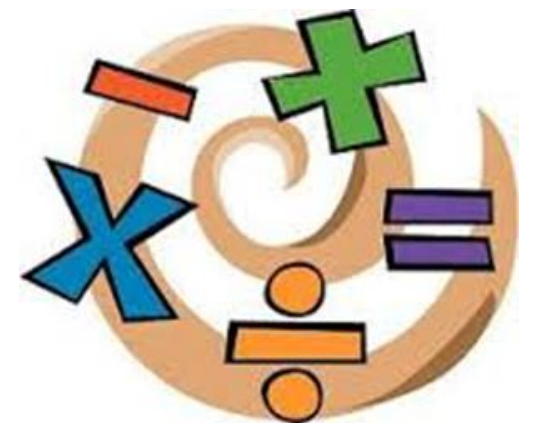


# ***Maths Mastery Parents' Session***



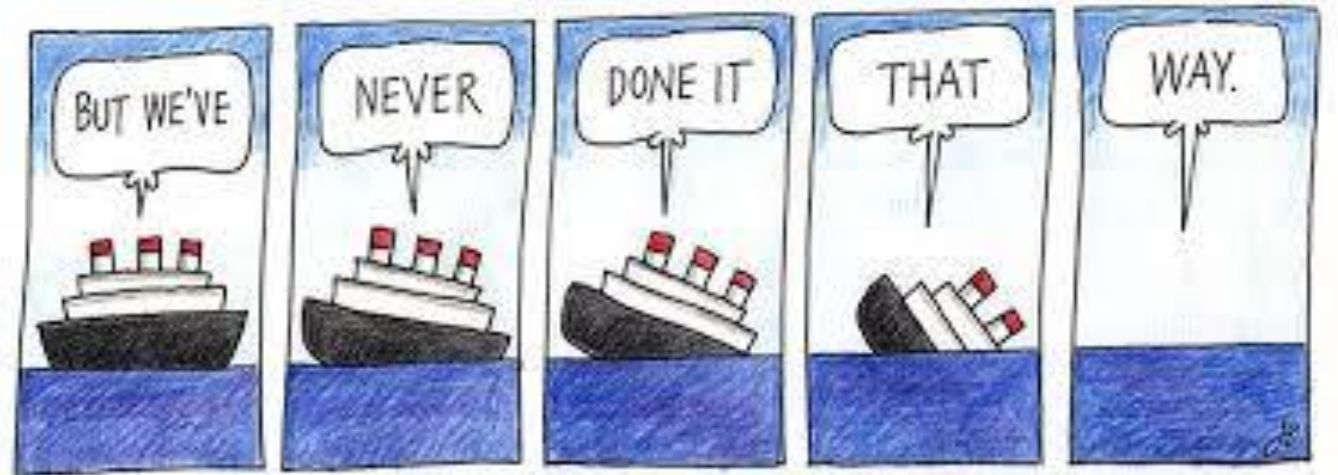
# Aims of this session:

- To gain an insight into maths
- To understand the mastery approach and how it is taught.
- To give ideas for supporting maths at home – making it fun!



# How and Why did the Mathematics Mastery Approach Develop:

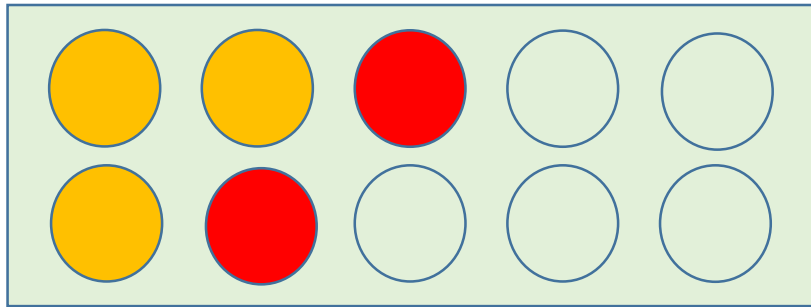
- Too many children are falling behind
- Not enough children are excelling
- Teaching has been focused on procedures over understanding
- Negative attitudes towards maths ability and enjoyment



