Introducing the Inverse

Meet Ingrid Inverse

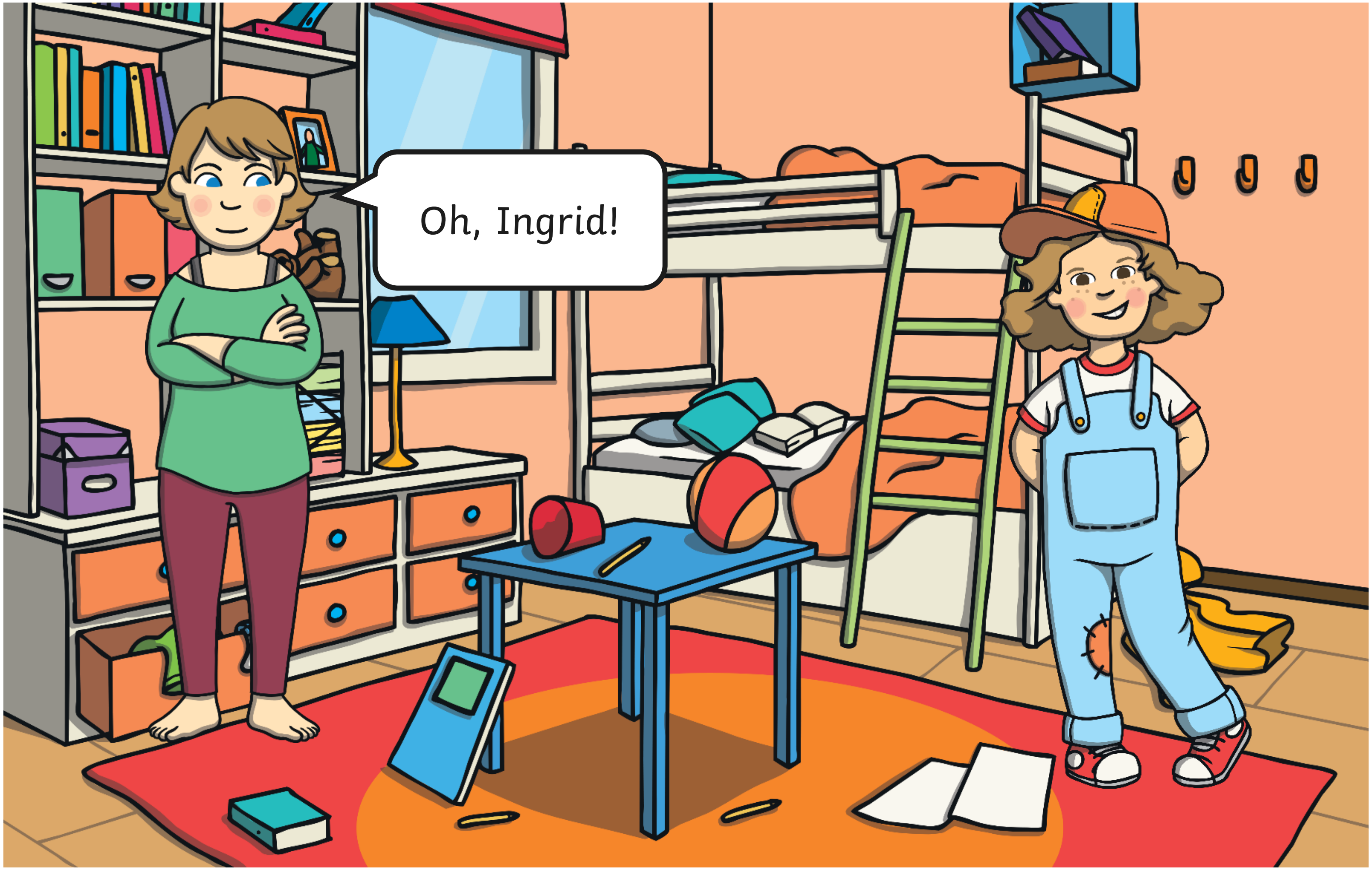
Whole Class

This is Ingrid Inverse. Whatever you do, she will reverse it.

Sometimes, she is very useful. (Sometimes, she is not!)

