Ask the Expert

Rose Griffiths, senior lecturer in education at the University of Leicester and author of Pearson's Rapid Maths, answers your questions on supporting children's numeracy...

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I TEACH A Y4 CLASS, BUT HAVE A NUMBER OF PUPILS WHO STRUGGLE WITH THINGS SUCH AS NUMBER BONDS AND SIMPLE ADDITION. IS THERE ANYTHING I CAN DO TO SUPPORT CHILDREN IN THESE AREAS?

A

The first thing to check is that each child is confident with counting groups of up to about 20 items. Some may not be very reliable at counting, so it is no wonder that adding is beyond them. If that is the case, then start with some daily counting of small groups of objects: toy cars or animals, plastic pound coins, or anything else the child is interested in.

Set up problems in a context so that children can see why we would want to figure out how many objects there are altogether. For example, "I had 4 pencils (or cars, marbles, etc.), then my friend gave me 3 more. How many do I have now?" At first, ask the child to use real items to figure this out, or to draw them. They can then work with a partner and take turns in setting problems for each other.

Many children will begin to use their fingers in place of the objects they are adding, and soon they will learn they do not have to 'count all' each time, but instead can 'count on'. For example, if they have counted out 4 pencils, then 3 more, they do not have to count the first 4 again, but just continue, "4,5,6,7". This is the point at which children start to learn each number bond – when they have seen the sum 4+3 often enough that they think, "I already know that one! It's 7".

Children need to concentrate first of all on getting the right answer for each important number bond, and then practise to get faster. Frequent, short periods of practice are most useful, each time concentrating on a fairly small group of facts. Reassure children by showing that you can use the sums you already know to figure out the answers to others. For example, if you know 3+3=6, then 3+4 must be one more, 7. These derived facts will gradually become ones children know by heart.

Lastly, don't neglect subtraction alongside addition. It is more effective to practise the two together.

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WE HAVE Y6 PUPILS WHO HAVE AVERAGE MATHS SKILLS, OR EVEN ABOVE AVERAGE MATHS SKILLS IN MOST AREAS, BUT THEY STILL SEEM TO STRUGGLE WITH TIMES TABLES. HOW CAN WE HELP THEM TO QUICKLY CATCH UP?

A

Just as with number facts in addition and subtraction, the first step must be to make sure the child understands what is going on! One way of doing this is by using a calculator to show the child what a particular multiplication pattern would look like, both with addition and multiplication. For example, ask the child to do these sums on a calculator for the four times table:

4+4=	2x4=
4+4+4=	3x4=

and so on up to

4+4+4+4+4+4+4+4+4+4=	10x4=

From about 3x anything, it becomes very clear why it might help us to be able to use the x sign on the calculator.

Once again, short, frequent practice is helpful. For each times table in turn:

- Practise counting in the multiples of that number, up to 10x the number: "0,4,8,12,16,...40" and backwards down to 0 again, to help make those multiples feel really familiar.
- Make sure children practise 0x, 1x, 2x, 10x at first, then use those facts to derive the ones in between. For example, half of 10x will be 5x; 6x will be one more lot added to 5x.
- Don't neglect 0x and x0! Many children get muddled with these.
- Try giving a string of sums based on a particular multiple, for example, 14+7+14, which can be done as 5x7. Children can make these up for each other, working with a partner on a particular times table.
- Do learn tables facts 'backwards', too: for example, "How many 4s make 24?"

ABOUT THE AUTHOR

Rose Griffiths is the author of Rapid Maths (pearsonschoolsandfecolleges.co.uk), a resource that helps struggling learners to catch up and build confidence. It contains lots of real life contexts, lively ideas, personalised support and repeated practice.