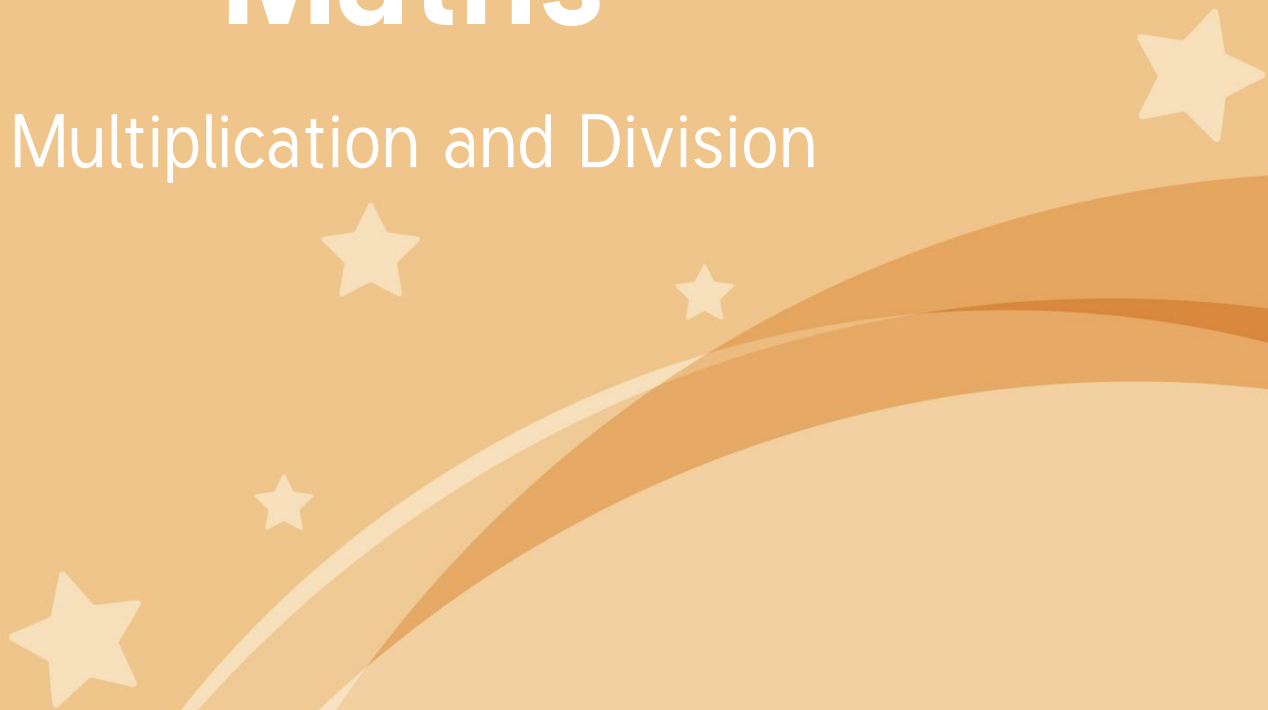




Maths

Multiplication and Division



Build It



Aim

- I can use known facts to multiply and divide mentally.

