Mathematics Planning Cycle Two

Year 1 – Group 5		Year 2 – Group 6	
TERM 1		**TERM 1**	
Number and Numeration	**Target Behaviours**	**Number and Numeration**	**Target Behaviours**
• Count large collections by grouping. (*e.g. tens, hundreds, fives*)	1.1(6)	• Read and write whole numbers to at least 10,000 in figures and words, and know what each digit represents and partition numbers into thousands, hundreds, tens and ones.	1.1(3)
• Read and write whole numbers to at least 1000 in figures and words.	1.1(2)		
• Know what each digit represents, and partition three digit numbers into a multiple of a hundred, a multiple of ten and ones. (H.T.O.)	1.3(2)	• Read and write the vocabulary of estimation and approximation. Make and justify estimates up to about 250, and estimate a proportion.	1.4(1)
• Order whole numbers to at least 100, and position them on a number line.	1.1	• Round any positive integer less than 1000 to the nearest 10 or 100.	1.4(2)
• Use and **begin** to write the vocabulary of estimation and approximation and give a sensible estimate of up to about 100 objects.	1.4(1)	• Read and write the vocabulary of comparing and ordering numbers. Use the symbols correctly, including less than (<), greater than (>), equals (=) and give a number lying between two given numbers and order a set of numbers.	1.1(3)
Using and Applying Mathematics			
• Choose and use appropriate operations to solve word problems.	1.5(9)	• Add/ subtract 1, 10, 100 or 1000 to/from any integer and count on or back in tens, hundreds or thousands from any whole number up to 10,000.	2.1(7), 1.1(6)
• Solve mathematical problems or puzzles, recognize simple patterns and relationships, generalize and predict. Suggest extensions by asking 'What if…?'	1.5, 1.5(16)	• Multiply or divide any integer up to 1000 by 10 (*whole number answers*), and understand the effect.	2.3(2)
• Solve word problems involving numbers in 'real life', money and measures, using one or more steps, including finding totals and giving change	1.5(1), (5), (6), (8)	*Using and Applying Mathematics*	1.5(9)

and working out which coins to pay. Explain how the problem is solved. • Solve a given problem by organizing and interpreting numerical data in pictograms (symbol representing two units); bar charts (intervals labelled in ones then twos).	1.5(10)	• Choose and use appropriate number operations and appropriate ways of calculating (*mental, mental with jottings, pencil and paper*) to solve problems.	

Calculation
• Extend understanding of the operations of addition and subtraction. Read and begin to write the related vocabulary, and continue to recognize that addition can be done in any order. Use the +, -, and = signs.
• Know by heart all addition and subtraction facts for each number to 20.
Mental Calculation Strategies *(Review from Cycle 1)*
• Use knowledge that addition can be done in any order to do mental calculations more efficiently. e.g.
  • Put the larger number first and count on;
  • Add 3 or 4 small numbers by putting the largest number first and/or by finding pairs totaling 9, 10, or 11;
  • Partition into '5 and a bit' when adding 6, 7, 8 or 9 (e.g. 47 + 8 = 45 + 2 + 5 + 3 = 50 + 5 = 55;
  • Partition into tens and ones, then recombine (e.g. 34 + 53 = 30 + 50 + 4 + 3)
• Add 2 or more of the same single-digit number mentally and relate to multiplication facts.
	2.1
	
	2.1(1)
	
	2.1(1)
	
	2.3(4)
		Calculation
		• Consolidate understanding of the relationship between + and -, Understand the principles (*not the names*) of the commutative and associative laws as they apply or do not apply to addition and subtraction.
		Mental Rapid Recall
		• Addition and subtraction facts for all numbers to 20
		• All number pairs that total 100
		  ○ (e.g. 62 + 38, 75 + 25, 40 + 60)
		• All pairs of multiples of 50 with a total of 1000
		  ○ (e.g. 850 + 150)
		Mental Calculation Strategies
		• Find a small difference by counting up (e.g. 5003 – 4996)
		• Count on or back in repeated steps of 1, 10 or 100.
		• Partition into tens and ones, adding the tens first.
		• Identify near doubles, using known doubles (e.g. 150 + 160)
		• Add or subtract the nearest multiple of 10, then adjust
			Review Yr. 1
			
			2.1(1)
			
			2.1(3)
			
			2.1(2)
			
