
Fully Recommended by the DfE!
POWER MATHS
The whole-class mastery approach that works for every child
Created in partnership with
White Rose Maths
Pearson
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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.

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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

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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**!

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What is mastery?

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

We achieve this by …

- Carefully sequenced, small step learning
- Representation that expose mathematical structures
- Developing mathematical thinking
- Building fluency

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Growth mindset

Fixed mindset	Growth mindset
"I'm not good at maths – I've never been good at maths"	"I'm finding maths hard now, but I can improve with time and effort"
"I give up – I can't make this any better"	"I can improve if I keep trying"
"If I fail I am a failure"	"Most successful people fail along the way"
"I can't do this – I keep making mistakes"	"Mistakes help me learn"

Meet the growth-mindset characters!

Flo

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

Dexter

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

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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

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See the lesson structure

POWER UP! ▶ DISCOVER & SHARE ▶ THINK TOGETHER ▶ PRACTICE ▶ REFLECT

Same Day Intervention

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Discover and Share

Concrete-Pictorial-Abstract approach

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

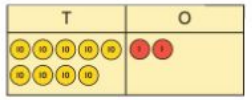
Share

a) 4 children picked up 92 pieces of litter.

They each picked up the same number of pieces.

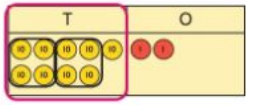
To work this out, I need to divide 92 by 4. I will use the method of short division that we learnt in the last lesson.

$4 \overline{)92}$



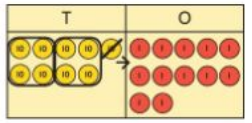
First, lay out the problem.

$4 \overline{)92}$ → $4 \overline{)\overset{2}{9}\,2}$



How many groups of 4 go into 9 tens?

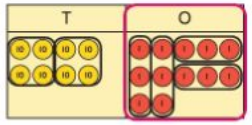
2 groups of 4 tens with 1 ten left over.



Exchange the 1 ten left over for 10 ones.

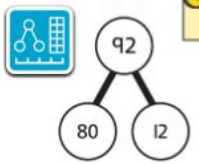
We now have 12 ones.

$4 \overline{)\overset{2}{9}\,\overset{1}{}2}$ → $4 \overline{)\overset{2}{9}\,\overset{1}{}\overset{3}{2}}$



How many groups of 4 go into 12 ones?

3 groups of 4 ones.



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

$80 \div 4 = 20$ $12 \div 4 = 3$

$20 + 3 = 23$

$92 \div 4 = 23$, so each child picked up 23 pieces of litter.

Engaging scenarios

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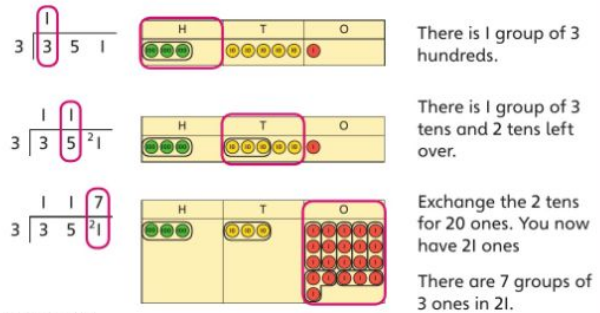
Think together

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



351 ÷ 3 = 117

There are 117 pieces of litter in each bag.

Think together

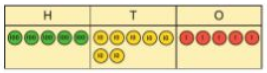
1 The children have a flask containing 575 ml of juice.

They share the juice equally among themselves and Mr Jones.

How much juice does each person get?

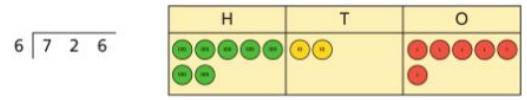
575 ÷ 5 = ☐

Each person gets ☐ ml of juice.

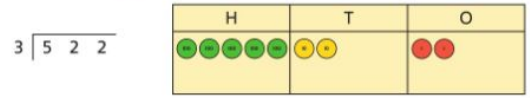


2 Complete these short divisions.

a) 726 ÷ 6 = ☐



b) 522 ÷ 3 = ☐



3 **a)** Look at these division problems.

