

Max's Magnificent Moving Boxes

Learning objective: To calculate the volume of cubes and cuboids by counting centimetre cubes and using the formula $\text{length} \times \text{width} \times \text{height}$.

Max the monkey is helping his friends pack their belongings into boxes. Help Max calculate the volume of each box by counting the 1cm^3 blocks or using the formula. For each shape, write the dimensions and calculate the total volume in cubic centimetres (cm^3).

Word bank: Volume · Cubic centimetres · Dimensions · Length · Width · Height · Formula · Capacity

1. Pip's Book Box: The box is 4cm long, 3cm wide, and 2cm high. What is the total volume? Show your calculation. (2 marks)

2. Nova's Telescope Box: This box is a cube with edges of 5cm. What is the volume of the box? (2 marks)

3. Ellie's History Trunk: The trunk has a volume of 48cm^3 . If the length is 6cm and the width is 4cm, what is the height of the trunk? (2 marks)

4. Zara's Art Crate: This crate is 10cm long, 2cm wide, and 3cm high. Write the volume in cm^3 . (2 marks)

5. True or False: A cuboid measuring 2cm x 2cm x 2cm has a larger volume than a cuboid measuring 1cm x 1cm x 7cm. Explain your reasoning. (2 marks)

Draw: Draw a cuboid on squared paper that has a total volume of exactly 12cm^3 . Label the length, width, and height of your drawing.



Extension challenge: Max finds a box that costs £2.50 to ship. If the shipping company charges 10p for every 1cm^3 of volume, what is the volume of the box Max is shipping? Show your working out.