



# 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.



# Using the Inverse to Solve Problems

twinkl

# Aim

- To use inverse relationships to solve missing number problems.

# Success Criteria

- I can choose the correct operation to use when I'm finding the inverse.
- I can find a missing number in a calculation by using the inverse operation.
- I can check my work using practical equipment or by drawing models.

# Remember It



Use the inverse operation to check these calculations are correct.

$12 + 5 = 18$  ✗  
 $12 + 5 = 17$

$15 - 4 = 11$  ✓

$14 - 5 = 9$  ✓

$4 + 12 = 17$  ✗  
 $4 + 12 = 16$

How did you know which operation to use?

How did you know which order to put the numbers in the calculation?





# Ingrid Inverses



$$12 + 6 = 18$$

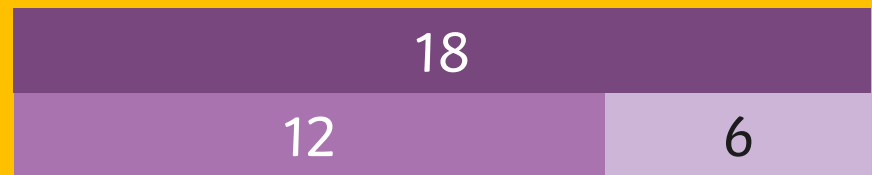
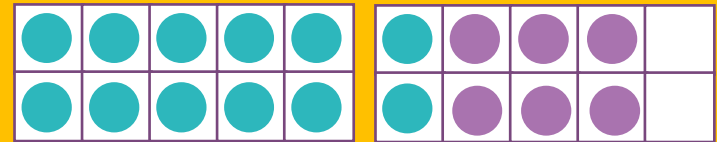
$$18 - 6 = 12$$

What do you notice?



If I subtract the amount I added, I get back to where I started.

**+** and **-** are inverses.



# Ingrid Inverses



$$20 - 7 = 13$$

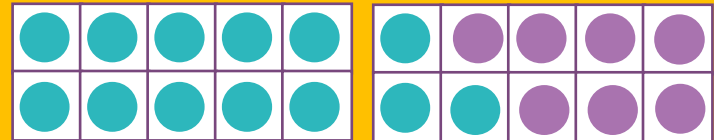
$$13 + 7 = 20$$

What do you notice?

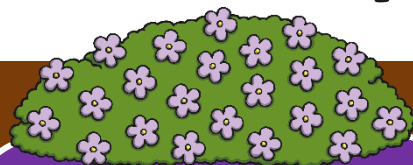


If I add the amount I subtracted, I get back to where I started.

**+** and **-** are inverses.



# Mind the Gap

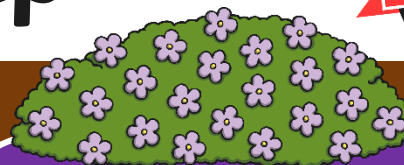


We can check our work using the inverse, for example:

$$8 + 11 = 19$$

can be checked with

$$19 - 11 = 8$$

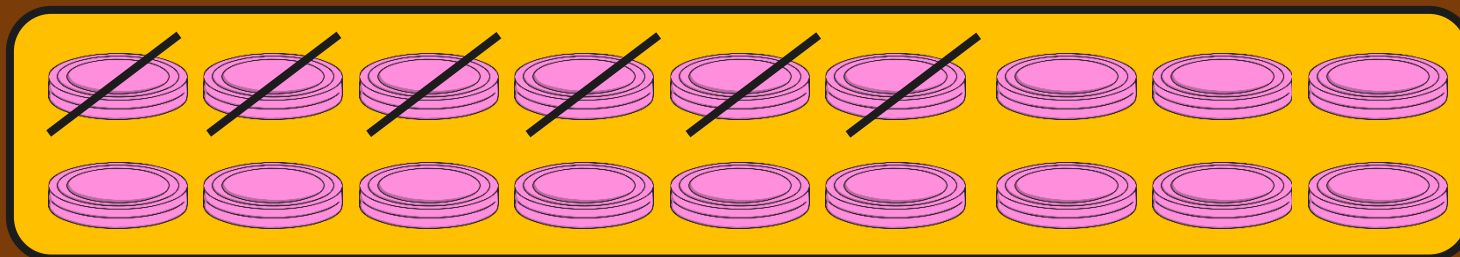


We can find gaps in number sentences using inverses too!