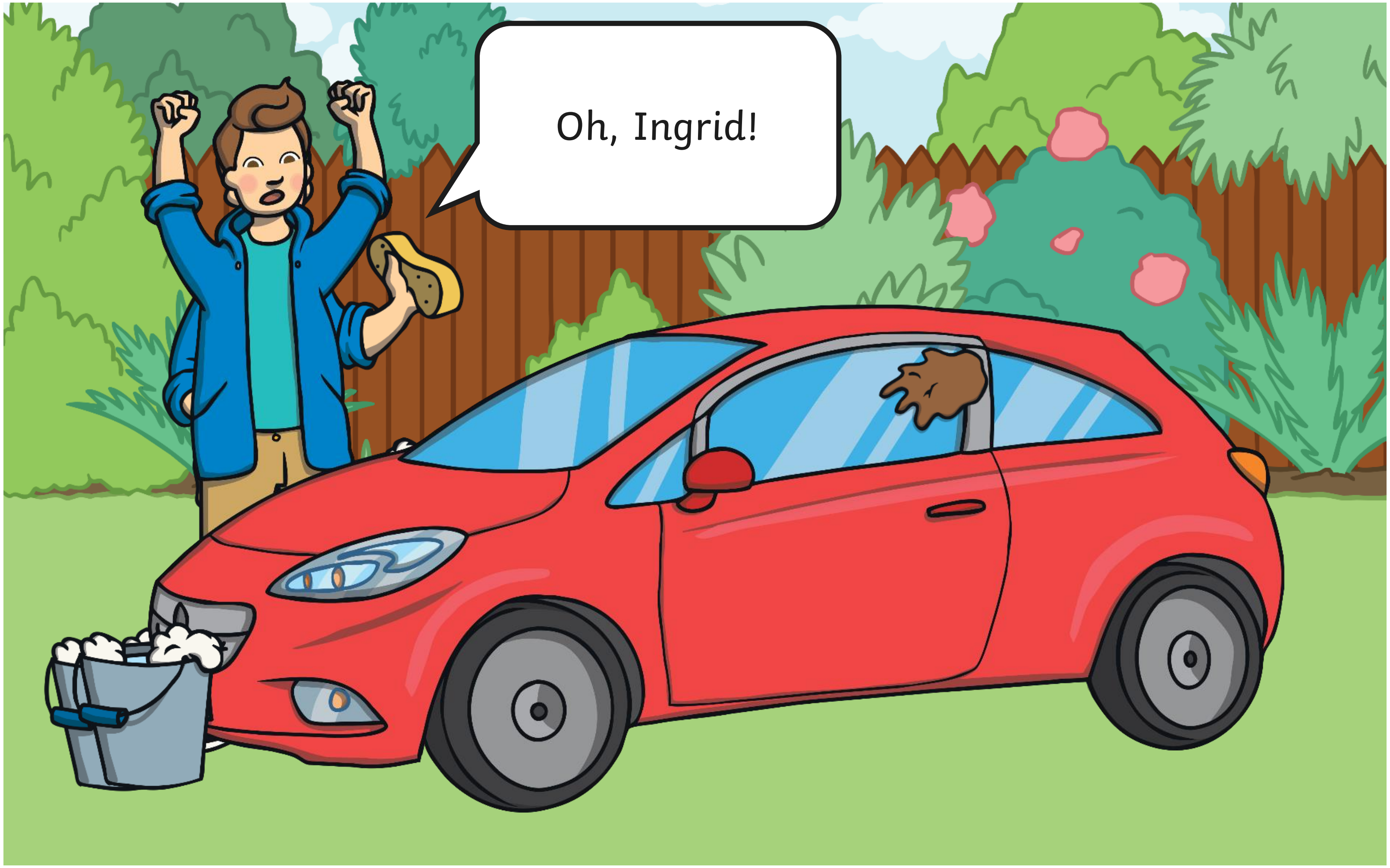
Meet Ingrid Inverse

Whole Class

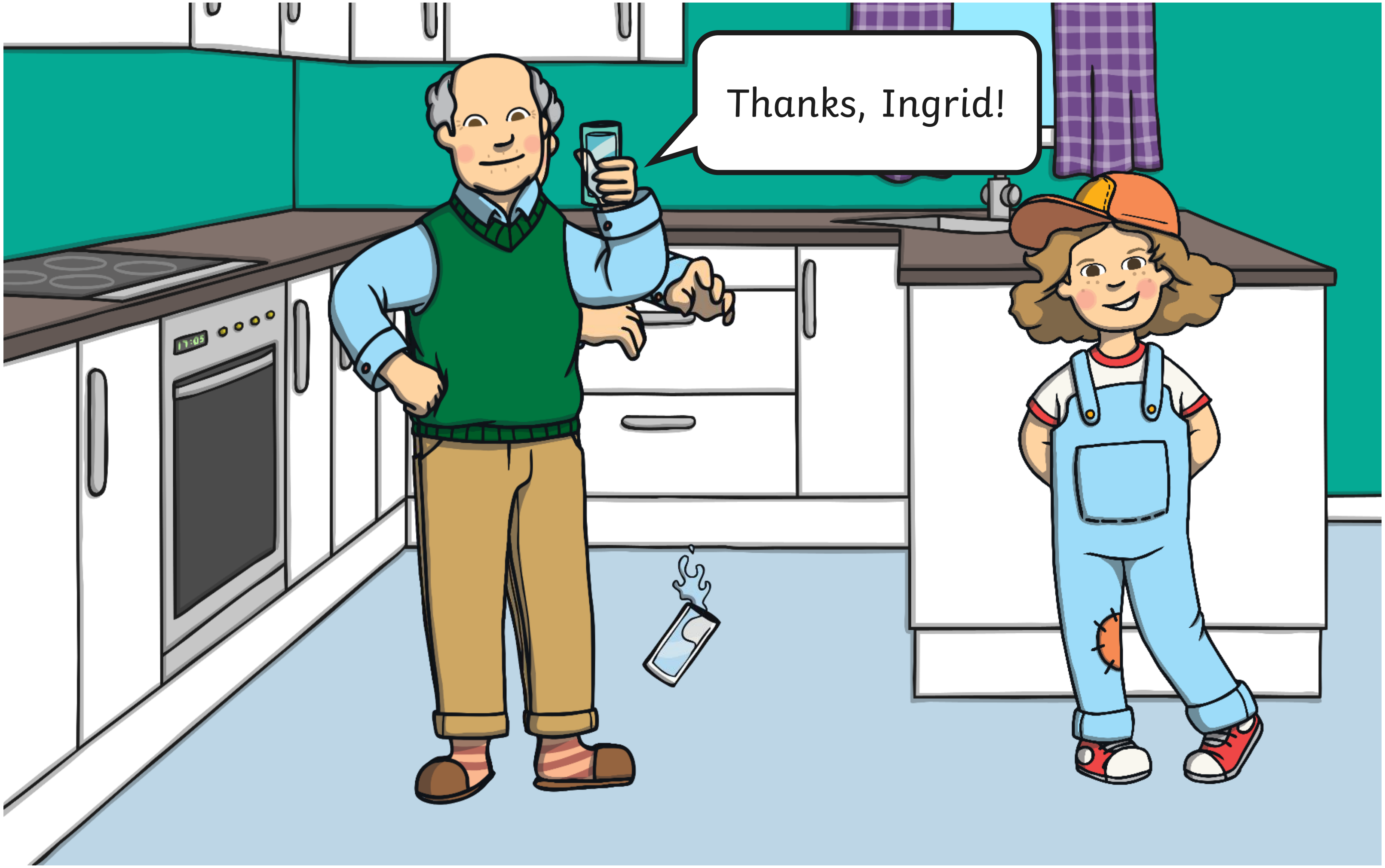


Meet Ingrid Inverse

Whole Class



Meet Ingrid Inverse


Thanks, Ingrid!
17:05

Meet Ingrid Inverse

What is an inverse operation?

