

Measures

Length

Understand and use the language associated with length, *eg long/short, longer/shorter, the same length as, taller/tallest, thick/thin, about the same as, just less than.*

Compare and talk about the length/height of two objects.

Talk about and order three objects of different lengths.

Measure length using non-standard units, *eg straws, paper clips, Roamer/Pixi* using:

- multiple units of the same length;
- two identical units;
- a single unit.

Choose, initially with help, and use suitable non-standard units to begin to estimate and measure the length of an object.

Through using non-standard units, *eg body parts, straws, pencils*, appreciate the need for a standard unit of length.

Appreciate the conservation of length through practical investigations.

Develop an appreciation of a metre, *eg by sorting objects into those which are longer/shorter than/about a metre long/wide/high.*

Measure using the metre as the standard unit.

Estimate and compare lengths in metres. Introduce shorter lengths, *eg half metre, quarter metre, decimetre, centimetre.*

Discuss the use of “benchmarks” to help to develop estimation skills.

Estimate and measure in metres and centimetres using a variety of instruments:

- discuss and select the appropriate unit and instrument;
- know how to use these instruments with reasonable accuracy, *eg using a dead length or waste end ruler;*
- use a ruler to draw and measure lines to the nearest half centimetre.

Appreciate and use, in practical situations, the relationship between metres and centimetres, *eg 1 m 25 cm is 125 cm.*

Discuss and share methods of measuring curved lines.

Appreciate that measurement of length will always be approximate depending on the measuring instrument used.

Introduce the kilometre. Appreciate and use the relationship between kilometres and metres, *eg 1 km 256 m is 1256 m.*

Appreciate the need for a greater degree of accuracy. Introduce, measure and record in millimetres.

Introduce the concept of perimeter. Find, by measuring and calculating, perimeters of simple shapes.

Understand and use the relationship between millimetres and centimetres.

Solve problems and carry out investigations relating to length, height, depth or distance using mental, pencil and paper or calculator methods.

Talk about the continuous nature of length.

Record measurements of length using decimal notation. Discuss how this relates to place value *eg, 14 mm = 1.4 cm, 126 cm = 1.26 m*

Be aware of the Imperial units of length still used in every day life, *eg miles, yards, feet and inches.*

Calculate the perimeter of simple shapes, initially with all lengths given.

Convert from one metric unit of length to another.

Appreciate the concept of scale to represent distances/lengths. Use scale in contexts such as maps and drawings.

“Weight”

Understand and use the language associated with “weight”, *eg heavy/light, heavier/lighter, the same as, lightest, almost the same as.*

Compare and talk about the “weight” of two objects

- by handling
- using balance scales

Talk about and order three objects of different “weights”.

Measure using non-standard units:

- weigh the same object using a variety of non-standard units, *eg cotton reels, marbles.*
- use the same non-standard unit to weigh different objects.

Choose, initially with help, and use suitable non-standard units to begin to estimate and measure the “weight” of an object.

Through using non-standard units, appreciate the conservation of “weight” and the need for a standard unit of “weight”.

Develop an appreciation of a kilogram, *eg by sorting objects into those that are heavier/lighter than/about 1 kilogram.*

Measure using the kilogram as the standard unit.

Estimate and compare “weights” in relation to a kilogram. Introduce lighter “weights”, *eg half kilogram, quarter kilogram.*

Explore “weights” less than one kilogram, half a kilogram, 100 grams to introduce grams.

Discuss the use of “benchmarks” to help to develop estimation skills.

Estimate and measure in kilograms and grams using a variety of instruments:

- discuss and select the appropriate unit and instrument;
- know how to use these instruments with reasonable accuracy.

Appreciate and use, in practical situations, the relationship between kilogram and grams, *eg 1 kg 256 gm is 1256 g.*

Appreciate that measurement of “weight” will always be approximate depending on the measuring instrument used.

Solve problems and carry out investigations relating to “weight” using mental, pencil and paper or calculator methods.

Talk about the continuous nature of “weight”.

Record measurements of “weight” using decimal notation. Discuss how this relates to place value *eg, 1260 g = 1.26 kg.*

Be aware of the Imperial units of weight used in everyday life, *eg stones and pounds.*

Develop an appreciation of other standard units of “weight”:

- milligram;
- tonne.

Convert from one metric unit of weight to another.

Capacity/Volume

Understand and use the language associated with capacity, *eg empty/full, pour/fill, holds more/holds less, holds the same as.*

Compare and talk about the capacity of two containers.

Talk about and order three containers in relation to capacity.

Measure capacity using non-standard units, *eg egg-cups, yoghurt pots*, using:

- multiple units of the same capacity;
- a single unit.

Select and use different single non-standard units to measure the capacity of a container.

Compare two objects of different volumes, *eg blocks, dice.* Order three or more objects with respect to volume.

Through using non-standard units, appreciate the need for a standard unit of capacity.

Develop an appreciation of a litre, *eg by sorting containers into those that hold more/less than/about a litre.*

Measure using the litre as a standard unit.

