Family Maths Toolkit

Family Maths Scrapbook Activities

Year 4

Any questions, please email:
enquiries@nationalnumeracy.org.uk

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Family Maths Toolkit

Introduction

Proven to improve children's and parents' confidence in maths, this family engagement resource aims to promote enjoyment of maths through discussion and working together on everyday maths.

This activity pack, created by National Numeracy, contains short, fun, 'real life' activities for families to do with their children. They are aligned to the English National Curriculum and compatible with the Scottish Curriculum for Excellence, with a strong focus on problem solving and reasoning.

There are 30 activities, one for each week of the school year. They are organised in this pack so that they get progressively harder - but they can be selected to match the curriculum area on which your children are working.

The individual activity sheets are not marked with the age or year group, but they are colour coded so you can tell the difference. Please note that the level is based on average expectations for the year group - children may be working below or above this, so draw on activities from other year groups if you need to.

This pack contains:

- An overview showing the suggested split of the activities by school term and by numeracy topic from the English National Curriculum.
- 30 activities, in the order given in the overview.
- 3 answer sheets, one per term. (Please note that many of the activities are designed to be open-ended, so answers are only given for activities that require them)

For schools

We recommend the following approach for schools using the activities:

- A whole class approach and even a whole school approach.
- If children are working well above or below age-related expectations, select an activity from a different year group pack.
- Hold a workshop to model the activity discussions for less confident parents.
- Have a launch event, giving out scrapbooks if you are using them. (Family Maths scrapbooks, in which children and families can record their work on these activities, are available to order through National Numeracy's website.)
- Emphasise that any member of the family can work with the child being given the activity.
- If there are no adults helping out at home, we suggest finding an older school buddy to help in an after or pre-school club.
- The parent/carer does not have to have any special knowledge of school maths or equipment.
- Encourage children to be creative: take photos, draw pictures, write calculations or create diagrams.
- Encourage both adult and child to use the comment box to promote reflection and help you understand what they think about each activity.
- Put completed activities on show so that children and families can learn from each other that there is not just one answer but many ways of approaching problems.

Any questions, please email:
enquiries@nationalnumeracy.org.uk

Family Maths Toolkit

For parents and carers

However you might feel about maths, you can make a huge difference to your children's numeracy learning.

All the evidence shows that talking about everyday maths helps develop children's maths confidence. Here are some questions that you can ask each other when tackling the activities:

- What do we need to do?
- What information do we have? What do we need to find out?
- Would any equipment help?
- What do you notice when...?
- Shall we make a guess and see if it works?
- What could we do if we get stuck?
- If we were doing this again, is there anything we could do differently?

You can adapt these activities to suit your family's interests and use whatever items you may have to hand, at home or out and about.

You might want to take photos, draw pictures, write calculations or create diagrams - it's up to you!

Do use the comment boxes to reflect your discussions and thoughts as you complete each activity together.

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Y4 Overview and Curriculum links

Family Maths Toolkit

Term	Topic	Activities	Main Curriculum link	Also covers
Autumn	**Number and place value**	Roman numerals loop game	Read Roman numerals to 100.	
	Number - multiplication and division	Sweets puzzle	Solve problems using the 5 and 7 times table facts.	
	Measurement	Expedition	Estimate, compare and calculate different measures, solve a range of problems, justify thinking.	
		Santa's elves' café	Problem solving involving money.	
		Christmas party time	Problem solving using addition and subtraction of money.	
		Planning a trip	Solve money problems Including two decimal places.	
	Geometry - properties of shape	Rangoli pattern	Draw symmetric patterns using a variety of media to become familiar with different orientations of lines of symmetry, and recognise line symmetry in a variety of diagrams.	
		Two cuts	Classify shapes using geometrical properties, extending to classifying different triangles and quadrilaterals.	
		Christmas tree	Develop listening skills, following Instructions accurately and developing own instructions using a range of positional and geometrical vocabulary.	
	Problem solving	Deciphering the code	Solve a range of problems and develop logical thinking skills.	

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Y4 Overview and Curriculum links

Family Maths Toolkit

Term	Topic	Activities	Main Curriculum link	Also covers
Spring	**Number and place value**	Hecantonchires	Place value introducing or using numbers greater than 1000.	
	Number - addition and subtraction	Everyday estimating	Refine estimation skills, use all four operations and a variety of methods to solve a range of problems, develop mathematical thinking.	
		Domino challenges	Doubles of numbers, odd and even, adding a succession of numbers, problem solving.	
	Number - multiplication and division	Gold robbery	Solve a range of problems using division, working systematically and developing mathematical thinking.	
	Measurement	Café menu	Solve problems with money in context such as choices of a meal on a menu.	
		Special offer	Solve money problems in a real life context, using two decimal places and thinking mathematically.	
		Design a Hobbit	Estimate, compare and calculate using different measures accurately.	Solve problems using fractions.
		Areas and perimeters	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and meters. Find the area of rectilinear shapes by counting squares.	
		Valentine's Day dates	Solve problems using months and years.	
	Geometry - properties of shape	Wheels	Begin to think about the properties of a circle.	Measure, compare length.

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Y4 Overview and Curriculum links

Family Maths Toolkit

Term	Topic	Activities	Main Curriculum link	Also covers
Summer	**Number and place value**	To a million	Identify, represent and estimate numbers.	
	Number - addition and subtraction	Crossword	Practise using mental methods for all four operations.	
		Car number plates	Solve a range of problems, thinking mathematically and working systematically.	
	Number - multiplication and division	Times table task	Recall and use multiplication facts.	Solve a range of problems and develop mathematical thinking and reasoning skills.
	Number - fractions	Pizza preparation	Solve problems involving fractions to divide quantities; add and subtract fractions with the same denominator.	
	Measurement	Cocktail prices	Estimate, compare and calculate different measures, including money with pounds and pence.	
		Travel maths	Read, write and convert time between analogue and digital 12 and 24 hour clocks, present data.	
		Hand luggage problem	Measure, compare, add and subtract mass (g/kg) and length (m, cm, mm).	
		Time challenge	Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.	
	Statistics	Working with your heart	Solve problems using and converting seconds to minutes; interpret and present discrete data; solve comparison problems using the information presented.	

