

Unit overview: Addition – Year 1

National Curriculum requirements

By the end of the year, the children will be able to:

- read, write and interpret mathematical statements involving addition (+) and equals (=) signs
- represent and use number bonds and within 20
- add one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems such as $\square = 8 + 9$.

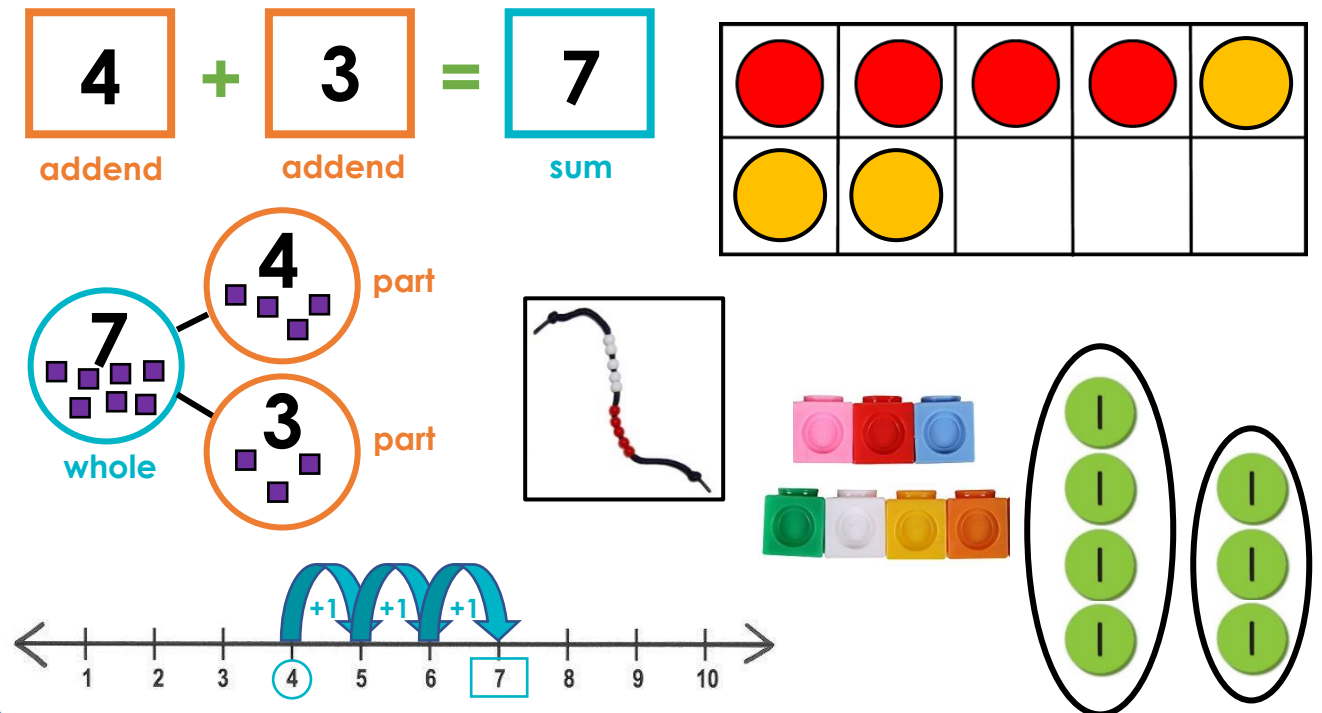
Vocabulary

- number names (0 – 100)
- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to

Manipulatives

- number cards
- counters
- dienes
- place value counters
- interlocking cubes
- ten frames
- number lines
- bead strings

Visual representations



The visual representations show the equation $4 + 3 = 7$ with '4' and '3' labeled as 'addend' and '7' as 'sum'. A ten frame shows 4 red circles and 3 yellow circles. A number bond shows 7 as the 'whole' and 4 and 3 as 'parts'. A bead string has 7 beads (4 red, 3 white). Interlocking cubes show 4 cubes (2 pink, 2 blue) and 3 cubes (2 green, 1 orange). A number line shows a jump from 4 to 7 with three '+1' jumps.

