# KS2 Maths Parent Workshop

Our goal for Maths education is that children are able to solve increasingly complex routine and non-routine problems, developing:

- a deep, secure and adaptable conceptual understanding;

- fluency with mathematical fundamentals and procedures; and

- proficiency with reasoning, application and use of mathematical vocabulary.

# We will discuss:

Curriculum Expectations;

Fluency with Number;

Flexibility with Maths; and

Where you can find out more about what your child is learning in Maths.

# Curriculum Expectations

National Curriculum

NCETM - Teaching for Mastery

- Whole Class Teaching
- Carefully constructed lesson design
- Varying how topic is approached
- Focus on fluency of number facts
- Representing maths in a variety of ways
- Mathematical Thinking

# Curriculum Expectations - Place Value

Year 3 - I can compare and order numbers up to 1000 using > < and =; I can count in tens and hundreds and can find 10 or 100 more or less from any given number up to 1000

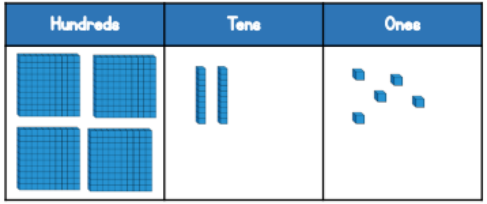
Year 4 - I can compare and order numbers beyond 1000, using < > =; I can count backwards through zero to include negative numbers

Year 5 - I can read write order and compare numbers to 1,000,000 (1 million) and determine the value of each digit; I can count forwards and backwards in steps of powers of 10 for any given number up to 1,000,000

Year 6 - I can read, write, order and compare numbers up to 10,000,000 and determine the value of each digit; I can use negative numbers in context and calculate intervals across zero

Year 3 - I can compare and order numbers up to 1000 using > < and =; I can count in tens and hundreds and can find 10 or 100 more or less from any given number up to 1000

Anna has made a number.



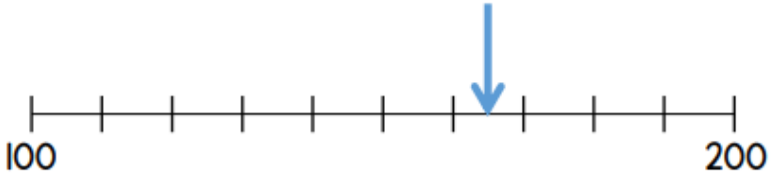

What number has Anna made?

_____

Is the number odd or even?

How do you know?

8 What number is the arrow pointing to?




Match each number in a box to the nearest **10**

158

142

131

to the nearest **10** is

140

130

180

160

150

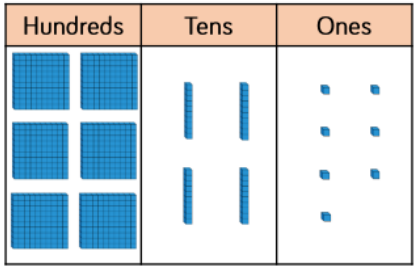
120

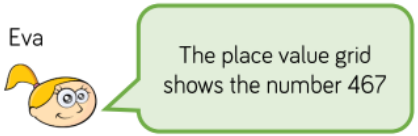
What is 100 less than 719? _____

What is 10 more than 97? _____

What is 10 less than 205? _____

Year 4 - I can compare and order numbers beyond 1000, using < > =; I can count backwards through zero to include negative numbers



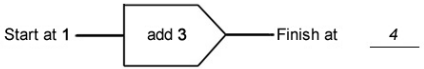



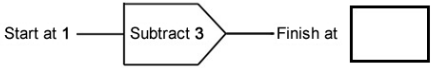

Is Eva correct? Explain your reasoning.

What do you notice about the number shown?


The number line can help you work out the missing numbers below.

The first one is done for you.




Complete the table:

| Start number | Rounded to the nearest 10 |
|---|---|
| 100 100 100 10 10 1 1<br>100 100 100 10 1 1 1 | |
| 851 | |
| XCVIII | |

Circle which of the following is equal to 5,042

50 + 42

50 + 40 + 2

5000 + 400 + 2

5,000 + 40 + 2

# Year 5 - I can read write order and compare numbers to 1,000,000 (1 million) and determine the value of each digit; I can interpret negative numbers in context

Add the symbol <, > or = to make the statement correct.

