



# Maths

## Multiplication and Division

# Gardening



# Aim

- I can solve problems using my knowledge of square and cube numbers.

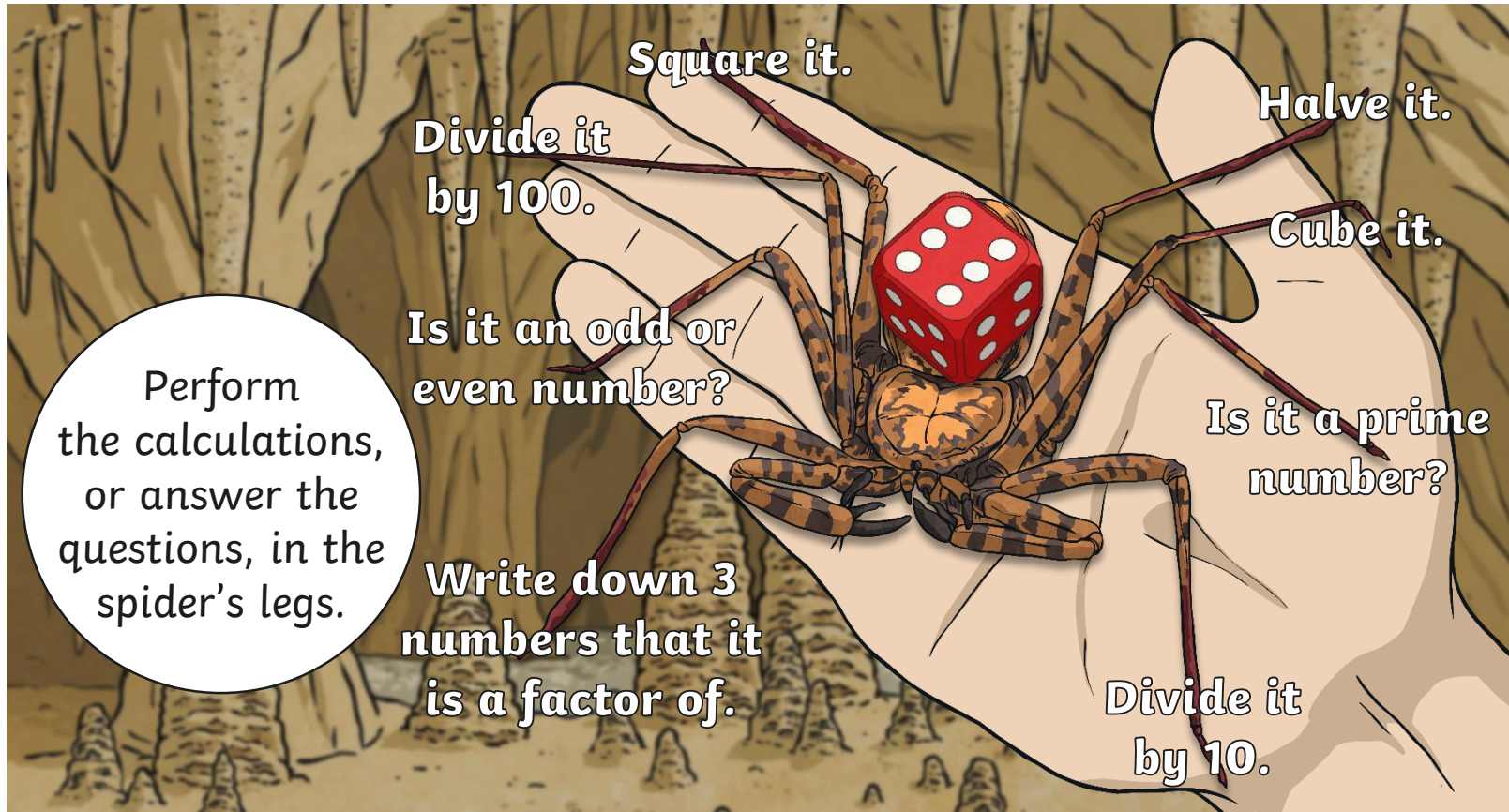
# Success Criteria

- I can pick out the important information from a word problem.
- I can calculate square and cube numbers to solve the problem.

