Maths At Europa

YEAR 5 - YEAR 6
Introduction to Teaching and Learning

Plan for session:

Approach to maths at Europa

Overview of learning in maths.

Expectation of what the children will cover in Year 6

Throughout there will be guidance on how to support at home.

Mastery in Maths

At Europa we believe children's chances of success are maximised if they develop deep and lasting understanding of mathematical procedures and concepts.

We deliver lessons based around the most recent pedagogy in mathematics - focusing on a Mastery Approach which ensures a concrete - pictorial - abstract exploration of number. This leads to a familiarity and understanding with the base ten system and a basic fluency which should enable success in their mathematical future.

The curriculum gives access to concepts for all, with an acquisition of depth rather than acceleration through content.

It allows for Mathematical talk, Exploration and Problem Solving & Reasoning to take place.

Legacy Mathematics/ Mastery in Maths / Bilingual Teaching

As a former European School we followed the European maths curriculum.

Children are immersed in two languages throughout their school life, we incorporate the Maths Mastery theory and practice but also build in teaching and learning styles that mirror national syllabi.

This is integrated with English National Curriculum expectations for assessment and ensuring that we teach to the children in front of us.

The approach to maths Teaching and Learning goes through the Concrete- Pictorial - Abstract cycle and Year 5 children may have missed out on some of the firm foundations at the end of KS1 due to covid.

In KS2 so far

- Count up to 100 000 and put numbers up to 100 000 in the correct order

- Addition and subtraction

- Multiplication and Division

- Fractions

- Geometry

- Measurement

- Statistics

-Maths Reasoning - Explain why . . .

Couple of new topics

Algebra

Ratio & Proportion

The Importance of Mastering 1 - 10

Deeper understanding helps children in their learning later on in school.

How does knowing how numbers are 'made' help children?

I know that 8 is made of 5 and 3 so I will also know...

$5 + 3 = 8$

$50 + 30 = 80$

$500 + 300 = 800$

$8 - 3 = 5$

$80 - 30 = 50$

$0.5 + 0.3 = 0.8$
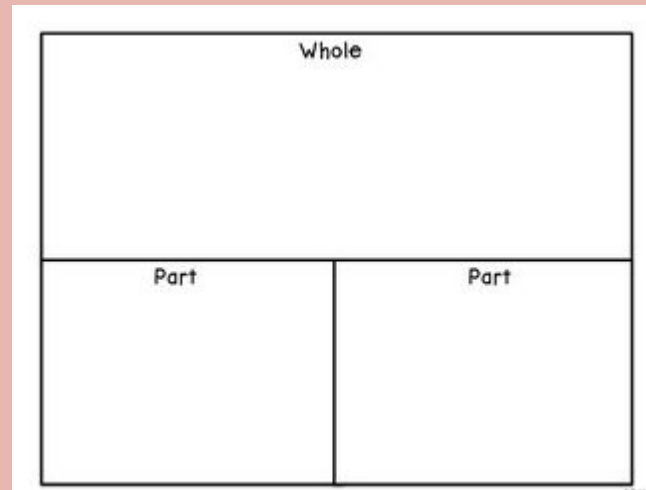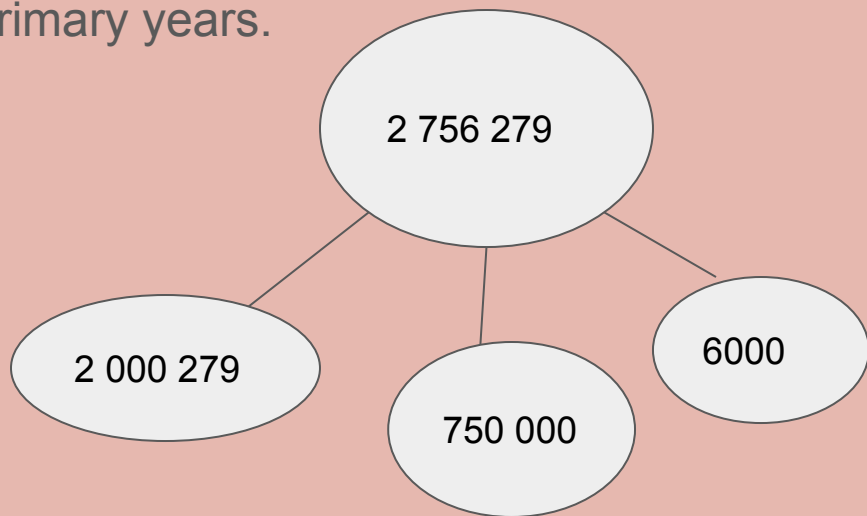
$0.8 - 0.3 = 0.5$

NCETM

Place Value

$$1,300,450 = 1,000,000 + \boxed{} + 400 + 50$$

Composition and decomposition of number

But also flexibility in splitting a whole into parts as has been learnt throughout primary years.