			2.1

• Extend understanding that multiplication can be done in any order.(*Review of Grade 2*) • Understand division as grouping (*repeated subtraction*) or sharing, read and begin to write the related vocabulary. • Recognize that division is the inverse of multiplication and that finding half is the inverse of doubling. • Know by heart multiplication facts for 2, 5 and 10 times-tables. Begin to know the 3 and 4 times-table. (*Review Grade 2*) • Derive quickly division facts corresponding to the 2, 5 and 10 times-tables. ***Mental Calculation Strategies*** • To multiply by 10, shift the digits one place to the left. • Use doubling or halving, starting from known facts. (e.g. 8 x 4 is double 4 x 4) • Check subtraction with addition, finding half with doubling and division with multiplication.	2.3(11) 2.3(10) 2.3(1) 2.3(8)	• Continue to use the relationship between addition and subtraction • Add 3 or 4 small numbers, finding pairs totalling 10, or 9 or 11. Add three two-digit multiples of 10, such as 40 + 70 + 50. • Use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers. ***Pencil and Paper Procedures*** • Use informal pencil and paper methods to support, record or explain additions/subtractions • Develop and refine written methods for column addition and subtraction of two whole numbers less than 1,000, and addition of more than two such numbers include money calculations e.g. $7.85 +/- $3.49.	2.1(7) 2.2(1) – (3) 2.1(7)
Rational Numbers		**Rational Numbers**	
• Use halves and quarters, relating the concept of half and quarter of a small quantity to the concept of half/quarter of a shape • Recognize simple fractions that are several parts of a whole such as ¾, $^2/_3$ or $^3/_{10}$.	3.1 3.1(2)	• Understand decimal notation and place value for tenths and hundredths, and use it in context, e.g. order amounts of money; converting a sum of money such as fls.13.25 to cents, or a length such as 125cm to metres, or round a sum of money to the nearest guilder/dollar. • Recognize the equivalence between a decimal and unit fraction forms of one half and one quarter, and tenths such as 0.3.	3.1 4.2(1) 3.2(1)

Measurement			
• Read and begin to write the vocabulary related to length. • Measure and compare using standard units (*km, m, and cm*), including using a ruler to draw and measure to the nearest half centimetre. • Know the relationship between kilometre and metres and metres and centimetres • Suggest suitable units and measuring equipment to estimate or measure length. • Read scales to the nearest division. • Read and begin to write the vocabulary related to time. • Use units of time and know the relationship between them (*second, minute, hour, day, week, month, year*). Suggest suitable units to estimate or measure time. • Read the time to 5 minute intervals on an analogue clock. • Use a calendar.	Review Cycle 1 4.6(3) 4.6(3) 4.6(3) 4.4(5) Review Cycle 1 4.1(6) 4.1(1) 4.1(7)		
Geometry			
Spatial Sense • Recognize and use the four compass directions N, S, E, W. • Read and begin to write the vocabulary related to position, direction and movement.	5.2(4) Review Cycle 1		

Year 1 – Group 5		Year 2 – Group 6	
TERM 2 (*Consolidate Term One work)*		**TERM 2** (*Consolidate Term One work)*	
Number and Numeration	**Target Behaviours**	**Number and Numeration**	**Target Behaviours**
• Describe and extend number sequences: count on or back in tens or hundreds, starting from any two- or three-digit number. • Count on or back in twos starting from any two-digit number and recognize odd or even numbers to at least 1000. • Recognize the two-digit and three-digit multiples of 2, 5 or 10, and three-digit multiples of 50 and 100. • Read and begin to write the vocabulary of comparing and ordering numbers, including ordinal numbers to at least 100. • Compare two given three-digit numbers, say which is more or less, and give a number which lies between them. • Round any two-digit number to the nearest 10 and any three-digit number to the nearest 100. ***Using and Applying Mathematics***	1.1(6) 1.2(1) 2.3(5) (extend from Cycle 1) 1.1(2) 1.4(2)	• Recognize and extend number sequences formed by counting from any number in steps of constant size, e.g. count on in steps of 25 to 500 and then back. • Recognize odd and even numbers up to 1,000 and some of their properties, including the outcome of sums or differences of pairs of odd and even numbers. • Recognize multiples of 2, 3, 4, 5 and 10 up to the tenth. ***Using and Applying Mathematics*** • Solve a problem by collecting quickly, organizing, representing and interpreting data in tables, charts, graphs and diagrams, including those generated by a computer: (*e.g. tally charts and frequency tables; pictograms – symbol representing 2, 5, 10 or 20 units; bar charts – intervals labelled in 2s, 5s, 10s or 20s; Venn and Carroll diagrams* (*two criteria*).	1.1(6) 1.2(1) 2.3(5) 1.5(15)

• Choose appropriate ways of calculating: mental, mental with jottings or pencil and paper. • Investigate a general statement about familiar numbers or shapes by finding examples to satisfy it. (*E.g. The sum of 2 even numbers is always a multiple of 4.*) • Recognize all coins and notes used in St. Martin. Understand and use Nafls., c, $, and know the Nafls3, 06 is 3 guilders and 6 cents and that $3.06 is 3 dollars and 6 cents. • Solve a given problem by organizing and interpreting numerical data in Venn and Carroll diagrams (*one criterion*) and frequency tables	1.5(9) 1.5(16) 4.2(1), 4.2(2) 1.5(15)		
Calculation		**Calculation**	
• Extend understanding that more than two numbers can be added; add three or four-single digit numbers mentally, or three or four two-digit numbers with the help of apparatus • Know by heart all multiples of 100 with a total of 1000 (e.g.300 + 700) ***Mental Calculation Strategies*** • Find a small difference by counting up from the smaller to the larger number (*e.g. 102 – 97*) • Identify near doubles, using doubles already known (*e.g. 80 +81*) • Add and subtract mentally a 'near multiple of 10' to or from a two-digit number… by adding or subtracting 10, 20, 30… and adjusting. • Begin to find remainders after simple division.	2.1 2.1(2)	• Extend understanding of the operation of x and ÷, and their relationship to each other and to + and -. Understand the principles (*not the names*) of the commutative, associative and distributive laws as they apply to multiplication. • Find remainders after division. Divide a whole number of guilders/dollars by 2, 4, 5, or 10 to give fls.cents/$.c. • Round up or down after division, depending on context. ***Mental Rapid Recall*** • Know by heart multiplication facts for 2, 3, 4, 5 and 10 times-table. • Begin to know multiplication facts for 6, 7, 8 and 9 times-table.	2.3(10) 2.3(8) 1.4(2) 2.3(1) 2.3(5)

