Measurement: Measuring and Estimating Length and Height

Aim: Measure and begin to record lengths and heights. DfE Ready-to-Progress Criteria: Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =. (1NPV-2) To measure or estimate length or height using a partially numbered ruler.	Success Criteria: I can place numbers up to 20cm on a marked ruler. I can use my reasoning skills to estimate lengths on an unmarked ruler.	Resources: Lesson Pack
	Key/New Words: Length, height, long, tall, short, measure, ruler, centimetres, interval, estimate.	Preparation: Differentiated More Measuring Activity Sheet - 1 per child Diving into Mastery Activity Cards - as required

Prior Learning: It will be helpful if children have learnt to accurately measure objects in centimetres (covered in Measuring Length and Height (Lesson 3): Using a Ruler).

Learning Sequence

Remember It: Children review measuring the length and height of objects using a ruler. They compare the two objects using the appropriate language.

Missing Measurements: Children are introduced to a ruler that does not have all the centimetre intervals labelled. They must use their knowledge of place value and the number line to help them to measure the objects. Use the Lesson Presentation to model the efficient strategies required to measure using a partially-numbered ruler. Can the children place numbers up to 20cm on a marked ruler?

Estimating Length and Height: Children are taught to use proportional reasoning to estimate measurements relative to the markings on the ruler when only 10cm intervals are marked. They apply this to measuring both length and height of objects. Children also reason about whether a child has accurately estimated the length of an object and explain their ideas. Can the children use reasoning to estimate lengths on an unmarked ruler?

More Measuring: Children mark missing numbers on a ruler. They measure and estimate length using partially-numbered rulers.

★ Children label unmarked intervals on a ruler, given the locations of the numbers for support. They measure objects using a partially-numbered ruler. They estimate midpoints between 0cm, 10cm and 20cm on a partially-marked ruler.

★★ Children label unmarked intervals on a ruler. They measure objects using a partially-numbered ruler. They estimate midpoints between 0cm, 10cm and 20cm on a partially-marked ruler. They use reasoning skills to estimate the length of objects.

★★★ Children label unmarked intervals on a ruler. They measure longer objects using a partially-numbered ruler. They estimate measurements on a ruler and explain their thinking. They label centimetre markings on a ruler from 0cm to 10cm.

Diving into Mastery: Schools using a mastery approach may prefer to use the following as an alternative activity. These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Children measure the length of objects using a partially-numbered ruler. They estimate the height of objects using proportional reasoning.

Children reason about whether the length or height of objects have been measured or estimated correctly.

Children answer a find all possibilities problem by measuring on a partially-numbered ruler.

Explore it

Learn it: Children will find this visually exciting Knowledge Organiser a useful tool for reminders about the language of comparing length and height and how to use a ruler.

Estimate it: Give children a strip of paper 10cm long. Ask children to estimate and then measure the length or height of objects around the classroom using the strip.

Compare it: Using a 10cm paper strip, make lists of objects that are 'taller than 10cm', 'longer than 10cm' and 'shorter than 10cm'.