Inverse operations are opposite operations that reverse each other and cancel each other out.

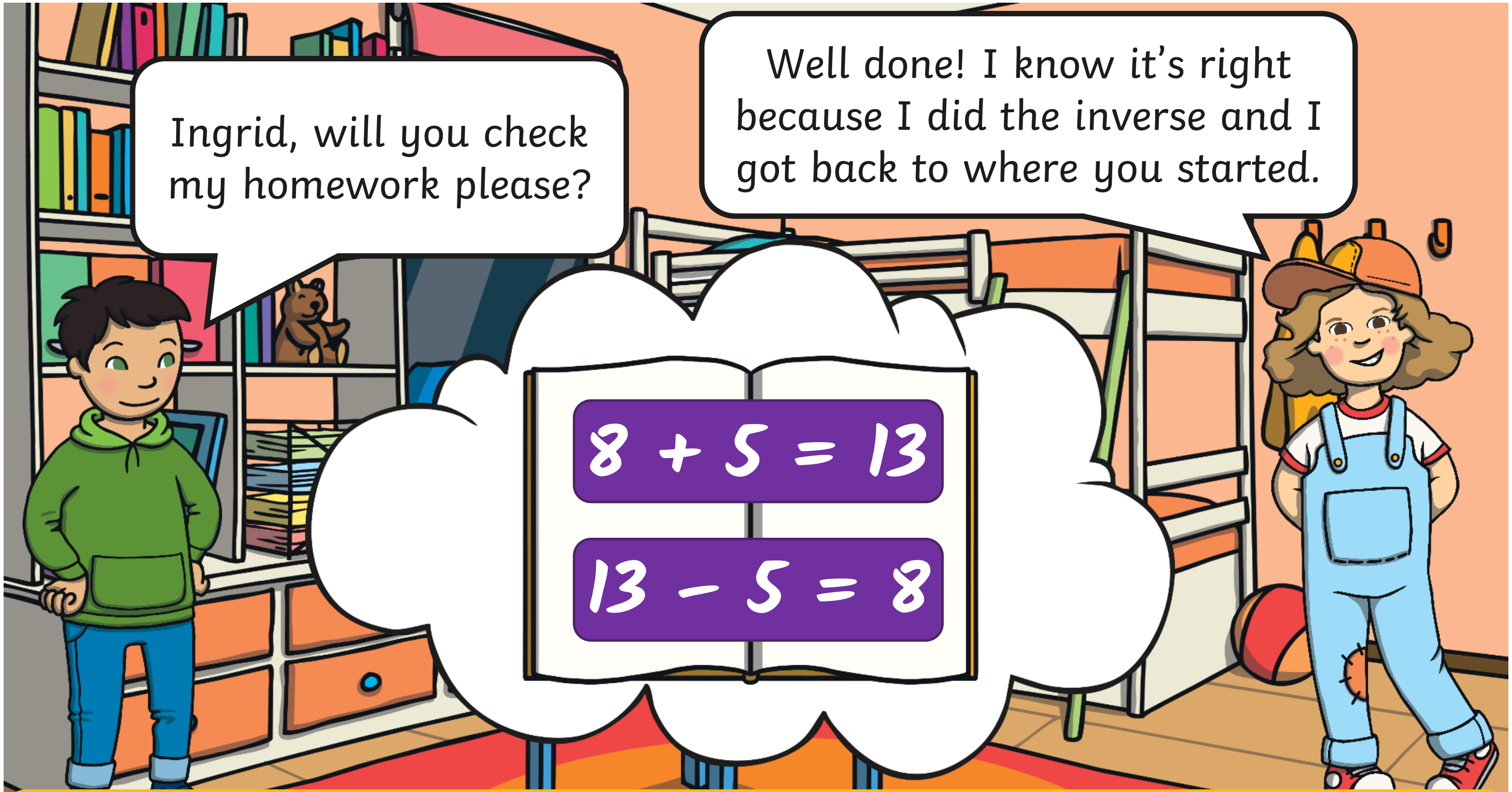
Addition is the inverse of subtraction.

Subtraction is the inverse of addition.

The inverse operation can be used to help us check our calculations are correct.

