Mathematics at Ghyllgrove Primary School

Supporting your child with Maths at home

Key Stage 1

<u>Our Vision</u>

At Ghyllgrove Primary School, we want to provide a fun, engaging and relevant Mathematics curriculum, which promotes the development of confident, independent and efficient mathematicians. By the end of their time at Ghyllgrove Primary School, we aim to have developed mathematically fluent children who enjoy the challenge of Mathematics, have a solid understanding of fundamental mathematical skills and have mastered a set of skills that will support them throughout life. We aim for all children to develop a strong sense of number and our number system, proficiency in arithmetic and an ability to articulate their mathematical understanding and reasoning. As well as providing children with rich, real life examples and opportunities for the application of these skills in lessons, we continuously seek to provide opportunities across the curriculum and through partnership with our families at home, to promote Maths skills and shows their relevance in all aspects of everyday life.

Mathematics in Year 1

As children begin their compulsory schooling in Year 1, schools will naturally work to build on the learning that takes place in the Reception year. Here are some of the main things your child is likely to be taught during their time in Year 1.

Number and Place Value

Place value is central to mathematics. Recognising that the digit '5' in the number 54 has a different value from the number 5 or the '5' in 504 is an important step in mathematical understanding.

- Count, both forwards and backwards, from any number, including past 100
- Read and write numbers up to 100 as digits
- Count in 2s, 5s and 10s
- Find 'one more' or 'one less' than a number
- Use mathematical language such as 'more', 'less', 'most', 'least' and 'equal'

Calculations

- Use the +, − and = symbols to write and understand simple number calculations
- Add and subtract one- and two-digit numbers, up to 20
- Solve missing number problems, such as $10 - ? = 6$
- Begin to use simple multiplication by organising and counting objects

Fractions

- Understand $\frac{1}{4}$ and $\frac{1}{2}$ to explain parts of an object or number of objects

Measurements

- Use practical apparatus to explore different lengths, weights and volumes
- Use language such as 'heavier', 'shorter' and 'empty' to compare things they have measured
- Recognise the different coins and notes of British currency
- Use language of time, such as 'yesterday', 'before', days of the week and months of the year
- Tell the time to the hour and half-hour, including drawing clock faces

Shape

- Recognise and name some common 2-d shapes, such as squares, rectangles and triangles
- Recognise and name some common 3-d shapes, such as cubes, cuboids and spheres
- Describe movements, including quarter turns

Parent Tip

There are plenty of opportunities for maths practice at home, from counting objects to simple games, such as dominoes and Snakes & Ladders. You can also begin to explore using money and clocks both in play at home and when out and about.

Mathematics in Year 2

During Key Stage 1, there is a big focus on developing basic number skills. That means securing a good understanding of place value, and recognising number bonds to 20. Practising these skills frequently will help children's mathematical thinking throughout school.

> Number bonds are essential to the understanding of maths. Children in Year 2 learn their number bonds to 20, that is being able to quickly recall the total of any two numbers up to 20, e.g. 5 + 9 = 14, rather than having to count on to find the answer.

At the end of Year 2, all children will sit the National Curriculum Tests for Key Stage 1. This will include a short arithmetic test of 15 questions, and a second paper of broader mathematics which will last around 35 minutes.

Parent Tip

Parents can always take a lead role in practical maths. Encouraging your child to help with the purchasing of small items at the newsagent, or measuring themselves and others, is a great way to start exploring number relationships.

Number and Place Value

- Recognise place value in two-digit numbers, e.g. knowing that the 1 in 17 represents 10
- Read and write numbers up to 100 as words
- Count in 2s, 3s and 5s
- Compare and order numbers up to 100
- Use the < and > symbols to represent the relative size of numbers

Calculations

- Recall number bonds up to 20 fluently
- Add and subtract numbers mentally and using objects, including two-digit numbers
- Show that adding two numbers can be done in any order, but subtracting cannot
- Recognise that addition and subtraction are inverse operations
- Learn the multiplication and division facts for the 2x, 5x and 10x tables
- Show that multiplying two numbers can be done in any order, but dividing cannot
- Solve problems using the x and ÷ symbols

Fractions

- Find $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of an object or set of objects
- Find the answer to simple fraction problems, such as finding $\frac{1}{2}$ of 6

