks into them and counting to determine the volume. [3.1.12,

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>conservation of volume.</p> <p>3.1.15 Distinguish between standard and non-standard units of measure for volume.</p> <p>3.1.16 Understand that capacity and volume are related.</p> <p>3.1.17 Solve problems in real-life situations involving capacity and volume.</p>	<p>and order the volume of objects using non-standard units.</p> <p>3.2.23. Explore the conservation of volume.</p> <p>3.2.24. Explain the need for a standard unit of measure.</p> <p>3.2.25. Identify the cubic centimetre and cubic metre (cm^3 and m^3) as the standard units for measuring volume, and use</p>			<p>3.1.13, 3.2.22, 3.3.5]</p> <ul style="list-style-type: none"> • Compare and order boxes according to their volume. [3.1.13, 3.2.22, 3.3.5] • Construct cubes and cuboids of various sizes using cubic blocks and calculate their volume by counting the number of cubic blocks used. [3.1.13, 3.2.22, 3.3.5] • Construct different solids using the same number of cubic blocks and confirm that the volume remains the same by counting and explaining that solids with different appearances may have the same volume. [3.1.14, 3.2.23, 3.3.5] • Explain the need for a standard unit of measure. [3.1.15, 3.2.24,

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>the standard units to measure volume.</p> <p>3.2.26. Estimate the volume of objects and verify by counting so as to determine the reasonableness of estimate.</p> <p>3.2.27. Investigate the relationship between volume and capacity.</p> <p>3.2.28. State the relationship between the units for volume and</p>			<p>3.3.5]</p> <ul style="list-style-type: none"> • Measure and record volume using the standard units of measure – cubic metre (a cubic metre can be constructed as a fun activity and used to measure the volume of large spaces) and cubic centimetre. [3.1.13, 3.1.15, 3.2.25, 3.3.5] • Estimate and verify the volume of boxes in cubic centimetres, and determine reasonableness of answer. [3.1.13, 3.1.15, 3.2.26, 3.3.5] • Investigate the relationship between capacity and volume through filling plastic containers with cubic centimetre blocks and liquid and comparing the results, or via the displacement of liquid in a measuring cup by a cubic

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	capacity. 3.2.29. Solve problems involving volume and capacity.			centimetre block. [3.1.16, 3.2.27, 3.2.28, 3.3.5] <ul style="list-style-type: none"> • Explain that there is a corresponding relationship between the units that are used to measure capacity and units that are used to measure volume. (1ml=1cubic centimetre and 1000ml=1000 cubic centimetres=1 litre). [3.1.16, 3.2.28, 3.3.5] • Solve problems involving volume and capacity. [3.1.17, 3.2.29, 3.3.5]
Area 3.1.18 Apply measurement techniques to quantify	3.2.30. Calculate the area of compound	3.3.6. Develop confidence in their abilities to use concepts	12. Demonstrate an understanding of area of	<ul style="list-style-type: none"> • Calculate the areas of compound shapes that may be dissected into rectangles and squares. [3.1.18,

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
measures for area. 3.1.19 Solve problems involving area.	shapes. 3.2.31. Draw shapes on a grid given the area of the shapes. 3.2.32. Estimate and verify the area of a shape using square metres and centimetres, and determine the reasonableness of answer. 3.2.33. Solve problems involving area.	in area and to estimate and measure area.	regular and irregular plane shapes.	3.2.30, 3.3.6] • Draw different shapes of a given area on grids. [3.1.18, 3.2.31, 3.3.6] • Estimate and verify the area of shapes using square metres and centimetres, and determine reasonableness of answer. [3.1.18, 3.2.32, 3.3.6] • Solve problems involving area. [3.1.19, 3.2.33, 3.3.6]
Language 3.1.20 Develop	3.2.34. Use appropriate	3.3.7. Communicate	13. Communicate	• Use appropriate language