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Roman numerals loop card game

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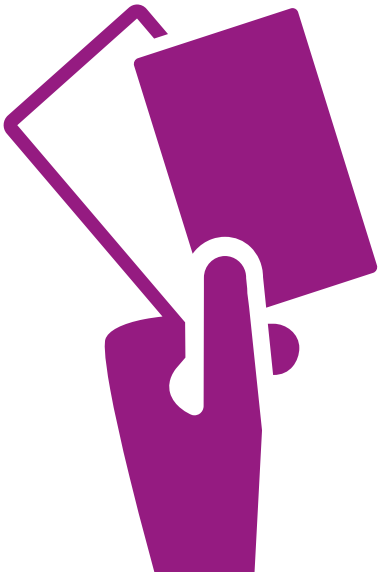
This is a game to practise recognising Roman numerals. Cut out the cards and shuffle them up carefully. Deal them all out to all the people playing. Choose anyone to start with any card. Start by just reading out the question.

All other players look to see if they have the card to match and they read 'I have...', then they ask the question underneath.



You could make up extra when you are happy with these!

I have I Who has 2 ?	I have II Who has 3?	I have III Who has 4?	I have IV Who has 5?	I have V Who has 6?
I have VI Who has 7?	I have VII Who has 8?	I have VIII Who has 9?	I have IX Who has 10?	I have X Who has 11?
I have XI Who has 12?	I have XII Who has 13?	I have XIII Who has 14?	I have XIV Who has 15?	I have XV Who has 20?
I have XX Who has 25?	I have XXV Who has 30?	I have XXX Who has 38?	I have XXXV111 Who has 40?	I have XL Who has 50?
I have L Who has 50?	I have LV Who has 70?	I have LXX Who has 90?	I have XC Who has 100?	I have C Who has 1?

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Roman numerals chart 1-100

Here is a chart of what each Roman numeral stands for. The system is based on seven different symbols. These symbols can be used to write any number from 1 to 3,999! Below are the numbers for 1-100.

100	C

1	I	10	X	19	XIX	28	XXVIII	37	XXXVII	46	XLVI	55	LV	64	LXIV	73	LXXIII	82	LXXXII	91	XCI
2	II	11	XI	20	XX	29	XXIX	38	XXXVIII	47	XLVII	56	LVI	65	LV	74	LXXIV	83	LXXXIII	92	XCII
3	III	12	XII	21	XXI	30	XXX	39	XXXIX	48	XLVIII	57	LVII	66	LXVI	75	LXXV	84	LXXXIV	93	XCIII
4	IV	13	XIII	22	XXII	31	XXXI	40	XL	49	XLIX	58	LVIII	67	LXVII	76	LXXVI	85	LXXXV	94	XCIV
5	V	14	XIV	23	XXIII	32	XXXII	41	XLI	50	L	59	LIX	68	LXVIII	77	LXXVII	86	LXXXVI	95	XCV
6	VI	15	XV	24	XXIV	33	XXXIII	42	XLII	51	LI	60	LX	69	LXIX	78	LXXVIII	87	LXXVII	96	XCVI
7	VII	16	XVI	25	XXV	34	XXXIV	43	XLIII	52	LII	61	LXI	70	LXX	79	LXXIX	88	LXXXVIII	97	XCVII
8	VIII	17	XVII	26	XXVI	35	XXXV	44	XLIV	53	LIII	62	LXII	71	LXXI	80	LXXX	89	LXXXIX	98	XCVIII
9	IX	18	XVIII	27	XXVII	36	XXXVI	45	XLV	54	LIV	63	LXIII	72	LXXII	81	LXXXI	90	XC	99	XCIX

Family comments:

Child comments:

Curriculum Link

Read Roman numerals to 100.

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Sweets puzzle

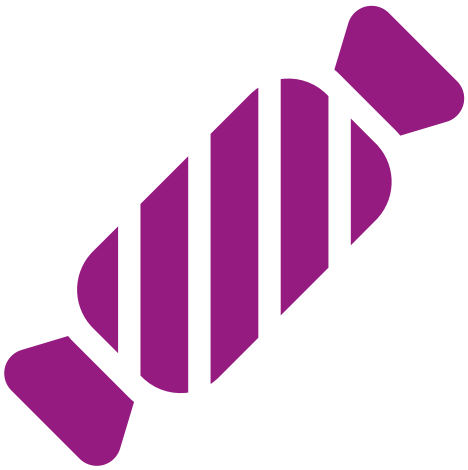
Family Maths Toolkit

What are your favourite sweets?

Chews have 5 in a pack and lollipops have 7 in a pack.

At a party, a mix of 140 sweets are needed for prizes. How many packs of each type of sweet could you buy?

Find as many different ways as you can.



Family comments:

Child comments:

Curriculum Link

Solve problems using the 5 and 7 times table facts.

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Expedition

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Imagine you are on an expedition and you have to abseil down a mountain, but you can only carry 25 kg of equipment. You have to choose what sleeping gear, wash gear, clothes, and food/drink you can pack into a bag which must weigh less than 25 kg.

Take a look around your house and cupboards and decide what you would take to survive. What would your other family members take?

Family comments:

Child comments:

Curriculum Link

Estimate, compare and calculate different measures, solve a range of problems, justify thinking.

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Santa's elves' café

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This is what Santa's elves charge for food at their café:

- **1 mince pie and a cup of tea cost £4**
- **2 mince pies and 2 reindeer biscuits cost £9**
- **1 reindeer biscuit and 2 teas cost £2**

1. What do you have to pay in total for 1 mince pie and 1 cup of tea?

2. What does each item cost on its own?

3. Can you make up your own puzzle like this for someone in your family? (Be sure to test it out!) Sell your favourite Christmas foods.

Family comments:

Child comments:

Curriculum Link

Problem solving involving money.

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Christmas party time!

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Your task is to plan a party within a given budget. The party is for 8 young children.

You would like some sort of entertainment and games that have prizes. Obviously you will need food and drink too – and not forgetting, of course, a cake.

Your budget for the whole party is £100.

Look at the list of prices (on the next page) and calculate what you can afford within your budget. Remember you cannot go a penny over!