# A Maths Mastery Curriculum

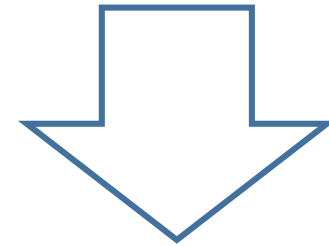
- High expectations for every child
- Few topics, greater depth
- Number sense and place value come first
- A research based curriculum
- Concrete, pictorial, abstract
- Problem solving is central – Answer, Prove, Explain
- Language and Communication lead to understanding
- Challenge is provided through an increased depth, rather than acceleration of content



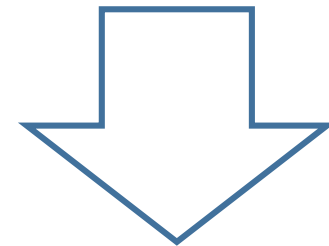


$$3 + 2 = 5$$

Concrete



Pictorial


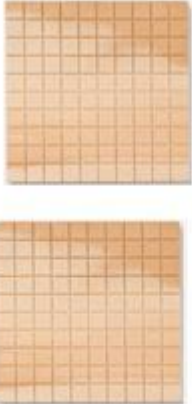
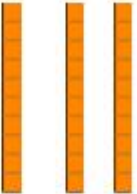



