SHAWLANDS PRIMARY SCHOOL

BETTER TOGETHER

Family Maths Activities

Year 5

About this booklet:

You can make a huge difference to your children's maths learning! This booklet aims to promote enjoyment of maths through discussion and working together on everyday maths!

It contains short, fun, 'real-life' activities for families to do together.

They are aligned to the English National Curriculum, with a strong focus on problem solving and reasoning.

The activities can be spread out across the year (as suggested on the following page) or at your own leisure in any order.

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

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

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?
- What could we do differently next time?

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.

Y5 Long Term Plan – Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5	Number and Place Value Addition and Subtraction Multiplication and Division	Fractions Geometry / Shape – position and direction	Multiplication and Division Fractions , Decimals and Percentages	Measurement – kilograms, kilometres, millimetres, millilitres – volume / capacity Geometry / Shape – perimeter, area & volume	Statistics – line graphs, timetables Geometry / Shape – angles, lines, lengths	Time Consolidation Investigations

SHAWLANDS PRIMARY SCHOOL

Suggested Delivery of Challenges

Challenge	Term	National Curriculum Link
Roman Numerals Timeline	Autumn 1	Number and Place Value
Healthy Counting	Autumn 1	Number and Place Value
Countdown Style Game	Autumn 1	Number and Place Value
An Interesting Year	Autumn 1	Number and Place Value
Holiday in Iceland	Autumn 1	Number and Place Value
Pyramid Puzzle	Autumn 2	Addition and Place Value
Space Pirates!	Autumn 2	Multiplication and Division
Prime Numbers – True or False	Autumn 2	Multiplication and Division
Cough Mixture	Autumn 2	Addition and Subtraction / Multiplication and Division
Design a Family Logo	Autumn 2	Shape
Pizza Dilemma	Spring 1	Fractions
Monkey's Peaches	Spring 1	Fractions
Super Swimmers	Spring 1	Percentages
Tennis Racquet	Spring 1	Decimals / Consolidation
Giraffes	Spring 2	Measurements
Dairy Cows and Milk	Spring 2	Measurement
Paddy's Walk to the Park	Spring 2	Measurement
Cheese Straws Part 1	Spring 2	Decimals / Measurement
Children's Petting Zoo	Spring 2	Area and Perimeter
Painting a Wall	Spring 2	Fractions / Area and Perimeter
Design a Superhero	Summer 1	Measurements – Consolidation
Boys' Heights	Summer 1	Statistics
Theme Park Rides	Summer 1	Statistics
Cheese Straws Part 2	Summer 1	Shape - Consolidation
Golf Balls	Summer 1	Area and Perimeter – Consolidation
The School Day	Summer 2	Time
School Trip to the Zoo	Summer 2	Time
Lucky Number 8	Summer 2	Consolidation
Cross-Sum Puzzle	Summer 2	Consolidation
Logical Car Park	Summer 2	Consolidation

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Roman numerals timeline

Family Maths Toolkit

Here are some famous events in history and the years they happened in Roman numerals.

Battle of Waterloo	The Gunpowder Plot	Queen Elizabeth II was 90 years old	The First World War started	The Great Fire of London	England football team won the World Cup	The Romans first occupied Wales
Lewis Carroll published 'Alice's Adventures in Wonderland'	First female Prime Minister in the UK - Margaret Thatcher	The Channel Tunnel opened	Decimal currency replaced 'pounds, shillings and pence'	Queen Victoria died	'What makes you beautiful' by One Direction was at number one	Scooby Doo series first on TV
MCMLXIX	MDCCCXV	LXXVIII	MMXI	MDCCCLXV	MCMLXXIX	MCMI
MCMXCIV	MCMLXXI	MDCV	MMXVI	MCMXIV	MCMLXVI	MDCLXI

Can you cut them out and match them up, then place them all on a timeline?
Can you add some years and events that you know to the timeline?

Family comments:

Child comments:

Curriculum Link

Read Roman numerals and recognise years written in Roman numerals.

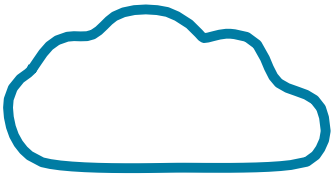
National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Healthy counting

Family Maths Toolkit

Health experts say that walking 10,000 steps a day can be a fun way of increasing the amount of physical exercise you do. It can build stamina, burn excess calories and give you a healthier heart.



10,000 steps is about 5 miles (2000 steps are roughly 1 mile).

Think about how far you walk in a day and estimate some activities you do. Here are some ideas:

- Walking to school
- Walking around school
- Walking upstairs
- Walking the dog
- Playing sport



Can you estimate how many steps you might take on an average day? Can you think of ways you could increase this?

Do any of your family think they walk 10,000 steps a day?

Helpful hints: Count steps over a short distance and estimate.

Family comments:

Child comments:

Curriculum Link

Read, write, order and compare numbers up to 1,000,000; solve number problems and practical problems that involve large numbers.

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Countdown style game

Family Maths Toolkit

Here are cards with the digits 1-9 on them plus an extra card with a decimal point. Cut them out, shuffle them and place face down.

1	2
3	4
5	6
7	8
9	0
.	

1	2
3	4
5	6
7	8
9	0
.	

National Numeracy
Getting on with numbers

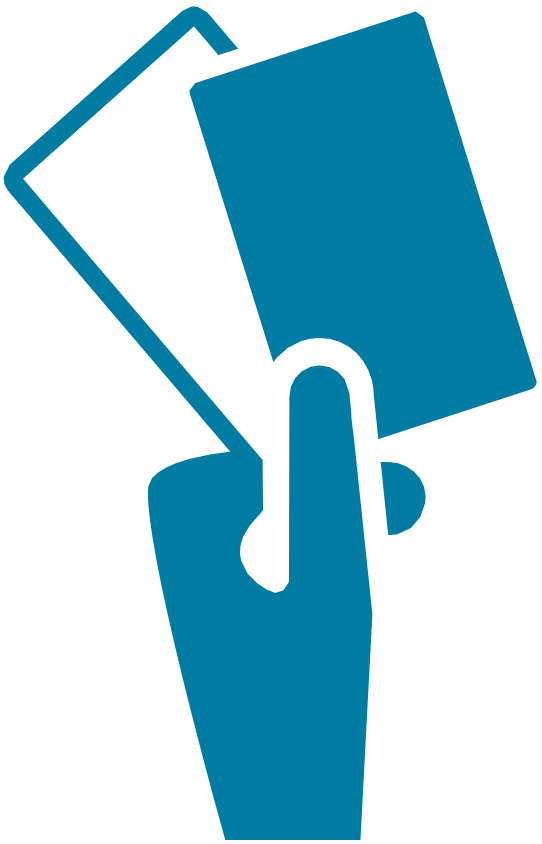
Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Take it in turns to take one card until each player has 4 cards. In a minute, try to make the largest number you can using all your cards. The player with the largest number wins.

If more than two people are playing, make a double set of cards. The game can be changed to making the smallest number possible.

You could use two sets of cards and each take 6 cards to make larger numbers or a more challenging game.

Helpful hints: Talk about the value of each digit especially with any close examples, read out the numbers that are formed.



Family comments:

Child comments:

Curriculum Link

Read, order and compare numbers to at least 1,000,000 and determine the value of each digit.

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

An interesting year

Family Maths Toolkit

What happens if you add up all (one of each) of the Roman numerals?

You will find a very interesting year – do you know what it is?

It is also the only year to contain each Roman numeral once in descending order.

Another interesting year could be the year in which you were born – could you write that in?

Roman numerals? Can you think of any others?

M

+ III = IX

IV + X

Family comments:

Child comments:

Curriculum Link

Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Holiday in Iceland

Family Maths Toolkit

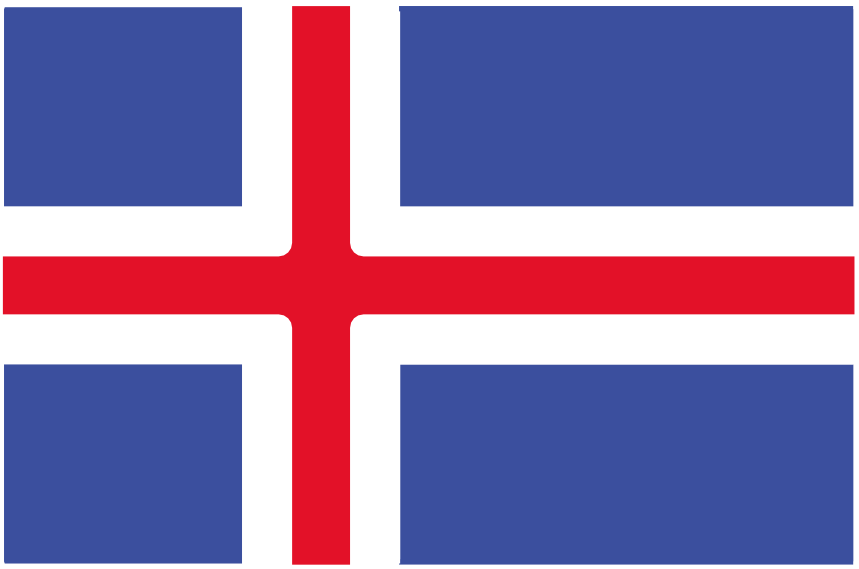
If you were planning a holiday to Iceland, you might be interested in what temperature to expect. A good time to go could be August.

Temperatures have been measured each month on the 1st of the month at 6am and here is what was recorded:

- In January the temperature was - 6 °C
- In February the temperature fell by 2 °C
- In March the temperature rose by 7 °C
- In April the temperature rose by 5 °C
- In May the temperature fell by 0.5 °C
- In June the temperature rose by 4 °C
- In July the temperature rose by 1.75 °C
- In August the temperature rose by 2 °C

What was the temperature in August?

Would you like to go then? How much colder or warmer is it than where you live today?