2 756 279

2 000 279

750 000

6000

Whole

Part

Part

Building Blocks throughout primary, skip counting in 10s, adding and subtracting 100s, 1000s etc.

Write the number that is **one thousand more** than 19,039

Write the number that is **one hundred less** than 19,039

1,000,000									
500,000					500,000				

1,000,000									
250,000		250,000		250,000		250,000			

1,000,000									
200,000		200,000		200,000		200,000		200,000	

1,000,000									
100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000

Addition / Subtraction - methods

Children will practice formal column addition and subtraction.

Just as important: Flexibility in Mental calculations.

To be able to do this effectively the children need to have additive reasoning skills with an ability to cross over tens, hundreds, thousands.

The complete understanding and fluency within the base ten system allows for connections to be made and a deep understanding of the method not just following the process.

It is essential that children understand when the columnar structure is not appropriate and that they can utilise more efficient methods.

Understanding and utilising inverse operations.

What do you notice?

Deliberate fluency practice

Which can then help children explore connections in number and hopefully ensure that they do not calculate when presented with:
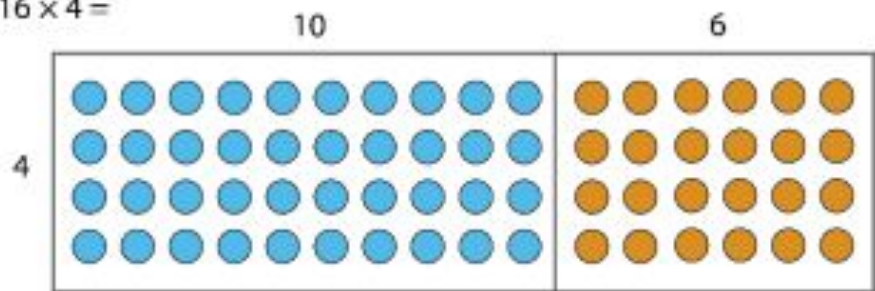
8000 + 413 ◯ 8005 + 408
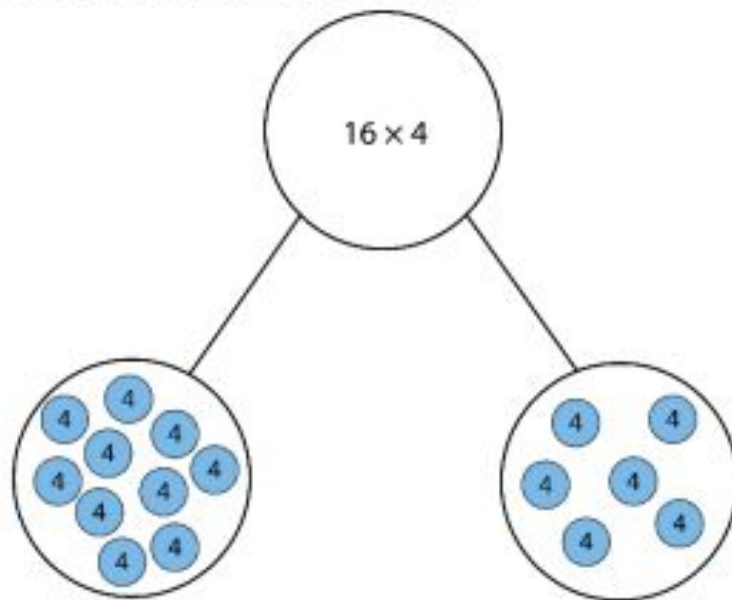
< > =

999 + 99

998 + 49

997 + 199

199 + 99 + 49

Multiplication and Division

Distributive law could be applied to the calculation 16×4 in the following ways:

$16 \times 4 =$

$16 \times 4 =$
$10 \times 4 + 6 \times 4$

16×4

Multiplication and Division

Using knowledge of Place Value, number, structures and operations.

Write the missing number to make this **division** correct.

$$15{,}000 \div \boxed{} = 75$$

Using knowledge of how to manipulate equations and the place value and X/ by powers of ten

$$754 \times 6 + 754 \times 3 = 754 \times \boxed{}$$

Multiplication - Distributive law

Multiplication and Division

Formal Methods and Efficient calculations

a. Describe the different methods Ezra and Ling have used. Which is the most efficient and why?

Ezra's method:

472×30

```
      4   7   2
  ×           3
  _____
  1   4   1   6
  _____
      2
```

$1,416 \times 10 = 14,160$

Ling's method:

472×30

```
          4   7   2
  ×           3   0
  _____
  1   4   1   6   0
  _____
          2
```

b. What strategy can be used to solve the question?

> Raksha has 2,000 ml of water, which she pours into five glasses. Nic has 800 ml of water, which she pours into four glasses. Who has more water per glass and by how much?

