



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 the scheme.

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 pairs. Children use a range of methods to investigate and check if their methods are correct. They use differentiated activity sheets and mastery cards to help children develop fluency.

NC Statement: Recall and use facts up 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. They use differentiated activity sheets and mastery cards to help children develop fluency.

NC Statement: Recall and use facts up 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 reasoning.

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 facts to add 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 and subtraction is not, and explain what this means;
- use the inverse relationship between addition and subtraction to solve problems and check 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. Wherever possible, lesson packs have been matched to each of 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.



Addition is Commutative



twinkl

Aim

- To be able to explain why addition is commutative but subtraction is not.

Success Criteria

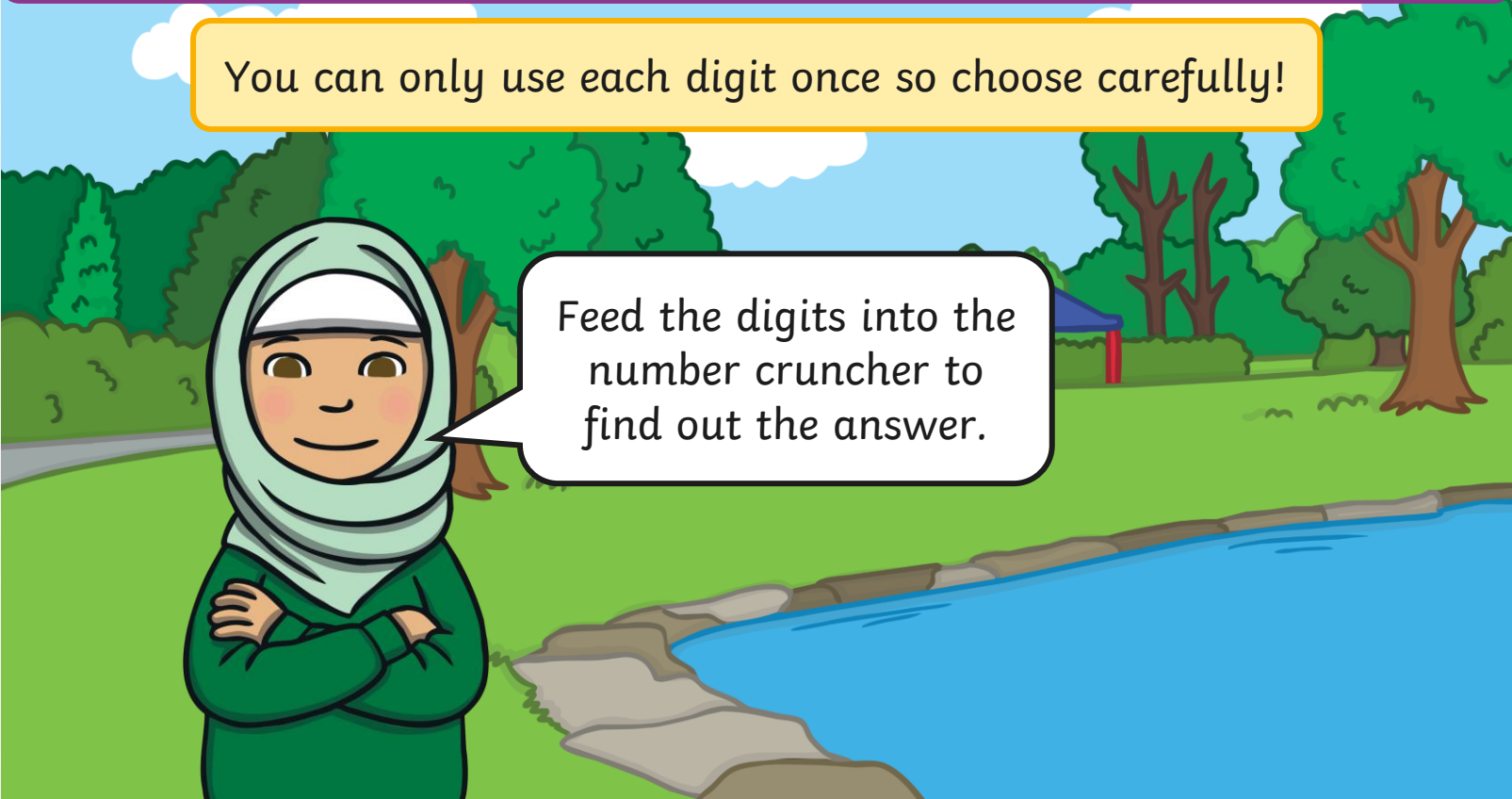
- I can use equipment to explain why addition is commutative.
- I can use equipment to explain why subtraction is not commutative.
- I can use commutativity to help me solve number problems.

Remember It



Can you use the digits to solve the clues?

You can only use each digit once so choose carefully!



Feed the digits into the number cruncher to find out the answer.

