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Helping your child

The maths that your child is learning may be different from the maths that you did at school. This is because modern maths teaching aims to make maths meaningful to children and to engage them in practical, problem-solving activities designed to build on what they already know and to pave the way for what they will learn in the next level.

Helping your child with the language of maths

There are two main reasons why children need to understand mathematical language.

- Mathematical language is needed to answer questions in lessons, to make sense of the activities or tasks the teacher gives them and to understand the questions asked in tests.
- Mathematical terms are necessary for the development of mathematical ideas and for understanding concepts. You need to understand and use the correct vocabulary to make progress in different areas of mathematics.

Children can get confused by language in mathematics for different reasons:

- Some words used in maths have different meanings in everyday life and this can be confusing. For example, table, net, area and face mean different things in real life and in mathematics. Even simple words like ‘sum’ can be confusing. This word means ‘the answer to an addition’ in mathematics, but in real life people often use it to talk about any calculation.
- Children do not understand the instructions in activities or questions. For example, when children are asked to circle the correct answer or to show two ways of finding the answer they may not know what to do.
- Some children may not have heard special mathematical terms or know what they mean. For example, product, factor, divide, subtract, or find the sum of.

What can you do at home to help children learn maths?

There are many things that you can do at home to support what your child is learning at school and to help them develop skills and confidence in maths. Some general things you can do are outlined here and activities linked to maths strands are given on separate cards.

Develop a positive attitude to maths

Be positive about your own maths knowledge and abilities. Children learn by listening and watching you. Try not to say thing like: ‘I never liked maths at school.’ Or ‘I was useless at school maths.’ Even if you don’t feel confident with maths, don’t voice this out loud. Be especially careful of suggesting that girls might not be as good at maths as boys.

- Tell and show children that everyone can learn maths and that maths is important and fun. Start by pointing out how you use maths in your daily life and then show...
them how different people in the family and community use maths in their working lives.

- Encourage persistence – children need to learn that it is OK to try different approaches, especially if the first one doesn’t seem to solve the problem.
- Offer praise and encouragement for effort and achievement.

**Point out the maths in everyday activities**

Counting and number activities can be found all around us. Point out numbers and talk about how they are used and ask children to name them to help with number recognition.

- As you go about your daily tasks, point out how you and others are using maths and encourage your child to tell you what maths he or she sees in daily activities. For example, the shopkeeper is counting the money, the tiler is putting shapes together and I am using this spoon to measure the correct amount of medicine to give you.
- Involve your child in activities that use maths – shopping, measuring ingredients, building, sewing, using public transport and gardening – all offer opportunities to talk about numbers, measures or shapes.
- Play games and do puzzles with your child – try to include number games and puzzles, logic and sorting puzzles and shape puzzles.
- Point out when you use ‘tools’ that can help with maths – for example, rulers and tape measures, a calculator, the calendar or alarm on your phone, measuring cups and containers and patterns or moulds.

**Take time to discuss problems and solutions**

Children will use different methods to solve problems. Encourage them to tell or show you how they worked out an answer. Talking about your ideas and listening to other people’s ideas helps to build understanding and teaches mathematical reasoning.

The maths your child is doing and the methods they are using to do things may be different from how you remember or were taught. Your child may also be doing less written work than you remember doing at that stage. Discuss any concerns you have with the teacher and be aware that things are done in a specific order for a reason. Teaching your child a different method of doing things before they are ready for it may in fact make things more difficult for them and prevent them from understanding and developing the concepts they need for success overall.
Your child’s teacher will introduce new words and teach the children what they mean. You can help your child learn these words by using them correctly yourself when you work through homework or do activities with your child. For levels 3 to 6, there is a glossary of key mathematical words at the back of your child’s book, and also at the end of the relevant Stage of *Homework notes for Parents*.

Encourage your child to explain what the words mean while he or she does their work. Ask them questions to make sure they can use the words correctly and tell you what it means.

Asking your child questions about what they are doing can help them develop their thinking and understanding. Here are some examples of the things you could ask.