• Derive quickly doubles of all whole numbers to at least 20 (*e.g. 17 + 17 or 17 x 2*) • Say or write a division statement corresponding to a given multiplication statement. • Check repeat addition or multiplication in a different order.		• Derive quickly; division facts corresponding to 2, 3, 4, 5 and 10 times table; doubles of all whole numbers to 50 (*e.g. 38 + 38 or 38 x 2*); doubles of multiples of 10 to 500 (*e.g. 460 x 2*); doubles of multiples of 100 to 5000 (*e.g. 3400 x 2*) and the corresponding halves (e.g. *74 + 2, ½ of 420, half of 3800*) ***Mental Calculation Strategies*** • Use doubling or halving, starting from known facts. e.g. double/half two-digit numbers by doubling/ halving the tens first ○ to multiply by 4, double, then double again ○ to multiply by 5, multiply by 10 then halve; ○ to multiply by 20, multiply by 10 then double; ○ find the 8 times-table facts by doubling the 4 times-table; ○ find quarters by halving halves. • Use closely related facts (*e.g. to multiply by 9 or 11, multiply by 10 and adjust; develop the x6 table from the x4 and x2 tables*) • Partition (*e.g. 23 x 4 = (20 x 4) + (3 x 4)* • Use the relationship between multiplication and division • Use known number facts and place value to multiply and divide integers by 10 and then by 100 (*whole-number answers*) ***Pencil and paper procedures***	2.3(4) 2.3(10) 2.3(7) 2.4

		• Approximate first. Use informal pencil and paper methods to support, record or explain multiplication and division. • Develop and refine written methods for TO x O, TO – O.	
Rational Numbers		**Rational Numbers**	
• Use diagrams to compare simple equivalent fractions: (*e.g. five tenths and one half, five fifths and one whole.*) • Compare familiar fractions: for example know that on the number line one half lies between one quarter and three quarters. • Estimate a simple fraction. • Add/subtract fractions with like denominators	3.1(4) 3.1(5), 3.1(6) 3.1(3) 3.1(12)	• Use fraction notation. Recognize simple fractions that are several parts of a whole, such as $^{2}/_{3}$ or $^{5}/_{8}$, and mixed numbers such as 5 ¾; recognize equivalence of simple fractions (*e.g. fractions equivalent to ½, ¼, or ¾*). Identify two simple fractions with a total of 1(*e.g. $^{3}/_{10}$ and $^{7}/_{10}$*) • Order simple fractions; decide whether fractions such as $^{3}/_{8}$ or $^{7}/_{10}$ are greater or less than one half. • Begin to relate fractions to division to division and find simple fractions such as ½, $^{1}/_{3}$, ¼, $^{1}/_{5}$, $^{1}/_{10}$… of numbers and quantities. Find fractions such as $^{2}/_{3}$, ¾, $^{3}/_{5}$. $^{1}/_{10}$… of shapes.	3.1(2), 3.1(5), 3.1(7) 3.1(10) 3.1(11)
Measurement			
• Read and begin to use the vocabulary related to mass. • Measure and compare standard units (kg, g). • Know the relationship between kilograms and grams. • Suggest suitable units and measuring equipment to estimate and measure mass. • Read scales to the nearest division (*labeled or unlabeled*); record estimates and measurements to the to the nearest whole or half unit (*e.g.*	(Review Cycle 1) 4.5(1) 4.5(2) (Review &b extend Cycle 1) 4.5(4)		

'about 3.5kg') or in mixed units (e.g. *'3kg and 100g')*			
Geometry			
• Classify and describe 3-D and 2-D shapes including the hemisphere, prism, semi-circle, quadrilateral… referring to properties such as reflective symmetry (2-D), the number of faces, the number of sides/edges and vertices, whether sides are the same length, whether or not angles are right angles. • Identify and sketch lines of symmetry in simple shapes and recognize shapes with no lines of symmetry. • Make and describe shapes and patterns: for example, explore the different shapes that can be made from four cubes. Relate solid shapes to pictures of them. • Identify right angles in 2-D shapes and the environment. ***Spatial Sense*** • Sketch the reflection of a simple shape in a mirror line along one edge. • Make and describe right-angled turns, including turns between the four compass points.	5.1, 5.2(2) 5.2(2) 5.1(17) 5.1(5) 5.2(2) (Review Cycle 1)		

