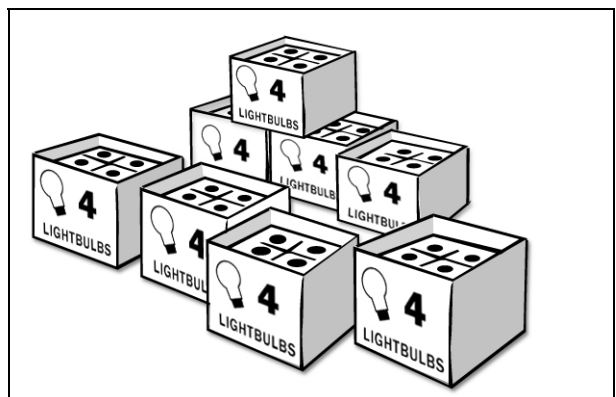
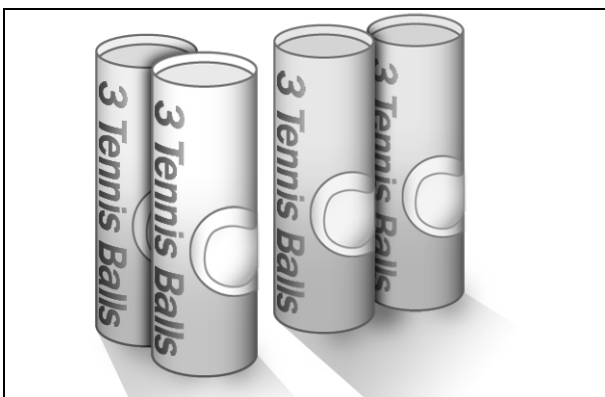
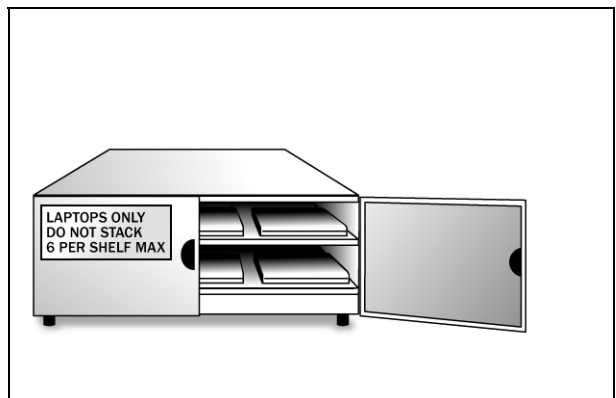
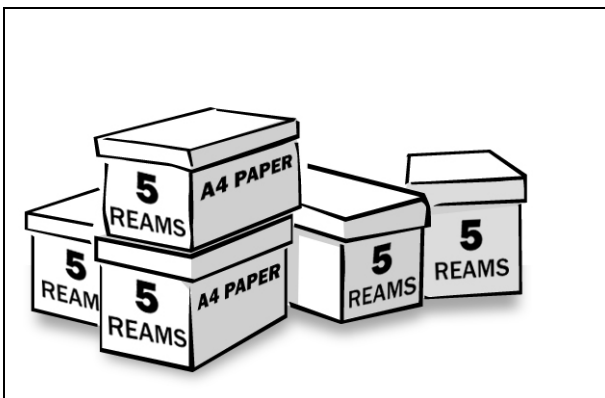


## Stacking and packing

### Q 1. Multiple items

For each of the examples below, work out how many items there are altogether:



Think about examples when you buy or handle multiple items.

Can you usually easily work out how many there are of them altogether?

Does it depend on how many items are grouped together?

You may be more confident with some multiplication tables than others. *If you would like more help and practice with multiplication tables, see Mini-tasks: Multiplying 1 and Multiplying 2.*