$$? + 6 = 18$$

can be solved with

$$18 - 6 = ?$$

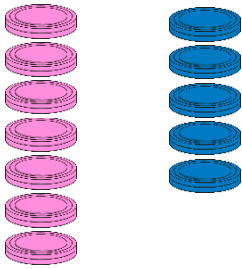




# Mind the Gap



$$? + 7 = 12$$



These look tricky but if we use an inverse, they are easy!



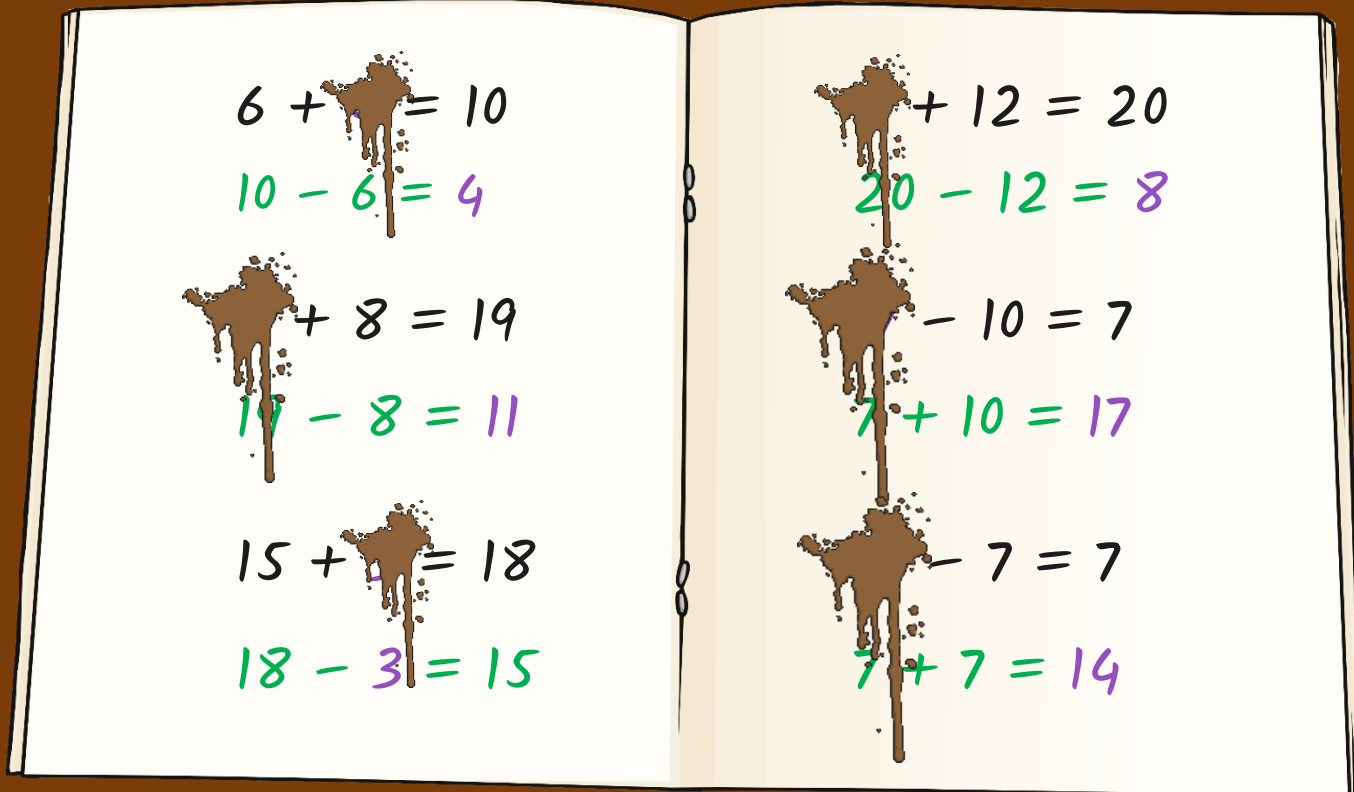
I don't know what I started with but I took away 7 and I am left with 5.