Abstract

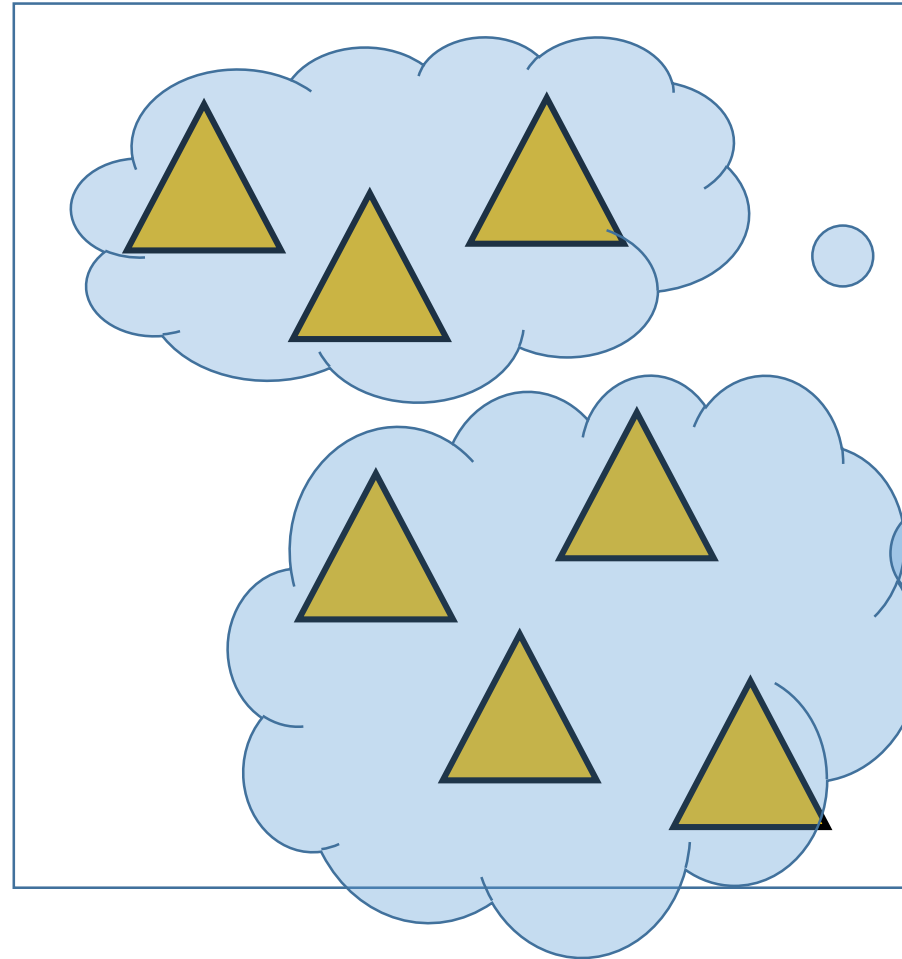
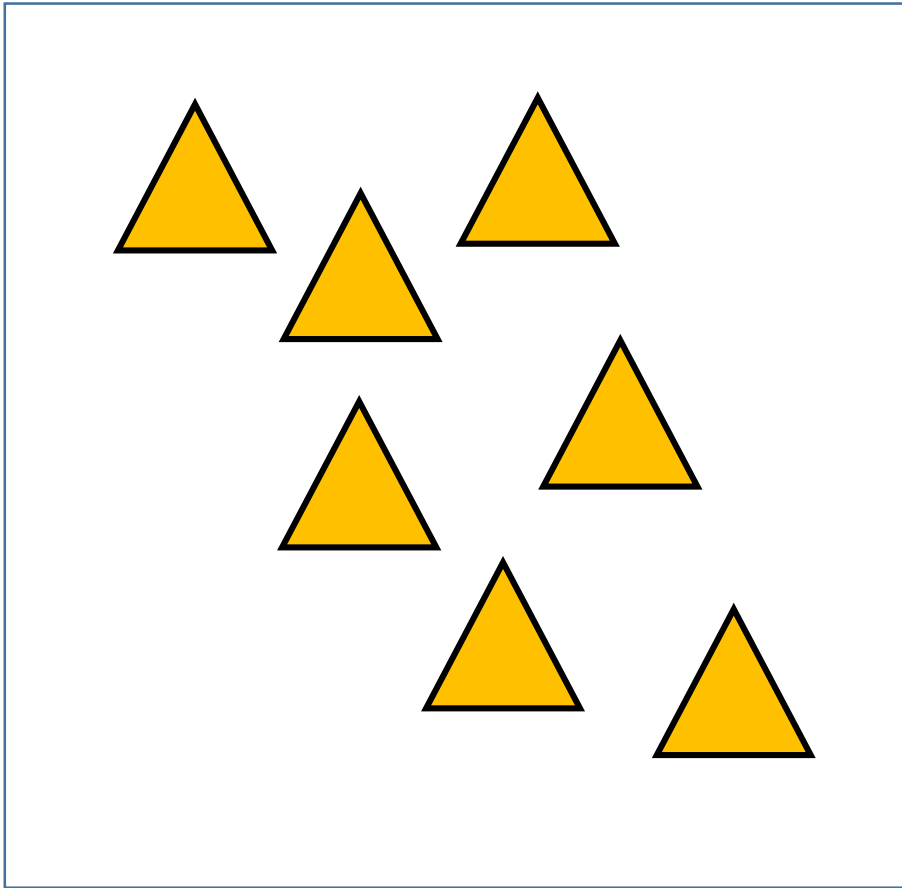
# Place Value

Place value is at the heart of the number system. All digits have a value and a secure understanding of this will enable children to use and understand different calculation methods.



thousands	hundreds	tens	ones
1	2	3	9
			

# Developing mental “counting” skills through addition of small “subitized” amounts



e.g.