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
appropriate vocabulary associated with measurement.	vocabulary associated with measurement, orally and in writing.	with confidence using language related to measurement.	effectively using vocabulary associated with measurement.	associated with measurement, such as: millimetre (mm), volume, cubic centimetre (cm ³) and compound shape. [3.1.20, 3.2.34, 3.3.7]
STATISTICS				
<p>4.1.1. Develop skills in collecting, organizing, displaying, analyzing and communicating appropriate statistical data to solve problems.</p> <p>4.1.2. Demonstrate an understanding</p>	<p>4.2.1. Formulate questions that can be addressed by statistical data.</p> <p>4.2.2. Collect data based on the investigation of a problem/question using questionnaires, experiments, data bases and other sources.</p>	<p>4.3.1. Appreciate the role of statistics in solving problems.</p> <p>4.3.2. Display an objective approach in collecting and analyzing data sets to eliminate bias, and ensure that fair</p>	<p>1. Design survey(s) to solve problem(s) that involves the use of statistical data.</p> <p>2. Gather, classify, organize and display data using tables, tally charts and graphs (pictographs,</p>	<ul style="list-style-type: none"> • Formulate problem situations that can be addressed via statistical data. [4.1.1, 4.2.1, 4.3.1] • Collect data using surveys, questionnaires, experiments, data bases and other sources. [4.1.1, 4.2.2, 4.3.2, 4.3.3] • Create a table to organise collected data, e.g. using a computer program - Excel. [4.1.1, 4.2.3, 4.3.2] • Determine a suitable scale for

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
of mode.	<p>4.2.3. Classify, organize and represent data using, tally charts, frequency tables and graphs (pictographs, block graphs, bar graphs, using various scale factors).</p> <p>4.2.4. Interpret data from tables, charts and graphs.</p> <p>4.2.5. Apply findings from analysis of data to solve problems.</p> <p>4.2.6. Communicate findings and decisions made using appropriate</p>	<p>conclusions are drawn.</p> <p>4.3.3. Collaborate in teams to find solutions to problems.</p> <p>4.3.4. Appreciate the use of data in making informed choices.</p> <p>4.3.5. Demonstrate pride in displaying work.</p>	<p>block graphs and bar graphs) and interpret results.</p> <p>3. Describe methods and analyse results and make decisions.</p> <p>4. Communicate findings and decisions made using vocabulary associated with statistics.</p> <p>5. Demonstrate an understanding of mode.</p>	<p>data and record the scale in a key e.g. ☉ = 10 people. [4.1.1, 4.2.3, 4.3.2]</p> <ul style="list-style-type: none"> • Represent data using tally charts, frequency tables and graphs (pictographs, block graphs, bar graphs, using various scale factors) or using simple graphing software to enter data and create a graph. [4.1.1, 4.2.3, 4.3.2, 4.3.3] • Utilize the features of graphs to ensure that they are completed appropriately (e.g. name and label the horizontal and vertical axes). [4.1.1, 4.2.3, 4.3.2] • Interpret the findings displayed in the tables, charts and graphs. [4.1.1, 4.2.4, 4.3.2, 4.3.4] • Use analysed data to solve

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>vocabulary associated with statistics.</p> <p>4.2.7. Evaluate decisions made based on analysis of data represented in tables, charts and graphs.</p> <p>4.2.8. Compare different representations of the same data to get an understanding of the suitability of the different forms and for different audiences.</p>			<p>problems, draw conclusions and make decisions. [4.1.1, 4.2.5, 4.3.1, 4.3.2, 4.3.3, 4.3.4]</p> <ul style="list-style-type: none"> • Communicate findings and decisions by writing a report using language associated with statistics e.g. data and mode. [4.1.1, 4.2.6, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5] • Evaluate decisions made on analysis of data by groups of students via group presentations. [4.1.1, 4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.3.4] • Compare the effectiveness of different representations of the same data to determine suitability of forms and for different audiences. [4.1.1, 4.2.8, 4.3.2, 4.3.3, 4.3.4]

MATHEMATICS CONTENT STANDARDS: STANDARD 4

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	4.2.9. Determine the mode for a given data set.			<ul style="list-style-type: none">• Compare the effectiveness of different methods of collecting data. [4.1.1, 4.2.8, 4.3.2, 4.3.3, 4.3.4, 4.3.5]• Determine the mode for a given set of data and explain its importance in data analysis. [4.1.2, 4.2.9, 4.3.3, 4.3.4]