Estimate and compare capacity in litres, *eg “Does the bucket hold more than 2 litres or less than 2 litres?“.* Introduce smaller capacities, *eg half litre and quarter litre.*

Discuss the use of “benchmarks” to help to develop estimation skills.

Appreciate the conservation of volume through practical investigations, *eg water poured from one container to another can take on a different shape but the volume remains the same, a solid built from cubes can be dismantled and reassembled in a variety of form.*

Explore the capacity of smaller containers to introduce the millilitre.

Estimate and measure the capacity of a range of containers in litres and millilitres using a variety of instruments:

- discuss and select the appropriate unit and instrument;
- know how to use these instruments with reasonable accuracy.

Appreciate and use, in practical situations, the relationship between litres and millilitres, *eg 1 litre 256 ml is 1256 ml.*

Appreciate that measurement of capacity/volume will always be approximate depending on the measuring instrument used.

Discuss, estimate and measure volume by counting centimetre cubes.

Solve problems and carry out investigations relating to capacity/volume using mental, pencil and paper or calculator methods.

Estimate, measure and record capacities/volumes using appropriate units.

Talk about the continuous nature of capacity/volume.

Record measurements of capacity in litres and millilitres using decimal notation. Discuss how this relates to place value, *eg 1516 ml is 1.516 litres.*

Be aware of the Imperial units of capacity used in everyday life, *eg pints, gallons.*

Convert from one metric unit of capacity to another.

Investigate ways of finding the volume of cubes and cuboids.

Calculate the volume of cubes and cuboids.

Area

Begin to understand the concept of area as the idea of covering a surface, *eg the tablecloth “covers” the table.*

Compare and talk about two surfaces by placing one on top of the other.

Cover surfaces using non-standard unit shapes which:

- leave gaps;
- do not leave gaps

and talk about the results.

Measure area using non-standard units, *eg envelopes, post cards.*

Work systematically to measure area using:

- different units to cover one area;
- same unit to cover different areas.

Find the area of shapes by counting squares where answers are:

- an exact number of squares;
- whole and half squares;
- whole and part squares.

Through using non-standard units, appreciate the need for a standard unit of area.

Find the area of irregular shapes in cm² by counting whole, half and part squares.

Investigate strategies for finding areas of squares and rectangles, leading to length x breadth.

Create a variety of shapes for a given area using practical materials and appreciate the conservation of area.

Explore larger areas to introduce the square metre, *eg using Roamer/Pip.*

Calculate areas of squares, rectangles and right-angled triangles.

Investigate area and perimeter, *eg calculate the perimeter of a variety of shapes which all have the same area.*

Time

Understand and use language associated with time *eg now, later, soon, morning, evening, before, after, yesterday, day, night.*

Talk about and sequence 2 or 3 familiar events *eg using pictures of activities of the school day.*

Talk about events now, past and future.

Recognise special times on the clock face *eg lunch time, home time.*

Know the names of the days of the week.

Develop an understanding of the passing of time through practical activities.

Use simple timers where:

- the time is fixed and the output is measured;
- the task is fixed and the time is measured.

Develop further vocabulary for time, *eg sooner, earlier, just a minute, now and again.*

Sequence the days of the week.

Know, talk about and order the seasons and the months of the year.

Tell the time in hours on the analogue clock.

Tell the time in half hours.

Explore and count minute intervals on a clock face.

Tell the time in “minutes past” the hour (5, 10, 15, 20, 25, 30). Relate to “half past” and “quarter past”.

Carry out practical activities to appreciate duration by estimating 1 min, 2 min, 5 min.

Tell the time in “minutes to” the hour on the analogue clock (25, 20, 15, 10 and 5). Relate to “quarter to”.

Appreciate and talk about important dates on the calendar, *eg make a calendar array for December.*

Read and interpret information from a calendar month.

Know the number of days in each month, year and leap year. Discuss the months generally associated with each season.

Relate hours and half-hours on analogue and digital clocks.

Understand and explain the relationships between units of time *eg minute/hour, hour/day, day/week/fortnight, month/year.*

Through investigation, appreciate that measurement of time will always be approximate depending on the timing device used.

Through discussion, develop an understanding of am and pm and use appropriate notation.

Through practical activities, appreciate the use of seconds to time shorter durations.

Talk about the continuous nature of time.

Appreciate different ways of writing dates.

Investigate calendar patterns and use these to calculate the passage of time between two given dates:

- within a month;
- across more than one month.

Appreciate the term “inclusive”.

Read and relate analogue and digital time (in 5 minute, 1 minute intervals).

Understand and use the 24-hour clock in meaningful contexts.

Use 24-hour clock notation, ie 1642 hours.

Use the relationship between minutes and hours to perform simple mental calculations involving counting forward/backwards.

Read and interpret simple timetables (12hr and 24hr) and apply knowledge to solve related problems.

Understand and use the terms – “decade”, “century” and “millennium”.

Discuss different times in other countries, initially within Europe.