

Years 3 & 4

Parent Maths Pack

“... pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.”

The national curriculum in England, DfE (2014)

We all use maths every day, often without realising it. We believe that every child can develop the numeracy skills they will need, both at school and throughout their lives.





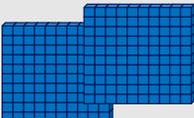
At Dog Kennel Hill School we follow the White Rose Maths Hub's new, more detailed schemes of learning, in years 3 and 4, which support a mastery approach to teaching and learning and have been designed to support the aims and objectives of the new National Curriculum. In addition to knowing and applying basic number skills, pupils are also required to reason mathematically, solve problems using different strategies and communicate their understanding effectively. Parents help at home is essential in helping children develop and strengthen these skills. Here are some suggestions for parents helping at home:

- ✓ Talk to your children about everyday maths
- ✓ Play maths games with them
- ✓ Value mistakes as learning opportunities
- ✓ Recognise that there is more than one way to work things out
- ✓ Praise children for effort over outcome
- ✓ Avoid saying things like "I'm useless at maths"
- ✓ Encourage your children to solve problems with you.
- ✓ Help them identify different methods or strategies to use in finding solutions and resist the temptation to provide the answer or method. There is usually more than one way to solve a problem, and simpler strategies are often effective.
- ✓ Provide opportunities for your children to explain and justify their thinking.
- ✓ Connect mathematics to real life experiences. Emphasising the mathematics around us helps to make mathematics education relevant.
- ✓ Ask good questions of your children about their homework and be good listeners when your children respond.
- ✓ Encourage children to estimate answers before working out the answer.

Key vocabulary for Place Value

Ones: 

Tens: 

Hundreds: 

is equal to (=) digit

numeral

position

value

rounding

greater than

less than

more

fewer

increase

decrease

multiple of ten

multiple of one hundred

nearest multiple of

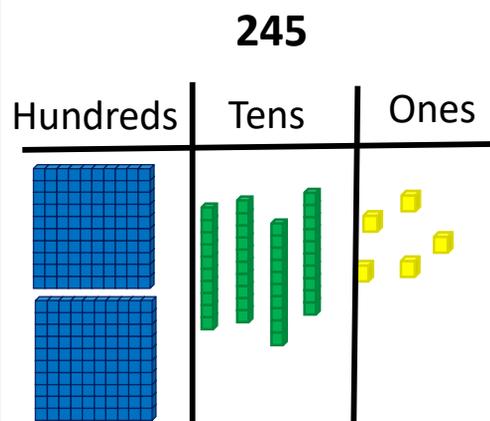
ten/one hundred

Partition - to split a number into two or more parts. E.g. we can partition 16 into 10 and 6.

Regroup – to exchange one ten for ten ones or unitise ten ones for one ten. “I have regrouped my ten ones for one ten”.

Representing 3-digit numbers

In school, children use Dienes blocks to represent numbers with up to three digits. This supports pupils with their understanding of the value of each digit and the relative difference in size between hundreds in comparison to tens and ones. These can then be manipulated to investigate and reason about different ways to partition a number. E.g. “How many ways can you make 245?” Once pupils are familiar with using the concrete materials, they can move on to drawing diagrams to represent the blocks. Try using diagrams at home to represent different 3-digit numbers.



Key vocabulary for Multiplication and Division

multiplication **division** **equal groups** **lots of** **sharing** **array**

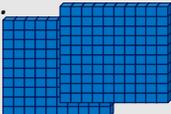
Commutative - A property of addition and multiplication. It does not matter in which order the addends or factors are added or multiplied; the result will be the same.

Inverse - Opposite operations that ‘undo’ each other. Division is the inverse of Multiplication.

Product - The result you get when you multiply two numbers.