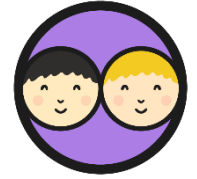
# Spiders



Roll a dice. This is the number that goes inside the spider.

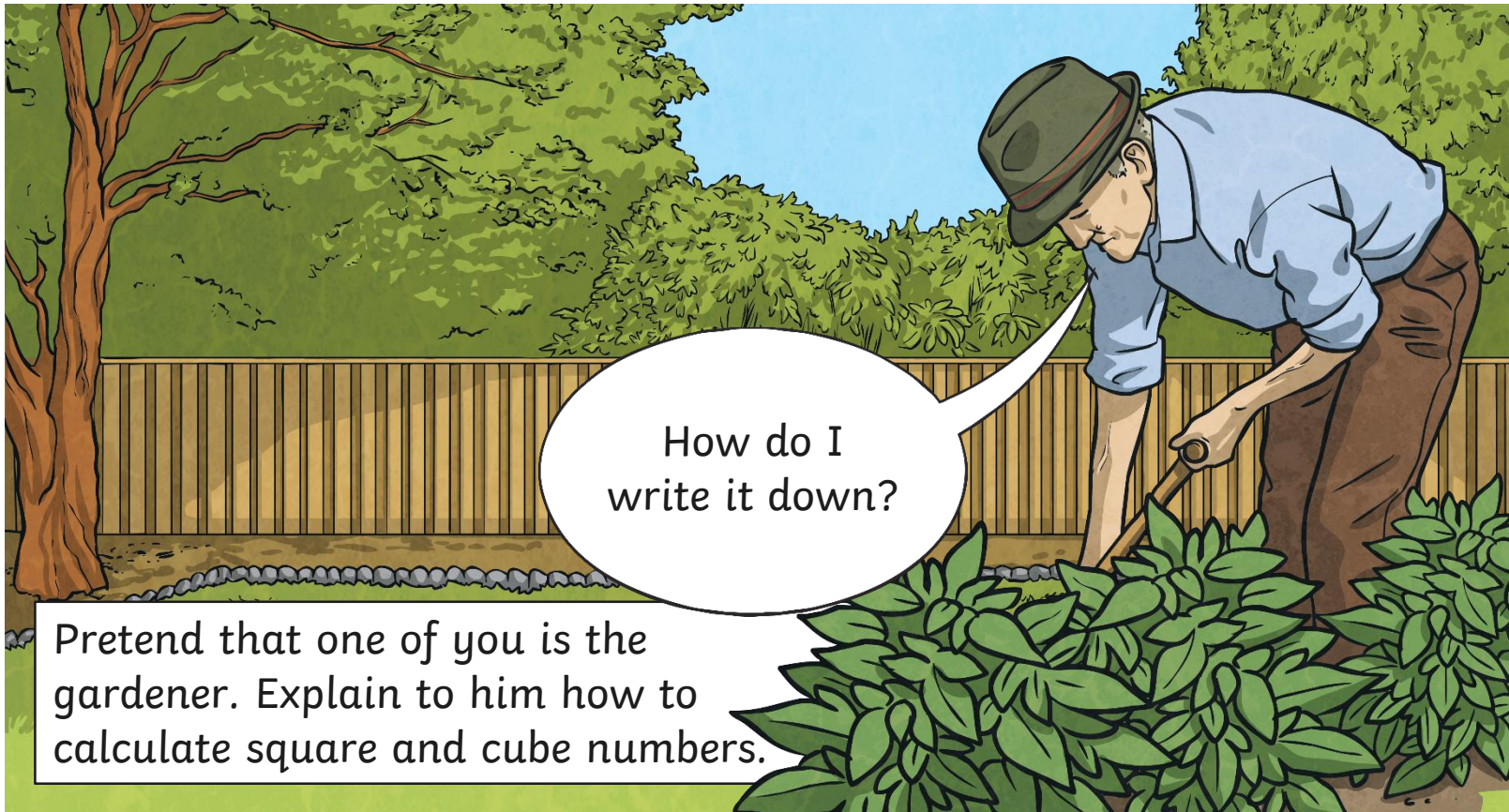


# Squares and Cubes



Help!

