

# Ashwell Primary School

## Maths Curriculum

### *Measurement – Skills & Knowledge Progression*



#### NURSERY – Measurement

##### Core knowledge to be acquired:

- Make comparisons between objects relating to size, length, weight and capacity
- Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'
- Begin to make sense of their own life-story and family's history (UoW).

##### Key Vocabulary:

size, compare, too many/few, too much/little, long(er, est), short(er, est), tall(er, est), thick, thin, heavy, light, full, empty, birthday, holiday, morning, afternoon, evening, night, yesterday, today, tomorrow, playtime, bedtime, before, after, next, last, now, soon, early, late, quick(er, est), slow(er, est), old(er, est), young(er, est), money, coin, penny, pence

##### What comes next:

- Compare length, weight and capacity.

#### RECEPTION – Measurement

##### Core knowledge to be acquired:

- Compare length, weight and capacity.

##### Key Vocabulary:

measure, guess, estimate, (not) enough, nearly, close to, about the same as, just over/under, metre, length, width, height, high, low, far, near, close, weigh, weight, balances, heavier/lighter than, heaviest, lightest, scales, half full, holds, container, time, days of the week, hour, o'clock, clock, watch, hands, price, cost, buy, sell, spend, spent, pay.

##### Prior knowledge / skills this builds on:

- Make comparisons between objects relating to size, length, weight and capacity
- Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'
- Begin to make sense of their own life-story and family's history (UoW).

##### What comes next:

- Compare, describe and solve practical problems for:
  - lengths and heights [e.g.: long/short, longer/ shorter, tall/short, double/half ]
  - mass/weight [e.g.: heavy/light, heavier than, lighter than]
  - capacity and volume [e.g.: full/empty, more than, less than, half, half full, quarter]
  - time [e.g.: quicker, slower, earlier, later]
  - Measure and begin to record length, height, mass/weight, capacity/volume, time (hours, minutes, seconds)
- 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.
- Sequence events in chronological order using language [e.g.: 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.

## YEAR 1 – Measurement

### Core knowledge to be acquired:

- Compare, describe and solve practical problems for:
  - lengths and heights [e.g.: long/short, longer/ shorter, tall/short, double/half ]
  - mass/weight [e.g.: heavy/light, heavier than, lighter than]
  - capacity and volume [e.g.: full/empty, more than, less than, half, half full, quarter]
  - time [e.g.: quicker, slower, earlier, later]
- 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.
- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
- Sequence events in chronological order using language [e.g.: 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.

### Key Vocabulary (in addition to previous year group):

measurement, roughly, centimetre, metre stick, kilogram, half kilogram, litre, half litre, capacity, volume, more/less than, quarter full, months of the year, seasons, weekend, month, year, earlier, later, midnight, date, how long...?, how often...?, always, never, often, sometimes, once, twice, half past, quarter past, quarter to, clock face, hour hand, minute hand, hours, minutes, change, dear, costs more, cheap, costs less, cheaper, costs the same as, how much...?, total.

### Prior knowledge / skills this builds on:

- Compare length, weight and capacity.

### What comes next:

- Compare and order lengths, mass, volume/ capacity and record the results using >, < and =
- Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels
- Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.
- Find different combinations of coins that equal the same amounts of money.
- Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
- Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.
- Compare and sequence intervals of time.
- Know the number of minutes in an hour and the number of hours in a day.

## YEAR 2 – Measurement

### Core knowledge to be acquired:

- Compare and order lengths, mass, volume/ capacity and record the results using >, < and =
- Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels
- Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.
- Find different combinations of coins that equal the same amounts of money.
- Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
- Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.
- Compare and sequence intervals of time.
- Know the number of minutes in an hour and the number of hours in a day.

### Key Vocabulary (in addition to previous year group):

measuring scale, further, furthest, tape measure, gram, millilitre, contains, temperature, degree, fortnight, 5, 10, 15... minutes past, digital/analogue clock/watch, timer, seconds, bought, sold

### Prior knowledge / skills this builds on:

- Compare, describe and solve practical problems for:
  - lengths and heights [e.g.: long/short, longer/ shorter, tall/short, double/half ]
  - mass/weight [e.g.: heavy/light, heavier than, lighter than]
  - capacity and volume [e.g.: full/empty, more than, less than, half, half full, quarter]
  - time [e.g.: quicker, slower, earlier, later]
- 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.
- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
- Sequence events in chronological order using language [e.g.: 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.

