

1.1 NUMBER SENSE

3-week sequence

Success criteria

Pupils can represent and explain what happens when counting forwards and backwards in ones and can compare two measures and describe the relationship.

I can choose some equipment to show how the numbers change when you count up from 20 to 30 and back from 30 to 20 and explain what is happening. I can build two towers and explain which is shorter and how I know.

Learning objectives

Pupils should be taught to:

Number, place value and rounding

- count to and across 100, forwards and backwards,
- beginning with 0 or 1
- count, read and write numbers to 100 in numerals
- given a number, identify one more and one less
- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

Measurement

- compare, describe and solve practical problems for:
 - lengths and heights [for example, long / short, longer / shorter, tall / short, double / half]
 - mass or weight [for example, heavy / light, heavier than, lighter than]
 - capacity / volume [for example, full / empty, more than, less than, half, half full, quarter]
- recognise and use language relating to dates, including days of the week, weeks, months and years.

Guidance

Pupils practise counting (1, 2, 3), ordering (e.g. first, second, third), and to indicate a quantity (e.g. 3 apples, 2 centimetres), including solving simple concrete problems, until they are fluent.

They practise counting as reciting numbers and counting as enumerating objects.

Pupils begin to recognise place value in numbers beyond 20 by reading, writing, counting and comparing numbers up to 100, supported by objects and pictorial representations.

1.2 ADDITIVE REASONING

3-week sequence

Success criteria

Pupils can solve addition and subtraction problems using their knowledge of one more and one less and number bonds.

I can show and explain how I know what happens if there are ten frogs in a pond and one jumps out, without counting the frogs that are left. I can show and explain how I know what happens if five frogs jump out, without counting the frogs that are left. I can explain how I know what the date is tomorrow and what it was yesterday.

Learning objectives

Pupils should be taught to:

Number and place value

- given a number, identify one more and one less

Addition and subtraction

- represent and use number bonds and related subtraction facts within 20
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as such as $7 = \square - 9$

Measurement

- sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
- recognise and use language relating to dates, including days of the week, weeks, months and years.

Guidance

Pupils memorise and reason with number bonds to 10 and 20.

They should realise the effect of adding or subtracting zero.

They discuss and solve problems in familiar practical contexts, including using quantities. Problems should include the terms put together, add, altogether, total, take away, distance between, difference between more than and less than so that pupils develop the concept of addition and subtraction and are enabled to use these operations flexibly.

1.3 GEOMETRIC REASONING

2-week sequence

Success criteria

Pupils can recognise and identify shapes in their environment and justify their thinking.

I can find four different rectangles around the school and explain what is the same and what is different about them.

Learning objectives

Pupils should be taught to:

Geometry: properties of shapes

- recognise and name common 2-D and 3-D shapes, including:
 - 2-D shapes [for example, rectangles (including squares), circles and triangles]
 - 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]

Geometry: position and direction

- describe position, direction and movement.

Guidance

Pupils handle common 2-D and 3-D shapes, naming these and related everyday objects fluently. They recognise these shapes in different orientations and sizes, and know that rectangles, triangles, cuboids and pyramids are not always similar to each other.

Pupils use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside.

1.4 NUMBER SENSE

2-week sequence

Success criteria

Pupils can represent and explain how they know one more or one less than any given number and read and compare numbers under 100.

I can choose some equipment to show and explain how I know how many people will be on the bus if there are seven people on the bus and one more gets on and use this to explain one more than 67.

I can choose some equipment to show and explain how I know how many people will be on the bus if there are 6 people on the bus and one gets off and use this to explain one less than 46.

I can read the numbers 17 and 70, say which is bigger and show and explain how I know.

Learning objectives

Pupils should be taught to:

Number and place value

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- count, read and write numbers to 100 in numerals
- given a number, identify one more and one less
- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

Measurement

- compare, describe and solve practical problems for:
 - lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
 - mass or weight [for example, heavy/light, heavier than, lighter than]
 - capacity/volume [for example, full/empty, more than, less than, half, half full, quarter]
 - time [for example, quicker, slower, earlier, later]
- recognise and use language relating to dates, including days of the week, weeks, months and years.