Year 1 – Group 5		Year 2 – Group 6	
TERM 3 (*Consolidate Term Two work)*		**TERM 3** (*Consolidate Term Two work)*	
Number and Numeration	**Target Behaviours**	**Number and Numeration**	**Target Behaviours**
Using and Applying Mathematics		• Recognize and extend number sequences, such as the sequence of square numbers, or the sequence of triangular numbers 1, 3, 6, 10, 15…	1.2(1)
• Use all four operations to solve simple word problems involving numbers and quantities based on 'real life', money and measures (including time), using one or more steps, including making simple conversions of guilders to dollars / francs and finding simple percentages.	1.5(1)-(8)	• Count on in steps of 0.1, 0.2, 0.25, 0.5…, and then back.	1.5(16)
		• Make general statements about odd or even numbers, including the outcomes of products.	2.3(1), 2.3(9)
• Explain methods and reasoning.	1.5(14)	• Recognize multiples up to 10 x 10. Know and apply simple tests of divisibility. Find simple common multiples.	2.3(6)
• Discuss the likelihood of particular events.	4.9(1)		
• Solve a problem by representing and interpreting data in tables, charts, graphs and	1.5(15) 4.8(13)		

diagrams, including those generated by a computer, e.g.: - • Bar line charts • Vertical axis labelled in 2s, 5s, 10s, 20s or 100s, first where intermediate points have no meaning (e.g. scores on a dice rolled 50 times) then when they may have meaning (e.g. room temperature over time) • Find the mode of a set of data	4.8(14)	• Recognize squares of numbers to at least 12 x 12. • Recognize prime numbers to at least 20 • Factorize numbers to 100 into prime numbers. ***Using and Applying Mathematics*** • Use the language associated with probability to discuss events, including those with equally likely outcomes.	2.4(6) 4.9(1)
		Calculation	
		Paper and Pencil • Short division of numbers involving decimals. ***Checking Results*** • Use knowledge of sums, differences, products of odd/even numbers. • Use tests of divisibility	2.4(5) 2.3(9)
Rational Numbers		**Rational Numbers**	
• Begin to understand percentage as the number of parts in every 100, and find simple percentages of small whole-number quantities (*e.g. 25% of fls8*) • Express one half, one quarter, three quarters, and tenths and hundredths as percentages (*e.g. know that ¾ = 75%*)	3.3(6) 3.3(7)	• Understand percentages as the number of parts in every 100. Express simple fractions such as one half, one quarter, three quarters, one third, two thirds…, and tenths and hundredths, as percentages (*e.g. know that $^1/_3$ = 33 $^1/_3$%*). • Find simple percentages of small whole-number quantities (*e.g. find 10% of $500, then 20%, 40% and 80% by doubling*).	3.3(7), 3.3(8)
Measurement		**Measurement**	

• Record estimates and readings from scales to a suitable degree of accuracy. • Understand and use angle measure in degrees. • Use a protractor to measure and draw acute and obtuse angles to the nearest 5°.	4.4(5) 4.6(13) 4.6(14)	• Calculate the perimetre and area of simple compound shapes that can be split into rectangles.	4.6(7), 4.6(9),4.6(10)
Geometry		**Geometry**	
• Classify triangles (isosceles, equilateral, scalene), using criteria such as equal sides, equal angles, lines of symmetry. • Make shapes with increasing accuracy • Visualize 3-D shapes from 2-D drawings and identify different nets for an open cube. • Recognize perpendicular and parallel lines. • Identify, estimate and order acute and obtuse angles. • Calculate angles in a straight line. ***Spatial Sense*** • Recognize reflective symmetry in regular polygons; i.e. know that a square has four axes of symmetry and an equilateral triangle has three. • Complete symmetrical patterns with two lines of symmetry at right angles (using squared paper or pegboard) • Recognize where a shape will be after reflection in a mirror line parallel to one side (sides not all parallel or perpendicular to the mirror line	5.1(15) 5.1(17) 5.1(2) 5.1(5) 4.6(13), (14) 5.2(2) 5.2(2) 5.2(3)	***Spatial Sense*** • Read and plot coordinates in all four quadrants.	5.2(5)

• Recognize where a shape will be after translation. • Recognize positions and directions; read and plot co-ordinates in the first quadrant.	5.2(4), (5)		