Sentence stems

____ add ____ is equal to ____.
 ____ plus ____ is equal to ____.

____ is a part. ____ is a part. The whole is ____.
 ____ is an addend. ____ is an addend. The sum is ____.

The whole is ____; the parts are ____ and ____.

The sum is ____; the addends are ____ and ____.

To find the ____ you add the ____ to the other ____.

Learning sequence

- read, write and interpret mathematical statements involving addition (+) and equal to (=) signs
- represent and use number bonds and related facts within 10, e.g. $6 + 2 = 8$
- add one-digit numbers within 10, including zero
- represent and use number bonds and related facts within 20
- add one-digit and two-digit numbers to 20, including zero using concrete objects, pictorial representations, and mentally, including:
 - adding a two-digit number to a one
 - adding three one-digit numbers
- solve one-step problems that involve addition using concrete objects and pictorial representations, and missing number problems
- estimate to check answers

Unit overview: Addition – Year 2

National Curriculum requirements

By the end of the year, the children will be able to:

- solve problems with addition:
 - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
 - applying their increasing knowledge of mental and written methods
- recall and use addition facts to 20 fluently, and derive and use related facts up to 100
- add numbers using concrete objects, pictorial representations, and mentally, including:
 - a two-digit number and ones
 - a two-digit number and tens
 - two two-digit numbers
 - adding three one-digit numbers
- show that addition of two numbers can be done in any order (commutative)
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

