Year 3 Unit 11: Measures (3 weeks)

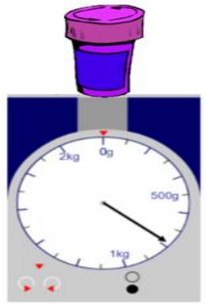
Before you start…

- *How confident are your pupils with reading scales?*
- *How familiar are your pupils with the units of measure for mass and capacity?*
- *How will you source a range of everyday small objects for pupils to weigh and a range of containers to explore capacity?*

Approximations

In this unit, pupils should be encouraged to read scales to the nearest interval and use words such a 'about' or 'approximately' to indicate that their answer is an approximation.

*"The cup is **about** 800 g."*

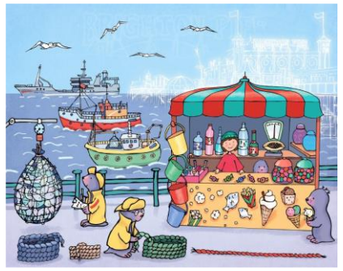


Choosing your words

Mass vs weight:
***Mass** refers to the amount of matter or 'stuff' within a given object and is measured in grams/kilograms. **Weight** refers to the amount of force exerted on an object by gravity. Both terms are used interchangeably until Year 5 when pupils begin to explore these concepts further in Science.*

Volume vs Capacity:
***Volume** is a quantity or amount of any substance and the 3-D space it fills. Capacity is the amount of liquid a container can hold.*
*'The bottle contains a **volume** of one litre but its **capacity** is two litres. The bottle is half full.'*

Lessons 7 and 8 are suggested consolidation lessons. You may want to use these lessons earlier in the unit to spend more time exploring an objective and allow further opportunity for practical measuring experiences. Alternatively, you may want to use these lessons to explore a task from the unit's task bank to allow pupils to apply what they have learnt.



Preparing a picnic

The final lesson(s) of the unit give pupils opportunity to apply knowledge of measures and calculation problems to create a picnic on Brighton Beach. This context is referred to throughout the unit: you may adapt this context to reflect your pupils' own experiences.

Exploring Mass

L1 Read weighing scales with different intervals
L2 Weigh and compare mass in mixed units
L3 Estimate mass

Pupils will read weighing scales to measure mass in grams and kilograms to the nearest interval on the scale. Throughout these lesson pupils should gain a sense of the relative masses of various 'everyday' objects. Pupils use this experience to generate estimates for the mass of objects which they will later check through measuring.

? *What practical experiences will you plan for pupils to apply their understanding?*
? *How will your assessments from lesson 1 inform your adaptations to lessons 2 and 3?*

Video: *It's all relative*

Exploring capacity

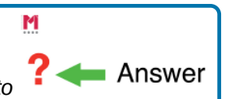
L4 Read scales when measuring volume
L5 Measure and compare capacities in mixed units
L6 Estimate capacity

Pupils will explore various measuring containers both diagrammatically and practically, reading scales in millilitres and litres. Throughout these lessons, pupils should get a sense of the relative capacity of various everyday container and use their knowledge to begin to make estimates in lesson 6.

? *How will you support pupils to identify the value of each interval?*
? *What activities can you plan for upcoming Maths Meetings to help pupils consolidate this?*

What was the question?

Consider providing blank or labelled bar models for pupils to create matching problems for.



Solving word problems

L9 & L10 Solve addition and subtraction word problems
L11 & L12 Solve multiplication and division word problems

Pupils use bar modelling to explore problems in a variety of contexts including length, mass and capacity. Emphasis should be put on 'making sense of the problem' and identifying the relationships between values rather than on using language cues.

? *How might you use questioning and language structures to support pupils in identifying the relationships between values in a given problem?*

Solving measure problems

L14 Solving problems on measure

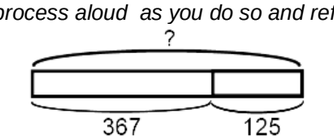
Pupils work in groups to collect information required to solve a variety of problems based on the context of the unit (Mr Slade's picnic is the suggested context). For each problem pupils should be encouraged to measure quantities or lengths required.

? *How will you group pupils for this lesson?*
? *How will assess pupils' understanding and use the assessments to inform future units and Maths Meetings?*

Lessons 13 and 15 are suggested consolidation lessons. Use your assessments from earlier in the unit, to determine the focus of these lessons. You may wish to use one of these lessons to complete lesson 14 over two lessons.

Dynamic Modelling

The power of bar models comes through the process of creating them and reasoning about them; the bar models in this unit should be drawn live to the pupils, explaining your thought process aloud as you do so and referring to part whole language where appropriate.



'There are two parts which make a whole. The whole is unknown.'