# Recognise halves and quarters of sets

### ➡️ Starting point

Show the set of cubes on the left-hand side of graphic **A**. Ask:

- *What fraction of the cubes in this set are shaded?* [$\frac{2}{4}$ or $\frac{1}{2}$] Show the cubes joined together, after the arrow, and reiterate that $\frac{1}{2}$ is shaded.

Show the set of cubes on the left-hand side of graphic **B**. Ask:

- *What fraction of these cubes are shaded?* [$\frac{1}{4}$] Show the cubes joined together, after the arrow, to emphasise that $\frac{1}{4}$ is shaded. Point out that the cubes will show the same fraction whether they are joined or separated.

Show the set of cubes on the left-hand side of graphic **C**. Say:

- *It is more difficult here to see what fraction is shaded. What could we do to help?* [Join the cubes together or arrange them in equal groups.] Reveal the joined cubes to show $\frac{1}{2}$.

Show the set of cubes on the left-hand side of graphic **D**. Ask:

- *What fraction of these cubes are shaded? How could we find out?* [Group them to show that $\frac{3}{4}$ are shaded.] Reveal the joined cubes to show $\frac{3}{4}$.

> **Key point:** Arrange items in equal groups to make it easier to find halves and quarters of sets of objects.

### 🔍 Spot the mistake

Ask:

- *The statement says 'One-half of the cards are shaded'. Is this true?* [no]
- *Why isn't it true?* [If the cards are arranged in two equal groups, you can see that less than half of the cards are shaded.]
- *Can we group them to find the correct answer?* [The cards can be arranged in four equal groups to show that $\frac{1}{4}$ of the cards are shaded.]
- *What fraction of the set is not shaded?* [$\frac{3}{4}$]

### ✔️ Good to go?

**Answers: a)** $\frac{3}{4}$    **b)** $\frac{1}{4}$    **c)** $\frac{2}{4}$

The pupils may give the answer $\frac{2}{8}$ for **b)** or $\frac{4}{8}$ or $\frac{1}{2}$ for **c)**. These are also correct, though the pupils are not expected to give these answers at this stage.
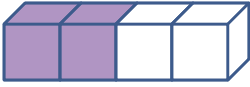
A further question could be asked: *What fraction of each set is not shaded?* [**a)** $\frac{1}{4}$, **b)** $\frac{3}{4}$ or $\frac{6}{8}$, **c)** $\frac{2}{4}$, $\frac{4}{8}$ or $\frac{1}{2}$]
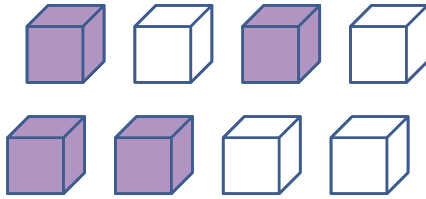
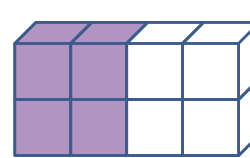> ## Pupil book practice                                    **Pages 6 and 7**
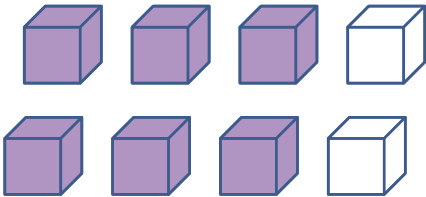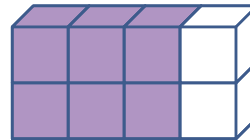>
> If pupils struggle with this concept, provide them with cubes to join together or to arrange into equal groups to help them decide whether $\frac{1}{4}$, $\frac{1}{2}$ or $\frac{3}{4}$ of the objects are being described. Note that, if the pupils have already encountered fractions other than halves and quarters, some of their answers may involve larger numbers, for example, $\frac{2}{8}$ rather than $\frac{1}{4}$. Accept these answers but encourage the pupils to also answer using halves and quarters.
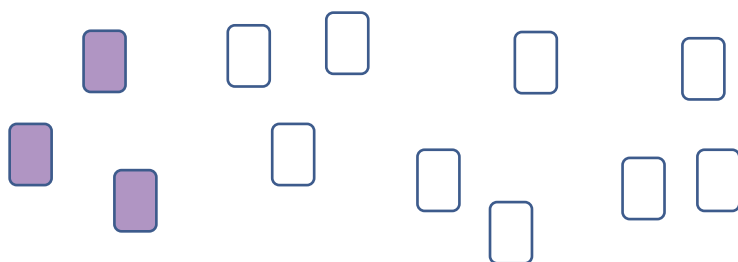
# ➡️ Starting point

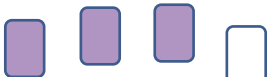**A** 

**B** 

**C** 

**D** 
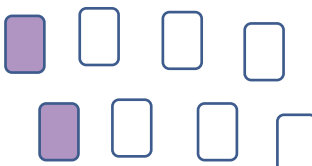
## 🔍 Spot the mistake



One-half of the cards are shaded.

## ✔️ Good to go?

What fraction of each set of cards is shaded?

**a)** 

**b)** 

**c)**