<table>
<thead>
<tr>
<th>Before your child starts an activity</th>
<th>While your child is working</th>
<th>If your child doesn’t know what to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ How are you going to do this?</td>
<td>✓ What have you done so far? What else do you need to do?</td>
<td>✓ Why don't you tell me what you have done so far?</td>
</tr>
<tr>
<td>✓ What equipment do you need?</td>
<td>✓ Why did you choose this way of working?</td>
<td>✓ What did you do in class? How is this different?</td>
</tr>
<tr>
<td>✓ What are you trying to find out?</td>
<td>✓ Could you have chosen another way?</td>
<td>✓ Could you try this with easier numbers?</td>
</tr>
<tr>
<td>✓ What information is given?</td>
<td>✓ What does this mean?</td>
<td>✓ Have you tried using a number line?</td>
</tr>
<tr>
<td>✓ Will you add, subtract, multiply or divide to get the answer?</td>
<td>✓ Do you think this method would work with other numbers? Why?</td>
<td>✓ Do you know anything that could help you do this?</td>
</tr>
<tr>
<td>✓ Are you going to work mentally or using a written method?</td>
<td>✓ Is your answer correct? Is there a way of checking?</td>
<td>✓ Would it help to put things in a different order?</td>
</tr>
<tr>
<td>✓ What method will you use to solve the problem? Why?</td>
<td>✓ Do you think there is a faster way of doing this?</td>
<td>✓ Could you draw a picture to help you?</td>
</tr>
<tr>
<td>✓ How are you going to record your working?</td>
<td>✓ How did you get this answer?</td>
<td>✓ Would it help if you made a table?</td>
</tr>
<tr>
<td>✓ Do you need to estimate before you start working?</td>
<td>✓ Did you come across any new words in this activity? Which?</td>
<td>What else could you try?</td>
</tr>
</tbody>
</table>
What your child will be learning

In primary school there is a focus on number skills (counting and place value) and number operations (adding, subtracting, multiplying and dividing) as these are important building blocks for other concepts. But maths is about more than just numbers and your children will also be learning about measures (length, mass, capacity, time and money), shapes (flat shapes and solids), position, patterns and graphs. Children will learn these things by:

- exploring and investigating
- thinking and talking about what they are exploring or investigating
- finding information and using it to solve problems
- explaining how they worked and how they reached their answers
- learning that there is more than one way to solve a problem.

You may find that your children do less ‘written number work’ than you did when you were their age. This is because research has shown that simply practising calculations (doing lots of the same types of sum, for example) does not teach people how to apply mathematics and use it to solve problems. The new approach to maths teaching aims to make sure that all children become able to think mathematically and to help make sure children develop positive feelings about maths.

The concepts and skills that children need to learn each year are carefully planned and organised so that:

- concepts and skills are introduced at the right time and at the right level
- each year builds on what the children already know.

The curriculum for each year is divided into five strands. These are:

- Number (number sense and counting, mental strategies and calculation methods)
- Geometry (shapes, position and movement)
- Measure (length, mass and capacity, money and time)
- Handling data (organising and sorting data and drawing diagrams and graphs)
- Problem solving.

Although problem solving is a separate strand it is not taught separately because it is built into all the other strands.
Homework notes for Parents

By the end of Stage 1 your child should be able to do the following:

<table>
<thead>
<tr>
<th>Number</th>
<th>Geometry</th>
<th>Measures</th>
<th>Data Handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Count forwards to 100 and backwards from 20</td>
<td>✓ Name and sort common 2D and 3D shapes, describe their features and use them to make patterns and models</td>
<td>✓ Know all local coins and show how to pay an exact amount</td>
<td>Answer questions using: ✓ block graphs and pictograms  ✓ lists and tables  ✓ Venn diagrams and Carroll diagrams</td>
</tr>
<tr>
<td>✓ Read and write numbers to 20 and count up to 20 objects</td>
<td>✓ Give sensible estimates of up to 30 items</td>
<td>✓ Use language of comparison (longer/shorter, heavier/lighter)</td>
<td>✓ Count in tens and twos within a given range and say the number 1 or 10 more or less than a given number</td>
</tr>
<tr>
<td>✓ Count in tens and twos within a given range and say the number 1 or 10 more or less than a given number</td>
<td>✓ Use knowledge of place value to order and position numbers</td>
<td>✓ Begin to know and use some units of time</td>
<td>✓ Use pairs to 10 to add more than two small numbers and use pairs to bridge 10 when adding and subtracting</td>
</tr>
<tr>
<td>✓ Use knowledge of place value to order and position numbers</td>
<td>✓ Know all number pairs to 10 and the related addition and subtraction facts</td>
<td>✓ Order the days of the weeks and other familiar events</td>
<td>✓ Know doubles to at least 5 and use known doubles to find near doubles</td>
</tr>
<tr>
<td>✓ Know all number pairs to 10 and the related addition and subtraction facts</td>
<td>✓ Find halves of even numbers to 10</td>
<td>✓ Name and sort common 2D and 3D shapes, describe their features and use them to make patterns and models</td>
<td>✓ Name and sort common 2D and 3D shapes, describe their features and use them to make patterns and models</td>
</tr>
<tr>
<td>✓ Use pairs to 10 to add more than two small numbers and use pairs to bridge 10 when adding and subtracting</td>
<td>✓ Begin to understand how addition and subtraction work and use the symbols +, – and =</td>
<td>✓ Recognise line symmetry</td>
<td>✓ Answer questions using: ✓ block graphs and pictograms  ✓ lists and tables  ✓ Venn diagrams and Carroll diagrams</td>
</tr>
<tr>
<td>✓ Know doubles to at least 5 and use known doubles to find near doubles</td>
<td>✓ Find halves of even numbers to 10</td>
<td>✓ Use everyday language to describe the movement of objects</td>
<td>✓ Share objects to make two equal groups</td>
</tr>
<tr>
<td>✓ Begin to understand how addition and subtraction work and use the symbols +, – and =</td>
<td>✓ Share objects to make two equal groups</td>
<td>✓ Use everyday language to describe the movement of objects</td>
<td>✓ Share objects to make two equal groups</td>
</tr>
</tbody>
</table>