Success Criteria

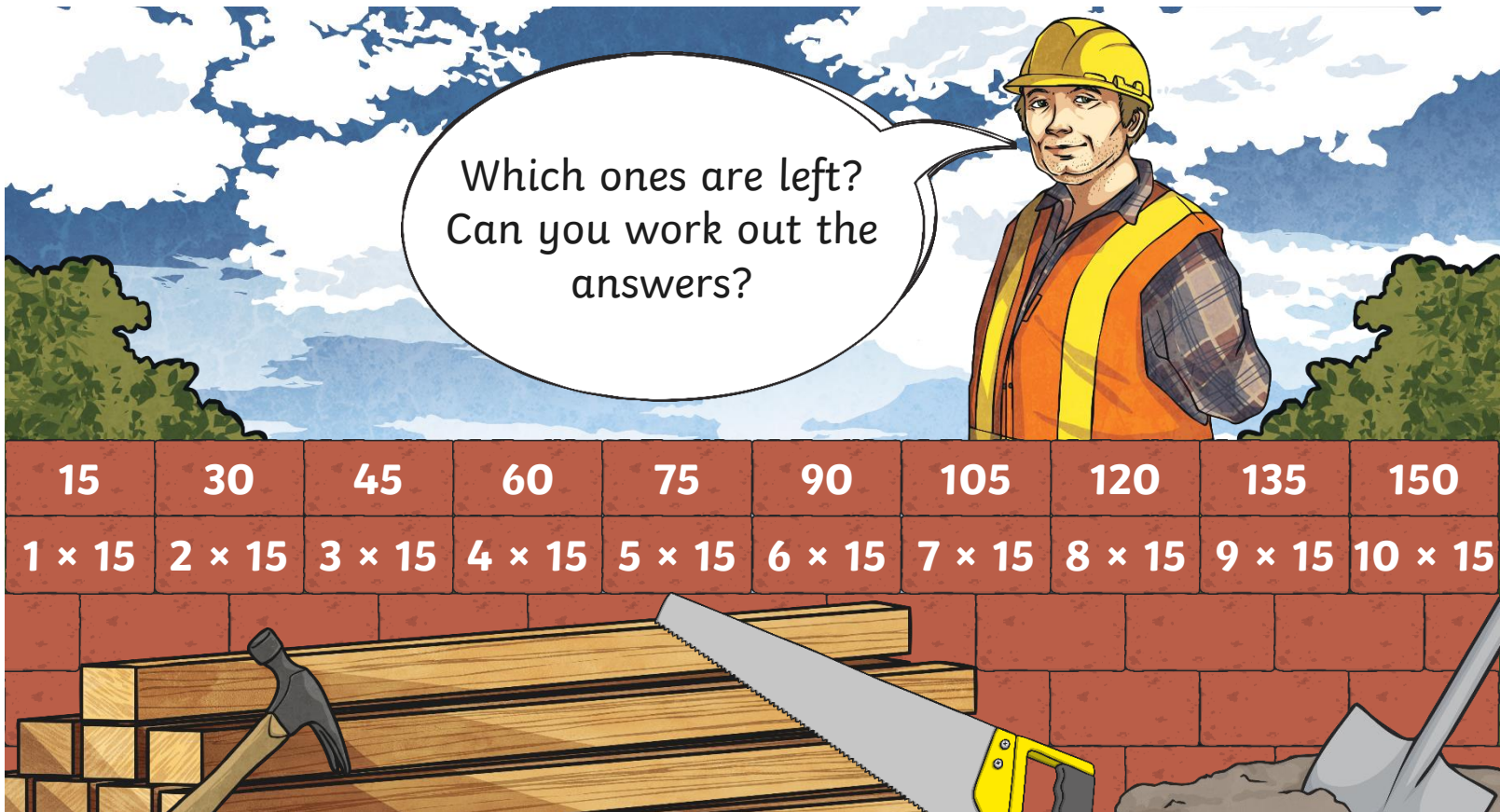
- I use factors to make multiplication and division calculations easier.
- I can multiply by 9 and 11 by multiplying by 10 and adjusting.
- I can multiply by 5 by multiplying by 10 and halving.
- I can multiply by 50 by multiplying by 100 and halving.

The Fifteen Times Table



Can you help Billy Builder with his multiplication?

Which ones are left?
Can you work out the
answers?



15

30

45

60

75

90

105

120

135

150

1×15

2×15

3×15

4×15

5×15

6×15

7×15

8×15

9×15

10×15

Multiplying by Nine

Let's calculate 56×9 .

We adjust by
subtracting the extra
group of 56 from our total.

$$560 - 56 = 504$$

$$\text{so } 9 \times 56 = 504$$

			H	T	O			
56	56	56		5	6	56	56	56
56	56	56	5	6	0	56	56	

Multiplying by Eleven

Let's calculate 74×11 .