MMXVII ◯ 


Here are four number cards.

| | |
|---|---|
| 42,350 | 43,385 |
| 56,995 | 56,963 |

Four children take one each and say a clue.

My number is 57,000 when rounded to the nearest 100 — Mo

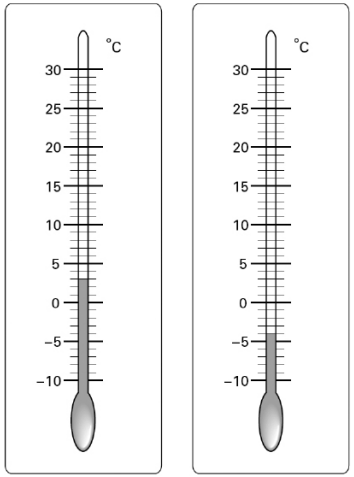
Rosie — My number has exactly three hundreds in it

My number is 43,000 when rounded to the nearest thousand — Jack

Dora — My number is exactly 100 less then 57,063

Which card did each child have?

These are temperatures at noon and midnight on a day in winter.




How many degrees higher is the temperature at noon than at midnight?

degrees

Year 6 - I can read, write, order and compare numbers up to 10,000,000 and determine the value of each digit; I can use negative numbers in context and calculate intervals across zero

3,576,219

Which digit is in the **ten thousands** place?

1 mark

Round 3,576,219 to the **nearest million**.

1 mark

Dora has the number 824,650

She subtracts forty thousand from her number.

She thinks her new number is 820,650

Is she correct?

Explain how you know.

Put these numbers in order from smallest to largest.

8,102,304 8,021,403 843,021 8,043,021

**Smallest**

1 mark

# Addition and Subtraction

Year 3 - I know my addition and subtraction facts for all numbers up to 20; I can add using column method up to 3-digit numbers.

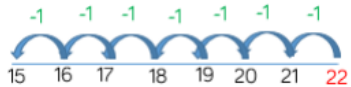
Year 4 - I am confident with all my number bonds to 20 and 100; I can use column subtraction for 3 digit numbers.

Year 5 - I can solve addition and subtraction multi-step problems and choose which operation to use (bar model); I can use rounding to estimate and check answers to calculations

Year 6 - I can solve addition and subtraction multi-step problems in context, with increasingly large numbers, deciding which operations to use and why

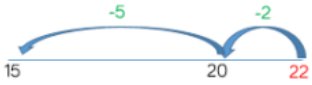
Year 3 - I know my addition and subtraction facts for all numbers up to 20; I can add using column method up to 3-digit numbers.

22 – 7 =

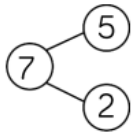



Can you put the larger number in your head and count back the smaller number? Start at 22 and count back 7

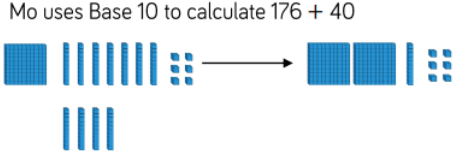
Can we use number bonds to subtract more efficiently?




We can partition 7 into 5 and 2 and use this to bridge the 10



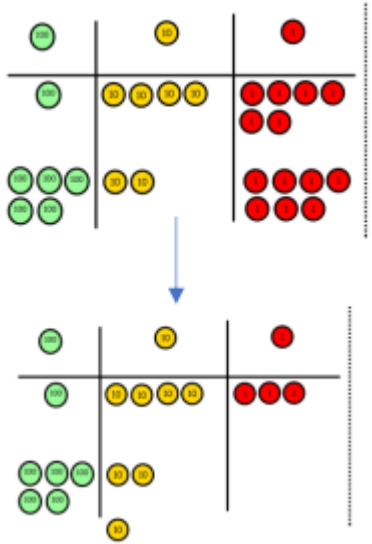

Mo uses Base 10 to calculate 176 + 40



Use Mo's method to calculate:

276 + 40 266 + 40 266 + 70

146 + 527



Year 4 - I am confident with all my number bonds to 20 and 100; I can use column subtraction for 3 digit numbers.

