

Maths in Group 6 at International School Haarlem

At International School Haarlem we aim to provide children with consistent and secure mathematical language, representations, and methods as they move up through the groups. These progress alongside their mathematical understanding and in combination with a range of concrete resources.

This document shows the National Curriculum goals alongside the mathematical language (new vocabulary in blue), representations, and methods the children are expected to have covered by <u>the end</u> of Group 6. In addition, it shows the concrete materials the children will use to support their learning and comprehension.

Place Value

National Curriculum Goals	Key Vocabulary	Representations	Concrete Resources
 Inational Curriculum Goals Group 6 read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero round any number up to 1 000 000 000 to the nearest 10, 100, 1000 and 100 000 solve number problems and practical problems that involve all of the above read Roman numerals to 1000 (M) and recognise years written in Roman numerals 	Group 6 Zero Tenths Hundredths Thousandths Ones Tens Hundreds Thousands Tens of thousands Hundreds of thousands Million Partition Negative number Place value Value Place holder Compare Equal to / the same as (=) Smaller / fewer / less / is less than (<)	Representations Group 6 Part-whole model Image: Ima	Group 6 Counters Place value counters Counting rack Image: Counting rack Dice Image: Counting rack Base ten Image: Counting rack Mumber lines (unlabelled) Place value cards Image: Counting rack Image

Addition & Subtraction

National Curriculum Goals	Key Vocabulary	Calculation Methods / Representations	Concrete Resources
 Group 6 add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and 	<u>Group 6</u> Add / Total / Plus / Together / Altogether / Addition / Sum / More / In all / Combined Take away / Minus / Less / Subtract /	Group 6 Part-whole model	Group 6 Counters Counting rack
 subtraction) add and subtract numbers mentally with increasingly large numbers use rounding to check answers 	Fewer / Difference / Left over / Remain Is / Equal / Is equal to / Is the same as Estimate / approximate	104,328 61,731 Bar model	Place value counters
 to calculations and determine, in the context of a problem, levels of accuracy solve addition and subtraction multi-step problems in contexts, deciding which operations and 	# more / counting on / how many more? # less / counting back / how many less? Number sentence / Number problem / Equation	104,328 61,731 104,328 61,731	Base ten
methods to use and why.	Digit Numeral Fact family Number bond Number facts Next multiple of ten / hundred Province multiple of ten / hundred	Column method	Number lines (unlabelled) +2 $+2138$ 40 61
	Previous multiple of ten / hundred Missing number Inverse Commutative Non-commutative Exchange	Th H T O 4 3 5 6 + 2 4 3 5 6 7 9 1 1 1 1 1	Place value chart

Multiplication & Division

National Curriculum Goals	Key Vocabulary	Calculation Methods / Representations	Concrete Resources
		Group 6	
Group 6 • identify multiples and factors, including	<u>Group 6</u> Doubling	Part-whole model	Group 6 Place value counters Dice
finding all factor pairs of a number, and	Halving	Groups	
common factors of two numbers	harring	Hundreds Tens Ones	
 know and use the vocabulary of prime 	Repeated addition		
numbers, prime factors and composite (nonprime) numbers	Multiplication		
 establish whether a number up to 100 is 	Multiply	Expanded column method	Base ten
prime and recall prime numbers up to 19	Multiplied by / times / groups of /		
multiply numbers up to 4 digits by a one-	factor / product		
or two-digit number using a formal written method, including long	Multiple	x 5	
multiplication for two-digit numbers	Array(s) – Row and Column	+ 1 5 0 (5 × 30)	
multiply and divide numbers mentally			
drawing upon known facts	Division	34 × 5 = 170	
 divide numbers up to 4 digits by a one- digit number using the formal written 	Dividing / divide by / divide into	Column method	Number lines (unlabelled)
method of short division and interpret	Grouping / equal groups of	Thesaarchik Handradik Term Ones Th H T O	10 × 8 = 80 10 × 8 = 6 × 8 =
remainders appropriately for the context	Sharing / share equally		
multiply and divide whole numbers and	Left / left over / remainder		0 80 160
those involving decimals by 10, 100 and 1000	Number sentence / Number	Area model	Multiplication squares
 recognise and use square numbers and 	problem / Equation	Yannin anan 12 Yanna anan 12 Yanan amaa 12	Wuitiplication squares
cube numbers, and the notation for	problem / Equation	400 40	
squared (2) and cubed (3)	Fact family / factor pairs		I I
solve problems involving multiplication and division including using their	Multiplication fact	60 6	
knowledge of factors and multiples,	Division fact	Short division (with grouping)	
squares and cubes	Inverse	Trousands Hundreds Ten Orac	
 solve problems involving addition, 	Commutative		
subtraction, multiplication and division and a combination of these, including	Non-commutative		10 10 10 40 40 10 12 40 10 10 10 10 10 10 10
understanding the meaning of the equals			Hundred square
sign	Square / squared	Long division Lattice method	1 2 3 4 5 5 7 8 9 10
solve problems involving multiplication	Cube / cubed	2 4 <i>c</i> 1 2 1x15=15 3 4	11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
and division, including scaling by simple fractions and problems involving simple	Number pattern	1 5 3 7 2 2×15=30 - 3 0 0 3×15=45 5 0 5	31 32 33 34 35 36 37 (38) 39 40 41 42 43 44 45 46 41 48 49 50
rates.	Number puttern	2 2 4×15=60 5 0 - 6 0 5×15=75 1 2	51 52 53 54 55 56 67 58 59 60 61 62 63 64 65 66 67 68 69 70
		1 1 2 10×15=150 8 4	71 72 73 74 75 76 77 78 79 80 81 62 85 86 85 86 87 98 99 90
			91 92 93 94 95 96 97 98 99 100

