

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 Reception 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!



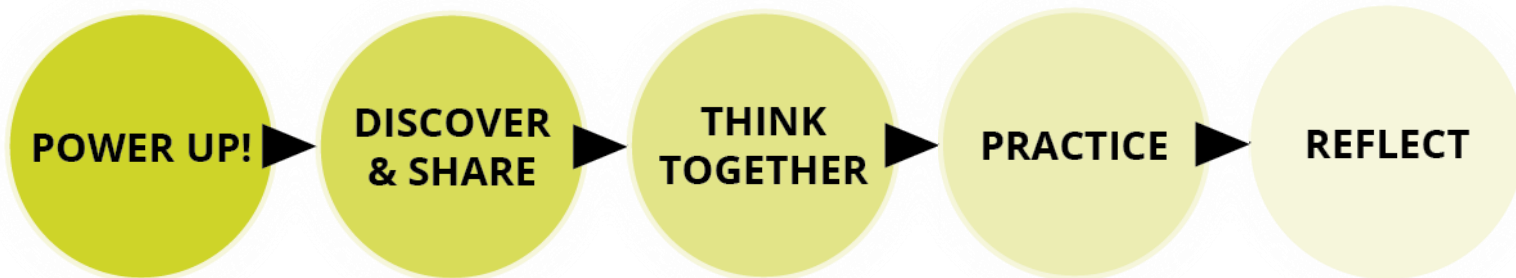
Is there a pattern?

## 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?

36

Engaging scenarios

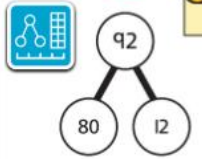
Concrete-Pictorial-Abstract approach

### 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 10 10 10 10 10 10</td><td>2 1</td></tr> </table>	T	O	10 10 10 10 10 10 10 10 10 10	2 1	<p>First, lay out the problem.</p>
T	O					
10 10 10 10 10 10 10 10 10 10	2 1					
$4 \overline{) \overset{2}{9} 2}$	<table border="1" style="width: 100px; height: 100px;"> <tr><th>T</th><th>O</th></tr> <tr><td>20 20 10 10 10 10 10 10 10 10</td><td>2 1</td></tr> </table>	T	O	20 20 10 10 10 10 10 10 10 10	2 1	<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 10 10 10 10 10 10 10 10	2 1					
$4 \overline{) 212}$	<table border="1" style="width: 100px; height: 100px;"> <tr><th>T</th><th>O</th></tr> <tr><td>20 20 10 10 10 10 10 10 10 10</td><td>3 1 1 1 1 1 1 1 1 1</td></tr> </table>	T	O	20 20 10 10 10 10 10 10 10 10	3 1 1 1 1 1 1 1 1 1	<p>Exchange the 1 ten left over for 10 ones. We now have 12 ones.</p>
T	O					
20 20 10 10 10 10 10 10 10 10	3 1 1 1 1 1 1 1 1 1					
$4 \overline{) 2312}$	<table border="1" style="width: 100px; height: 100px;"> <tr><th>T</th><th>O</th></tr> <tr><td>20 20 10 10 10 10 10 10 10 10</td><td>3 1 1 1 1 1 1 1 1 1</td></tr> </table>	T	O	20 20 10 10 10 10 10 10 10 10	3 1 1 1 1 1 1 1 1 1	<p>How many groups of 4 go into 12 ones? 3 groups of 4 ones.</p>
T	O					
20 20 10 10 10 10 10 10 10 10	3 1 1 1 1 1 1 1 1 1					

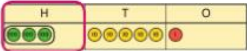


$80 \div 4 = 20$     $12 \div 4 = 3$   
 $20 + 3 = 23$   
 $92 \div 4 = 23$ , so each child picked up 23 pieces of litter.

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

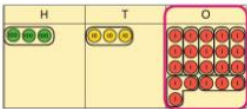
# Think together

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

$$\begin{array}{r} 1 \\ 3 \overline{) 351} \\ \underline{3} \phantom{00} \\ 0 \phantom{00} \end{array}$$

 There is 1 group of 3 hundreds.

$$\begin{array}{r} 1 \phantom{0} \\ 3 \overline{) 3521} \\ \underline{3} \phantom{00} \\ 0 \phantom{00} \end{array}$$

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

$$\begin{array}{r} 1 \phantom{0} \phantom{0} \\ 3 \overline{) 3521} \\ \underline{3} \phantom{00} \\ 0 \phantom{00} \end{array}$$

 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.