Write in the missing digits.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | | + | | 3 | = | 1 | 0 | 0 |

Two children completed the following calculation:

1,234 + 345

My answer is 1,589

Dora

My answer is 4,684

Alex

Both of the children have made a mistake in their calculations.

Calculate the actual answer to the question.

What mistakes did they make?

Mo uses Base 10 to subtract 142 from 373

| H | T | O |
|---|---|---|
|  |  |  |

| | | | |
|---|---|---|---|
| | 3 | 7 | 3 |
| – | 1 | 4 | 2 |
| | | | |

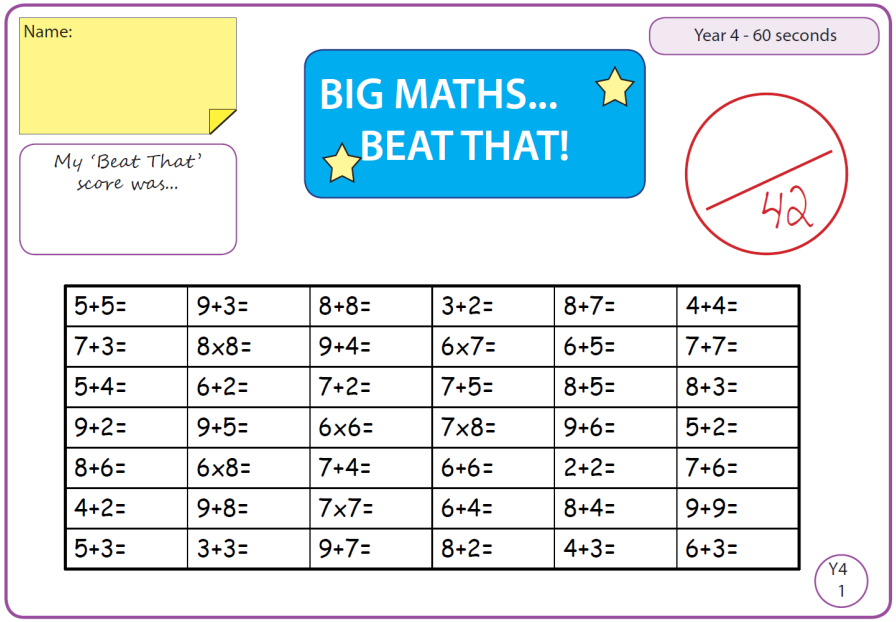
Use Mo's method to calculate:

