◎INSPIREMATHS

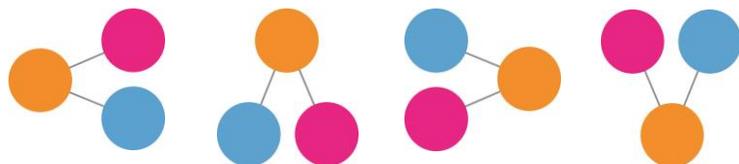## Concrete – Pictorial – Abstract

Concrete: Things you can pick up and move, for example dice, counters, shells, pebbles, straws.

Pictorial: A picture to represent mathematics, such as a calculation (printed in books or drawn).

Abstract: Numbers (1, 2, 3, 4) and symbols (+, -, x, ÷, <, >, =).

Part whole model

If you know two values, you can always find the third.

Vocabulary

Find lots of different words to say the same thing, for example add, more, increase, plus.

Problem solving

Problem solving usually involves the bar model. Encourage children to answer questions using full sentences. The bar model is usually used when solving problems.

How you can help:

Ask your child what they know about a particular number. For example, here are some facts about 12:

- It is an even number.
- It comes after 11 and before 13.
- I can write it in numbers and words.
- I can make it using 1 ten and 2 ones.
- It is a 2-digit number.
- It is 2 more than 10 and 3 fewer than 15.
- The sum of 7 and 5 is 12.
- 5 fewer than 17 is 12.
- It has 6 factors.
- It is half of 24 (a third of 36, a quarter of 48, a tenth of 120).
- It is double 6.
- It is the product of: 3×4, 4×3, 2×6, 6×2, 1×12, 12×1.
- The sum of the digits in 12 is 3.

Encourage your child to answer word problems using full sentences, and encourage them to draw pictures and models to answer questions.

Talk about maths with your child in everyday situations, such as a shopping trip or a trip to the park.

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Bar modelling   **Notes**

- Read the problem.
- Write a sentence for the answer, leaving a gap where the answer will go.
- Think about what is being asked and which model supports the question.
- Draw the bars.
- Partition or 'chunk' the bars and note which section represents the answer.
- Discuss the question and think about what is being asked.
- Write the answer in the sentence and check that the answer makes sense.
- Is there another way to draw the model and represent the question?
- What further questions could you ask using the model as a prompt?

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