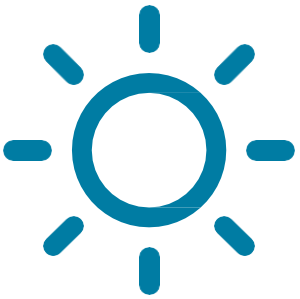
National Numeracy
Getting on with numbers

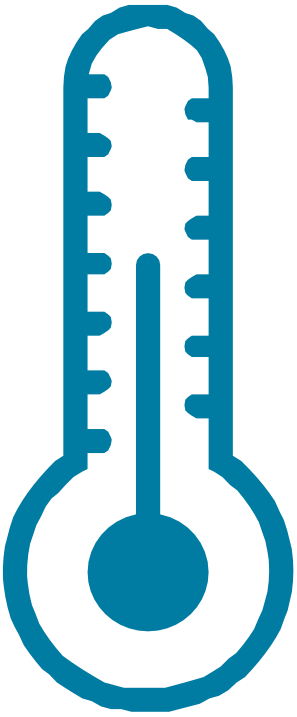
Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Look at some world temperatures and find the coldest and the hottest today – which would you prefer? Where would a polar bear prefer? Or a giraffe?

In winter in the UK, most people heat their homes - do you know what temperature your home is usually?

Helpful hints: Use either the world temperatures in a newspaper or look them up online; talk about what happens in very cold climates or very hot climates.





Family comments:

Child comments:

Curriculum Link

Interpret negative numbers in context, count forwards and backwards with positive and negative numbers including through zero.

National Numeracy
Getting on with numbers

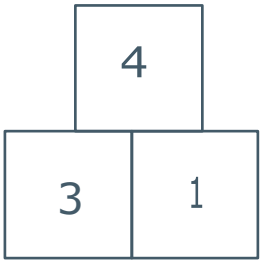
Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

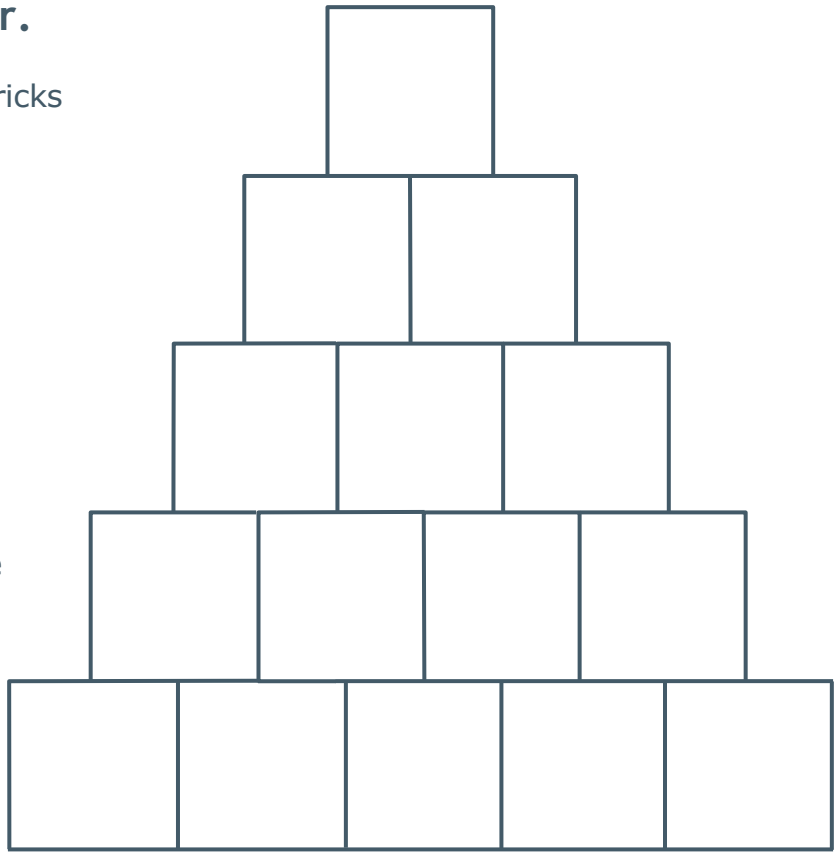
Pyramid puzzle

Family Maths Toolkit

Place the digits 1 to 5 in each of the bottom 5 squares, in any order.

The numbers are found by adding two bricks immediately below. For example:





What arrangement of the numbers in the bottom row gives the highest total in the top brick of the pyramid?

What arrangement will give the smallest number in the top brick?

Family comments:

Child comments:

Curriculum Link

Add numbers mentally with increasingly large numbers, thinking and reasoning.

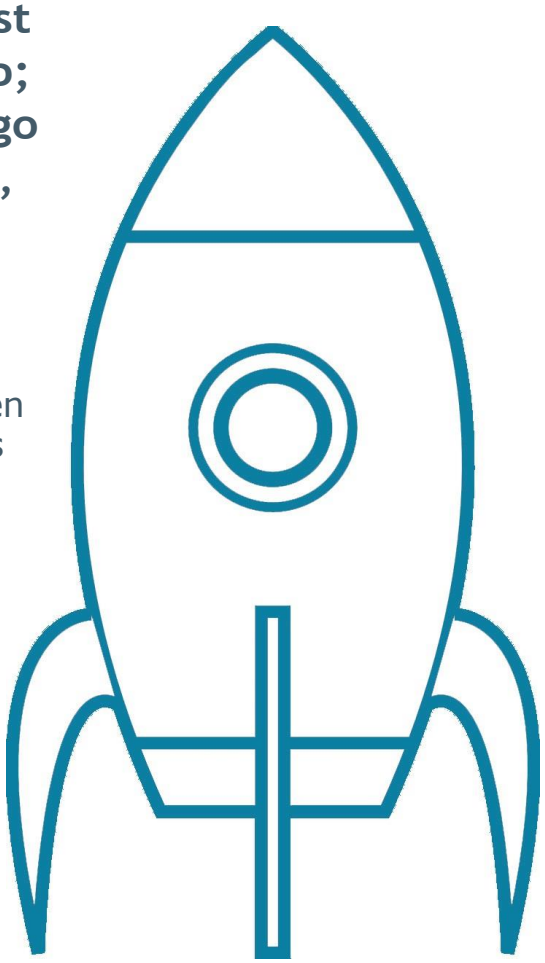
National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Space Pirates!

Family Maths Toolkit

9 space pirates find an alien treasure chest full of gold pieces in a captured spaceship; they decide to share the gold pieces and go different ways. However, when they try this, there are 2 gold pieces left over. A fight breaks out over who should have them!



One space pirate is called back to base. The others take their chance and split up the gold pieces between the 8 of them, but again they argue because there is one left over.

Work out how many gold pieces the space pirates found.

Change the problem for a friend by having a different number of space pirates or the number of gold pieces left over. Check it works!

Family comments:

Child comments:

Curriculum Link

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

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Lucky number 8

Family Maths Toolkit

In the Chinese culture, the number 8 is seen as a lucky number.

One example is a Chinese couple wanted to get married in the year 2015 because all the digits added up to 8 (2+0+1+5 = 8). This makes it a lucky year for them!

If they were born in 1990, and need to be 18 to get married, are there any other years that they could have chosen?

Do you know anyone who got married in a lucky '8' year?

Do you know anyone who was born in a lucky '8' year?

Helpful hints: Start by calculating the first year in which they are 18 years old.



Family comments:

Child comments:

Curriculum Link

Solve number problems.

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Cough mixture

Family Maths Toolkit

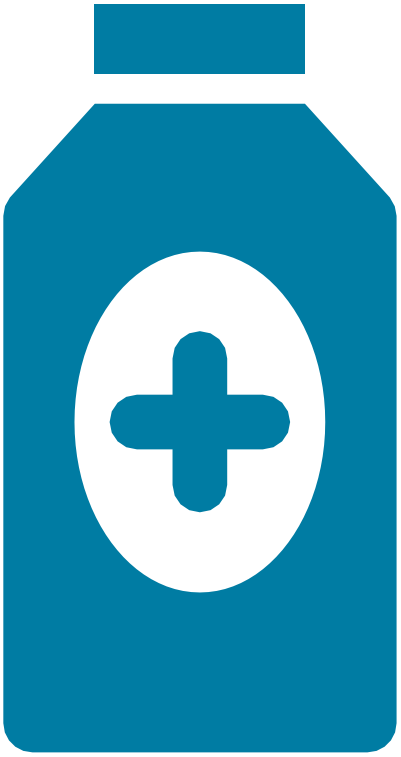
One family have sadly all got bad coughs. A bottle of cough mixture contains 500 ml of medicine.

- **ADULT DOSE**

  10 ML FOUR TIMES A DAY

- **CHILD DOSE**

  5 ML FOUR TIMES A DAY



Two adults and two children need to take the cough mixture every day for five days.

Will there be enough cough mixture in the bottle?

Talk about and explain your answer.

Do you have any bottles of medicine in your house? What capacity do they have? How many dosages could you have from the bottle?

Family comments:

Child comments:

Curriculum Link

Solve problems involving addition and multiplication.

