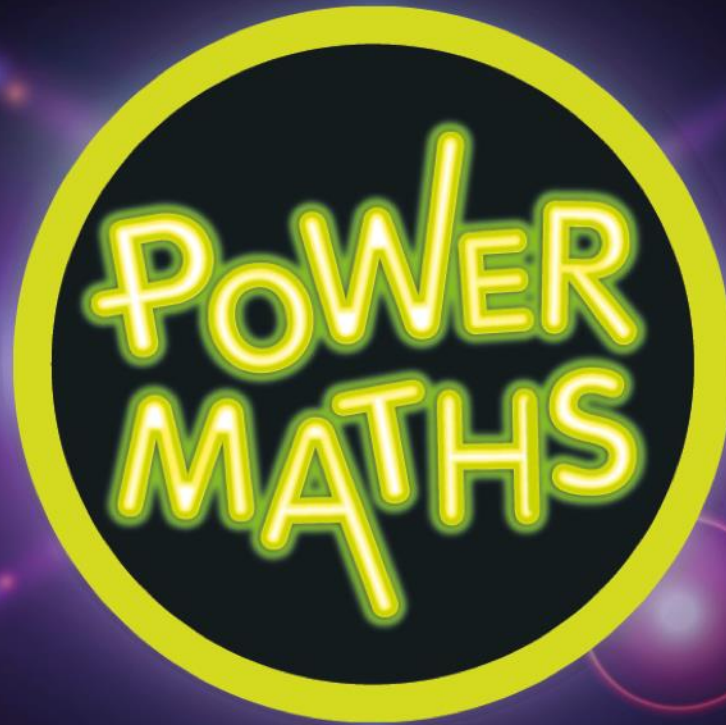




Valence Primary School

Power Maths Presentation



Fully
Recommended
by the DfE!

**The whole-class mastery approach
that works for every child**

Created in
partnership
with





**At the heart of
Power Maths
is the belief that all
children can achieve.
It's built on an
exciting growth
mindset and
problem-solving
approach.**

Key aims of *Power Maths*






Keeping the whole class progressing together

Providing rich problem solving to challenge and engage every child

Practical assessment to reveal misconceptions and inform speedy interventions

Nurturing a growth mindset and building children's confidence in maths

In a nutshell ...

-  An exciting **whole-class mastery approach** for Year 1 to Year 6
-  Written by **mastery experts** and inspired by best practice from around the world
-  Fully **recommended by the Department for Education**
-  Created specifically for **UK classrooms**
-  Makes maths an adventure and helps build a culture of **excitement and confidence!**

What is mastery?

“Mastering maths means acquiring a deep, long-term, secure and adaptable understanding of the subject” – NCETM

We achieve this by ...

Developing
mathematical
thinking

Carefully
sequenced,
small step
learning

Building
fluency

Representation
that expose
mathematical
structures

Growth mindset

Fixed mindset

“I’m not good at maths – I’ve never been good at maths”

“I give up – I can’t make this any better”

“If I fail I am a failure”

“I can’t do this – I keep making mistakes”

Growth mindset

“I’m finding maths hard now, but I can improve with time and effort”

“I can improve if I keep trying”

“Most successful people fail along the way”

“Mistakes help me learn”

Meet the growth-mindset characters!

Flo

Flo is flexible and creative. She often comes up with new methods to solve problems.



Can we do it differently?

Dexter

Dexter is determined. When he makes a mistake he learns from it and tries again.

Let's try again!

Meet the growth-mindset characters!



Astrid

Astrid is brave and confident. She is not afraid to make mistakes.

I will share my ideas!

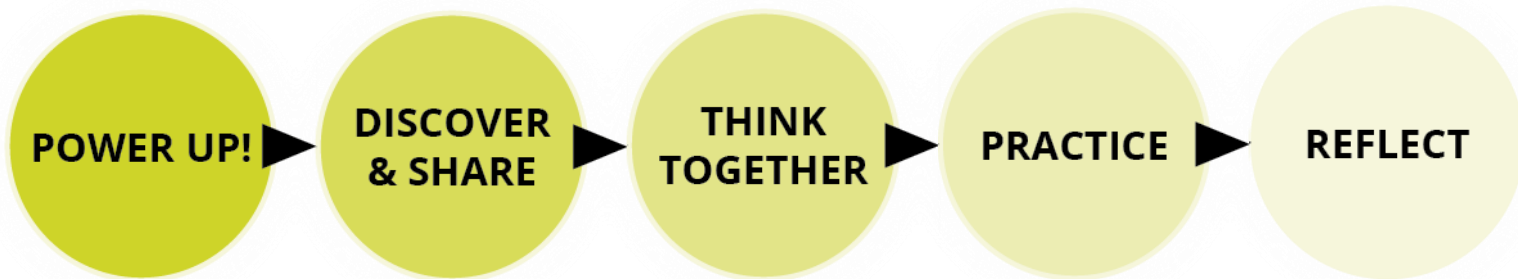


Is there a pattern?

