



# Strengthen Activities

## MISCONCEPTION

**Children may confuse the concepts of size and weight, thinking 'bigger' is always 'heavier'.**

### STRENGTHENING UNDERSTANDING

1. Provide objects including large, light objects (empty box) and small, heavy objects (rock). Without lifting any, ask children to predict which is heavier and why. Observe who links size to weight.
2. Provide opportunities for children to pick up two objects and compare them. For example, ask: *Which feels heavier, the cardboard box or the bag of sugar? If something is bigger, is it always heavier?*
3. Give children plenty of practice comparing different-sized objects in this way. Discuss that the material an object is made out of or filled with, rather than its size, is what determines the weight.

### ASSESSMENT CHECKPOINT

Can children give examples of large objects that are lighter and small objects that are heavier?

### RESOURCES

Objects to weigh: large and light (empty box, balloon), small and heavy (rock, bag of sugar)

## MISCONCEPTION

**Children may not recognise the need for uniformity when using non-standard units.**

### STRENGTHENING UNDERSTANDING

1. Ask children to use balance scales and combinations of non-standard units (e.g. a mixture of blocks and beads) and non-standard units of differing weights (e.g. cubes of different sizes) to weigh a selection of objects. They should also compare weights of items measured using two different non-standard units (e.g. one weighed using cubes and one using marbles).
2. For each task, ask: *What is wrong here? Why is this not an accurate measurement / comparison? What needs to change?* Each time, encourage children to model the correct use of non-standard units.

### ASSESSMENT CHECKPOINT

Discuss Q1 and Q2 on Practice Book p107. Can children explain why units must be the same size?

### RESOURCES

Balance scales, a selection of non-standard units (cubes, blocks, marbles, beads), objects to weigh

## MISCONCEPTION

**Children may link a container's height to its capacity (e.g. a tall, thin jug holds more than a shallow, wide jug).**

### STRENGTHENING UNDERSTANDING

1. Show children two containers – one tall and thin, one shallow and wide (ensure that the shallow, wide container will hold more). Ask: *Which container will have the greatest capacity? Why do you think this?*
2. Ask: *How can we compare capacities?* Use non-standard units (e.g. yoghurt pots) and water to measure both containers. Ask: *Why is it important that each unit is the same? Does a taller container hold more?*
3. Provide further containers (of differing heights and widths) for children to compare.

### ASSESSMENT CHECKPOINT

Discuss the Reflect activity on Practice Book p121. Do children recognise that they cannot compare containers without measuring capacity?

### RESOURCES

Water, different-sized containers, Practice Book p121