Remember It



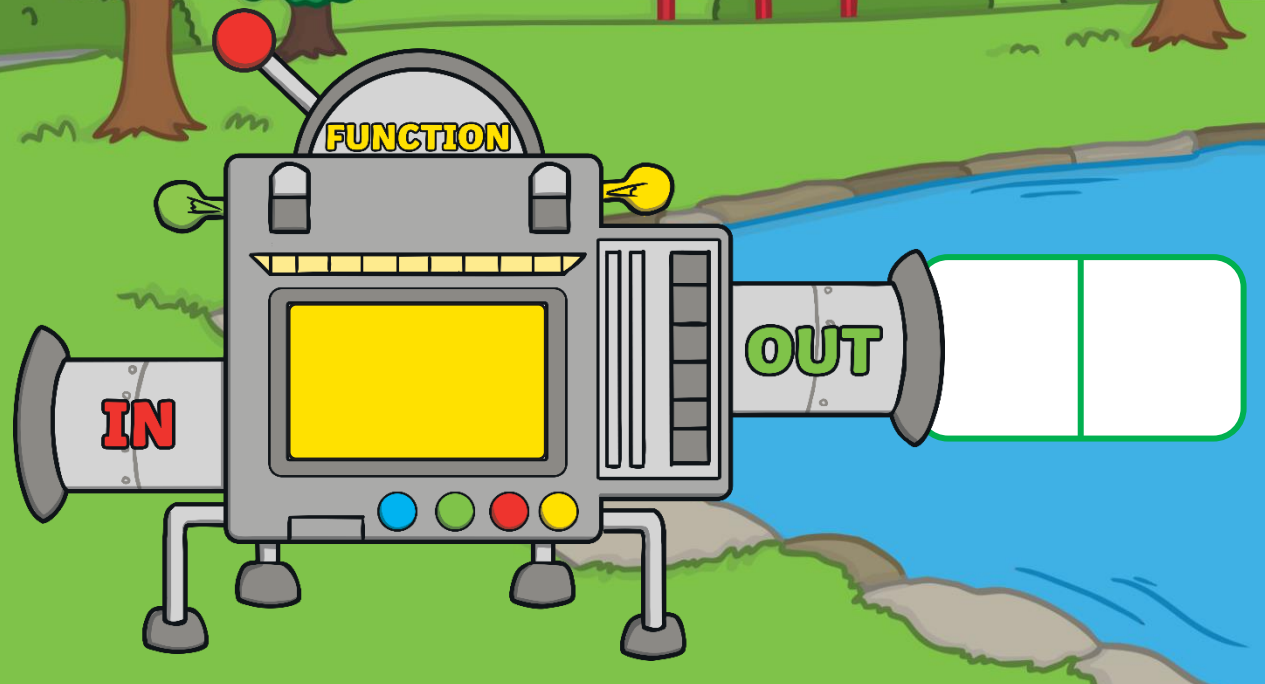
Make the highest even 2-digit number.
Make the lowest odd 2-digit number.

7

9

4

1



Remember It



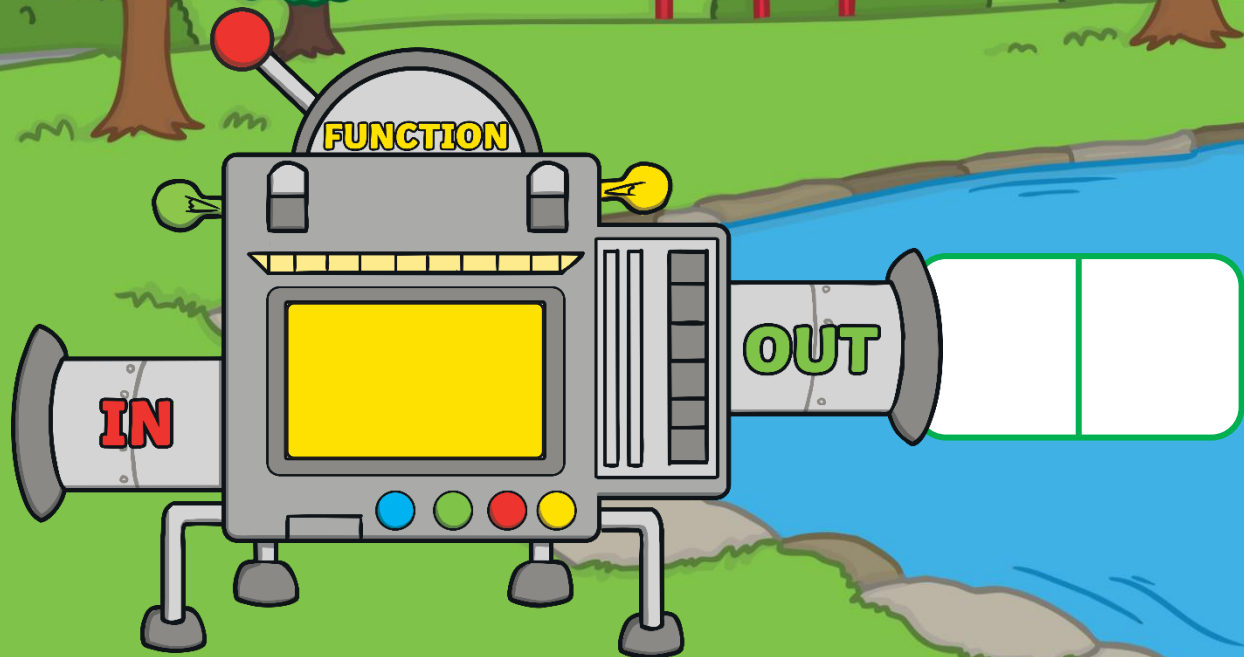
Make two 2-digit numbers that are close together.