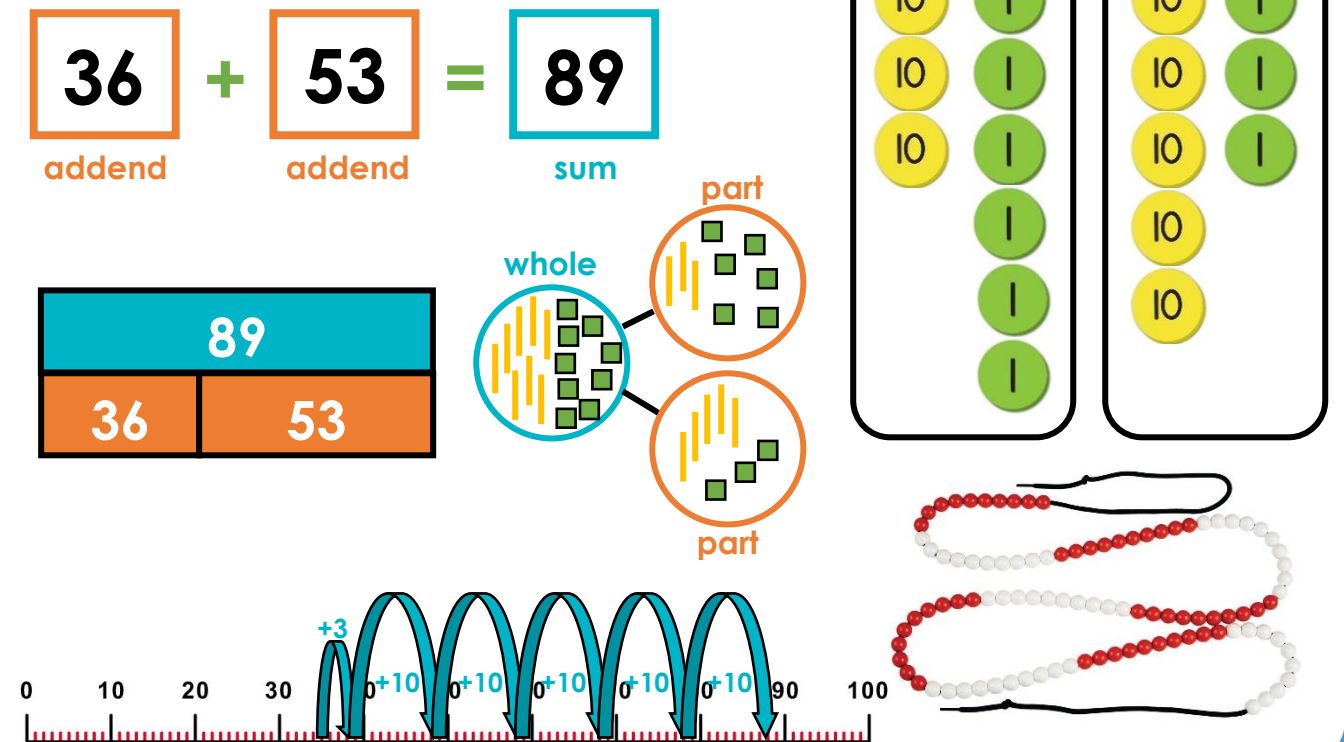
Vocabulary

- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to
- partition
- commutative

Manipulatives

- counters
- dienes
- place value counters
- interlocking cubes
- hundred squares
- ten frames
- number lines
- bead strings

Visual representations



Sentence stems

_____ add _____ is equal to _____.

_____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.

_____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

To find the _____ you add the _____ to the other _____.

Learning sequence

- recall and use addition facts to 20 fluently, and derive and use related facts up to 100
- show that addition of two numbers can be done in any order (commutative)
- using number bond facts, add numbers using concrete objects, pictorial representations, and mentally, including:
 - a two-digit number and ones
 - a two-digit number and tens
 - two two-digit numbers
 - adding three one-digit numbers
- using a 'make the next 10' strategy, add numbers using concrete objects, pictorial representations, and mentally, including:
 - two one digit numbers
 - a two-digit number and ones
 - two two-digit numbers
- solve problems with addition: using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems
- apply their increasing knowledge of mental and written methods in a range of scenarios.

Unit overview: Addition – Year 3

National Curriculum requirements

By the end of the year, the children will be able to:

- add numbers mentally, including:
 - a three-digit number and ones
 - a three-digit number and tens
 - a three-digit number and hundreds
- add numbers with up to three digits, using formal written methods of columnar addition
- estimate the answer to a calculation and use inverse operations to check answers
- solve problems, including missing number problems, using number facts, place value, and more complex addition.

Vocabulary

- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to
- partition
- commutative
- estimate

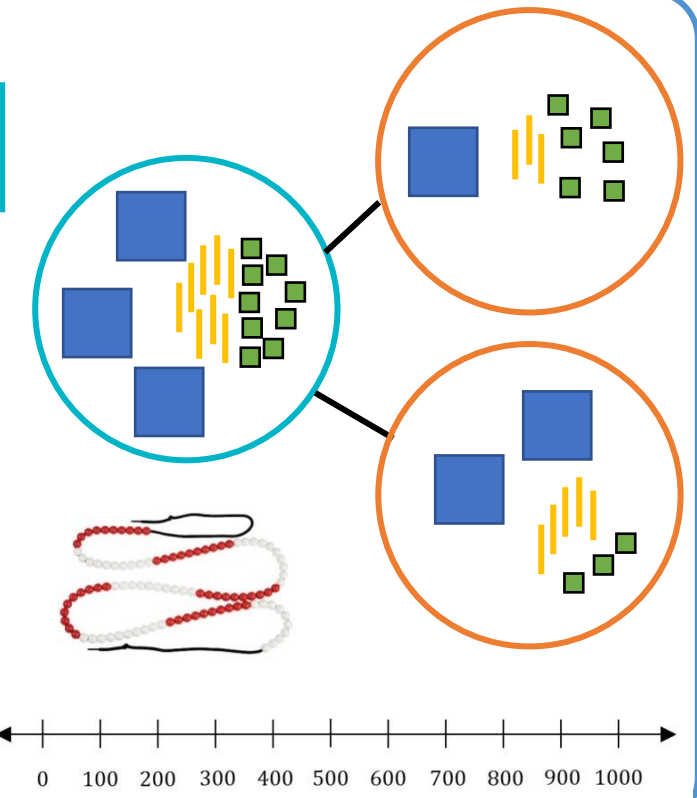
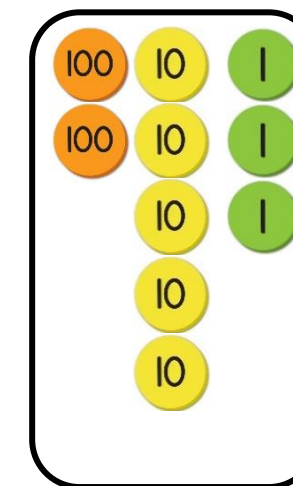
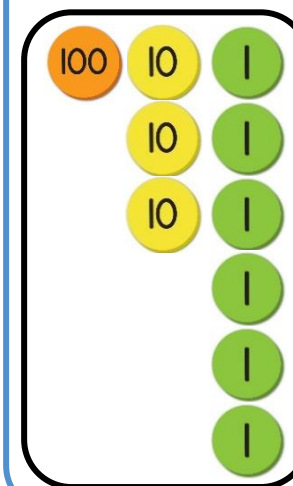
Manipulatives