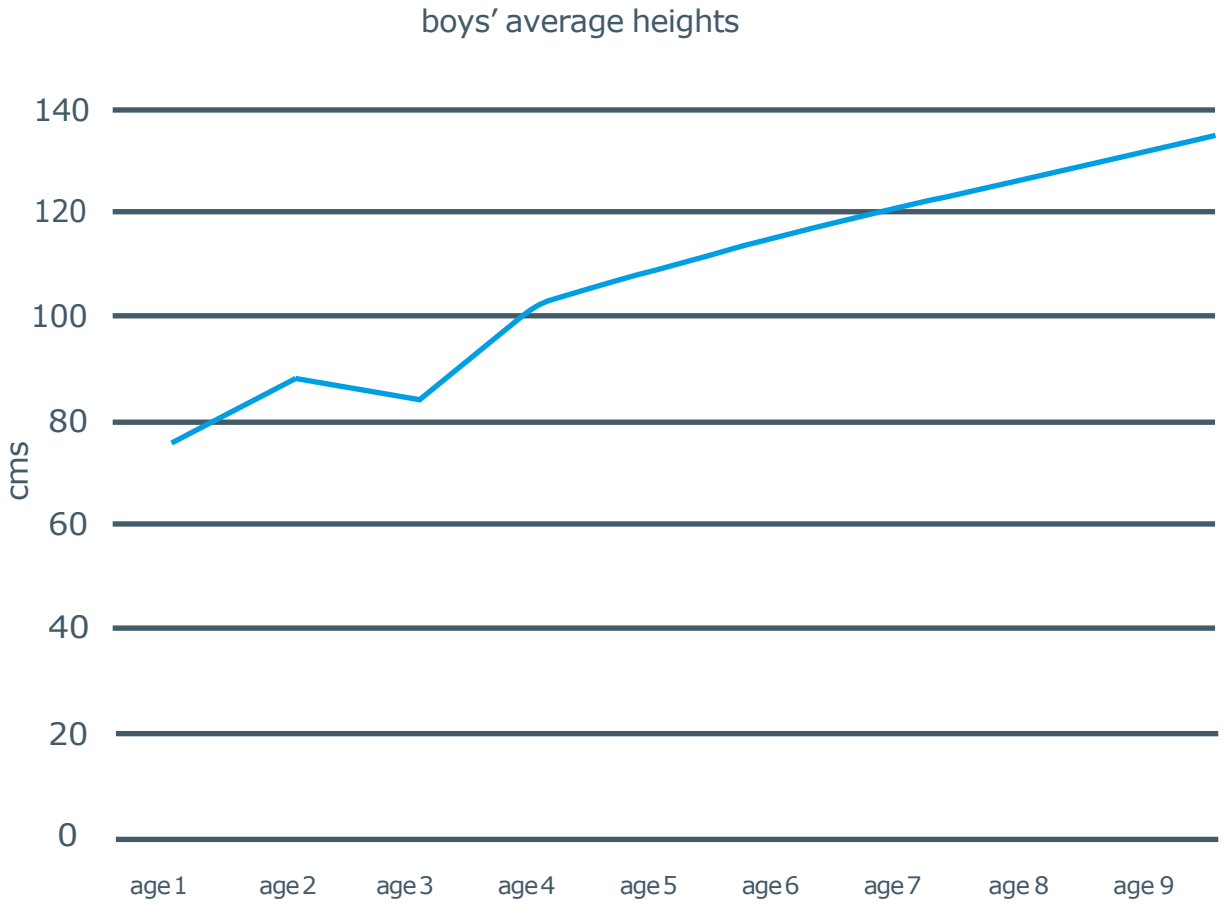
National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Boys' heights

Family Maths Toolkit

This is a line graph showing the average heights of boys from the age of 1 to 9.



Can you plot your own height on to this graph? Girls' average height is usually a little less than boys' but everyone is different!

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

How much taller are members of the family? Would you need a new graph to show other family members?

Can you draw a line graph which will estimate your height growth up to the age of 16?

Helpful hints: This graph is presented in centimetres. For information, 1 cm = 0.39 inches; 1 m = 39.37 inches and 1 m = 3.28 feet.





Family comments:

Child comments:

Curriculum Link

Solve comparison and difference problems using information presented in line graphs.

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Tennis racquet

Family Maths Toolkit

Sophie is saving money for a tennis racquet. On her birthday on 31st August, her grandmother gave her £20 to start her off.

She starts saving on 1st September and puts 30p in her money box. On the 2nd, she puts another 30p in and carries on saving 30p every day.

How much will she have on 10th September?
How much will she have on 10th October?

Her uncle told Sophie that, if she had £50 by the end of December, he would give her an extra 20%. Will she make it? If so, how much extra will her uncle give her?

Will she be able to buy a racquet for £66?

If you could save 20p a day for a month, what would you spend it on?

Or would you save it up for a year? Then what could you buy?



Family comments:

Child comments:

Curriculum Link

Solve problems in context deciding which operations to use, calculate using decimal places in the context of money, calculate simple percentages of money.

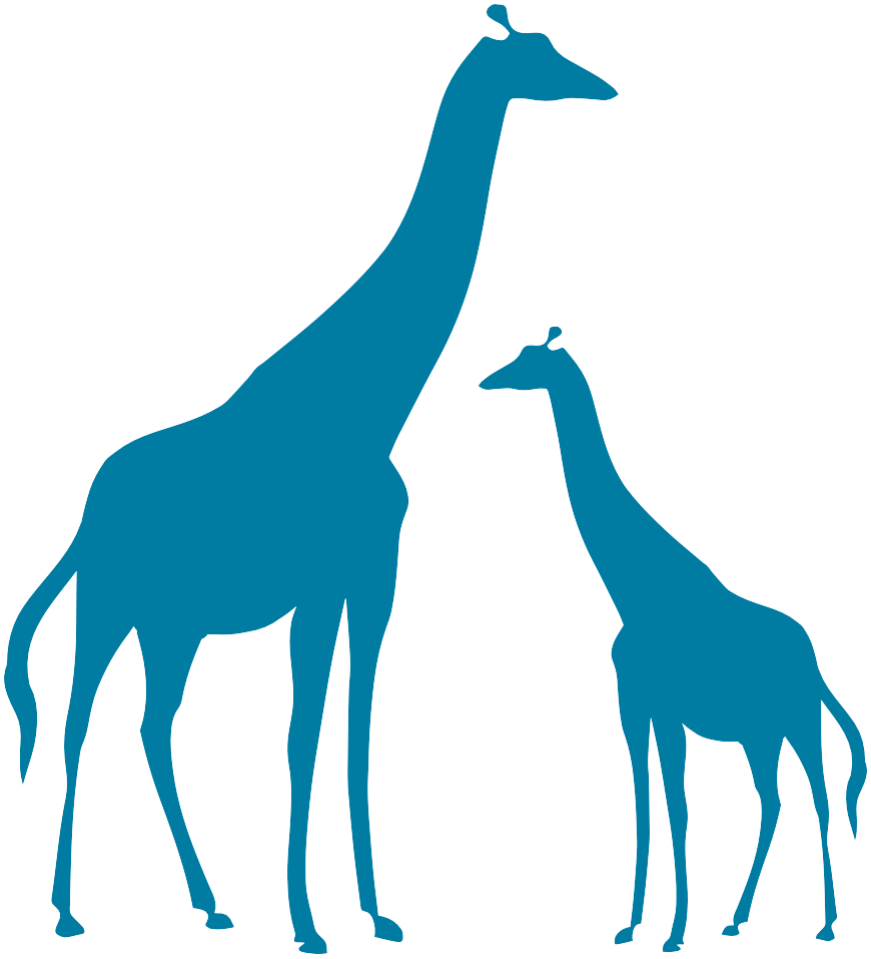
National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Giraffes

Family Maths Toolkit

Two giraffes have a difference in their heights of 2.362 m. The shortest is not fully grown and is 3.451 m.



What is the height of the tallest?

The tallest has a parent who is 16 cm taller – how tall is he?

Female giraffes are a little shorter, usually between 4 and 5 m tall. Two of them have a difference of 1.7 m. How tall could each of them be?

What is the difference between the tallest and the shortest person in your family?

A male giraffe could grow up to 6 m tall. What is the difference between this and the tallest member of your family?

Family comments:

Child comments:

Curriculum Link

Use addition and subtraction to solve problems involving measure (length) and involving numbers up to 3 decimal places.

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Pizza dilemma

Family Maths Toolkit

Hamish buys 6 pizzas for his friends.

Each friend is given $\frac{3}{4}$ of a pizza - how many friends can he serve?

Can you help him?

What other fractions could he cut the pizza into so that everyone gets an equal share?

If your family bought 3 different pizzas (cheese, ham and pineapple, and spicy sausage), what fraction could you all have?





Family comments:

Child comments:

Curriculum Link

Solve practical problems involving fractions.

National Numeracy
Getting on with numbers

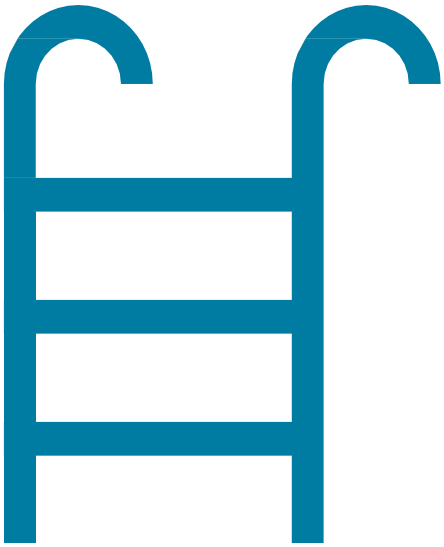
Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Super swimmers

Family Maths Toolkit

At a swimming championship, there are 240 races. These are:

- 120 breaststroke
- 60 butterfly
- 30 front crawl
- 24 back crawl
- 6 medley



One super swimmer Simon is really good and he entered many races:

- $^1/_3$ of the breaststroke
- $^5/_6$ of butterfly
- $^1/_5$ of front crawl
- $^3/_4$ of back crawl

How many races did he enter in total?