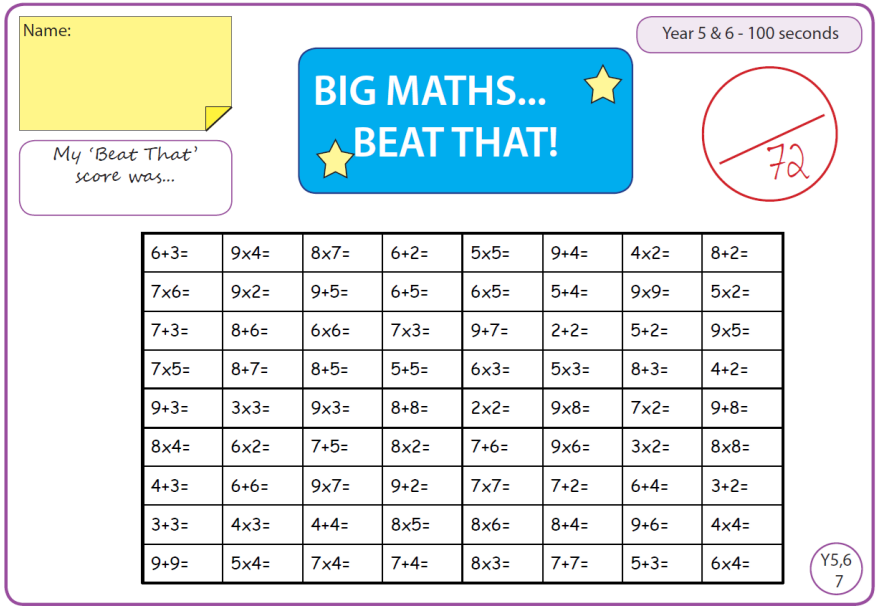
565 – 154 565 – 145 565 – 165

629 – 483

| H | T | O |
|---|---|---|
|  |  |  |

# Fluency - 10 minutes every day



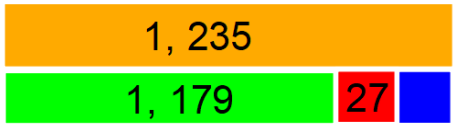
Year 5 - I can solve addition and subtraction multi-step problems and choose which operation to use (bar model); I can use rounding to estimate and check answers to calculations


1,235 people go on a school trip.

There are 1,179 children and 27 teachers.
The rest are parents.

How many parents are there?

Explain your method to a friend.




The perimeter of a **rectangle** is one metre.

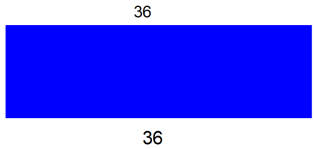
Each **longer** side is 36 centimetres.

What is the length of each **shorter** side?

Show your method

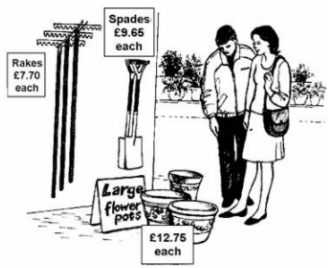
centimetres

2 marks




$$\begin{array}{r} {}^{1}2\,{}^{1}{}^{9}2\,{}^{1}0\,39 \\ -\quad 1359 \\ \hline 20680 \end{array}$$

Year 6 - I can solve addition and subtraction multi-step problems in context, with increasingly large numbers, deciding which operations to use and why




Nicola has **£50**

She buys 3 flowerpots and a spade.

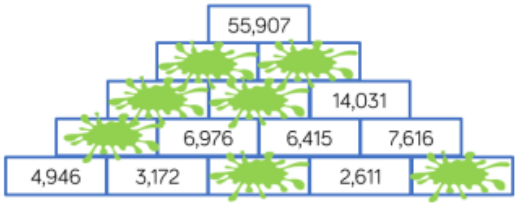
How much money does she have left?

Show your method

£

2 mark

Complete the pyramid using addition and subtraction.




Rosie completes this subtraction incorrectly.

$$\begin{array}{r} 28701 \\ -\ 7621 \\ \hline 21180 \\ \hline \end{array}$$

Explain the mistake to Rosie and correct it for her.

# Multiplication and division

Year 3 - I know what multiples are, I can recall and use the multiplication and division facts for the 3, 4 and 8 times tables

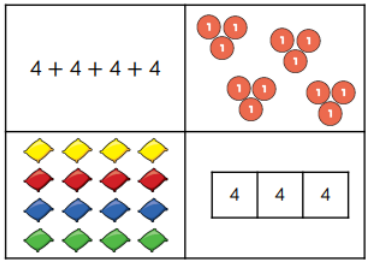
Year 4 - I can recall and use the multiplication and division facts for all tables up to 12 x 12; I can solve multiplication pyramids and understand the relationship between multiplication and division.

Year 5 - can recall quickly all the multiplication and division facts for tables up to 12 x 12 and can use them confidently in larger calculations; I can divide 4 digit and 3 digit numbers by one digit

Year 6 - I can multiply multi-digit numbers up to 4 digits by a 2-digit whole number using the formal written method of long multiplication; I can divide numbers up to 4 digits by a 2-digit whole number using long division

# Year 3 - I know what multiples are, I can recall and use the multiplication and division facts for the 3, 4 and 8 times tables

Which part below does not show counting in fours?

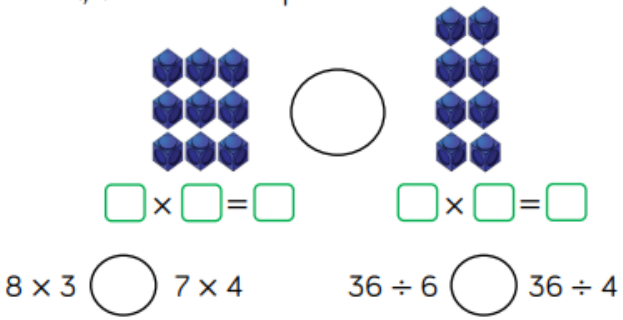



Explain why.

Complete the table.

| × | 2 | 4 | 8 |
|---|---|---|---|
| 3 | 6 | | |
| | 10 | 20 | |
| | | | 72 |

Use <, > or = to compare.




Here are six digit cards.


Use **all six** digit cards to make three multiples of 3

# Mastering Number in Years 4 and 5

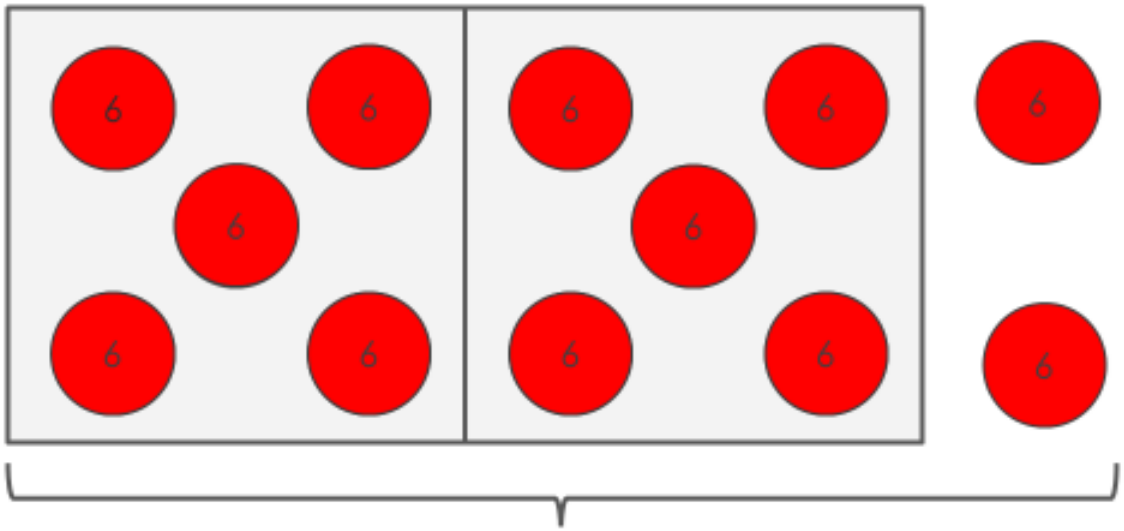
Daily fluency practice

Strong focus on multiplication

Do you agree with Mo?

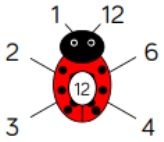
I think 6 × 12 has got to be 70-something.

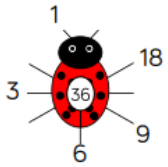
# 6 × 12



Year 4 - I can recall and use the multiplication and division facts for all tables up to 12 x 12; I can solve multiplication pyramids and understand the relationship between multiplication and division.

Here is an example of a factor bug for 12
Complete the factor bug for 36




Are all the factors in pairs?
Draw your own factor bugs for 16, 48, 56 and 35

The signs are missing from these number sentences.

Write in the missing signs, + – × or ÷

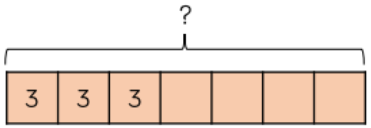
The first has been done for you.

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | × | 5 | = | 40 | – | 10 |
| 20 | | 8 | = | 4 | | 7 |
| 21 | | 3 | = | 15 | | 8 |

Complete the fact family.

___ × ___ = ___
___ × ___ = ___
___ ÷ ___ = ___
___ ÷ ___ = ___

There are 7 tricycles in a playground.
How many wheels are there altogether?
Complete the bar model to find the answer.




## Spot the mistake

Alex and Dexter have both completed the same multiplication.

Alex

| | H | T | O |
|---|---|---|---|
| | 2 | 3 | 4 |
| × | | | 6 |
| 1 | 2 | 0 | 4 |
| | 2 | 2 | |

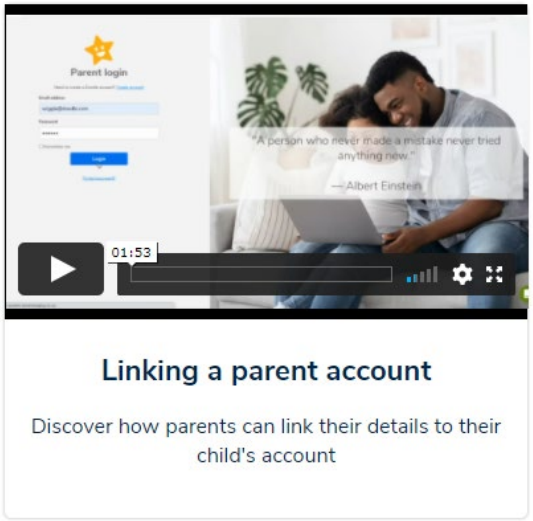
Dexter

| | H | T | O |
|---|---|---|---|
| | 2 | 3 | 4 |
| × | | | 6 |
| 1 | 4 | 0 | 4 |
| | 2 | 2 | |

Who has the correct answer?
What mistake has been made by one of the children?

# Year 4 Multiplication Check

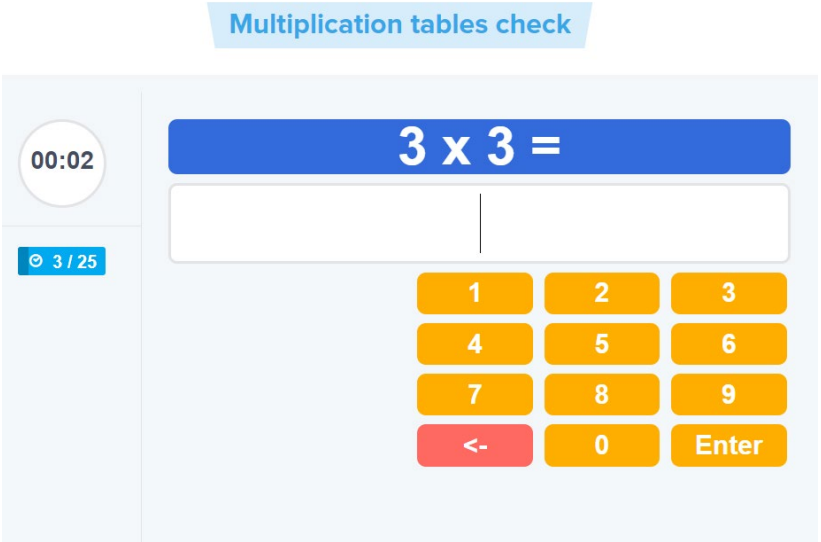
National test at the end of Year 4




https://www.timestables.co.uk › multiplication-tables-ch...

Multiplication Tables Check - Timestables.co.uk

The **Multiplication Tables Check** (MTC) is a key stage 2 assessment to be taken by pupils at the end of year 4 (in June). From the 2019 / 2020 academic year ...



Year 5 - can recall quickly all the multiplication and division facts for tables up to 12 x 12 and can use them confidently in larger calculations; I can divide 4 digit and 3 digit numbers by one digit

**615 ÷ 5**

1. Write 615 (dividend) then draw the first line of the bus stop, saying ***divided,*** then the second line of the bus stop, saying ***by.*** Record the divisor (5).
2. Start on the left. How many times goes 5 go into 6?

