Huntingdon Academy
A L.E.A.D. Academy

Mathematics progression of concepts – year 1 addition and subtraction

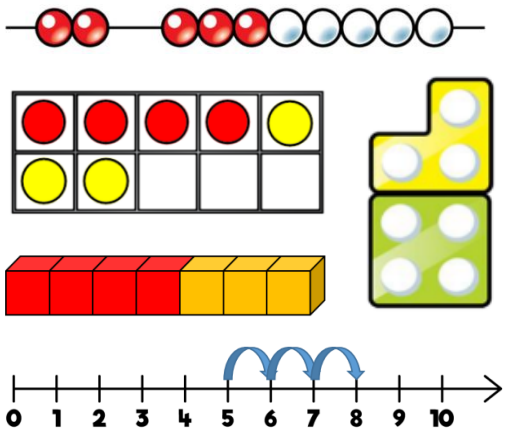
Key vocabulary:

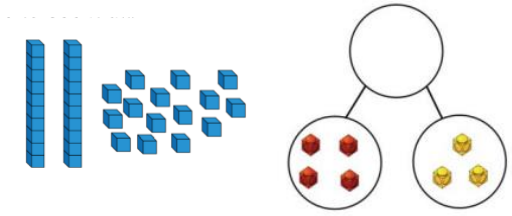
Equals add subtract double halve difference one more ten more fact families number bonds how many more? How many fewer?

In F2, I have learnt…

Number bonds
- to recall number bonds to 5 and some number bonds to 10, including double facts
- to compare quantities up to 10, recognising when one quantity is greater than, less than or the same as the other quantity

Representations and manipulatives





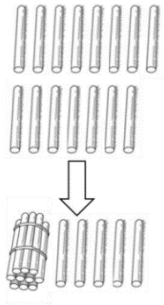
In year 1, I am learning…

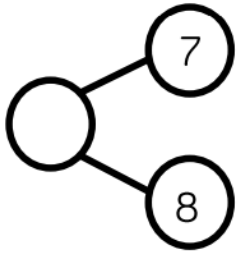
Number bonds
- to represent and use number bonds and related subtraction facts within 20

Mental calculation
-to add and subtract one- digit and two-digit numbers to 20, including zero
-to read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs

Written methods
- read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs

Problem solving
-to solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7=?-9





In year 2, I will learn…

Number bonds
-to recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

Mental calculation
-to add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
- a two-digit a and ones
- a two-digit number and tens
- two two-digit numbers
- adding three one-digit numbers

-to show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot

Inverse, estimating and checking
-to recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Problem solving
-to solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures

In my future I can…

Across the curriculum

-science – understanding data
-DT – taking measurements
-PE – keeping score, measuring, angles
-geography – coordinates, maps
-computing – databases, coding

Life skills

-shopping and budgeting
-critical thinking
-playing sport
-map reading
-interpreting statistics
-working with computers

Careers

-shop worker
-bank cashier
-architect
-doctor
-nurse
-teacher
-computer programmer

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Mathematics progression of concepts – year 2 addition and subtraction

Key vocabulary:

equals add subtract double halve difference one more ten more fact families number bonds how many more? how many fewer? total sum number facts

In year 1, I have learnt…

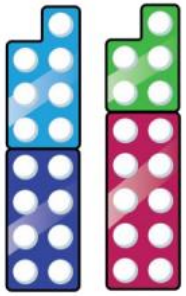
Number bonds
- to represent and use number bonds and related subtraction facts within 20

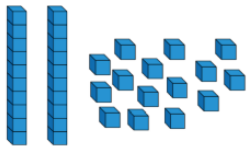
Mental calculation
-to add and subtract one- digit and two-digit numbers to 20, including zero
-to read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs

Written methods
- read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs

Problem solving
-to solve one-step problems that involve addition and subtraction, using concrete

Representations and manipulatives





In year 2, I am learning…

Number bonds
-to recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

Mental calculation
-to add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
- a two-digit a and ones
- a two-digit number and tens
- two two-digit numbers
- adding three one-digit numbers

-to show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot

Inverse, estimating and checking
-to recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

Problem solving
solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures

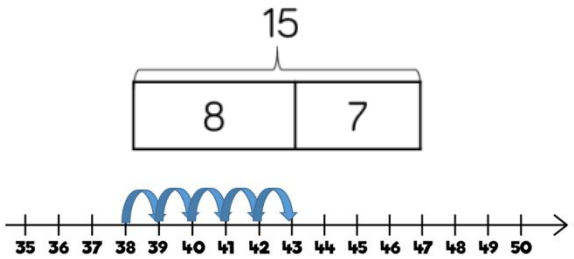
In year 3, I will learn…

Mental calculation
- add and subtract numbers mentally, including:
- a three-digit number and ones
- a three-digit number and tens
- a three-digit number and hundreds