Fractions

National Curriculum Goals	Key Vocabulary	Representations	Concrete Resources
Group 6	Group 6	<u>Group 6</u>	Group 6
 compare and order fractions whose denominators are all multiples of the same number 	Whole Fraction	Part-whole model	Counters •••••
 identify, name, and write equivalent fractions of a given fraction, represented visually, 	Numerator Denominator	Fraction wall	Strips of paper
including tenths and hundredths	Unit fractions Non-unit fractions	Praction wall	
 recognise mixed numbers and improper fractions and convert from one form to the 	Proper fraction Improper fraction Mixed numbers		Number lines $+1$ $+\frac{1}{10}$
other and write mathematical statements > 1 as a mixed number (for example: $\frac{2}{5} + \frac{4}{5} =$	Fractions of a set	Bar models	$\frac{3}{10}$ $1\frac{3}{10}$ $1\frac{4}{10}$
• add and subtract fractions with the same denominators that are multiples of the same number	Integer Divide Parts Split Equal / Equally Equivalent / equivalence		Fraction tiles
 multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams 	Convert Operators	$\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$ Number lines	Fraction app
		$\begin{array}{c} +1 \\ \hline \\ \hline \\ \hline \\ \hline \\ \frac{3}{10} \\ \hline \\ 1 \\ \hline \\ \frac{3}{10} \\ \hline \\ 1 \\ \frac{3}{10} \\ \hline \\ 1 \\ \frac{3}{10} \\ \hline \\ 1 \\ \frac{4}{10} \\ \hline \\ 1 \\ \hline \\ 1 \\ 0 \\ \hline \end{array}$	

Decimals & Percentages

National Curriculum Goals	Key Vocabulary	Representations	Concrete Resources
Group 6	Group 6	Group 6	Group 6
read and write decimal numbers		Part-whole model	Counters Place value counters
as fractions (for example: 0.71 =	Fraction	\bigcirc	
71	Whole	0.62	Constant of the second s
 recognise and use thousandths 	Integer	\sim	Counting rack
and relate them to tenths,		0.6 0.02	
hundredths, and decimal	Decimal		
equivalents	Decimal point		
 round decimals with two decimal 		Bar m <mark>odel</mark>	
places to the nearest whole	Percentages - %		
number and to one decimal		100%	Number lines (labelled and unlabelled)
place	Tenths – 0.1		1 11 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2
 read, write, order, and compare 	Hundredths – 0.01		
numbers with up to three	Thousandths – 0.001	·	Base ten
decimal places			
 solve problems involving 	Compliments to 1	Place value chart	
numbers with up to three		ands a state	
decimal places	Halves	housa undre Cnes Tenths Tenths	
recognise the per cent symbol	Quarters		
(%) and understand that per cent			Hundredth Square
relates to 'number of parts per	Representation		
hundred', and write percentages			
as a fraction with denominator	Place holder	Hundredth Square	
100, and as a decimal	Exchange		
 solve problems which require 			
knowing percentage and decimal	Equivalent		
equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$			Place value chart
and those fractions with a	Convert		
denominator of a multiple of 10			Theuron Bundre Benn Chenn Hennlied Mennlied Mennlied
or 25.			