



Maths

Addition and Subtraction

Need a coherently planned sequence of lessons to complement this resource?

Lesson Breakdown

Below is our suggestion for the most coherent and progressive sequence to teach this area of Planit Maths steps on the White Rose Maths scheme of learning although we have not aimed to mirror the exact order in which they are presented.

Recall and Use Facts (1): Number Facts up to 10

This computer game themed lesson is designed to help children secure their understanding of number facts. Children use a range of methods to investigate and check if they are correct. Differentiated activity sheets and mastery cards to help children.

NC Statement: Recall and use facts to 20 fluently and derive and use related facts up to 100.

Lesson Aim: To recall and use number facts up to 10.

Recall and Use Facts (2): Number Facts up to 20

This lesson teaches children to use familiar number facts to solve and create problems. Children are encouraged to use different representations to support their learning. Differentiated activity sheets and mastery cards to help children develop fluency.

NC Statement: Recall and use facts to 20 fluently and derive and use related facts up to 100.

Lesson Aim: To recall and use number facts up to 20.

Solve Problems (1): Using Different Representations to Solve Problems

Children learn to solve addition and subtraction problems using concrete objects and pictorial representations, including those involving numbers, quantities and measures, applying their increasing knowledge of mental and written methods. This lesson includes Diving into Mastery activity cards with fluency resources.

NC Statement: Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures, applying their increasing knowledge of mental and written methods.

Lesson Aim: To solve addition and subtraction problems using objects, pictures and models.

Introduction

In this unit, children will learn to recall and use addition and subtraction facts. They use a variety of different models, images and equipment to build their number sense, enabling them to use facts flexibly. They learn different strategies to help them add and subtract numbers efficiently, explaining their methods with concrete resources or jottings. Methods include: adding a unit to a ten, adding three single-digit numbers and adding and subtracting multiples of ten leading to pairs of two-digit numbers. They find the difference between numbers and reason about when it is quicker to find the difference or take away. They build up their understanding of commutativity and inverse relationships, using these to solve increasingly complex missing number problems. They apply their learning to problem-solving, and are able to ask questions, explain their choices and demonstrate their methods.

Resources

In addition to your standard maths resources, you will need:

- digital cameras

Assessment Statements

By the end of this unit;

children working towards the expected level will be able to:

- recall and use at least four out of six number facts to ten and derive their associated subtraction facts;
- add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required;
- explain their addition and subtraction methods verbally, in pictures or using apparatus;
- understand that two numbers can be added in any order and the answer will be the same.

children working at the expected level will be able to:

- recall number facts to add and within ten and subtraction facts. Use these to derive number and within 20 and 100;
- add and subtract within 100: a two-digit number and ones, a two-digit number and tens, two two-digit numbers;
- add three one digit numbers using efficient methods;
- understand that addition is commutative but subtraction is not, and explain what this means;
- use the inverse relationship between addition and subtraction to solve problems and check their calculations;
- solve addition and subtraction problems in context of quantities and measures, using pictures and mentally.

Addition and Subtraction

Maths | Year 2 | Steps to Progression Overview

The aim of this overview is to support teachers using Planit Maths to show the most coherent and progressive sequence to teach each area of maths. We also want to fully support teachers who use the White Rose Maths scheme of learning to make full use of the resources available within Planit Maths. Whenever possible, lesson packs have been marked to teach the small steps on the White Rose Maths scheme of learning.

Yearly Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value	Number: Addition and Subtraction						Measurement: Money	Number: Multiplication and Division			
Spring	Number: Multiplication and Division	Statistics	Geometry: Properties of Shape				Number: Fractions	Measurement: Length and Height	Consolidation			
Summer	Position and Direction	Problem Solving and Efficient Methods	Measurement: Time	Measurement: Mass, Capacity and Temperature			Investigations					

See our [Addition and Subtraction Steps to Progression](#) document.

Twinkl Planit is our award-winning scheme of work with over 4000 resources.



Introducing the Inverse



Aim

- To recognise and explain inverse relationships.

Success Criteria

- I can say what 'inverse' means.
- I can use equipment to explain why addition and subtraction are the inverse of each other.
- I can say what the inverse calculation is for an addition or subtraction calculation.