Written methods
-to add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction

Inverse, estimating and checking
- estimate the answer to a calculation and use inverse operations to check answers

Problem solving
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction



In my future I can…

Across the curriculum

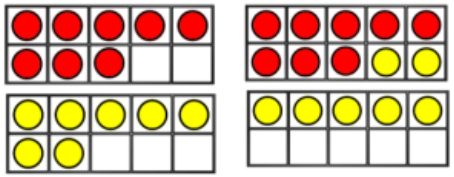
-science – understanding data
-DT – taking measurements
-PE – keeping score, measuring, angles
-geography – coordinates, maps
-computing – databases, coding

Life skills

-shopping and budgeting
-critical thinking
-playing sport
-map reading
-interpreting statistics
-working with computers

Careers

-shop worker
-bank cashier
-architect
-doctor
-nurse
-teacher
-computer programmer



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Mathematics progression of concepts – year 3 addition and subtraction

Key vocabulary:

equals add subtract double halve difference one more ten more fact families number bonds how many more? how many fewer? total sum number facts exchange regroup column addition column subtraction

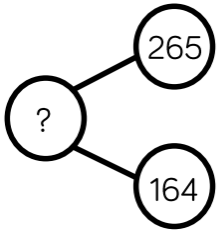
In year 2, I have learnt…

Number bonds
-to recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

Mental calculation
-to add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
- a two-digit a and ones
- a two-digit number and tens

Inverse, estimating and checking
-to recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

Problem solving
- to solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures



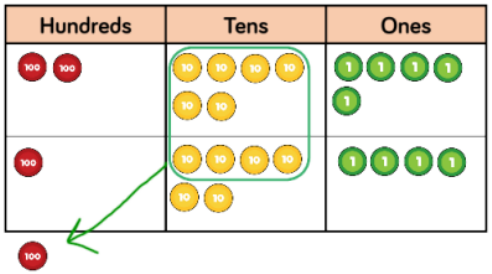
In year 3, I am learning…

Mental calculation
- add and subtract numbers mentally, including:
  - a three-digit number and ones
  - a three-digit number and tens
  - a three-digit number and hundreds

Written methods
-to add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction

Inverse, estimating and checking
- to estimate the answer to a calculation and use inverse operations to check

Problem solving
- to solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction



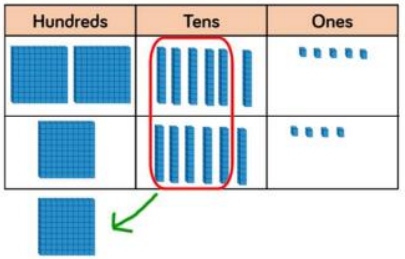
In year 4, I will learn…

Written methods
- to add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

Inverse, estimating and checking
-to estimate and use inverse operations to check answers to a calculation answers

Problem solving
- to solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Representations and manipulatives



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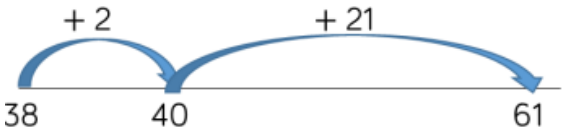


In my future I can…

Across the curriculum

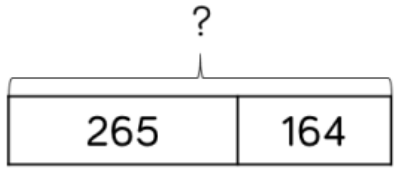
-science – understanding data
-DT – taking measurements
-PE – keeping score, measuring, angles
-geography – coordinates, maps
-computing – databases, coding

Life skills

-shopping and budgeting
-critical thinking
-playing sport
-map reading
-interpreting statistics
-working with computers

Careers

-shop worker
-bank cashier
-architect
-doctor
-nurse
-teacher
-computer programmer



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Mathematics progression of concepts – year 4 addition and subtraction

Key vocabulary:

equals add subtract double halve difference one more ten more fact families number bonds how many more? how many fewer? total sum number facts exchange regroup column addition column subtraction inverse