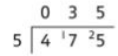
CHALLENGE

There are 312 eggs. How many boxes of 6 eggs can be made?	Divide 1,980 by 2	485 ÷ 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?



: 5B p27

Friendly, supportive characters help children develop a growth mindset.

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Practice

Questions are presented in a logical sequence.

→ Textbook 5B p36

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

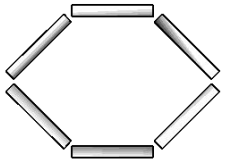
1 Mo is dividing 78 by 3. Complete his working.

3 | 7 8

T	O

78 ÷ 3 = ☐

2 Olivia is making hexagons with straws, like this:



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

6 | 9 6

T	O

Oliva can make ☐ hexagons.

3 Work out these divisions.

a) 642 ÷ 6 = ☐ b) 725 ÷ 5 = ☐ c) 5,016 ÷ 3 = ☐

6 | 6 4 2 5 | 7 2 5 3 | 5 0 1 6

4 Calculate the answers to these divisions.

a) 7,924 ÷ 7 = ☐ b) 711 ÷ 3 = ☐ c) 916 ÷ 4 = ☐

7 | 7 9 2 4

5 What division does this bar model model represent?

Write the calculation and then solve it.

2,454					

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

What mistake has Isla made?

0 8 7 9
4 | 1 ^{3}5 ^{3}1 ^{3}6

Th	H	T	O

7 Fill in the missing numbers in these short divisions.

a) 2 / 4 | ¹7 2

b) 2 2 / 3 | 8 7 3

c) 6 / 5 | ¹ ^{3}0

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

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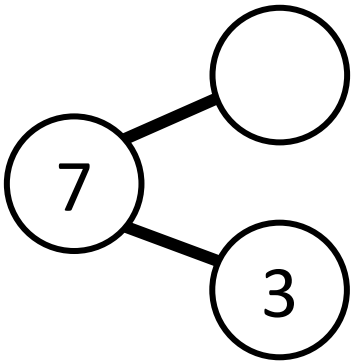
Models and representations

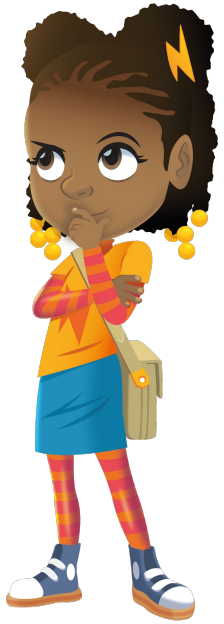
Part-whole models



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.



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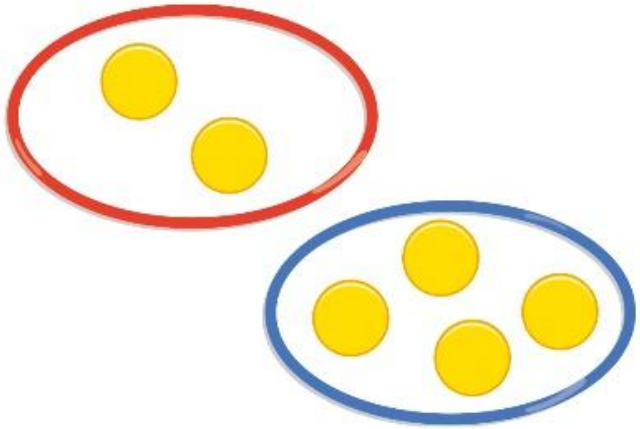
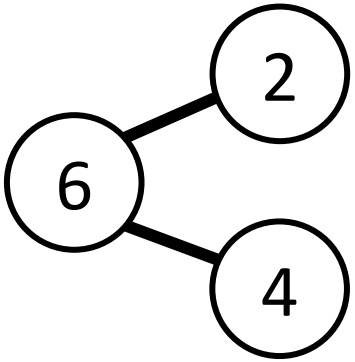
Models and representations





