

# Diagnostic TASK

FOCUS

**Indirect Measure**

- Key Understandings 1, 4

## Volume of Prisms (1)

Years 4–9

### Purpose

To investigate what students understand about:

- using an array to work out the volume of rectangular prisms
- using the  $l \times w \times h$  formula
- working out the volume of more complex prisms.

Students who make errors with this task may not be able to interpret the two-dimensional representation of the prisms. They need to carry out the Block Towers task.

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.

### Materials

Volume of Prisms (1) sheet

Teacher Recording Sheet

### Producing the Work Samples

#### Individual interview

Interviews are appropriate for students whom the teacher considers 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.

Read and familiarise students with the task. Students carry out the task and record how they worked it out. They may need help from the teacher to record their method of working.

#### Small group or whole class

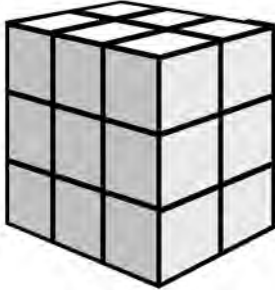
Read and familiarise students with the task. Observe and record how the students work out the problem and how they refer to their unit of volume.



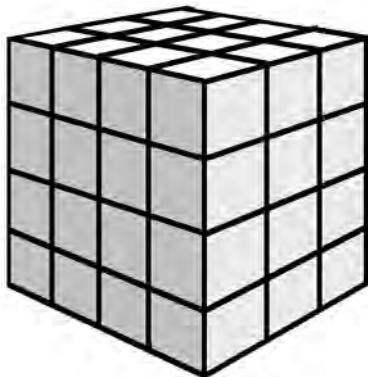
# Volume of Prisms (1): Teacher Recording Sheet

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

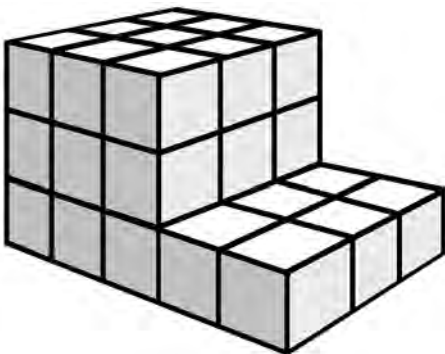
1. What is the volume of this prism? How did you work it out?



2. What is the volume of this prism? How did you work it out?



3. What is the volume of this prism? How did you work it out?



# Diagnostic TASK

FOCUS

**Indirect Measure**

- Key Understandings 1, 4

## Volume of Prisms (2)

Years 5–9

### Purpose

To investigate what students understand about:

- working out the volume of rectangular prisms that have fractional side lengths
- using the  $l \times w \times h$  formula
- working out the volume of more complex prisms.

### Materials

Volume of Prisms (2) sheet

Teacher Recording Sheet

### Producing the Work Samples

#### Individual interview

Interviews are appropriate for students whom the teacher considers to be at risk. They can also be used to sample ability levels in order to give the teacher an idea of the students' thinking about volume.

Read and familiarise students with the task. Students carry out the task and record how they worked it out. They may need help from the teacher to record their method of working.

#### Small group or whole class

Read and familiarise students with the task. Observe and record how the children worked it out and how they refer to their unit of volume.

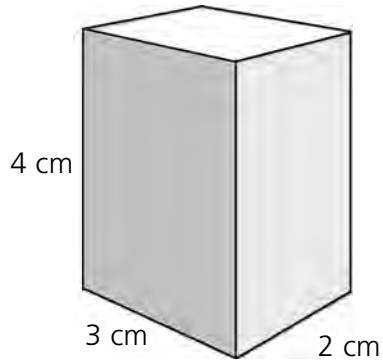
Please note: the volume of the prism in the second diagram is 4.5 cm x 3.5 cm x 2.5 cm. It includes fractional lengths but does not indicate this with numbers, to see if students understand the formula as above  $l \times w \times h$ .



## Volume of Prisms (2): Teacher Recording Sheet

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

1. What is the volume of this prism? How did you work it out?



2. What is the volume of this prism? How did you work it out?