5

8

3

6

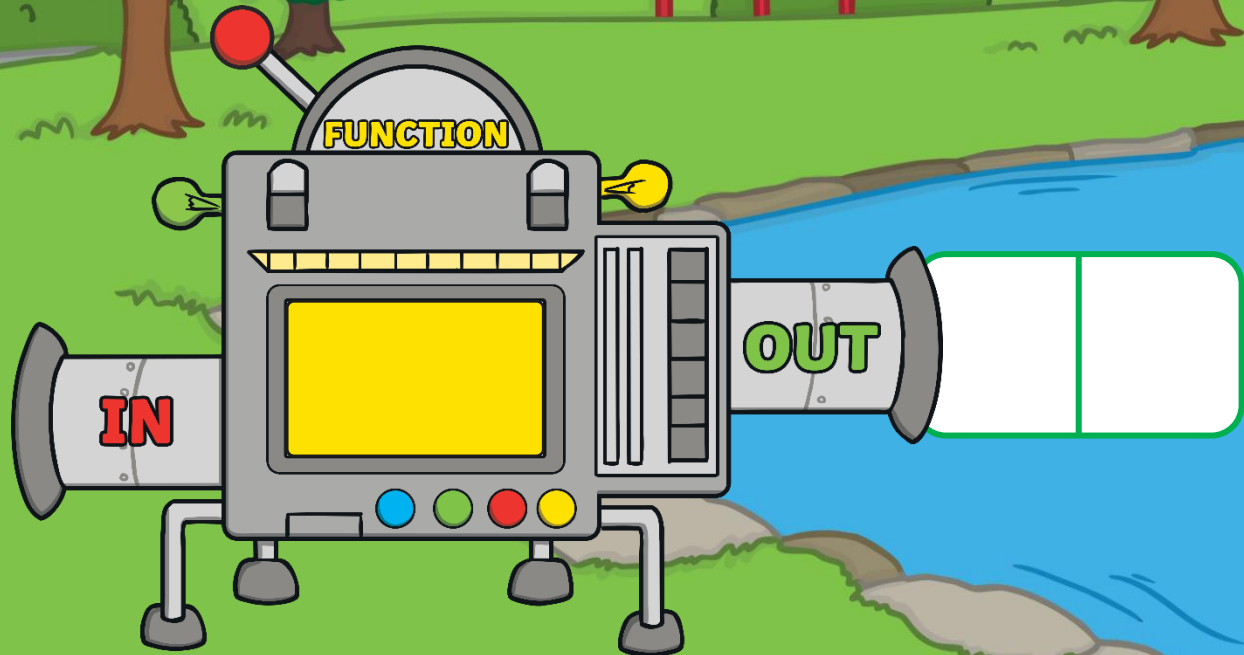


Remember It



Make two numbers and add them to make 20.