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Items	Cost
Food and drink options	
Packet of crisps	30p each or pack of 6 for £1.50
Packets of cheese straws	£0.75 approximately 10 in a pack
Mini sausages on a stick	£1.20 for a pack of 12
Mini pizzas	£1.75 pack of 6
Sausage rolls	£1.25 pack of 6
Biscuits	£0.75 per packet
Mini sandwiches (assorted fillings)	£1.60 per pack of 4
Mini 'fairy or Santa' cakes	£1.50 per pack of 8
Large Christmas chocolate sponge cake	£4.50 - serves 8
1L bottles of fizzy drinks = 6 cups	£0.90 each
Orange, blackcurrant or lemon squash	£0.10 per cup (150ml)
Water	free
Plastic cups	£0.50 per packet of 10
Plastic plates	£0.75 per pack of 10
'Goody' going home bags	£0.75 each
Prizes	
Packets of sweets	£0.99 each
Whistles	£0.25 each or packets of 5 for £1
Mini hand games	£0.99 each
Entertainment Options	
Hire a small bouncy castle	£35 per hour
Magician or comedy act	£42 per hour

Family comments:

Child comments:

Curriculum Link

Curriculum link: problem solving using addition and subtraction of money.

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Planning a trip

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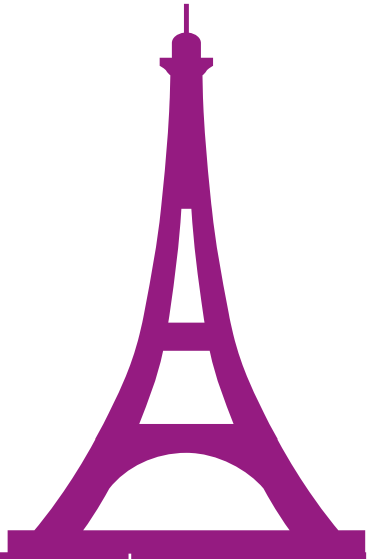
You have £2000 to spend on a holiday. Where would you go? Would you take any family members? How much would it cost? Could you visit more than one place? Make up a plan of real places to visit and how much it would cost. Here is an example of a day out (with pretend prices) but you can go anywhere you like! Look up some fun places!



Place	Who	Cost	Total
Disneyland Paris	2 adults and 2 children	Adults £575.00 each Children £300.00 each	£1,750.00
Eiffel Tower	1 adult and 2 children	Adult £28.00 Children £20.00 each	£68.00
Seine riverboat trip	2 adults and 2 children	Adults £30.80 each Children £26.55 each	£114.70

Family comments:

Child comments:

Curriculum Link

Solve money problems including two decimal places.

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Rangoli pattern

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Rangoli patterns can be made from lots of different shapes – they can be square, rectangular or circular or a mix of all three.

Look at the one below. You could colour this pattern or use the shapes to design your own.

They are often symmetrical and take their ideas from nature – peacocks, flowers, fruit, and leaves – see what you could find to make your pattern.

Can your family design different ones, which is your favourite?

Family comments:

Child comments:

Curriculum Link

Draw symmetric patterns using a variety of media to become familiar with different orientations of lines of symmetry, and recognise line symmetry in a variety of diagrams.

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Two cuts

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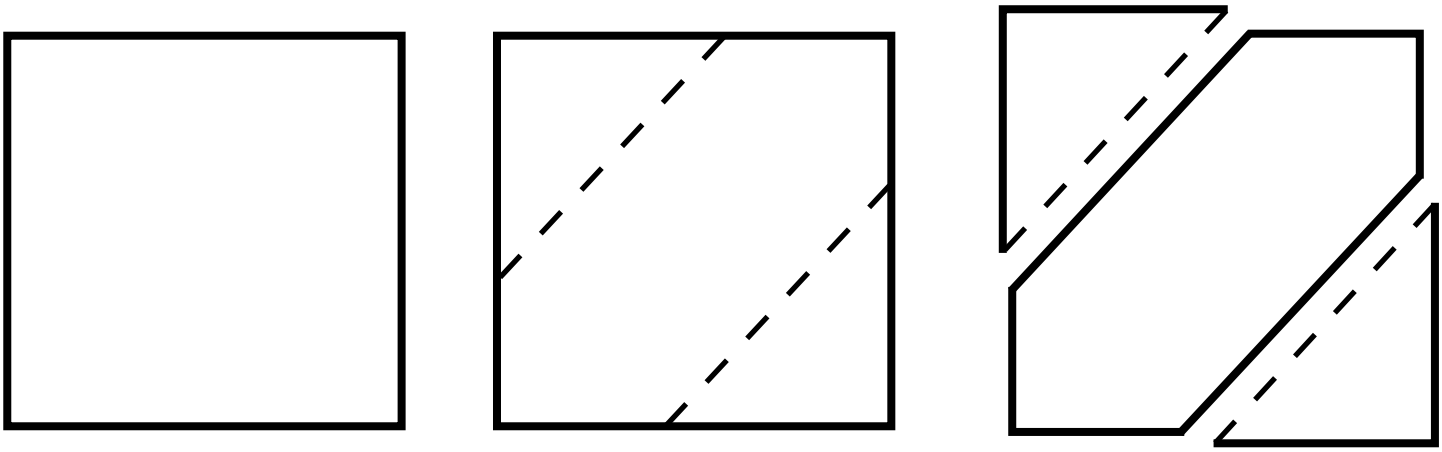
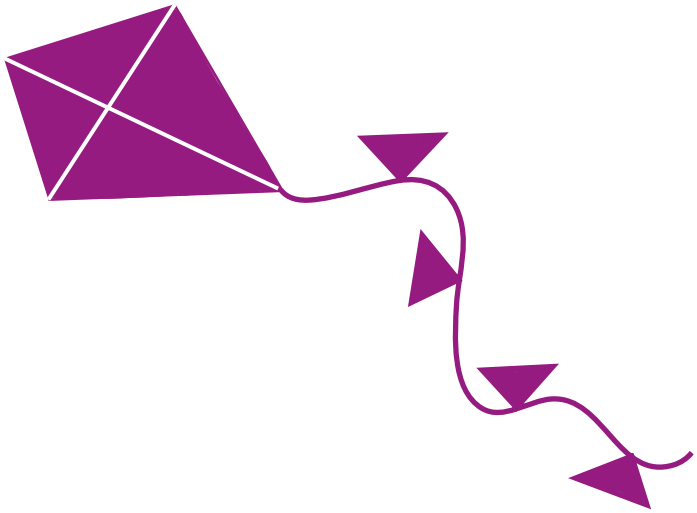
Start with a square.



