

## Year 3, Block C: Handling data and measures Unit 1

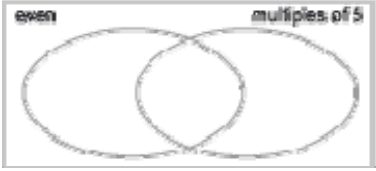
### Learning overview

In this learning overview are suggested assessment opportunities linked to the assessment focuses within the Assessing pupils' progress (APP) guidelines. As you plan your teaching for this unit, draw on these suggestions and alternative methods to help you to gather evidence of attainment or to identify barriers to progress that will inform your planning to meet the needs of particular groups of children. When you make a periodic assessment of children's learning, this accumulating evidence will help you to determine the level at which they are working. To gather evidence related to the three Ma1 Assessment focuses (problem solving, reasoning and communicating), it is important to give children space and time to develop their own approaches and strategies throughout the mathematics curriculum, as well as through the application of skills across the curriculum.

In this unit the following assessment focuses are illustrated:

- **Ma1, Problem solving**
- **Ma3, Measures**
- **Ma4, Processing and representing data**
- **Ma4, Interpreting data.**

Children **classify objects, numbers or shapes** according to one criterion, progressing to two criteria, and **display this on a Venn diagram**. They understand that a Venn diagram uses two rings within a rectangle to show the relationship between two criteria, and that the objects which do not match either criterion are placed outside of the rings. For example, they enter the numbers 1 to 20 onto a Venn diagram and answer questions such as:

<p><i>Which numbers are multiples of 5 but not even? Explain why the number 17 is not in either ring.</i></p>	
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Children choose other properties to create their own Venn diagrams. They **explain how they decide to place each item**.

**Assessment focus: Ma4, Processing and representing data**

Look for evidence of children being able to sort and classify numbers, shapes and objects, using more than one criterion; for example, by placing numbers in the correct place on a Venn diagram.

Children **pose a problem** such as:

*What is our favourite TV show, sport, comic, colour, ...?*

*What game shall we make to run at the school fair?*

*Do all cats eat the same food? (see links to science)*

They discuss questions such as:

*How can we find out?*

*What information should we collect, and how?*

*How shall we organise it?*

**Assessment focus: Ma1, Problem solving**

Look out for children who are able to suggest systematic and appropriate approaches to collecting, organising and representing data in order to solve a given problem.

To answer the problem, they **collect data quickly**, for example, by voting with a show of hands. They **present this information in a frequency table**. Children understand the term *frequency* as *how many there are of something or the number of times that something happens*. They discuss the outcomes and **respond to questions** such as:

*How many more children chose ... than ...?*

*What are the three most popular choices?*

*How might the table change if everyone had two votes?*

Children **choose appropriate instruments and units** to measure and record measurements such as their height, shoe size, length of foot and hand span, measuring where appropriate to

the nearest half-centimetre. They discuss how to work together as a class so that every child's measurements are collected and recorded efficiently. They **enter these measurements into a database** and interrogate this to answer questions such as:

*How many children have a shoe size bigger than 12?*

*How many children are shorter than 125 cm?*

Children keep this database to use for comparison in the summer term.

They **make and record predictions** about the differences they expect to see in their measurements in the summer term.

**Assessment focus: Ma3, Measures**

Look for evidence of children considering where a length begins and ends to make their measurements and comparisons fair. For example, look for children suggesting that shoes are removed to measure heights fairly, or marking the start and end points for the measurement on the tracing of their hand spans. As they begin to use tape measures to find a chest or waist measurement, for example, look for children who understand how to position the tape and read the length. Look for children reading lengths to the nearest half-centimetre where appropriate.

Children **investigate** the lengths of feet that fit into shoes of the same size. They measure their feet to the nearest half-centimetre, recording this measurement in both cm and mm. They **produce a simple class pictogram** showing the shoe sizes of all children in the class by using a sticky note to represent each child. On the sticky note they put their name and foot length. They use the information to answer questions such as:

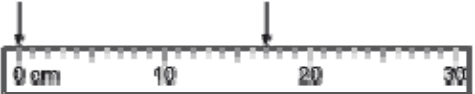
*What length of foot will fit into a size 1 shoe?*

*Do all children with the same length of foot wear the same size of shoe?*

They **pose simple questions of their own** for other children to answer from the graph.

**Assessment focus: Ma4, Interpreting data**

As children interpret data that they or others have collected and represented, look for evidence of how they communicate their findings. When looking at a pictogram, for example, look for evidence of the types of question children answer and for children who can compare data in order to answer questions such as: 'How many more... than...?' Look for children who respond to questions about the whole data set, for example: 'How many children took part?', and for those who pose similar questions.

Objectives	Assessment for learning
<p><i>Children's learning outcomes are emphasised</i></p> <ul style="list-style-type: none"> <li>Follow a line of enquiry by deciding what information is important; make and use lists, tables and graphs to organise and interpret the information</li> </ul> <p><i>I can decide what information to collect to answer a question</i></p>	<p>What question are you trying to answer? What information will you collect? Who will you ask? How will you find it? What lists can you see in the classroom? Why are they there?</p>
<ul style="list-style-type: none"> <li>Know the relationships between kilometres and metres, metres and centimetres, kilograms and grams, litres and millilitres; choose and use appropriate units to estimate, measure and record measurements</li> </ul> <p><i>I can suggest sensible units to measure lengths</i></p>	<p>A metre stick is how many cm long? Which is the most sensible estimate for the length of your hand span? A 80 cm B 16 m C 14 cm D 12 km Suggest something you would measure in kg, in ml, in km.</p>
<ul style="list-style-type: none"> <li>Read, to the nearest division and half-division, scales that are numbered or partially numbered; use the information to measure and draw to a suitable degree of accuracy</li> </ul> <p><i>I can use a ruler or a tape measure to measure a length to the nearest <math>\frac{1}{2}</math> cm</i></p>	<p>Show me where <math>24\frac{1}{2}</math> cm would go on this tape measure/ruler.</p> <p>What length is shown below?</p> 

- Answer a question by collecting, organising and interpreting data; use tally charts, frequency tables, pictograms and bar charts to represent results and illustrate observations; use ICT to create a simple bar chart

*I can explain what a frequency chart tells me*

You have to find out what sport your class prefers. Explain what you would do. How would you record the information?

Say three things that you can tell from this frequency table.

**School dinners for class 4**

Day	Number of school dinners
Monday	11
Tuesday	13
Wednesday	17
Thursday	8
Friday	13

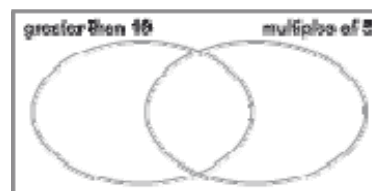
Why might so few children have chosen to have school dinner on Thursday?

- Use Venn diagrams or Carroll diagrams to sort data and objects using more than one criterion

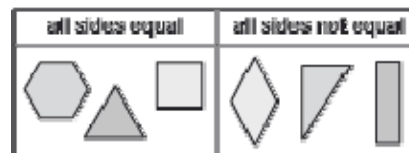
*I can place objects on a Venn diagram*

Where would you place these numbers on the diagram?

13, 20, 10, 7



One of these shapes is in the wrong place on the diagram. Which one?



- Use talk to organise roles and actions

*I can discuss how to work together to solve a problem*

You have to work as a group to measure each person's height, foot length and hand span. Start by deciding what each person will do.