

MEASURES

Pupils should be taught to:

Understand and use the vocabulary related to length, mass and capacity; begin to know relationships between standard metric units

Measure and compare:

- by direct (side by side) comparison;
- using uniform non-standard units;
- using standard units

As outcomes, Year 1 pupils should, for example:

Understand and use in practical contexts:

- length and distance: *long, short, tall, high, low, wide, narrow, deep, shallow, thick, thin, far, near, close...*
- mass: *weight, weighs, heavy, light, balances...*
- capacity: *full, empty, holds...*

and comparative words such as: *longer, longest...*

Length, mass, capacity: direct comparison

Make direct comparisons (side by side, no counting) in a variety of contexts: for example, compare the lengths of two different ribbons, the weights of two different objects, the capacities of two different cups... For example:

- Compare the heights of two children standing back to back.
- Use a balance to find out which of four parcels is the heaviest.
- Find out which of three or more things holds most by filling with rice, water, sand... and pouring from one to the other.

Length, mass, capacity: non-standard and standard units

Use uniform non-standard and standard units to measure, count and solve problems in a variety of contexts.

For example:

- How many:
cubes balance this shoe;
rulers fit along this line;
cups fill this jug?



- 7 rulers fit across the table. 10 rulers fit across the door. Which is wider, the table or the door? How much wider is it?
- Estimate the distance (number of steps forward) that a floor robot should move from a marked spot to different objects. Check estimates, and respond to questions such as: Is that far enough? Too far? How many more steps forward are needed?

As outcomes, Year 2 pupils should, for example:

Understand, use and begin to read:

- length and distance: *long, short, tall, high, low, wide, narrow, deep, shallow, thick, thin, far, near, close...*
- mass: *weight, weighs, heavy, light, balances...*
- capacity: *full, empty, holds...*

and comparative words such as: *longer, longest...*

Know that:

1 metre = 100 centimetres
 1 kilogram = 1000 grams
 1 litre = 1000 millilitres

Length, mass, capacity: non-standard/standard units

Make direct comparisons by finding or suggesting things, for example:

- longer or shorter than 1 metre, or 1 centimetre, or 10 centimetres;
- heavier or lighter than 1 kilogram;
- holding more or less than 1 litre.

Use uniform non-standard and standard units to measure and solve problems in a variety of contexts.

For example:

- Find out which of two or more things is longest/shortest by measuring in metres or centimetres... For example, use a metre stick marked in centimetres to measure the reach and the stride of a partner, measuring to the nearest centimetre, and compare with own measurements.
- Find out which of two or more things is heaviest/lightest by balancing with and counting: cubes, plastic weights, kilograms...
- Find out which of two or more things holds most/least by filling with and counting: cups of water, litres...

As outcomes, Year 3 pupils should, for example:

Use, read and begin to write:

- length and distance: *long, short, tall, high, low, wide, narrow, deep, shallow, thick, thin, far, near, close, distance...*
- mass: *weight, weighs, heavy, light, balances...*
- capacity: *full, empty, holds...*

and comparative words such as: *longer, longest...*

Know that:

1 kilometre = 1000 metres
 1 metre = 100 centimetres
 1 kilogram = 1000 grams
 1 litre = 1000 millilitres

Begin to recognise that 3.5 m represents three and a half metres, and that 3.05 m is 3 metres and 5 centimetres.

Length, mass, capacity: standard units

Solve problems involving length, mass and capacity in a variety of contexts, using standard units such as:

- miles, kilometres, metres, centimetres...
- kilograms, half kilograms, units of 100 g...
- litres, half litres, units of 100 ml...

Use standard units to measure and solve problems in a variety of contexts.

For example:

- Use a ruler or tape measure to measure the hand span and round the wrist of a partner, measuring to the nearest half centimetre. Compare with own measurements.
- Work out a recipe for 8 people or 2 people by doubling or halving quantities in a simple recipe for 4 people.

MEASURES

Pupils should be taught to:

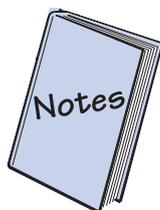
Suggest suitable units to estimate or measure length, mass or capacity

As outcomes, Year 1 pupils should, for example:

Understand and use in practical contexts:
guess, roughly, nearly, close to, about the same as...
too many, too few, enough, not enough...

Suggest uniform units to measure or estimate. For example:

- Guess roughly, then check:
how far up the wall you can reach;
how far you can jump from this line;
how many cubes would fit across your book;
if the red parcel is heavier than the blue one;
how many cubes would balance the parcel;
if the tall thin container holds more or less than the short fat one;
how many bottles full of water would fill the bucket.
- Suggest things that could be measured using:
rulers, garden canes, matchsticks... metre sticks...
cubes, matchboxes filled with sand (taped up)...
egg cups, cups... litre jugs...
- Suggest a unit you could use to measure:
the height of a table;
the width of a book;
across the classroom;
the weight of a parcel;
how much a big saucepan holds.