Year 3 – Group 7		Year 1 – Group 8	
TERM 1		**TERM 1**	
Number and Numeration	**Target Behaviours**	**Number and Numeration**	**Target Behaviours**
• Place and write whole numbers in figures and words, and know what each digit represents. • Use the vocabulary of comparing and ordering numbers including symbols such as <, >, =.Give one or more numbers lying between two given	1.1(4)	• Use the vocabulary of estimation and approximation. • Consolidate rounding an integer to the nearest 10, 100 or 1000.	1.4(1) 1.4(2) 1.2(2)

numbers. Order a set of integers less than one million. • Use the vocabulary of estimation and approximation. Make and justify estimates of large numbers, and estimate simple proportions such as one third, seven tenths. • Round any integer up to 1,000 or 10,000 • Order a given set of positive integers • Recognize and extend number sequences formed by extending beyond zero when counting back. E.g. count on in steps of 25 to 1,000 and then back; count on or back in steps of 0.1, 0.2, 0.3…. • Make general statements about odd or even numbers, including the outcomes of sums and differences. *Using and Applying Mathematics* • Choose and use appropriate number operations to solve problems, and appropriate ways of calculating: mental, mental with jottings, written methods, and calculator.	1.4(1) 1.4(2) 1.1(5) 1.2(1) 1.2(2) 1.5(9)	• Find the difference between a positive and a negative integer, or two negative integers, in a context such as temperature or the number line, and order a set of positive and negative integers.	
Calculation		**Calculation**	

Mental Rapid Recall
• Derive quickly or continue to derive quickly: -
  • decimals that total 1 (e.g. 0.2 + 0.8) or 10 (6.2 + 3.8)
  • all two-digit pairs that total 100 (e.g. 43 + 57)
	2.1	*Mental Calculation Strategies (+ & -)*
		• Consolidate all strategies from the previous year, including: -
		  • Find a difference by counting up;
		  • Add or subtract the nearest multiple of 10, 100 or 1000, then adjust;
			2.1

• all pairs of multiples 50 with a total of 1000 (e.g. 350 + 650) *Mental Calculation Strategies* • Find differences by counting up through the next multiple of 10, 100 or 1000. E.g. calculate mentally a difference such as 8006 – 2993. • Partition into H, T and O, adding the most significant digits first. • Identify near doubles, such as 1.5 + 1.6. • Add or subtract the nearest multiple of 10 or 100, then adjust. • Develop further the relationship between addition and subtraction. • Add several numbers (e.g. four or five single digits, or multiples of 10 such as 40 + 50 + 80) • Use known number facts and place value for mental addition and subtraction (e.g. 470 + 380, 810 –380, 7.4 + 9.8, 9.2 - 8.6) *Paper and Pencil* • Use informal paper and pencil methods to support, record or explain additions and subtractions. • Extend written methods to column addition and subtraction of : - • two integers less than 10, 000 • addition of more than two integers less than 10, 000 *Checking Results* • Check with the inverse operation when using a calculator	2.1(7) 2.2	• Use the relationship between addition and subtraction; • Add several numbers. • Use known number facts and place value to consolidate mental addition/subtraction (e.g. 470 + 380, 810 – 380, 7.4 + 9.8, 9.2 – 8.6) • Use informal pencil and paper methods to support, record or explain additions and subtractions. • Understand and use the relationships between the four operations, and the principles (not the names) of the arithmetic laws. • Use brackets. *Mental Rapid Recall (x & ÷)* • Consolidate knowing by heart multiplication facts up to 10 x 10 • Derive quickly: • division facts corresponding to tables up to 10 x 10 • squares of multiples of 10 to 100 • (e.g. 60 x 60) • doubles of all two-digit numbers • (e.g. 3.8 x 2, 0.76 x 2); • doubles of multiples of 10 to 1,000 • (e.g. 670 x 2) • doubles of multiples of 100 to 10,000 • (e.g. 6500 x 2) and the corresponding halves. *Mental Calculation Strategies (x & ÷)*	2.1(7) 2.2 2.3(1) 2.3(1) – (8)

• Check the sum of several numbers by adding in reverse order
• Check with an equivalent calculation
• Estimate by approximating (round to the nearest 10 or 100), then check result.
• Use knowledge of sums and differences of odd /even numbers.
• Develop calculator skills and use the calculator effectively.
		• Use related facts and doubling or halving. For example:
		  • double or halve the most significant digit first;
		  • to multiply by 25, multiply 100 then divide by 4;
		  • double one number and halve the other;
		  • find the 24x table by doubling the 6x table twice.
		• Use factors (e.g. 35 x 18 = 35 x 6 x 3);
		• Use closely related facts: for example, multiply 49 or 51 by multiplying by 50 and adjusting.
		• Develop the 17x table by adding facts from the 10x and 7x tables.
		• Partition (e.g. 87 x 6 = (80 x 6) + (7 x 6); 3.4 x 3 = (3 x 3) + (0.4 x 3).
		• Use the relationship between multiplication and division
		• Use known number facts and place value to consolidate mental multiplication and division.
		Paper and Pencil (x & ÷)
		• Approximate first. Use informal pencil and paper methods to support, record or explain multiplications and divisions.
		• Extend written methods to:
		  • multiplication of ThHTO x 0 (short multiplication)
			2.4