Meet Ingrid Inverse

Whole Class


Ingrid, will you check my homework please?
Well done! I know it's right because I did the inverse and I got back to where you started.
8 + 5 = 13
13 − 5 = 8

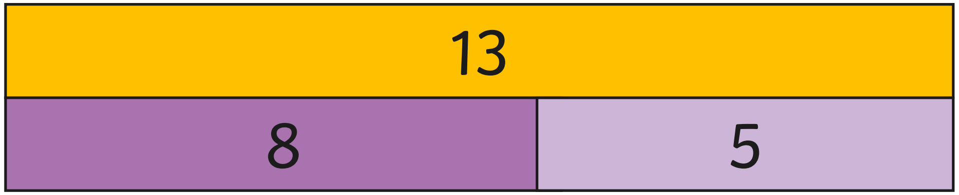
What did Ingrid do?
How did she know Ben's calculation was right?

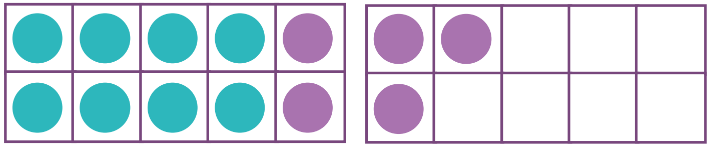
Meet Ingrid Inverse

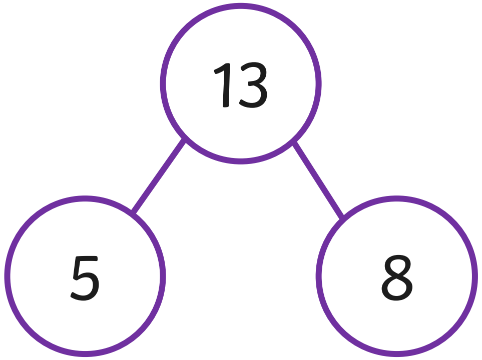
Whole Class

Ingrid is great at using the inverse! She has made some models to help you.

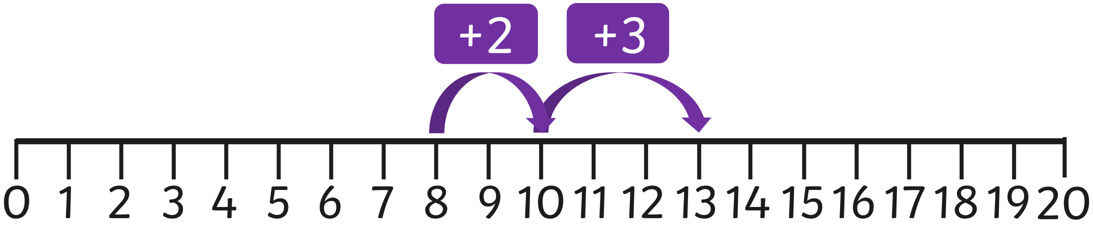
Discuss what you see. Which do you find the most helpful? Can you think of any other models that might help?







Click the models to hide them. Click here to show them all.


+2
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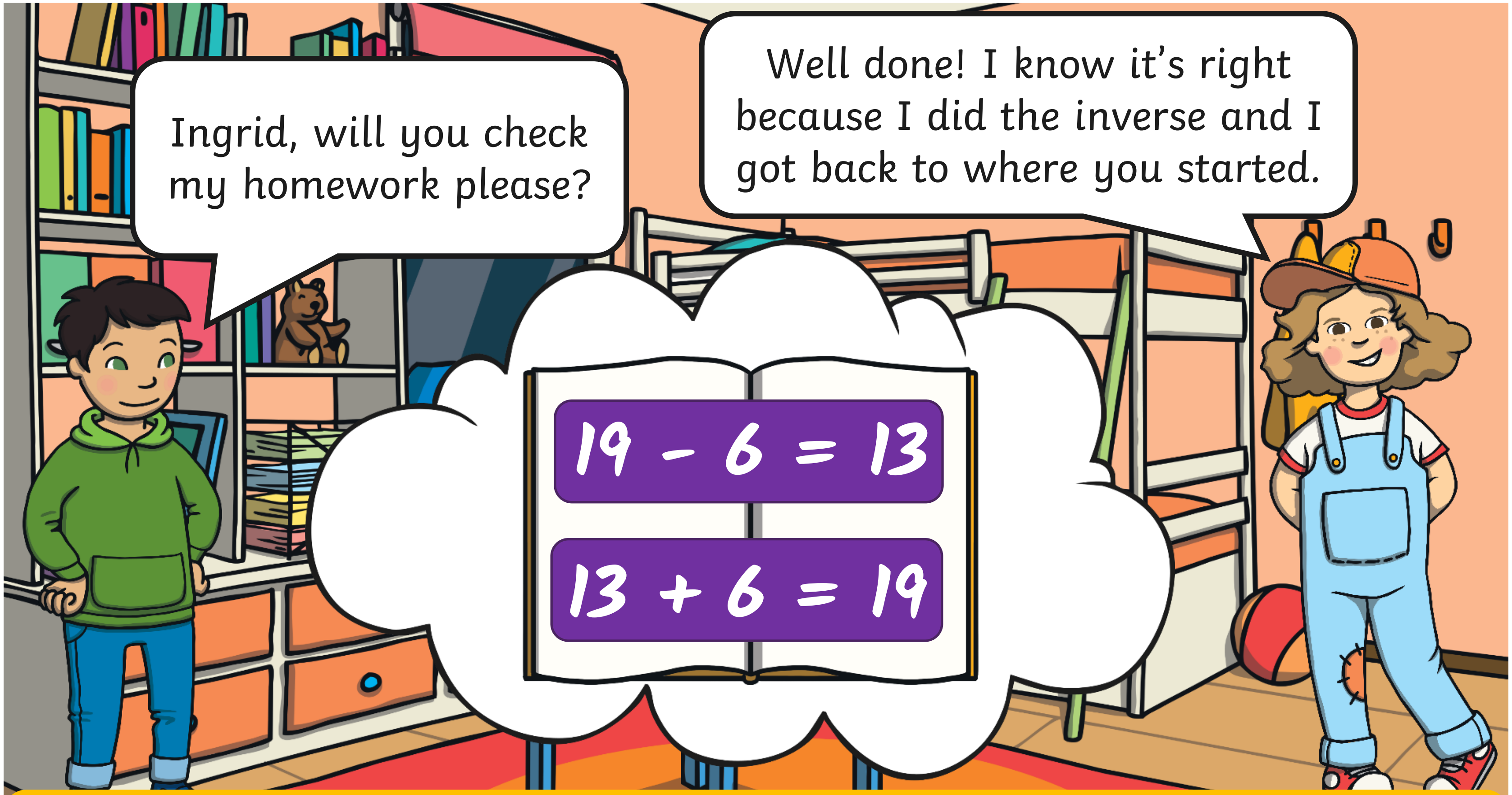
Ingrid Inverses Again