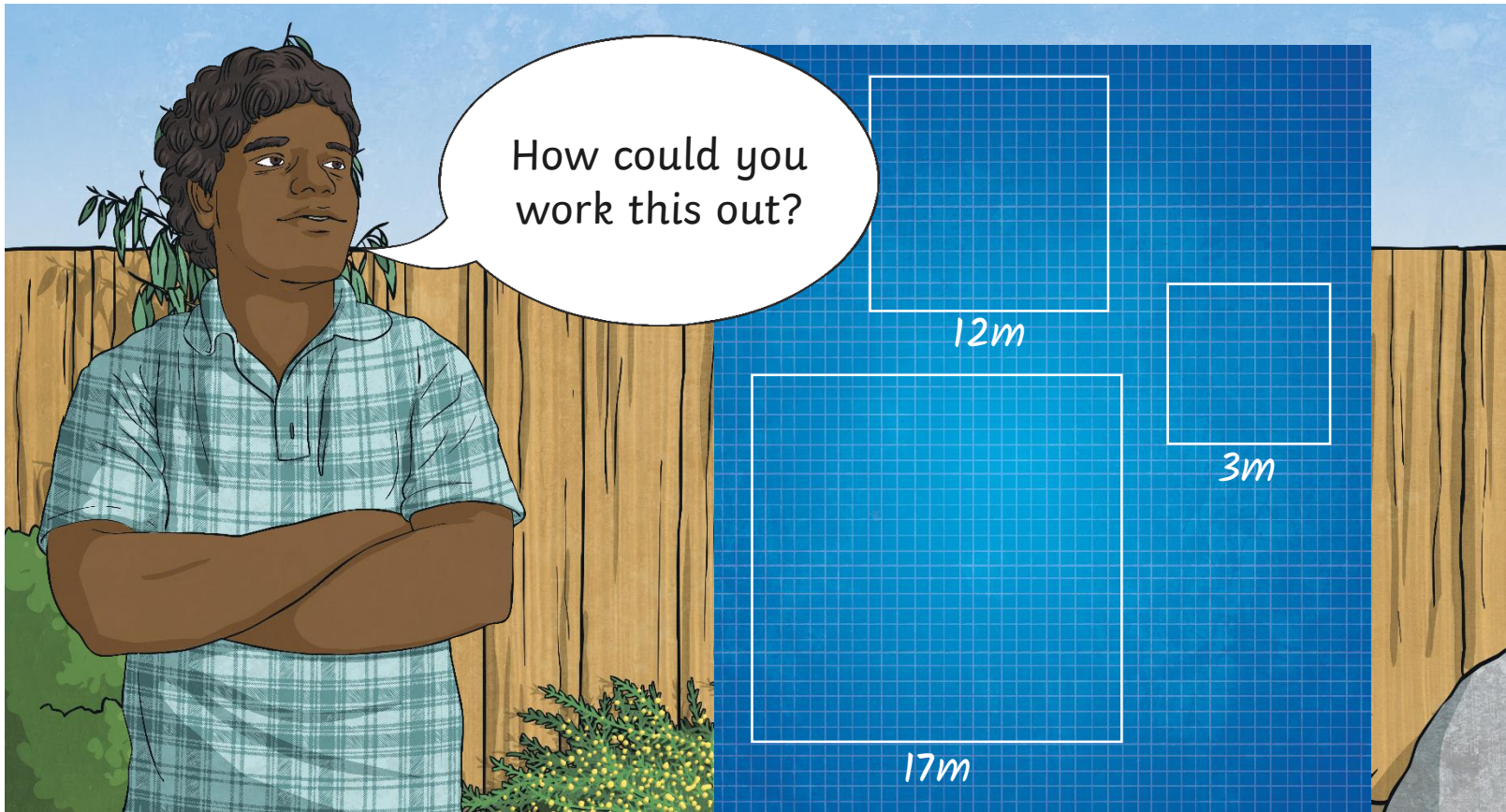
To do this job I need to know about square and cube numbers.