Guidance

Pupils practise counting (1, 2, 3), ordering (e.g. first, second, third), and to indicate a quantity (e.g. 3 apples, 2 centimetres), including solving simple concrete problems, until they are fluent.

They practise counting as reciting numbers and counting as enumerating objects.

Pupils begin to recognise place value in numbers beyond 20 by reading, writing, counting and comparing numbers up to 100, supported by objects and pictorial representations.

1.5 ADDITIVE REASONING

2-week sequence

Success criteria

Pupils can solve addition and subtraction problems using their number bonds for ten to derive bonds for 20 and their knowledge of one more and one less.

I can show and explain how I know what happens if there are 20 biscuits on a plate and one is eaten, without counting the biscuits that are left.
I can show and explain how I know what happens if five biscuits are eaten, without counting the biscuits that are left.

Learning objectives

Pupils should be taught to:

Number and place value

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- given a number, identify one more and one less

Addition and subtraction

- represent and use number bonds and related subtraction facts within 20
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$.

Guidance

Pupils memorise and reason with number bonds to 10 and 20.

They should realise the effect of adding or subtracting zero.

They discuss and solve problems in familiar practical contexts, including using quantities. Problems should include the terms put together, add, altogether, total, take away, distance between, difference between more than and less than so that pupils develop the concept of addition and subtraction and are enabled to use these operations flexibly.

1.6 NUMBER SENSE

3-week sequence

Success criteria

Pupils can represent and explain what happens when counting in two and tens and connect this with adding and subtracting two and ten. They can explain how they know which numbers are multiples of ten and which are multiples of two.

I can show and explain how much I have spent if I spend 50p on a cake and 10p on a biscuit at the school fair, without counting in ones. I can show and explain how much I have left if I have 80p and I spend 10p guessing the name of the bear at the school fair, without counting in ones. I can show and explain why I can't pay for a DVD which costs £7 using only £2 coins without needing change.

Learning objectives

Pupils should be taught to:

Number and place value

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- count, read and write numbers to 100 in numerals; count in multiples of twos and tens
- given a number, identify one more and one less
- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

Measurement

- recognise and know the value of different denominations of coins and notes.

Guidance

Pupils practise counting (1, 2, 3), ordering (e.g. first, second, third), and to indicate a quantity (e.g. 3 apples, 2 centimetres), including solving simple concrete problems, until they are fluent.

Pupils begin to recognise place value in numbers beyond 20 by reading, writing, counting and comparing numbers up to 100, supported by objects and pictorial representations.

They practise counting as reciting numbers and counting as enumerating objects, and counting in twos and tens from different multiples to develop their recognition of patterns in the number system (for example, odd and even numbers), including varied and frequent practice through increasingly complex questions.

1.7 MULTIPLICATIVE REASONING

3-week sequence

Success criteria

Pupils can represent and explain how to solve problems involving multiplying and dividing by two and ten, with support.

I can set out chairs in the hall in rows of ten, and when there are five rows I can say how many chairs there are altogether and how I know. I can show and explain how I know there are six eggs in a box without counting in ones.

Learning objectives

Pupils should be taught to:

Number and place value

- count, read and write numbers to 100 in numerals; count in multiples of twos and tens

Multiplication and division

- solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

Measurement

- recognise and know the value of different denominations of coins and notes.

Guidance

Through grouping and sharing small quantities, pupils begin to understand multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.

They make connections between arrays, number patterns and counting in twos, fives and tens.

1.8 NUMBER SENSE

3-week sequence

Success criteria

Pupils can represent and explain how to use their counting to measure lengths, weights and capacities.

I can use 10 cm rods and my counting in tens to measure the length of a table in my classroom and then find that number on a tape measure.