So if I add them back together, I can find out how many I had to begin with.

# Mud Splats



Oh no! Ben's work is covered in mud! Can you help him work out the missing numbers **using the inverse**? Click on the mud splats to reveal the numbers.



# Making Sense



Ali wants to use the inverse to find a missing number in this calculation:

$$? + 15 = 19$$

The inverse of addition is subtraction so I'll work out  
 $15 - 19$ .



Does this make sense? Do you agree? Explain why.

# Making Sense



Now, Ali is trying to find another missing number.

$$12 - ? = 7$$

I know addition is the inverse of subtraction so I'll work out  $12 + 7$ .



Does this make sense? What is Ali doing wrong?

# Making Sense



Explain to your partner...

- ★ How to choose which operation to use when working out the inverse.
- ★ How to decide where the numbers go in the calculation.

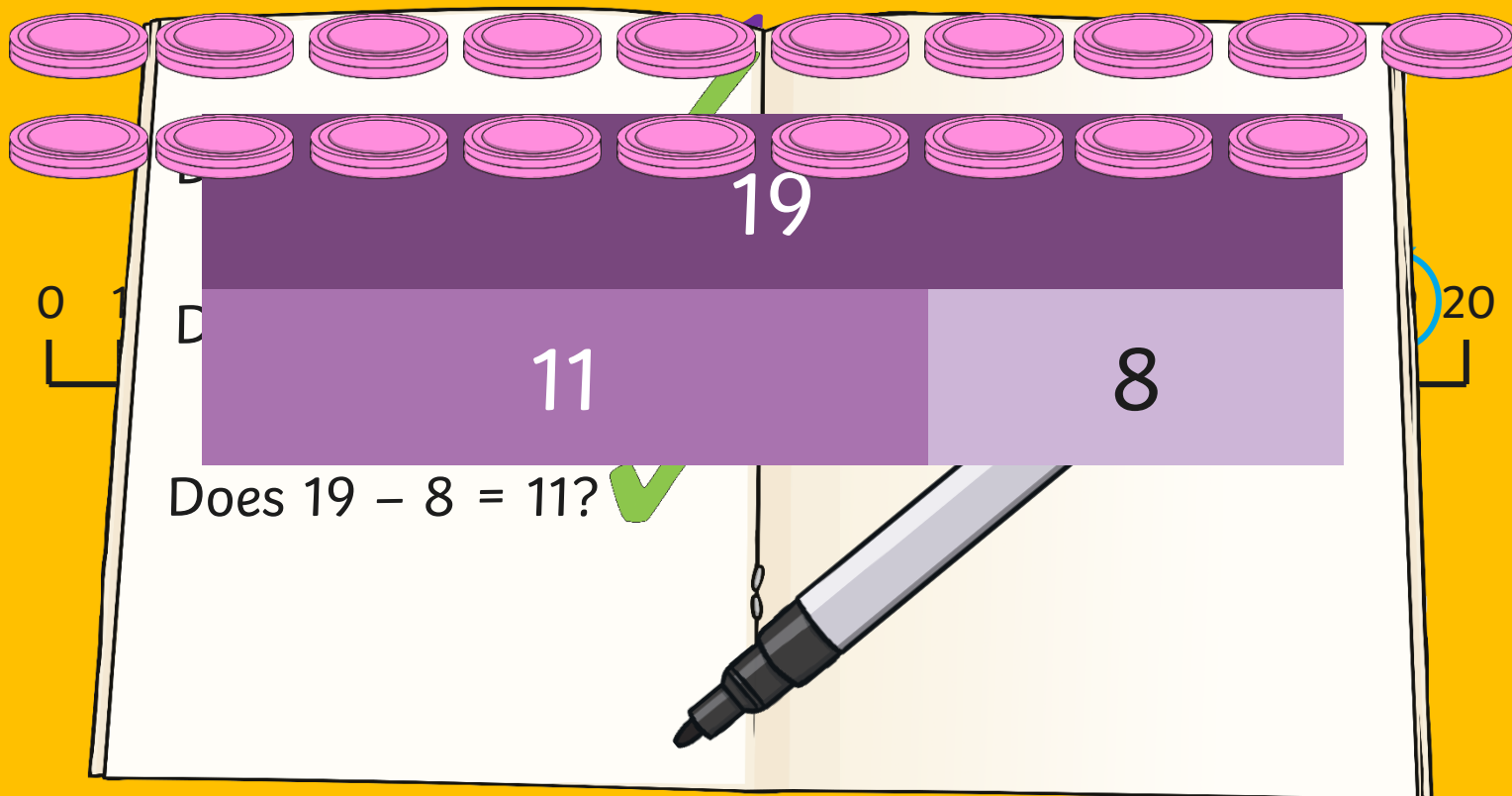


# Making Sense



There are other ways you can check your answer makes sense.

You can use a number line.





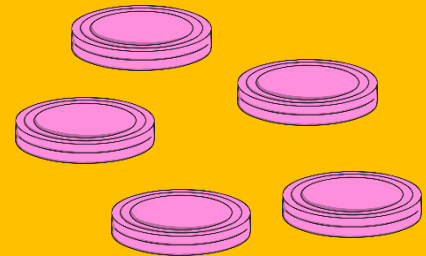
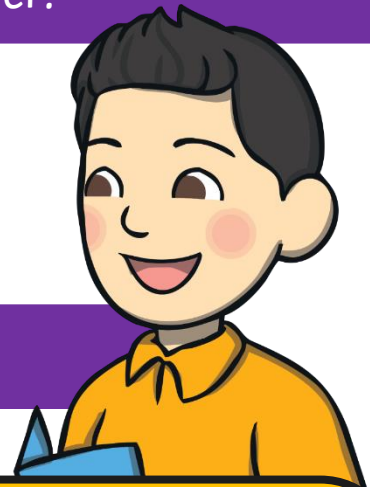
# Making Sense



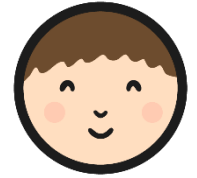
Use the inverse to find the missing number.

$$12 + ? = 20$$

Then, check using one of these methods:



# A Muddy Mess



## A Muddy Mess

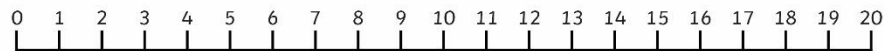
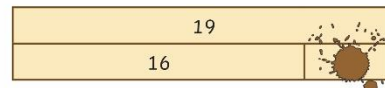