Remember It



Azim rolled a 0-9 dice 6 times to collect 6 digits.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

I rolled:
6, 3, 7, 9, 3, 1.
I can use as
many of these
digits as I like to
make a number.



How many of the numbers in the grid can you make by adding and subtracting Azim's digits?

Meet Ingrid Inverse



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

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



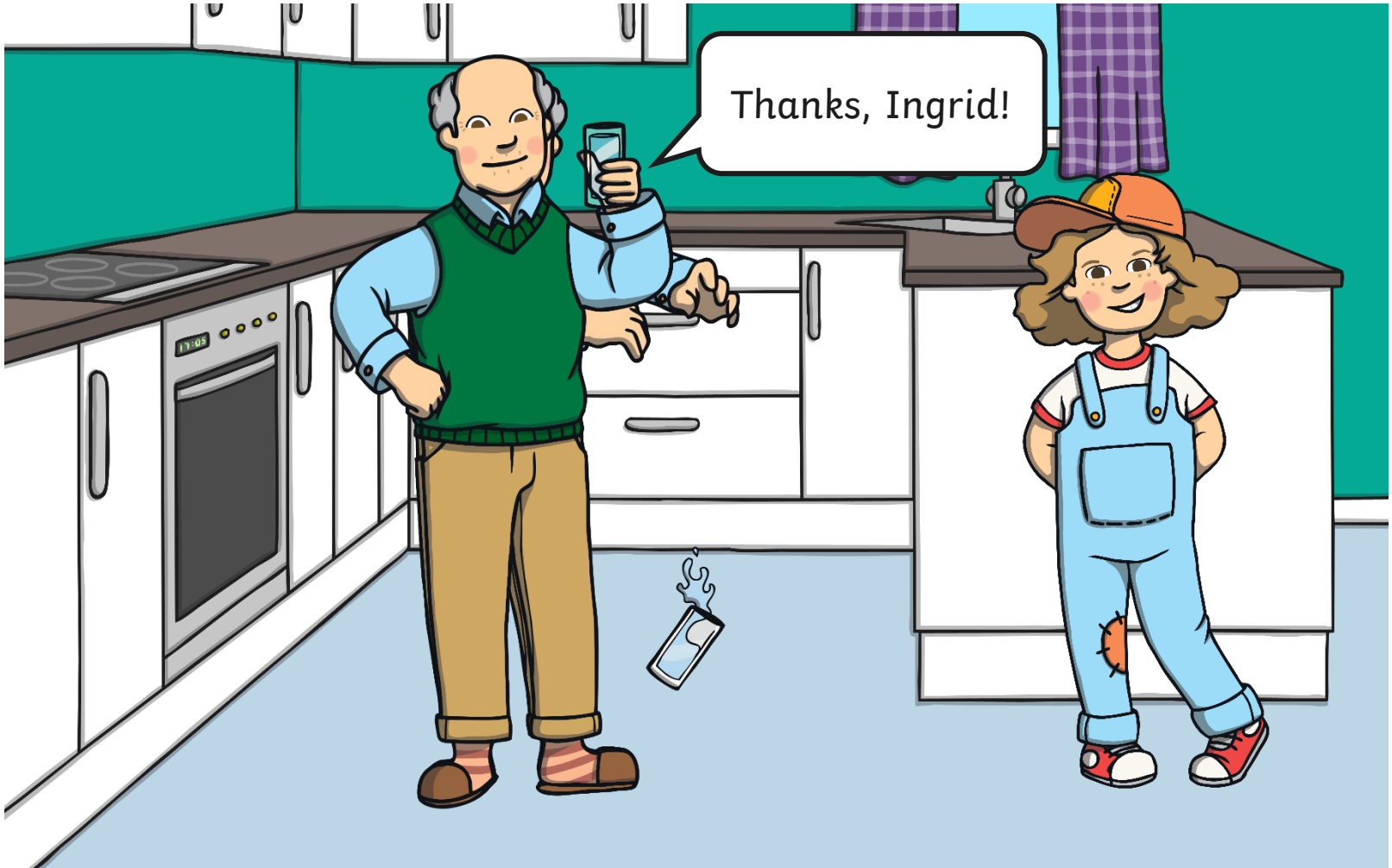
Meet Ingrid Inverse



Meet Ingrid Inverse



Meet Ingrid Inverse



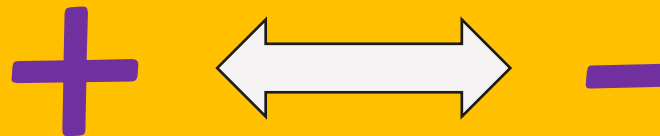
Meet Ingrid Inverse



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.