3

+

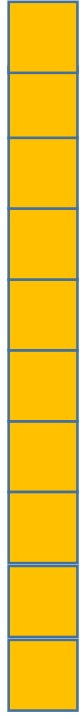
4

=

7



10



10



23

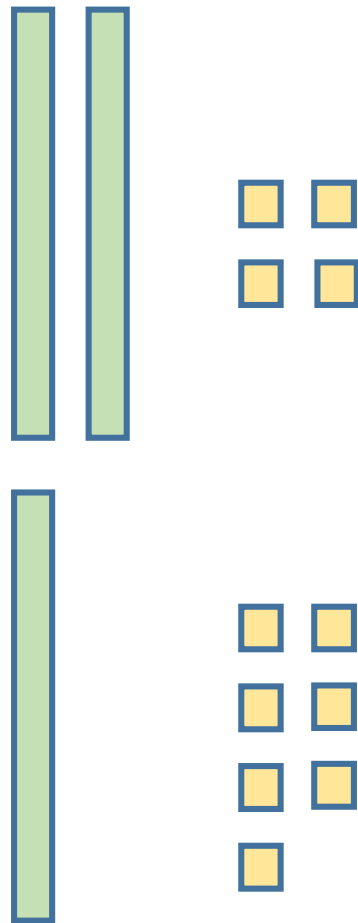


17



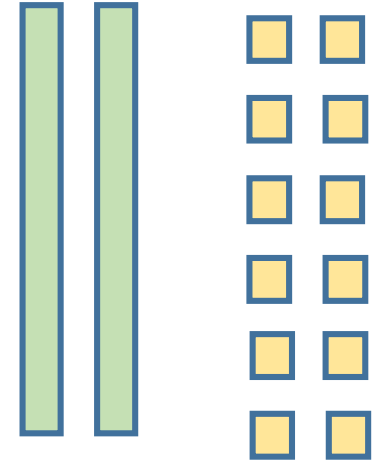
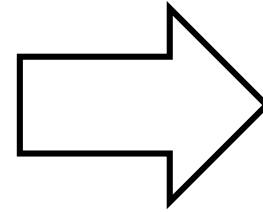
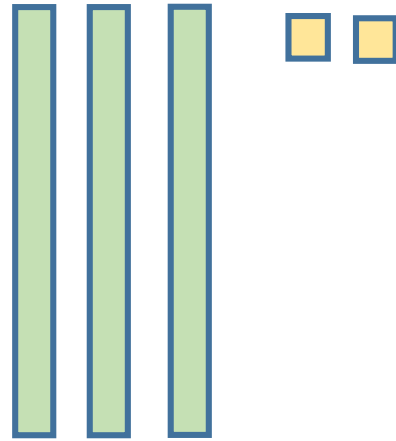
Develop column addition using manipulatives to scale

$$\begin{array}{r} 1 \\ 24 \\ + 17 \\ \hline 41 \end{array}$$



# Develop column subtraction using manipulatives to scale

$$\begin{array}{r} \overset{2}{\cancel{3}}\overset{1}{2} \\ - 14 \\ \hline \end{array}$$