4
2
9
1
3
7



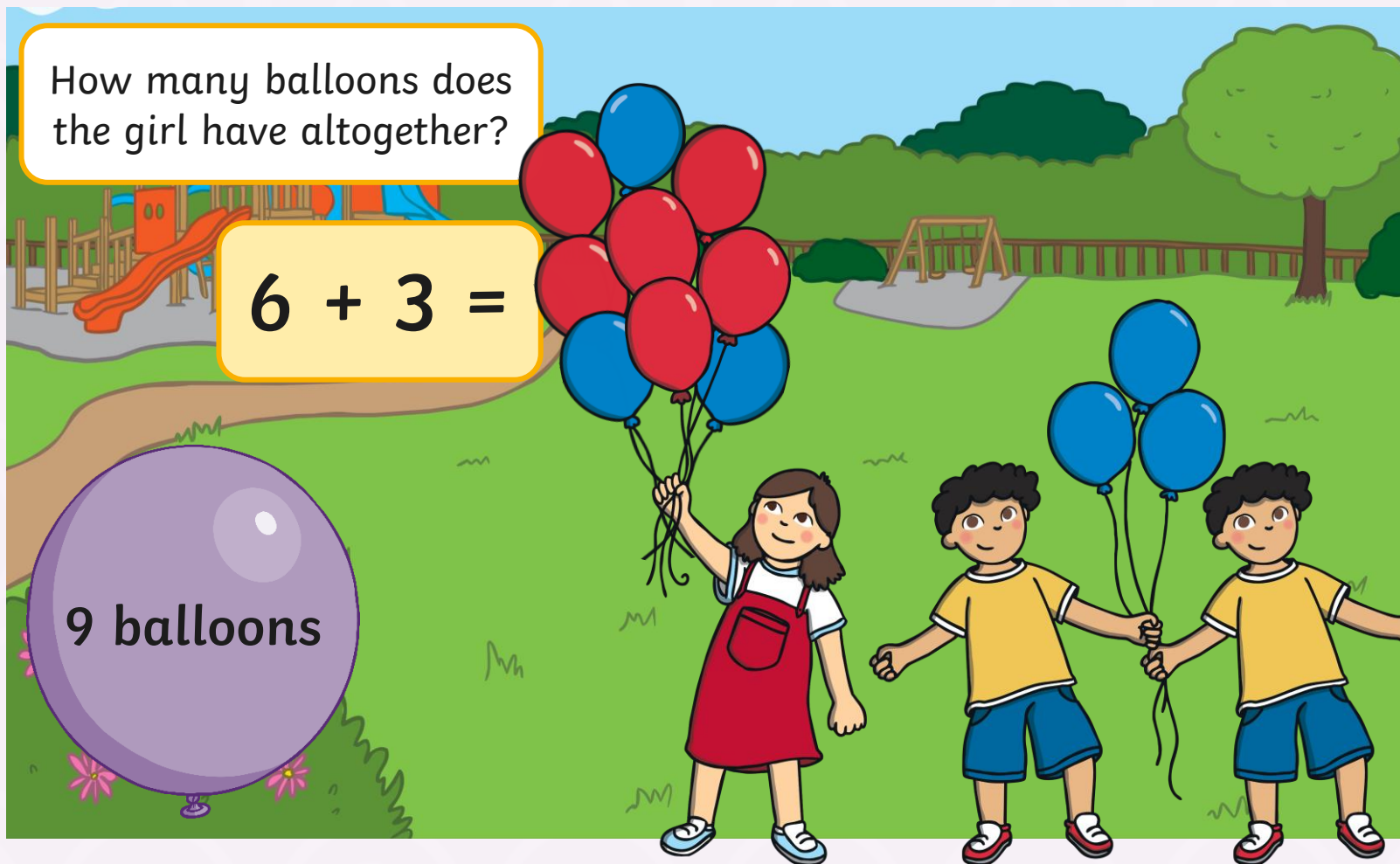
Balloons



How many balloons does the girl have altogether?