National Numeracy
Getting on with numbers

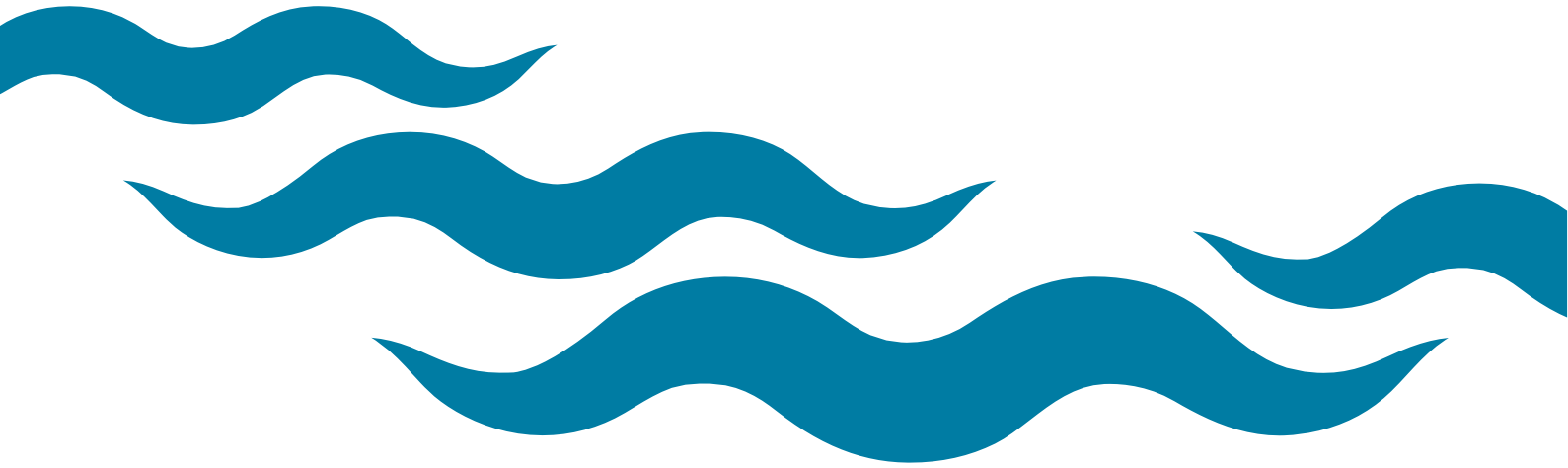
Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

His twin sister Suzie is also very good and she entered:

- 75% of the breaststroke
- 15% of butterfly
- 20% of front crawl
- 50% of back crawl

Who swam the most races?

Which stroke would you prefer? Can you pretend you are entering all the races and decide what percentage or fraction of each you would swim?



Family comments:

Child comments:

Curriculum Link

Solve problems which require knowing percentages and fractions.

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Design a Superhero

Family Maths Toolkit

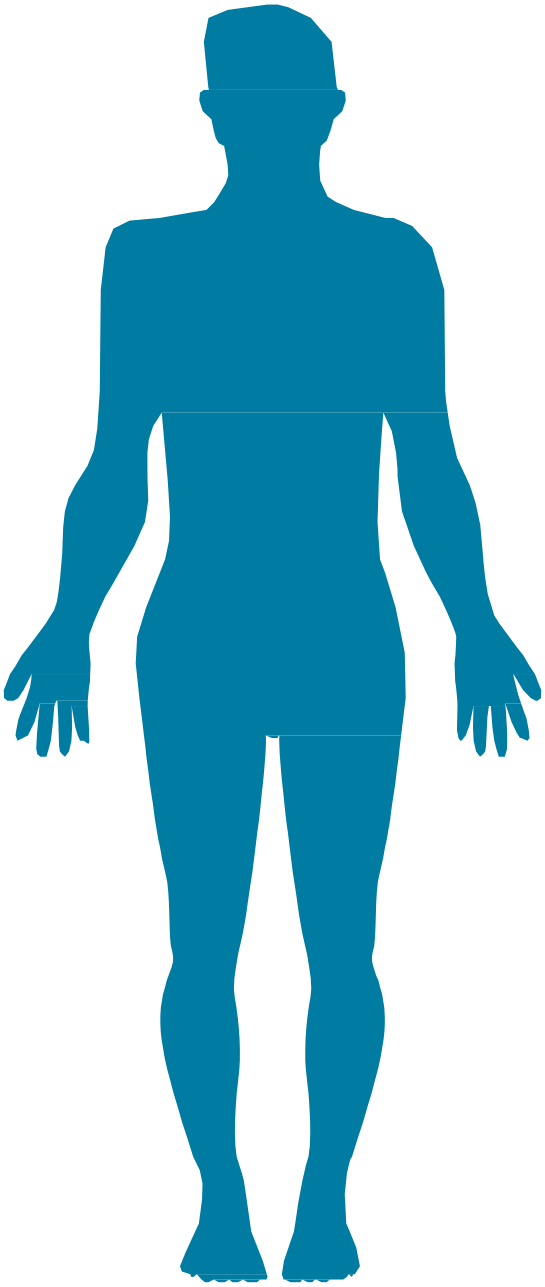
Facts about humans:

- Humans' arm spans are in the ratio 1:1 with their height
- Their heads are about 1:6 or 1:7 to their height
- Their hands are about 25% of their arm length
- The ratio of leg length to body length changes as we grow up

Can you check these facts on you and your family?
This is an old saying – is it true for your family?

Once around the waist, twice around the neck;

Once around the neck, twice around the wrist.

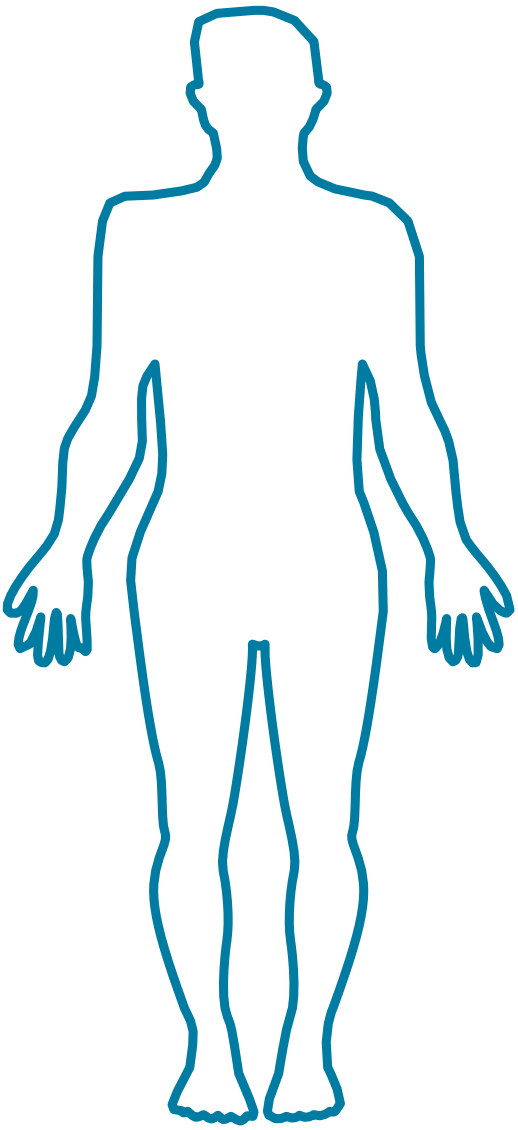


National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Design a Superhero using all the information you have. He or she could be bigger than an average human – or smaller of course – but must keep the same proportions. Name your Superhero.

Helpful hints: Cut out strips of paper or string to represent each body part; arm span is tip of finger on one hand to tip of finger on the other hand with arms out wide (as possible); measure head in a straight line from top to under chin.



Family comments:

Child comments:

Curriculum Link

Solve problems involving measurements and simple scaling using fractions and percentages.

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Monkey's peaches

Family Maths Toolkit

i) A little monkey had 60 peaches.

On the **first** day he decided to keep $^{3}/_{4}$ of his peaches. He gave the rest away. Then he ate one.

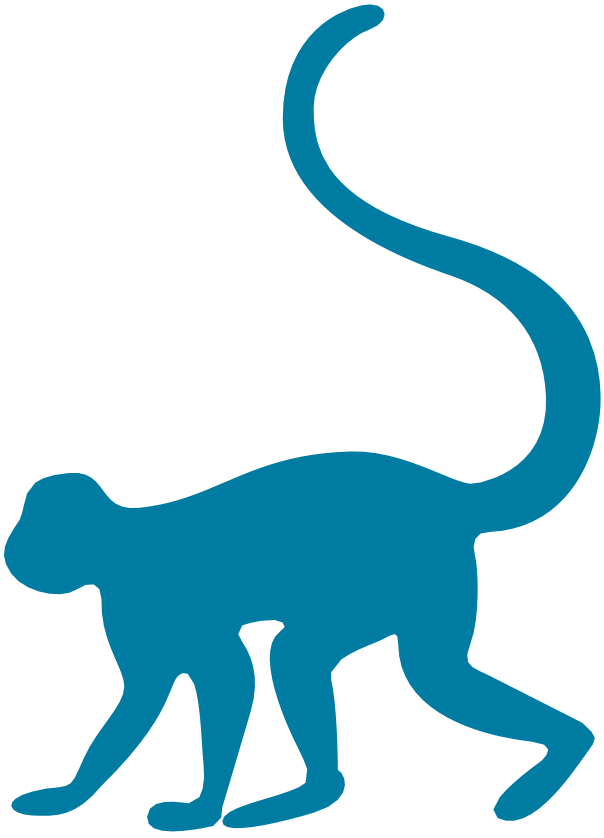
On the **second** day he decided to keep $^{7}/_{11}$ of his peaches. He gave the rest away. Then he ate one.

On the **third** day he decided to keep $^{5}/_{9}$ of his peaches. He gave the rest away. Then he ate one.

On the **fourth** day he decided to keep $^{2}/_{7}$ of his peaches. He gave the rest away. Then he ate one.

On the **fifth** day he decided to keep $^{2}/_{3}$ of his peaches. He gave the rest away. Then he ate one.

How many did he have left at the end?