$2 + 4 = 6$

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POWER MATHS

MATHS IS AN ADVENTURE

Curious

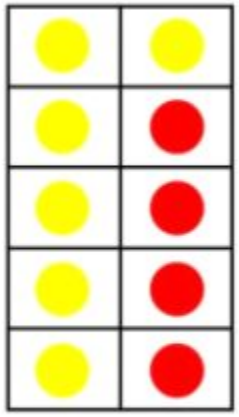
Learn

Exciting

Learn

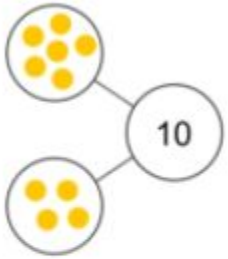
A0100

Number bonds to 10 and 20



6 + 4 = 10
4 + 6 = 10
10 – 4 = 6
10 – 6 = 4

Tens Frame



6 + 4 = 10
4 + 6 = 10
10 – 4 = 6
10 – 6 = 4

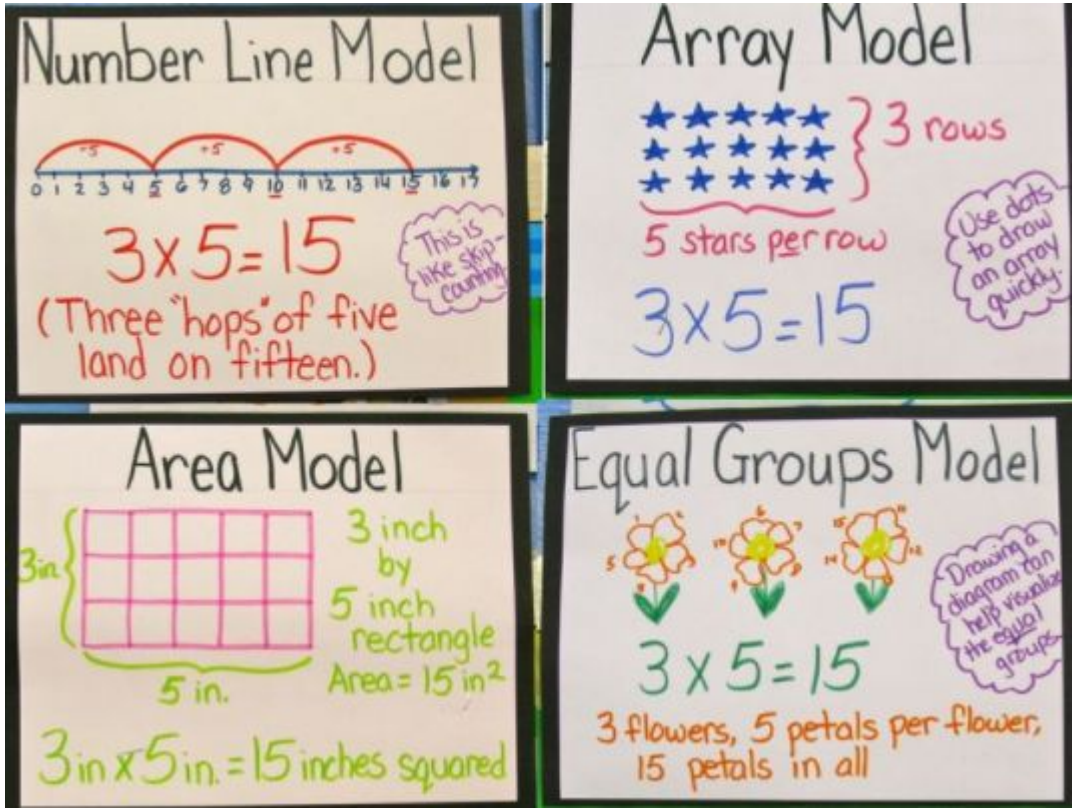
Part Whole Model

10	
6	4

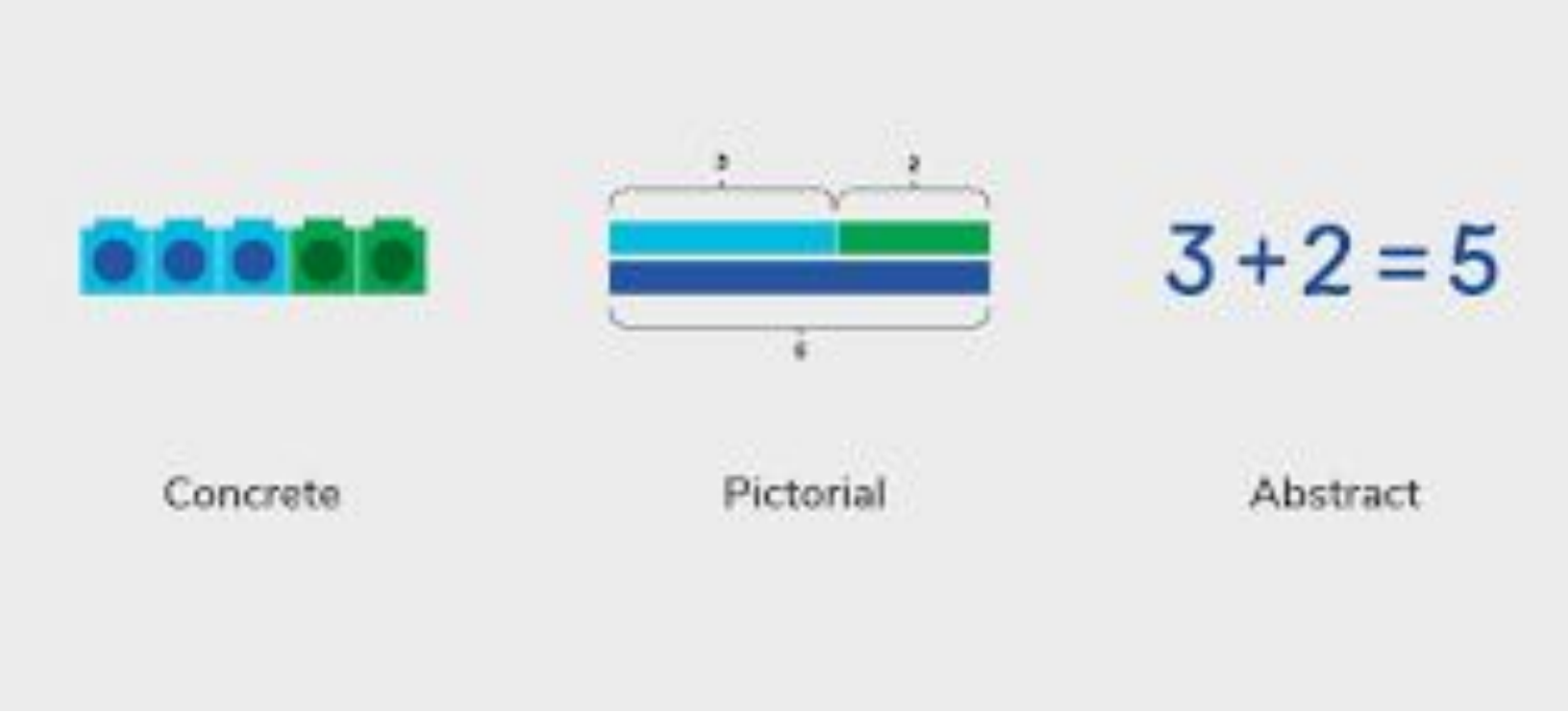
6 + 4 = 10
4 + 6 = 10
10 – 4 = 6
10 – 6 = 4