Ash

Ash is curious and inquisitive. He loves to explore new concepts

See the lesson structure



Same Day Intervention



Discover and Share

Unit 7: Multiplication and division (2), Lesson 8

Dividing up to a 4-digit number by a 1-digit number 2



Discover



- 1 a) How many pieces of litter has each child picked up?
- b) Mr Jones has picked up 351 pieces of litter. He shares them equally between 3 bags.
How many pieces of litter are in each bag?

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Engaging scenarios

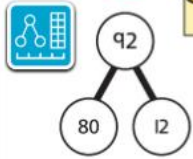
Concrete-Pictorial-Abstract approach

Share

a) 4 children picked up 92 pieces of litter.
They each picked up the same number of pieces.

To work this out, I need to divide 92 by 4. I will use the method of short division that we learnt in the last lesson.

$4 \overline{) 92}$	<table border="1" style="width: 100px; height: 100px;"> <tr><th>T</th><th>O</th></tr> <tr><td>10 10 10 10</td><td>2 2</td></tr> </table>	T	O	10 10 10 10	2 2	<p>First, lay out the problem.</p>
T	O					
10 10 10 10	2 2					
$4 \overline{) \overset{2}{9}2}$	<table border="1" style="width: 100px; height: 100px;"> <tr><th>T</th><th>O</th></tr> <tr><td>20 20 20</td><td>2 2</td></tr> </table>	T	O	20 20 20	2 2	<p>How many groups of 4 go into 9 tens? 2 groups of 4 tens with 1 ten left over.</p>
T	O					
20 20 20	2 2					
$4 \overline{) 212}$	<table border="1" style="width: 100px; height: 100px;"> <tr><th>T</th><th>O</th></tr> <tr><td>20 20 20</td><td>12 2 2</td></tr> </table>	T	O	20 20 20	12 2 2	<p>Exchange the 1 ten left over for 10 ones. We now have 12 ones.</p>
T	O					
20 20 20	12 2 2					
$4 \overline{) 232}$	<table border="1" style="width: 100px; height: 100px;"> <tr><th>T</th><th>O</th></tr> <tr><td>20 20</td><td>3 2 2 2</td></tr> </table>	T	O	20 20	3 2 2 2	<p>How many groups of 4 go into 12 ones? 3 groups of 4 ones.</p>
T	O					
20 20	3 2 2 2					



$80 \div 4 = 20$ $12 \div 4 = 3$
 $20 + 3 = 23$
 $92 \div 4 = 23$, so each child picked up 23 pieces of litter.

I used a part-whole model to partition the number into two numbers that divide by 4.

Think together

Unit 7: Multiplication and division (2), Lesson 8

Unit 7: Multiplication and division (2), Lesson 8

b) Mr Jones shares 351 pieces of litter equally between 3 bags.

$$\begin{array}{r} 1 \\ 3 \overline{) 351} \\ \underline{3} \\ 0 \end{array}$$

 There is 1 group of 3 hundreds.

$$\begin{array}{r} 1 \\ 3 \overline{) 3521} \\ \underline{3} \\ 0 \end{array}$$

 There is 1 group of 3 tens and 2 tens left over.

$$\begin{array}{r} 1 \\ 3 \overline{) 3521} \\ \underline{3} \\ 0 \end{array}$$

 Exchange the 2 tens for 20 ones. You now have 21 ones
 There are 7 groups of 3 ones in 21.

$351 \div 3 = 117$

There are 117 pieces of litter in each bag.

Think together

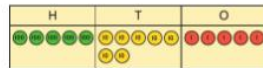
1 The children have a flask containing 575 ml of juice.

They share the juice equally among themselves and Mr Jones.

How much juice does each person get?

$575 \div 5 = \square$

Each person gets \square ml of juice.

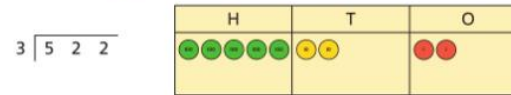


2 Complete these short divisions.

a) $726 \div 6 = \square$



b) $522 \div 3 = \square$



3 a) Look at these division problems.

There are 312 eggs.
How many boxes of 6 eggs can be made?

Divide 1,980 by 2

$485 \div 5$



What is different about these divisions compared with the ones you have been doing so far?