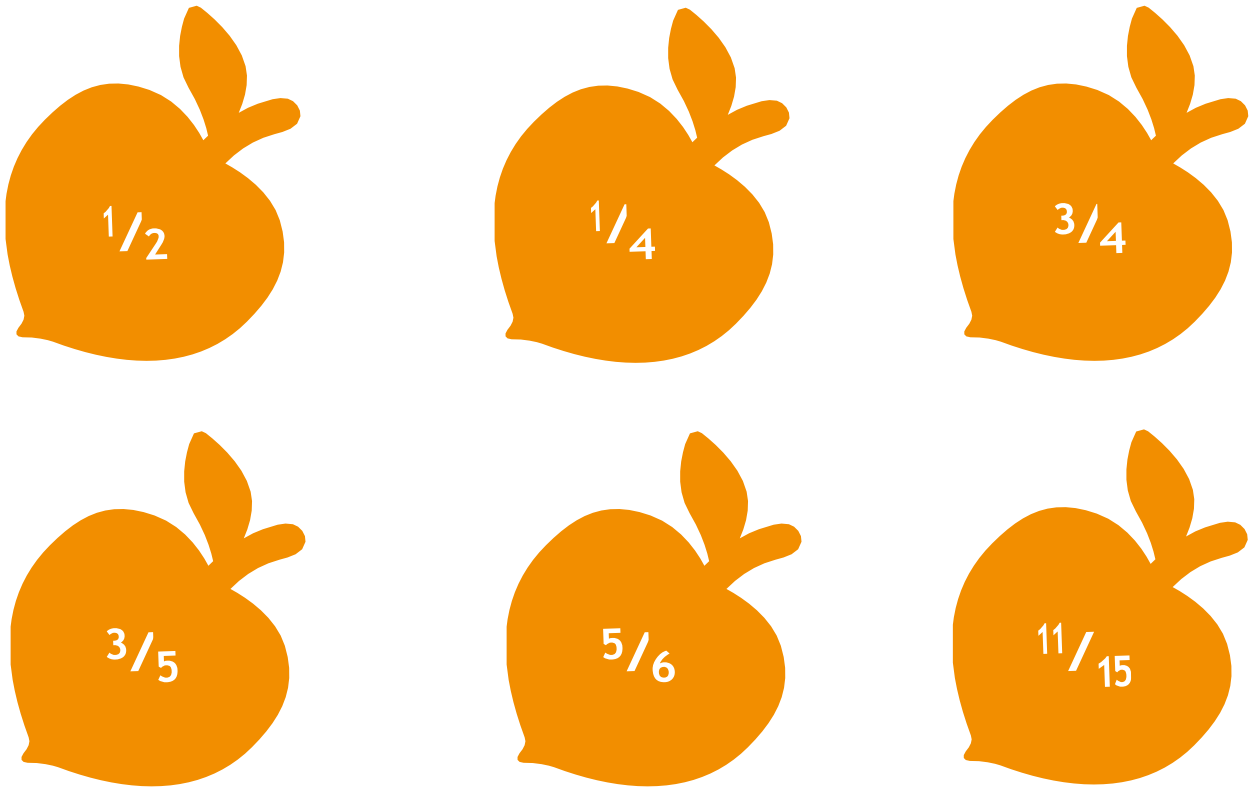


National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

ii) A little monkey had **75** peaches.

Each day, he kept a fraction of his peaches, gave the rest away, and then ate one. These are the fractions he decided to **keep**:



In which order did he use the fractions so that he was left with just one peach at the end?

Family comments:

Child comments:

Curriculum Link

Solve problems using fractions of whole numbers.

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Painting a wall

Family Maths Toolkit

Maciez was helping his parents paint their living room. He found that $^1/_5$ of a can of paint covered 2.5 square metres of wall.



How much wall would one whole can cover?

Estimate how many cans of the same paint you would need to paint your bedroom walls.

Maciez noticed that the ceiling needed white paint and $^1/_3$ of a can covered 3.5 square metres. How much ceiling would the whole can cover?

How many cans would be needed to cover your bedroom ceiling?



Family comments:

Child comments:

Curriculum Link

Using fractions to solve problems which involve calculating and comparing the area of rectangles (including squares) using standard units of squared metres.

National Numeracy
Getting on with numbers

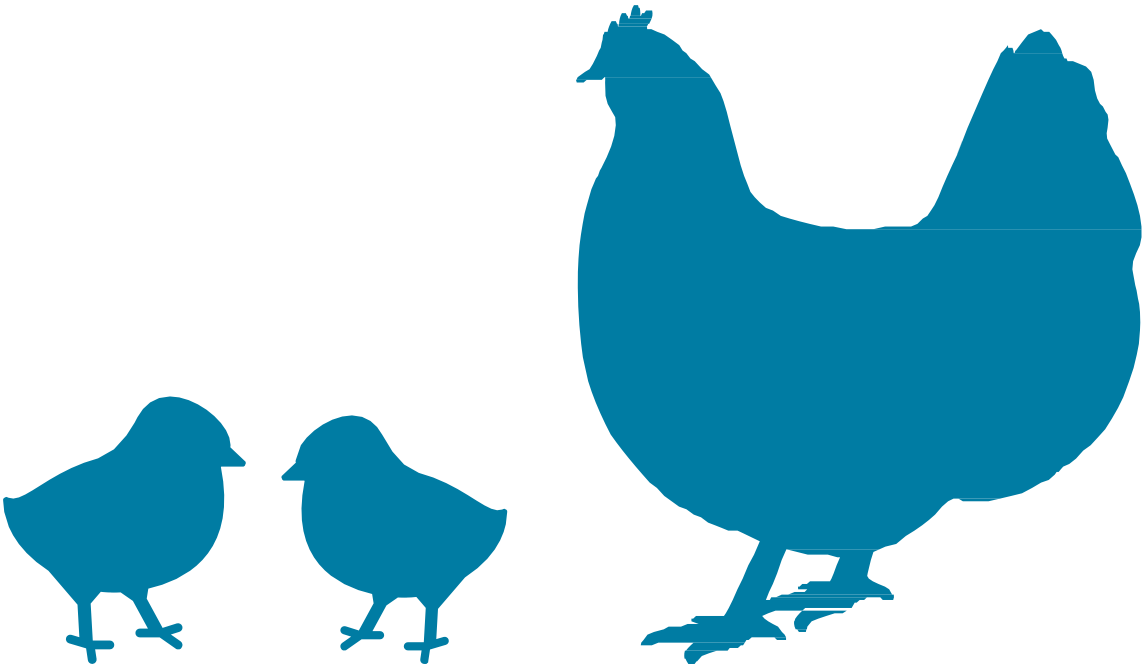
Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Children's petting zoo

Family Maths Toolkit

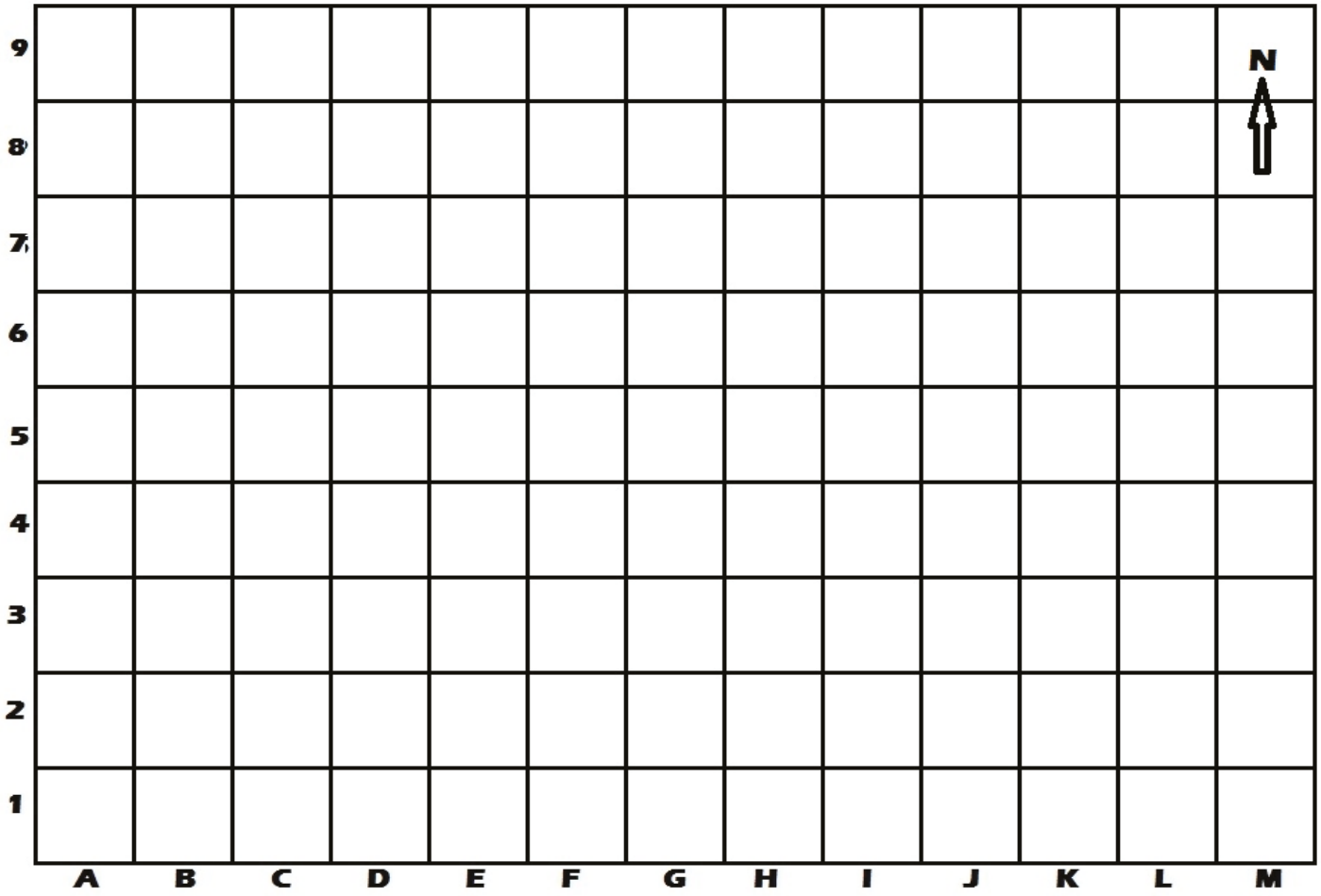
In the zoo, the animals need RECTANGULAR enclosures. (1 square = 1 m^2)

1. Make a chicken enclosure which covers an area of 36 m^2 in the south-west corner of the map. Draw the chickens and make the enclosure yellow.
2. In the centre of the map make a rabbit enclosure that covers 4 m^2. Draw in the rabbits and colour the enclosure green.
3. In the east of the map make a lamb enclosure which covers 10 m^2. Draw in the lambs and colour the enclosure light brown.
4. Can you fit in any other enclosures? What area do they have and what animals are kept there? Draw paths to join all your enclosures.