Which of these shapes can you make by making two straight cuts to it?

Pentagon	Hexagon	Octagon	A seven-sided shape
Trapezium	Parallelogram	Rhombus	Irregular quadrilateral
Kite	Right-angled triangle	Isosceles triangle	Equilateral triangle



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Record your cuts on these squares and name the shape.

Family comments:

Child comments:

Curriculum Link

Classify shapes using geometrical properties, extending to classifying different triangles and quadrilaterals.

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Christmas tree

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Draw a plain Christmas tree.

Ask one of your family to read out the instructions to decorate it – you have to listen carefully. You will need some colour pencils or crayons.

1. Place a square blue present with a pink bow to the right of the trunk.
2. Put a round orange bauble on the 3rd branch on the left hand side.
3. Draw a red bucket around the trunk, place a cube shaped blue present next to it.
4. Draw a star on top – it should have 5 points.
5. Put a candy cane on the 1st branch on the right hand side.
6. Place another cane symmetrically on the other side.
7. Place a triangular prism shaped present on the left of the trunk. The wrapping paper should be green with yellow stars on it.
8. Hang a small red stocking on both bottom branches – they should hang at 90 degrees to the branch!
9. Hang an angel on the top left hand side branch - colour this yellow.
10. Finish your tree with 5 different baubles – 2 x red, 2 x blue and 1 green anywhere.

Now make up some instructions carefully and see if your family can follow them to decorate another blank tree.

Family comments:

Child comments:

Curriculum Link

Develop listening skills, following instructions accurately and developing own instructions using a range of positional and geometrical vocabulary.

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Deciphering code

Family Maths Toolkit

Decipher this!

MEMER, REB R BMEME EHTRE HTFIF VONFO REBME

____ ____ ____ ____ ____ ____ ____ ____

Helpful hint: Write each block of characters backwards to read it properly! You will need to sort them out and put them in order to make sense.

X marks the spot!

Follow the trail from beginning to end...

E	A	S	O	N
R	U	N	X	A
T	G	P	T	N
R	X	O	O	D
E	D	W	L	P

Adapted from a Bletchley Park activity

Think you've got it?! Now make your own – see if your friends can work them out!

Family comments:

Child comments:

Curriculum Link

Solve a range of problems and develop logical thinking skills.

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Hecatonchires

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The Hecatonchires were mythical Greek giants, each with 50 heads and 50 arms on each set of shoulders. Each arm had 10 hands. Each hand had 10 rings on – one was magic!

After a fierce battle, one of the Titans managed to chop off one of the Hecatonchires' arms. Then he cut off one hand from an arm.

How many hands were left?

On one of the remaining hands, the Titan found the magic ring and pulled it off – how many rings were left on the Hecatonchires?

Helpful tips: It may help to draw this initially.

Family comments:

Child comments:

Curriculum Link

Place value introducing or using numbers greater than 1000.

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Everyday estimating

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Think of something that you do every day – for example, clean your teeth – and estimate how many times you will do this in your whole life.

Then see if you can work it out (you can use a calculator or an adult to help) – it will not be an exact answer!

Family comments:

Child comments:

Curriculum Link

Refine estimation skills, use all four operations and a variety of methods to solve a range of problems, develop mathematical thinking.

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Domino challenges

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Using a set of dominoes (cut out from the attached sheet if you do not have any), can you find:

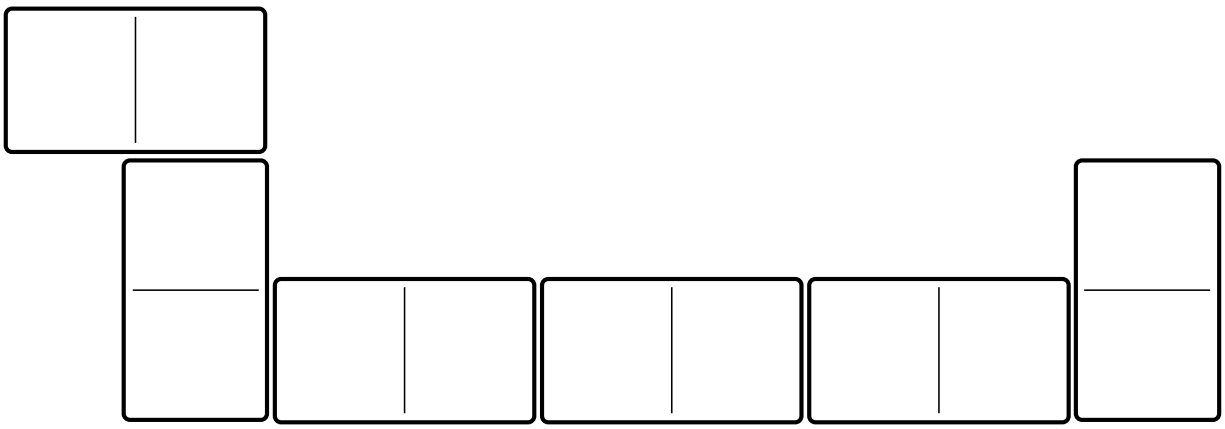
- 5 dominoes which add up to 20
- 5 odd number doubles which total more than 10
- 3 doubles with a total more than 20
- 4 near doubles with a total more than 25
- a domino with a difference of 3 between the number of dots each end
- a domino with an odd number one end and an even the other.

Can you make a snake with all the doubles – what does it add up to?

Can you make a snake with 40 dots?

Can you make a snake with an even total between 31 and 41?

Can you make up any other rules?