Nelson International Mathematics
Number

What your child will be doing this year

This year your child will learn to count (up to at least 100), to use numbers to say how many items there are in a set, and to do simple calculations in a low number range. A good understanding of numbers and how they work can help your child in all areas of maths.

How this topic is taught at this level

Young children need lots of experience of making numbers, counting items, drawing items and talking about numbers. Children will rote count by repeating number names (chanting) as well as through rhymes and songs. They will learn to match objects to numbers using practical equipment. At this level children should be encouraged to:

- touch each object as they count it and say the number name
- arrange the objects in a way that can help them to count them
- repeat the count to check that the total is the same, especially if the objects they are counting have moved.

When children start to do simple calculations they will use real objects and number lines to help them keep track and see what they are doing. For example, to divide objects into two groups, they will actually share them out.

Some ideas for supporting learning at this level

**Point out numbers in and around the home.** Go on a number hunt with your child: you will find numbers on houses, clocks, calendars, timers, signs, adverts and many other places. Encourage your child to look at and say the individual numbers. Talk about what the numbers are used for – remember, some numbers are just labels (such as telephone numbers, and numbers on number plates), while others have a specific meaning (prices, times and sports results).

**Count everything as often as you can.** Count toys, steps as you walk, kitchen utensils as you set the table or washing as you hang it out. As your child becomes more confident, count in twos, fives and tens. When you read to your child count the items on the pages and talk about ‘how many’ there are. Once children can count, start at any number and let your child order the numbers and count forwards and backwards, for example, say things like, ‘We are on page 8 of this book, what page comes next?’ ‘What was the page before this?’

**Every culture has rhymes and counting songs.** Teach your children the ones that you know and use them to develop counting forwards and backwards.

**Play games with dice (or playing cards).** Roll the dice (or draw a card) and say, make (show with your fingers or count out objects) or write the numbers shown on it.
Use everyday contexts to solve number problems. For example, ‘I need six spoons to set the table. I only have two. How many more will I need?’ ‘You have two pillows on your bed and your brother has one pillow on his bed. How many pillows is that?’ ‘Uncle Sami is coming to dinner tonight. How many chairs will we need for all of us?’ ‘I rolled double 2 on the dice. How many points do I get?’ and so on.
Geometry

What your child will be doing this year

Your child will learn the names of flat (2D) shapes and solid objects, sort these using their features and use them to make patterns and models. They will also learn to recognise basic line symmetry and use everyday words to talk about direction and distance.

How this topic is taught at this level

Children learn about shapes and their properties by handling them, moving and making them, folding them and using them to build models and make patterns. Many of the activities your child does at this level will be practical.

Some ideas for supporting learning at this level

Use the language of shapes in everyday life. Point out the shapes of objects that you use at home and refer to their size and shape. For example, pass me the big round plate, take the largest can of jam off the shelf.

Find shape patterns in the environment. Fabrics, tiles, toys, wrapping paper, designs on crockery and natural objects are all useful for this. Encourage your child to say what shapes he or she can find in the patterns and to use the language of size and comparison to talk about this. For example, ask things like, ‘These two tiles are both squares, how are they different?’

Games. Play ‘I spy’ and other games to help children identify and name shapes and patterns. For example, ‘I spy with my little eye something red and shaped like a box’. You may also like to play ‘shape hunt’ where you choose a shape (a circle or a box shape for example) and see how many of these your child can find on journeys or trips to the supermarket.