National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669



5. Could you draw another grid and design your own zoo for other animals? Be careful that the largest animals usually have the largest area of enclosure. Can you include any enclosures which are not rectangular?

NB: Please provide squared paper for both exercises.

Family comments:

Child comments:

Curriculum Link

Calculate the area of rectangles using square centimetres/ metres; know the points of the compass.

National Numeracy
Getting on with numbers

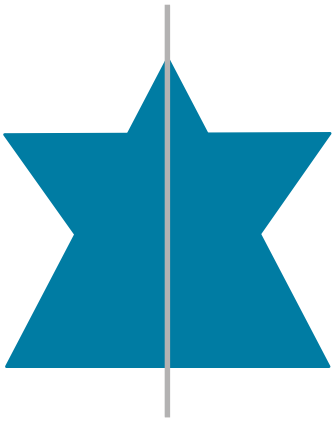
Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Design a family logo

Family Maths Toolkit

Many famous logos are symmetrical; they have a shape reflected. Sometimes they are reflected on a line like these examples:

line of symmetry



folding line



mirror line



mirror line

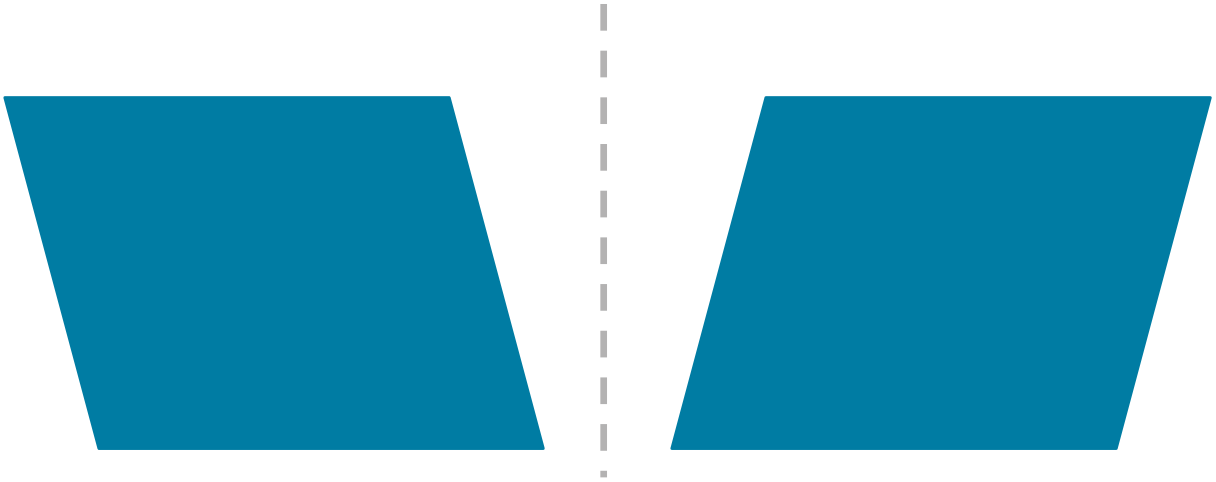


Sometimes they can be reflected from the mirror line:

shape

mirror line

reflection

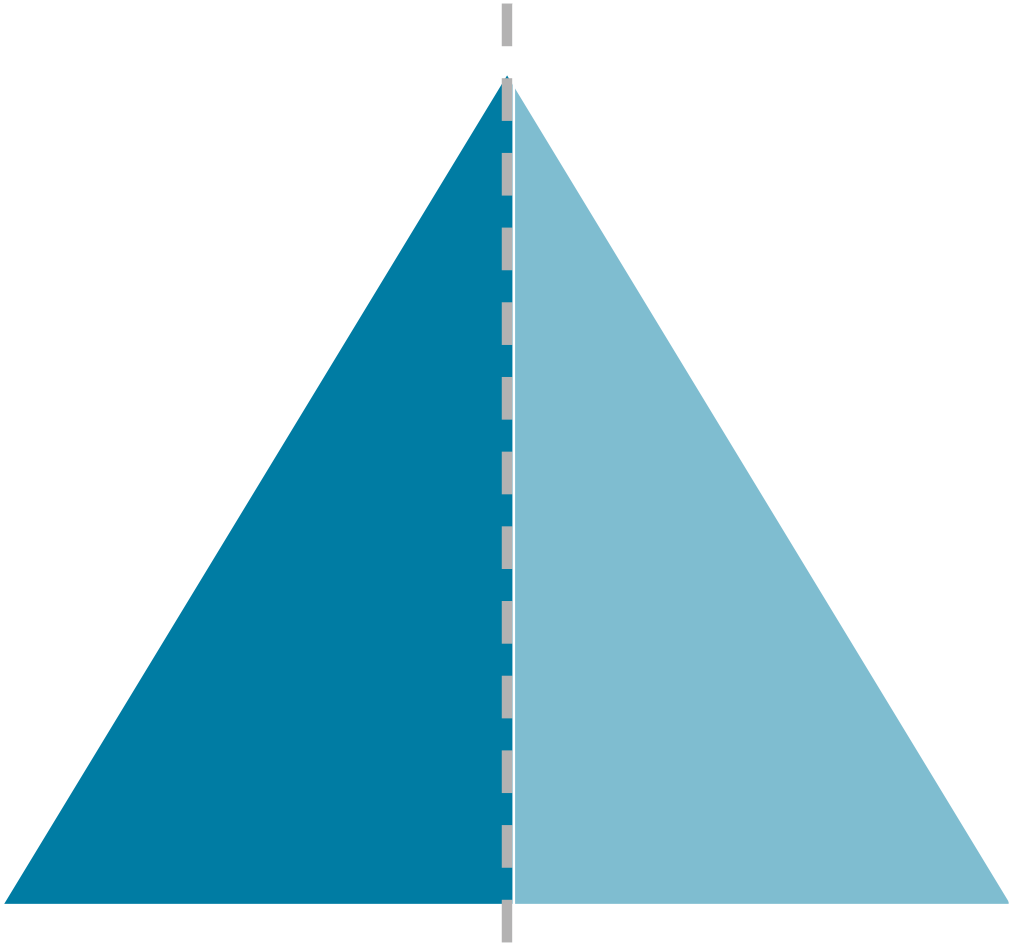


National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Look at some famous advertising logos, such as McDonald's – is it symmetrical? Can you find any others?

Using what you know about reflections, shapes and patterns where shapes have just been translated, design a simple logo for your family. You can use any colour or shape. Squared paper might help.



Family comments:

Child comments:

Curriculum Link

Identify, describe and represent the position of a shape following a reflection or translation (move along or up or down but not change size or shape).

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Theme park rides

Family Maths Toolkit

Some theme parks are so big that buses run to take visitors to the different rides. Here is a timetable for three buses:



Ride	Yellow bus	Red bus	Blue bus
Haunted house	9.30	10.30	13.30
Space ride	9.40	10.40	13.40
Rollercoaster	10.00	-	14.00
Water ride	10.20	11.20	14.20
Carousel	10.30	11.30	-
Safari ride	10.35	11.35	14.35
Railroad	10.50	-	14.50
Jungle adventure	11.10	12.00	15.10
Fairytale flight	11.20	12.20	-
Pirate ship	11.35	-	15.35
Ocean submarine	11.50	12.50	15.50

National Numeracy
Getting on with numbers

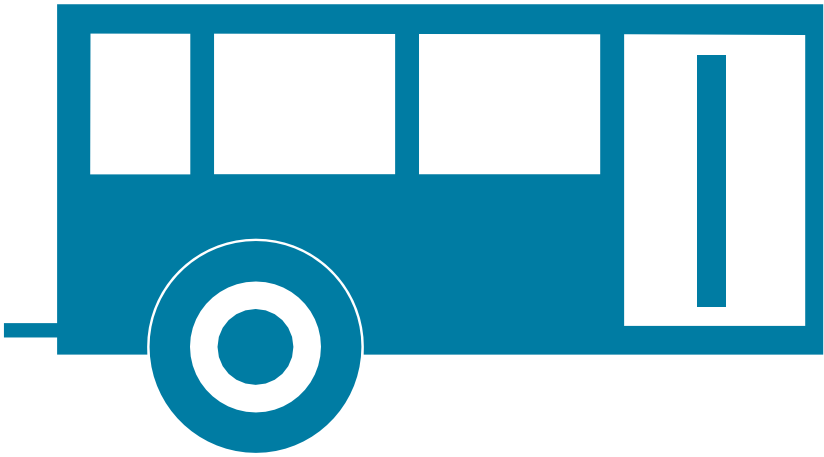
Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

1. If you had a ticket for the Water ride at 11.25, which bus would be best to catch?
2. What time does the blue bus arrive at Railroad?
3. How long does it take to get from the Space ride to the Ocean Submarine on the blue bus?
4. If you wanted to go on the Railroad and the Fairytale flight, which bus would you need?
5. If you got out of bed late at 10.00, which bus could you catch from the Haunted House to go on the Safari ride?

Can you make up two more rides and fill in the blank times on the table?

Can you make up two more questions which involve your times?

Helpful hints: It would be useful to reinforce this activity by looking at a real timetable if possible (bus, train etc).



Family comments:

Child comments:

Curriculum Link

Complete, read and interpret information in tables, including timetables.

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Cheese Straws
Part 1

Family Maths Toolkit

Here is a quick recipe for Cheese Straws:

- **Unroll a pack of puff pastry, scatter over a couple of handfuls of grated Parmesan, then fold in half**
- **On a lightly floured surface, roll out to the thickness of a £1 coin**
- **Cut into 1cm strips, then twist the strips 3-4 times**
- **Lay on a baking sheet, scatter over more cheese and bake for 12 mins, or until golden**

(from BBC Quick Recipes online)

How many straws do you think this will make? If you are able to make the recipe, try it and see how many straws it makes. If not, estimate.



