

Diagnostic TASK

FOCUS

Understanding Units

- Key Understandings 1, 2, 3

Direct Measure

- Key Understanding 1, 3

Indirect Measure

- Key Understandings 1, 4

Which Lunchbox Holds More?

Years 3–7

Purpose

To investigate:

- what students know about the attribute of volume
- how they use units to measure and compare volumes.

Materials

Two small lunchboxes or small boxes that are different in volume but not easy to compare visually (it is important that some of the inside dimensions not be a whole number measure)

Assorted objects that can be used as units, e.g. 1 cm and 2 cm cubes, marbles or pattern blocks (no rice, sand or water); have only enough units to fill the larger container

Ruler, pencil, measuring cylinders, measuring jugs, balance beams, kitchen scales, string and square grid paper

Teacher Recording Sheet

Producing the Work Samples

Individual interview

Interviews are appropriate for students whom teachers considered to be at risk. They can also be used to sample a range of ability levels in order to give an idea of the students' thinking about volume. Interviewing those students who have carried out diagnostic tasks with other attributes will help build a more complete picture of the understandings of a few individuals.

1. Point to the two lunchboxes and ask, *Which lunchbox (or box) holds more? Which lunchbox holds more volume?* If the student guesses ask, *How can you be sure?*
2. If appropriate ask, *How much more volume does the larger one hold?*

Small group

Small groups are appropriate for Year 3 or 4 students if they each have two lunchboxes to compare and there are enough materials available. It is useful for the teacher to observe and record what the children say and do, using the Teacher Recording Sheet.

Read and familiarise students with the task. Observe and record how children carry it out.

Which Lunchbox Holds More? Teacher Recording Sheet

Name _____ Year _____ Date _____

1. Which lunchbox (or box) holds more lunch? Which holds the largest volume? How can you be sure?

2. How much more volume does it hold? How did you work it out?