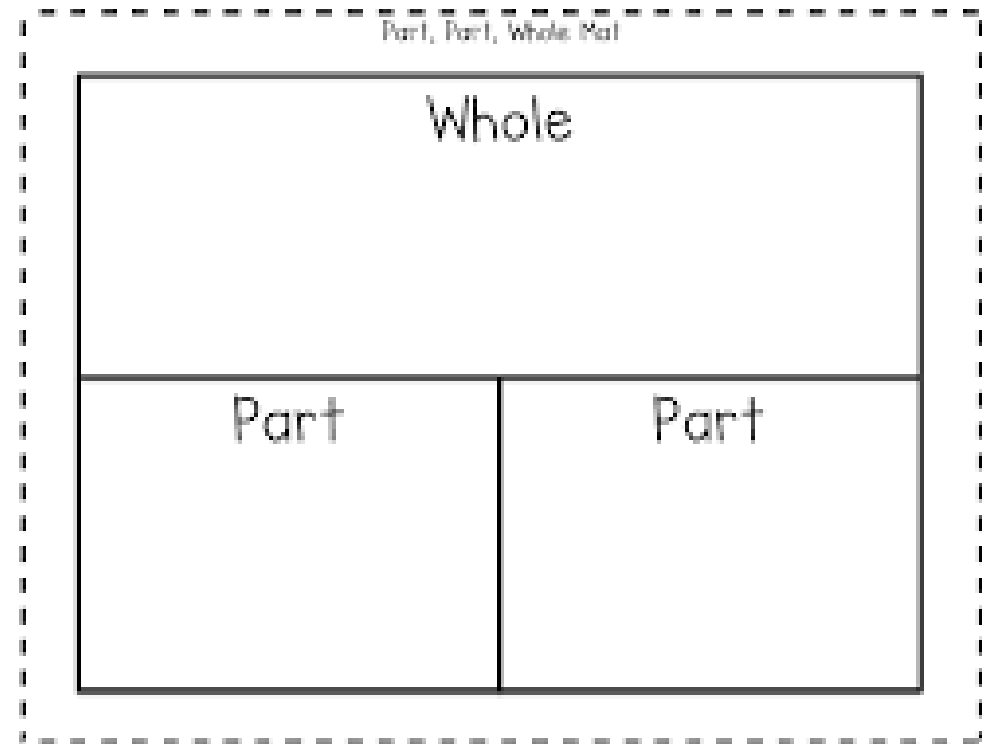


## Keep it simple!

Maths is not always about 'big' numbers and times tables – it is about being able to apply concepts to different situations, problem solve, and find different strategies to check working.

e.g. '12 + 6 = 18'

- How do you know?
- Can you show me this as a picture?
- What are the parts of 18?
- How can you check that is correct?
- What would 6 + 12 be?
- Can you say that in a number sentence?



