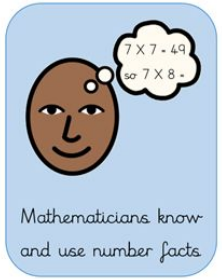
TORRIANO PRIMARY SCHOOL

Year 5/6 Maths Parent Workshop

28.02.23



Objectives:

- What is expected in Upper Key Stage 2.
- How we plan teaching and learning.
- Reasoning skills.
- What can we do at home?
- Questions.

Mathematics programmes of study: key stages 1 and 2

National curriculum in England

National Curriculum context:

The **principal focus** of mathematics teaching in upper key stage 2 is to:

- Ensure that pupils extend their understanding of the number system and place value to include larger integers. This should **develop the connections** that pupils make between multiplication and division with fractions, decimals, percentages and ratio.
- At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding **efficient written and mental methods of calculation.** With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems.
- Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.
- By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.
- Pupils should read, spell and pronounce mathematical vocabulary correctly.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMARY_national_curriculum_-_Mathematics_220714.pdf

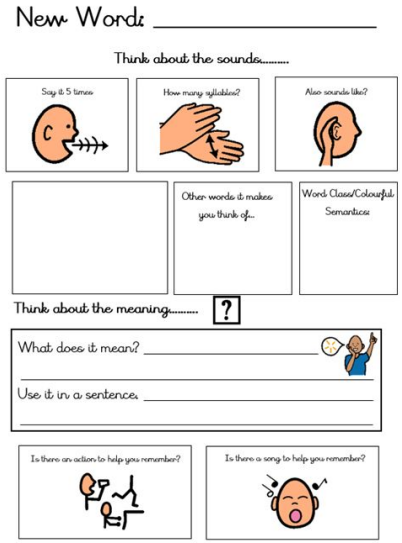
‘extend understanding’

‘develop connections’

‘increasingly complex’

‘wider range’

‘fluent’



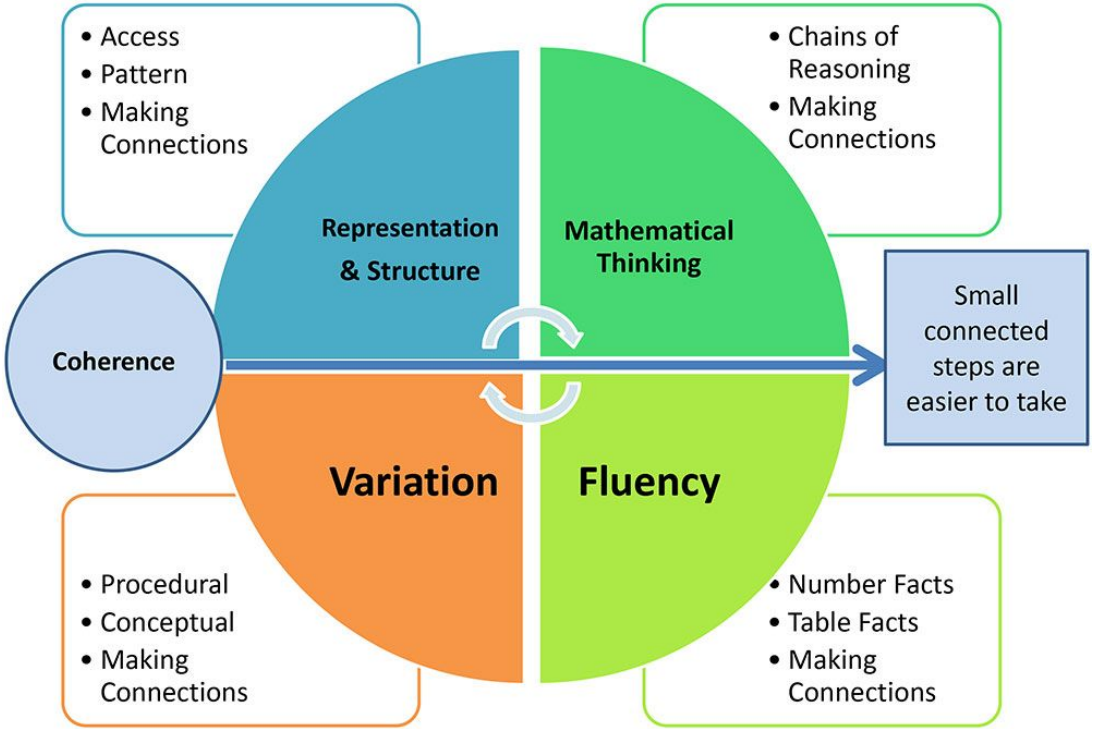
Differences in content:

