

# Design a Superhero



Family Maths  
Toolkit

## Facts about humans:

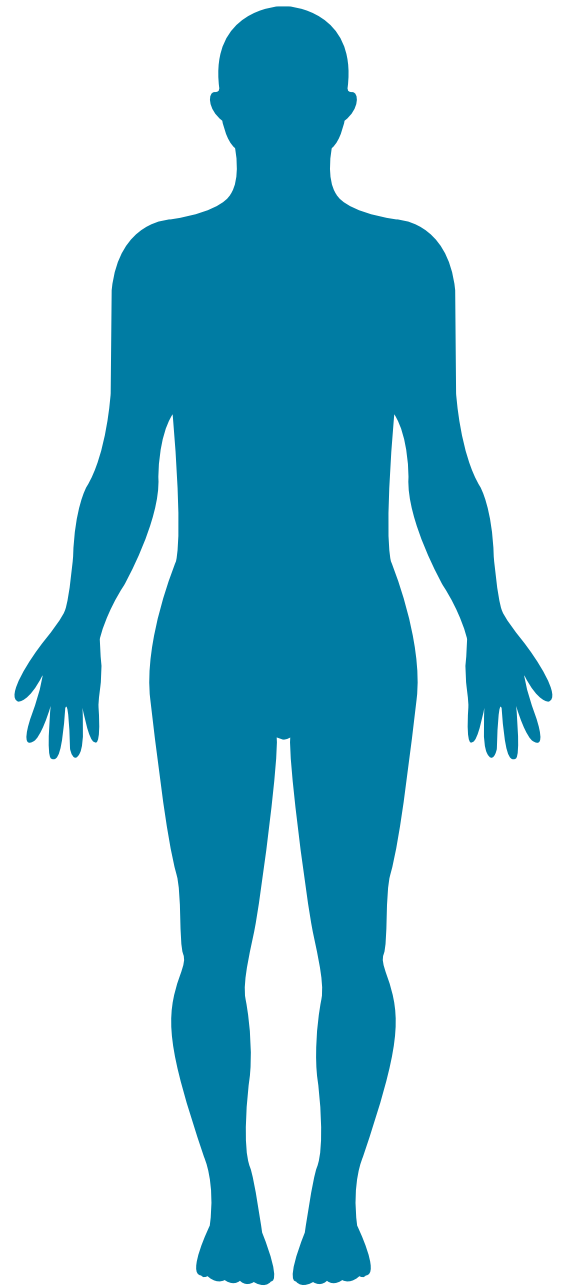
- Humans' arm spans are in the ratio 1:1 with their height
- Their heads are about 1:6 or 1:7 to their height
- Their hands are about 25% of their arm length
- The ratio of leg length to body length changes as we grow up

Can you check these facts on you and your family?

This is an old saying – is it true for your family?

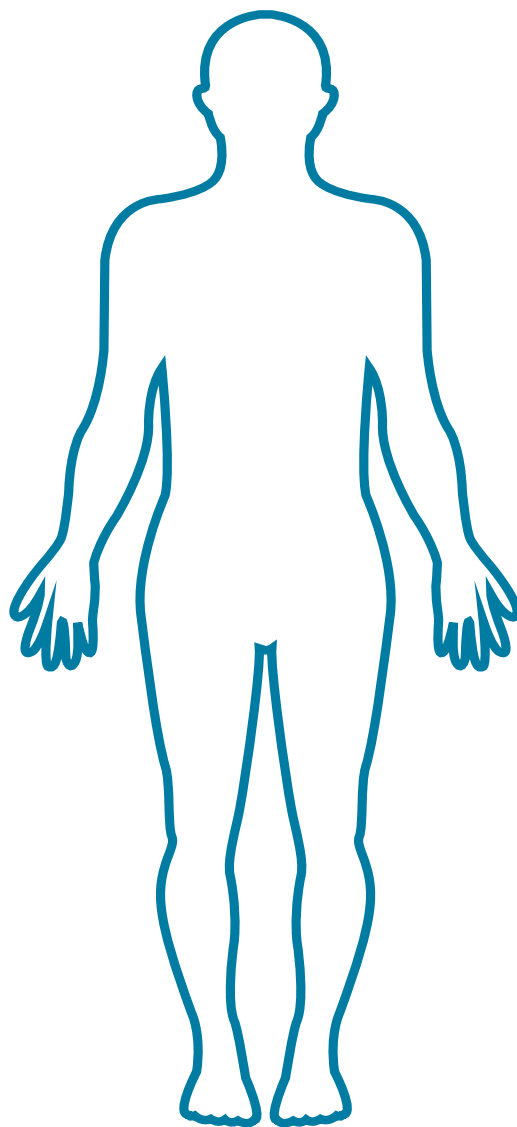
***Once around the waist, twice around the neck;***

***Once around the neck, twice around the wrist.***



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**

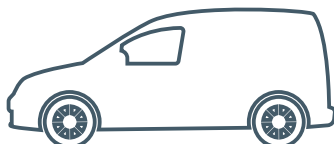
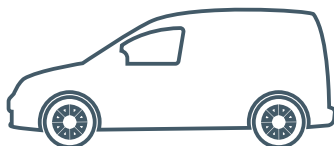
Solve problems involving measurements and simple scaling using fractions and percentages.

# 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.

# 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.

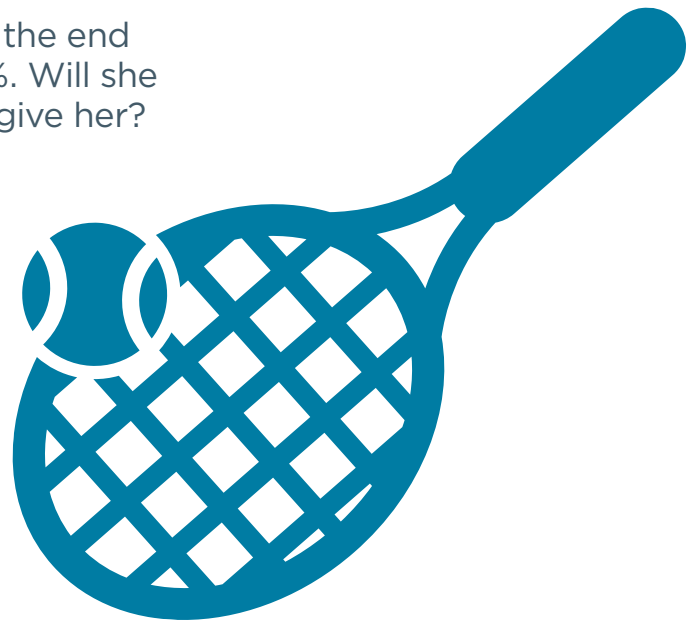
How much will she have on 10th September?  
How much will she have on 10th October?

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.

# 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.