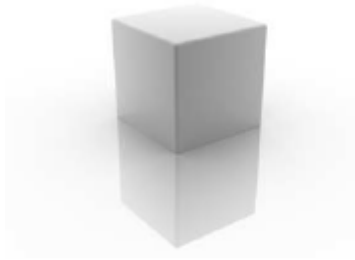


1

A student wants to calculate the density of the two objects shown in the figure below.



**Metal cube**

© Whitehouse/iStock/Thinkstock,



**Small statue**

© Marc Dietrich/Hemera/Thinkstock

Describe the methods that the student should use to calculate the densities of the two objects.

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**(Total 6 marks)**

## Mark schemes

1

### **Level 3 (5–6 marks):**

Clear and coherent description of both methods including equation needed to calculate density. Steps are logically ordered and could be followed by someone else to obtain valid results.

### **Level 2 (3–4 marks):**

Clear description of one method to measure density **or** partial description of both methods. Steps may not be logically ordered.

### **Level 1 (1–2 marks):**

Basic description of measurements needed with no indication of how to use them.

### **0 marks:**

No relevant content.

### **Indicative content**

#### **For both:**

- measure mass using a balance
- calculate density using  $\rho = m / V$

#### **Metal cube:**

- measure length of cube's sides using a ruler
- calculate volume

#### **Small statue:**

- immerse in water
- measure volume / mass of water displaced
- volume of water displaced = volume of small statue

**[6]**