		• short multiplication of numbers including decimals. • Develop calculator skills and use a calculator effectively. *Checking Results* • Check with the inverse operation when using a calculator. • Check with the sum of several numbers by adding in the reverse order. • Check with an equivalent calculation • Estimate by approximating (round to the nearest 10, 100, or 1,000), then check result. *Using and Applying Mathematics* • Choose and use appropriate number operations to solve problems, and appropriate ways of calculating; mental, mental with jottings, written methods or calculator. • Identify and use appropriate operations (including combinations of operations) to solve word problems involving numbers and quantities based on 'real life', money or measures (including time), using one or more steps, including converting guilders to dollars and francs, or vice versa, and calculating percentages such as taxes. • Explain methods and reasoning. • Solve a problem by representing, extracting and interpreting data in tables, graphs, charts and diagrams, including those generated by a computer, for example:	1.5(9) 1.5(14) 1.5(10)-(13)

		line graphs (e.g. distance/time, for a multiplication table, a conversion graph, a graph of pairs of numbers adding to 8); frequency tables and bar charts with grouped discrete data (e.g. test marks 0-5, 6-10, 11-15…).	
Rational Numbers		**Rational Numbers**	
• Relate fractions to their decimal representations: i.e. recognize the equivalence between the decimal and fraction forms of one half, one quarter, three quarters… and tenths and hundreds (e.g. $^{7}/_{10}$ = 0.7, $^{27}/_{100}$ = 0.27) • Use fraction notation, including mixed numbers, and the vocabulary numerator and denominator. • Add or subtract a pair of decimal fractions, both with one or both with two decimal places (e.g. fls29,78 + fls53,34)	3.2(2) 3.1(2) 3.2(4)	• Multiply and divide decimals mentally by 10 or 100, and integers by 1,000, and explain the effect • Use decimal notation for tenths and hundreds in calculations and tenths, hundredths and thousandths when recording measurements. • Know what each digit represents in a number with up to three decimal places. • Give a decimal fraction lying between two others (e.g. between 3.4 and 3.5). • Order a mixed set of numbers or measurements with up to three decimal places. • Round a number with two decimal places to the nearest tenth or to the nearest whole number.	3.2(5) 3.2(1) 3.2(4) 3.2(3) 3.2(3) 1.4(2)
Measurement		**Measurement**	
• Use, read and write standard metric units (km, m, cm, kg, g, l, ml) including their abbreviations, and relationship between them. Convert larger to smaller units (e.g. km to m, m to cm or mm, kg to g, l to ml).	4.4(1) 4.4(2)	• Use, read and write standard metric units (km, m, cm, mm, kg, g, l, ml), including abbreviations, and relationships between them.	4.4(1) 4.4(2)

• Understand, measure and calculate perimeters of rectangles and regular polygons • Suggest suitable units and measuring equipment to estimate or measure length, mass or capacity. • Measure and draw lines to the nearest millimetre. • Use units of time on a 24 hour digital clock and use the 24-hour clock notation e.g. 19:53	4.6(7) 4.6(3) 4.6(3) 4.1(3)	• Convert smaller to larger units (e.g. m to km, cm or mm to m, g to kg, ml to l) and vice versa • Suggest suitable units and measuring equipment to estimate or measure length, mass or capacity. • Record estimates and readings from scales to a suitable degree of accuracy. • Use a protractor to measure and draw acute and obtuse angles to the nearest degree.	4.6(3) 4.4(5) 4.6(14)
Geometry			
• Recognize properties of rectangles	5.1(7)	• Describe and visualize properties of solid shapes such as parallel or perpendicular faces or edges. • Classify quadrilaterals, using criteria such as parallel sides, equal angles, equal sides… • Make shapes with increasing accuracy. • Visualize 3-D shapes from 2-D drawings and identify different nets for a closed cube. • Recognize and estimate angles. • Check that the sum of the angles of a triangle is 180 degrees: for example, by measuring or paper folding. • Calculate angles in a triangle or around a point. *Spatial Sense* • Recognize where a shape will be after reflection: ◦ in a mirror line touching the shape at a point (sides of shape not necessarily	5.1(13) 5.1(7) 5.1(5) 5.1(15) 5.2(3)

		parallel to or perpendicular to the mirror line); • in two mirror lines at right angles (sides of shape parallel or perpendicular to the mirror line). • Recognize where a shape will be after two translations. • Recognize where a shape will be after a rotation through 90 degrees about one of its vertices.	