Ones: 

Tens: 

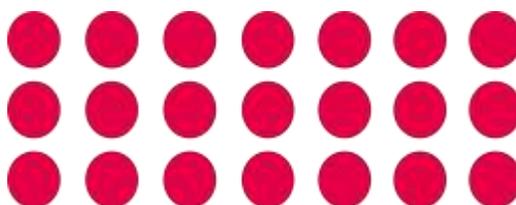
Hundreds: 

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Arrays

An arrangement of items (counters, objects, numbers etc) in columns and rows, used to represent multiplication and division. The array on the right represents the following equations: $3 \times 6 = 18$, $6 \times 3 = 18$, $18 \div 3 = 6$ and $18 \div 6 = 3$



Daily practice

Talking about number with your children every day will support them with their understanding of place value. Use questions such as “Which number has the greatest value, how do you know?”, “How can we round that number?”, “What is the approximate answer?”, “How many tens make...?”

Outside of number daily practice of telling the time and times tables is also valuable.

Number of the day

Select a three digit number as your number of the day. Each day ask questions such as:

- What would that number look like? Can you think of something that long, that price, that amount etc?
- What is the value of each digit?
- What is the nearest multiple of ten or 100?
- What is 10 more or 10 less? What is 100 more/less?

Money, money, money

Money is a great way of practising place value. You can start with using just 1p and 10p coins. Grouping pennies into piles of ten and regrouping for a ten pence piece. Asking questions such as “can you change these pennies into 10ps for me?” This can be extended to larger amounts and eventually using pounds, pence and notes.

To practice ordering numbers, compare two amounts of money.

“Who has more? How do you know? Convince me!”

Rounding battle



You will need: a pair of dice (or roll one die twice)
A list of multiples of ten ranging from 10 – 70.

Roll the pair of dice, decide which order you would like to place the digits to make a two digit number. For example if you rolled a two and a five, you could make 25 or 52.

Round the number to the nearest multiple of ten and cross that multiple of ten off your list.

The first to cross out all multiples of ten is the winner.

Round multiple digit value nearest
 multiple of ten

10

20

30

40

50

60

70

Try this at home – more ideas

Daily practice – multiplication and division facts

Practising these little and often can often be the best way to remember them. Why not try putting some tables practice into your daily routine such as on the walk to school or during a car journey? Use songs to make the process fun. There are great songs on line.

Cooking

Cooking is a great way to practise a range of mathematical skills whilst having fun. To practice multiplication. Why not try multiplying or dividing the ingredients of a recipe by 2, 3 or 4 to change the portion size?

Array hunt

An array is a set of objects arranged into rows and columns. An egg box is an example of an array. What other arrays can you find around the house? What multiplication and division problems would they represent?

Helping children to find arrays in their daily lives will support their understanding of multiplicative relationships such as commutativity and the inverse.



Telling the Time

Daily practice of this at home will help to support your child. Questions to think about: Have you got an analogue clock or watch at home? If not where could they see one? Are there any outdoor clocks in your local area you could refer to?

Questions to support thinking

- What do you think would happen if...
- What's the same? What's different?
- How do you know that?
- Can you see a pattern? What would come next?
- What else could go in this set? What couldn't?

Websites

The Oxford Owl website has some helpful tips and activities for helping your child at home with times tables:

<https://www.oxfordowl.co.uk/for-home/maths/times-tables-tips/>

Playing Time Tables Rockstars is a great way to learn times tables. <https://trockstars.com/>

BBC Megamaths is a radio show about a team of detectives on a maths mission to solve mental maths problems.

Try this at home – workshop game



Fill up the square!