I think there is something different in the first step of each division.

b) Max tries to work out the third division problem. What mistake has Max made?

$$\begin{array}{r} 0 \\ 5 \overline{) 41725} \\ \underline{4} \\ 0 \\ \underline{0} \\ 0 \\ \underline{0} \\ 0 \end{array}$$



Friendly, supportive characters help children develop a growth mindset.

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Practice

Questions are presented in a logical sequence.

→ Textbook 5B p36

Unit 7: Multiplication and division (2), Lesson 8

Unit 7: Multiplication and division (2), Lesson 8

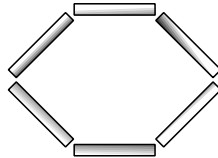
Dividing up to a 4-digit number by a 1-digit number ②

- 1 Mo is dividing 78 by 3. Complete his working.

	T	O
3 7 8		

$78 \div 3 = \square$

- 2 Olivia is making hexagons with straws, like this:



Olivia has 96 straws. How many hexagons can she make?

	T	O
6 9 6		

Olivia can make hexagons.

- 3 Work out these divisions.

a) $642 \div 6 = \square$

b) $725 \div 5 = \square$

c) $5,016 \div 3 = \square$

$6 \overline{) 642}$

$5 \overline{) 725}$

$3 \overline{) 5016}$

27

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- 4 Calculate the answers to these divisions.

a) $7,924 \div 7 = \square$

b) $711 \div 3 = \square$

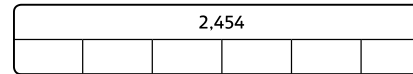
c) $916 \div 4 = \square$

$7 \overline{) 7924}$



- 5 What division does this bar model model represent?

Write the calculation and then solve it.



- 6 Isla has made a number and then divided her number by 4 using short division.

What mistake has Isla made?

$4 \overline{) 0879}$

Th	H	T	O

- 7 Fill in the missing numbers in these short divisions.

a) $\begin{array}{r} 2 \\ 4 \overline{) \quad 72} \end{array}$

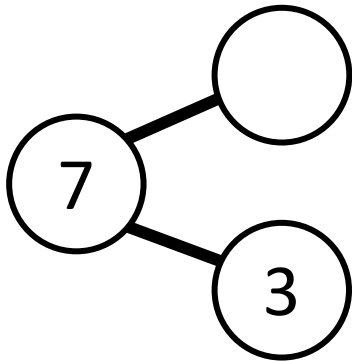
b) $\begin{array}{r} 22 \\ 3 \overline{) 873} \end{array}$

c) $\begin{array}{r} 6 \\ 5 \overline{) \quad 30} \end{array}$

Calculations are connected so that children think about the underlying concepts.

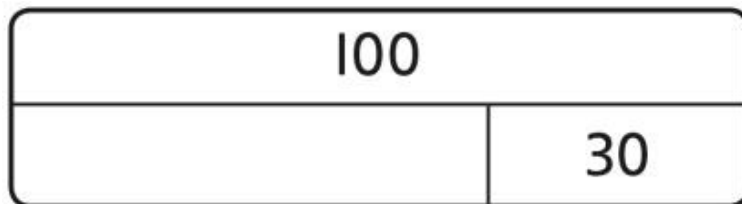
Models and representations

Part-whole models



Shows how numbers can be split into parts. Helps show the connection between addition and subtraction.

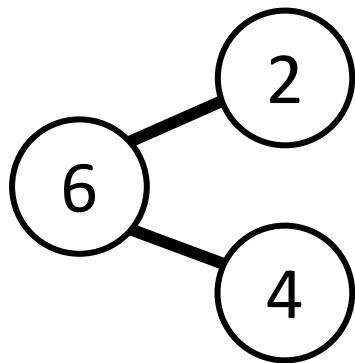
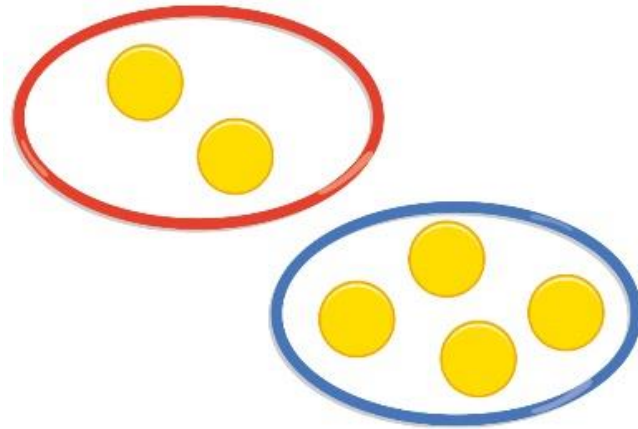
Bar models



Helps show the maths problem as a picture.



Models and representations



$$2 + 4 = 6$$



MATHS

IS AN ADVENTURE