### What comes next:

- Compare lengths (m/cm/mm), mass (kg/g) and volume / capacity (l/ml).
- Measure lengths (m/cm/mm), mass (kg/g) and volume / capacity (l/ml).
- Tell and write the time from an analogue clock; 12-hour and 24-hour clocks.
- Tell and write the time from an analogue clock, including using Roman numerals from I to XII.
- Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock/a.m./p.m., morning, afternoon, noon and midnight.
- Know the number of seconds in a minute and the number of days in each month, year and leap year.
- Compare durations of events, [e.g.: to calculate the time taken by particular events or tasks].
- Measure the perimeter of simple 2-D shapes.
- Add and subtract amounts of money to give change, using both £ and p in practical contexts.
- Add and subtract lengths (m/cm/mm), mass (kg/g) and volume / capacity (l/ml).

## YEAR 3 – Measurement

### Core knowledge to be acquired:

- Compare lengths (m/cm/mm), mass (kg/g) and volume / capacity (l/ml).
- Measure lengths (m/cm/mm), mass (kg/g) and volume / capacity (l/ml).
- Tell and write the time from an analogue clock; 12-hour and 24-hour clocks.
- Tell and write the time from an analogue clock, including using Roman numerals from I to XII.
- Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock/a.m./p.m., morning, afternoon, noon and midnight.
- Know the number of seconds in a minute and the number of days in each month, year and leap year.
- Compare durations of events, [e.g.: to calculate the time taken by particular events or tasks].
- Measure the perimeter of simple 2-D shapes.
- Add and subtract amounts of money to give change, using both £ and p in practical contexts.
- Add and subtract lengths (m/cm/mm), mass (kg/g) and volume / capacity (l/ml).

### Key Vocabulary (in addition to previous year group):

division, approximately, millimetre, kilometre, mile, distance apart, between, to...from, perimeter, centigrade, century, calendar, earliest, latest, a.m., p.m., Roman numerals, 12-hour/24-hour clock time

### Prior knowledge / skills this builds on:

- Compare and order lengths, mass, volume/ capacity and record the results using >, < and =
- Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels
- Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.
- Find different combinations of coins that equal the same amounts of money.
- Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
- Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.
- Compare and sequence intervals of time.
- Know the number of minutes in an hour and the number of hours in a day.

### What comes next:

- Compare and estimate different measures, including money in pounds and pence.
- Read, write and convert time between analogue and digital 12-hour / 24- hour clocks.
- Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
- Convert between different units of measurement [e.g.: kilometre to metre; hour to minute].
- Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.
- Find the area of rectilinear shapes by counting squares.
- Calculate different measures, including money in pounds and pence.

## YEAR 4 – Measurement

### Core knowledge to be acquired:

- Compare and estimate different measures, including money in pounds and pence.
- Read, write and convert time between analogue and digital 12-hour / 24- hour clocks.
- Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
- Convert between different units of measurement [e.g.: kilometre to metre; hour to minute].
- Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.
- Find the area of rectilinear shapes by counting squares.
- Calculate different measures, including money in pounds and pence.

### Key Vocabulary (in addition to previous year group):

unit, standard unit, metric unit, breadth, edge, area, covers, square centimetre (cm<sup>2</sup>), mass, weight, measuring cylinder, leap year, millennium, noon, date of birth, timetable, arrive, depart

### Prior knowledge / skills this builds on:

- Compare lengths (m/cm/mm), mass (kg/g) and volume / capacity (l/ml).
- Measure lengths (m/cm/mm), mass (kg/g) and volume / capacity (l/ml).
- Tell and write the time from an analogue clock; 12-hour and 24-hour clocks.
- Tell and write the time from an analogue clock, including using Roman numerals from I to XII.
- Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock/a.m./p.m., morning, afternoon, noon and midnight.
- Know the number of seconds in a minute and the number of days in each month, year and leap year.
- Compare durations of events, [e.g.: to calculate the time taken by particular events or tasks].
- Measure the perimeter of simple 2–D shapes.
- Add and subtract amounts of money to give change, using both £ and p in practical contexts.
- Add and subtract lengths (m/cm/mm), mass (kg/g) and volume / capacity (l/ml).