# Patios

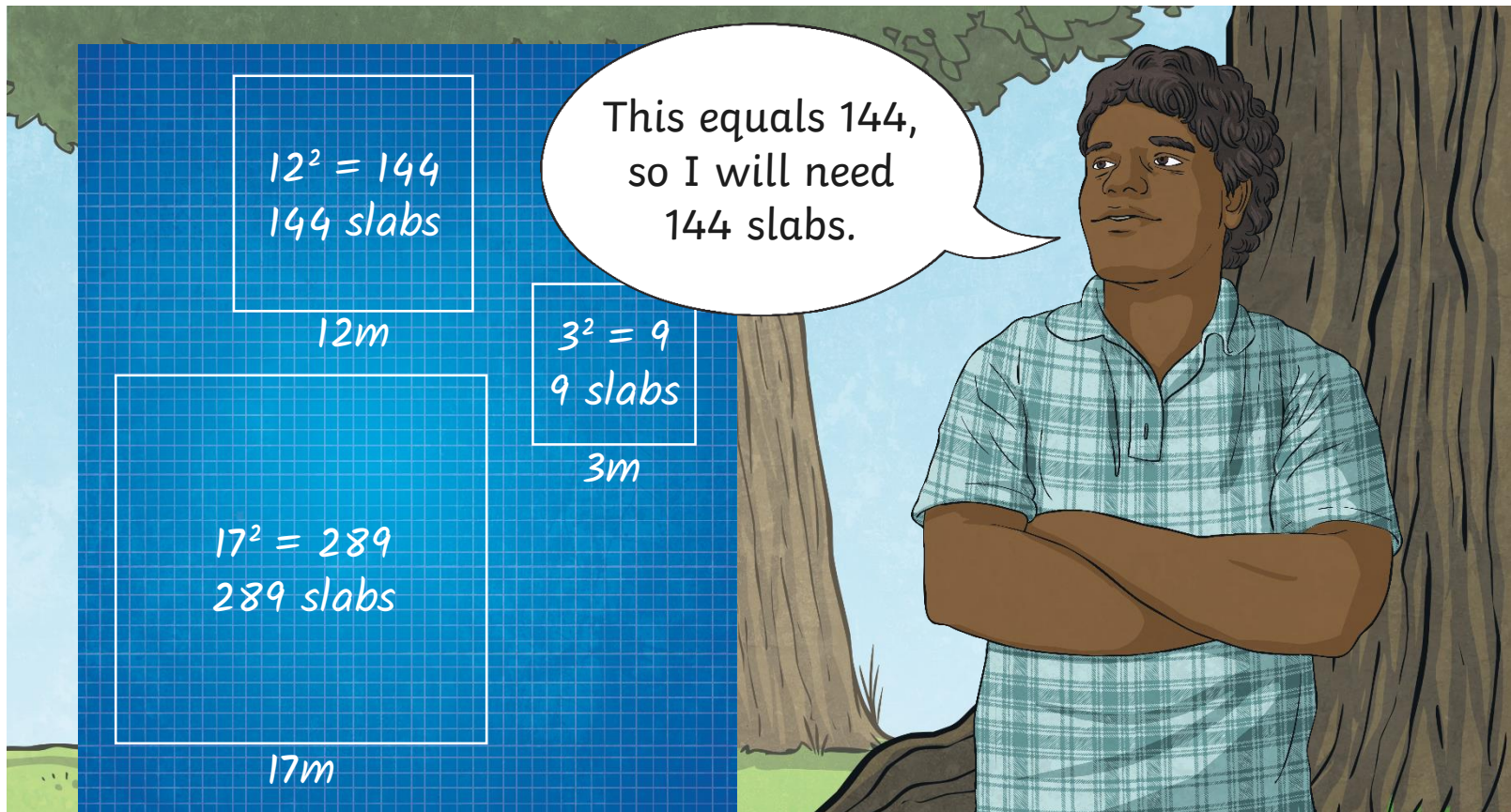


Geoff the gardener has to work out how many paving slabs he needs to make these square patio areas. Each slab is  $1\text{m}^2$ .