Primary School Curriculum

Mathematics

Standard 5

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
NUMBER (Include Std. 4)				
<p>Fractions</p> <p>1.1.1 Demonstrate an understanding of adding and subtracting fractions and mixed numbers, concretely, pictorially and symbolically.</p> <p>1.1.2 Demonstrate an understanding of multiplying a fraction by a whole number, multiplying fractions and</p>	<p>1.2.1 Develop and apply algorithms to add and subtract fractions and mixed numbers.</p> <p>1.2.2 Solve problems involving addition and subtraction of fractions including mixed numbers.</p> <p>1.2.3 Develop and apply algorithms to multiply</p> <ul style="list-style-type: none"> • a fraction by a whole number 	<p>1.3.1 Display interest while engaging in activities related to number concepts.</p> <p>1.3.2 Develop confidence in understanding and using mathematical procedures to solve problems.</p>	<p>1. Develop and apply procedures to add and subtract fractions and mixed numbers to solve problems.</p> <p>2. Develop and apply procedures to multiply a fraction by a whole number and multiply fractions and mixed numbers and to solve</p>	<p>ADDITION AND SUBTRACTION</p> <ul style="list-style-type: none"> • Model addition and subtraction of fractions and mixed numbers using concrete and pictorial representations, and record symbolically. [1.1.1, 1.2.1, 1.3.1] • Develop the algorithm for adding and subtracting fractions and mixed numbers with like or unlike denominators. [1.1.1, 1.2.1, 1.3.2] • Apply the algorithm to add and subtract fractions and mixed numbers to solve problems. [1.1.1, 1.2.1, 1.2.2, 1.3.2]

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>mixed numbers concretely, pictorially and symbolically.</p> <p>1.1.3 Demonstrate an understanding of dividing whole numbers by fractions, fractions by whole numbers and fractions concretely, pictorially and symbolically.</p>	<ul style="list-style-type: none"> • fraction by fraction • mixed numbers <p>1.2.4 Solve problems involving the multiplication of:</p> <ul style="list-style-type: none"> • a fraction by a whole number • fraction by fraction • mixed numbers <p>1.2.5 Develop and apply algorithms to divide</p> <ul style="list-style-type: none"> • a whole number by a fraction • a fraction by a whole number 		<p>problems.</p> <p>3. Develop and apply procedures to divide whole numbers by fractions, fractions by whole numbers and fractions to solve problems.</p>	<ul style="list-style-type: none"> • Explain the procedures for adding and subtracting fractions and mixed numbers. [1.1.1, 1.2.1, 1.2.2, 1.3.2] <p>MULTIPLICATION AND DIVISION</p> <ul style="list-style-type: none"> • Model the multiplication of a fraction by a whole number, a fraction by a fraction and a mixed number by a mixed number, concretely or pictorially (using, for example, an area model and/or repeated addition) and record the process. [1.1.2, 1.2.3, 1.3.1] • Explain through the use of words and diagrams the procedures involving multiplication using fractions and mixed numbers. [1.1.2,

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<ul style="list-style-type: none"> • a fraction by fraction. <p>1.2.6 Solve problems involving the division of:</p> <ul style="list-style-type: none"> • a whole number by a fraction • a fraction by a whole number • a fraction by a fraction. 			<p>1.2.3, 1.3.2]</p> <ul style="list-style-type: none"> • Generalize and apply rules (algorithms) for multiplication involving fractions and mixed numbers. [1.1.2, 1.2.3, 1.2.4, 1.3.2] • Model division of a whole number by a fraction, a proper fraction by a whole number or fraction, concretely or pictorially and record the process. [1.1.3, 1.2.5, 1.3.1] • Explain through the use of words and diagrams division involving fractions. [1.1.3, 1.2.5, 1.3.1] • Generalize and apply rules (algorithms) for division involving fractions. [1.1.3,

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>1.2.5, 1.2.6, 1.3.2]</p> <ul style="list-style-type: none"> • Determine the effects of multiplying or dividing by a fraction. [1.1.2, 1.1.3, 1.2.4, 1.2.6, 1.3.2] • Explain why division by a fraction is equivalent to multiplication by its reciprocal. [1.1.2, 1.1.3, 1.2.4, 1.2.6, 1.3.2] • Apply the algorithms for multiplication and division involving fractions to solve problems. [1.1.2, 1.1.3, 1.2.4, 1.2.6, 1.3.2]
<p>Decimals</p> <p>1.1.4 Demonstrate an understanding</p>	<p>1.2.7 Solve problems involving the multiplication</p>	<p>1.3.3 Develop confidence in understanding</p>	<p>4. Develop and apply the procedures to</p>	<ul style="list-style-type: none"> • Investigate multiplication of decimals by whole numbers and decimals by converting decimal