Ingrid, will you check my homework please?
Well done! I know it's right because I did the inverse and I got back to where you started.
19 – 6 = 13
13 + 6 = 19

What did Ingrid do?
How did she know Ben's calculation was right?

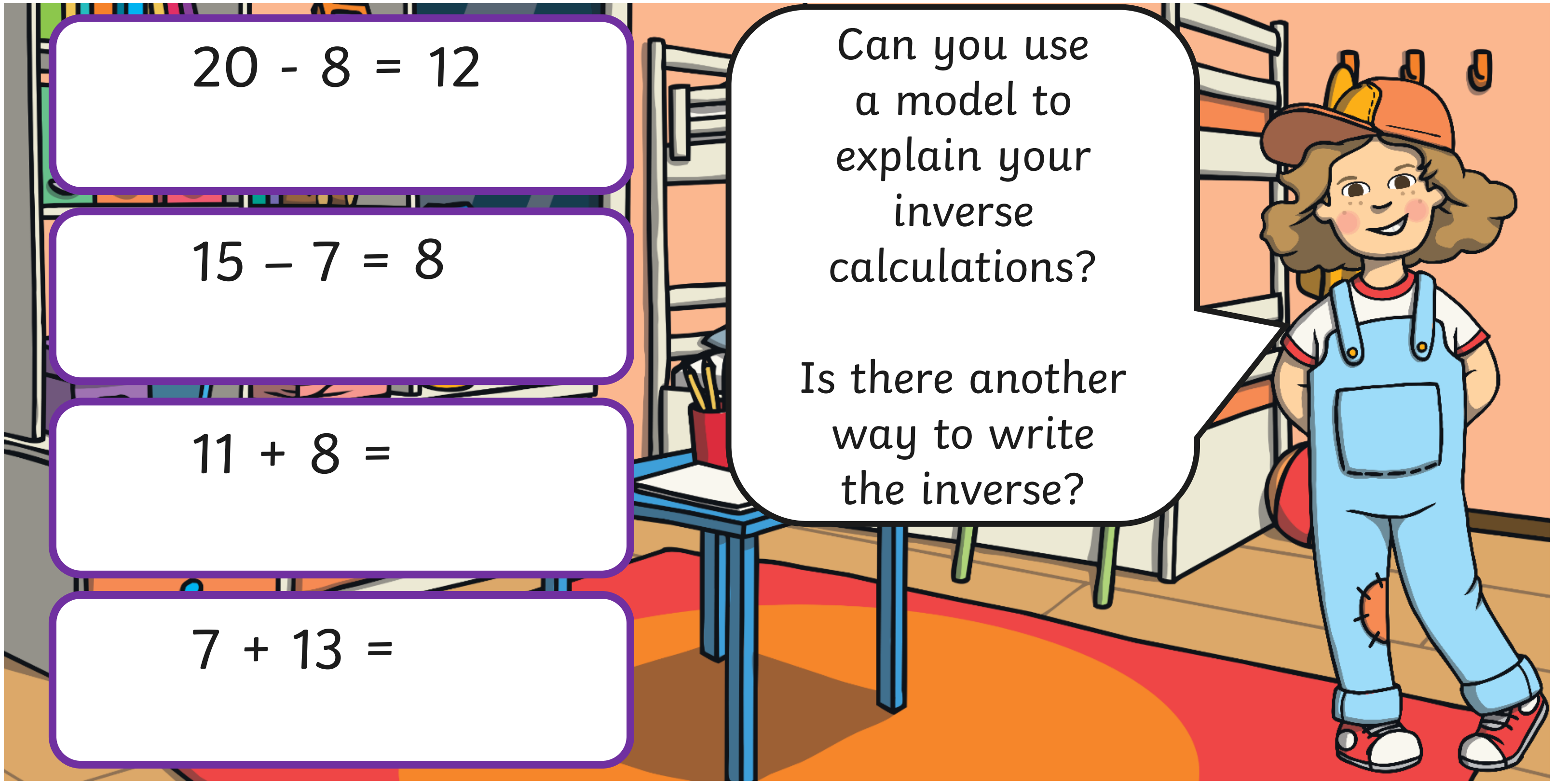
Ingrid Inverses Again

Can you make or draw some models to show Ben’s calculation?

Trying Inverses

What would Ingrid do with these?

Remember, she likes to get back to where she started.