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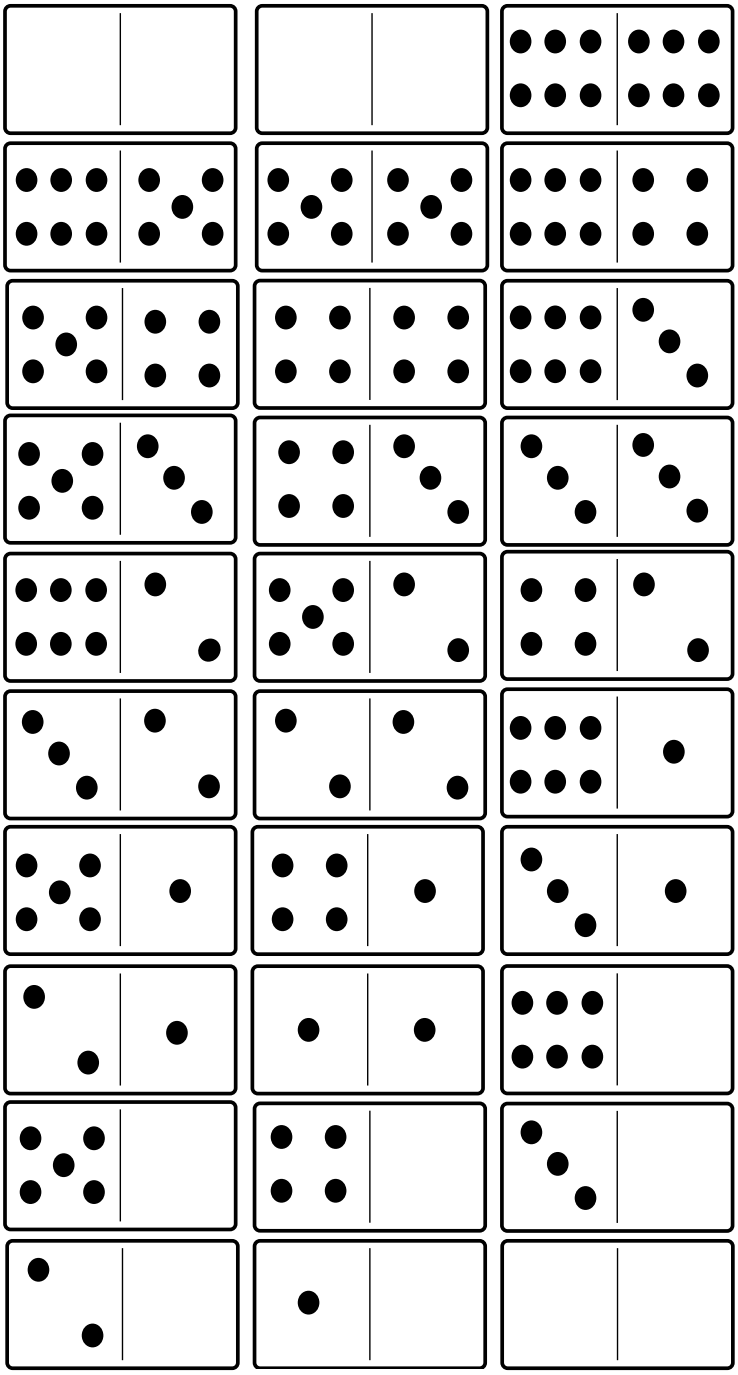

Family comments:

Child comments:

Curriculum Link

Doubles of numbers, odd and even, adding a succession of numbers, problem solving.

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Gold robbery

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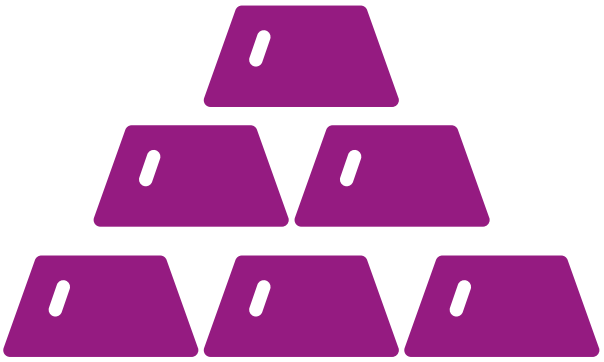
5 dwarves steal a number of gold bars, from Smaug the dragon, and decide to divide up the gold and go different ways. However, when they try this, there are 2 bars left over. A fight breaks out over who should have them!

One dwarf is knocked unconscious. The other 4 take their chance and split up the bars 4 ways, but again they argue because there is one bar left over.

Work out how many gold bars the dwarves stole.

Change the problem for a friend by having a different number of dwarves or change how many get knocked out, or the number of bars left over. Check it works!



Family comments:

Child comments:

Curriculum Link

Solve a range of problems using division, working systematically and developing mathematical thinking.

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Cafè menu

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Here is a menu for lunch:

- **spaghetti special or vegetable pie**
- **jacket potato or salad**
- **an orange or yogurt or ice-cream**

What are the all the possible meals you could have (choosing one from each line each time)?

Give each item a price and work out the cost of each meal. Which would be the cheapest?

Pretend you are going to open a restaurant - choose two main meals and two puddings you would have on the menu. How much would they cost?

Family comments:

Child comments:

Curriculum Link

Solve problems with money in context such as choices of a meal on a menu.

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Special offer

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When you go to the shops do you ever look for special offers like two for the price of one? Or buy one, get the second half price?

See how many special offers you can find by looking in a shop or online – are they all good bargains? Sometimes offers are not as good as they seem. For example, two 1 litre bottles of fruit juice for £5.00 when a 2 litre bottle costs £4.99!

Can you find any interesting offers?

Can you choose something you like to eat or drink and make up a good special offer for it?

Family comments:

Child comments:

Curriculum Link

Solve money problems in a real life context, using two decimal places and thinking mathematically.

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Design a Hobbit

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The Hobbit

"They are a little people, about half our height, and smaller than the bearded dwarves. Hobbits have no beards. They are inclined to be fat in the stomach; they dress in bright colours (chiefly green and yellow); wear no shoes, because their feet grow natural leathery soles and thick warm hair like the stuff on their heads (which is curly); have long clever brown fingers, good natured faces, and laugh deep fruity laughs."

From The Hobbit by J.R.R. Tolkien

Facts about humans

- Humans' arm spans are the same length as their height
- Their heads are about $1/7$ or $1/8$ of their height
- Their hands are about $1/4$ of their arm length
- Can you check these facts on you and a friend?

Design a hobbit using all the information you have.

Family comments:

Child comments:

Curriculum Link

Estimate, compare and calculate using different measures accurately; solve problems using fractions.