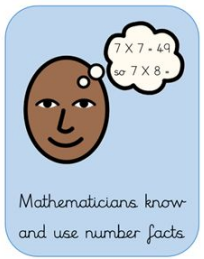
New content in Y5:

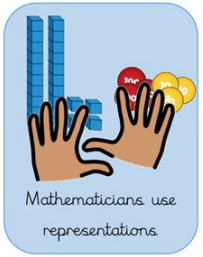
- Multi-step problems.
- Formal long and short multiplication and division methods.
- Squared and cubed numbers (Volume of 3D shapes).
- Prime numbers.
- Percentages.
- Multiplying fractions.
- Angles - use of protractor.
- Reflection and translation.
- Timetables.

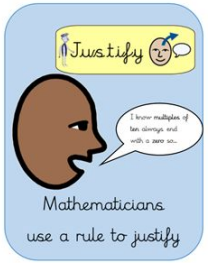
New content in Y6:

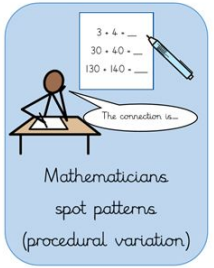
- Ratio and proportion.
- Algebra.
- Parts of a circle.
- Pie charts.
- Mean as an average.

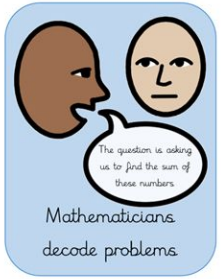

• Access
• Pattern
• Making Connections
Representation & Structure
Mathematical Thinking
• Chains of Reasoning
• Making Connections
Coherence
Small connected steps are easier to take
Variation
Fluency
• Procedural
• Conceptual
• Making Connections
• Number Facts
• Table Facts
• Making Connections

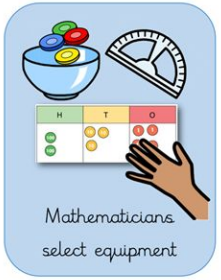

7 X 7 = 49
so 7 X 8 =
Mathematicians know and use number facts

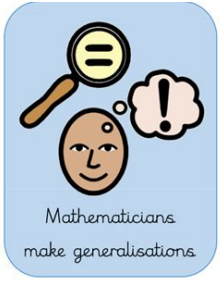

Mathematicians use representations


Justify
I know multiples of ten always end with a zero so...
Mathematicians use a rule to justify


3 + 4 = __
30 + 40 = __
130 + 140 = __
The connection is...
Mathematicians spot patterns (procedural variation)


The question is asking us to find the sum of these numbers
Mathematicians decode problems


H
T
O
Mathematicians select equipment


Mathematicians make generalisations

NCETM

NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

White Rose Maths

Upper Key Stage 2 - Fractions video lessons

Video lessons on fractions for children in Years 5 and 6

Statutory guidance

National curriculum in England: mathematics programmes of study

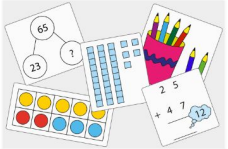
Updated 28 September 2021

Upper Key Stage 2 - Number, Addition and Subtraction video lessons

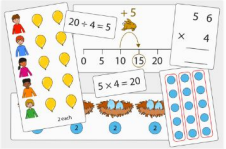
Video lessons on number, addition and subtraction for children in Years 5 and 6

Upper Key Stage 2 - Linking fractions, decimals and percentages video lessons

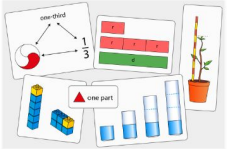
Video lessons on linking fractions, decimals and percentages for children in Years 5 and 6



1. Number, Addition and Subtraction



2. Multiplication and Division



3. Fractions

Scheme of learning

Editable reasoning & problem solving questions

End of block assessment (A)

End of block assessment (B)

In Y3/4, there is a large focus on mental methods.

Unfortunately, this can mean that children are hesitant when showing their working when it comes to arithmetic questions.