- counters
- dienes
- place value counters
- interlocking cubes
- hundred squares
- ten frames
- number lines
- bead strings

Visual representations

$$\boxed{136} + \boxed{253} = \boxed{389}$$

addend addend sum



Sentence stems

_____ add _____ is equal to _____.
 _____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.
 _____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

To find the _____ you add the _____ to the other _____.

Learning sequence

- using number bond facts, add numbers using concrete objects, pictorial representations, and mentally, including:
 - a two-digit number and ones
 - a two-digit number and tens
 - two two-digit numbers
 - adding three one-digit numbers
- using a 'make the next 10/100' strategy, add numbers using concrete objects, pictorial representations, and mentally, including:
 - two one digit numbers
 - a two-digit number and ones
 - two two-digit numbers
- add numbers with up to three digits, using formal written methods of columnar addition
- solve problems, including missing number problems, using number facts, place value, and more complex addition
- estimate the answer to a calculation and use inverse operations to check answers

Unit overview: Addition – Year 4

National Curriculum requirements

By the end of the year, the children will be able to:

- add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate
- estimate and use inverse operations to check answers to a calculation
- solve addition two-step problems in contexts, deciding which operations and methods to use and why.

Vocabulary

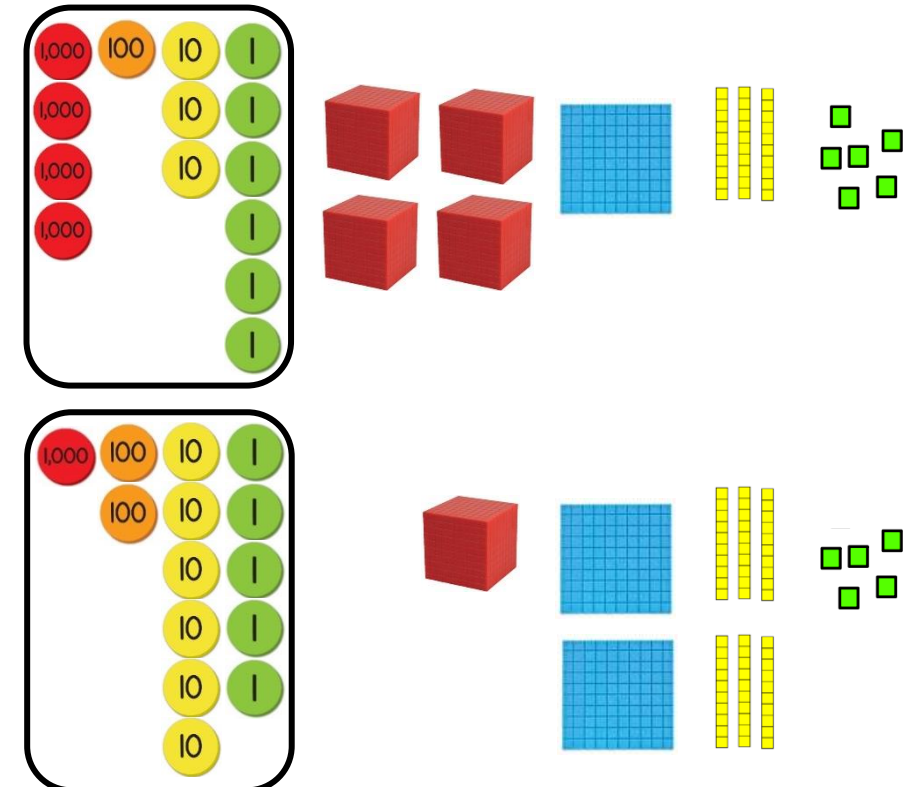
- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to
- partition
- commutative
- estimate