We adjust by
adding on the extra
group of 74 to our total.
 $740 + 74 = 814$
so $11 \times 74 = 814$

			H	T	O				
74	74	74		7	4	+	74	74	
74	74	74	7	4	0	+	74	74	74

Multiplying by Five and Fifty



We can multiply by 5 by multiplying by 10 and halving.

We can multiply by 5 by multiplying by 10 and halving.
Try these: Multiply a number by 10 and halve the result.
Multiply a number by 100 and halve the result.

Multiply by 5 (half of 10 ×)	Multiply by 50 (half of 100 ×)
68 680 ÷ 2 = 340	66 6600 ÷ 2 = 3300
164 1640 ÷ 2 = 820	382 38 200 ÷ 2 = 19 100
429 4290 ÷ 2 = 2145	864 86 400 ÷ 2 = 43 200

Fantastic Factors

We can also use the relationships between factors to make mental calculations easier.

If you divide a number by 4, you can divide it by 2 twice. If you have a number, then you can divide it by 2 because $2 \times 2 = 4$.

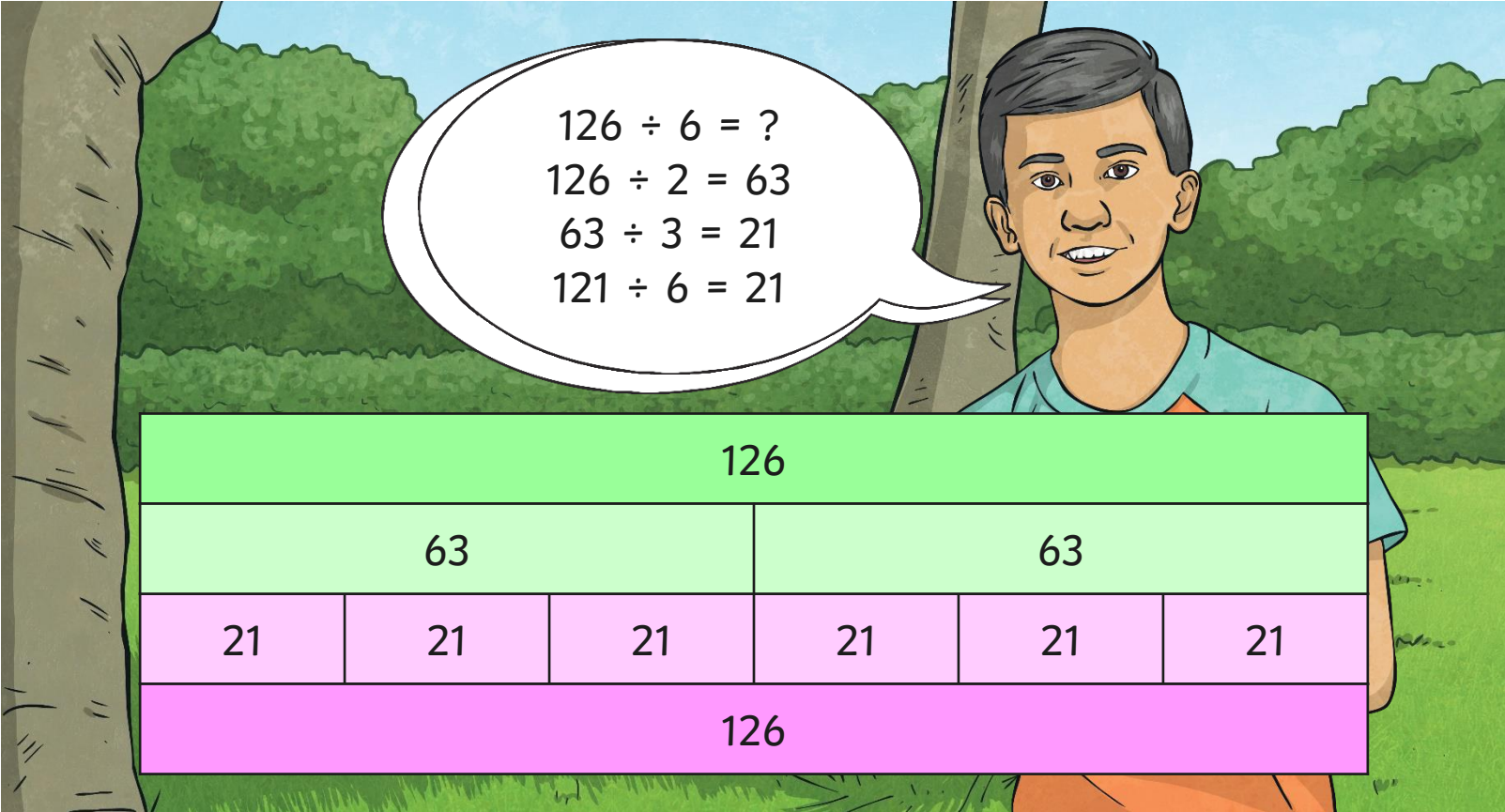
$284 \div 4 = ?$
 $284 \div 2 = 142$
 $142 \div 2 = 71$
 $284 \div 4 = 71$