Find missing values in a number sentence

$$7 = \square + 3$$

$$\square + 3 = 8$$

$$10 = \square - 3$$

$$12 - \square = 8$$

**The vocabulary:**

**'ones' not 'units'**

**exchanging not borrowing**

**'calculations' or 'equations' not 'sums'**

**When carrying put the number above not below.**

**Always put operation on the left**

# **Multiplication and division**

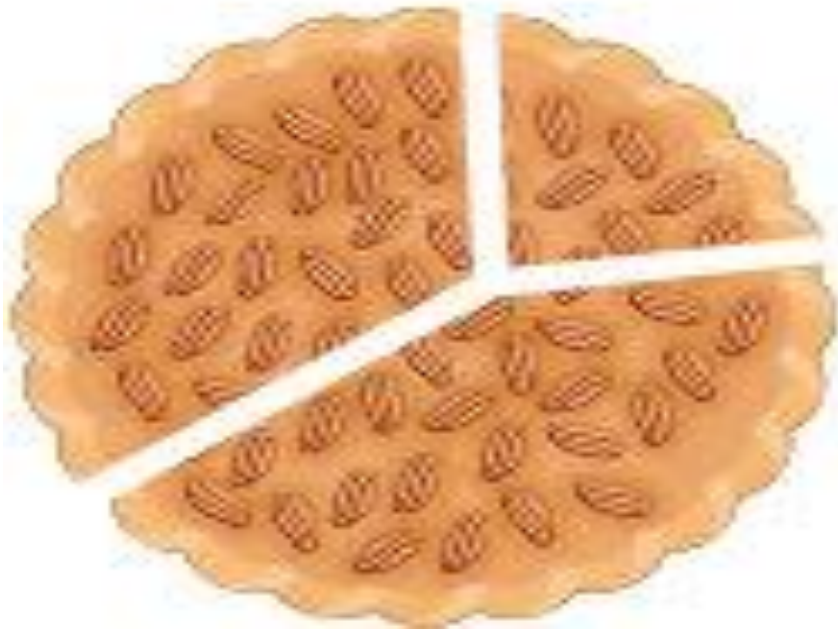
**Fractions**

**Misconceptions**

**Which is bigger  $\frac{1}{4}$  or  $\frac{1}{3}$  ?**

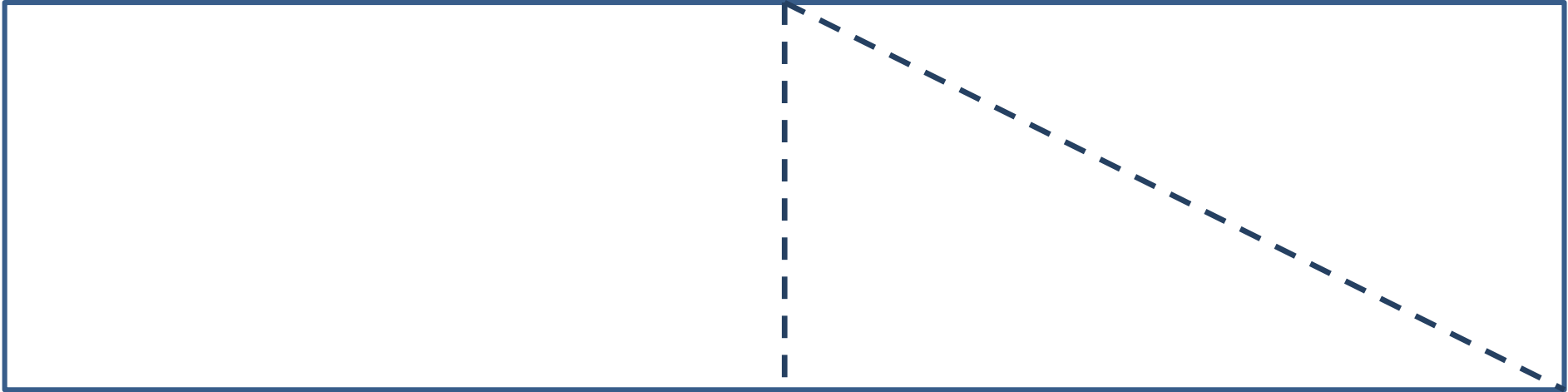
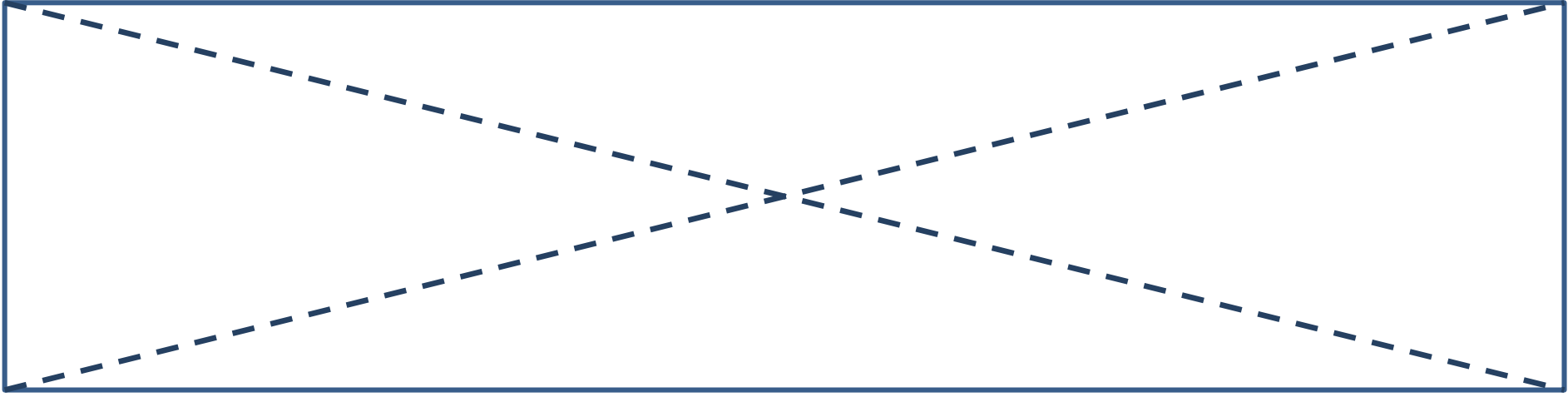
# Misconception

*Fractional pieces have to be congruent (the same shape) to be the same fraction.*



Each piece of the pie is one third.