20 - 8 = 12

15 – 7 = 8

11 + 8 =

7 + 13 =

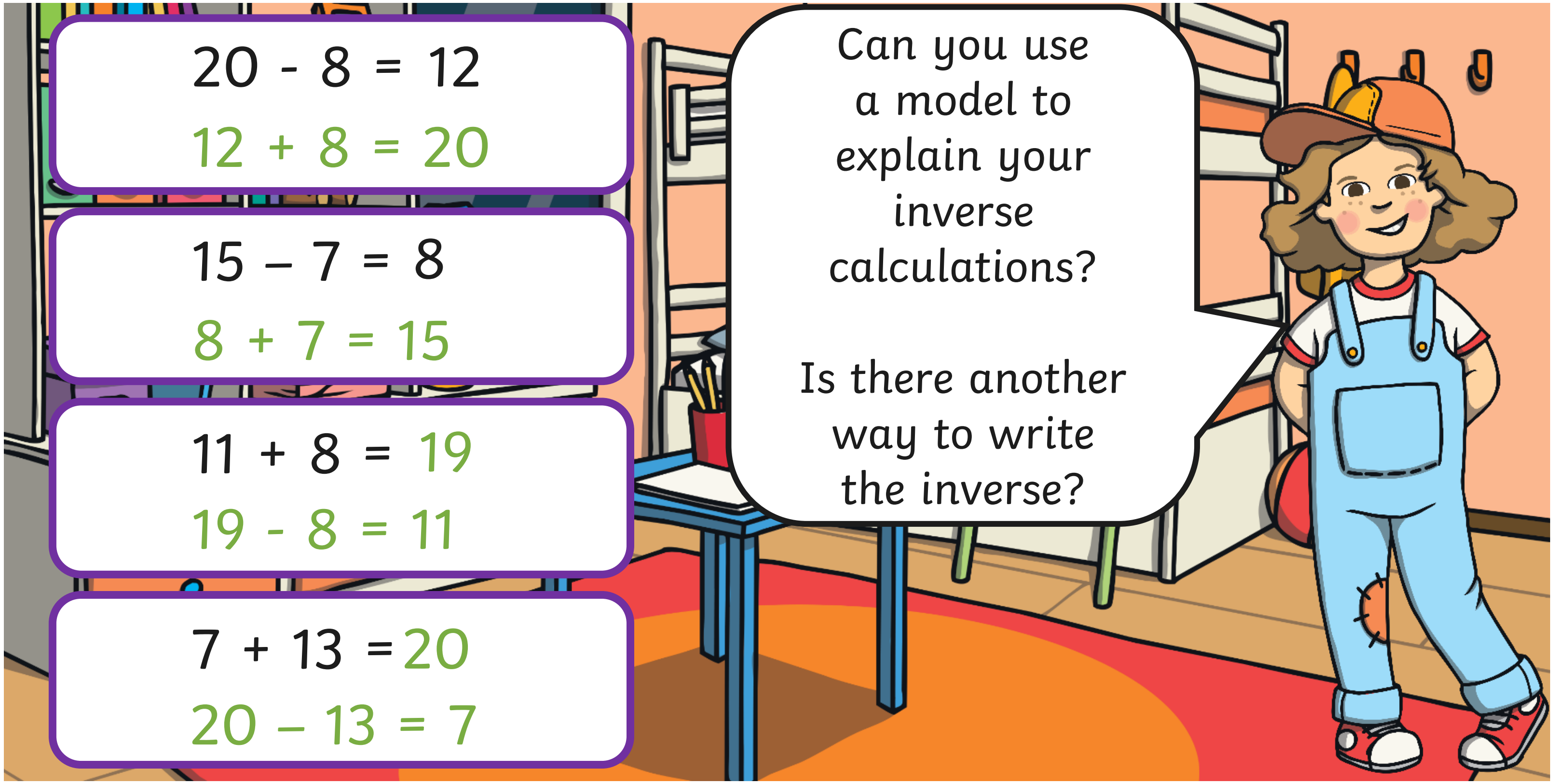
Can you use
a model to
explain your
inverse
calculations?

Is there another
way to write
the inverse?

Trying Inverses - Answers

What would Ingrid do with these?

Remember, she likes to get back to where she started.



