# Maths in Group 7 at International School Haarlem
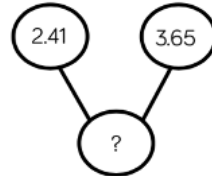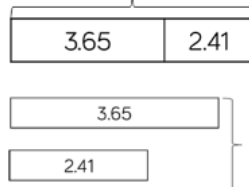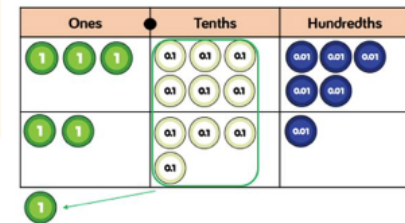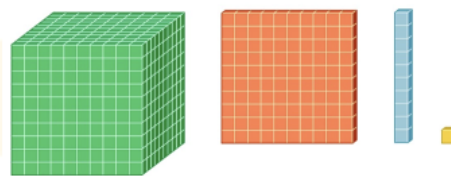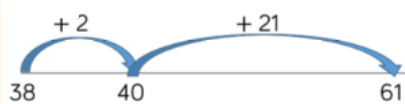
At International School Haarlem we aim to provide children with consistent and secure mathematical language, representations, and methods as they move up through the groups. These progress alongside their mathematical understanding and in combination with a range of concrete resources.
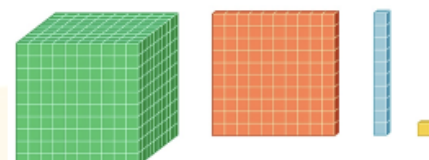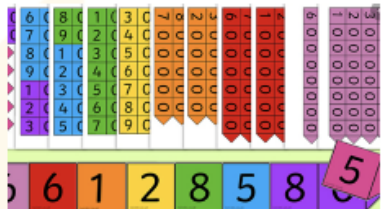
This document shows the National Curriculum goals alongside the mathematical language (new vocabulary in blue), representations, and methods the children are expected to have covered by _the end_ of Group 7. In addition, it shows the concrete materials the children will use to support their learning and comprehension.
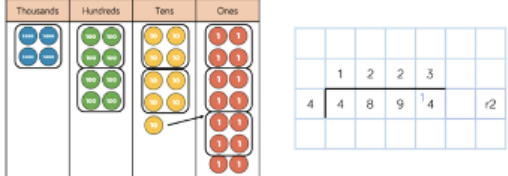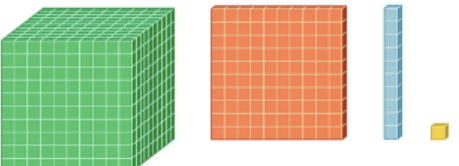
# Place Value

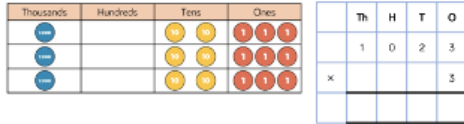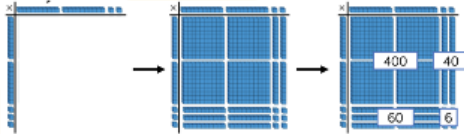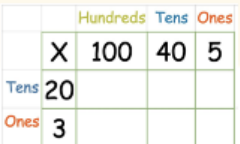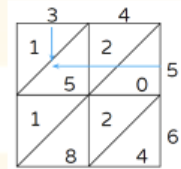| National Curriculum Goals | Key Vocabulary | Representations | Concrete Resources |
|---|---|---|---|
| <ul><li>read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</li><li>round any whole number to a required degree of accuracy</li><li>use negative numbers in context, and calculate intervals across zero</li><li>solve number and practical problems that involve all of the above</li></ul> | Zero<br>*Tenths*<br>*Hundredths*<br>*Thousandths*<br>Ones<br>Tens<br>Hundreds<br>Thousands<br>Tens of thousands<br>Hundreds of thousands<br>*Millions*<br>Partition<br>Negative number / minus number<br>Positive number<br>*Whole number / integer*<br>Place value<br>Value<br>Place holder<br><br>Compare<br>Equal to / the same as (=)<br>Smaller / fewer / less / is less than (<)<br>Smallest / fewest / least<br>More / bigger / larger / greater / is greater than (>)<br>Most / biggest / largest /greatest<br>Order<br>Ascending<br>Descending<br><br>Estimate / approximate<br>Round to the nearest 10 / 100 / 1000 / *10 000 / 100 000*<br><br>100 less / *1000 less / 10 000 less*<br>100 more / *1000 more / 10 000 more*<br>Skip counting / counting by / counting in / times tables / multiples of / factors / products / *intervals* | **Part-whole model**<br><br>**Bar model**<br><br>**Place value chart** | **Counters**    **Place value counters**<br><br>**Dice**<br><br>**Base ten**<br><br>**Number lines (unlabelled)**<br><br>**Place value cards**<br><br>**Place value chart** |