$$6 + 3 =$$

9 balloons



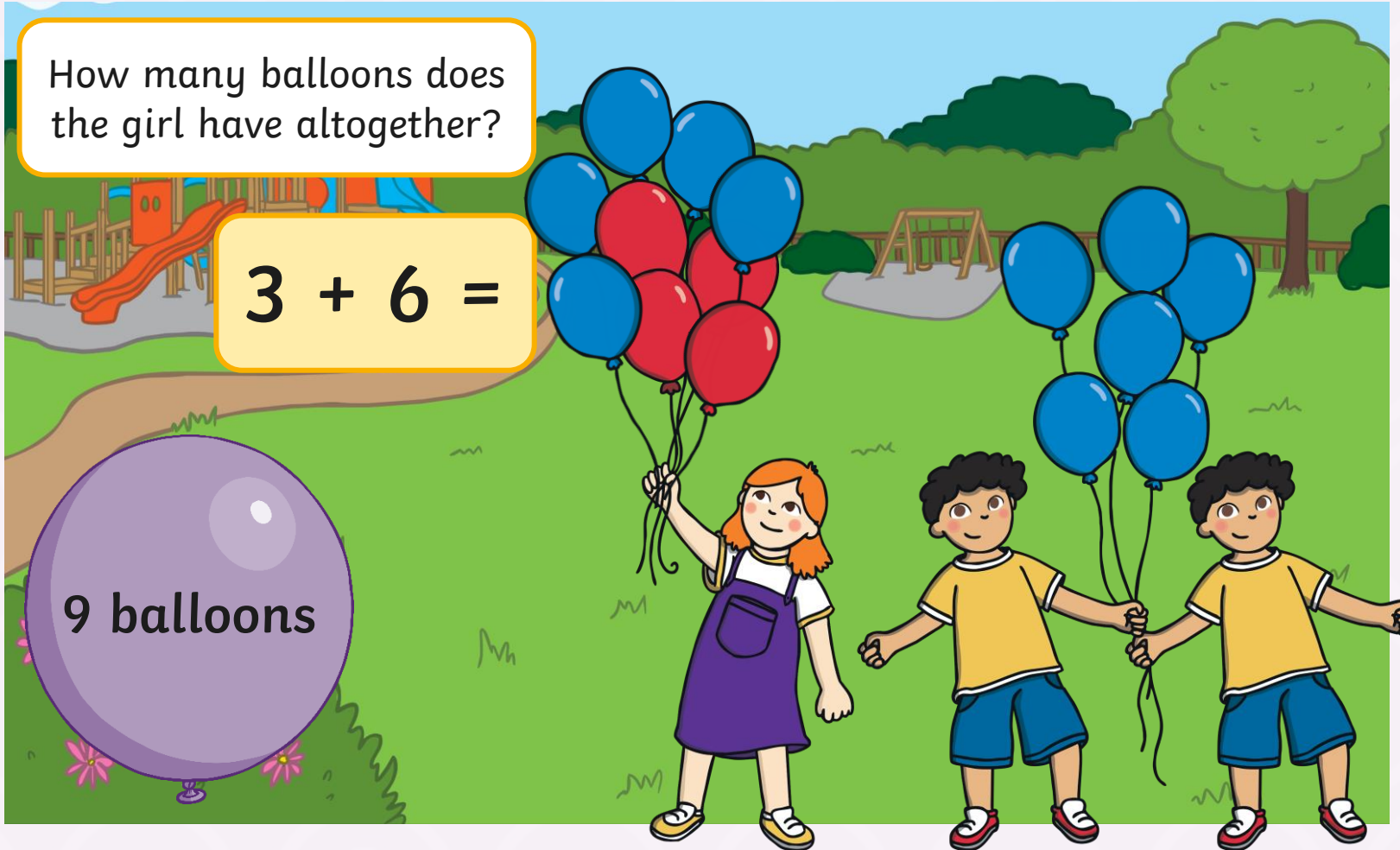
Balloons



How many balloons does the girl have altogether?

$$3 + 6 =$$

9 balloons



Balloons



Which girl had more balloons altogether?
Let's compare them.



Do they have the same amount? How do you know?

They have the same amount.

It doesn't matter which way round you add the numbers, they still make the same total amount.

Football Cards

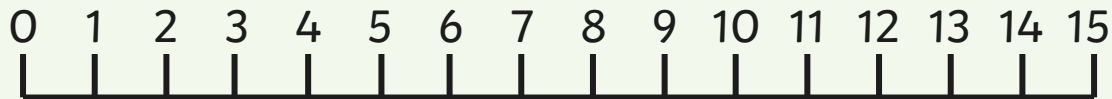


I had 8 football cards and then I bought 5 more.



I had 5 football cards and then I bought 8 more.

Do the children have the same amount? How do you know?



Turn Around



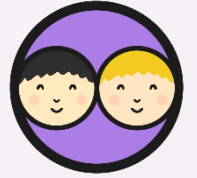
Can two numbers be added in any order?

Will we get the same answer?

What do you think?
Can you show your
thinking using equipment?



Turn Around



Two numbers can be added in any order.

Addition is commutative. This means we can add the numbers any way round and we still get the same total.

How could this help us with our maths?

To **commute** means to travel.