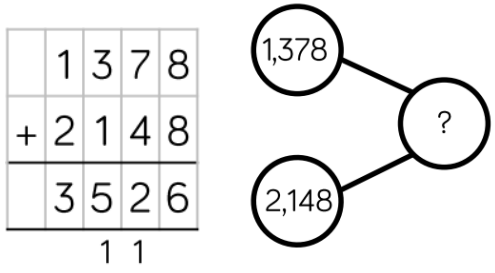
In year 3, I have learnt…

Mental calculation
- add and subtract numbers mentally, including:
  - a three-digit number and ones
  - a three-digit number and tens
  - a three-digit number and hundreds

Written methods
-to add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction

Inverse, estimating and checking
- to estimate the answer to a calculation and use inverse operations to check answers

Problem solving
- to solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction



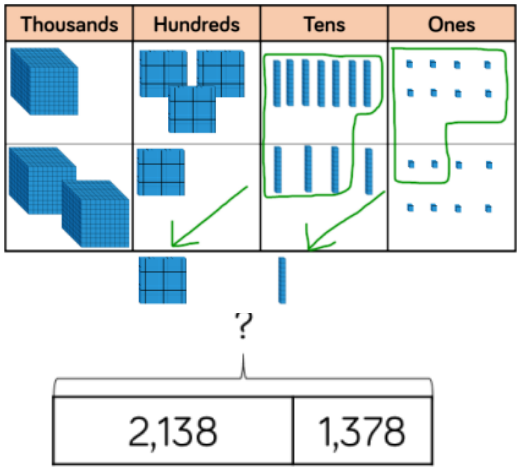
In year 4, I am learning…

Written methods
-to add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

Inverse, estimating and checking
-to estimate and use inverse operations to check answers to a calculation

Problem solving
- solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Representations and manipulatives



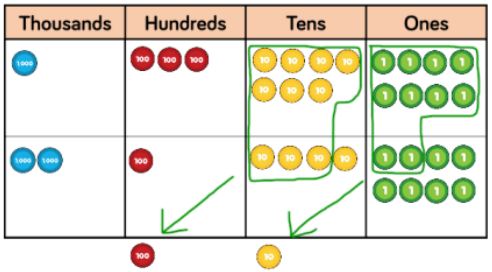
In year 5, I will learn…

Mental calculation
- to add and subtract numbers mentally with increasingly large numbers

Written methods
- add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)

Inverse, estimating and checking
-to use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

Problem solving
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why



In my future I can…

Across the curriculum

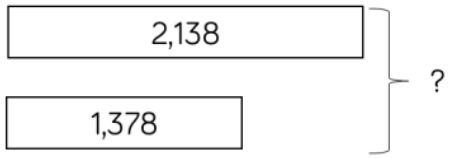
-science – understanding data
-DT – taking measurements
-PE – keeping score, measuring, angles
-geography – coordinates, maps
-computing – databases, coding

Life skills

-shopping and budgeting
-critical thinking
-playing sport
-map reading
-interpreting statistics
-working with computers

Careers

-shop worker
-bank cashier
-architect
-doctor
-nurse
-teacher
-computer programmer



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Mathematics progression of concepts – year 5 addition and subtraction

Key vocabulary:

equals add subtract double halve difference one more ten more fact families number bonds how many more? how many fewer? total sum number facts exchange regroup column addition column subtraction inverse

In year 4, I have learnt…

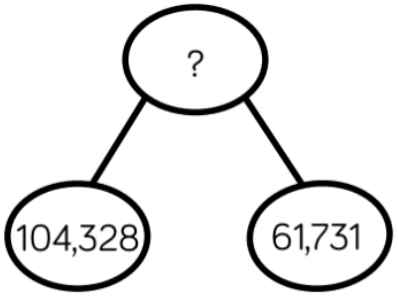
Written methods
-to add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

Inverse, estimating and checking

-to estimate and use inverse operations to check answers to a calculation

Problem solving
- solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Representations and manipulatives



In year 5, I am learning…

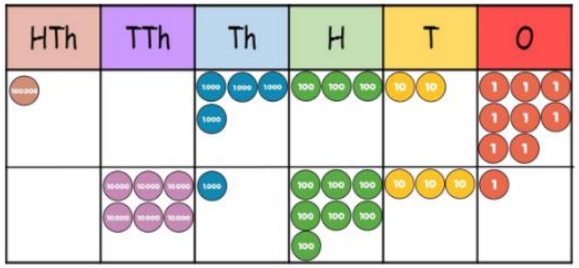
Mental calculation
- to add and subtract numbers mentally with increasingly large numbers

Written methods
- add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)

Inverse, estimating and checking

-to use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

Problem solving
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why



In year 6, I will learn…

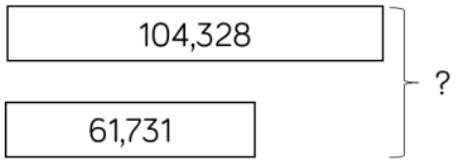
Mental calculation
-to perform mental calculations, including with mixed operations and large numbers
-to use their knowledge of the order of operations to carry out calculations involving the four operations

Inverse, estimating and checking

-to use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.

