

Tips to help kids understand maths

Back-to-Front Maths is pretty different to how we all learned maths at school. It uses problem-based teaching, which is a fancy way of saying “if you work it out yourself, then you will understand it forever”. The idea is to ask kids a series of questions that get them to work out how maths works for themselves, instead of just telling them how to do it. This creates those “aha” moments that make learning increase in leaps and bounds instead of progressing at a snail’s pace.

Three really important things to try and remember are:

1. Limit yourself to asking questions and pushing your kids to think and consider options rather than telling them stuff.
2. Remember that if they give you a weird answer, it is probably a misconception that they really believe. Try to get them to evaluate their idea and think it through to see if it makes logical sense rather than just telling them that they are wrong.
3. Memorisation is still really important, but if your child is having trouble understanding a concept then memorisation is not likely to help. They need to know WHY rather than just doing more of the same.

Have fun!

Number size and place value

Place value is heavily linked to relative size. Here are some good things to try with your kids:

- Take note of larger numbers as they occur (e.g. house numbers, page numbers in books). Encourage your child to read the numbers and talk about other ways they could have been written.
- Talk about numbers whenever opportunities arise. Ask questions such as “Which is bigger/smaller/the same/different?”
- Encourage students to work out how they could pay for something using different combinations of \$100 notes, \$10 notes and \$1 coins.
- Involve your children in decision making about buying furniture. Look at prices for furniture/electric goods in catalogues and talk about which is more expensive (e.g., when considering buying a new microwave or tv or fridge...). Have students tell you

what the price is. Cut out the pictures with the prices, and order them from the cheapest to the most expensive, and then write their good and bad points underneath.

- Have your children measure amounts of liquids using millimetres (e.g. 250mL, 500mL) and compare which one is the biggest. Try using smaller measuring instruments to put the total amount together and then compare to check that they are the same amounts (e.g. to make 250mL use a 100mL cup and a 50mL cup: $100\text{mL} + 100\text{mL} + 50\text{mL} = 250\text{mL}$, then compare it to your original measurement of 250mL to see that they are the same). This can be done in bath time with different sized measuring cups and jugs.
- Cut up a “hundreds chart” into a jig saw puzzle to do at home.
- Use number lines to examine relative size: For example talk about house numbers up to 100 as they occur on long streets.

Fractions

Basic understanding of fractions is pivotal to much of primary and high school maths and is one of the most difficult concepts for kids to understand. Try to build these into your regular routines:

- Involve your child in cooking activities which require half a cup of an ingredient. He/she could half fill the cup measure for you.
- When making sandwiches or cutting other foods, talk about how you cut them into halves. Use words such as half, even, equal, parts.
- Involve your child in sharing with another ensuring that each person has a fair share. Both halves need to be equal.
- Make sure that kids understand that you cannot have a “bigger half” or bigger third, or fifth or anything else. Fractions must be equal.
- Link quarters to the clock – quarter past, half past, quarter to, o’clock. Four quarters only. Not all fractions are called quarters, only fourths.
- Ordinal numbers (1st, 2nd, 3rd, 4th etc) have strong links to fractions.

Try these:

- Talk about the order in which you complete everyday activities (e.g. making a cake, putting on the washing, set the table). Use words like first, next, last, third, to describe the sequence of actions.
- Give your child directions using the language of order (e.g. “First put the rubbish in the bin and then go and do your homework”).
- Ask your child to arrange things in order (e.g. the family’s shoes). Talk about the order using words like first, second, last.