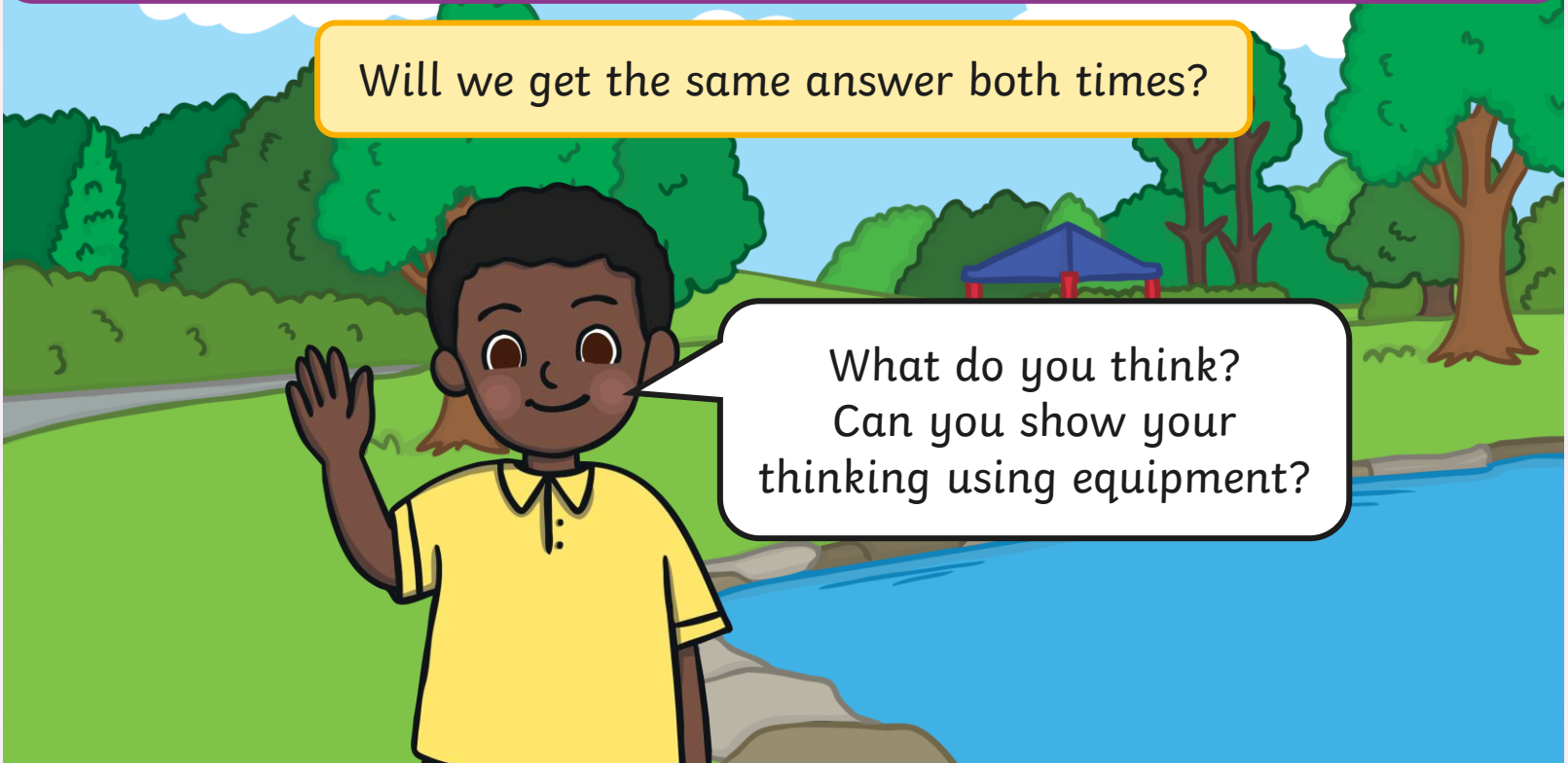
Lost Cards



Is subtraction commutative?
Can two numbers be subtracted in any order?

Will we get the same answer both times?

What do you think?
Can you show your
thinking using equipment?

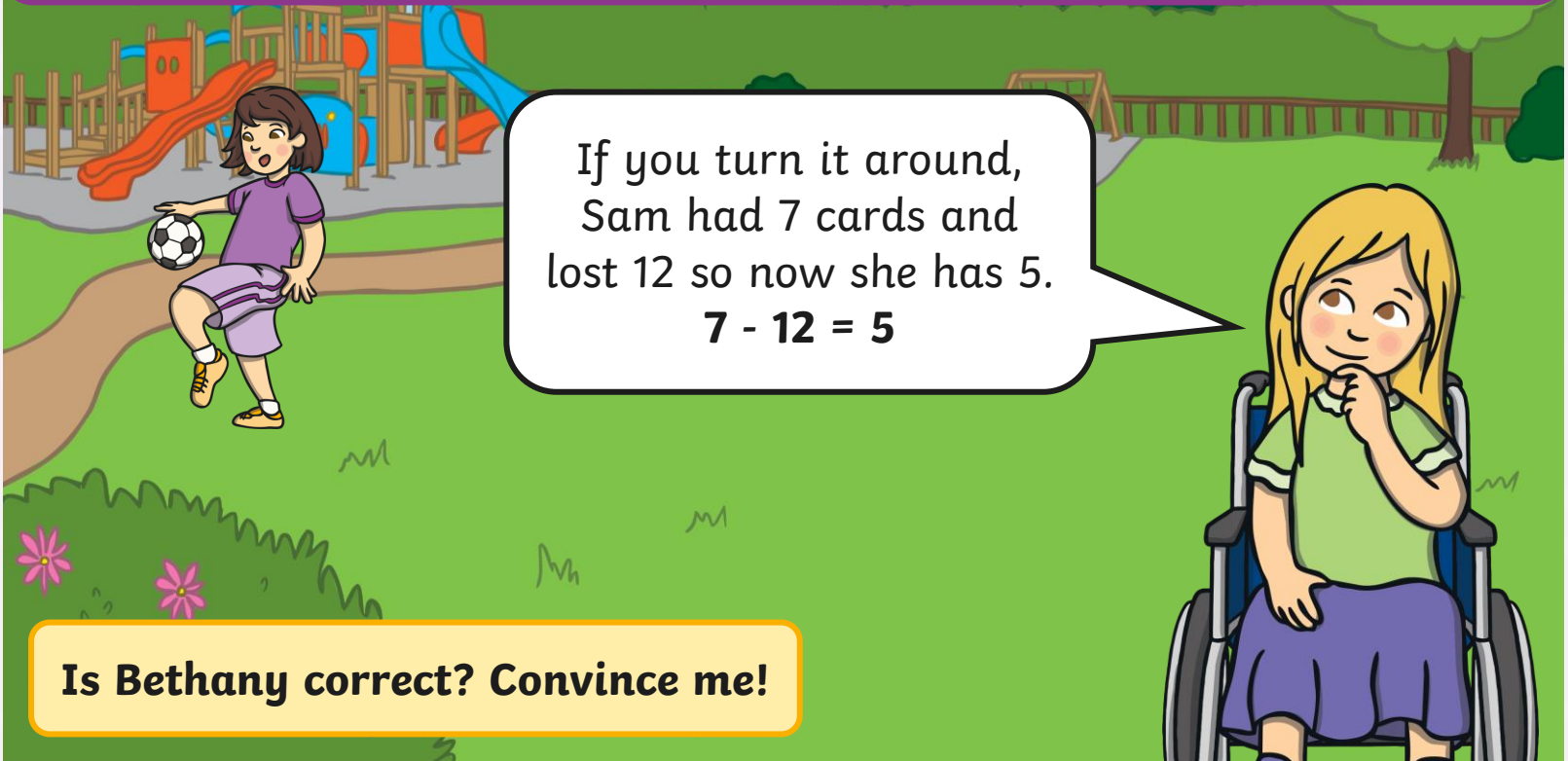


Lost Cards



Sam had 12 cards. She lost 7 so now she has 5.