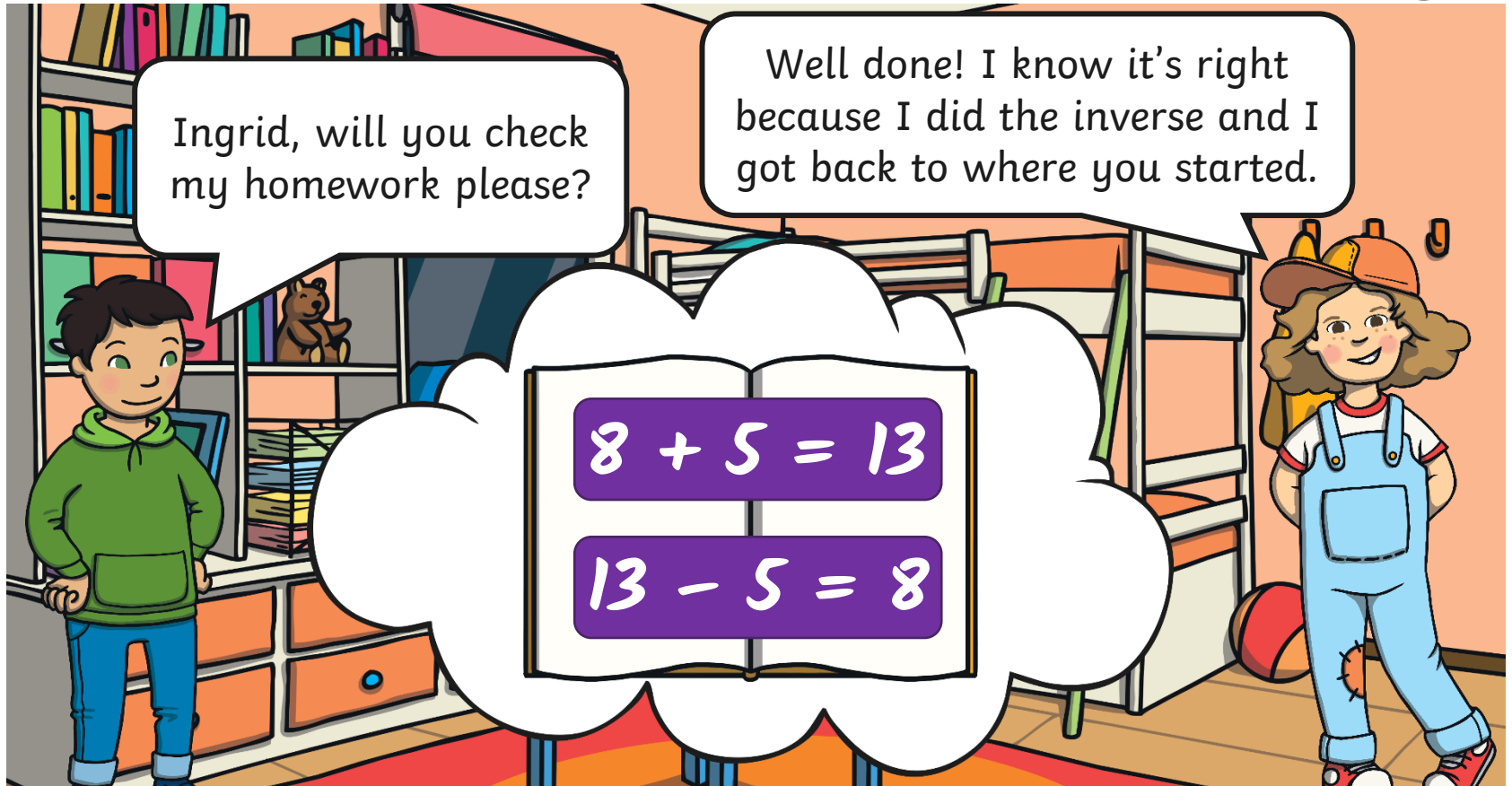


Subtraction is the inverse of addition.

