

**Measure: Know 1 metre = 100 centimetres.**

***Notes on the activities:** The activities below provide a “build up” by starting with estimating and measuring in centimetres (cm). We do this as the smaller size of cm allows for children to measure easily accessible items such as pencils, books etc in their environment and then move onto comparing these lengths. Measuring in metres (m) will develop from this.*

**Estimate and measure in cm**

***You will need a 30cm ruler and some items that can be measured. Pencils, pens, the mini whiteboard, a book and so on. (If you don’t have a ruler, the school should.)***

Ask the child what they know about length or distance, allowing them to talk about anything that comes to their minds. It could be that “My uncle lives in Manchester which is far away.”, or “That pencil is shorter than that pen.” Feel free to give an example if the child is struggling. Then show one of the items and ask the child how long they think it is. They may give an answer that is very unlikely, perhaps using metres instead of centimetres and so on. If this happens, question how they got the answer and show them the ruler. Say that for smaller objects we can measure in cm and that we use metres for bigger objects.

Show the child what 1cm looks like on the ruler. Get them to trace a 1cm line on paper or the whiteboard. Ask them if they can think of something that size. At their age, the tip of their index finger or thumb is probably about 1cm wide!

Ask the child to measure the pencil using the ruler. You may need to clarify with the child that they start at 0cm, not 1cm, which is a common mistake. Allow the child to measure and record the length. Then show a different object, discuss if it is longer or shorter than the previous one. From their answer, ask them to give a good estimate (or guess) as to the length of the object then measure it to find out. Repeat this process for different objects.

**Additional notes: Some of the objects will not be exact centimetre lengths. For example a pencil may measure 7.3cm. At this stage do not introduce decimals, but talk about millimetres being smaller than centimetres and that we will look at the closest cm number for now.**

**How long is a metre?**

This session could take a long time as it depends on you helping the child to work out how to do the measurement. The idea is that the fact that 1m = 100cm will be much more memorable if the child measures it for themselves.

***You will need a 30cm ruler, a 1m ruler and some masking tape. (The school should have a 1m ruler that you can borrow.)***

Stick a strip of masking tape 1 metre long on the floor. Following on from the previous session, show them the 30cm ruler and ask the child to estimate how long the strip is in cm. Then show them that it is the same length as the metre ruler, and so is 1m long. Ask them if they know how many cm there are in a metre. If they know praise them and say “that’s right, now let’s check by measuring” and if they don’t know say “all right, let’s find out by measuring”.

Ask them how they would measure the length using the 30cm ruler – give them as much support as they need but try to get them to have the ideas and do the work. Ideally get them to mark the point 30cm from one end of the strip, then 30 cm from that, then 30cm from that. Write down on the whiteboard cm at the top of a column and then 30, 30, 30. Make sure they know how to measure the last piece of 10cm and add the 10 to the bottom of the column. Now make sure that they understand that if they add  $30+30+30+10$  that is the number of cm in a metre. Remember you may have to help them with the addition.

At the end show them that the metre rule has 1m equals 100cm.

## **Comparing lengths**

***You will need a 30cm ruler, a 1m ruler, some masking tape and range of objects measuring less than 1 m.***

Have the masking tape strip of 1 m stuck on the floor. Remind the child about the last session when they learnt that there were 100cm in 1m. The child should then take the objects and order them in size next to the masking tape strip. Throughout this, you should be asking “How long do you think that is?”, “Is it longer or shorter than the last object?”, ensuring the child is talking about what they’re doing throughout. You can also ask them to estimate how long the object is in cm.

This will help them make practical sense of the lengths and magnitude in front of them. You could also ask them to measure each item once they have ordered or estimated them to check how accurate they have been.

## **Measuring the child’s height**

***You will need a 1m ruler***

Ask the child if they know how tall they are and how you could measure their height. If the child has a better idea than the following, try it – or try both.

Find a wall to stand the child against and use the whiteboard or a book to find the point at the child’s height. Mark it with a Post-it Note or some blue tack or the equivalent. Help the child measure the height as 1m plus so many centimetres. Work out how many centimetres that is, given that 1m is 100cm. Let the child write a label for themselves: “I am ... cm tall which is 1m and .. cm”

**Vocabulary** to use includes “long/short”, “longer/shorter”, “tall/short”, “taller/shorter”, and if appropriate for the child “double/half”.