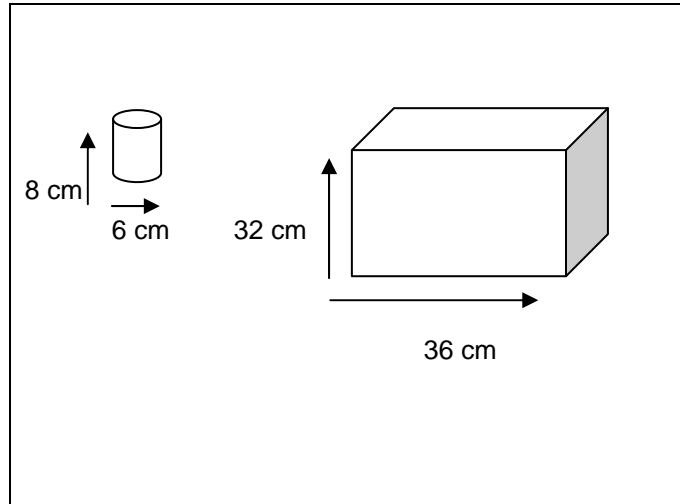
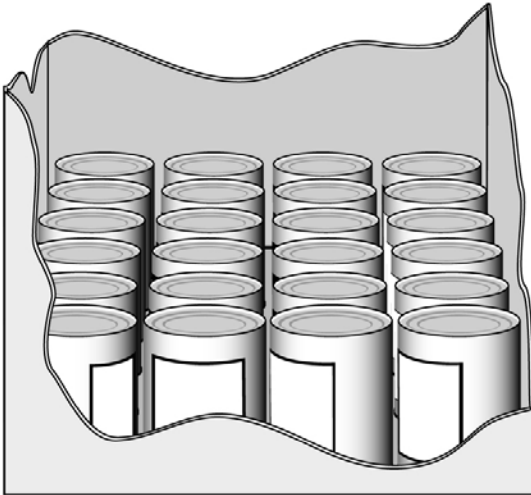
## 2. Packing boxes

**Q 2(a)** Raksia is working in a food packing company. Today she is packing tins into boxes.

The tins are arranged in each box so that the bottom layer of the box holds:

- 6 tins in each row
- 4 rows of tins.

How many tins fit in the bottom layer of the box?



Four layers of tins will fit into each box. (The box is 32 cm high and each tin is 8 cm tall.)

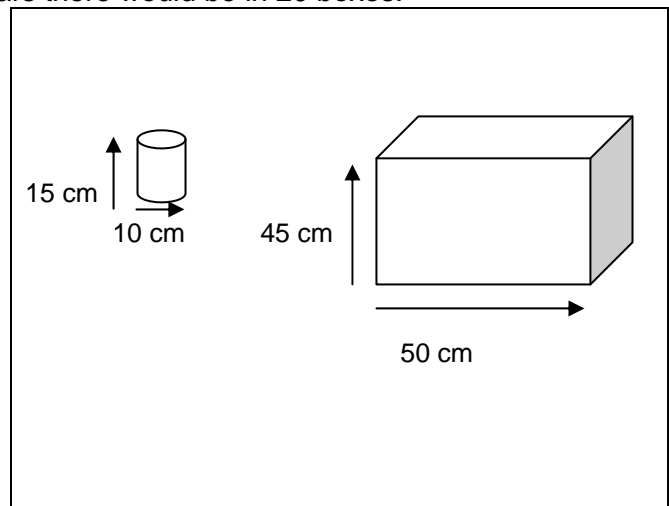
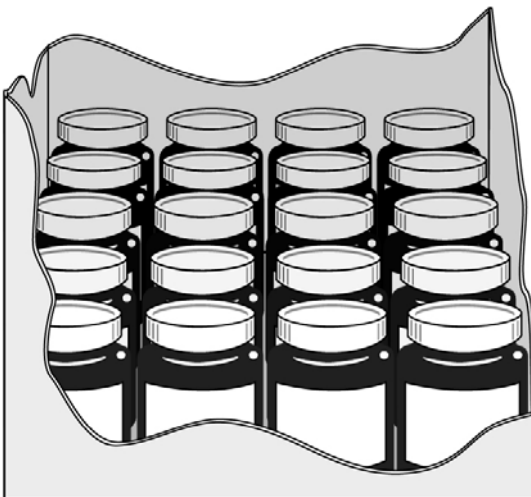
How many tins altogether will fit into each box?

How many tins will there be in 10 boxes?

**Q 2(b)** Raksia moves on to another range, packing jars into boxes. This time the jars are arranged so that the bottom layer of the box holds:

- five jars in each row
- four rows of jars
- three layers of jars fit into each box.

Use similar steps to work out how many jars there would be in 20 boxes.