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Areas and perimeters

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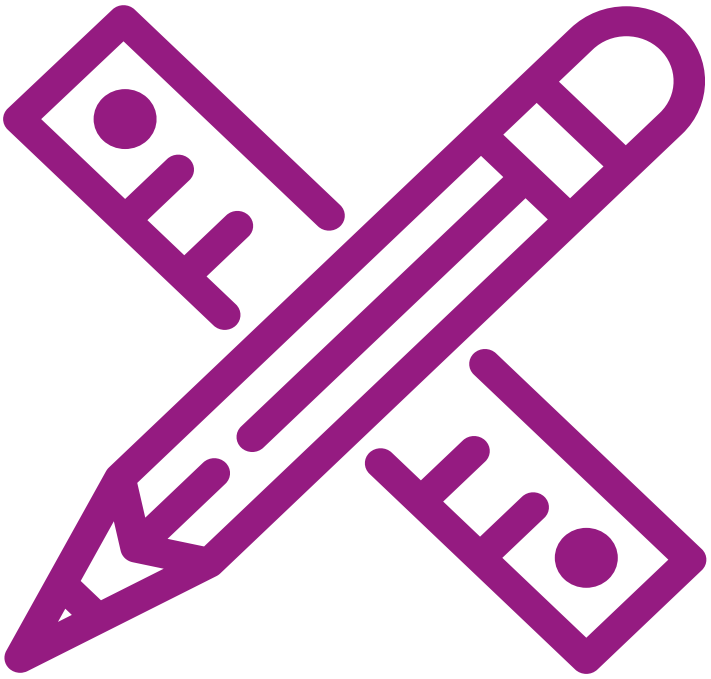
Estate agents give the size of rooms when they sell a house. Measure a room in your house to find the area – you can use squared paper to help you draw it and count the squares if it helps.

1. Which is the biggest room in your house?
2. Which is the smallest?
3. Measure the perimeter (all around the edge). Does the room with the largest area always have the longest perimeter?



Family comments:

Child comments:

Curriculum Link

Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. Find the area of rectilinear shapes by counting squares.

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St Valentine's Day dates

Family Maths Toolkit

St Valentine's Day is celebrated on 14th February every year. What is special about February as a month?

Here are some important dates about St Valentine:

270 - a bishop called Valentine died

496 - February 14th was named as St Valentine's Day

1537 - the king named 14th February as a holiday in this country

1868 - Cadbury produced the first chocolate box for St Valentine's Day

Can you draw a timeline from 1537 to now? Then can you add any important dates you know that fit in this timeline? It could be historical events or important dates in your own family history. Sometimes you could put two dates, for example the First World War was from 1914 to 1918 and lasted 4 years.

Family comments:

Child comments:

Curriculum Link

Solve problems using months and years.

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Wheels

Family Maths Toolkit

How many things can you find that have wheels? Think about cars, buses, toys...

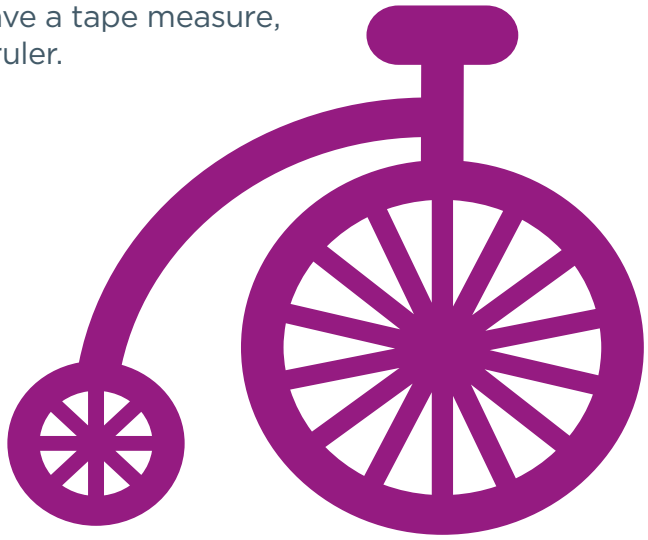
Are all wheels the same shape? Are all wheels the same size? Are they wide or narrow?

If we measure across the middle of the circle, it is called the diameter. All the way round the outside edge is called the circumference.

How many different diameters can you measure? Write down what the wheel belonged to and its diameter.

Can you think of anything that may have different size wheels?

Helpful hint: If you don't have a tape measure, use a piece of string and a ruler.



Family comments:

Child comments:

Curriculum Link

Measure, compare length. Begin to think about the properties of a circle.

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To a million

Family Maths Toolkit

How long does it take to count to 100?

Estimate how long it would take you to count to 1000. How did you calculate your estimate?

Molly said:

It took me 2 minutes to count to 100 so I think it will take me 20 minutes to count to 1000.

Do you think her estimate is a good one? Work out how long it would take to count to 1 000 000. Make some other estimates and see how close you are.

It would take a really long time to count to a million, but without counting we can estimate that there must be more than a million grains of sand on a beach. Can you think of any more examples of a million?

Family comments:

Child comments:

Curriculum Link

Identify, represent and estimate numbers.

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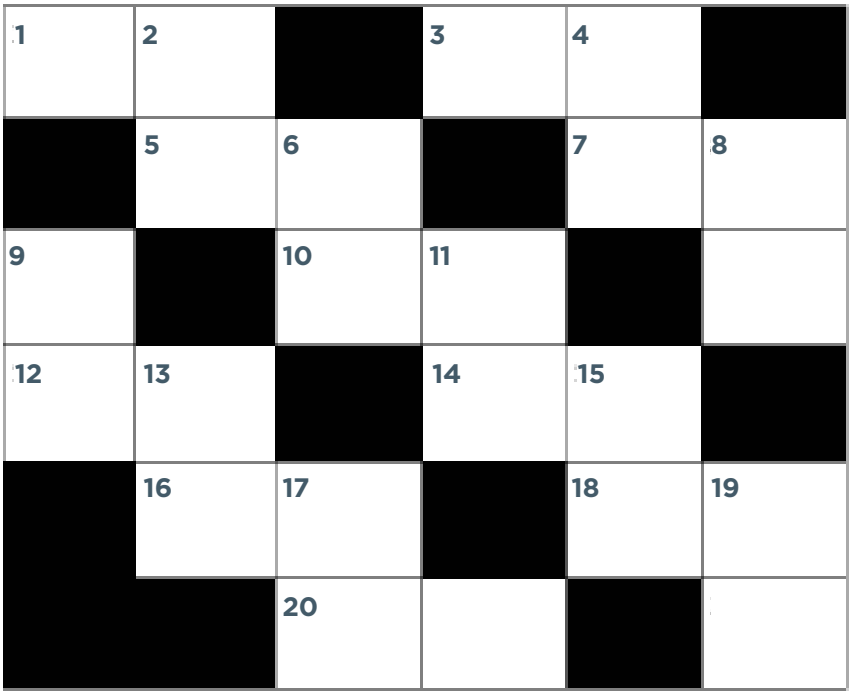
Crossword activity Part one

Family Maths Toolkit

Here is an example of a simple number crossword. Can you solve it?