20 - 8 = 12
12 + 8 = 20

15 – 7 = 8
8 + 7 = 15

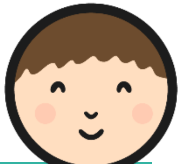
11 + 8 = 19
19 - 8 = 11

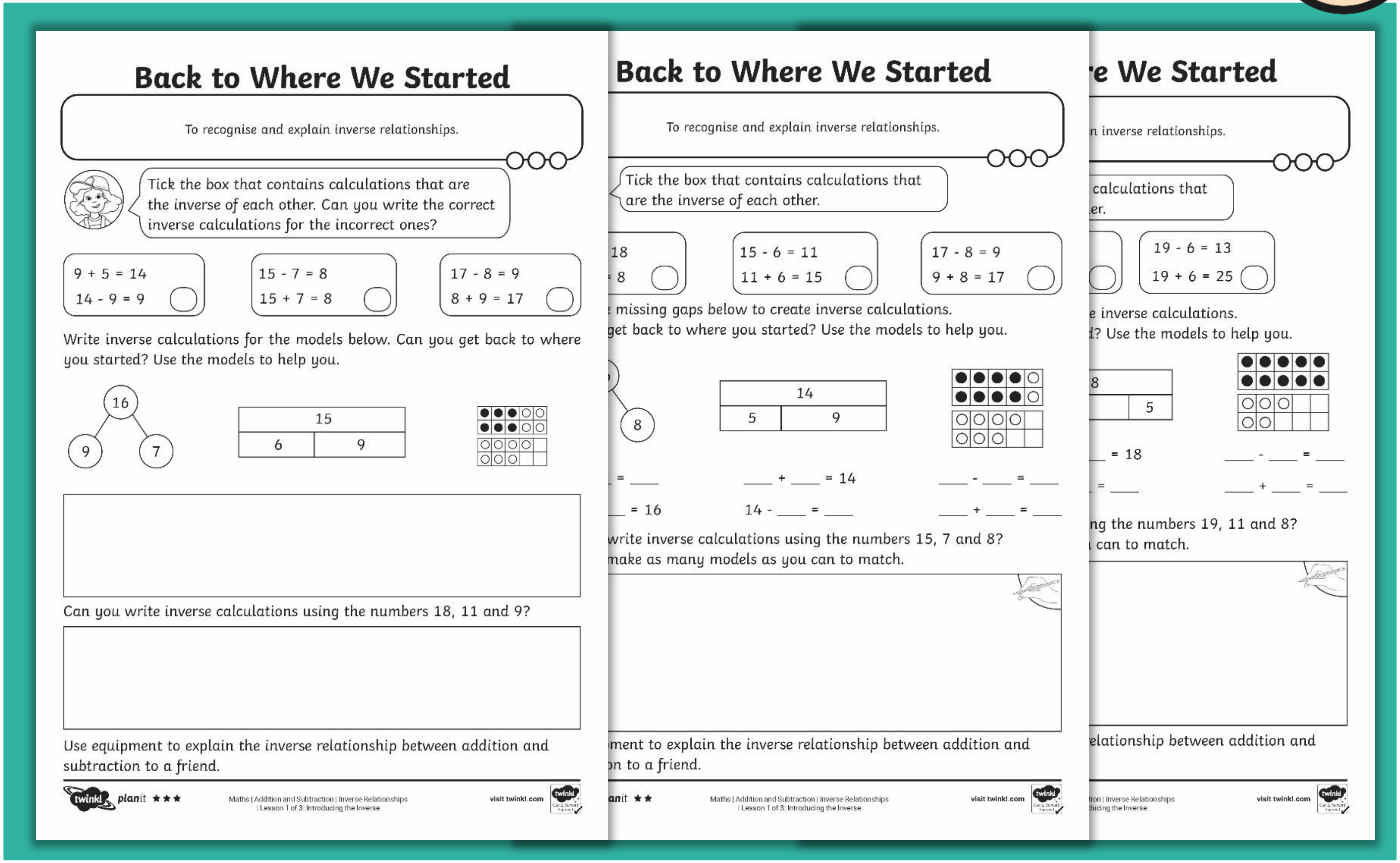
7 + 13 = 20
20 – 13 = 7

Can you use a model to explain your inverse calculations?

Is there another way to write the inverse?

Back to Where We Started





Back to Where We Started

To recognise and explain inverse relationships.

Tick the box that contains calculations that are the inverse of each other. Can you write the correct inverse calculations for the incorrect ones?

9 + 5 = 14
14 - 9 = 9 ○

15 - 7 = 8
15 + 7 = 8 ○

17 - 8 = 9
8 + 9 = 17 ○

Write inverse calculations for the models below. Can you get back to where you started? Use the models to help you.

Can you write inverse calculations using the numbers 18, 11 and 9?

Use equipment to explain the inverse relationship between addition and subtraction to a friend.

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Back to Where We Started

To recognise and explain inverse relationships.

Tick the box that contains calculations that are the inverse of each other.

18
8 ○

15 - 6 = 11
11 + 6 = 15 ○

17 - 8 = 9
9 + 8 = 17 ○

missing gaps below to create inverse calculations.
get back to where you started? Use the models to help you.

= ____
____ + ____ = 14
____ - ____ = ____

____ = 16
14 - ____ = ____
____ + ____ = ____

write inverse calculations using the numbers 15, 7 and 8?
make as many models as you can to match.

ment to explain the inverse relationship between addition and
on to a friend.

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e We Started

n inverse relationships.

calculations that
er.

○

19 - 6 = 13
19 + 6 = 25 ○

e inverse calculations.
d? Use the models to help you.

____ = 18
____ - ____ = ____

= ____
____ + ____ = ____

ng the numbers 19, 11 and 8?
n can to match.

elationship between addition and

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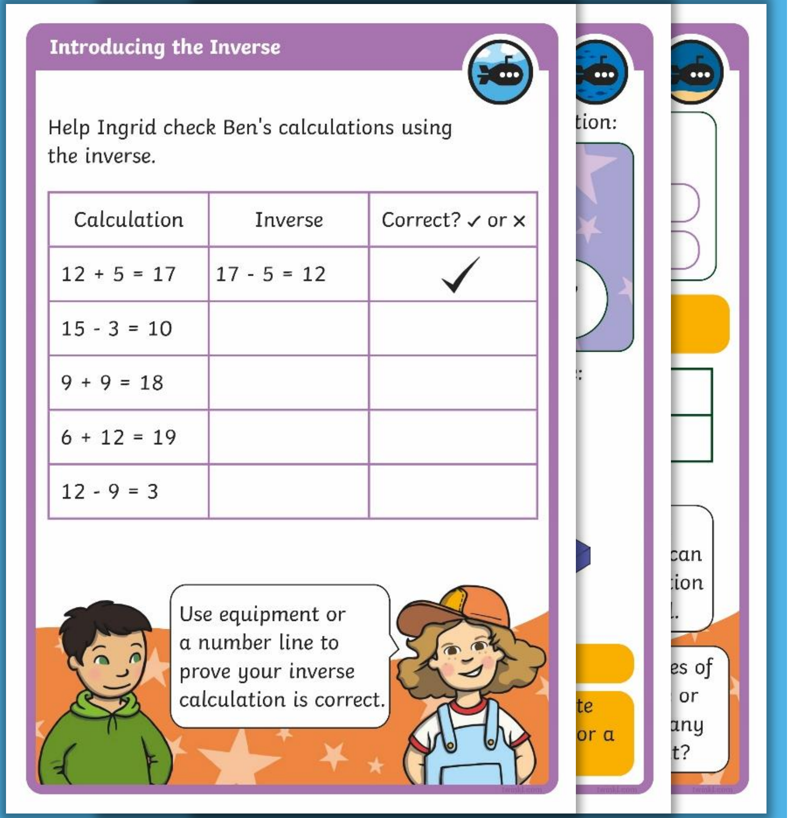
Diving into Mastery

