

Helping your child with fluency in mathematics

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.



*The Great Pet Sale
by Mick Inkpen*

The questions and activities below are related to the book 'The Great Pet Sale' by Mick Inkpen. If a rat with half the whiskers cost 1p, how much would a rat with all his whiskers cost? If I bought a terrapin and a tortoise how much change would I get from 20p? How much would 3, 4 or 5 pets cost? Practise counting in 2, 5's and 10's. Find the page with the Skink on. Which animal is the most expensive? Which is the least expensive? True or False? I can buy all three animals for 20p Prove it. What is a pair? Name other things that come in pairs. How many ways can I make £1.00? (Using coins). What could I buy for exactly 20p, 30p, 50p or £1.00?

Songs and Rhymes

Sing or say songs with your child will help them in both literacy and maths, such as 'Inchworm' by Danny Kaye – How far can you double?

Games

- Snakes and ladders – asking how many more till you reach 100
- Darts – subtract from 100

Walking to School

On the way to school look out for numbers up to 100, such as 64 or 78 on house doors, number plate, bus stops etc. Which is the biggest number on the number plate that you can find?

In the Kitchen

Show your child the numbers on your measuring jugs and scales; get him/her to help you to weigh things and measure out quantities when baking and preparing dinner. Show your child the weights and measures on packets, bottles and tins.

What's the time?

Throughout the day, talk to your child about what time – how many minutes in an hour and hours in a day. When telling the time make a point of showing them the clock and explaining why. Look at o'clock, half past, quarter to, quarter past and 5 minute intervals together. Give your child a watch to wear and ask him/her the time. Count in fives and tens.

Going Shopping

When you are only buying one thing, e.g. 36p get your child to tell you how much change you will get from 40p. Ask him/her how many tens and how many ones 36p is made up from. After you have been shopping, choose 6 different items costing less than £1. Make price labels for each one e.g: 48p, 79p. Then ask your child to do one or more of the following things:

- Choose two items and find the total
- Work out the change from £1
- Add 9p to each price in their head
- Say which price is an odd number and which is an even number

- Place the labels in order, starting with the lowest
- Identify the coins that they have to use to pay for each item (fewest)

Other money activities

How much? Tip out the small change from a purse. Count it up with your child.

William has £1 he spends 40p. How much change does he receive? Link it to number bonds to 100. Spent 40p, 60p change.

This is some of the maths your child should be able to do by the end of Year 2

Compare and order numbers from 0 up to 100; read and write numbers to at least 100 in numerals and in words. Solve problems with addition and subtraction: recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity. Choose and use appropriate standard units to estimate and measure length/height (m/cm); mass(kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit. Using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume/capacity. Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value; find different combinations of coins that equal the same amounts of money. Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times; know the number of minutes in an hour and the number of hours in a day.

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