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)		
• Solve word problems involving numbers in 'real life', money and measures, using one or more steps, including finding totals and giving change and working out which coins to pay. Explain how the problem is solved.	1.5(1), (5), (6), (8)	• Multiply or divide any integer up to 1000 by 10 (*whole number answers*), and understand the effect.	2.3(2)
		Using and Applying Mathematics	
• Solve a given problem by organizing and	1.5(10)	• Choose and use appropriate number operations and appropriate ways of calculating (*mental, mental with jottings, pencil and paper*) to solve	1.5(9)

interpreting numerical data in pictograms (symbol representing two units); bar charts (intervals labelled in ones then twos).		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.
• 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.
	2.1
	
	2.1(1)
	
	2.1(1)
	
	2.3(4)
	
	2.3(11)
		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
		• 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
			Review Yr. 1
			
			2.1(1)
			
			2.1(3)
			
			2.1(2)
			
			2.1
			
			2.1(7)
			
			2.2(1) – (3)

• 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(10) 2.3(1) 2.3(8)	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)
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.	Review Cycle 1 4.6(3)		

• 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.	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*** • 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	1.1(6) 1.2(1) 2.3(5) (extend from Cycle 1) 1.1(2) 1.4(2) 1.5(9) 1.5(16) 4.2(1), 4.2(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)

\$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(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. • 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.	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. • 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	2.3(10) 2.3(8) 1.4(2) 2.3(1) 2.3(5)

		○ 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*** • 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.	2.3(4) 2.3(10) 2.3(7) 2.4
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.	3.1(4) 3.1(5), 3.1(6)	• 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 $^{7}/_{10}$*)	3.1(2), 3.1(5), 3.1(7)

• Estimate a simple fraction. • Add/subtract fractions with like denominators	3.1(3) 3.1(12)	• 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(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. 'about 3.5kg'*) or in mixed units (e.g. *'3kg and 100g')*	(Review Cycle 1) 4.5(1) 4.5(2) (Review &b extend Cycle 1) 4.5(4)		
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.	5.1, 5.2(2) 5.2(2)		

• 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(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
• 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)
• Find the mode of a set of data
	1.5(1)-(8)
	
	1.5(14)
	4.9(1)
	1.5(15)
	4.8(13)
	
	4.8(14)
		• 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)

		Calculation	
		Paper and Pencil • Short division of numbers involving decimals. ***Checking Results*** • Use knowledge of sums, differences, products	2.4(5)

		of odd/even numbers. • Use tests of divisibility	 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.	5.1(15) 5.1(17) 5.1(2) 5.1(5) 4.6(13), (14)	***Spatial Sense*** • Read and plot coordinates in all four quadrants.	 5.2(5)

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.	5.2(2) 5.2(2) 5.2(3) 5.2(4), (5)		