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>of multiplication and division involving decimals.</p>	<p>of:</p> <ul style="list-style-type: none"> • a decimal by a whole number • tenths by tenths. <p>1.2.8 Solve problems involving the division of:</p> <ul style="list-style-type: none"> • a decimal fraction up to 2 decimal places by a whole number. 	<p>and using mathematical procedures to solve decimal problems.</p>	<p>multiply decimals by whole numbers and decimals (limited to tenths by tenths) and to divide a decimal by a whole number (up to hundredths) to solve problems.</p>	<p>to base ten fractions before multiplying.</p> <p>E.g. $0.8 \times 6 = \frac{8}{10} \times 6 = \frac{48}{10} = 4.8$; $0.6 \times 0.4 = \frac{6}{10} \times \frac{4}{10} = \frac{24}{100} = 0.24$</p> <p>[1.1.4, 1.2.7, 1.3.3]</p> <ul style="list-style-type: none"> • Observe patterns before generalizing and applying rules (algorithms) for multiplication involving decimals. [1.1.4, 1.2.7, 1.3.3] • Investigate division of decimals (limited to hundredths) by whole numbers. [1.1.4, 1.2.8, 1.3.3] • Generalize and apply rule (algorithm) for dividing decimals by whole numbers. [1.1.4, 1.2.8, 1.3.3] • Recognise the number patterns formed when decimal numbers

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>are multiplied or divided by 10 or 100. [1.1.4, 1.2.7, 1.2.8, 1.3.3]</p> <ul style="list-style-type: none"> • Explain why keeping track of place value positions is important when applying the operations on decimal numbers. [1.1.4, 1.2.7, 1.2.8, 1.3.3] • Use a number of strategies to solve routine and non-routine problems involving decimals. [1.1.4, 1.2.7, 1.2.8, 1.3.3]
<p>Percent</p> <p>1.1.5 Develop an understanding of percent, concretely, pictorially and symbolically.</p>	<p>1.2.9 Develop an understanding of percent concretely, pictorially and symbolically.</p> <p>1.2.10 Calculate the</p>	<p>1.3.4 Appreciate the importance of mathematics in real-life situations.</p>	<p>5. Demonstrate an understanding of percent concretely, pictorially and symbolically.</p>	<ul style="list-style-type: none"> • Investigate area models divided into 100 equal parts concretely or pictorially to connect fractions to percents. [1.1.5, 1.2.9, 1.3.4] • Explain that “percent” means “out of 100” and that the symbol

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>1.1.6 Demonstrate an understanding of the relationships between fractions and percents.</p> <p>1.1.7 Apply understanding of fractions, decimals and percents to solve problems.</p>	<p>percent of a quantity.</p> <p>1.2.11 Express a quantity as a percentage of another.</p> <p>1.2.12 Relate percents to fractions (halves, quarters, fifths and tenths) and decimals.</p> <p>1.2.13 Compare and order fractions, percents and decimals.</p> <p>1.2.14 Solve problems involving fractions, decimals and</p>		<p>6. Demonstrate an understanding of the relationships between fractions and percents.</p> <p>7. Apply understanding of fractions, decimals and percents to solve problems.</p>	<p>% means ‘percent’. [1.1.5, 1.2.9, 1.3.4]</p> <ul style="list-style-type: none"> • Record the percent displayed in a given concrete or pictorial representation symbolically. [1.1.5, 1.2.9, 1.3.4] • Identify and describe percents from real-life situations, and record them symbolically. [1.1.5, 1.2.9, 1.3.4] • Calculate simple percents of quantities, e.g. 10% of \$200 = $\frac{1}{10}$ of \$200 = \$20. [1.1.5, 1.2.10, 1.3.4] • Express quantities as percentages of other quantities. [1.1.5, 1.2.11, 1.3.4] • Explain how a percent of an

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	percents.			<p>amount could be less/more than a percent of another amount. [1.1.5, 1.2.11, 1.3.4]</p> <ul style="list-style-type: none"> • Solve given problems involving percents. [1.1.7, 1.2.14, 1.3.4] • Relate percents (e.g. 50%, 25%, 20% and 10%) to fractions (e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$) and decimals (e.g. 0.5, 0.25, 0.2 and 0.1). [1.1.6, 1.2.12, 1.3.4] • Recall commonly used related percents, decimals and fractions e.g. 75%, 0.75 and $\frac{3}{4}$. [1.1.6, 1.2.12, 1.3.4] • Compare and order fractions, decimals and percents. [1.1.6, 1.2.13, 1.3.4] • Use mental strategies to convert