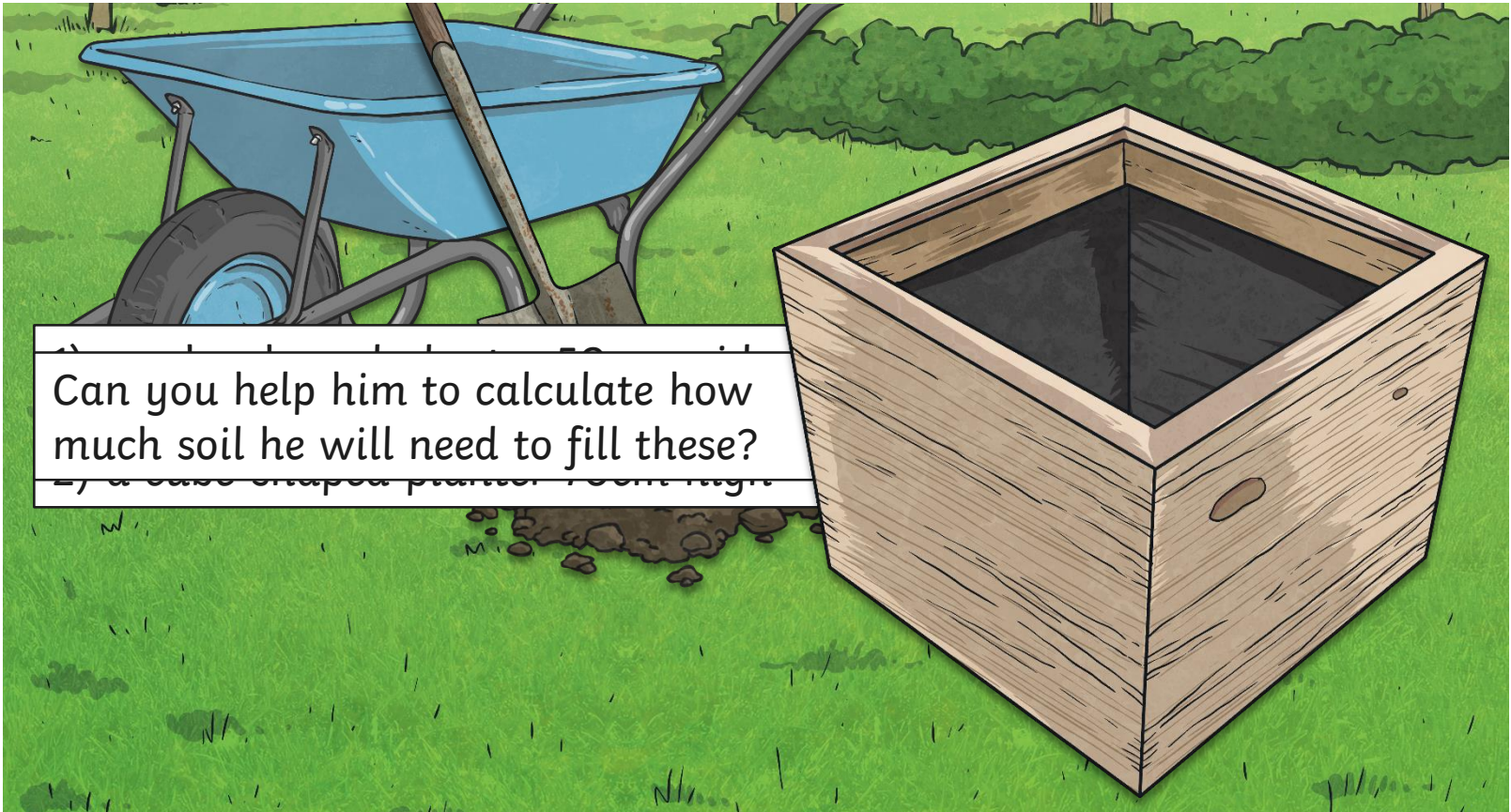
# Patios

The patios are squares so the length and width will be the same.



# Planters

Geoff needs to build some cube-shaped planters in the corners of the patio to plant shrubs in.