National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

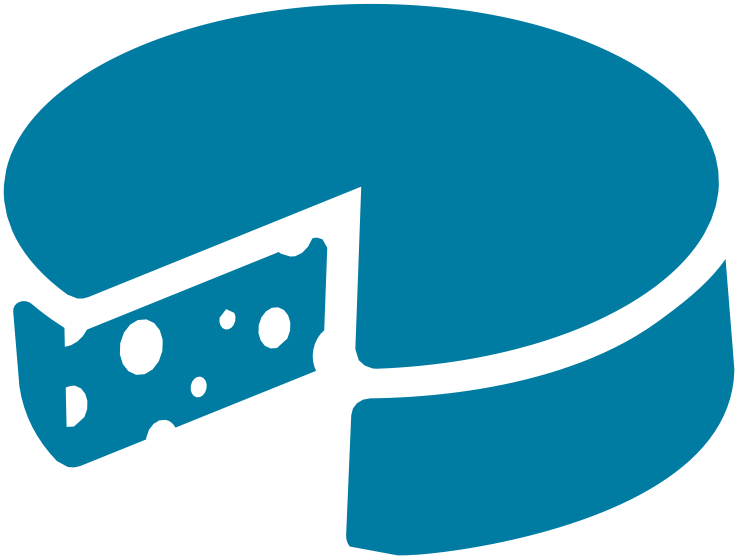
This recipe only uses two ingredients:

- Ready rolled puff pastry sheet £1.30
- Parmesan which can be bought in different ways:
  - Tub of 100g grated Parmesan cheese for £2.00
  - Tub of 80g Parmesan cheese shavings for £1.80
  - A 200g piece of Parmesan cheese to grate for £2.70

Estimate how much cheese you will need and decide which way to buy it. How much will your recipe cost for one batch of straws?

If you plan a party for 40 people, how many straws will you need? How much will it cost to make?

If you were to sell them at a school fayre, would you sell them individually or in bunches (maybe 5 or 10 in a bunch)? How much would you sell them for so that you make a profit?



Family comments:

Child comments:

Curriculum Link

Solve problems involving decimals to two decimal places and measurements in context.

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Cross-sum puzzle

Family Maths Toolkit

Can you complete the puzzle so that all the sums are correct?

7	x	?	=	?	?
-		+		÷	
?	x	?	=	?	?
=		=		=	
?	+	?	=	?	?

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Can you work together to make up another puzzle?
You can change the signs if you wish.

?		?	=	?	?
?		?	=	?	?
=		=		=	
?		?	=	?	?

Family comments:

Child comments:

Curriculum Link

Using all four calculations to solve problems.

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Prime numbers – true or false?

Family Maths Toolkit

Read this statement:

Square numbers can always be made by adding two prime numbers together.



Do you think this is true or false?

For example, 4 is a square number and can be made by adding 2 and 2.

Likewise 9 = 2 + 7

How many even prime numbers can you find? Why do you think that is?

Helpful hints: A square number is the product of a number multiplied by itself. A prime number is divisible only by itself and one.

Challenge – Challenge your family to find some examples and see if they agree or disagree.

Family comments:

Child comments:

Curriculum Link

Know and use the vocabulary of prime numbers.

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Dairy cows and milk

Family Maths Toolkit

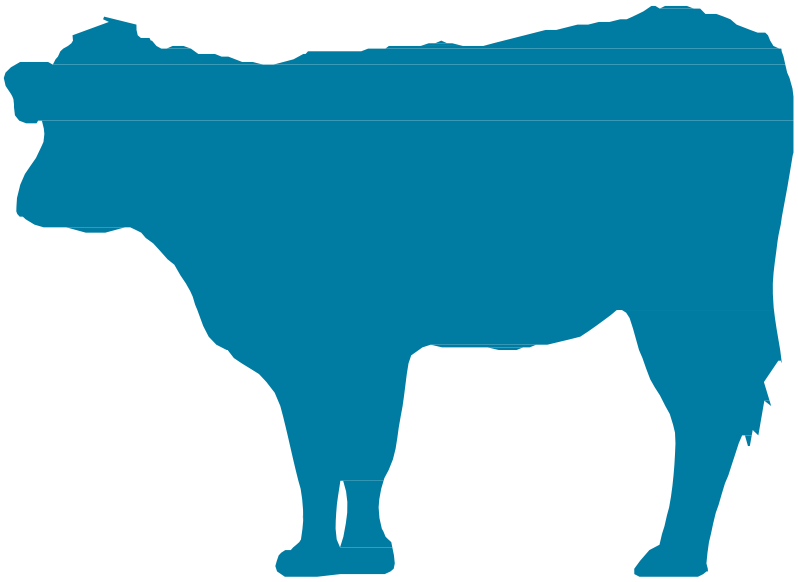
A dairy cow produces, on average, 24 litres of milk a day.

Estimate how much milk your family uses in a day. Remember to think about milk in drinks and on bowls of cereal.

If your family kept a cow, how much would you have left over in a week? … Or would you need two cows?

How many families do you think one cow could provide for?

Helpful hints: Measure some examples of how much you use in a jug and estimate from these (use water instead though!!).



Family comments:

Child comments:

Curriculum Link

Convert between different units of metric measure (for example: l and ml).

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

The school day

Family Maths Toolkit

Imagine you are a government minister and have the power to change the school day - what would you organise differently?



Here is a typical school day:

9.00	10.30	10.45	11.00	12.00	13.00	15.00
School opens – lessons start	Playtime	Assembly	Lesson	Lunchtime	Afternoon lessons start	School finishes

Lessons are often 60 minutes long.

Schools are open 39 weeks of the year and have 13 weeks school holiday – the longest holiday is usually 6 weeks in the summer.

In your school day, there must be at least 75 minutes playtime. Lessons can be any length. How would you re-arrange the day?

Would you change the holidays?

Draw a plan for a day in school and a plan for the holidays.

Family comments:

Child comments:

Curriculum Link

Solve problems involving converting between units of time.

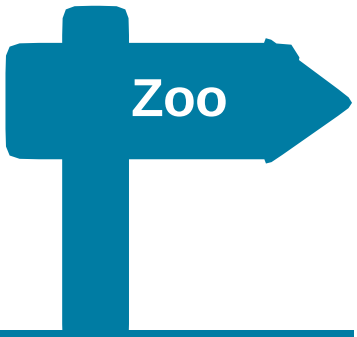
National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

School trip to the zoo

Family Maths Toolkit

Imagine your class is going on a school trip to the zoo. It will be a whole day trip and you have been put in charge of organising the day.



Use this information to draw up a timetable for the day. Remember to include important things like travel time, a lunch break and toilet stops.

		Times	How long
Things to see	Penguins; Gorilla; Tigers; Monkeys; Fish; Insects; Giraffes; Elephants; Lions Adventure playground Shop		
Feeding the animals	Feed the penguins See the lions being fed	11.00 9.40	20 minutes 5 minutes
Show times	Parrots on bikes Hold a lemur	14.15 10.30	20 minutes 10 minutes
Important information	Bus leaves school Bus leaves the zoo	8.45 15.30	25 minutes to the zoo

Family comments:

Child comments:

Curriculum Link

Solve problems involving units of time.

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

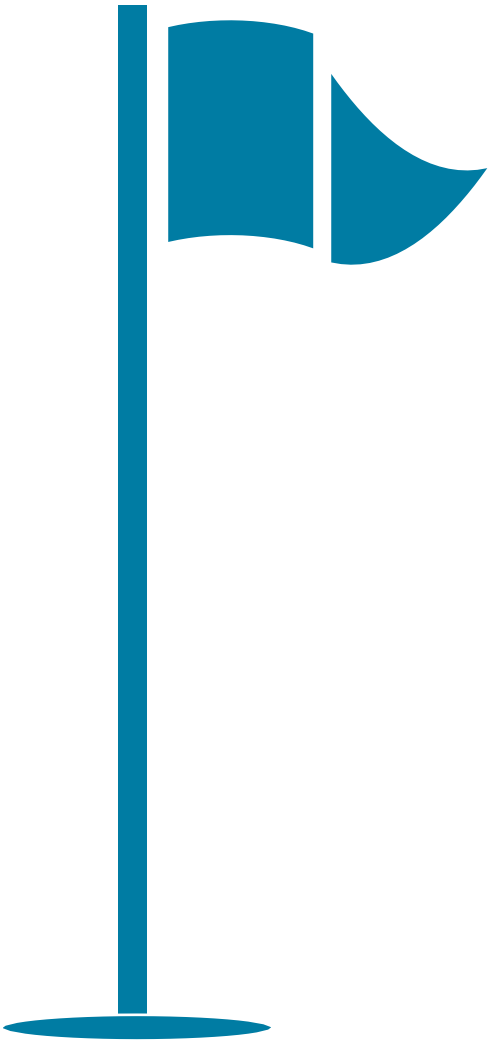
Golf balls

Family Maths Toolkit

The diameter of a golf ball is 4 cm. Sally's dad wants to make a box which will hold 6 golf balls.

What size (length and width) could the box be?

Is there more than one answer?



Family comments:

Child comments:

Curriculum Link

Measure and calculate the perimeter of shapes in centimetres.

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Paddy's walk to the park

Family Maths Toolkit

Paddy and his friend Monty went for a walk to the park. Use these clues to work out how far they walked (there and back):



Please note the clues may not be in order!

- Their garden path is 5 m long
- They walk past five lamp posts which are 25 m apart
- From the roundabout to the park is 4.75 m
- Their house is 300 m from the pet shop
- They stop at the pet shop first
- From the pet shop to the roundabout is 0.75 km

Could you estimate how far you would walk to somewhere near your home?

