Helping your child with fluency in mathematics

Year 3

Aims of the National Curriculum

For children to become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and are able to recall and apply their knowledge rapidly and accurately.

What is fluency?

Fluency consists of three elements:

Efficiency is about not being bogged down with too many steps or losing sight of the logic of the strategy. An efficient strategy is one that a student can carry out easily, keeping track of sub-problems and make use of intermediate results to solve the problem.

Accuracy depends on several aspects of the problem-solving process, among them careful recording, knowledge of number facts and other important number relationships and double checking results.

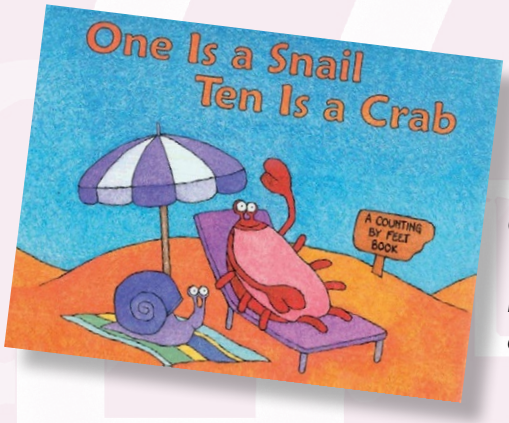
Flexibility requires knowledge of more than one approach to solving a particular kind of problem, such as two-digit multiplication. Students need to be flexible in order to choose an appropriate strategy for the numbers involved, and also to be able to use one method to solve a problem and another method to check the results.

So fluency demands more of pupils than memorising a single procedure – they need to understand why they are doing what they are doing and know when it is appropriate to use different methods. *(Russell 2000)*

How can you support your child in becoming fluent in mathematics?

Maths in Stories

When reading with your child look for opportunities to practise maths.



One is a Snail, Ten is a Crab by April Pulley Sayre and Jeff Sayre

The questions and activities below are related to the book 'One is a Snail, Ten is a Crab' by April Pulley Sayre and Jeff Sayre.

How else could you make 10, 20, 30, 40, 50 etc? Explore commutative law – 4 x 10 is the same as 10 x 4. Count up in 4, 8, 50's. Find 10 more, 10 less of the number. Look at the pets that you have in your house. Could they make similar book/sums with their own pets/toys.

Games

- Darts – add and subtract from 301 (If you don't have darts could throw balls in buckets with different values on the buckets or roll 3 dice)
- Dice – Roll two dice, find the total and then ask your child to multiply the total by the multiplication table that they are working

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on. Can they also tell you the associated division fact? E.g. the number on the dice are 4 and 5. The total is 9. 9 x 3 = 27. The associated division fact is 27÷3 = 9.

- Cards – remove the picture cards from the pack. Pick a card and ask your child to multiply it by the table that they are working on.
- Monopoly – links with money and numbers greater than 100.
- Bingo – Each person writes down 6 numbers which are multiples of 4 e.g. 4 8 12 24 36 40

  Roll either a twelve sided die or two six sided dice. If you choose two dice then add the numbers together first e.g. roll a 3 and a 4, add these to make 7.

  Multiply that number by 4.

  If the answer is on your paper cross it out.

  The first to cross out all six numbers of their number wins.

  You can also play the game using a different times table or a combination of two tables.

What's the time?

Throughout the day, ask your child the time – to the nearest minute. Use an analogue clock as well as a digital clock. Ask what the time will be in one hour from now. Investigate various things that they can do in a minute e.g. write their name.

In the Kitchen

Ask your child to help you to weigh things and measure out quantities when baking and preparing dinner. Then ask him/her to double the quantities.Look at the weights and measure on packets, bottles and tins. Choose 5 items. Ask your child to put them in order, heaviest or lightest first.

Going Shopping

When you are only buying a few things get your child to estimate how much the bill will come to. Afterwards you could also ask your child to do one or more of the following:

- Find the total of three items and tell you the change from £5, £10.
- Look at any reductions and talk about what the language means – 'buy one get one free'.
- Change the values from £ to p and visa-versa. Write these down.
- Place the cost of six items in order, starting with the lowest.
- Identify the coins that they have to use to pay for each item (fewest).

Fractions

Use 12 buttons, or paper clips or pieces of pasta. Ask your child to find half of the 12 things. Then find one quarter of the same group. Finally, find one third of the whole group. Repeat with other numbers.

This is some of the maths your child should be able to do by the end of Year 3

Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. Compare and order numbers up to 1000. Read and write numbers up to 1000 in numerals and in words. Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.Recognise, find and write fractions of a discrete set of objects.Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). Add and subtract amounts of money to give change, using both £ and p in practical contexts.Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24- hour clocks; estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight.

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