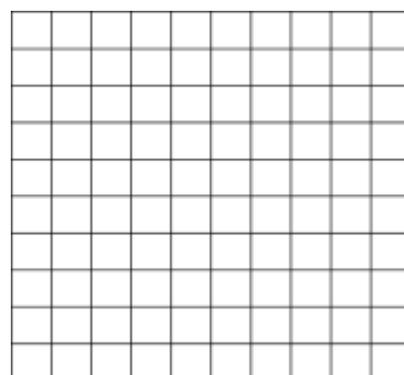
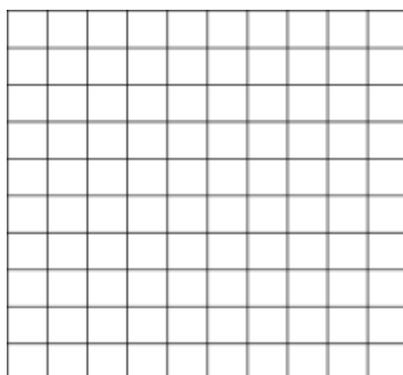
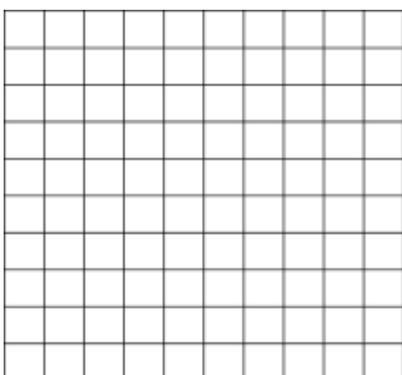
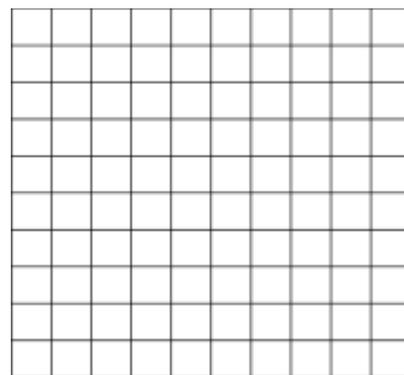
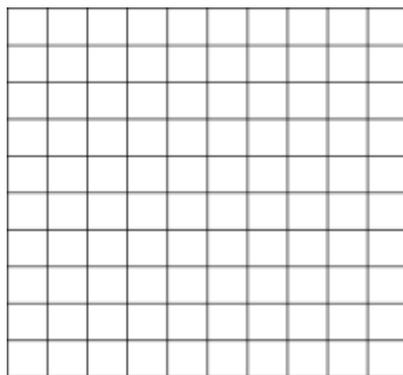
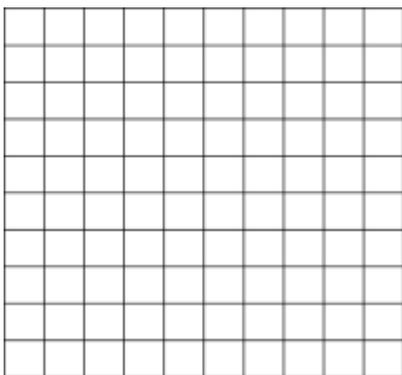
You will need: A pair of dice or online dice, two 10 by 10 grids.

Each player has a ten by ten grid.
Take it in turns to roll the pair of dice. If I roll a 3 and a 6 I need to make an array that represents 3×6 , see example to the right.

x	x	x							
x	x	x							
x	x	x							
x	x	x							
x	x	x							
x	x	x							

The aim of the game is to fill up the square.