See also problems involving measures (page 70).

As outcomes, Year 2 pupils should, for example:

Understand, use and begin to read:
guess, estimate...
roughly, nearly, about, close to...

Suggest suitable units to measure or estimate.
 For example:

- Estimate, then check:
 how many matches fit round a book;
 how many bean sticks/metres fit across the hall;
 how many cubes/centimetres fit across the table;
 how many plastic weights/kilograms balance the potatoes...
- Identify in a collection of different bottles or containers those which hold 1 litre or 2 litres.
- Suggest things that could be measured using:
 metres, centimetres...
 kilograms, grams...
 litres...
- Suggest a unit to measure:
 the width of the classroom;
 the height of a flower;
 how much water will fill a bowl.

Respond to oral or written questions like:

- What is about 1 cm, 10 cm, 100 cm long/tall/wide/deep?
- What will balance about 1 kg, 5 kg?
- What holds about 1 litre, 5 litres?

See also problems involving measures (page 71).

As outcomes, Year 3 pupils should, for example:

Use, read and begin to write:
guess, estimate...
roughly, nearly, about, approximately...

Suggest suitable standard units to measure or estimate. For example:

- Estimate, then check, using standard units:
 how wide/tall the classroom is;
 how long/thick a pencil is;
 how many kilograms balance a house brick;
 how much a big saucepan holds;
 how far it is round a bottle, or a tree trunk...
- Collect and display labels from:
 tins holding between 100 grams and 500 grams...
 bottles holding from 50 millilitres to 250 millilitres...
- Suggest things that could be measured using:
 miles or kilometres, metres, centimetres...
 kilograms, grams...
 litres, millilitres...
- Suggest a standard unit to measure:
 how far it is to London;
 the height of a door;
 the length and width of a greetings card;
 the capacity of a kitchen bucket.

Respond to oral or written questions like:

- Would you expect:
 a front door to be 1, 2 or 5 metres tall;
 a hand span to be 5, 15 or 50 centimetres wide;
 a new born baby to be 3 kg or 30 kg;
 a teapot to hold 1 litre, 10 litres or 100 litres?

See also problems involving measures (page 71).

MEASURES

Pupils should be taught to:

Suggest and use simple measuring equipment, reading and interpreting number scales with some accuracy

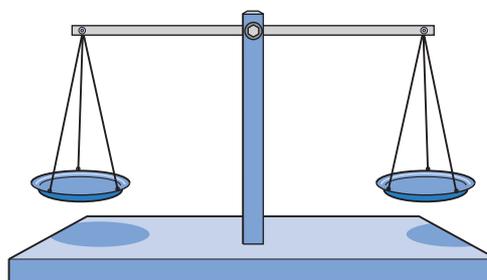
As outcomes, Year 1 pupils should, for example:

Choose and use, for example, sticks, cubes, cups... to measure with.

Make simple measuring devices. For example:

- Mark a long stick (such as a garden cane) to find out which of two or more lengths is greatest.
- Use string to find out which of two or more non-straight lines is longest.

Use a balance with two pans, or two identical containers, to compare two objects, or capacities, directly.



Record estimates or measurements as 'about 3 beakers full' or 'about as heavy as 20 cubes'.

As outcomes, Year 2 pupils should, for example:

Choose and use measuring equipment such as rulers, tape measures, metre sticks, balances, jugs, beakers...

Make simple measuring devices. For example:

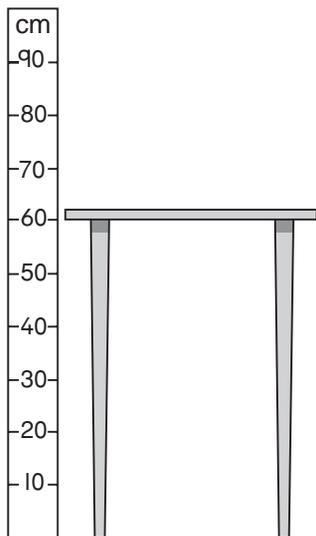
- Make a paper tape measure to measure with.
- Put a vertical strip on a large jar to measure cups full. Use the jar to measure the capacity of some smaller containers.

Use a ruler to measure and draw lines that are a multiple of 1 cm, or to join two points and measure the distance between them.

Use a metre stick to measure lines that are a multiple of 10 cm.

Read a simple scale to the nearest labelled division. For example:

- What is the height of the table?



Record estimates and measurements to the nearest metre or centimetre, kilogram, or litre, using own notation: for example, 'three and a bit metres long', 'nearly three kilograms heavy', 'just less than a litre full'.