Manipulatives

- counters
- dienes
- place value counters
- interlocking cubes
- hundred squares
- ten frames
- number lines
- bead strings

Visual representations

$$\begin{array}{r} 4136 \\ +1265 \\ \hline 5401 \\ 11 \end{array}$$



Sentence stems

_____ add _____ is equal to _____.
 _____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.
 _____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

To find the _____ you add the _____ to the other _____.

Learning sequence

- using number bond facts, add numbers using concrete objects, pictorial representations, and mentally, including:
 - a two-digit number and ones
 - a two-digit number and tens
 - two two-digit numbers
 - two three-digit numbers
 - two four-digit numbers
 - adding three one-digit numbers
- using a 'make the next 10/100/1000' strategy, add numbers using concrete objects, pictorial representations, and mentally, including:
 - two one digit numbers
 - a two-digit number and ones
 - two two-digit numbers
 - two three-digit numbers
 - two four-digit numbers
- add and subtract numbers with up to 4 digits using the formal written methods of columnar addition
- estimate and use inverse operations to check answers to a calculation
- solve addition two-step problems in contexts, deciding which methods to use and why

Unit overview: Addition – Year 5

National Curriculum requirements

By the end of the year, the children will be able to:

- add whole numbers with more than 4 digits, including using formal written methods (columnar addition)
- add numbers mentally with increasingly large numbers
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- solve addition multi-step problems in contexts, deciding which operations and methods to use and why.

Vocabulary

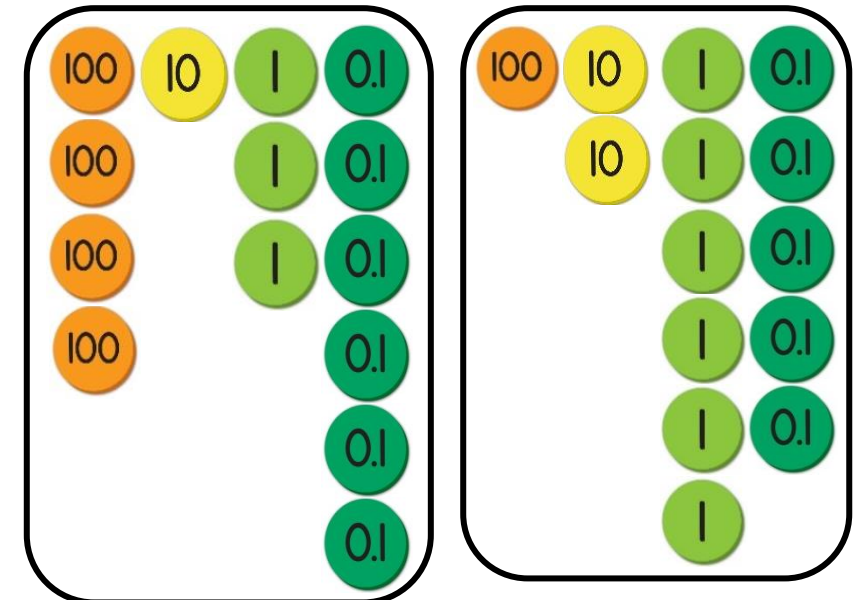
- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to
- partition
- commutative
- estimate