# Planters

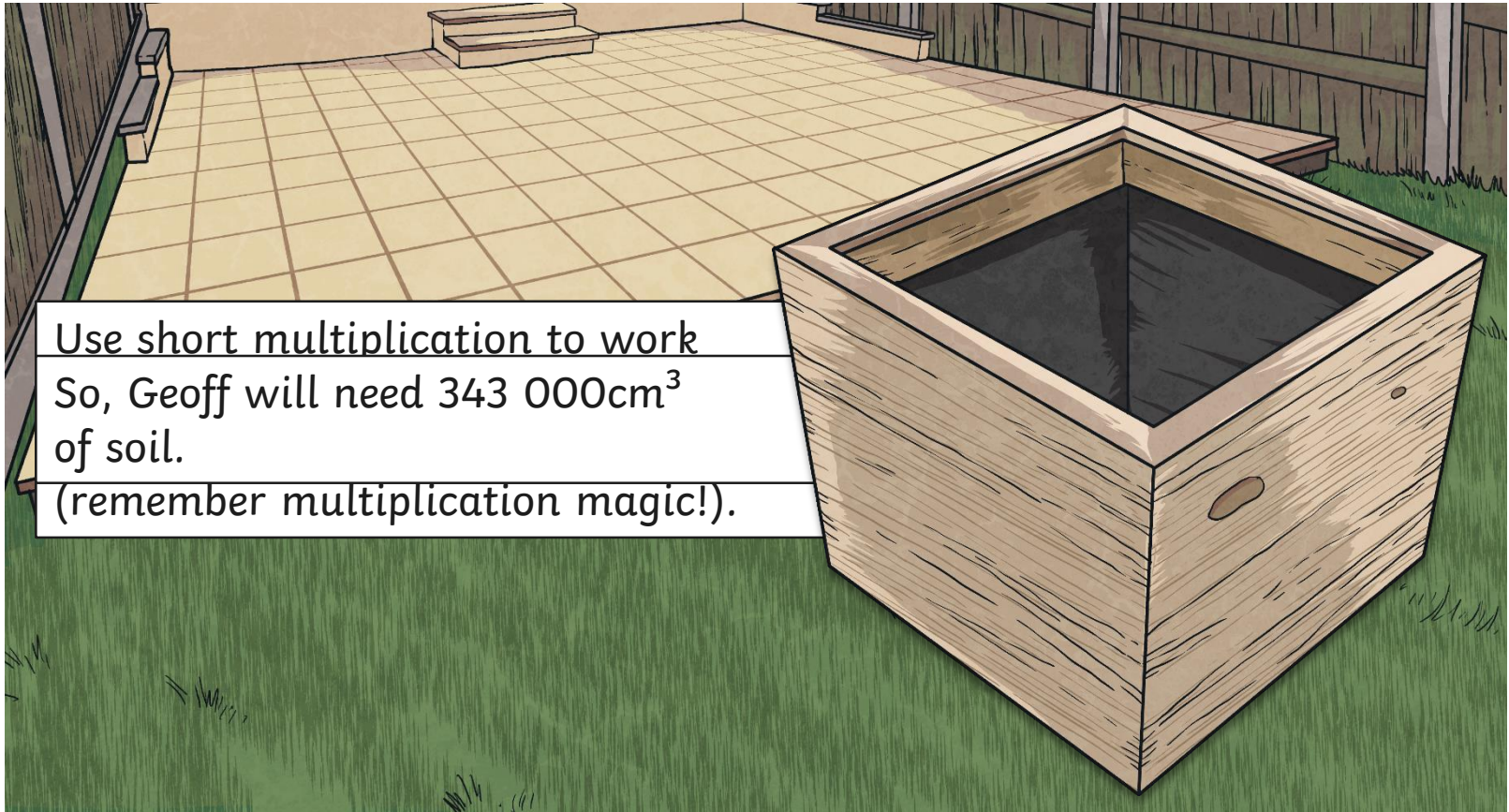
To work this out, we need to cube the measurements:



So, Geoff will need  $125\,000\text{cm}^3$  of soil.

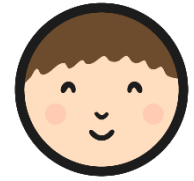
# Planters

To work this out, we need to cube the measurements:



Use short multiplication to work  
So, Geoff will need  $343\ 000\text{cm}^3$   
of soil.  
(remember multiplication magic!).

# Gardening



Use your marvellous maths skills to complete these activities:

**Gardening**

I can solve problems using my knowledge of square and cube numbers.

Help Geoff to solve these gardening problems.  
Draw diagrams on the back of the sheet to help you.

