

# Diagnostic TASK

## FOCUS

### Understanding Units

- Key Understandings 1, 2, 3

### Direct Measure

- Key Understandings 1, 2, 5

### Indirect Measure

- Key Understandings 1, 4

## Which Has More Volume?

Years 5–7

### Purpose

To investigate:

- what students know about the attribute of volume
- what students know about directly comparing volume
- how they use units to measure and compare volume
- whether they understand the relationship between millilitres and cubic centimetres (Direct Measure, Key Understanding 5).

### Materials

A wooden or plastic block (about 5 cm x 5 cm x 5 cm = 125 cm<sup>3</sup>)

A lump of playdough or Blu Tac rolled out to look longer and thinner than the block

Assorted objects that can be used as units, e.g. 1 cm and 2 cm cubes, marbles and pattern blocks

Sand and water, two identical transparent measuring jugs, ruler, pencil, measuring cylinders, 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 consider to be at risk. They can also be used to sample a range of ability levels in order to give the teacher an idea of the students' thinking about volume.

Ask the questions from the Teacher Recording Sheet and encourage students to use whatever they need to answer them.

#### Small group or whole class

This task is appropriate for Year 6 or 7 students. The objects are placed in a central position and the last two questions modified to:

- How could you use the materials in front of you to work out which object has more volume?
- How could you use the materials to work out how much more volume the larger one has?

# Which Has More Volume? Teacher Recording Sheet

Name \_\_\_\_\_ Year \_\_\_\_\_ Date \_\_\_\_\_

**1. What does volume mean?**

**2. Do the two objects in front of you have the same volume? Explain.**

**3. Which object has more volume? Use the materials in front of you to work it out. How did you work it out?**

**4. How much more volume does the larger one have? Use the materials in front of you to work it out. How did you work it out?**