Fractions, Decimals and Percentages

Year 5 there has been an emphasis on understanding decimals and the interconnectedness of fractions, decimals and percentages.

Including reading, writing, ordering and comparing decimals up to three decimal places.

Reading and writing decimals as fractions and vice versa.

Calculations and rounding with decimals.

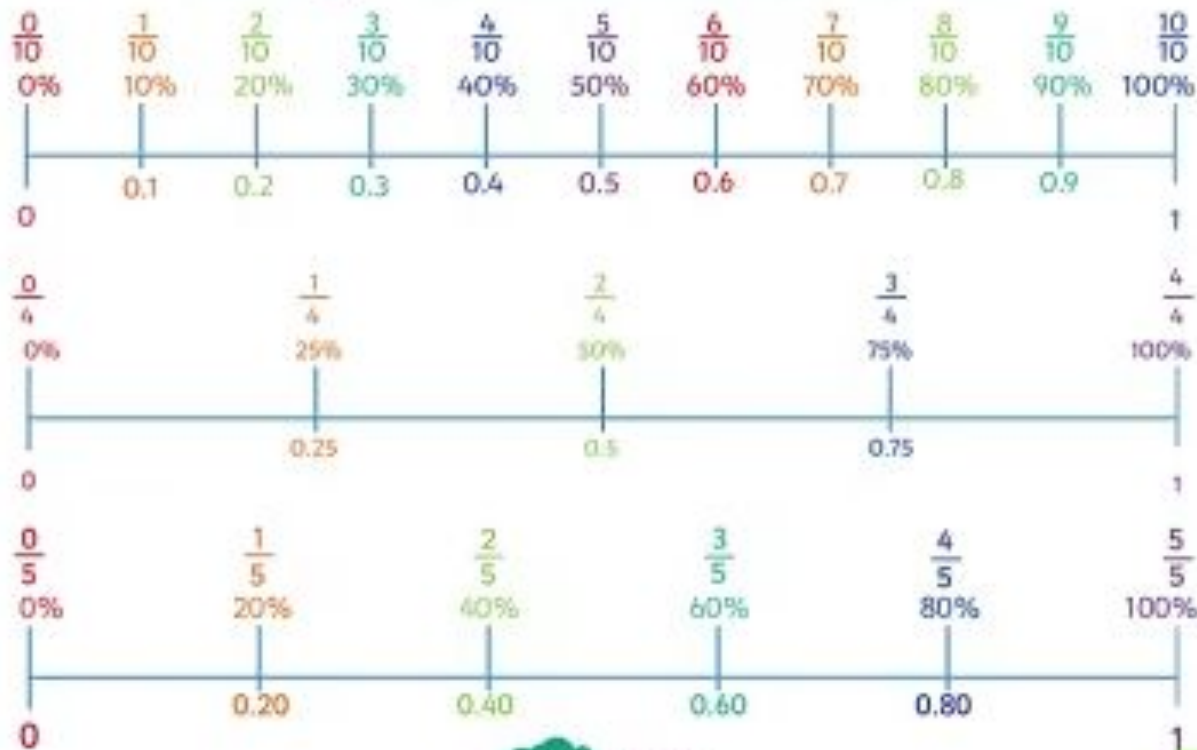Recapped and extended upon with heavy focus on Percentages -

Children will have been introduced to percentages in Y5 exploring 100 as a denominator, next in Y6 they make further links to decimals and hundredths as a fraction.

Fractions, Decimals and Percentages

Percentages Decimals and Fractions Numberlines

Problem Solving and Reasoning

Odd one out

Power of mistakes

What method?

Why? Support or Challenge?
Show me in another way.

Cars and motorbikes are parked in a street.

car
4 wheels

motorbike
2 wheels

Stefan counts 3 motorbikes and 5 cars.

He counts **28 wheels** altogether.

Explain why Stefan **cannot** be correct.

Amira says, 'To work out a fraction of a number, you multiply the number by the numerator of the fraction and then divide the answer by the denominator of the fraction.'

Do you think that this is always, sometimes or never true?

Explain your reasoning.

Which is the odd one out?
$\frac{2}{5}$, 0·4, $\frac{4}{10}$, $\frac{3}{6}$, $\frac{6}{15}$

Explain your choice.

Possible at home support for your children.

Consolidation of place value to a million;

Revision of times tables

Consolidation of fractions, decimals and percentages

Problem Solving and Reasoning.

BBC Bitesize is a great digital resource

https://www.bbc.co.uk/bitesize/subjects/z826n39

NRICH for problems solving https://nrich.maths.org/primary

https://mathsframe.co.uk/en/resources/category/22/most-popular

In school

Time to help?

Google form

And an offer to send extra KS2 support ideas.

Any Questions?