- Gardener Geoff is building a square patio. If the length of the patio is 27 metres, how wide is it?  
\_\_\_\_\_
- What is the area of a square patio which is 35 metres long?  
 $35^2 = 35 \times 35 =$  \_\_\_\_\_  $m^2$
- What is the area of a square lawn which is 65 metres long?  
\_\_\_\_\_
- What is the length of a square lawn with an area of  $1225m^2$ ?  
\_\_\_\_\_
- How wide is a square patio with an area of  $1764m^2$ ?  
\_\_\_\_\_
- How much soil will Geoff need to fill a cube-shaped planter 72cm high?  
 $72^3 = 72 \times 72 \times 72 =$  \_\_\_\_\_  $cm^3$  of soil
- Geoff has  $20\ 160cm^3$  of soil left. Will there be enough to fill a planter 0.25 metres wide? (tip: try converting it into centimetres first).  
\_\_\_\_\_
- How much soil will Geoff need to fill a cube-shaped planter 76cm high?  
\_\_\_\_\_
- $27\ 000\ cm^3$  of soil completely fills a cube-shaped mini planter on the wall in Geoff's garden. How high is the planter?  
\_\_\_\_\_
- Geoff has 2 cube-shaped planters left to fill. They are both 3 metres wide. How much soil will he need?  
\_\_\_\_\_

**Gardening**

I can solve problems using my knowledge of square and cube numbers.

Help Geoff to solve these gardening problems.  
Draw diagrams on the back of the sheet to help you.

- Gardener Geoff is building a square patio. If the length of the patio is 17 metres, how wide is it?  
\_\_\_\_\_
- What is the area of a square patio which is 17 metres long?  
 $17^2 = 17 \times 17 =$  \_\_\_\_\_  $m^2$
- What is the area of a square lawn which is 25 metres long?  
\_\_\_\_\_
- What is the length of a square lawn with an area of  $169m^2$ ?  
\_\_\_\_\_
- How wide is a square patio with an area of  $225m^2$ ?  
\_\_\_\_\_
- How much soil will Geoff need to fill a cube-shaped planter 65cm high?  
 $65^3 = 65 \times 65 \times 65 =$  \_\_\_\_\_  $cm^3$  of soil
- Geoff has  $216m^3$  of soil left. Will there be enough to fill a planter 9 metres wide?  
\_\_\_\_\_
- How much soil will Geoff need to fill a cube-shaped planter 64cm high?  
\_\_\_\_\_
- $15\ 625\ cm^3$  of soil completely fills a cube-shaped mini planter on the wall in Geoff's garden. How high is the planter?  
\_\_\_\_\_
- Geoff has 2 cube-shaped planters left to fill. They are both 4 metres wide. How much soil will he need?  
\_\_\_\_\_

**Gardening**

I can solve problems using my knowledge of square and cube numbers.