1	0	4	3	2	8
+	6	1	7	3	1
1	6	6	0	5	9

1



In my future I can…

Across the curriculum

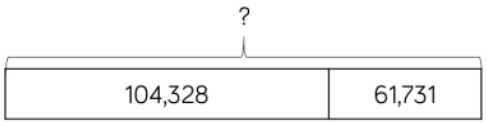
-science – understanding data
-DT – taking measurements
-PE – keeping score, measuring, angles
-geography – coordinates, maps
-computing – databases, coding

Life skills

-shopping and budgeting
-critical thinking
-playing sport
-map reading
-interpreting statistics
-working with computers

Careers

-shop worker
-bank cashier
-architect
-doctor
-nurse
-teacher
-computer programmer



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Mathematics progression of concepts – year 6

addition and subtraction

Key vocabulary:

equals add subtract double halve difference one more ten more fact families number bonds how many more? how many fewer? total sum number facts exchange regroup column addition column subtraction inverse order of operations

In year 5, I have learnt…

Mental calculation
- to add and subtract numbers mentally with increasingly large numbers

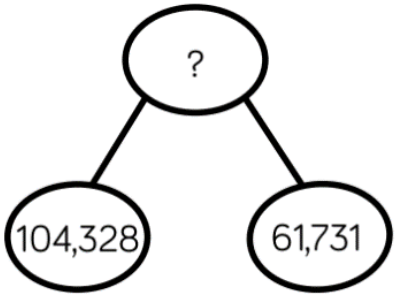
Written methods
- add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)

Inverse, estimating and checking

-to use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

Problem solving
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Representations and manipulatives

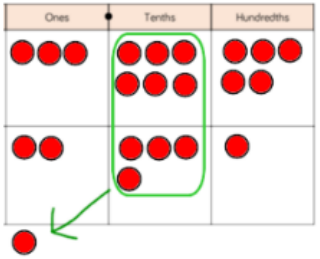


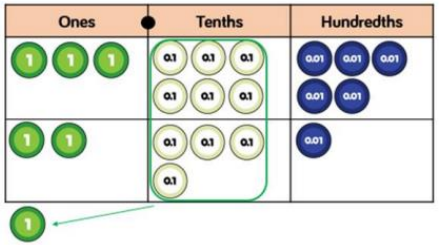
In year 6, I am learning…

Mental calculation
-to perform mental calculations, including with mixed operations and large numbers
-to use their knowledge of the order of operations to carry out calculations involving the four operations

Inverse, estimating and checking

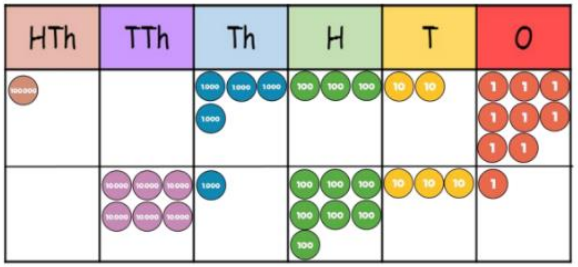
-to use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.





In KS3, I will learn…

-to apply the four operations including formal written methods to decimals, proper and improper fractions and mixed numbers, all both positive and negative
-to use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals
-to recognize and use relationships between operations including inverse operations
-to use a calculator and other technology to calculate results accurately and then interpret them appropriately



1	0	4	3	2	8
+	6	1	7	3	1
1	6	6	0	5	9

1

In my future I can…

Across the curriculum

-science – understanding data
-DT – taking measurements
-PE – keeping score, measuring, angles
-geography – coordinates, maps
-computing – databases, coding

Life skills

-shopping and budgeting
-critical thinking
-playing sport
-map reading
-interpreting statistics
-working with computers

Careers

-shop worker
-bank cashier
-architect
-doctor
-nurse
-teacher
-computer programmer

104,328

61,731

?