

The *Power Maths* lesson sequence

At the heart of *Power Maths* is a unique lesson sequence designed to empower children to understand core concepts and grow in confidence. Embracing the National Centre for Excellence in the Teaching of Mathematics' (NCETM's) definition of mastery, the sequence guides and shapes every *Power Maths* lesson you teach.

Flexibility is built into the *Power Maths* programme so there is no one-to-one mapping of lessons and concepts meaning you can pace your teaching according to your class. While some children will need to spend longer on a particular concept (through interventions or additional lessons), others will reach deeper levels of understanding. However, it is important that the class moves forward together through the termly schedules.

Power Up 5 minutes

Each lesson begins with a Power Up activity (available via the online subscription) which supports fluency in key number facts.

The whole-class approach depends on fluency, so the Power Up is a powerful and essential activity.

TOP TIP






If the class is struggling with the task, revisit it later and check understanding.

Power Ups reinforce key skills such as times-tables, number bonds and working with place value.

Unit 2: Lesson 2

Power Up


Use number bonds to 10 to help with number bonds to 100.

| | | |
|--|---------------|---|
|  + <input type="text"/> = 10 | So I know ... |  + <input type="text"/> = <input type="text"/> |
|  -  = <input type="text"/> | So I know ... |  - <input type="text"/> = <input type="text"/> |

Explain to your partner how you can use this ten frame to find a number bond to 100.

| | | | | |
|---|---|---|---|---|
| ● | ● | ● | ● | ● |
| ● | ● | ● | | |

I wonder if I can turn the ten frame into an addition or subtraction number sentence.



Discover 10 minutes

A practical, real-life problem arouses curiosity. Children find the maths through story-telling.

A real-life scenario is provided for the Discover section but feel free to build upon these with your own examples that are more relevant to your class.

TOP TIP


Discover works best when run at tables, in pairs with concrete objects.

Question **1** a) tackles the key concept and question **1** b) digs a little deeper. Children have time to explore, play and discuss possible strategies.

Unit 4: Multiplication and division (1), Lesson 13

Understanding divisibility **1**

Discover



1 a) Lexi and Zac are using lollipop sticks to make squares.
How many squares can they make?
How many lollipop sticks are left over?

b) How would the answer change if they had 14 lollipop sticks?
What about 15, 16 or 17 lollipop sticks?

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Share 10 minutes

Teacher-led, this interactive section follows the Discover activity and highlights the variety of methods that can be used to solve a single problem.

TOP TIP

Bring children to the front (or onto the carpet if you have this area) to discuss their methods. Pairs sharing a textbook is a great format for this!

Unit 4: Multiplication and division (1), Lesson 13

Share

a) Four lollipop sticks make one square.

They can make 3 squares with 1 lollipop stick left over.

We call the amount left over the **remainder**.

I will try organising my work in a table.

b)

| Number of sticks | Working | Number of squares | Number of sticks left over |
|------------------|---------|-------------------|----------------------------|
| 14 | | 3 | 2 |
| 15 | | 3 | 3 |
| 16 | | 4 | 0 |
| 17 | | 4 | 1 |


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Your Teacher Guide gives target questions for children. The online toolkit provides interactive structures and representations to link concrete and pictorial to abstract concepts.

TOP TIP

Bring children to the front to share and celebrate their solutions and strategies.

Think together

 10 minutes

Children work in groups on the carpet or at tables, using their textbooks or eBooks.

TOP TIP

Make sure children have mini whiteboards or pads to write on if they are not at their tables.

Unit 4: Multiplication and division (1), Lesson 13

Think together

1 Lexi and Zac use more lollipop sticks. How would you complete the table?

| Number of sticks | Working | Number of squares | Number of sticks left over |
|------------------|---------|-------------------|----------------------------|
| 18 | | 4 | |
| 19 | | | |
| 20 | | | |

2 a) Describe the pattern that Lexi can see.

I can see a pattern in the number of lollipop sticks left over.

Lexi

b) Is Zac correct?

I don't think you can have more than 3 lollipop sticks left over.

Zac

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Using the Teacher Guide, model question 1 for your class.

Question 2 is less structured. Children will need to think together in their groups, then discuss their methods and solutions as a class.

In questions 3 and 4 children try working out the answer independently. The openness of the challenge question helps to check depth of understanding.

Practice ⌚ 15 minutes

Using their Practice Books, children work independently while you circulate and check on progress.

Questions follow small steps of progression to deepen learning.

TOP TIP

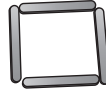
Some children could work separately with a teacher or assistant.

Understanding divisibility 1

1 Lexi has 11 lollipop sticks.



She makes squares, like this.



a) Draw the squares that Lexi makes.

b) How many complete squares can Lexi make?

Lexi can make complete squares.

c) What is the remainder?

The remainder is lollipop sticks.

d) What if Lexi makes triangles with the sticks?

How many complete triangles can she make?

What is the remainder?

There are complete triangles and the remainder is .

Are some children struggling? If so, work with them as a group, using mathematical structures and representations to support understanding as necessary.

There are no set routines: for real understanding, children need to think about the problem in different ways.

Reflect ⌚ 5 minutes

'Spot the mistake' questions are great for checking misconceptions.

The Reflect section is your opportunity to check how deeply children understand the target concept.

3 Max makes square blocks from cubes, like this.



He makes 5 square blocks and has a remainder of 3 cubes.



How many cubes did Max start with?

Max started with cubes.

Reflect

Explain why Aki is correct.



Aki

When you divide by 5, the greatest remainder is 4.

• _____

• _____

• _____

• _____

The Practice Books use various approaches to check that children have fully understood each concept.

Looking like they understand is not enough! It is essential that children can show they have grasped the concept.