Across

1. 50 – 26
3. 5 x 7
5. 100 – 77
7. 20.5 + 20.5
10. 8 x 8
12. 56 + 41
14. 9 x 4
16. 170 – 89
18. 101 – 85
20. 26 x 2

Down

2. Double 21
4. Half of 108
6. 12 x 3
8. Half of 38
9. 100 – 1
11. 1/4 of 172
13. Double 39
15. 32 + 29
17. 5/10 of 30
19. 15 x 4

Now, can you and your family make up another for your friends to solve, for an extra challenge?!

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Crossword activity
Part two

For an additional challenge, design your own grid – choose where to put the black squares (not as easy as it seems).

Family comments:

Child comments:

Curriculum Link

Practise using mental methods for all four operations.

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Car number plates

Family Maths Toolkit

Look at the cars in a car park or on your road. Write down the first digit in three different car number plates.

1. What are the 3 numbers for the cars you found?
2. What is their total if you add the digits together?
3. Does it matter which order you add the digits in?
4. Can you find a set of three car number plates where the first digits have a total greater than 20?
5. Could you make one up? Is it possible if one of the digits is 1?
6. Suppose you looked at all the cars in the car park - or on your road. How many times would you expect the first digits from three cars to add up to more than 20?

Family comments:

Child comments:

Curriculum Link

Solve a range of problems, thinking mathematically and working systematically.

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Times table task

Family Maths Toolkit

Which times table is this?
(Clue: it's not in order!)

A x F = GJ
E x F = DH
C x F = GC
D x F = AB
J x F = HJ
G x F = F
GB x F = FB
F x F = AF
H x F = CH
K x F = HC

A x F

Please see over for helpful tips to get started if you need them.

Can you make up another times table like this?

? = GJ

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Helpful hints:

- How many single digit products in this times table? So which times table can it NOT be?
- Can you find the product which is a square number? How would you recognise that? Is it a single digit or 2 digit product? Which times tables might this fit? So which times tables can you rule out?
- Can you find the multiplication that is x 1? How would you recognise that?
- Can you find the products that are teens numbers? How many can you find? Which times tables have the same number of teens products? So which times tables can this NOT be?
- Once you know what letter 1 represents, can you find the multiplication that is x 10? How would you recognise that? You should now be able to find what letter represents 0.
- How many products are multiples of 10? Does that rule out any remaining times tables?

=FB

Family comments:

Child comments:

Curriculum Link

Recall and use multiplication facts. Solve a range of problems and develop mathematical thinking and reasoning skills.

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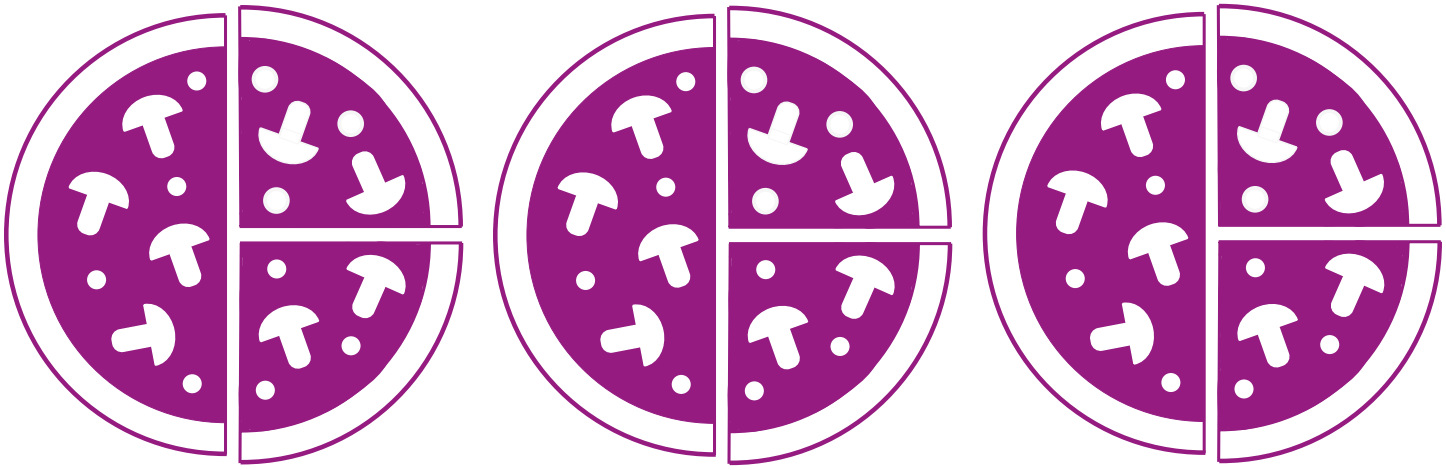
Pizza preparation

Family Maths Toolkit

In a pizza shop, Antonio uses $^{3}/_{5}$ of a jar of chopped tomatoes on each pizza.

He has 4 jars of tomatoes. How many pizzas could he cover?

He also uses tubs of grated cheese. He uses $^{2}/_{3}$ of a tub on each pizza and has 5 tubs of cheese – how many pizzas could he put cheese on?



Helpful hint: Draw the jars and tubs and split them into the fractions needed.

Family comments:

Child comments:

Curriculum Link

Solve problems involving fractions to divide quantities; add and subtract fractions with the same denominator.

