



# Power Maths Reception: Working with Measure

<b>Unit 10: Measure</b> <b>Unit 18: Measure</b>	
<b>Importance of this topic</b>	It introduces the concept that time, length, height, distance, weight and capacity can be measured, and that these attributes can be used to compare objects.  Prepares children for using standard units of measure in Key Stage 1.
<b>How this topic develops</b>	Unit 10 Children use comparative language to explore relative lengths, heights, distances and weights.  Unit 18 Focuses on volume and capacity.
<b>Structures and representations</b>	Children will encounter a variety of structures and representations during the 'Measure' units.  <b>Balance scales</b> Balance scales demonstrate, and allow children to investigate, the comparative weights of small objects.  <b>Measurable objects</b> Small real-life objects and multi-link cubes are used for the exploration of weight, length and height.  <b>Containers</b> A variety of containers will help children to explore capacity.
<b>Key vocabulary</b>	In the 'Measure' units, children will learn vocabulary for discussing time and routine, including timetables and sequences. They will explore terms related to length, height and distance, and the measurement of these. Vocabulary related to weight will also be introduced and used. Children will then meet terms related to capacity.  [The following text is shown on screen.  time; clock; o'clock; next; earlier; later; before, after, every day, timetable; sequence; length; height; high; distance; further; measure; longer; shorter; taller; weight; weigh; balance; scales; heavy; light; balance; capacity; container; hold; full; empty; half; nearly; most; least; cup; glass]

**Unit 10: Measure**

**Unit 18: Measure**

**Misconceptions and interventions**

You may encounter the following misconceptions while teaching the 'Measure' units of Power Maths Reception.

**Misaligning objects**

Children may not be aware of the need to line up items at a start point to compare lengths or heights. In the example on screen, the child has not aligned the start of the fire engine and car, so may say that the car is longer than the fire engine.

[On screen: A toy car and a toy fire engine are positioned one above the other so the front of the car extends beyond the front of the fire engine.]

To assist them, encourage children to use a flat edge, such as a wall, box or book, to help them align the starting points of their objects.

[On screen: A book appears. The car and fire engine are moved so their ends are aligned along the edge of the book, showing clearly that the fire engine is longer than the car.]

**Mistaking size for weight**

Another common misconception is that children may assume physically larger objects are heavier.

[On screen: A can of beans is shown alongside a large inflated balloon. A speech bubble says, 'The balloon is bigger so it is heavier.']

Provide plenty of opportunities for children to investigate the weights of different objects, including physically small but heavy objects, and physically large but light objects. Encourage children to explore the different objects for themselves, and then to compare their weights using balance scales.

[On screen: Pairs of objects are shown: the can and the balloon, an apple and an empty plastic bag, and a marble and a feather.]

Similar activities can help to tackle misconceptions about capacity.

[On screen: A tall but very narrow cone of popcorn is shown alongside a short but wide cone of popcorn.]

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<p><b>Assessing for mastery</b></p>	<p>They will be comfortable comparing lengths, heights and distances, and measuring these using non-standard units such as cubes.</p> <p>[On screen: A candle is shown alongside a taller bottle. The bottle is then measured using multilink cubes stacked into a tower.]</p> <p>They will be able to estimate differences in weight, and investigate these using balance scales.</p> <p>[On screen: A set of balance scales is shown. A tube of toothpaste is added to one side, tilting the scales. A carton of milk is then added to the other side, tilting the scales in the other direction.]</p> <p>They will also be able to identify which containers hold the most and least. In each unit, they will understand and use the key terms necessary to discuss their comparisons.</p> <p>[On screen: A bucket is shown alongside a smaller cup. Two speech bubbles appear: 'The bucket holds more than the cup.' 'It will be heavier, too.']</p> <p>You could deepen children's understanding of their new vocabulary during other activities. For example, you could ask: 'Can you use a nearly empty bucket of sand to make a sandcastle? Can you use a half-full bucket?'</p>
<p><b>Embedding the concept</b></p>	<p>To embed the concept of this topic into everyday classroom life.</p> <p>You could also pause to point out containers, and contrasting heights or weights around you.</p> <p>[On screen: A small bottle of juice, a large carton of milk and a small snack bar are shown.]</p>
	<p>As you teach the 'Measure' units, make the most of opportunities for using play to put the abstract concepts into context.</p> <p>You can look at your Teacher Guide for further advice and support on introducing this topic to your class.</p> <p>[On screen: The following text appears.</p> <p>'Your Teacher guide also includes <i>Before you teach</i> and <i>After the lesson</i> reflection questions for each lesson you teach. Don't forget to take a look!']</p>