Measurements

- Use standard units to measure length (centimetres and metres), mass (grams and kilograms), temperature (degrees Celsius) and capacity (millilitres and litres)
- Use the £ and p symbols for money amounts
- Combine numbers of coins to make a given value, for example to make 62 pence
- Tell the time to the nearest five minutes on an analogue clock
- Know the number of minutes in an hour and hours in a day

Shape

- Identify the number of sides and a line of symmetry on 2-d shapes
- Identify the number of faces, edges and vertices on 3-d shapes
- Use mathematical language to describe position and direction, including rotations and turns

Graphs and Data

- Construct and understand simple graphs such as bar charts and pictograms

How you can support at home



Measuring

- **Cooking**- weighing and following instructions
- **Measure yourself!** - make a height strip. Keep a graph to show your growth! How much have you grown?
- **Measure stuff!** - use a tape measure
- **Telling the time**- how long until...? Analogue /digital time, Days of the week, dates, keep a calendar/

Picnic or Party maths:

- Preparing food for a group of people is a real problem solving opportunity; how many cups can we fill with one jug, how many pieces of pizza can we cut from each one? A great opportunity to use terms like 'half' 'quarter' 'double' and put those tables into practice.


How you can do Maths at Home


Shopping games:

- Set up a mini supermarket in the kitchen and give the children some real money to go shopping with.
- Change can be the trickiest concept and needs to be taught in 'real' shopping activities which can be done really well at home.

Number games

- Board games
- Snakes and ladders
- Dominoes
- Playing card games eg snap, doubles
- Dice games eg exchange game
- Have fun playing with a calculator and try out those signs!


Shapes everywhere

- **Shopping Shape Sort**; let your child loose on the packages and sort them into cuboids, cylinders, cubes
- **2-D shape pictures and patterns**
- Which shapes can you draw? you will need a ruler for some of them!

Props around the house

Ideas taken from **Maths for Mums and Dads** Eastaway, R. and Askew, M. (2010)

- **A prominent clock**- digital and analogue is even better. Place it somewhere where you can talk about the time each day.
- **A traditional wall calendar**-Calendars help with counting days, spotting number patterns and
- **Board games that involve dice or spinners**-helps with counting and the idea of chance
- **A pack of playing cards**- Card games can be adapted in many ways to learn about number bonds, chance, adding and subtracting
- **A calculator**- A basic calculator will help with maths homework when required, there are also many calculator games you can play, too.
- **Measuring Jug**-Your child will use them in school, but seeing them used in real life is invaluable. Also useful for discussing converting from metric to imperial
- **Dried beans, Macaroni or Smarties**- for counting and estimating
- **A tape measure and a ruler**- Let your child help when measuring up for furniture, curtains etc
- **A large bar of chocolate** (one divided into chunks)- a great motivator for fractions work
- **Fridge magnets with numbers on**- can be used for a little practice of written methods
- **Indoor/outdoor Thermometer**- especially useful in winter for teaching negative numbers when the temperature drops below freezing
- **Unusual dice**- not all dice have faces 1-6, hexagonal dice, coloured dice, dice from board games all make talking about chance a little more interesting
- **A dartboard with velcro darts**- Helps with doubling, trebling, adding and subtracting.

Birthdays!

Star with your child's age. Ask your child:

- How old will you be when you are 1 year older?
- How old were you last year?
- How old will you be 2/5/10 years from now?

Repeat with the ages of different relatives. You may want to make up your own age!

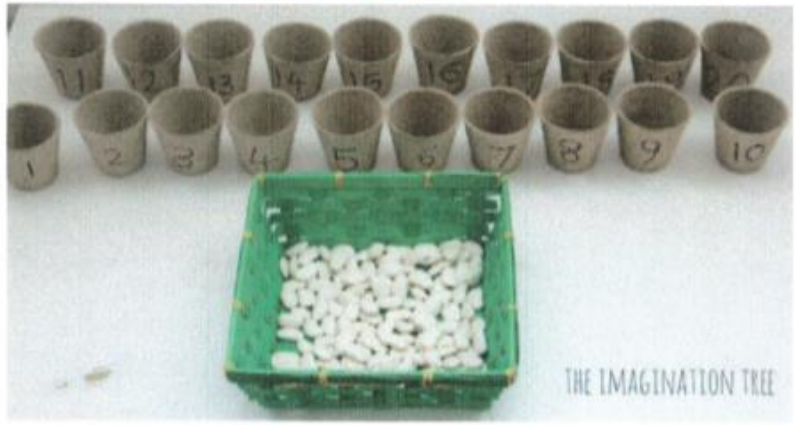
Cut out numerals from newspapers, magazines or birthday cards. Then help your child to put the numbers in orders.