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				between percents and fractions to estimate discounts. [1.1.7, 1.2.12, 1.2.14, 1.3.4] <ul style="list-style-type: none"> • Interpret and explain the use of fractions, decimals and percents in everyday contexts e.g. $\frac{3}{4}$ hr. = 45 mins. in solving problems. [1.1.7, 1.2.14, 1.3.4]
Problem Solving 1.1.8 Create and solve single and multi-step problems involving the four operations. 1.1.9 Apply mental mathematics strategies to	1.2.15 Create and solve real-life, one-step and multi-step problems involving operations with whole numbers, fractions, mixed numbers, decimals,	1.3.5 Demonstrate appropriate judgment in selecting problem solving strategies. 1.3.6 Develop flexibility in using a variety of strategies to	8. Create and solve one-step and multi-step problems involving whole numbers, fractions, mixed numbers, decimal, percents including	<ul style="list-style-type: none"> • Create and solve real-life, one-step and multi-step problems involving whole numbers, fractions, mixed numbers, decimals, percents and money (including profit and loss, discount, savings, salaries, wages, loans, simple interest, VAT). [1.1.8, 1.2.15, 1.3.5, 1.3.7] • Select and use appropriate

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p style="text-align: center;">solve problems.</p> <p>1.1.10 Use patterns and other strategies to solve problems.</p>	<p>simple percents and money (including profit and loss, discount, savings, salaries, wages, loans, simple interest, VAT).</p> <p>1.2.16 Solve problems involving unequal sharing (not including the use of ratio).</p>	<p>1.3.7 Demonstrate independence and perseverance in solving problems.</p>	<p>money using algorithms, mental strategies and other problem solving strategies.</p> <p>9. Solve problems involving unequal sharing.</p>	<p>estimation strategies to check for reasonableness of answers and use calculators to check answers/solutions. [1.1.10, 1.2.15, 1.3.6]</p> <ul style="list-style-type: none"> • Select and use appropriate mental strategies to aid in finding solutions to problems. [1.1.9, 1.2.15, 1.3.5, 1.3.6] • Solve routine and non-routine problems using a variety of strategies such as: use a model, act it out, draw a picture, look for a pattern, guess and check, work backwards, logical reasoning, make a table or chart, make an organized list, and try a simpler form of the problem. [1.1.10, 1.2.15, 1.3.5, 1.3.6, 1.3.7] • Solve problems in mathematical

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>games. [1.1.10, 1.2.15, 1.3.7]</p> <ul style="list-style-type: none"> • Pose and solve problems involving unequal sharing e.g. “Garvin and Thomas shared 35 mangoes between themselves so that Garvin received 5 more than Thomas. Find each boy’s share”. [1.1.10, 1.2.16, 1.3.5, 1.3.6, 1.3.7]
<p>Language</p> <p>1.1.11 Develop appropriate vocabulary associated with number.</p>	<p>1.2.17 Use appropriate vocabulary associated with number, orally and in writing.</p>	<p>1.3.8 Communicate with confidence using language related to number.</p> <p>1.3.9 Demonstrate an appreciation for others by listening to their</p>	<p>10. Communicate effectively using vocabulary associated with number.</p>	<ul style="list-style-type: none"> • Use appropriate language associated with number, such as: percent (%), percentage, discount, savings, salaries, wages, loans, simple interest, tax, VAT, express, principal, rate and unequal sharing. [1.1.11, 1.2.17, 1.3.8, 1.3.9]

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
		point of view.		
GEOMETRY (Include Std. 4)				
<p>Solids and Plane Shapes</p> <p>2.1.1 Develop an understanding of the properties of solids and plane shapes.</p> <p>2.1.2 Develop spatial sense through exploration of solids and plane shapes.</p> <p>2.1.3 Explore angles in solids and plane shapes.</p> <p>2.1.4 Solve problems</p>	<p>2.2.1 Investigate the properties of solids by examining their cross-sections, base and height and angles.</p> <p>2.2.2 Identify types of quadrilaterals: rectangle, square, trapezium, parallelogram and rhombus.</p> <p>2.2.3 Classify and compare</p>	<p>2.3.1 Display curiosity while exploring solids and plane shapes.</p> <p>2.3.2 Develop perseverance when solving problems involving shape and space.</p>	<p>1. Describe solids in terms of their properties.</p> <p>2. Classify and determine the properties of quadrilaterals.</p> <p>3. Solve problems involving solids and plane shapes.</p>	<p>SOLIDS</p> <ul style="list-style-type: none"> • Identify and list the properties of solids. [2.1.1, 2.2.1, 2.3.1] • Investigate right angles and non-right angles in solids. [2.1.2, 2.1.3, 2.2.1, 2.3.1] • Make skeletal and plasticine models of solids. [2.1.2, 2.2.1, 2.3.1] • Explore and describe the cross-sections of solids, base and height. [2.1.1, 2.1.2, 2.2.1, 2.3.1]

