

Key questions for tonight...

- ▶ What is problem solving?
- ▶ What problem solving activities are children presented with as they move through the school?
- ▶ What strategies do children learn to help them to solve mathematical problems?
- ▶ How can parents help at home?

What is problem solving?

- ▶ *Fluency* – developing mathematical knowledge and skills.
- ▶ *Reasoning* – building on existing understanding to find out new proofs and rules.
- ▶ *Problem solving* – applying knowledge and skills to find a solution to a given problem.

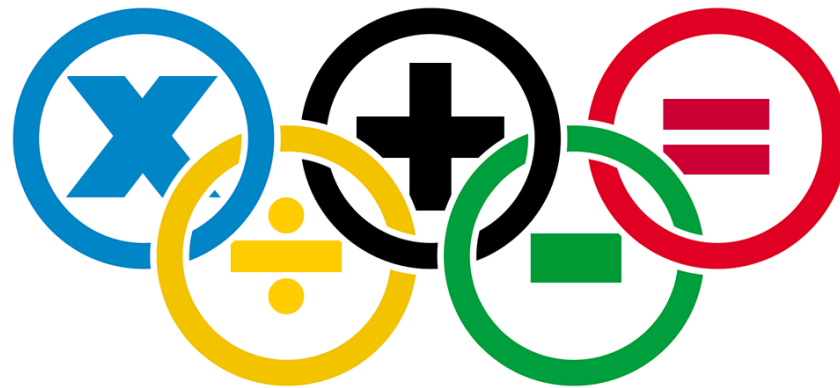
What is problem solving?

KS2 expectations

- ▶ **solve addition and subtraction multi-step problems** in contexts, deciding which operations and methods to use and why
- ▶ **solve problems** involving addition, subtraction, multiplication and division
- ▶ **solve problems** which require answers to be rounded to specified degrees of accuracy
- ▶ **solve problems** involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
- ▶ **solve problems** involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
- ▶ **solve problems** involving similar shapes where the scale factor is known or can be found
- ▶ **solve problems** involving unequal sharing and grouping using knowledge of fractions and multiples
- ▶ **solve problems** involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
- ▶ **interpret and construct pie charts and line graphs and use these to solve problems**

What problem solving activities are children presented with as they move through the school?

Time to do some maths!



What strategies do children learn to help them to solve mathematical problems?

Key questions

- ▶ What do you know and what do you need to find out?
- ▶ What calculations will you need to do?
- ▶ Would it help to represent the problem visually (part-part-whole, bar model, algebra)?
- ▶ How will you know you are right? How could you check?

Key stage 1

8

A game costs £25

Ben has £19



How much **more** money does Ben need to buy the game?

£

Key stage 1

28 There are **55** cakes.

20 boys and **19** girls each take a cake.

How many cakes are **left**?



Show
your
working

cakes

Key stage 2

6 pencils cost **£1.68**



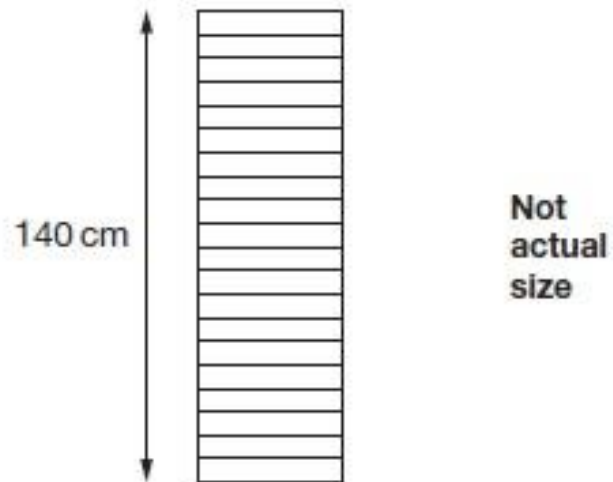
3 pencils and 1 rubber cost **£1.09**



What is the cost of **1 rubber**?

Key stage 2

A stack of 20 identical boxes is 140 cm tall.



Stefan takes **three** boxes off the top.

How tall is the stack now?

How can parents help at home?

- ▶ Real-life problems: shopping, travelling, cooking, making, planning events, eating out.
- ▶ Use the key questions and visual representations.
- ▶ Access support online, for example the [Family maths toolkit](#).