2 Complete these short divisions.

a)  $726 \div 6 = \square$

$$\begin{array}{r} 6 \overline{) 726} \\ \underline{6} \phantom{00} \\ 12 \phantom{0} \\ \underline{12} \phantom{0} \\ 0 \phantom{0} \end{array}$$


b)  $522 \div 3 = \square$

$$\begin{array}{r} 3 \overline{) 522} \\ \underline{3} \phantom{00} \\ 22 \phantom{0} \\ \underline{21} \phantom{0} \\ 12 \\ \underline{12} \\ 0 \end{array}$$


## Think together

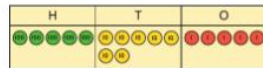
1 The children have a flask containing 575 ml of juice.

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.



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?

$$\begin{array}{r} 0 \phantom{0} \phantom{0} \phantom{0} \\ 5 \overline{) 41725} \\ \underline{4} \phantom{00} \\ 17 \phantom{0} \\ \underline{15} \phantom{0} \\ 25 \\ \underline{25} \\ 0 \end{array}$$



Friendly, supportive characters help children develop a growth mindset.

# Practice

Questions are presented in a logical sequence.

→ Textbook 5B p36

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

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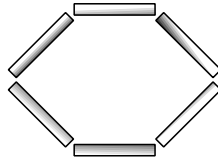
## Dividing up to a 4-digit number by a 1-digit number ②

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

T	O

$78 \div 3 = \square$

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



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

T	O

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

28

- 4 Calculate the answers to these divisions.

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

b)  $711 \div 3 = \square$

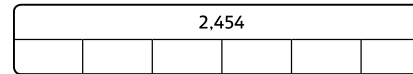
c)  $916 \div 4 = \square$

$7 \overline{) 7924}$



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

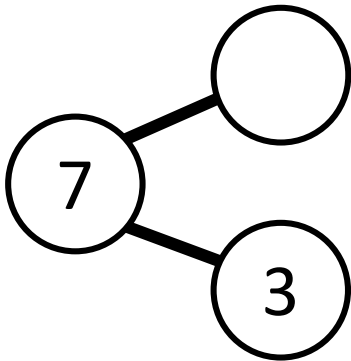
b)  $\begin{array}{r} 22 \\ 3 \overline{) 873} \end{array}$

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

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

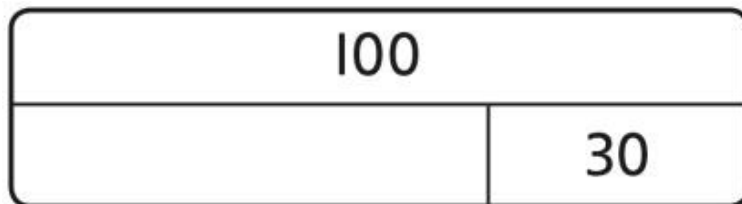
# Models and representations

## Part-whole models



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

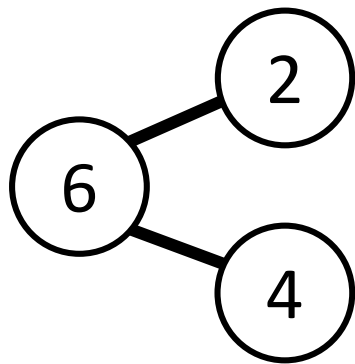
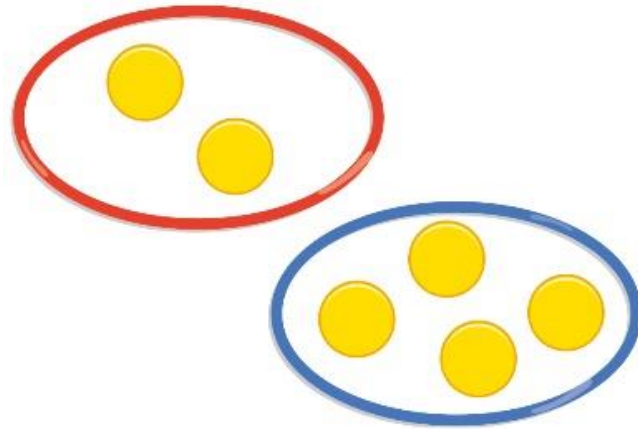
## Bar models



Helps show the maths problem as a picture.



# Models and representations



$$2 + 4 = 6$$



# MATHS

IS AN ADVENTURE



Learn

Exciting

Curious

Learn