Going round the houses

When walking down the street with your child, look at house numbers. These will probably follow a pattern of either odd or even numbers. Can your child predict what number will be on the next house? Talk about the pattern.

Daily Practise: Make mistakes when chanting, counting or ordering numbers. Can your child spot what you have done wrong?

Beans and Flower Pots



- Label 21 empty pots (e.g. yoghurt pots) 0-20.
- Children count the right number of beans into each pot. Other small objects could be substituted.
- A 0 pot is important to consolidate that 0 represents a nil value.
- When they are done ask your child to pour out each of the teen number jars and arrange the beans into a group of ten and then ones (units).

Dicey Coins

For this game you need a dice and about twenty 10p coins.

- Take turns to roll the dice and take that number of 10p coins.
- Guess how much money this is. Then count aloud in tens to check, e.g. *saying ten, twenty, thirty, forty…*
- If you do this correctly you keep one of the 10p coins.
- First person to collect £1 wins.

Daily Practise: Counting in 10s to and from 100 from 0 or any given number regularly will increase fluency and will support addition subtraction.

A hundred square can support children's counting.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Count forward

Count backward

Daily Practise: Help your child to identify numbers in everyday life. Can they read door numbers, the number of different channels on TV, page numbers in books etc.

Track Games

Make a number track to 20, or longer. Make it relevant to your child's interests- space, castles, sea world, monsters. Then play on it.

- Throw a dice. Move along that number of spaces. **but** before you move, you must work out what number you will land on. If you are wrong, you don't move! The winner is the first to land exactly on 20. Now play going backwards to 1.
- Throw a dice. Find a number on the track that goes with the number thrown to make either 10 or 20. Put a counter on it, e.g. you throw a '4' and put a counter on either 6 or 16. If someone else's counter is there already, you may replace it with yours! The winner is the first person to have a counter on 8 different numbers.

Number Fact Bingo!

- Draw a simple grid for a bingo board. This can be done on any scrap of paper.
- Each player chooses five answers (e.g. numbers to 10 to practise simple addition, multiples of 5 to practise the five times tables).
- Ask a question and if a player has the answer, they can cross it off.
- The winner is the first player to cross off all their answers.

Go Fish: Pairs for 10

- Make number cards from 0-10 (3 sets of each number).
- Play "Go Fish" to add numbers to 10.
  e.g. You have fished a 4. What number do you need to fish to make 10?

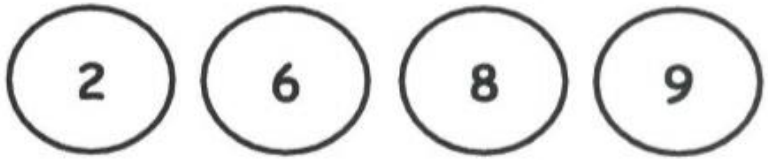
The winner is the first person to find all the pairs that add to 10.

Have a '*fact of the day*', e.g. 16=8+8. Pin this fact up around the house. Practise reading it in a quiet, loud, or squeaky voice. Ask your child over the day if they can recall the fact.

Adding Circles

For this game, you need a dice, a pencil and paper.

- Each of you should draw four circles on your piece of paper.
- Write a different number between 2 and 12 in each circle.



- Roll the dice twice. Add the two numbers.
- If the total is one of the numbers in your circles then you may cross it out.
- The first person to cross out all four circles wins.

You can make this game harder by choosing bigger numbers and rolling more dice.

Number Fact Race

Give your child a number fact (e.g. 5+3=8). Ask them what else they can find out from this fact (e.g. 3+5=8, 8-5=3, 8-3=5). It is important that children understand subtraction can 'undo' an addition and therefore it is the inverse.