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
involving solids and plane shapes.	quadrilaterals according to their attributes (angles, sides, perpendicular and parallel). 2.2.4 Solve problems involving solids and plane shapes.			<ul style="list-style-type: none"> • Recognise that some solids have a uniform cross-section and name them. [2.1.1, 2.1.2, 2.2.1, 2.3.1] • Solve problems involving solids. [2.1.4, 2.2.4, 2.3.2] <p>PLANE SHAPES: QUADRILATERALS</p> <ul style="list-style-type: none"> • Sort quadrilaterals (rectangles, squares, trapezoids, parallelograms, rhombuses) according to their attributes (e.g. angles, lengths of sides, parallel sides). [2.1.1, 2.1.3, 2.2.2, 2.2.3, 2.3.1] • Describe the properties of specific quadrilaterals. [2.1.1, 2.1.3, 2.2.2, 2.2.3, 2.3.1] • Name, explore and compare a wide variety of quadrilaterals in

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<p>terms of size and number of angles, type and number of sides e.g. trapezium. [2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.3.1]</p> <ul style="list-style-type: none"> • Sketch and label quadrilaterals from a given verbal description. [2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.2.2, 2.2.3, 2.2.4, 2.3.2] • Solve problems involving plane shapes. [2.1.4, 2.2.4, 2.3.2]
<p>Language</p> <p>2.1.5 Develop appropriate vocabulary associated with geometry.</p>	<p>2.2.5 Use appropriate vocabulary associated with geometry, orally and in writing.</p>	<p>2.3.3 Communicate with confidence using language related to geometry.</p>	<p>4. Communicate effectively using vocabulary associated with geometry.</p>	<ul style="list-style-type: none"> • Use appropriate language associated with geometry, such as: cross-section, height, trapezium, parallelogram and rhombus. [2.1.5, 2.2.5, 2.3.3]
MEASUREMENT (Include Std. 4)				

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>Linear: Perimeter</p> <p>3.1.1 Develop and apply formulae for measurement of perimeter.</p> <p>3.1.2 Solve problems in real life situations involving perimeter.</p>	<p>3.2.1. Develop and use formulae for finding the perimeter of squares and rectangles.</p> <p>3.2.2. Solve problems involving perimeter of compound shapes.</p>	<p>3.3.1. Appreciate the functional role of measurement in their everyday lives.</p> <p>3.3.2. Appreciate the importance of formulae for calculations in perimeter.</p>	<p>1. Develop and use proficiently the formulae to calculate perimeter of squares and rectangles in problem solving.</p>	<ul style="list-style-type: none"> • Determine the perimeter of rectangles and squares. [3.1.1, 3.2.1, 3.3.1] • Write and explain the formulae for finding the perimeter of any given rectangle and square. [3.1.1, 3.2.1, 3.3.1] • Calculate and compare perimeters of squares and rectangles. [3.1.2, 3.2.1, 3.3.2] • Find the perimeters of simple composite figures that may be dissected into rectangles and squares. [3.1.2, 3.2.2, 3.3.2] • Use estimation strategies to check for reasonableness of solutions to problems relating to

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				perimeter. [3.1.2, 3.2.2, 3.3.2] <ul style="list-style-type: none"> Solve problems in real-life contexts involving perimeter. [3.1.2, 3.2.1, 3.2.2, 3.3.2]
<p>Mass/Weight</p> <p>3.1.3 Use algebraic reasoning to solve problems in mass/weight.</p> <p>3.1.4 Solve problems involving mass/weight.</p>	<p>3.2.3. Apply algebraic reasoning to calculate unknown mass/weight on a balance.</p> <p>3.2.4. Solve problems involving mass/weight.</p>	<p>3.3.3. Show perseverance in solving problems related to algebraic reasoning.</p>	<p>2. Apply algebraic reasoning to calculate unknown values involving mass/weight.</p> <p>3. Solve problems involving mass/weight.</p>	<ul style="list-style-type: none"> Explore algebraic thinking by exploring balance tools (concretely, pictorially, including online resources) using shapes of unknown masses/weights. [3.1.3, 3.2.3, 3.3.3] Calculate unknown mass/weight on a balance. [3.1.3, 3.1.4, 3.2.3, 3.2.4, 3.3.3] Solve problems involving mass/weight. [3.1.4, 3.2.4,