### What comes next:

- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to three decimal places.
- Convert between miles and kilometres.
- Recognise that shapes with the same areas can have different perimeters and vice versa.
- Calculate the area of parallelograms and triangles.
- Recognise when it is possible to use the formulae for the area of shapes.
- Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units [e.g.: mm<sup>3</sup> and km<sup>3</sup>].
- Recognise when it is possible to use the formulae for the volume of shapes.
- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

## YEAR 5 – Measurement

### Core knowledge to be acquired:

- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to three decimal places.
  - Convert between miles and kilometres.
  - Recognise that shapes with the same areas can have different perimeters and vice versa.
  - Calculate the area of parallelograms and triangles.
  - Recognise when it is possible to use the formulae for the area of shapes.
  - Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed ( $\text{cm}^3$ ) and cubic metres ( $\text{m}^3$ ), and extending to other units [e.g.:  $\text{mm}^3$  and  $\text{km}^3$ ].
  - Recognise when it is possible to use the formulae for the volume of shapes.
- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

### Key Vocabulary (in addition to previous year group):

imperial unit, square metre ( $\text{m}^2$ ), square millimetre ( $\text{mm}^2$ ), pint, gallon, discount, currency

### Prior knowledge / skills this builds on:

- Compare and estimate different measures, including money in pounds and pence.
- Read, write and convert time between analogue and digital 12-hour / 24- hour clocks.
- Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
- Convert between different units of measurement [e.g.: kilometre to metre; hour to minute].
- Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.
- Find the area of rectilinear shapes by counting squares.
- Calculate different measures, including money in pounds and pence.

### What comes next:

- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to three decimal places.
- Convert between miles and kilometres.
- Recognise that shapes with the same areas can have different perimeters and vice versa.
- Calculate the area of parallelograms and triangles.
- Recognise when it is possible to use the formulae for the area of shapes.
- Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed ( $\text{cm}^3$ ) and cubic metres ( $\text{m}^3$ ), and extending to other units [e.g.:  $\text{mm}^3$  and  $\text{km}^3$ ].
- Recognise when it is possible to use the formulae for the volume of shapes.
- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

## YEAR 6 – Measurement

### Core knowledge to be acquired:

- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to three decimal places.
- Convert between miles and kilometres.
- Recognise that shapes with the same areas can have different perimeters and vice versa.
- Calculate the area of parallelograms and triangles.
- Recognise when it is possible to use the formulae for the area of shapes.
- Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed ( $\text{cm}^3$ ) and cubic metres ( $\text{m}^3$ ), and extending to other units [e.g.:  $\text{mm}^3$  and  $\text{km}^3$ ].
- Recognise when it is possible to use the formulae for the volume of shapes.
- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

### Key Vocabulary (in addition to previous year group):

yard, foot, feet, inch, inches, circumference, tonne, pound, ounce, centilitre, cubic centimetres ( $\text{cm}^3$ ), cubic metres ( $\text{m}^3$ ), cubic millimetres ( $\text{mm}^3$ ), cubic kilometres ( $\text{km}^3$ ), Greenwich Mean Time, British Summer Time, International Date Line, profit, loss.

### Prior knowledge / skills this builds on:

- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to three decimal places.
- Convert between miles and kilometres.
- Recognise that shapes with the same areas can have different perimeters and vice versa.
- Calculate the area of parallelograms and triangles.
- Recognise when it is possible to use the formulae for the area of shapes.
- Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed ( $\text{cm}^3$ ) and cubic metres ( $\text{m}^3$ ), and extending to other units [e.g.:  $\text{mm}^3$  and  $\text{km}^3$ ].
- Recognise when it is possible to use the formulae for the volume of shapes.
- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

### What comes next:

#### Key Stage 3: Geometry and Measures

- use standard units of mass, length, time, money and other measures, including with decimal quantities
- derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders)
- calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes