Welcome!

There are 3 kinds of people:

Those who are good at math.

And those who aren't.

someecards
user card

We do NOT believe this!

Jason Elliott - Maths Lead, Deputy Headteacher

Agenda

- Introduction
- What is Maths Mastery?
- Expectations in Years 5 and 6
- A focus on the four operations - what are the expected methods?
- SATS - a look at the three papers
- Resources to support at home

Introduction...

- About me...

- About your expectations...

Improvement on Maths and getting him ready for upcoming SATS

Understand curriculum and learning objectives over next year or so, and try to figure out how to keep my child challenged and engaged!

How can I support my child, especially as SATS approaches?
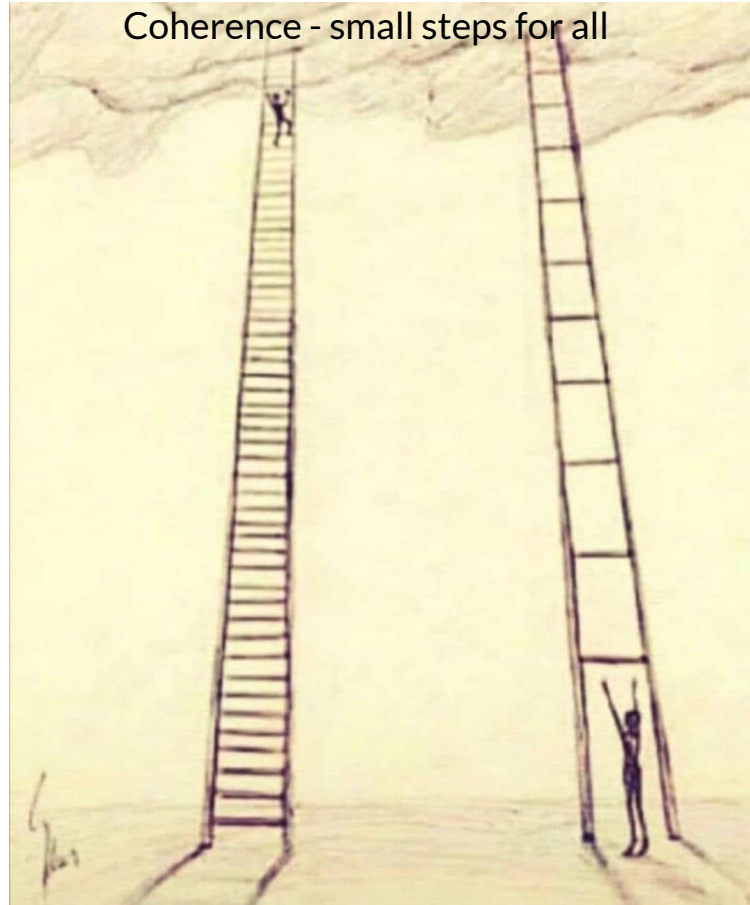
What is Maths Mastery?

Us...

Our children...

What is Maths Mastery?

Coherence - small steps for all

Heber's Approach

- At Heber we follow the White Rose Scheme of Learning, which provides a termly plan for each year group from Year 1 to Year 6. In addition to the yearly overviews below, children access a weekly fluency lesson. This ensures students build their fluency, revisiting the fundamentals of mathematics throughout the year, as number sense will affect their success in other areas of mathematics. Students who are successful with number are much more confident mathematicians.

Year 5

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Number **Place value** VIEW			Number **Addition and subtraction** VIEW		Number **Multiplication and division A** VIEW			Number **Fractions A** VIEW			
Spring term	Number **Multiplication and division B** VIEW			Number **Fractions B** VIEW		Number **Decimals and percentages** VIEW			Measurement **Perimeter and area** VIEW		Statistics VIEW	
Summer term	Geometry **Shape** VIEW			Geometry **Position and direction** VIEW		Number **Decimals** VIEW			Number **Negative numbers** VIEW	Measurement **Converting units** VIEW		Measurement **Volume** VIEW

Year 6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Number **Place value** VIEW		Number **Addition, subtraction, multiplication and division** VIEW					Number **Fractions A** VIEW		Number **Fractions B** VIEW		Measurement Converting units VIEW
Spring term	Number **Ratio** VIEW		Number **Algebra** VIEW		Number **Decimals** VIEW		Number **Fractions decimals and percentages** VIEW		Measurement **Area, perimeter and volume** VIEW		**Statistics** VIEW	
Summer term	Geometry **Shape** VIEW		Geometry Position and direction VIEW	**Themed projects, consolidation and problem solving** VIEW								

Expectations <u>for all</u> in Years 5 and 6

Year 5 Fluency Expectations for All

Times Tables	
Recall and use multiplication and division facts for the **12 times table**	
Multiply and divide numbers mentally drawing upon known facts (e.g. 128 ÷ 4 using partitioning such as 120 ÷ 4 and 8 ÷ 4)	

Four Operations	
Add and subtract numbers mentally with increasingly large numbers.	
Column addition for numbers with more than 4 digits	
Column subtraction for numbers with more than 4 digits	
Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	
Formal written method for up to ThHTU x U	
Long Multiplication method for up to ThHTU x TU	
Short Division method for ThHTU ÷ U	
Interpret remainders appropriately for the context	

Fractions	
Compare and order fractions whose denominators are all multiples of the same number.	
Convert between mixed numbers and improper fractions	
Add and subtract fractions with the same denominator and denominators that are multiples of the same number.	
Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	
Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.	

Year 6 Fluency Expectations for All

Times Tables	
➡ Recall and use multiplication and division facts for the **12 times table**	
➡ Multiply and divide numbers mentally drawing upon known facts (e.g. 128 ÷ 4 using partitioning such as 120 ÷ 4 and 8 ÷ 4)	

Four Operations	
➡ Column addition for numbers with more than 4 digits	
➡ Column subtraction for numbers with more than 4 digits	
Long multiplication method for up to 4 digit numbers x TU	
Multiply one-digit numbers with up to two decimal places by whole numbers.	
Long division method for 4 digit numbers ÷ TU	
Short division method for 4 digit numbers ÷ TU	
Use written division methods in cases where the answer has up to two decimal places.	

Fractions and percentages	
Use common factors to simplify fractions	
Use common multiples to express fractions in the same denomination	
Compare and order fractions, including fractions > 1	
Add and subtract fractions with different denominators and mixed numbers	
Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 x 1/2 = 1/8].	
Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6].	
Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8].	

Take a look at the expectations for you child's year group. Any surprises?

Let's introduce some language...

addend + addend = sum

$10 + 5 = 15$

What happens to the sum if one of the addends increases/decreases? $10 + 8 = 18$

What happens if both of the addends increase/decrease? $12 + 8 = 20$

Let's take a look at the four operations...

Addition

addend + addend = sum

Year 5
Add and subtract mentally with increasingly large numbers.

Modelled example...

4065 + 997

This is where the generalisations we can make with the language above is essential...

Your turn...

2010 + 199

Let's take a look at the four operations...

Addition

addend + addend = sum

Year 5 and 6
Column addition with numbers with more than four digits.

Modelled example (with bar model)...

12,106 + 1,945

Your turn...

43,321 + 1,982

Let's introduce some language...

Subtraction

minuend - subtrahend = difference

15 - 10 = 5

What happens to the difference if the minuend and the subtrahend increase or decrease by the same amount?

12 - 7 = 5

Let's take a look at the four operations...

Subtraction

minuend - subtrahend = difference

Year 5
Add and subtract mentally with increasingly large numbers.

Modelled example…

4065 - 999 =

How can we use the generalisation on the previous slide to support our thinking?

Your turn…

2010 - 199

Let's take a look at the four operations...

Subtraction

minuend - subtrahend = difference

Year 6
Column subtraction with numbers with more than 4 digits.

Modelled example...

52,036 - 1,552

Your turn..

43,203 - 2,234

Multiplication

factor x factor = product

What happens to the product of one of the factors is multiplied/divided?

3 x 8 = 24

x10   x10

3 x 80 = 240

Let's take a look at the four operations...

Multiplication

factor **x** factor **=** product

Year 5/6
Long multiplication method for ThHTU x TU

Modelled example...

4065 x 24 =

Your turn...

2537 x 32 =

Year 6
Multiply X.XX by a whole number

Modelled example...

2.35 x 4 =

Your turn...

1.27 x 3 =

Let's take a look at the four operations…

Division

product ÷ factor = factor

Year 5
Short division method for ThHTU ÷ U

Modelled example…

Your turn…

2010 ÷ 3

Year 6
Long division method for ThHTU ÷ TU

Modelled examples…

2976 ÷ 24 =

Your turn…

5865 ÷ 15

SATS

Paper 1 - Arithmetic

- Four operations
- Fractions, decimals and percentages

Total of 40 marks

Papers 2 and 3 - <u>Reasoning</u> and Problem Solving

- Geometry
- Data
- Problem solving using the four operations - a variety
- Problem solving using FDP - a variety

Total of 35 marks for **each paper** (70)

Total marks available - 110

2022 Pass - 58
Greater Depth - 96

https://www.satspapersguide.co.uk/ks2-year-6-sats/ks2-year-6-sats-papers/

Paper 1 Examples - Arithmetic

5 ☐ + 70 = 485

1 mark

10 1,010 × 10 =

1 mark

13 1,080 ÷ 9 =

1 mark

21 $\frac{2}{3} + 2\frac{1}{3} =$

1 mark

30 80% of 115 =

1 mark

31 $\frac{2}{7} - \frac{1}{9} =$

1 mark

Here are six number cards.

| 3 | 4 | 5 | 6 | 7 | 8 |
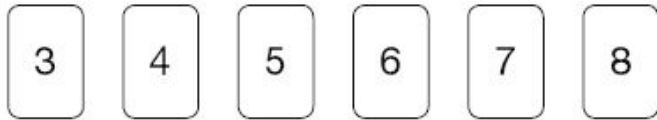
Use **all six** cards to complete the three multiplications below.

$24 = \boxed{} \times \boxed{}$

$28 = \boxed{} \times \boxed{}$

$30 = \boxed{} \times \boxed{}$

This chart shows the range of temperatures each day during one week from Monday to Friday.
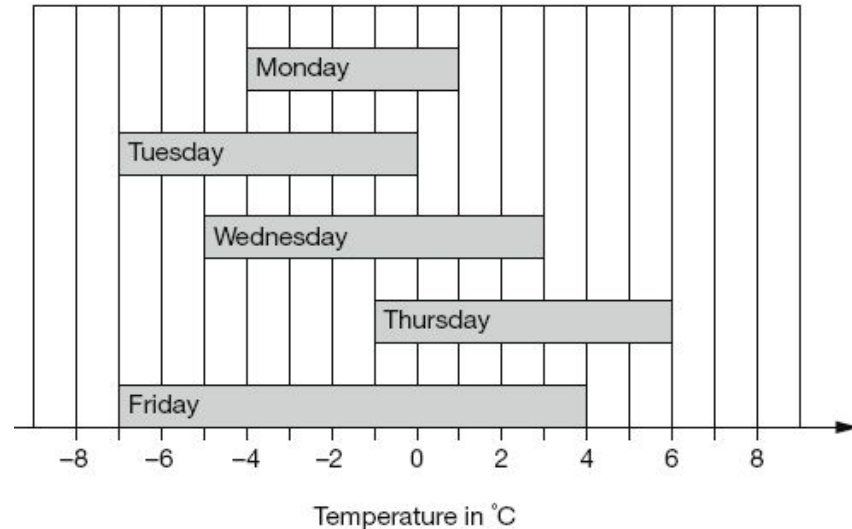
Temperature in °C

What was the **lowest** temperature?

What was the difference between the highest and lowest temperatures on **Wednesday**?

Jack says,

> When you square a prime number, the answer has only two factors.

Explain why Jack is **not** correct.

Emma has a 5 litre bag of compost.

COMPOST
5 litres

She uses 2.75 litres.

How much compost does Emma have left?

litres

This table shows how many people finished the New York Marathon in each of the first four decades it was held.
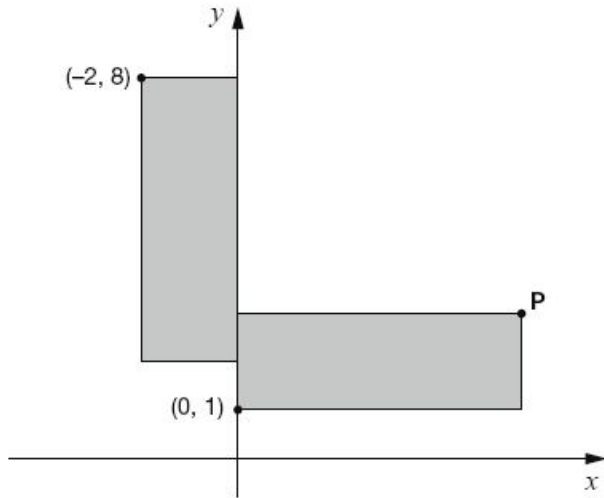
New York Marathon	
Decade	Total number of people who finished
1st decade	24,863
2nd decade	170,932
3rd decade	282,420
4th decade	350,824

What is the mean number of people who finished the marathon per decade? Round your answer to the **nearest hundred**.

These two rectangles are identical.

The length of each rectangle is **three times** its width.

(−2, 8)

Not to scale

P

(0, 1)

y

x

What are the coordinates of point **P**?

(,   )
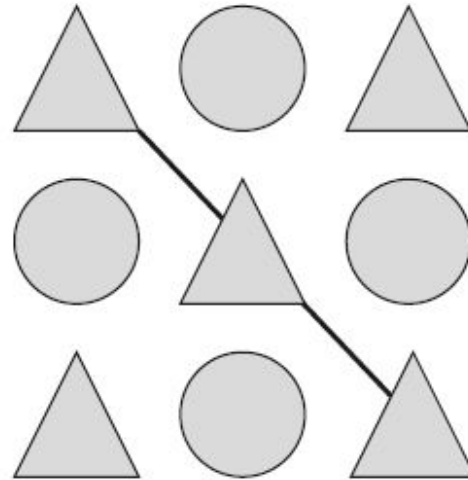
Each shape stands for a number.

The total of the shapes on the diagonal line is 48
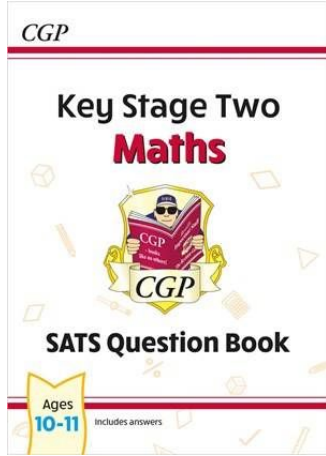
The total of all the shapes is 200

Calculate the value of each shape.

Explore the papers…

https://www.satspapersguide.co.uk/ks2-year-6-sats/ks2-year-6-sats-papers/#ks2maths

To support you at home

What is available on the Heber website to support you at home?

- Resource folder for today's session.
- Vocabulary
- Calculation policy

Times tables…

Thank you!