Build models and make patterns. Use blocks or empty containers and boxes to build models of houses or other structures. Talk about which shapes work best and which are not suitable. If you have blocks or plastic shapes, use them to make patterns and get your child to tell you what the pattern is. If you have crayons or paints, get your child to draw their own shape patterns.

Teach and use spatial words. Give your child instructions to find things that you need. Use the words ‘up’, ‘down’, ‘over’, ‘under’, ‘between’, ‘on top of’, ‘next to’ and ‘behind’ to help them locate items.

Movement and maths. Use any small object and get your child to position it and move it according to your instructions. For example, put the pen under the book. Now move it so it is next to the book. You can also prepare an obstacle course outside or at the local park. Say things like, ‘Climb up the slide’, ‘Go around the swing’, ‘Run over the bridge’, ‘Climb through the barrel’, and so on.
Measure

What your child will be doing this year

This year your child will begin to measure and compare objects using informal units (for example, laying out a ribbon to see it is as long as four paper clips). They will also need to recognise all local coins and begin to tell the time (to the hour) and talk about time.

How this topic is taught at this level

In the early years children learn to measure by direct comparison. For example, they will put two pencils next to each other and compare them to say which is longer or shorter. They will also compare lengths, weights and volumes with informal, but uniform units of measure. So for example, they may use blocks as units to compare the weight of different items, or they may use cups to compare the volume of different containers.

It takes time and practice for children to learn to estimate and measure accurately.

Some ideas for supporting learning at this level

Measure everyday items. Ask your child to find things that are longer or shorter than a shoe, a sock, a spoon or a piece of string. Use foot lengths or hand spans to measure the length of a table or rug. Fill containers with sand (or water in the bath) and see which containers hold most, least, and more than or less than each other.

Sort and order. When you go shopping, encourage your child to unpack the items and arrange them from biggest to smallest, tallest to shortest or heaviest to lightest.

Keep a record of family heights. Use a wall chart, or record the height of family members against a doorframe. Talk about who is tallest, shortest, taller than or shorter than. If you use a kitchen or bathroom scale, show your child how it works (but don’t focus too much on actual measuring units).

Talk about time. Point out the time (using o’clock) of different activities referring to a clock or watch if you can, for example, it’s 12 o’clock, time for lunch. It’s 7 o’clock, that’s bath time. Use the words ‘earlier’ and ‘later’, ‘day’ and ‘night’ to compare times.

Display the days of the week. Use a large calendar or make a wall chart with the days of the week displayed in order. Use this to teach and reinforce the names of the days and the order of the days. Encourage your child to write or stick stickers on the days to show what they do on particular days. For example, Monday is swimming, Friday is mosque and so on.

Play games with money. Teach the coins and their value by trading. For example, show your child a ten cent coin and ask how many one- two- or five-cent pieces they need to have the same amount. Children often understand ‘money maths’ long before they understand other formal calculations. Bear in mind that prices and other money amounts are decimal and that your child does not know yet how to work with decimal fractions. Stick to a low number range, whether you use coins or notes, focussing on the value of the coins/notes and counting in ones, twos, fives or tens to get amounts. You may also use small amounts of money to reinforce doubling and halving small numbers.
Data

What your child will be doing this year

This year children will begin to sort and organise data or objects in order to answer a question. They will make simple graphs and sort items using Venn diagrams and special tables called Carroll diagrams. If you are not sure what these are, you can find information in your child’s Workbook.

How this topic is taught at this level

Children will physically sort items and arrange them in order to find information or to show results of a simple investigation. An important concept at this level is sorting items into a group and ‘not’ that group. For example, put all the red fruit in one bowl and all the fruit that is ‘not red’ into another bowl.

Some ideas for supporting learning at this level

Make coin graphs. Use a collection of mixed coins (empty your pocket or coin purse) and ask your child questions about the coins. For example, ‘Which coins do I have most of/fewest of?’ ‘How many more 5c coins do I have than 10c coins?’ Show your child how to sort the coins by value in rows or columns (to resemble a graph) and how to find the answers by comparing the rows or counting the coins in a row.

Sort items in the home. Use the criteria ‘one thing’ and ‘not that thing’ to sort items. For example, sort laundry into socks and not socks, or ‘your clothes’ and ‘not your clothes’. Sort fruit into ‘bananas’ and ‘not bananas’ or groceries into ‘items for the fridge’ and ‘items not for the fridge’.

Use a calendar to make a weather graph. Let your child draw symbols (or use stickers) to show what the weather was each day for a week or a month. At the end of the week/month, make a picture graph to show how many sunny/rainy/windy/cold days there were in that time.