# Addition & Subtraction

| National Curriculum Goals | Key Vocabulary | Calculation Methods / Representations | Concrete Resources |
|---|---|---|---|
| **Group 7** <br> • multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication <br> • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context <br> • divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context <br> • perform mental calculations, including with mixed operations and large numbers <br> • identify common factors, common multiples and prime numbers <br> • use their knowledge of the order of operations to carry out calculations involving the four operations <br> • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why <br> • solve problems involving addition, subtraction, multiplication, and division <br> • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy | **Group 7** <br> *Add / Total / Plus / Together / Altogether / Addition / Sum / More / In all / Combined* <br><br> *Take away / Minus / Less / Subtract / Fewer / Difference / Left over / Remain / Counting on to find the difference* <br><br> *Is / Equal / Is equal to / Is the same as Estimate / approximate* <br><br> *# more / counting on / how many more?* <br> *# less / counting back / how many less?* <br><br> *Number sentence / Number problem / Equation* <br><br> *Digit* <br> *Numeral* <br> *Integer* <br><br> *Fact family* <br> *Number bond* <br> *Number facts* <br><br> *Missing number* <br> *Inverse* <br> *Commutative* <br> *Non-commutative* <br><br> *Exchange* | **Group 7** <br> **Part-whole model** <br> **Bar model** <br> **Column method** | **Group 7** <br> **Counters** <br> **Place value counters** <br> **Base ten** <br> **Place value chart** <br> **Number lines (unlabelled)** |

# Multiplication & Division

| National Curriculum Goals | Key Vocabulary | Calculation Methods / Representations | Concrete Resources |
|---|---|---|---|
| **Group 7**<br>• multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication<br>• divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context<br>• divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context<br>• perform mental calculations, including with mixed operations and large numbers<br>• identify common factors, common multiples and prime numbers<br>• use their knowledge of the order of operations to carry out calculations involving the four operations<br>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why<br>• solve problems involving addition, subtraction, multiplication, and division<br>• use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy | **Group 7**<br>Doubling<br>Halving<br><br>Repeated addition<br>Multiplication<br>Multiply<br>Multiplied by / times / groups of / factor / product<br>Multiple<br>Array(s) – Row and Column<br><br>Division<br>Dividing / divide by / divide into<br>Grouping / equal groups of<br>Sharing / share equally<br>Left / left over / remainder<br><br>Number sentence / Number problem / Equation<br><br>Fact family / factor pairs<br>Multiplication fact<br>Division fact<br>Inverse<br>Commutative<br>Non-commutative<br><br>*Square*<br>*Squared cube*<br>*Cubed*<br><br>Number pattern | **Group 7**<br>**Column method**<br><br>**Area model**<br><br>**Grid method**  **Lattice method**<br><br>**Short division (with grouping)**<br><br>**Long division**<br>$1 \times 15 = 15$<br>$2 \times 15 = 30$<br>$3 \times 15 = 45$<br>$4 \times 15 = 60$<br>$5 \times 15 = 75$<br>$10 \times 15 = 150$ | **Group 7**<br>**Place value counters**  **Dice**<br><br>**Base ten**<br><br>**Multiplication square**<br><br>**Square number grid** |