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



Meet Ingrid Inverse



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.

$$8 + 5 = 13$$

$$13 - 5 = 8$$

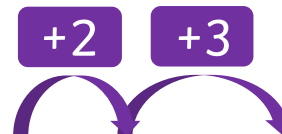
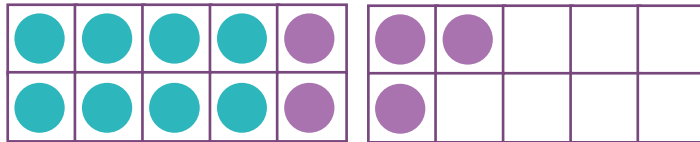
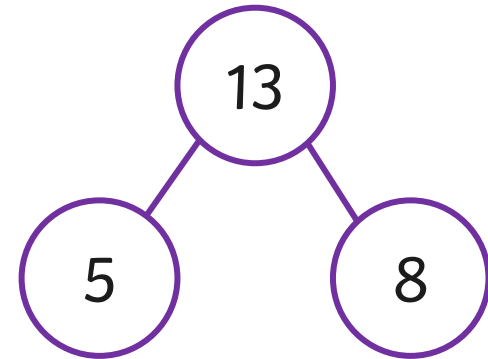
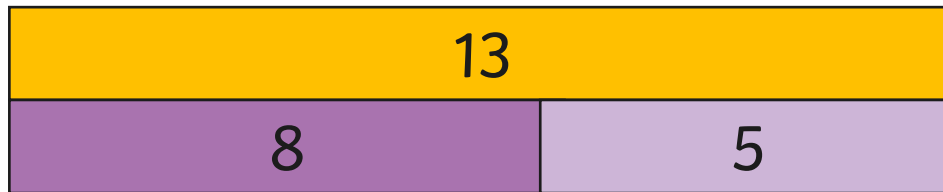
What did Ingrid do?
How did she know Ben's calculation was right?

Meet Ingrid Inverse



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.

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?

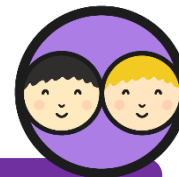
Ingrid Inverses Again



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

Use equipment available in your classroom.

Trying Inverses



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.



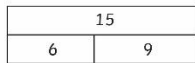
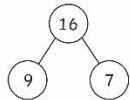
Tick the box that contains calculations that are the inverse of each other. Can you write the correct inverse calculations for the incorrect ones?

$9 + 5 = 14$
 $14 - 9 = 9$

$15 - 7 = 8$
 $15 + 7 = 8$

$17 - 8 = 9$
 $8 + 9 = 17$

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.



Back to Where We Started

To recognise and explain inverse relationships.

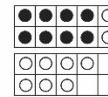
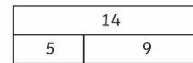
Tick the box that contains calculations that are the inverse of each other.

$18 - 8 = 8$

$15 - 6 = 11$
 $11 + 6 = 15$

$17 - 8 = 9$
 $9 + 8 = 17$

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



$8 + \underline{\quad} = 14$ $\underline{\quad} + \underline{\quad} = 14$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$
 $\underline{\quad} = 16$ $14 - \underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$

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

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



Back to Where We Started

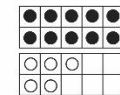
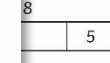
To recognise and explain inverse relationships.

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

$18 - 8 = 8$

$19 - 6 = 13$
 $19 + 6 = 25$

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



$8 + \underline{\quad} = 18$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$
 $\underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$

Write inverse calculations using the numbers 19, 11 and 8? Can you make as many models as you can to match.

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



Diving into Mastery

Dive in by completing your own activity!



Introducing the Inverse



Help Ingrid check Ben's calculations using the inverse.