$2 \times 2 = 4$.

284			
142		142	
71	71	71	71
284			

Fantastic Factors

If we want to divide a number by 6, we could think about the factors of 6 which are easy to calculate.

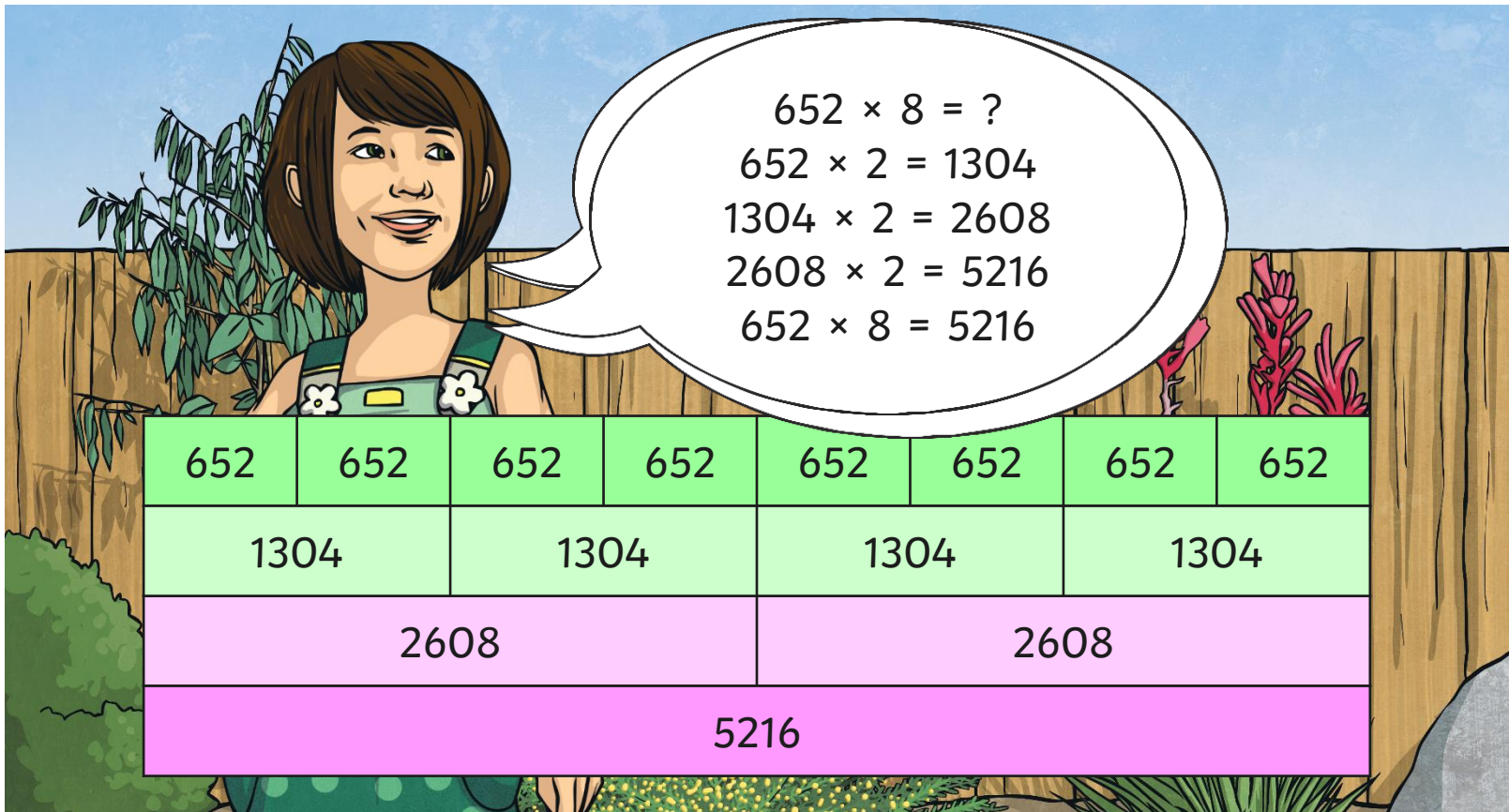


126 \div 6 = ?
126 \div 2 = 63
63 \div 3 = 21
121 \div 6 = 21

126					
63			63		
21	21	21	21	21	21
126					

Fantastic Factors

This strategy also works for multiplication.



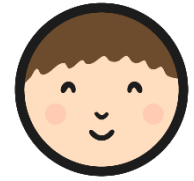
A cartoon illustration of a girl with brown hair and a nose ring, wearing a green and white floral apron, standing in a garden. A large white speech bubble next to her contains the following text:

$$652 \times 8 = ?$$
$$652 \times 2 = 1304$$
$$1304 \times 2 = 2608$$
$$2608 \times 2 = 5216$$
$$652 \times 8 = 5216$$

Below the speech bubble is a table illustrating the multiplication process:

652	652	652	652	652	652	652	652
1304		1304		1304		1304	
2608				2608			
5216							

Build It



Use your marvellous maths skills to complete these activities:

Build It

I can use known facts to multiply and divide mentally.

- Cut out these cards and sort them into four piles according to the strategy you would use to solve them.
 - Multiplying by 10 and adding or subtracting groups.
 - Multiplying by 10 and halving.
 - Multiplying by 100 and halving.
 - Using factors, e.g. multiply by 8 by multiplying by $2 \times 2 \times 2$.
- Show your piles to a partner. Did they sort the cards in the same way?
- Use the strategies to work out the answers and write them on the cards.
- Use a written method or a calculator to check your work. If you made a mistake, find out where you went wrong and put it right.

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Maths | Year 5 | Multiplication and Division | Mental Strategies | Lesson 3 of 4 | Build It

$484 \div 4$	6305×4	5038×9	777×50	11×5280
167×6	674×50	9×889	753×11	852×5

Build It

I can use known facts to multiply and divide mentally.

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$484 \div 4$	635×4	538×9	77×50	11×528
165×6	67×50	9×88	753×11	852×5

Build It

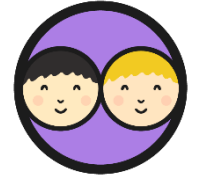
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- Cut out these cards and sort them into four piles according to the strategy you would use to solve them.
 - Multiplying by 10 and adding or subtracting groups.
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$104 \div 4$	63×4	53×9	73×50	11×52	$848 \div 4$
16×6	65×50	9×85	73×11	842×5	74×4

Next Steps



What do you know now that you didn't know at the start of the lesson?



Aim



- I can use known facts to multiply and divide mentally.

Success Criteria

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