

Early Years Library

READ THE
INTRODUCTION
TO THIS SERIES

Part of the **Numeracy** Series

MEASUREMENT

What do we
mean by
measurement?

Children can engage with, and enjoy early experiences of measurement (such as playing with measuring tapes, balance scales, or lining up objects), graphs (such as voting on the book they will read first at story time) and corresponding language (such as 'heaviest', 'shorter' or 'more/less'). Young children are not expected to understand the more advanced principles underpinning these skills such as making sure all the units are the same size (standardised units of measurement), understanding why there are no gaps or overlaps between the units of measurement (i.e., placing units end to end), measuring in straight lines, and using the correct techniques in different measurement tools (e.g., when to use a measuring tape or a ruler). These more advanced skills will develop as they move through school.

Why is it
important

By exploring measurements and graphs, children can see how maths can be used in everyday life to solve problems and represent information. Children can draw on these early experiences to support their understanding as they grow. These early skills help to support children's understanding of counting and quantities in order to make comparisons.

Becoming familiar with how to measure

Children have the opportunity to experience measuring objects by their length, height, width, and weight using a variety of methods and units of measurement (for example using measuring tapes, string, or counting blocks). As children have more experience of measurement, they learn to describe properties using the measurement units (e.g., 'four blocks long') and use measuring words like 'smallest', 'largest', 'heavier', 'lighter', 'taller' and 'shorter' to make comparisons.

Most commonly used strategies in evidence-based manuals:

- Talk with children about the properties of objects using measurement vocabulary and ask them questions to compare different objects
- Provide opportunities for children to measure objects using a variety of non-standard measures, for example, linking cubes or crayons

Inspiring Ideas

- When children are making a tower out of stacking blocks, playing with toys of different sizes, or filling small and large containers during messy play, encourage them to line up the resources by size (perhaps by height, length, or how much they can hold). *"This dinosaur is definitely the biggest. Can you find a dinosaur that is shorter than this one?"*
- Height Hands! Ask children to measure their height by using their hands. *"Horses' heights are measured by using our hands! The tallest horse EVER was 21 hands tall! Shall we see how tall we are by using our hands?"*
- Using balance scales, support children to compare the weight of objects and guess which objects might be the heaviest. *"That side of the scale is almost touching the table and that side is up in the air! So, the leaves must be lighter than the pebbles! Can we find anything that might be heavier than the pebbles?"*
- When baking with children, use lots of measuring language alongside measuring spoons, jugs and weighing scales. *"Wow, the scales say this weighs 200 grams! How many more spoonfuls of flour do you think we'll need for the scales to say it weighs 300g? Look, the numbers are getting higher as we fill it up, that means it's getting heavier!"*
- Support children to pour from a large container into smaller container, beginning to introduce the concept of volume. *"Which jug holds the most? Now they're both full, which one feels the heaviest?"*

Tip

Have balance scales or kitchen scales, rulers and measuring tapes as part of your continuous provision both indoors and outdoors so children can explore the idea of measuring during free play.

Tip

Activities like a sand pit and baking give children practical experience of the language of measurement and using early measurement skills to solve problems and produce meaningful outcomes.

Becoming familiar with charts and graphs

Children become familiar with charts and graphs (for example, tally and bar charts) through meaningful experiences. The charts and graphs children create should have meaning and an outcome that children will see immediately in order to enhance their understanding and appreciation of what charts and graphs mean. For example, children will vote on what activity to participate in first that day, rather than voting on everyone's favourite activity. These early experiences of creating charts and graphs can be a valuable tool for capturing children's voice by showing them their views are valued and make a difference in their learning environment.

Most commonly used strategies in evidence-based manuals:

- Visually display charts and graphs. For example, you could build a graph using characters to show which is the most popular book to read at the next story time
- Talk to children about the charts and graphs you have created and use the words "more" and "less" to ask questions (e.g., "Did we see more flies or ants in the garden?")

Inspiring Ideas

- Tallest Tower Bar chart! At story-time, have each child place one brick/block/cube next to the book they would like to hear first. Their votes will build towers next to the books. "Which tower is the tallest? Yes! That means that most children want to read this book first! How many children wanted to read the other book first? Shall we count the blocks and see?"
- Using a display, support children to record how they got to their setting each day for a week. This can be represented in different ways, for example, by using stickers or voting with toy cars, buses etc. "We all get to nursery in different ways. How do most children get here? Walking, that's right."