$$12 - 7 = 5$$



If you turn it around,
Sam had 7 cards and
lost 12 so now she has 5.

$$7 - 12 = 5$$

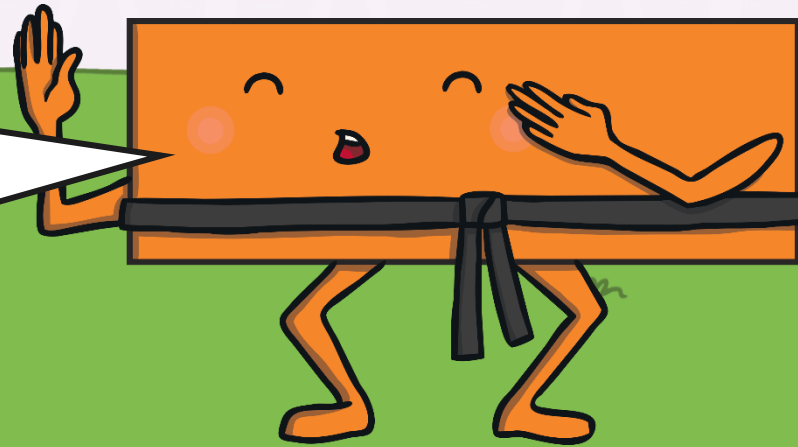
Is Bethany correct? Convince me!

Lost Cards



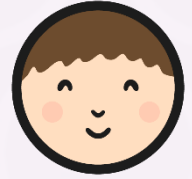
Two numbers can not be subtracted in any order.

Remember in year 2,
when we subtract,
we start with the
biggest number.



Subtraction is not commutative. If we turned the subtraction around, we would get a different answer.

Commutativity



These number sentences have been turned around but some of them are now incorrect! Work out which are right and which are wrong.



Can you check your answer using equipment?