Year 3 – Group 7		Year 4 – Group 8	
TERM 2 (*Consolidate Term One work)*		**TERM 2** (*Consolidate Term One work)*	
Number and Numeration	**Target Behaviours**	**Number and Numeration**	**Target Behaviours**
• Recognize multiples of 6, 7, 8, 9, up to the 10th multiple. • Know and apply tests of divisibility by 2, 4, 5, 10 or 100. • Know square of all numbers to at least 10 x 10 • Find all pairs of factors of any number up to 100. *Using and Applying Mathematics* • Explain methods and reasoning, orally and in writing. • Solve mathematical problems or puzzles, recognize and explain patterns and relationships and generalize and predict. • Suggest extensions asking 'What if…?' • Make and investigate a general statement about familiar numbers or shapes by finding examples that satisfy it. • Explain a generalized relationship (formula) in words.	2..3(1) 2.3(9) 2.3(6) 2.3(12) 1.5(14) 1.5(10) 1.5(16)	*Using and Applying Mathematics* • Explain methods and reasoning, orally and in writing. • Solve mathematical problems or puzzles, recognize and explain patterns and relationships and generalize and predict. • Suggest extensions by asking 'What if…?' • Make and investigate a general statement about familiar numbers or shapes by finding examples to satisfy it. • Develop from explaining a generalized relationship in words to expressing it in a formula using letters as symbols (e.g. the cost of *n* articles at 15cent each). • Find the mode and range of a set of data. • Begin to find the median and mean of a set of data.	1.5(14) 1.5(10) 1.5(16) 4.8(14) 4.8(15)
Calculation		**Calculation**	
• Understand the effect of and relationship between the four operations and the principles (not the names) of the arithmetic laws as they apply to multiplication. Begin to use brackets.	2.3(10), 2.4(2), 2.4(7)	• Express a quotient as a fraction or as a decimal rounded to one decimal place. Divide guilders/dollars and cents by a two-digit number to give guilders/dollars and cents	3.2(6) 3.2(7)

• Begin to express a quotient as a fraction or as a decimal when dividing a whole number by 2, 4, 5, or 10, or when dividing money.
• Round up or down after division, depending on the context.
Mental Rapid Recall
• Know by heart all multiplication facts up to 10 x 10.
• Derive quickly or continue to derive quickly: -
  • Division facts corresponding to tables up to 10 x 10.
  • Doubles of all whole numbers 1 to 100 (e.g. 78 x 2)
  • Doubles of multiples of 10 to 100 (e.g. 670 x 2)
  • Doubles of multiples of 100 to 1000 (e.g. 6500 x 2) and the corresponding halves.
Mental Calculation Strategies
• Use doubling or halving, starting from known facts. E.g.
  • double/halve any two-digit number by doubling/halving the tens first
  • double one number and halve the other
  • to multiply by 25, multiply by 100 then divide by four
  • find the x16 table facts by doubling the x8 table
  • find sixths by halving thirds.
	3.1(18), 3.2 (6)
	
	3.2(7)
	
	2.3(1)
		• Round up or down after division, depending on the context.
		Paper and Pencil
		• Extend written methods to:
		  • long multiplication of a three-digit by a two-digit integer;
		  • short division of TO or HTO by O (mixed-number answer);
		  • division of HTO by TO (long division, whole-number answer).
			2.4(5)

• Use factors (e.g. 8 x 12 = 8 x 4 x 3) • Use closely related facts (e.g. multiply by 19 or 21 by multiplying by 20 and adjusting; develop the x12 from the x10 and x2 tables). • Partition (e.g. 47 x 6 = (40 x 6) + (7 x 6)). • Use the relationship between multiplication and division • Use known facts and place value to multiply and divide mentally. *Paper and Pencil* • Approximate first. Use informal pencil and paper methods to support, record or explain multiplications or divisions • Extend written methods to; - • Short multiplication of HTO or U.t by U • Long multiplication of TO by TO • Short division of HTO by O (with integer remainder)	2.4(6) 2.3(3) 2.3(7) 2.3(10) 2.3(8) 2.4(1)-(5)		
Rational Numbers		**Rational Numbers**	
• Change an improper fraction to a mixed number (e.g. change $^{13}/_{10}$ to 1 $^{3}/_{10}$). • Recognize when two simple fractions are equivalent including relating hundredths to tenths (e.g. $^{70}/_{100} = {}^{7}/_{10}$). • Order a set of fractions such as 2, 2 ¾, 1 ¾, 2 ½, 1 ½, and position them on the number line. • Relate fractions to division, and use division to find simple fractions, including tenths and hundredths, of numbers and quantities (e.g. ¾ of 12, $^{1}/_{10}$ of 50, $^{1}/_{100}$ of $3)	3.1(4) 3.1(5) 3.1(6) 3.1(11)	• Change a fraction such as $^{33}/_{8}$ to the equivalent mixed number 4 $^{1}/_{8}$ and vice versa • Recognize relationships between fractions: for example, that $^{1}/_{10}$ is ten times $^{1}/_{100}$, and $^{1}/_{16}$ is half of $^{1}/_{8}$. • Reduce a fraction to its simplest form by cancelling common factors in the numerator and denominator. • Order fractions such as $^{2}/_{3}$, ¾ and $^{5}/_{8}$ by converting them to fractions with a common	3.1(4) 3.1(5) 3.1(9) 3.1(6)

		denominator, and position them on a number line. • Use a fraction as an 'operator' to find fractions, including tenths and hundredths, of numbers or quantities (e.g. $^{5}/_{8}$ of 32, $^{7}/_{10}$ of 40, $^{9}/_{100}$ of 400 centimetres) • Solve simple problems involving ratio and proportion. • Recognize the equivalence between the decimal and fraction forms of one half, one quarter, three quarters, one eighth… and tenths, hundredths and thousandths. (e.g. $^{700}/_{1000}$ = $^{70}/_{100}$ = $^{7}/_{10}$ = 0.7) • Begin to convert a fraction to a decimal using division.	3.1(12) 3.3(1) –(5) 3.2(1) 3.2(5)
Measurement		**Measurement**	
• Understand area measured in square centimetres (cm^2). • Understand and use the formula in words 'length x breadth' for the area of a rectangle	4.6(9) 4.6(12)	• Appreciate different times around the world.	4.1(8)

