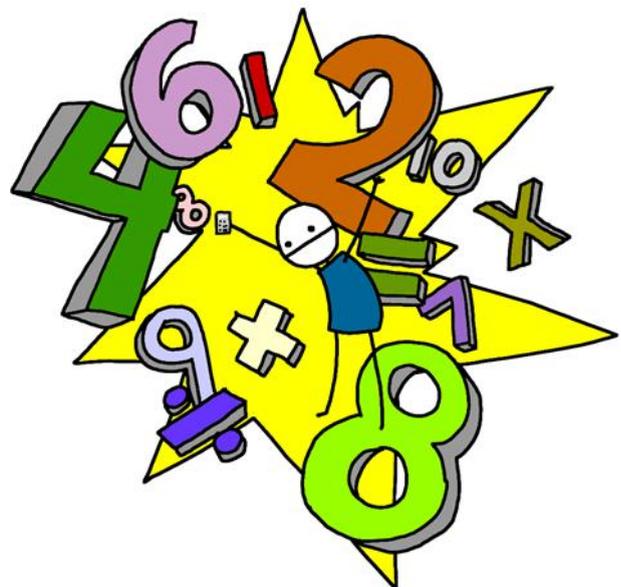




Numeracy Stages and Ideas for Parents to Assist Children with Mathematics at Home



Overview of Numeracy Stages

The Numeracy Project aims to raise the level of student achievement in mathematics. It is based on research about how children learn and is designed to teach children to think mathematically. There is an emphasis on children developing a sense of number that they can apply rather than learning by rules. You can support your child's learning in mathematics by:

- ✓ being positive and enthusiastic about mathematics yourself.
- ✓ discussing mathematical experiences with your family.
- ✓ recognising the stage of development your child is at (see below) e.g.: if your child needs to use fingers to work something out, accept this way.
- ✓ not feeling you have to know everything. Be a learner too. Get your child to show you how. They will love having you ask and will learn from explaining.

The beginning stages of development that children and adults move through are listed below. There are many real-life experiences that you can have with your child at all of these stages. It is important that your child is confident at the stage they're at before they move on. Your child's teacher will be able to discuss which strategy stage your child is working at.

Emergent

- ✓ They are learning to rote count.

One-to-one counting

- ✓ They can count up to ten objects.



Counting from One on Materials

- ✓ They can add and subtract using their fingers or objects (up to ten).
- ✓ When they add $4 + 3$ they will start counting from one.
- ✓ Children can count numbers from 0 – 20 (backwards and forwards).



Counting from One by using Images

- ✓ They can see objects in their mind rather than using real objects.
- ✓ When they add $4 + 3$ they will still start counting from one.
- ✓ Children can count numbers from 0 – 20 (backwards and forwards)

Advanced Counting (Counting On)

- ✓ When adding $4 + 3$ they will count on from four (4, 5, 6, 7).
- ✓ Children can work with numbers from 0 – 100.
- ✓ Children use skip-counting as an early means of multiplying e.g. 5×2 as 2, 4, 6, 8, 10.

Early Additive

- ✓ They can separate numbers into useful units to solve addition and subtraction, e.g. $7 + 8$ can be done as $7 + 7 + 1$ (doubles) or $9 + 7$ is the same as $10 + 6$ (tidy tens).
- ✓ Children can work with numbers from 0 – 1,000.
- ✓ They will recognise and begin to use symbols for common fractions e.g. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$

Advanced Additive

- ✓ They can separate numbers into useful units in a variety of ways to solve of addition and subtraction, and are beginning to solve multiplication and division problems.
- ✓ Children can work with numbers from 0 – 1,000,000.
- ✓ This stage could also be called Early Multiplicative



Advanced Multiplicative

- ✓ They can choose from a range of strategies to solve problems involving multiplication and division, including problems with fractions
- ✓ Students can work with decimal numbers to three places e.g. 6.23, 6.3.
- ✓ They are able to make use of more complicated strategies where one or more of the numbers may need to be broken up, manipulated then recombined.

Advanced Proportional

- ✓ They can make use of a variety of complex strategies to solve problems involving fractions, proportions, and ratios.
- ✓ Students are able to find relationships between quantities of two different measures e.g. You can make 21 glasses of lemonade using 28 lemons. How many glasses can you make using 8 lemons?



Helping your child with maths

Incidental maths in everyday family life

As adults, we use maths all the time — as we shop, figure out how much time to allot for tasks, and schedule time for cooking, eating, and cleaning. Often, our children are with us during these tasks. Perhaps they are even helping out. Why not involve them in the maths?



The everyday maths activities can be built into the things most families already do – ordinary routines such as figuring out ways to save money, to share fairly, or to get somewhere on time. With these activities, children practice adding, subtracting, multiplying, dividing, and using other important maths skills while doing tasks that are a regular part of life.

What about bookwork?



Most children will have untidy sections in their maths books especially where they have been thinking through problems. They should also have tidy sections where they will have written out important ideas or results.

Children are involved in classroom discussion and hands-on activities. Therefore there may be less formal written work in their books than in previous years. Ask them about their work and ideas.

Calculators

Children should do most calculations in their heads. They should only use pencil and paper or a calculator when the numbers are hard. There is also a place for children to explore numbers and number patterns using a calculator.



Basic Facts

Children should be able to make sense of addition and multiplication before they try to memorise their tables. When they do understand it is important that they learn these basic facts and recall them instantly. Basic facts are linked to different stages. These will include the traditional basic facts as well as others such as addition and subtraction facts to ten, facts to twenty, doubles and 'teen' numbers.

Ask your child's teacher when or how they feel it is appropriate for you to support your child in learning these facts.



Learning Basic Facts

To practise your child can:

- Draw the fact.
- Record the results in their own way.
- Record the fact as an equation.
- Write it out 5 times.
- Image it. Talk to someone else about their imaging.
- Show the fact with materials e.g. milk bottle tops or counters.
- Use the Hundreds Board to find what comes just before and just after it when they skip count.
- Discuss the related family of facts and record using tens frames to help them.
- Write a number story about it.
- Practise the fact in their mind at a spare moment.

Never say "I was no good at maths at school". This gives children the idea that maths is not fun or interesting and could affect their attitude. Even if we as adults have negative memories of maths, we should try to be positive about it. Remember, the way we were taught may have been quite different to the way maths is taught in schools today. And you may be far better at maths than you realize.