Dive in by completing your own activity!



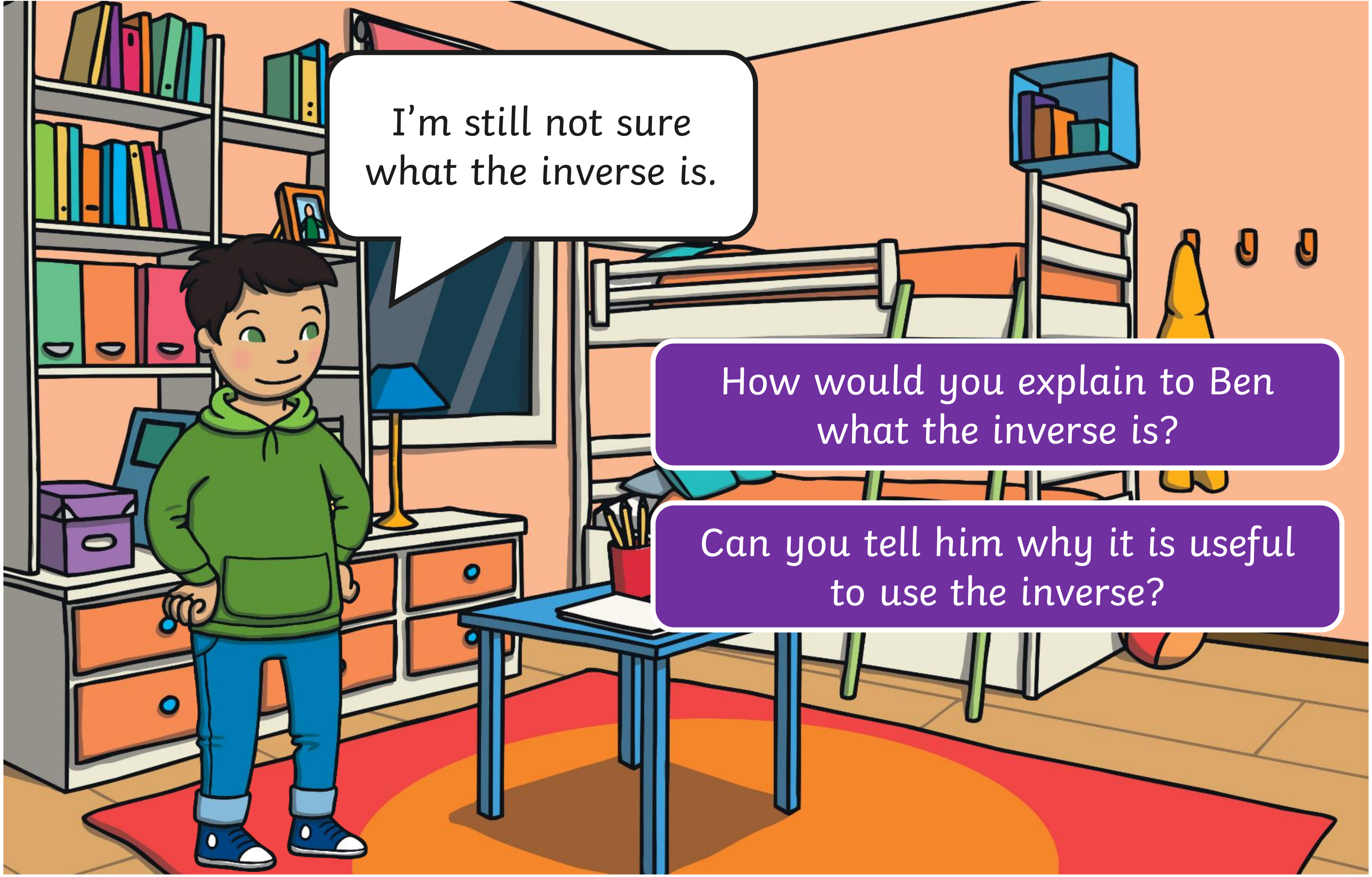
Introducing the Inverse

Help Ingrid check Ben's calculations using the inverse.

Calculation	Inverse	Correct? ✓ or ✗
12 + 5 = 17	17 - 5 = 12	✓
15 - 3 = 10		
9 + 9 = 18		
6 + 12 = 19		
12 - 9 = 3		

Use equipment or a number line to prove your inverse calculation is correct.

Explain the Inverse


I'm still not sure what the inverse is.

How would you explain to Ben what the inverse is?

Can you tell him why it is useful to use the inverse?

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