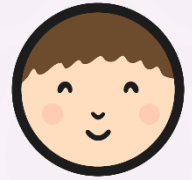
$$12 + 8 = 20$$

$$8 + 12 = 20$$

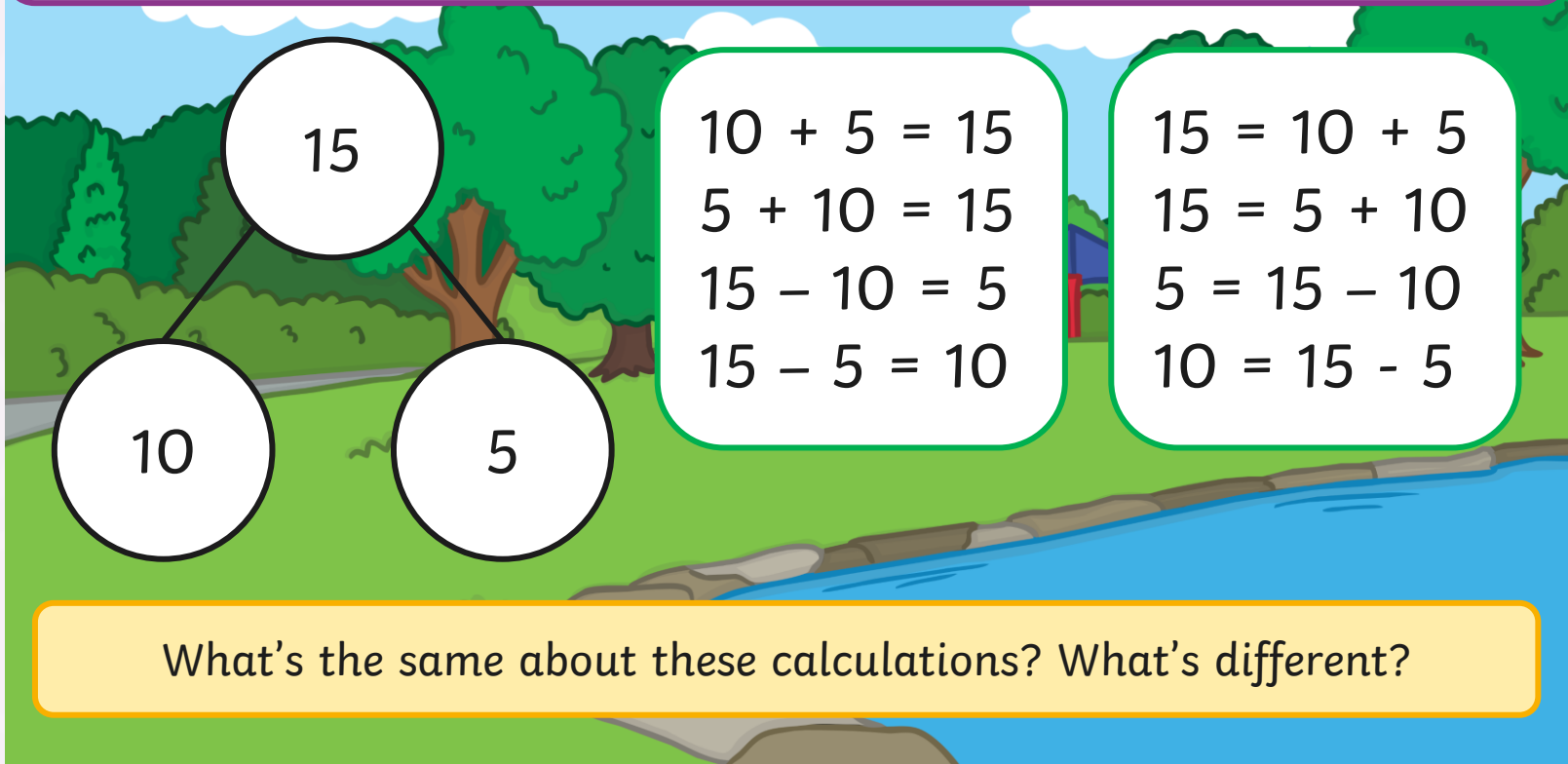
$$12 - 8 = 20$$

$$20 - 12 = 8$$

Commutativity

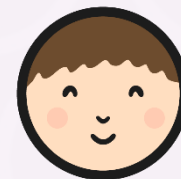


What calculations can you write using this part-whole model?
Can you write addition and subtraction calculations?



What's the same about these calculations? What's different?

Calculation Check



Calculation Check

To be able to explain why addition is commutative but subtraction is not.

These number sentences have been turned around but some of them are now incorrect! Put a cross next to the number sentences that are incorrect.

<input checked="" type="checkbox"/> $14 + 6 = 20$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $12 - 19 = 7$ <input type="checkbox"/>
<input checked="" type="checkbox"/> $6 + 14 = 20$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $19 - 7 = 12$ <input type="checkbox"/>
<input checked="" type="checkbox"/> $6 - 20 = 14$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $12 + 7 = 19$ <input type="checkbox"/>
<input checked="" type="checkbox"/> $20 - 14 = 6$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $7 + 12 = 19$ <input type="checkbox"/>

Write the number sentences on the boats for each of the part-whole diagrams. Get your partner to use equipment to check your number sentences.

<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>
<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>
<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>
<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>

Use equipment to explain why addition is commutative.
Use equipment to explain why subtraction is not commutative.

Calculation Check

To be able to explain why addition is commutative but subtraction is not.

These number sentences have been turned around but some of them are now incorrect! Put a cross next to the number sentences that are incorrect. Use equipment to explain how you know.

<input type="checkbox"/> $= 20$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $12 - 19 = 7$ <input type="checkbox"/>
<input type="checkbox"/> $= 20$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $19 - 7 = 12$ <input type="checkbox"/>
<input type="checkbox"/> $= 20$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $12 + 7 = 19$ <input type="checkbox"/>
<input type="checkbox"/> $= 6$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $7 + 12 = 19$ <input type="checkbox"/>

Write the number sentences on the boats for each of the part-whole diagrams. Use equipment to check your number sentences.

<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>
<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>
<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>
<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>

Use equipment to explain why addition is commutative.
Use equipment to explain why subtraction is not commutative.

Calculation Check

To be able to explain why addition is commutative but subtraction is not.

These number sentences have been turned around but some of them are now incorrect! Put a cross next to the number sentences that are incorrect. Use equipment to explain how you know. Write the correct number sentence to complete the fact family.

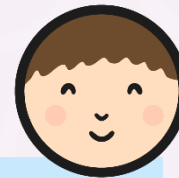
<input type="checkbox"/> $= 20$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $12 - 19 = 7$ <input type="checkbox"/>
<input type="checkbox"/> $= 20$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $19 - 7 = 12$ <input type="checkbox"/>
<input type="checkbox"/> $= 20$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $12 + 7 = 19$ <input type="checkbox"/>
<input type="checkbox"/> $= 6$ <input type="checkbox"/>	<input checked="" type="checkbox"/> $7 + 12 = 19$ <input type="checkbox"/>

Write the number sentences on the boats for the part-whole diagram. Find 2 different ways to complete the fact family and write sentences to match them. Get your partner to check your number sentences.

<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>
<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>
<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>
<input type="text"/> = <input type="text"/>	<input type="text"/> = <input type="text"/>

Use equipment to explain why addition is commutative.
Use equipment to explain why subtraction is not commutative.

Diving into Mastery



Dive in by completing your own activity!



Addition is Commutative



Sam writes this calculation:

$$4 + 12 = 16$$

She writes these calculations using the same numbers. Tick the ones that are right, cross the ones that are wrong.

$12 + 4 = 16$

$16 = 12 + 4$

$16 = 4 + 12$

$12 = 4 + 16$

$16 = 12 - 4$

$4 = 16 - 12$

$16 - 12 = 4$

$12 = 4 - 16$

Explain your thinking and prove you are right using equipment.

Thoughts



What does commutative mean?

Is addition commutative?

Is subtraction commutative?

Can you explain commutativity using equipment?

How could we use this to help us?



Aim



- To be able to explain why addition is commutative but subtraction is not.

Success Criteria

- I can use equipment to explain why addition is commutative.
- I can use equipment to explain why subtraction is not commutative.
- I can use commutativity to help me solve number problems.