Learning objectives

Pupils should be taught to:

Number and place value

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- count, read and write numbers to 100 in numerals; count in multiples of twos and tens
- given a number, identify one more and one less
- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

Measurement

- measure and begin to record the following:
 - lengths and heights
 - mass/weight
 - capacity and volume
- recognise and know the value of different denominations of coins and notes.

Guidance

They practise counting as reciting numbers and counting as enumerating objects, and counting in twos and tens from different multiples to develop their recognition of patterns in the number system (for example, odd and even numbers), including varied and frequent practice through increasingly complex questions.

Pupils move from using and comparing different types of quantities and measures using non-standard units, including discrete (for example, counting) and continuous (for example, liquid) measures, to using manageable common standard units.

In order to become familiar with standard measures, pupils begin to use measuring tools such as a ruler, weighing scales and containers.

For additional guidance see appendix.

1.9 ADDITIVE REASONING

2-week sequence

Success criteria

Pupils can solve, represent and record addition and subtraction problems, appropriately choosing and using their number facts and counting (using numbers up to 20).

I can show and explain different ways to solve $5 + 6$ and $20 - 2$ and say which I think is best and why. I can work out the date for our school trip if today is the 10th and we are going in three days, write a number sentence to match and explain it.

Learning objectives

Pupils should be taught to:

Number and place value

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- given a number, identify one more and one less

Addition and subtraction

- read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 29$

Measurement

- sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
- recognise and use language relating to dates, including days of the week, weeks, months and years.

Guidance

Pupils memorise and reason with number bonds to 10 and 20 in several forms (for example, $9 + 7 = 16$; $16 - 7 = 9$; $7 = 16 - 9$). They should realise the effect of adding or subtracting zero. This establishes addition and subtraction as related operations.

They discuss and solve problems in familiar practical contexts, including using quantities. Problems should include the terms put together, add, altogether, total, take away, distance between, difference between more than and less than so that pupils develop the concept of addition and subtraction and are enabled to use these operations flexibly.

1.10 GEOMETRIC REASONING

2-week sequence

Success criteria

Pupils can recognise and identify shapes in their environment and justify their thinking and create simple repeating patterns.

I can sort food boxes between those that are cuboids and those that are not, and explain what is the same and what is different about the cuboids. I can create a repeating pattern using different shaped food boxes and explain it.

Learning objectives

Pupils should be taught to:

Geometry: properties of shapes

- recognise and name common 2-D and 3-D shapes, including:
 - 2-D shapes [for example, rectangles (including squares), circles and triangles]
 - 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]

Geometry: position and direction

- describe position, direction and movement.

Guidance

Pupils handle common 2-D and 3-D shapes, naming these and related everyday objects fluently.

They recognise these shapes in different orientations and sizes, and know that rectangles, triangles, cuboids and pyramids are not always similar to each other.

Pupils use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside. They recognise and create repeating patterns with objects and with shapes.

1.11 NUMBER SENSE

3-week sequence

Success criteria

Pupils can represent and explain what happens when counting in different steps and connect this with adding and subtracting and measuring. They can explain how they know which numbers are multiples of two, five and ten.

I can show and explain what happens if I have £20 in my piggy bank and I get £5 for my birthday, without counting in ones. I can show and explain what happens if I have £35 and I spend £5, without counting in ones.

Learning objectives

Pupils should be taught to:

Number and place value

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- count, read and write numbers to 100 in numerals, count in multiples of twos, fives and tens
- given a number, identify one more and one less
- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
- read and write numbers from 1 to 20 in numerals and words

Measurement

- measure and begin to record the following:
 - lengths and heights
 - mass/weight
 - capacity and volume
 - time (hours, minutes, seconds)
- recognise and know the value of different denominations of coins and notes

- sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].

Guidance

They practise counting as reciting numbers and counting as enumerating objects, and counting in twos, fives and tens from different multiples to develop their recognition of patterns in the number system (for example, odd and even numbers), including varied and frequent practice through increasingly complex questions.

Pupils move from using and comparing different types of quantities and measures using non-standard units, including discrete (e.g. counting) and continuous (e.g. liquid) measures, to using manageable common standard units.