35 $\frac{5}{6} \times 540 =$

1 mark

36 8 3) 8 0 5 1

Show your method

2 marks

hegartymaths

https://mathsframe.co.uk/en/resources/resource/486/Y6-Arithmetic-Practice

Pages 46/47:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMARY_national_curriculum_-_Mathematics_220714.pdf

Long multiplication

24 × 16 becomes

```
      2
      2 4
  × 1 6
  -------
  2 4 0
  1 4 4
  -------
  3 8 4
```

Answer: 384

124 × 26 becomes

```
      1 2
      1 2 4
  ×     2 6
  ---------
  2 4 8 0
      7 4 4
  ---------
  3 2 2 4
  1 1
```

Answer: 3224

124 × 26 becomes

```
      1 2
      1 2 4
  ×     2 6
  ---------
      7 4 4
  2 4 8 0
  ---------
  3 2 2 4
  1 1
```

Answer: 3224

Addition and subtraction

789 + 642 becomes

```
      7 8 9
  +   6 4 2
  ---------
  1 4 3 1
      1 1
```

Answer: 1431

874 – 523 becomes

```
      8 7 4
  –   5 2 3
  ---------
      3 5 1
```

Answer: 351

932 – 457 becomes

```
      8  12 1
      ~~9~~ ~~3~~ 2
  –   4  5  7
  ---------
      4  7  5
```

Answer: 475

932 – 457 becomes

```
      1  1
      9  3  2
  –   ~~4~~ ~~5~~ 7
      5  6
  ---------
      4  7  5
```

Answer: 475

Short division

98 ÷ 7 becomes

```
      1 4
    ---------
  7 | 9 8
      2
```

Answer: 14

432 ÷ 5 becomes

```
        8 6 r 2
    ---------
  5 | 4 3 2
        3
```

Answer: 86 remainder 2

496 ÷ 11 becomes

```
        4 5 r 1
    ---------
  1 1 | 4 9 6
          5
```

Answer: $45\frac{1}{11}$

Short multiplication

24 × 6 becomes

```
      2 4
  ×     6
  -------
  1 4 4
      2
```

Answer: 144

342 × 7 becomes

```
      3 4 2
  ×       7
  ---------
  2 3 9 4
      2 1
```

Answer: 2394

2741 × 6 becomes

```
      2 7 4 1
  ×         6
  -----------
  1 6 4 4 6
      4 2
```

Answer: 16 446

Long division

432 ÷ 15 becomes

```
        2 8 r 12
    ---------
  1 5 | 4 3 2
        3 0 0
        -------
        1 3 2
        1 2 0
        -------
          1 2
```

Answer: 28 remainder 12

432 ÷ 15 becomes

```
        2 8
    ---------
  1 5 | 4 3 2
        3 0 0     15×20
        -------
        1 3 2
        1 2 0     15×8
        -------
          1 2
```

$\frac{\cancel{12}}{\cancel{15}} = \frac{4}{5}$

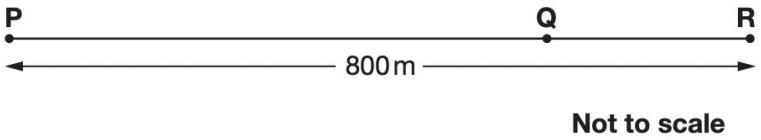
Answer: $28\frac{4}{5}$

432 ÷ 15 becomes

```
        2 8 · 8
    ---------
  1 5 | 4 3 2 · 0
        3 0
        -------
        1 3 2
        1 2 0
        -------
          1 2 0
          1 2 0
          -------
              0
```