**(1 time, with a remainder of 1)**

3. Record above then regroup the remainder to the next column.

$$5\overline{)6^{1}1\ 5}\quad (1)$$

4. How many times does 5 go into 11?

**(2 times, with a remainder of 1)**

5. Record above then regroup the remainder.

$$5\overline{)6^{1}1^{1}5}\quad (1\ 2)$$

6. How many times does 5 go into 15?

**(3 times, with none remaining)**

7. Record to complete the calculation.

$$5\overline{)6^{1}1^{1}5}\quad (1\ 2\ 3)$$

If the calculation has a remainder, children learn to record this as a remainder, as a fraction, or to continue the calculation into decimal places.

$\frac{1}{7}$ of 294 =

Dan says,

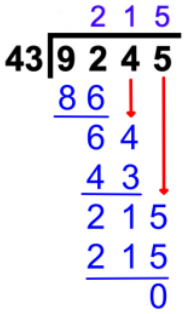
*'I choose a number.*
*I multiply it by 5*
*Then I subtract 7*
*My answer is 38'*

What number did Dan choose?

Show your method

2 marks

# Year 6 - I can multiply multi-digit numbers up to 4 digits by a 2-digit whole number using the formal written method of long multiplication; I can divide numbers up to 4 digits by a 2-digit whole number using long division




Children learn to record remainders as decimals or as fractions, as appropriate to the calculation.

| | |
|---|---|
| **1** | 43 |
| **2** | 86 |
| **3** | 129 |
| **4** | 172 |
| **5** | 215 |
| **6** | 258 |
| **7** | 301 |
| **8** | 344 |
| **9** | 387 |
| **10** | 430 |

| **How to work out multiples of a number using related facts:** | |
|---|---|
| **x1** | 1 x 43 = 43 |
| **x2** | Double 43 is 86 |
| **x3** | 43 + 86 = 129 |
| **x4** | Double 86 is 172 |
| **x5** | Half of 430 = 215 |
| **x6** | Double 129 is 258 |
| **x7** | 3 x 7 = 21, 40 x 7 = 280<br>21 + 280 = 301 |
| **x8** | Double 172 is 344 |
| **x9** | 430 – 43 = 387 |
| **x10** | 10 x 43 = 430 |

Find the multiples in this order:
1, 2, 4, 10, 5, 3, 6, 8, 9, 7

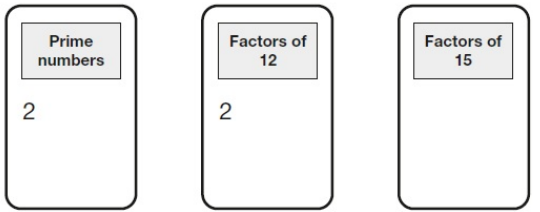
Encourage children not to work out 6, 7, 8 and 9 until they are sure they will need them.

Here are five numbers.

~~2~~ 3 4 5 6

Write each number on the correct cards.

The number 2 has been written on the correct cards for you.




2 marks

Year 6 - I can multiply multi-digit numbers up to 4 digits by a 2-digit whole number using the formal written method of long multiplication; I can divide numbers up to 4 digits by a 2-digit whole number using long division

Layla makes jewellery to sell at a school fair.

Each bracelet has **53** beads.

She makes **68** bracelets.

Each necklace has **105** beads.

She makes **34** necklaces.

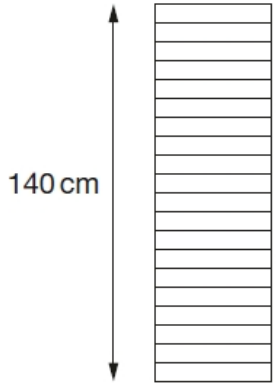
How many beads does Layla use **altogether?**

Show your method

beads

3 marks

A stack of 20 identical boxes is 140 cm tall.




**Not actual size**

Stefan takes **three** boxes off the top.

How tall is the stack now?

Where to find out more about what your child/ren are learning.


- *Mathematics Curriculum for Key Stage 1 and 2*
- *William Tyndale Calculation Framework*
- *Whole School Maths Overview*
- *Fluency – Instant Recall Facts*
- ***Mathematics Curriculum Overview and Knowledge & Skills Progression***