

Maths Fluency

At

Tonwell St Mary's

Mental Fluency is key to success

There is so much more than just holding numbers in your head.

Number fluency - Aims

- Three key goals – efficiency, accuracy and flexibility.
- **Efficiency** – children have strategies that they understand, that don't have too many steps, where they can keep track of their working etc.
- **Accuracy** – children can record carefully, use known facts correctly and check their answers.
- **Flexibility** – children can choose appropriate skills and strategies to solve problems.



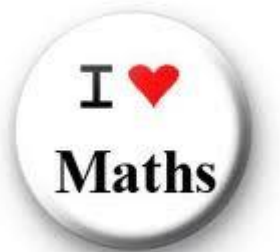
Mental Calculation

Mental calculation requires familiarity with:

- place value and partitioning;
- knowledge of number facts, such as number bonds to 10;
- the size of numbers and where they fit into the number system;
- the relationships between operations

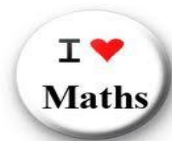
Skills of Mental Calculation

- Remembering number facts and recalling them without hesitation
- Using facts that are known by heart to figure out new facts
- Applying understanding of place value and ability to partition numbers into parts
- Understanding and using the laws of arithmetic and relationships between the four operations to find answers and check results
- Having a repertoire of mental strategies to do calculations, with some thinking time
- Solving word problems

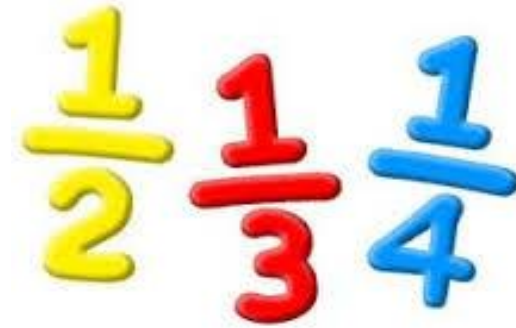
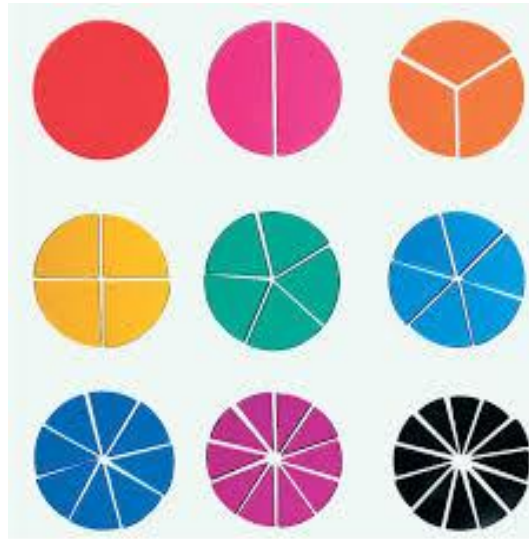


Children, who are confident with number, have 4 pillars which underwrite calculation.

1. A good understanding of place value
2. A good bank of number facts
3. Have a good set of images and models
4. A good ability to double and halve



CPA



CONCRETE ➤ PICTORIAL ➤ ABSTRACT

Destination Questions

- These are questions and problems that children work on once they have reached certain stages in their lessons.
- The idea is for them to have a try independently to demonstrate their understanding of the learning.
- Here are some examples of Destination questions for Year 1 to Year 6.

Destination Questions

1 



How many?

2 



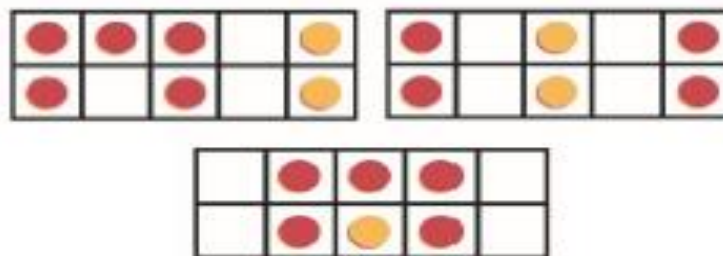
What's the same, what's different?

3 



Draw the additional dots to make this 6.

4 

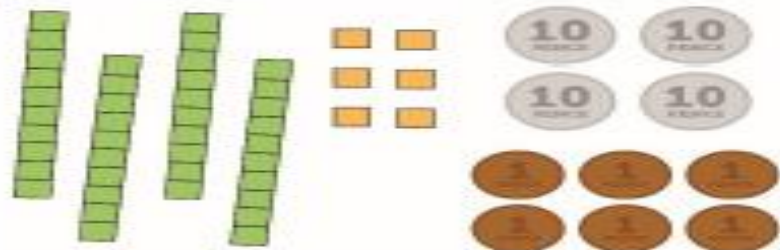


Decide which one is your odd one out and why?

Year 2

Destination Questions

1



What is the same, what is different?

2



Make this number with base-10 and in a part whole model

3

I have 17 ones and I am between 40 and 50.
Who am I?
How many tens do I have?

4

These two calculations are the same.