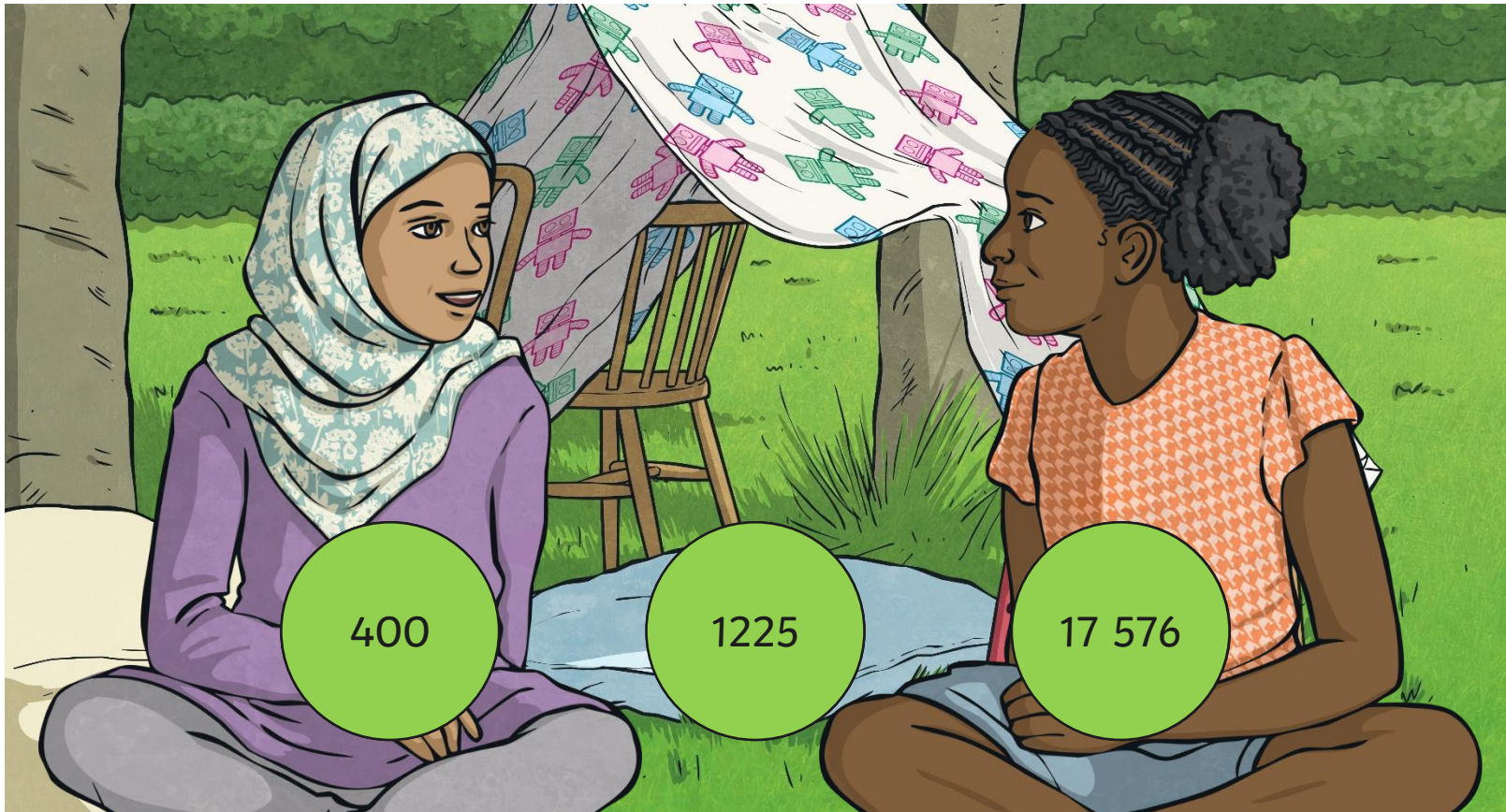
Help Geoff to solve these gardening problems.  
Draw diagrams on the back of the sheet to help you.

- Gardener Geoff is building a square patio. If the length of the patio is 4 metres, how wide is it?  
\_\_\_\_\_
- What is the area of a square patio which is 4 metres long?  
 $4^2 = 4 \times 4 =$  \_\_\_\_\_  $m^2$
- What is the area of a square lawn which is 40 metres long?  
\_\_\_\_\_
- What is the length of a square lawn with an area of  $144m^2$ ?  
\_\_\_\_\_
- How wide is a square patio with an area of  $121m^2$ ?  
\_\_\_\_\_
- How much soil will Geoff need to fill a cube-shaped planter 50cm high?  
 $50^3 = 50 \times 50 \times 50 =$  \_\_\_\_\_  $cm^3$  of soil
- Geoff has  $216m^3$  of soil left. Will there be enough to fill a planter 8 metres wide?  
\_\_\_\_\_
- How much soil will Geoff need to fill a cube-shaped planter 60cm high?  
\_\_\_\_\_
- $1000\ cm^3$  of soil completely fills a cube-shaped mini planter on the wall in Geoff's garden. How high is the planter?  
\_\_\_\_\_
- Geoff has 2 cube-shaped planters left to fill. They are both 2 metres wide. How much soil will he need?  
\_\_\_\_\_

# Flip It



Have a go at writing your own word problems for these calculations.  
Then, pass your problems to your partner for them to solve.



# Aim



- I can solve problems using my knowledge of square and cube numbers.

# Success Criteria

- I can pick out the important information from a word problem.
- I can calculate square and cube numbers to solve the problem.