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				3.3.3]
<p>Time</p> <p>3.1.5 Solve problems in real-life contexts involving time.</p>	<p>3.2.5. Solve problems involving time and other related concepts (using proportional reasoning).</p>	<p>3.3.4. Display perseverance in solving problems related to time.</p>	<p>4. Solve problems involving time.</p>	<ul style="list-style-type: none"> • Use a number of mental and written strategies to solve familiar and unfamiliar problems involving time. [3.1.5, 3.2.5, 3.3.4] • Use proportional reasoning to solve problems involving time and other related concepts. [3.1.5, 3.2.5, 3.3.4]
<p>Capacity and Volume</p> <p>3.1.6 Develop and apply the formula for measurement</p>	<p>3.2.6. Develop and apply the formula for determining the</p>	<p>3.3.5. Demonstrate confidence in ones abilities</p>	<p>5. Develop and use proficiently the formula to calculate</p>	<ul style="list-style-type: none"> • Explain, using models, how the volume of cubes and cuboids can be determined. [3.1.6, 3.2.6,

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
<p>of volume.</p> <p>3.1.7 Solve problems in real-life contexts involving volume and capacity.</p>	<p>volume of cubes and cuboids.</p> <p>3.2.7. Solve real-life problems involving volume and capacity.</p>	<p>to measure.</p> <p>3.3.6. Appreciate the importance of formulae for calculations.</p>	<p>volume of cubes and cuboids in problem solving.</p> <p>6. Solve problems involving volume and capacity.</p>	<p>3.3.5]</p> <ul style="list-style-type: none"> • Generalize a rule (formula) for determining the volume of cubes and cuboids by considering the number of cubes used in each layer and the number of layers. [3.1.6, 3.2.6, 3.3.5] • Investigate to find the relationship between the length, breadth, height and volume of cubes and cuboids. [3.1.6, 3.2.6, 3.3.5] • Calculate the volume of cubes and cuboids. [3.1.7, 3.2.7, 3.3.6] • Recognise that solids with different appearances may have the same volume. [3.1.6, 3.2.6, 3.3.5]

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> Solve problems involving volume and capacity. [3.1.7, 3.2.7, 3.3.6]
<p>Area</p> <p>3.1.8 Develop and apply formula for measurement of area.</p> <p>3.1.9 Solve problems in real-life situations involving area.</p>	<p>3.2.8. Develop and use formula to calculate the area of squares and rectangles.</p> <p>3.2.9. Solve problems involving area of compound shapes.</p>	<p>3.3.7. Appreciate the importance of formula for calculations involving area.</p> <p>3.3.8. Display confidence when working independently in solving problems.</p>	<p>7. Develop and use proficiently formula to calculate area in problem solving.</p>	<ul style="list-style-type: none"> Generalize a rule (formula) for determining the area of squares and rectangles. [3.1.8, 3.2.8, 3.3.7] Write and explain the formula for finding the area of squares and rectangles. [3.1.8, 3.2.8, 3.3.7] Apply formula to find the areas of simple composite figures that may be dissected into rectangles and squares. [3.1.8, 3.1.9, 3.2.8, 3.2.9, 3.3.7, 3.3.8]

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
				<ul style="list-style-type: none"> • Use estimation strategies to check for reasonableness of solutions to problems relating to area. [3.1.9, 3.2.8, 3.2.9, 3.3.8] • Solve problems in real-life contexts involving area. [3.1.9, 3.2.8, 3.2.9, 3.3.7, 3.3.8] • Solve problems involving perimeter and area. [3.1.9, 3.2.9, 3.3.8]
<p>Language</p> <p>3.1.10 Develop appropriate vocabulary associated with measurement.</p>	<p>3.2.10. Use appropriate vocabulary associated with measurement, orally and in writing.</p>	<p>3.3.9. Communicate with confidence using language related to measurement.</p>	<p>8. Communicate effectively using vocabulary associated with measurement.</p>	<ul style="list-style-type: none"> • Use appropriate language associated with measurement, such as: cubic metre (m^3), formula. [3.1.10, 3.2.10, 3.3.9]

