

Max's Magnificent Moving Boxes

Learning objective: To calculate the volume of cubes and cuboids using the formula (length $\times$ width $\times$ height) and express answers in cubic centimetres (cm³).

Max the monkey is helping his friends pack their belongings into storage boxes. Use your knowledge of volume to calculate the space inside each box. Remember: Volume = length $\times$ width $\times$ height. Fill in the missing dimensions or calculate the total volume for each of Max's tasks below.

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

1. Pip the caterpillar has a small box for his book collection. It has a length of 5cm, a width of 4cm, and a height of 2cm. What is the total volume of Pip's box? (2 marks)

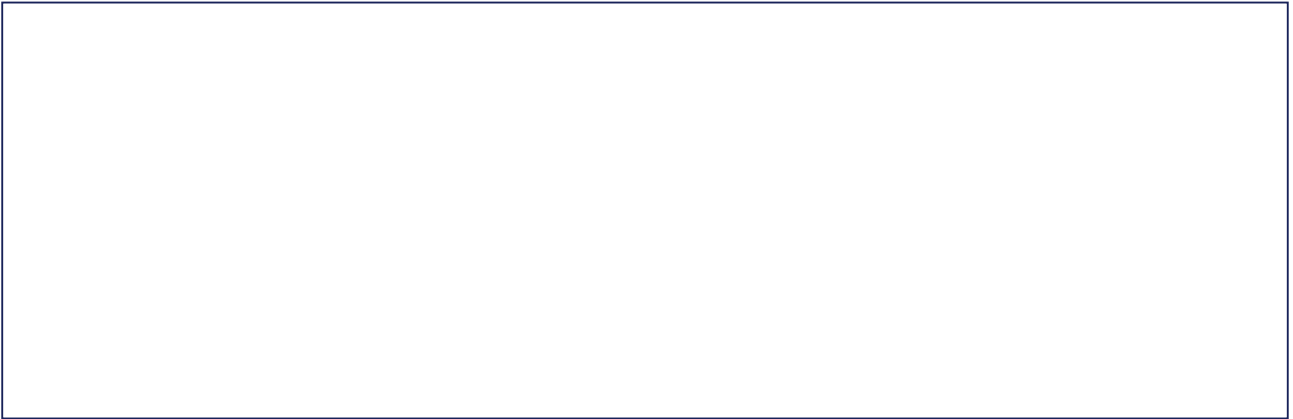
2. Nova the owl is packing her stargazing telescope. The box is a cube with sides of 6cm. Calculate the volume of Nova's cube-shaped box. (2 marks)

3. Ellie the elephant has a large storage container with a volume of 120cm³. If the length is 6cm and the width is 5cm, what must the height of the container be? (3 marks)

4. Zara the zebra has a rectangular box with a volume of 80cm³. If the height is 2cm and the length is 8cm, calculate the width of her box. (3 marks)

5. Finn the dolphin finds a crate that is 10cm long, 3cm wide, and 4cm high. He wants to know if this crate has a larger or smaller volume than a box that is 5cm $\times$ 5cm $\times$ 5cm. Show your working out. (3 marks)

Draw: Draw a cuboid box labelled with a length of 10cm, a width of 2cm, and a height of 5cm. Next to it, write the calculation you would use to find its volume.



Extension challenge: Max has a budget of £50 to buy packing materials. If each box costs £3.50, how many boxes can he buy in total, and how much change will he have left for snacks?