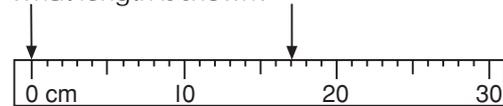
As outcomes, Year 3 pupils should, for example:

Choose and use a range of measuring equipment such as rulers, tapes, scales, jugs, beakers...

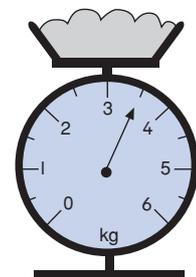
Use a ruler to measure and draw lines to the nearest half centimetre (for example, 8.5 cm, 13.5 cm).

Read a scale to the nearest marked division. For example:

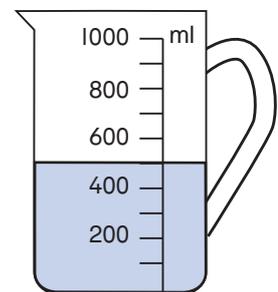
- What length is shown?



- What measurement is shown on the scales?



- How much is in the jug?



Record estimates and measurements using a mix of units: for example, 'three metres and twenty centimetres', 'three kilograms and five hundred grams or three and a half kilograms'.

Record to the nearest half metre, half kilogram or half litre using whole and half units: for example, 'about 3.5 kg' or 'about 2.5 m'.

MEASURES

Pupils should be taught to:

Understand and use the vocabulary related to time; know and use units of time and the relationships between them; read the time from clocks; solve problems involving time, and explain how the problem was solved

As outcomes, Year 1 pupils should, for example:

Understand and use in context:
names of days of the week, seasons of the year...
hour, day, week, month, year, season, morning, afternoon, evening, night, midnight, weekend, today, yesterday, tomorrow, now, soon, early, late, before, after, first, second, next...
quick, fast, slow...
how long ago, how long will it be to, how long will it take to...
how often... always, never, often, sometimes, usually...
once, twice...
and comparatives such as: *faster, slower, takes longer...*

Know that:

1 week = 7 days

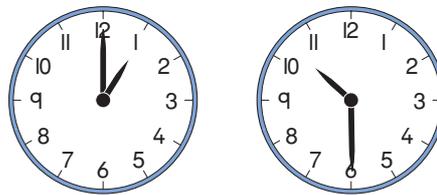
1 day = 24 hours

Know in order the days of the week.

Order familiar events in a day or week, or in a story.

Talk about how often events occur, using vocabulary such as: *often, sometimes, always, usually, never...*

Read the time to the hour or half hour on an analogue clock.



Make estimates and check using a simple timer in PE, science... or at home. For example:

- What can you do while the sand runs through the timer?
- What time will this clock show in one hour's time?

See also problems involving time (page 70).

As outcomes, Year 2 pupils should, for example:

Understand, use and begin to read the vocabulary from the previous year, and extend to: names of months... and *fortnight, minute, second...*

Know that:

- 1 week = 7 days
- 1 day = 24 hours
- 1 hour = 60 minutes
- 1 minute = 60 seconds

Know in order the months and seasons of the year. Know significant times in the day or year: for example, own bedtime, own birthday (day and month).

Read the time to the half or quarter hour on a digital clock or an analogue clock, knowing, for example, that the time is quarter to 5 or 15 minutes to 5.



Make estimates and check using a simple timer in PE, science... or at home. For example:

- Estimate, then check: who takes least/most time to hop across the hall; how long it takes to change for PE...
- Suggest a suitable unit of time to measure the time needed to walk home, sleep each night...
- What takes about 10 seconds, 1 minute, 1 hour?

See also problems involving time (page 71).

As outcomes, Year 3 pupils should, for example:

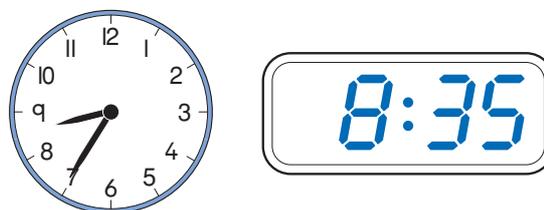
Use, read and begin to write the vocabulary from the previous year, and extend to: *century... calendar... date... am and pm...*

Know that:

- 1 year = 365 days or 52 weeks or 12 months
- 1 week = 7 days
- 1 day = 24 hours
- 1 hour = 60 minutes
- 1 minute = 60 seconds

Use a calendar and write the date correctly. Know own date of birth (day, month, year).

Read the time to five minutes on a digital clock and an analogue clock, knowing, for example, that the time is 8:35 or 35 minutes past 8 or 25 minutes to 9. Use am and pm.



Make estimates and check using a simple timer in PE, science... or at home. For example:

- Estimate, then check: the greatest and least time taken to run 200 m; how long you will be in school today...
- Suggest a suitable unit of time to measure the time: to the end of the month, to boil an egg...
- What takes about 30 minutes, 5 hours, 4 weeks...?

See also problems involving time (page 71).