What is the missing information?

$$5 \text{ tens} + \square = 52$$

$$\square + 22 = \square$$

5

Numbers can only be regrouped into tens and ones like this:

$$37 = 30 + 7$$

Can you prove that this statement is incorrect?









6



Which one is the odd one out?

Can you explain why?

Year 3

Destination Questions 		
<p>1 </p> <p>True or false? You always look at the highest place value column first when ordering any numbers. Use some examples to prove your decision.</p>	<p>2 </p> <p>If you ordered these numbers from smallest to largest, what would the 4th number be?</p> <p>483 421 412 338 491</p>	<p>3 </p> <p>Prove that 289 is closer to 300 than 315.</p>
<p>4 </p>  <p>Think of a number that each of the ? could be.</p> <p>Think of a number that each of the ? definitely cannot be.</p> <p>Explain your reasoning for both.</p>	<p>5 </p> <p>Circle the numbers that could be rounded to 300.</p> <p>339 299 401 251 306</p>	<p>6 </p> <p>How many different numbers can you show me that would be 500 when rounded to the nearest 10?</p>

Year 4

Destination Questions

1



Emma is calculating

$$4536 - 1955$$

Which calculation should she use to estimate her answer?

2



True or False

$$84 + 47 = 64 + 67$$

3



How many different ways can you solve

$$3622 + 589$$

4



Given: $174 + 352 = 526$

Complete this calculation

$$153 + \square = 526$$

5



Complete this calculation

$$395 - 142 = \square - 149$$

Year 5

Destination Questions

1 🌟

Write the missing numbers in each sequence:

170,000 180,000
 23,450 23,550 23,750
952,000 951,998

2 🌟

Spot the mistakes:

5,505 ~ Five thousand, five hundred and fifty

2,400 ~ Twenty-four thousand

3,010,002 ~ Three hundred and one thousand and two

26,030 ~ Twenty-six thousand and thirteen

3 🌟

Write the number that is ten more than nine hundred and fifty thousand, nine hundred and fifty two.

4 🌟

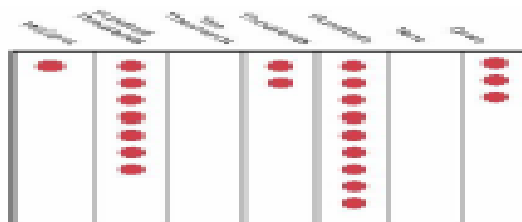
What digit could be inserted to make this statement true?

$$346,3\boxed{6} > 346,346$$

5 🌟



6 🌟



If you have 3 more counters, what other numbers could you make?

7 🌟

Write 3 numbers which rounded to the nearest 1,000 would be:

3,000

57,000

204,000

8 🌟

Round the number 159,996 to the nearest 1,000, then the nearest 10,000.

What do you notice?

9 🌟

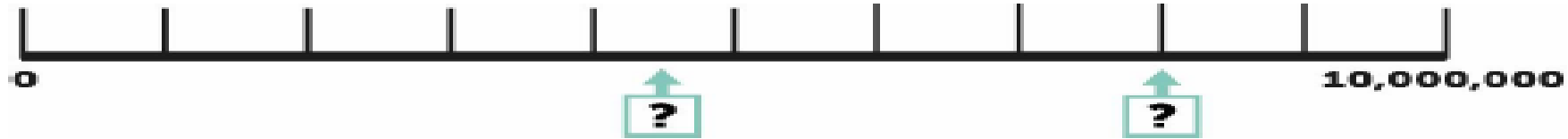
If the population of the UK was approximately 65,300,000, what is this to the nearest million?

What is the largest actual population that would round to the same nearest million?

Year 6

Destination Questions

1 



What could these numbers be?

2 

Write the number that is one hundred less than 3 million in numerals and in words.

3 

What is the third largest number in this set?

12,324.5 12,567 12,604 1,458.69

4 

What digit could be inserted to make this statement true?

$23,763.\square 12 > 23,763.829$

5 

What is the largest whole number which, when rounded to the nearest 10,000, gives 80,000?

6 

20 hundreds = thousands
600,000 = hundreds
twenty thousand = tens

7 

Round 4,782.50

to the nearest 100

to the nearest 1,000

to the nearest whole number

8 

Circle 2 numbers with a difference of 4.

-0.5 1.5 4.5 -2.5 -3.5

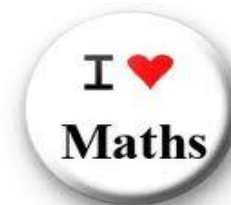
9 

Day temperature = 12°C
Night temperature = -5.5°C

What is the difference between the temperature at night and during the day?

What can you do to help at home?

- Have a **positive attitude** to maths!
- **Talk maths** with your child e.g. "How much change will I get from...?", "How many obtuse angles can you see around us?"
- Involve children when taking measurements or weighing items
- Give children opportunities to use money to shop, check change etc.
- Talk about the mathematics in sport e.g. What does the dart player need to land on to win? Are there others ways to achieve that score?
- Encourage quick recall of multiplication and division facts.
- Look at number puzzles/challenges from newspapers.
- Play board and card games together.
- **Share strategies and methods** (allow your child to be the expert)
- When helping your child calculate, use the method that yo has been taught.



Any Questions?