They may also be able to find other facts, such as near doubles, too, e.g. 50+30=80, 500+300=800, 5+4=9, 15+3=18). How quickly can they find all associated facts?

Out and About

On the way to school see how many cones, cuboids, spheres and cylinders you can spot. Which did you see most of?

Cupboard Maths

- Choose two tins or packets from your food cupboard.
- Ask your child to hold one in each hand and tell you which is heavier, and which is lighter. (Check by reading the weight on each tin or packet.)
- If they are right, they keep the lighter one. Then choose another item from the cupboard, trying to find one that is lighter still.
- Carry on until your child has found the lightest item in the cupboard. It might be suitable to eat as a prize!

Daily Practise: Choose a number of the week e.g. 5. Practise counting to 5 and on from 5. Count out groups of 5 objects (5 dolls, 5 bricks, 5 pens). See how many places you can spot the numeral 5.

Takings

For this game you will need a dice and a collection of small things such as Lego bricks, sticky shapes or dried pasta. You will also need a pencil and paper.

- Take turns.
- Roll a dice. Take that number of pieces of pasta. Write down the number.
- Keep rolling the dice and taking that number of pieces of pasta. But, before you take them, you must write down your new total.
- For example, Sam has 7. She throws 4. She has to work out how many she will have now. She starts counting from seven: *eight, nine, ten, eleven.* She writes 11.
- You can only take your pieces of pasta if you are right.
- The first person to collect 20 pieces of pasta wins!

Regular practise of forming each digit correctly will really embed this skill.

Sort things out: if you have a box of beads, sort them by size or colour. Challenge your child to sort them in multiple ways, e.g. can you sort by colour and size?

Grab Bag Subtraction

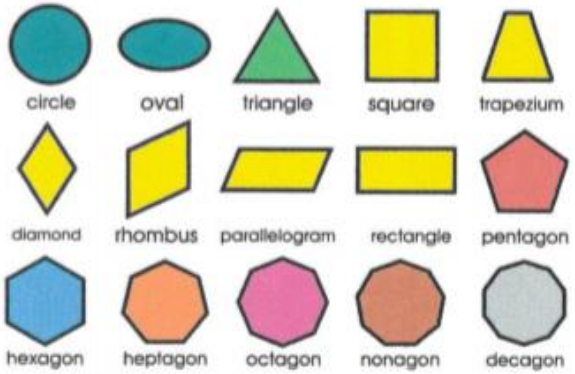
- Choose a number of things to work with, and put that many objects into a bag.
- You can use crayons, coins, beans, buttons, etc.
- Grab a handful of the items and count them. Use subtraction to work out how many items are now left in the bag.
- Write down the calculation.
- Encourage counting up or back.
- Let your partner have a turn.
- Whoever leaves the least amount in the bag is the winner.

Count in multiples of 1, 2, 5 and 10. Miss a number(s) out and clap. Your child has to guess the missing number.

2D Shape Hunt

At home, or when you are out, look at the surface of shapes.

- Ask your child – what shape is this plate, this mirror, the bath mat, the tea towel, the window, the door, the red traffic light, and so on.
- Choose a shape for the week, e.g. a square. How many of these shapes can your child spot during the week, at home and when you are out?

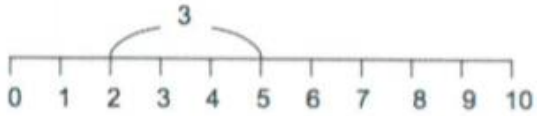


Make a model using boxes/containers of different shapes and sizes. Ask your child to describe their model.

Look for symmetrical objects. Help your child to draw or paint symmetrical pictures / patterns?

Play 'guess my shape'. You think of a sl
Your child asks questions to try to ide
it but you can only answer 'yes' or 'no'
Does it have more than 4 corners? Does it have any curved sides?)

Dice Game



You need a 1-6 dice, paper and pencil.

- Take turns.
- Choose a number between 1 and 10 and write it down.
- Throw the dice and say the dice number.
- Work out the difference between the chosen number and the dice number, e.g. if you wrote down a 2 and the dice shows 5, the difference is 3.

You could also draw a number line to help your child to see the difference between the two numbers.

Choose some food items out of the cupboard. Try to put the objects in order of weight, by feel alone. Check by looking at the amounts on the packets.