Year 3 – Group 7		Year 4 – Group 8	
TERM 3 (*Consolidate Term Two work)*		**TERM 3** (*Consolidate Term Two work)*	
Number and Numeration	**Target Behaviours**	**Number and Numeration**	**Target Behaviours**

Using and Applying Mathematics
• Use all four operations to solve simple word problems involving numbers and quantities based on 'real life', money and measures (including time), using one or more steps, including making simple conversions of guilders to dollars / francs and finding simple percentages.
• Explain methods and reasoning.
• Discuss the likelihood of particular events.
• Solve a problem by representing and interpreting data in tables, charts, graphs and diagrams, including those generated by a computer, e.g.: -
  • Bar line charts
  • Vertical axis labelled in 2s, 5s, 10s, 20s or 100s, first where intermediate points have no meaning (e.g. scores on a dice rolled 50 times) then when they may have meaning (e.g. room temperature over time)
	1.5(1)-(8)
	
	1.5(14)
	4.9(1)
	1.5(15)
	4.8(13)
		• Recognize and extend number sequences, such as the sequence of square numbers, or the sequence of triangular numbers 1, 3, 6, 10, 15…
		• Count on in steps of 0.1, 0.2, 0.25, 0.5…, and then back.
		• Make general statements about odd or even numbers, including the outcomes of products.
		• Recognize multiples up to 10 x 10. Know and apply simple tests of divisibility. Find simple common multiples.
		• Recognize squares of numbers to at least 12 x 12.
		• Recognize prime numbers to at least 20
		• Factorize numbers to 100 into prime numbers.
		Using and Applying Mathematics
		• Use the language associated with probability to discuss events, including those with equally likely outcomes.
			1.2(1)
			
			1.5(16)
			
			2.3(1), 2.3(9)
			
			2.3(6)
			
			2.4(6)
			
			4.9(1)

• Find the mode of a set of data	4.8(14)		
Calculation		**Calculation**	
		Paper and Pencil • Short division of numbers involving decimals. *Checking Results* • Use knowledge of sums, differences, products of odd/even numbers. • Use tests of divisibility	2.4(5) 2.3(9)
Rational Numbers		**Rational Numbers**	
• Begin to understand percentage as the number of parts in every 100, and find simple percentages of small whole-number quantities (e.g. 25% of fls8) • Express one half, one quarter, three quarters, and tenths and hundredths as percentages (e.g. know that ¾ = 75%)	3.3(6) 3.3(7)	• Understand percentages as the number of parts in every 100. Express simple fractions such as one half, one quarter, three quarters, one third, two thirds…, and tenths and hundredths, as percentages (e.g. know that $^1/_3$ = 33 $^1/_3$%). • Find simple percentages of small whole-number quantities (e.g. find 10% of $500, then 20%, 40% and 80% by doubling).	3.3(7), 3.3(8)
Measurement		**Measurement**	
• Record estimates and readings from scales to a suitable degree of accuracy. • Understand and use angle measure in degrees. • Use a protractor to measure and draw acute and obtuse angles to the nearest 5°.	4.5(5) 4.6(13) 4.6(14)	• Calculate the perimetre and area of simple compound shapes that can be split into rectangles.	4.6(7), 4.6(10)
Geometry		**Geometry**	
• Classify triangles (isosceles, equilateral, scalene), using criteria such as equal sides, equal angles, lines of symmetry. • Make shapes with increasing accuracy	5.1(16) 5.1(17)	*Spatial Sense* • Read and plot coordinates in all four quadrants.	5.2(5)

• Visualize 3-D shapes from 2-D drawings and identify different nets for an open cube. • Recognize perpendicular and parallel lines. • Identify, estimate and order acute and obtuse angles. • Calculate angles in a straight line. *Spatial Sense* • Recognize reflective symmetry in regular polygons; i.e. know that a square has four axes of symmetry and an equilateral triangle has three. • Complete symmetrical patterns with two lines of symmetry at right angles (using squared paper or pegboard) • Recognize where a shape will be after reflection in a mirror line parallel to one side (sides not all parallel or perpendicular to the mirror line • Recognize where a shape will be after translation. • Recognize positions and directions; read and plot co-ordinates in the first quadrant.	5.1(2) 5.1(5) 4.6(13), (14) 5.2(2) 5.2(2) 5.2(3) 5.2(4), (5)		