multiply divide array product parts
whole equation equal groups



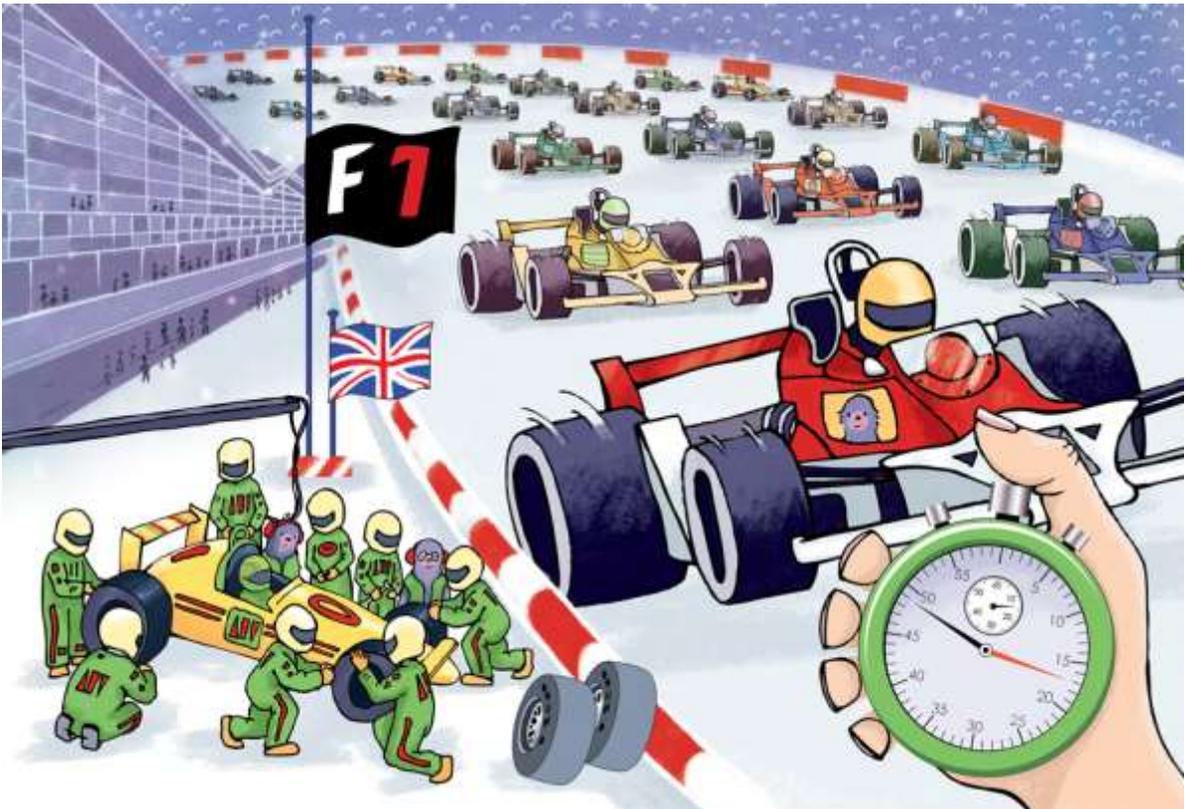
Big Pictures

What maths can you see? Discuss with your children at home using the key vocabulary from the previous page.



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Try this at home – more ideas

Shape

You could take your child on a 'shape walk' around an area such as Cardiff Bay to see what shapes they can spot. They should be able to identify different types of triangles and recognise multi-sided shapes including heptagons.

Time

Make sure that there are both traditional and digital clocks around the house for your child to practise reading the time to the nearest minute. Use TV guides and timetables to encourage them to calculate times (e.g. which programme will last 45 minutes?)

Money

Receiving (and spending!) pocket money can make children very keen learners in this area! Put them in charge of a small part of the shopping list at the supermarket and give them a budget they must not go over. Encourage them to solve problems involving money. E.g. I need 4 packets of sugar at £1.30 each. How much will that cost? How much change will I get from £10?

Measures

Cooking is a great way for your child to practise weighing and measuring in grams and kilograms. It's a terrific way to learn to accurately read scales and measure out capacities in litres and centilitres.

Multiplication tables

Helping your child to learn multiplication facts and regularly going over them will benefit them enormously. They should learn to recite them in order as well as give 'quickfire' answers when they are jumbled up (e.g. "What are seven eights?", "How many nine's make 81?"). This can be done on car journeys or whenever there is a spare 5 minutes.

By the end of Year 4, your child should know multiplication tables 1 to 12. Playing **Time Tables Rock Stars** is a great way for them to learn.