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Cocktail prices

Family Maths Toolkit

Using the price list work out the cost in pounds (£) of each jug of fruit cocktail based on how much juice each cocktail uses:

1. Jug of Brilliant Blackcurrant: 650ml of blackcurrant juice and 150ml of apple juice.
2. Jug of Luscious Lemon: 700ml of lemon juice and 150ml of pineapple juice.
3. Jug of Original Orange: 450ml of orange juice and 350ml of pineapple juice.
4. Jug of Amazing Apple: 400ml of apple juice, 150 ml of lemon juice and 100ml of orange juice.
5. Jug of Proper Pineapple: 250ml of pineapple juice, 250ml of orange juice and 250ml of lemon juice.
6. Using only £3.50 can you create your own fruit cocktail recipe?

Price list

- **Pineapple juice: 60p per 100ml**
- **Orange juice: 40p per 100ml**
- **Lemon juice: 50p per 100ml**
- **Apple juice: 80p per 100ml**
- **Blackcurrant juice: 30p per 100ml**

Family comments:

Child comments:

Curriculum Link

Estimate, compare and calculate different measures, including money with pounds and pence.

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Travel maths

Family Maths Toolkit

If you had to plan a trip to Glasgow in Scotland, which transport would you use and how long would it take?

Use the internet, books or imagination to write a timetable of your journey. If you live in or near Glasgow, choose a destination further away!

Family comments:

Child comments:

Curriculum Link

Read, write and convert time between analogue and digital 12 and 24 hour clocks, present data.

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Hand luggage dilemma

Family Maths Toolkit

Sometimes people travel on planes. When they do, they are allowed to carry a small bag on to the plane. The bag must not weigh over 7 kg. The bag cannot be any bigger than 55 cm by 45 cm by 25 cm.

What would you choose to carry? You do not need clothes as these will be in the main case. Which things are unexpectedly heavy?

Helpful hint: Find a similar sized bag and try packing it yourself.

Family comments:

Child comments:

Curriculum Link

Measure, compare, add and subtract mass (g/kg) and length (m/cm/mm).

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Time challenge

Family Maths Toolkit

Talk about these and try to put them in order!

A minute	Time for an oak tree to grow 30 metres high	A million seconds	Time to soft boil an egg
An hour	Length of time since the last ice age	A month	Game of football with no extra time
Read all the Harry Potter books	A year	Number of years for the earth to go round the sun	A hundred months
A good shower	Number of months since you were born	Time to tidy your bedroom	A thousand days

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Now make up a puzzle of your own.

Family comments:

Child comments:

Curriculum Link

Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.

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Working with your heart

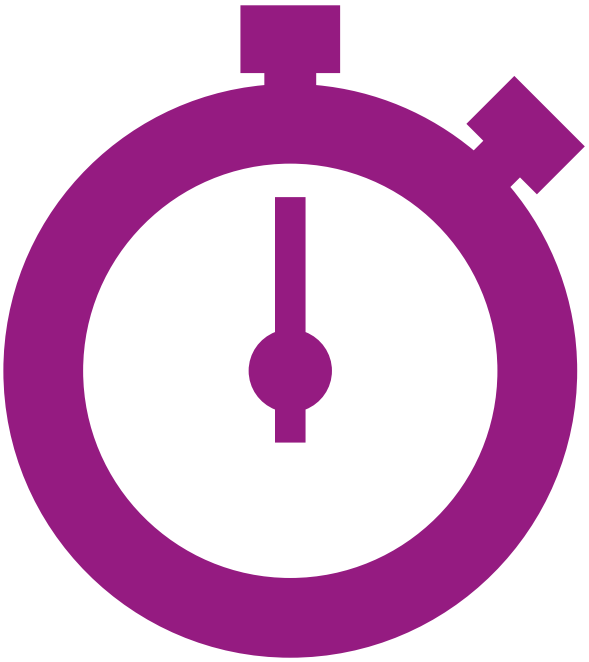
Family Maths Toolkit

We all know how important it is to make our heart work to keep it healthy. One good way is to jump, hop or skip.

Estimate how many hops you can do on one foot in 15 seconds. Write down your estimate. Ask all your family to join in and write their estimates.

Now – watching a clock or using a stopwatch or timer – see how many hops you can do in 15 seconds. At the end, write down how many you did.

Compare everyone's estimate with their actual count – what do you notice? How can you record this? What was the most common estimate? What was the most common actual score? Based on your actual score, how many do you think you could do in a minute?



Family comments:

Child comments:

Curriculum Link

Solve problems using and converting seconds to minutes; interpret and present discrete data; solve comparison problems using the information presented.

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Y4 Autumn activities answers

Family Maths Toolkit

Deciphering the code

"Remember remember the fifth of November"
and "Gunpowder treason and plot"

Sweet puzzle

3 combinations:

- 7 packs of Chews and 15 packs of lollipops
- 14 Chews and 10 lollipops
- 21 Chews and 5 lollipops

Santa's elves' cafè

- Mince pie = £3.50
- Cup of tea = 50p
- Reindeer biscuit = £1.00

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Y4 Spring activities answers

Family Maths Toolkit

Cafè menu

12 possible combinations

Gold robbery

17, 37 and many more numbers like this fit the question – but can the dwarves carry that many?

Hecatonchires

- 50 Heads x 50 Arms = 2500 arms
- Each arm had 10 hands = 25000 hands
- Each hand had 10 rings = 250000 rings

- 25000 – 10 (one arm) = 24990 hands left
- 24990 hands x 10 (rings) = 249900 rings
- Titan stole one ring = 249899 rings left on Hecatonchires

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Y4 Summer activities answers

Family Maths Toolkit

Crossword puzzle

Across	Down
1. 24	**2.** 42
3. 35	**4.** 54
5. 23	**6.** 36
7. 41	**8.** 19
10. 64	**9.** 99
12. 97	**11.** 43
14. 36	**13.** 78
16. 81	**15.** 61
18. 16	**17.** 15
20. 52	**19.** 60

Car Number-Plates

23 possibilities – can you find them all?

Not possible if one digit is 1.

Cocktail prices

1. £3.15
2. £4.40
3. £3.90
4. £4.35
5. £3.75

Times table

It represents the 6 times table.

Pizza preparation

- 6 pizzas ($^2/_5$ left over)
- 7 pizzas ($^1/_3$ left over)

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