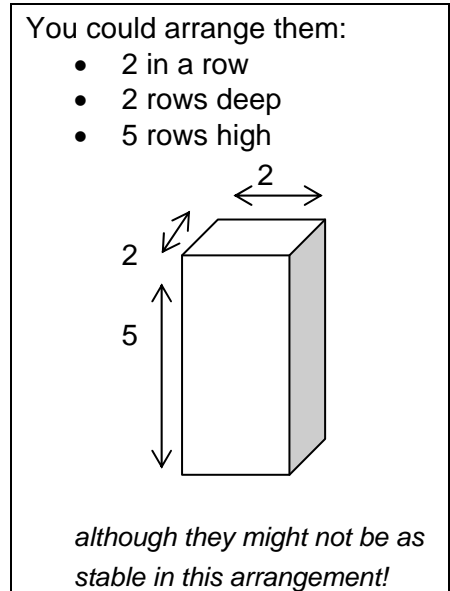
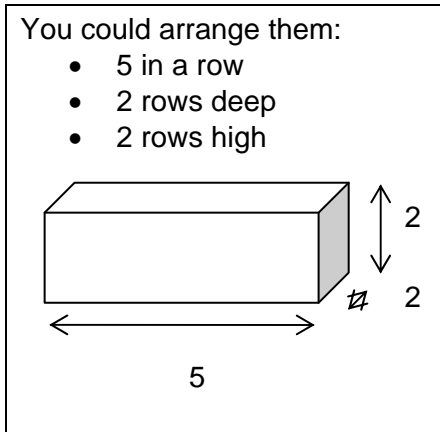


**Q 3. Stacking boxes**

Think about stacking boxes to store them.

You want them to not take up too much room, but to be safe – and to be accessible when you need to get to them.

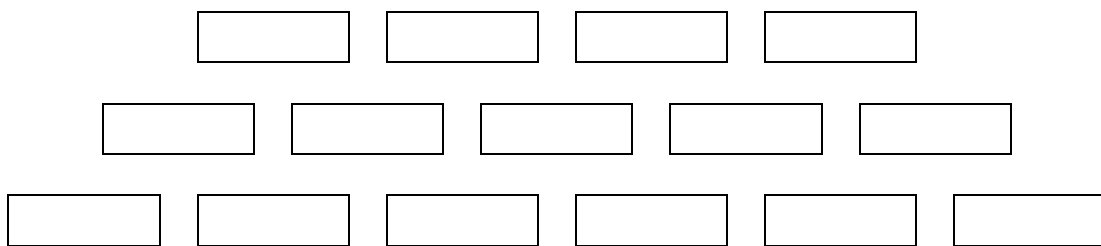
Think about ways to stack 20 boxes:



Think about possible arrangements you could use to stack these numbers of boxes:

- 36 boxes
- 100 boxes
- 48 boxes.

Often when people stack items, they stagger the position of items in alternate rows:



Why do they do this?

**Explore how this affects the number of items that will fit in the same amount of space.**

How does the number of items in each row compare to the row below it?

## Multiplication 3 – Answer sheet

### Q 1. Multiple items:

The numbers of items shown are:

48 chocolate bars	(12 × 4)
24 packets of crisps	(8 × 3)
25 reams of paper	(5 × 5)
12 laptops	(6 × 2)
12 tennis balls	(3 × 4)
32 light bulbs	(4 × 8)

### Q 2. Packing boxes:

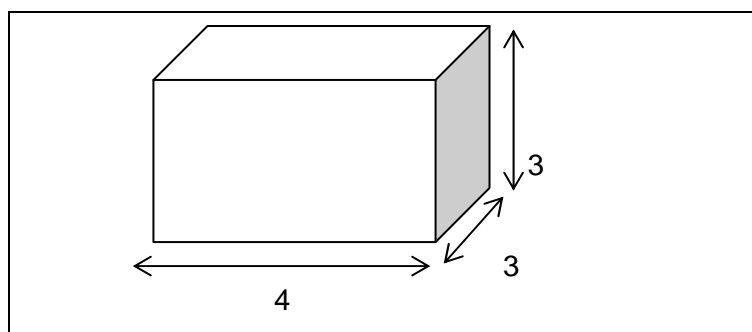
<b>2(a)</b>	24 tins per layer	(6 × 4)
	96 tins per box	(24 × 4)
	960 tins in 10 boxes	(96 × 10)

<b>2(b)</b>	20 jars per layer	(5 × 4)
	60 jars per box	(20 × 3)
	1,200 jars in 20 boxes	(600 jars in 10 boxes + 600 jars in another 10 boxes)

### Q 3. Stacking boxes:

You could stack 36 boxes in the arrangement:

- 3 boxes in a row
- 4 rows deep
- 3 rows high



$$(3 \times 3 \times 4 = 36) \quad \text{OR} \quad 4 \times 3 \times 3 \quad \text{OR} \quad 2 \times 9 \times 2$$

You could stack **100 boxes** in the arrangement:

- 4 boxes in a row
- 5 rows deep
- 5 rows high

$$4 \times 5 \times 5 = 100 \quad \text{OR} \quad 5 \times 5 \times 4$$

You could stack **48 boxes**:

- 4 boxes in a row
- 4 rows deep
- 3 rows high

$$4 \times 4 \times 3 = 48 \quad \text{OR} \quad 4 \times 3 \times 4$$