To use inverse relationships to solve missing number problems.



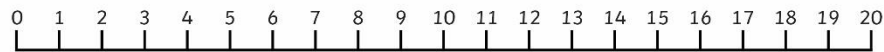
Ben has splashed mud on his work again!

Use inverses to help uncover the muddy numbers. Use equipment to check that your answer makes sense and draw the jumps on the number line.

1.  $16 + \square = 19$  \_\_\_\_\_



2.  $\square - 8 = 10$  \_\_\_\_\_



## Diving into Mastery

Dive in by completing your own activity!



### Using the Inverse to Solve Problems

Use the inverse to find the missing numbers.

$$\text{paw print} + 7 = 15$$

16

$$8 \quad \text{paw print}$$

$$12 + \text{paw print} = 20$$

18

$$7 \quad \text{paw print}$$

$$\text{paw print} - 9 = 8$$

14

$$\text{paw print} \quad 8$$

$$\text{paw print} - 9 = 11$$

Use equipment or a number line to check your answers.



# Pyramids



The two numbers below add together to make the number above them.

Can you fill in the gaps?



Use your knowledge of inverses to work out the missing numbers?

Click a rain splash to reveal the numbers.

15			
8			
		6	1

Can you explain how you found the missing numbers?

# Pyramids



How about this one?



Click on the rain splashes to reveal the numbers.

16						
7			4			
5	1	2	1	2	1	1

# Aim



- To use inverse relationships to solve missing number problems.

# Success Criteria

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