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
STATISTICS (Include Std. 4)				
<p>4.1.1. Develop skills in collecting, organizing, displaying, analyzing and communicating appropriate statistical data to solve problems.</p> <p>4.1.2. Demonstrate an understanding of mode and mean.</p>	<p>4.2.1. Formulate questions that can be addressed by statistical data.</p> <p>4.2.2. Collect data based on the investigation of a problem or question using questionnaires, experiments, data bases and other sources.</p> <p>4.2.3. Classify, organize and represent data using tally charts, frequency tables and graphs</p>	<p>4.3.1. Appreciate the role of statistics in solving problems.</p> <p>4.3.2. Display an objective approach in collecting and analyzing data sets to eliminate bias and ensure that fair conclusions are drawn.</p> <p>4.3.3. Collaborate in teams to find solutions to</p>	<p>1. Design survey(s) to solve problem(s) that involves the use of statistical data.</p> <p>2. Gather, classify, organize and display using tables, tally charts and graphs (pictographs, block graphs and bar graphs) and interpret results.</p> <p>3. Describe methods,</p>	<ul style="list-style-type: none"> • Formulate problem situations that can be addressed via statistical data. [4.1.1, 4.2.1, 4.3.1, 4.3.3] • Collect data using surveys, questionnaires, experiments, data bases and other sources. [4.1.1, 4.2.2, 4.3.1, 4.3.2, 4.3.3] • Create a table to organise collected data, e.g. using a computer program - Excel. [4.1.1, 4.2.3, 4.3.1, 4.3.3] • Determine a suitable scale for data and record the scale in a key e.g. ☺ = 10 people. [4.1.1, 4.2.3, 4.3.1, 4.3.3] • Represent data using tally charts, frequency tables and

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>(pictographs, block graphs, bar graphs, using various scale factors).</p> <p>4.2.4. Interpret data from tables, charts and graphs.</p> <p>4.2.5. Apply findings from analysis of data to solve problems.</p> <p>4.2.6. Write report on findings and decisions made using appropriate vocabulary associated with statistics.</p>	<p>problems.</p> <p>4.3.4. Appreciate the use of data in making informed choices.</p> <p>4.3.5. Demonstrate pride in displaying work.</p> <p>4.3.6. Demonstrate collaboration when writing group reports.</p>	<p>analyse results and make decisions.</p> <p>4. Communicate findings and recommendations using vocabulary associated with statistics.</p> <p>5. Demonstrate an understanding of mode and mean.</p>	<p>graphs (pictographs, block graphs, bar graphs, using various scale factors) or using simple graphing software to enter data and create a graph. [4.1.1, 4.2.3, 4.3.1, 4.3.3]</p> <ul style="list-style-type: none"> • Utilize the features of graphs to ensure that they are completed appropriately (e.g. name and label the horizontal and vertical axes). [4.1.1, 4.2.3, 4.3.1, 4.3.3] • Interpret the findings displayed in the tables, charts and graphs. [4.1.1, 4.2.4, 4.3.1, 4.3.2, 4.3.3] • Use analysed data to solve problems, draw conclusions and make decisions. [4.1.1, 4.2.5, 4.3.2, 4.3.4] • Communicate findings and decisions by writing a report

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	<p>4.2.7. Evaluate decisions made based on analysis of data represented in tables, charts and graphs.</p> <p>4.2.8. Compare different representations of the same data to get an understanding of the suitability of forms and for different audiences.</p> <p>4.2.9. Determine the mode for a given data set.</p> <p>4.2.10. Develop the</p>			<p>using language associated with statistics. [4.1.1, 4.2.6, 4.3.5, 4.3.6]</p> <ul style="list-style-type: none"> • Evaluate decisions made on analysis of data by groups of students via group presentations. [4.1.1, 4.2.7, 4.3.3, 4.3.5] • Compare the effectiveness of different representations of the same data to determine suitability of forms and for different audiences. [4.1.1, 4.2.8, 4.3.2, 4.3.4] • Compare the effectiveness of different methods of collecting data. [4.1.1, 4.2.8, 4.3.3] • Determine the mode for a given set of data. [4.1.2, 4.2.9, 4.3.1,

MATHEMATICS CONTENT STANDARDS: STANDARD 5

CONTENT	SKILLS	DISPOSITIONS	OUTCOMES	ELABORATIONS
Students will:				
	concept of mean/average. 4.2.11. Solve problems involving mean/average.			4.3.4] <ul style="list-style-type: none"> • Explore the concept of mean using various activities related to equal sharing or distribution. [4.1.2, 4.2.10, 4.3.1, 4.3.4] • Determine and use the rule for calculating the mean of a given set of data. [4.1.2, 4.2.10, 4.3.1, 4.3.4] • Explain the term 'mean/average'. [4.1.2, 4.2.10, 4.3.1, 4.3.4] • Solve problems involving mean/average. [4.1.2, 4.2.11, 4.3.1, 4.3.4]