Bar Model

Times tables up to 12x12



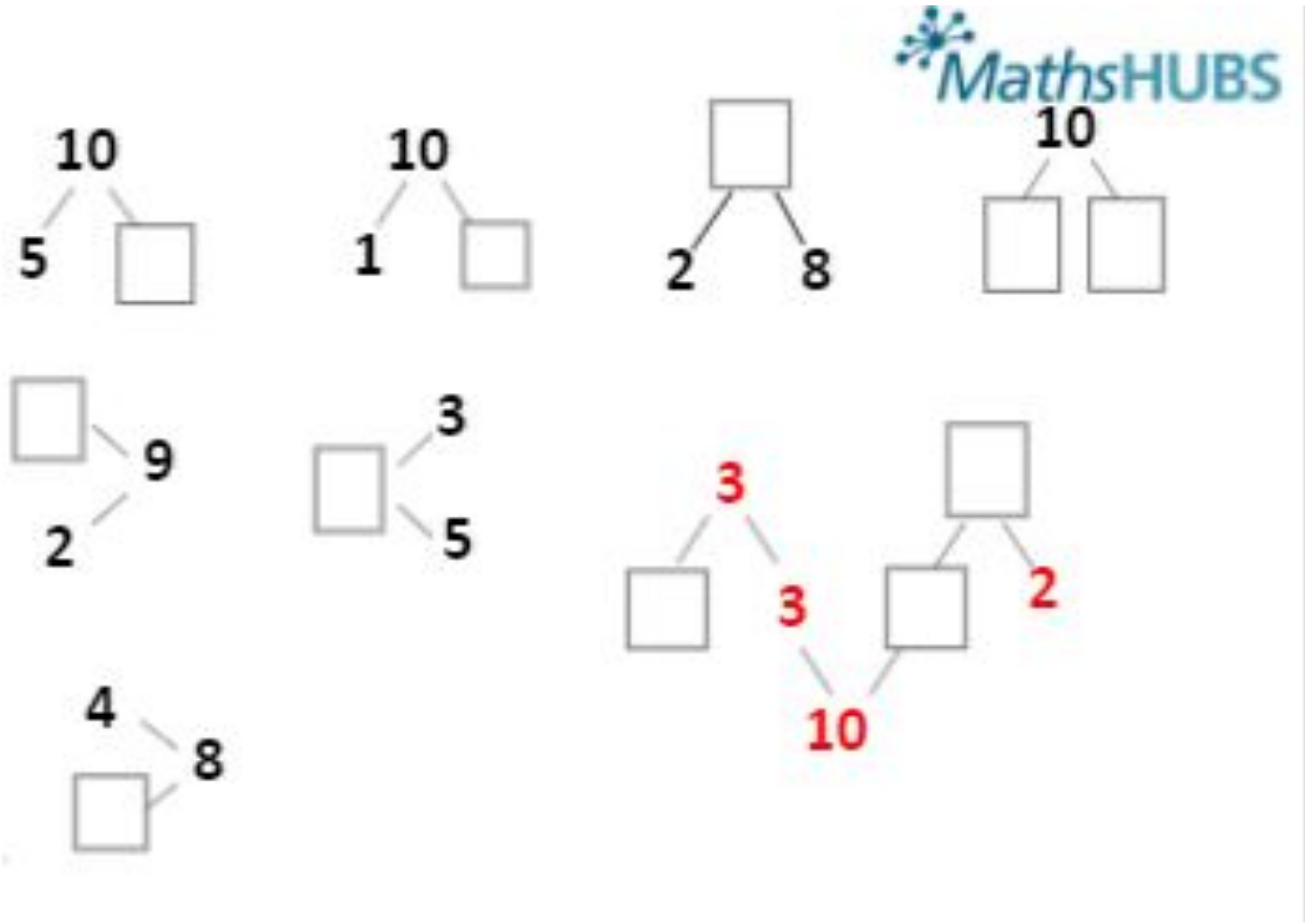
If you know that 6 x 4 = 24, what else do you know?



Can you represent

5 + 3 = 8 or 5 x 3 = 15

in different ways?


MathsHUBS
10
5
10
1
2
8
10
9
2
3
5
3
3
2
10
4
8

3x4

Real world applications

(Mike Askew 2016)

- A tray of muffins, four rows of three
- Three bags, each containing four apples
- If I have three t-shirts and four pairs of shorts, the number of day that I can go out in t-shirt and shorts and not wear the same combination twice
- The number of sprats a mother shark eats if she eats four for every one her baby eats and the baby eats three;
- The length of rope that is needed to make four skipping ropes each of which are 3 metres long
- The weight of a bag of cement that is four times as heavy as a 3kg bag.

Calculate this: 18×5

Find as many different methods as possible.

Can you draw a model for each method?

Numicon

to support number sense at home