Homework notes for Parents Stage 2
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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.
By the end of Stage 2 your child should be able to:

<table>
<thead>
<tr>
<th>Number</th>
<th>Geometry</th>
<th>Measures</th>
<th>Data Handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Count up to 100 objects, grouping them in twos, fives and tens, and count on and back in ones and tens from a given number, and give sensible estimates up to 100 objects (using multiples of ten)</td>
<td>✓ Name, sort describe and visualise common 2D and 3D shapes, describe their features and recognise 2D drawings of 3D shapes</td>
<td>✓ Recognise all local coins and notes and write money amounts</td>
<td>Answer questions using: ✓ block graphs and pictograms ✓ lists and tables</td>
</tr>
<tr>
<td>✓ Order and compare numbers, place them on number lines and use the symbols &lt; and &gt; to compare them</td>
<td>✓ Identify line symmetry in patterns and shapes, draw lines of symmetry and find examples of symmetry in the environment</td>
<td>✓ Find totals and coins and notes needed to pay an amount and work out change</td>
<td>Use Venn diagrams and Carroll diagrams to sort numbers or objects using one and two criteria</td>
</tr>
<tr>
<td>✓ Explain what each digit represents in two-digit number, partition numbers into tens and ones and round numbers to the nearest 10</td>
<td>✓ Follow and give instructions involving position, direction and movement, including whole, half and quarter turns</td>
<td>✓ Estimate, measure, weigh and compare objects using non-standard units and measuring instruments</td>
<td></td>
</tr>
<tr>
<td>✓ Begin to understand basic fractions (half, quarter and three-quarters) use fraction notation and recognise which fractions are equivalent</td>
<td>✓ Know that a right angle is a quarter turn</td>
<td>✓ Compare lengths, weights and capacities using centimetre, metre, 100 g, kilogram and litre.</td>
<td></td>
</tr>
<tr>
<td>✓ Know all number pairs to 20 and derive related addition and subtraction facts, and all pairs of multiples of 10 to 100</td>
<td></td>
<td>✓ Know and order the days of the week and months of the year</td>
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<tr>
<td>✓ Add four or five small numbers together</td>
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<tr>
<td>✓ Extend their understanding of addition and subtraction and begin to use strategies to add and subtract with two-digit numbers</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>✓ Recognise multiples of 2, 5 and 10</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>✓ Learn doubles for all numbers to 10 and 15, 20, 25 and 50 and learn to double two-digit numbers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Use the symbols +, −, × and ÷ to record and make sense of number sentences involving all four basic operations</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>✓ Work out multiplication and division facts for the 3 and 4 times tables</td>
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<td></td>
</tr>
</tbody>
</table>
Number

What your child will be doing this year

This year your child will continue to count (forwards and backwards to at least 100), to use numbers to say how many items there are in a set, count in steps (twos, fives, tens) and to do simple calculations in a slightly higher number range, but using the same skills as last year. Children will also begin to use place value (tens and ones) and also to work with simple fractions.

How this topic is taught at this level

Young children will still need lots of experience of making numbers, counting items, drawing items and talking about numbers at this level.

When children start to do simple calculations they will use real objects and number lines and tracks 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. They will also use arrays (objects arranged in rows and columns) to begin to explore multiplication and division.

Some ideas for supporting learning at this level

Continue to 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). Include simple fractions, such as those found on sale signs, in shoe sizes and so on, to show children where these can be found.

Continue to 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. Count in twos, fives and tens or other constant steps whenever possible. Include counting backwards. When you read to your child, count the items on the pages and talk about ‘how many’ there are. Let your child order the numbers and count forwards and backwards, for example, say things like, ‘We are on page 18 of this book, what page comes next?’ ‘What was the page before this?’ Introduce odd and even numbers using house numbers. Count one side as you walk down the street and ask children to say which numbers will come next, which house would be between 10 and 14 and so on.

Play games with dice (or playing cards). Roll two dice or draw two cards and ask the children to work out the total. Roll dice or add cards till you get to a target number (such as 30). Choose a starting number and work backwards to practise subtraction.