Helpful hints: Be sure to calculate using one measure, convert the distances to the same unit of measurement. If you are estimating distances from your home, remember that an adult pace is roughly 1 m.

Family comments:

Child comments:

Curriculum Link

Convert between different units of metric measure and solve problems.

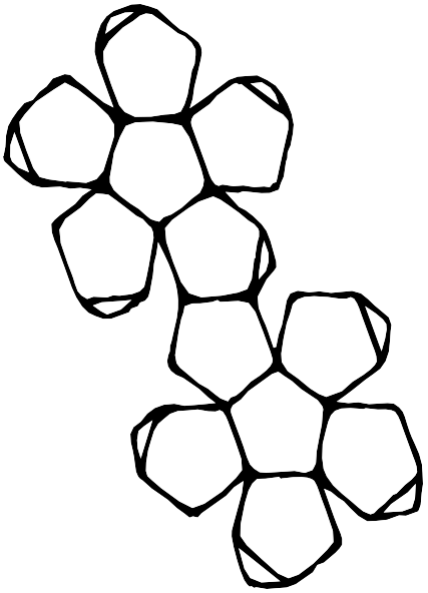
National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Cheese Straws Part 2

Family Maths Toolkit

A mathematical net is a pattern that you can fold to make a solid shape. A net of a cube will have 6 squares and will fold to make what looks like a dice.



In the activity Cheese Straws Part 1, you either made some cheese straws or thought about how you would make them.

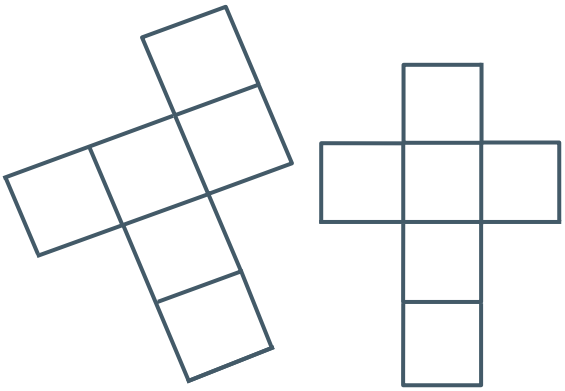
Think about what size they would be – how long did you decide to cut them?

If you wanted to sell them, they could be presented in a nice box.

What would the dimensions of your box need to be for your cheese straws?

Can you draw the net of the box? (It need not be to scale, just label the dimensions.)

Would you always choose a rectangular prism (cuboid) or could you design a different shape box?



Family comments:

Child comments:

Curriculum Link

Identify 3D shapes, including cubes and other cuboids, from 2D representations.

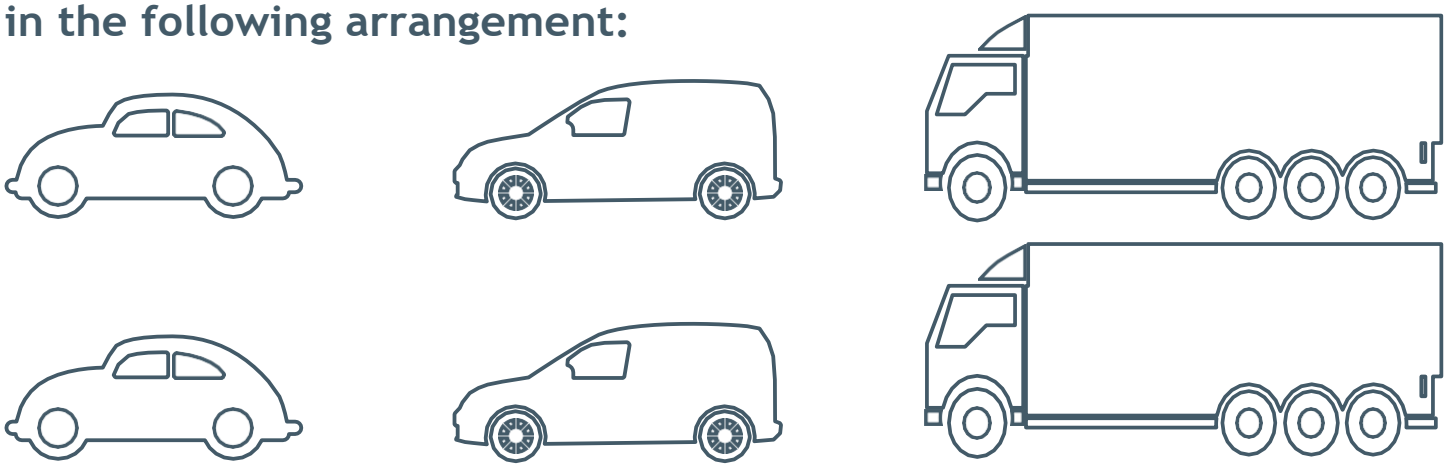
National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Logical car park

Family Maths Toolkit

Some vehicles are parked together in the following arrangement:



There are 2 cars, 2 vans and 2 lorries.

We've hidden the colour of each vehicle.

These clues will help you work out what colour each vehicle is:

- Red is not next to silver
- Blue is between silver and green
- Yellow is not a car or van
- Blue is above orange

Challenge – Can you make up another puzzle like this for your family to work out?

Family comments:

Child comments:

Curriculum Link

Use logic and reasoning to solve problems by applying mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

National Numeracy
Getting on with numbers

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Y5 Autumn activity answers

Family Maths Toolkit

An interesting year

1666

Cough mixture

Each day, one adult needs to take 4 x 10 ml (4 x 10 = 40 ml). Therefore 2 adults need 80 ml per day.

Each day, one child needs to take 4 x 5 ml (4 x 5 = 20 ml). Therefore 2 children need 40 ml per day.

2 adults and 2 children need 120 ml each day. For five days, this would be 5 x 120 = 600 ml so the bottle does not hold enough.

Lucky Number 8

Two possible years to be married in are: 2024 and 2033…any later and they will be in their 50's!!

Pyramid Puzzle

largest 1 4 5 3 2
smallest 5 3 1 2 4

Holiday in Iceland

The temperature in August would be 11.25 °C.

Roman numerals Timeline

Battle of Waterloo	The Gunpowder Plot	Queen Elizabeth II was 90 years old	The First World War started	The Great Fire of London	England football team won the World Cup	The Romans first occupied Wales
MDCCCXV	MDCV	MMXVI	MCMXIV	MDCLXVI	MCMLXVI	LXXVIII

Boys' heights

Age	Mean	Centimetres should be
1	30	76
2	35	89
3	38	97
4	41	104
5	44	112
6	46	117
7	48	122
8	51	130
9	53	135

Space Pirates!

65 (9x7 = 63 with 2 left over; 8x8 = 64 with 1 left over)

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Lewis Carroll published 'Alice's Adventures in Wonderland'	First female Prime Minister in the UK - Margaret Thatcher	The Channel Tunnel opened	Decimal currency replaced 'pounds, shillings and pence'	Queen Victoria died	'What makes you beautiful' by One Direction was at number one	Scooby Doo series first on TV
MDCCCLXV	MCMLXXIX	MCMXCIV	MCMLXXI	MCMI	MMXI	MCMLXIX

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Y5 Spring activity answers

Family Maths Toolkit

Super Swimmers

- Simon = 40 breast; 50 butterfly; 6 front crawl; 18 back crawl = 114 total
- Suzie = 90 breast; 9 butterfly; 6 front crawl; 12 back crawl = 117
- So Suzie swam the most races

Monkey's peaches

i. 60 > kept 45 > 44; keep 28 > 27; keep 15 > 14; keep 4 > 3; keep 2 > 1

ii. $^{11}/_{15}$ gives 55 to keep less 1 = 54; $^{5}/_{6}$ gives 45 less 1 = 44; $^{3}/_{4}$ gives 33 less 1 = 32; $^{1}/_{2}$ gives 16 less 1 = 15; $^{3}/_{5}$ gives 9 less 1 = 8; $^{1}/_{4}$ gives 2 less 1 = 1 left

Painting a wall

- $^{1}/_{5}$ to cover 2.5 sq m = a whole can would cover 12.5 sq m
- $^{1}/_{3}$ to cover 3.5 sq m = a whole can would cover 10.5 sq m

Giraffes

- 5.813 m
- + 16 cm = 5.973 m
- eg 4.1 m + 1.7 m = 5.8 m

Pizza dilemma

8 friends, The equivalent fraction to $^{3}/_{4}$ of a pizza is $^{6}/_{8}$ or $^{9}/_{12}$.

Theme park rides

1. Red bus
2. 14.50
3. 2 hrs 10 mins
4. yellow bus
5. red or blue bus

Tennis racquet

- By 10th Sept she will save £3 plus gift of £20 = £23; on 10th Oct she will have £12 plus £20 = £32
- By end of Dec she will save £36.60 plus £20 = £56.60, therefore she will get extra 20% from uncle which will be £11.32
- Therefore her total will be £67.92 so she can buy the racquet



Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669

Y5 Summer Activity answers

Family Maths Toolkit

Cross-sum

7	x	4	=	2	8
-		+		÷	
5	x	5	=	2	5
=		=		=	
2	+	9	=	1	1

Paddy's walk to the park

The distances to add one way are 5 m, 300 m, 750 m and 4.75 m = 1059.75 m. Double this for the return trip = 2119.50 m or 2.1195 km (rounded to 2.12 km).

Logical car park



Prime numbers true or false?

- 16= 5+11
- 25 = 2 + 23
- 36 = 13 + 23
- 49 = 2 + 47
- 64 = 17 + 47
- 81 = 2 + 79
- 100 = 3 + 97
- 121 impossible
- 144 = 47 + 97
- 169 = 2 + 167

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669



- 196 = 29 + 167
- 225 = 2 + 223
- 256 = 89 + 167
- 289 impossible
- 324 = 101 + 223
- 361 = 2 + 359
- 400 = 41 + 359

List of prime numbers up to 100: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97

Copyright © National Numeracy 2021. Commercial copying, hiring and lending is prohibited.Registered charity no: 1145669