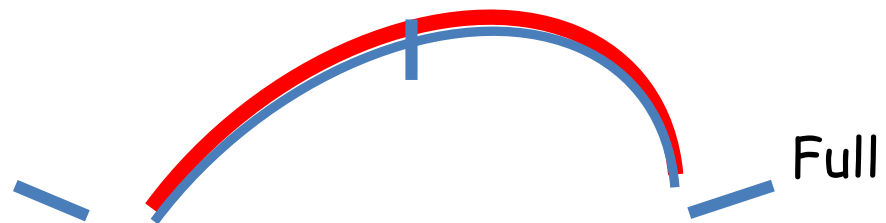


Empty



Full

Empty



Full

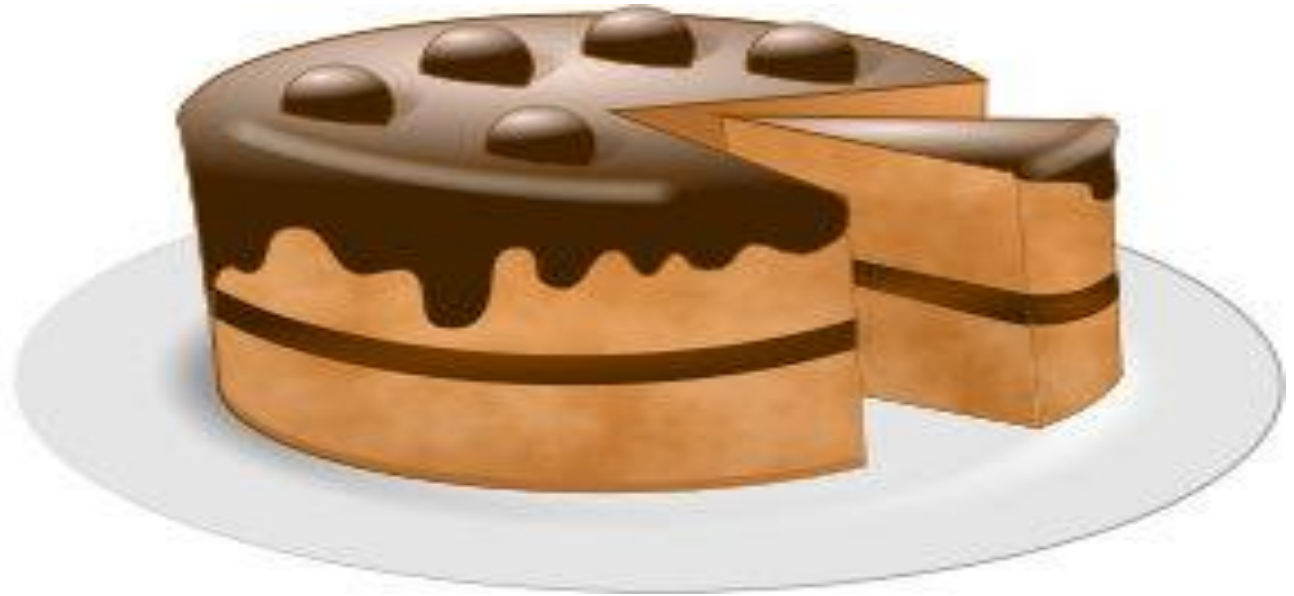


# Misconception

*The number  $\frac{1}{2}$  lies half-way between any two labelled integers on a number line.*



Would you rather have  $\frac{1}{2}$  of the bun or  $\frac{1}{4}$  of the cake ?



# And another, and another...

Give an example of a fraction that is less than a half. (Y3)

Give an example of a fraction that is more than one half but less than a whole. (Y4)

Give an example of a fraction that is more than three quarters. (Y5)

Give an example of a fraction that is greater than 1.1 and less than 1.5 (Y6)

**Programmes of study**

**True or false statements**

**Examples of questions**

## **Suggested websites**

[nrich.maths.org](http://nrich.maths.org)

[www.ncetm.org.uk](http://www.ncetm.org.uk)

[www.twinkl.co.uk](http://www.twinkl.co.uk)

**Searching for 'helping your child with maths' finds many more websites.**