Use everyday contexts to solve number problems. For example, ‘I need two biscuits per person and there are five people, how many biscuits will I need?’ ‘If there are four wheels on one car, how many wheels are there on three cars?’ ‘I can see six wheels altogether on some bicycles, how many bikes are there?’ And so on.
Geometry

What your child will be doing this year

Your child will sort, name, describe and draw flat (2D) shapes and solid (3D) objects, and identify these in different positions and in the environment. They will also learn to recognise basic reflection symmetry and use everyday words to follow and give directions. They will begin to see that turns can be clockwise or anti-clockwise and learn that a right angle is actually a quarter turn.

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 continue to be practical.

Some ideas for supporting learning at this level

Find shapes and 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?’ Choose a shape of the week (for example a cylinder). Try to find as many cylinders as possible at home or out and about during the week.

Games. Play ‘5 questions’ with your child. Choose a shape (don’t tell the child what it is) and get them to ask questions to try to work out what shape it is. You may only answer ‘Yes’ or ‘No’. For example, ‘Does it have three sides?’ Let your child choose a shape and ask questions to guess what it is.

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.

Give and follow directions. Make a model of your neighbourhood or draw a picture map of the area around your house. Use this together with a toy car or small doll to teach and reinforce direction words. For example, tell the driver how to get from your house to the shops. ‘Follow these directions, where will you end up?’
Measure

What your child will be doing this year
This year your child will continue to measure and compare objects using informal units and some standard units. They will also need to recognise all local coins and notes and use money notation, as well as tell time (to the half hour), measure short periods of time (seconds and minutes) and use units of time correctly.

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. From this, they will move on to standard units.

Some ideas for supporting learning at this level

Measure everyday items. Let your child measure items at home. For example, measure the ingredients in a recipe, or help you measure out the length of wire to make a chicken coop or a fence for the garden using a tape measure or metre stick. Measure out a metre of string and use this to find items that are longer or shorter than a metre at home. Weigh items in kilograms using a kitchen or bathroom scale and let your child say how many litres a container will hold, or how much petrol you put in the car when you fill up (to the nearest whole litre).

Keep a record of family heights. Use a wall chart, or record the height of family members against a doorframe using centimetres and metres. 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 and read weights in kilograms.

Talk about time. Point out the time (using half past and o’clock) of different activities, referring to both analogue and digital clocks or watches if you can. For example, it’s 12 o’clock, time for lunch. It’s half past six, time to get up.

Measure how long it takes to do things. With your child, time how long it takes to do certain things (brush your teeth, tidy your room, pack your school bag, count to 50 in fives and so on). Time the activities and talk about how long they take.

Involve children in working with money. Talk about how you pay for items using notes and coins. When you see prices, let your child read them to you to reinforce money notation. Let your child suggest what notes and/or coins you could use to pay for different things. When you shop, let the children arrange prices from cheapest to most expensive, or vice versa. Let your child count and check your change when you shop locally.
Data

What your child will be doing this year

This year children will continue to sort and organise data or objects in order to answer a question. They will record information in tables and graphs and sort items using Venn diagrams and special tables called Carroll diagrams. Children will also begin to sort items using two criteria, for example sort these shapes into big squares and small squares (i.e. using the shape and the size to sort them).

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 remains sorting items into a group and ‘not’ that group. For example, put all the red fruit in this 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. As you sort laundry or pack groceries, discuss which items should go together and why. For example, ‘These things don’t need ironing. I am folding them and putting the towels in one pile and the sheets in another.’ ‘These things all go in the fridge. The milk and butter go on the shelf, these salad things all go together in the crisping drawer.’ Use the criteria ‘one thing’ and ‘not that thing’ to sort items. For example, sort laundry into ‘shirts’ and ‘not shirts’, or ‘ironing’ and ‘not ironing’. 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, draw a block graph to show how many sunny/rainy/windy/cold days there were in that time.

Keep track of glasses of water (or fruit or vegetables). Draw up a large table with the names of family members across the top. Ask your child to keep track (use tally marks) of how many glasses of water different family members drink during a day. Use the results for a few days to draw up a block or picture graph comparing the amount of water each person drank. Ask questions like ‘Who drank the most water?’ ‘Who drank the least water?’ ‘How many glasses did X drink?’ ‘How many more glasses did you drink than me?’ and so on.