Answer: 28·8

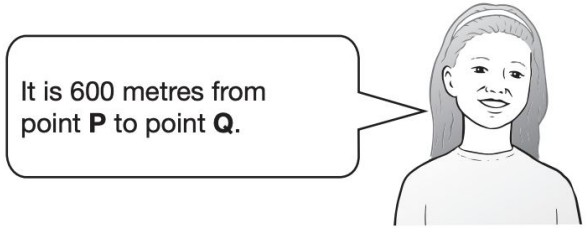
23



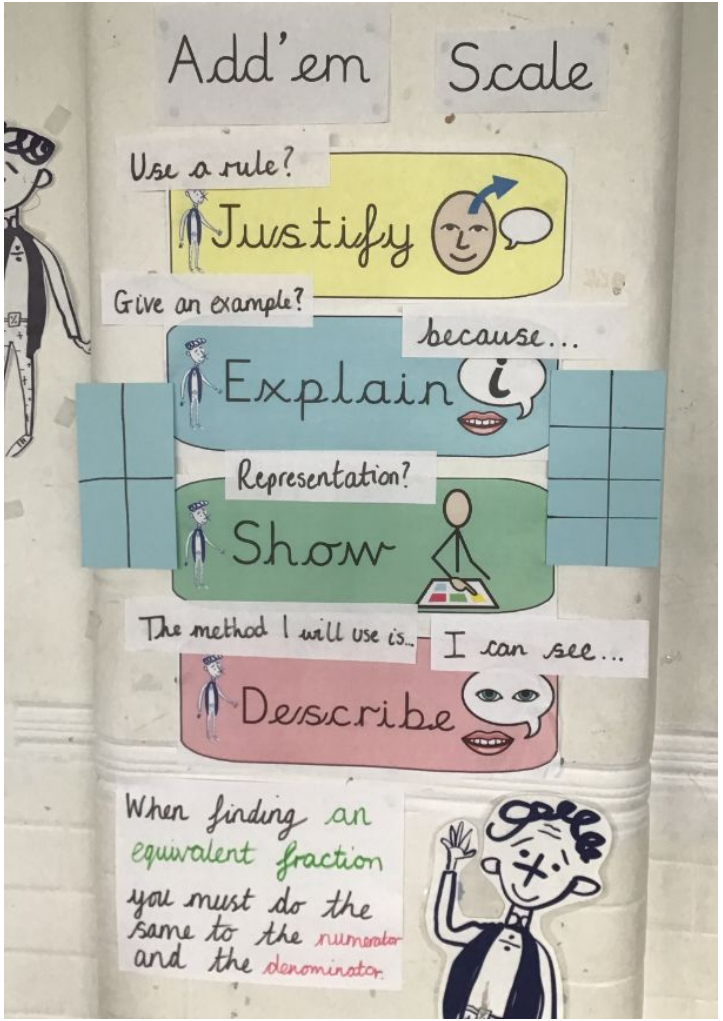
The distance from point **P** to point **R** is 800 metres.

The distance from point **P** to point **Q** is **4 times** the distance from point **Q** to point **R**.

Olivia says,



Explain why Olivia is **not** correct.



Kirsty says,

When you double the size of an acute angle, you always get an obtuse angle.

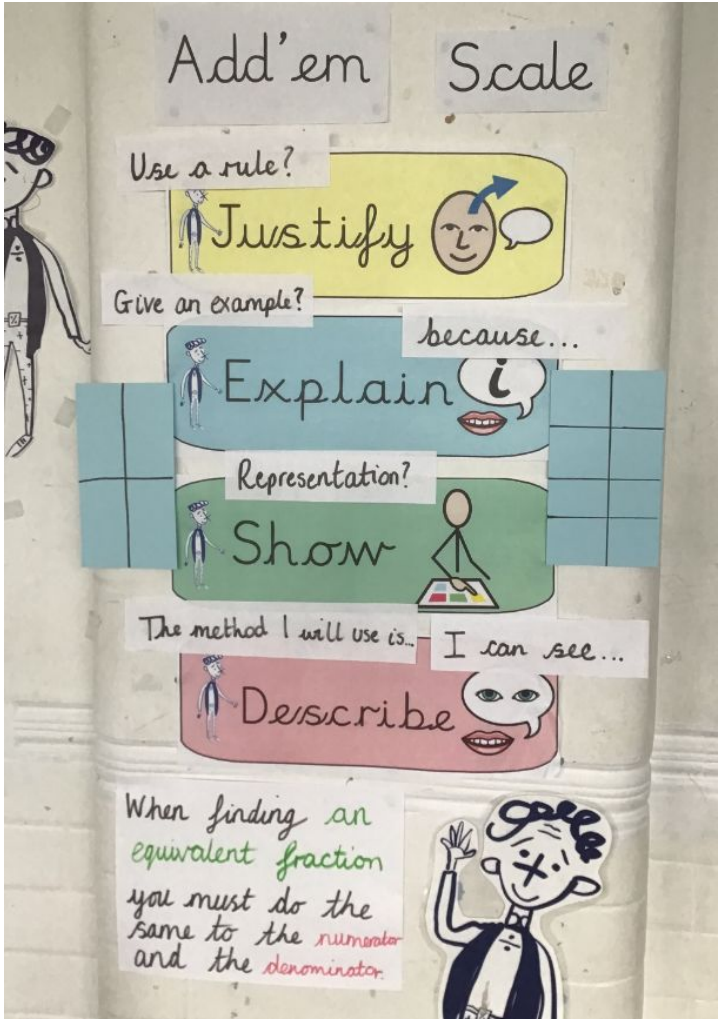
Explain why Kirsty is **not** correct.

"I know that an acute angle is…"
"I know that an obtuse angle is…"

"The smallest an acute angle can be is…"

"A representation I could use is…"

"In my representation, I can see that…"



Current at home practice:

https://www.londonsouthwestmathshub.co.uk/current-projects/greater-depth-2016-2017

https://mathsframe.co.uk/en/resources/resource/486/Y6-Arithmetic-Practice

https://nrich.maths.org/9415