In order to become familiar with standard measures, pupils begin to use measuring tools such as a ruler, weighing scales and containers.

For additional guidance see appendix.

1.12 ADDITIVE REASONING

3-week sequence

Success criteria

Pupils can solve, represent and record addition and subtraction problems, appropriately choosing and using their number facts and counting (using numbers up to 20).

I can show and explain all the different ways seven people can be carried in two boats across a river, record matching number sentences and explain how I know I have found all the ways.

Learning objectives

Pupils should be taught to:

Number and place value

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- given a number, identify one more and one less

Addition and subtraction

- read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$

Guidance

Pupils memorise and reason with number bonds to 10 and 20 in several forms (for example, $9 + 7 = 16$; $16 + 7 = 9$; $7 = 16 - 9$). They should realise the effect of adding or subtracting zero. This establishes addition and subtraction as related operations.

They discuss and solve problems in familiar practical contexts, including using quantities. Problems should include the terms put together, add, altogether, total, take away, distance between, difference between more than and less than so that pupils develop the concept of addition and subtraction and are enabled to use these operations flexibly.

1.13 MULTIPLICATIVE REASONING

3-week sequence

Success criteria

Pupils can represent and explain what happens when doubling and halving in the context of both discrete objects and continuous measures. They can show and tell the time, on an analogue clock, on the hour and half past.

I can show and explain how to cut a piece of ribbon for the big bear that is twice as long as the ribbon for the small bear and how many grapes to give the big bear if he has twice as many as the small bear. I can show and explain how to share a cake and how to share a packet of biscuits between two people and set the clock for half past four when they have a snack.

Learning objectives

Pupils should be taught to:

Number and place value

- *count, read and write numbers to 100 in numerals, count in multiples of twos, fives and tens*

Multiplication and division

- *solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher*

Fractions

- recognise, find and name a half as one of two equal parts of an object, shape or quantity
- recognise, find and name a quarter as one of four equal parts of an object, shape or quantity

Measurement

- *recognise and know the value of different denominations of coins and notes*
- tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

Guidance

Pupils are taught half and quarter as 'fractions of' discrete and continuous quantities by solving problems using shapes, objects and quantities. For example, they could recognise and find half a length, quantity, set of objects or shape. Pupils connect halves and quarters to the equal sharing and grouping of sets of objects and to measures, as well as recognising and combining halves and quarters as parts of a whole.

Pupils use the language of time, including telling the time throughout the day, first using o'clock and then half past.

They practise counting as reciting numbers and counting as enumerating objects, and counting in twos, fives and tens from different multiples to develop their recognition of patterns in the number system (for example, odd and even numbers), including varied and frequent practice through increasingly complex questions.

1.14 GEOMETRIC REASONING

2-week sequence

Success criteria

Pupils can use their understanding of halves and quarters to talk about shapes and movement (turns) and solve related problems.

I can explain how to programme a programmable toy to draw a square on paper.

Learning objectives

Pupils should be taught to:

Fractions

- *recognise, find and name a half as one of two equal parts of an object, shape or quantity*
- *recognise, find and name a quarter as one of four equal parts of an object, shape or quantity*

Geometry: properties of shapes

- *recognise and name common 2-D and 3-D shapes, including:*
 - *2-D shapes [for example, rectangles (including squares), circles and triangles]*
 - *3-D shapes [for example, cuboids (including cubes), pyramids and spheres]*

Geometry: position and direction

- describe position, direction and movement, including whole, half, quarter and three-quarter turns.

Guidance

Pupils handle common 2-D and 3-D shapes, naming these and related everyday objects fluently.

They recognise these shapes in different orientations and sizes, and know that rectangles, triangles, cuboids and pyramids are not always similar to each other.

Pupils use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside.

They recognise and create repeating patterns with objects and with shapes.

Pupils make whole, half, quarter and three-quarter turns in both directions and connect turning clockwise with movement on a clock face.