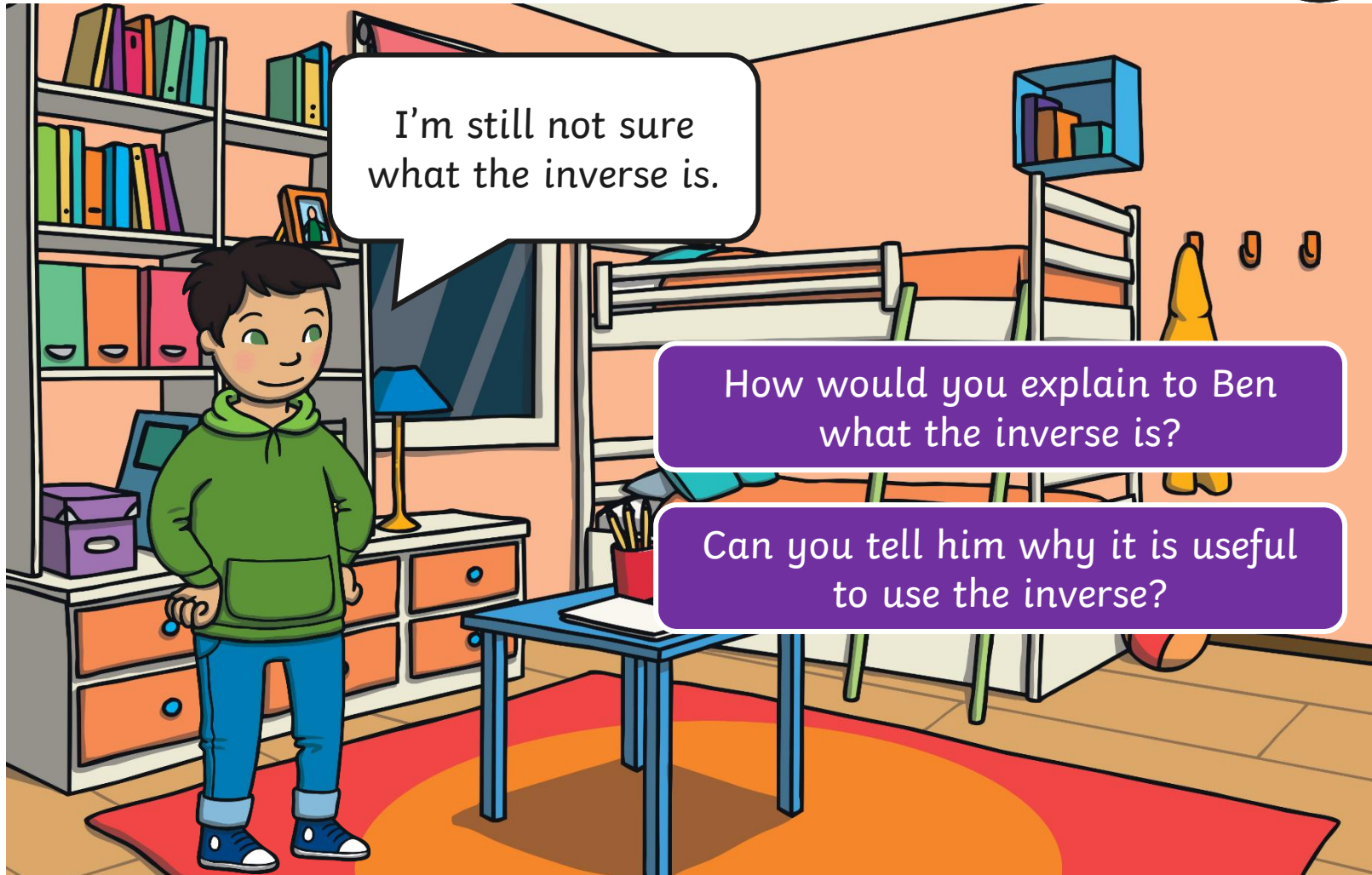
Calculation	Inverse	Correct? ✓ or ×
$12 + 5 = 17$	$17 - 5 = 12$	✓
$15 - 3 = 10$		
$9 + 9 = 18$		
$6 + 12 = 19$		
$12 - 9 = 3$		



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?

Aim



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Success Criteria

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