Manipulatives

- counters
- dienes
- place value counters
- interlocking cubes
- hundred squares
- ten frames
- number lines
- bead strings

Visual representations

$$\begin{array}{r}
 413.6 \\
 +126.5 \\
 \hline
 540.1 \\
 11
 \end{array}$$



Sentence stems

_____ add _____ is equal to _____.
 _____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.
 _____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

To find the _____ you add the _____ to the other _____.

If I know _____ then I can calculate _____

Learning sequence

- revise addition skills from Years 1 – 4
- add numbers mentally with increasingly large numbers
- add whole numbers with more than 4 digits, including using formal written methods (columnar addition)
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- solve addition multi-step problems in contexts, deciding which methods to use and why
- solve problems involving numbers up to three decimal places

Unit overview: Addition – Year 6

National Curriculum requirements

By the end of the year, the children will be able to:

- perform mental calculations, including with mixed operations and large numbers
- solve addition multi-step problems in contexts, deciding which operations and methods to use and why

Vocabulary

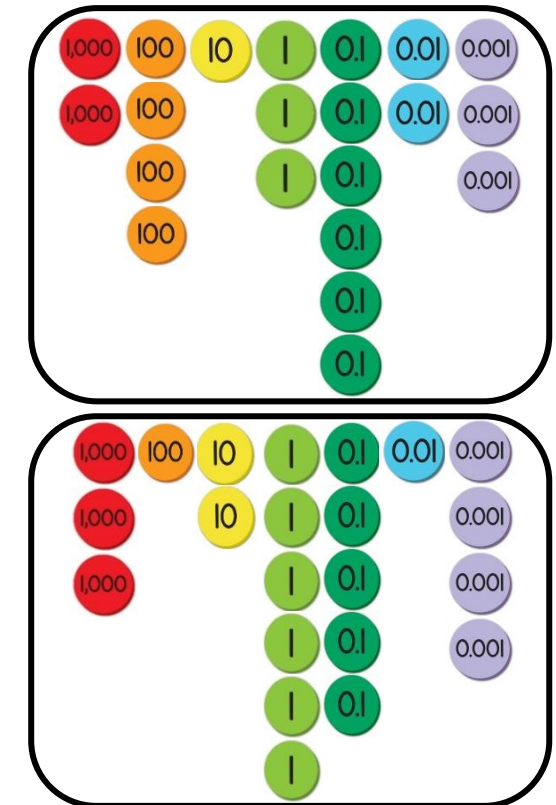
- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to
- partition
- commutative
- estimate

Manipulatives

- counters
- dienes
- place value counters
- interlocking cubes
- hundred squares
- ten frames
- number lines
- bead strings

Visual representations

$$\begin{array}{r}
 2413.623 \\
 + 3126.514 \\
 \hline
 5540.137 \\
 11
 \end{array}$$



Sentence stems

_____ add _____ is equal to _____.

_____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.

_____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

To find the _____ you add the _____ to the other _____.

If I know _____ then I can calculate _____

Learning sequence

- revise addition skills from Years 1 – 5
- add numbers mentally with increasingly large numbers
- add whole numbers with more than 4 digits, including using formal written methods (columnar addition)
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- solve addition multi-step problems in contexts, deciding which methods to use and why
- solve problems involving numbers up to three decimal places
- use their knowledge of the order of operations to carry out calculations involving the four operations
- find pairs of numbers that satisfy an equation with two unknowns