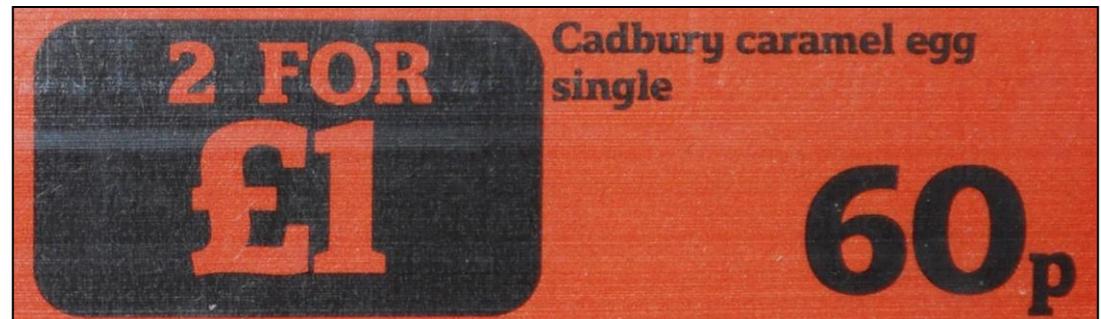
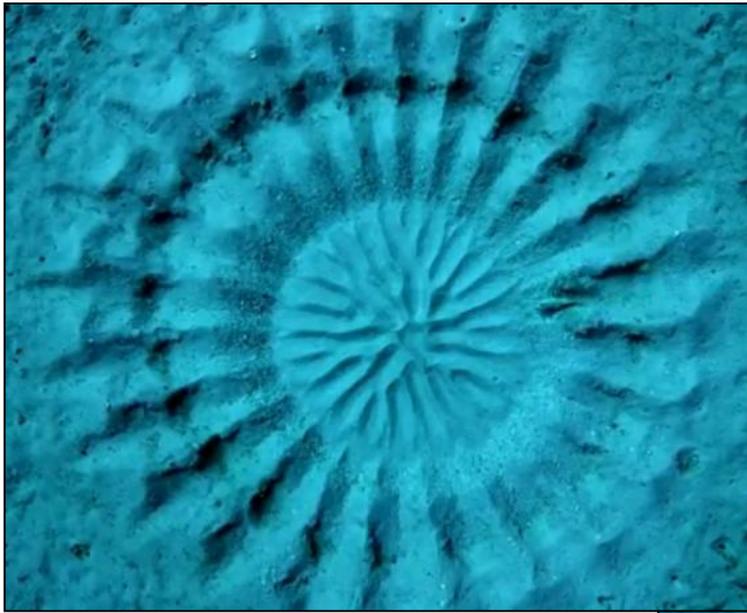


Mathematics is EVERYWHERE!



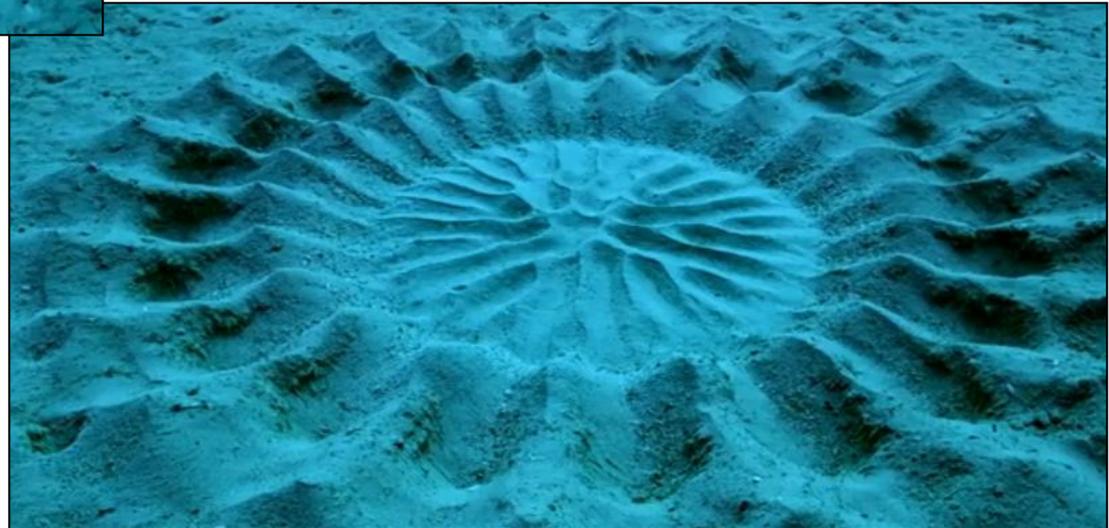


Life Story



**“A plan of mathematical perfection” that takes ... “24 hours a day for 1 week.”
“Nowhere else in nature does an animal construct something as complex and perfect such as this.”**

[David Attenborough]



Premier League Pricing

<http://www.bbc.co.uk/news/uk-23723537>

Attraction	Cheapest adult ticket	Most expensive adult ticket	Cheapest day out	Food	Drink (Tea)
	£35.10	£46.80	£45.50	£7.70 (chicken burger)	£2.70
	£45.00	£90.20	£52.15	£5.50 (burger meal)	£1.65
	£16.00	£16.00	£23.75	£5.50 (soup of the day)	£2.25
	£19.00	£325.00	£24.06	£4.22 (panino)	£0.84 (coffee)
	£34.20	£45.60	£50.20	£10-£15 (kids eat free after 3.00 pm)	£6.00 (refillable)
	£22.50	£30.00	£22.50	n/a	n/a
	£66.00	£549.00	£72.30	£3.80 (burger)	£1.80 (coffee)
	£6.00	£93.50	£6.00	n/a	n/a

Legoland, Windsor

Alton Towers

Edinburgh Castle

York Races

Blackpool Tower Big Ticket

Inter Milan match

One Direction, Etihad Stadium

Madame Tussauds, London

Premier League Pricing

<http://www.bbc.co.uk/news/uk-23723537>

Attraction	Cheapest adult ticket	Most expensive adult ticket	Cheapest day out	Food	Drink (Tea)
Alton Towers	£35.10	£46.80	£45.50	£7.70 (chicken burger)	£2.70
Blackpool Tower Big Ticket	£45.00	£90.20	£52.15	£5.50 (burger meal)	£1.65
Edinburgh Castle	£16.00	£16.00	£23.75	£5.50 (soup of the day)	£2.25
Inter Milan match	£19.00	£325.00	£24.06	£4.22 (panino)	£0.84 (coffee)
Legoland, Windsor	£34.20	£45.60	£50.20	£10-£15 (kids eat free after 3.00 pm)	£6.00 (refillable)
Madame Tussauds, London	£22.50	£30.00	£22.50	n/a	n/a
One Direction, Etihad Stadium	£66.00	£549.00	£72.30	£3.80 (burger)	£1.80 (coffee)
York Races	£6.00	£93.50	£6.00	n/a	n/a

National Curriculum (DfE, September 2013)

The National Curriculum for mathematics aims to ensure all pupils:

- *become fluent in the fundamentals of mathematics*
- *reason mathematically*
- *can solve problems by applying their mathematics*



The national curriculum in England

Framework document

A recipe for fruit squash

Oranges (chopped)	300 g
Lemonade	1500 ml
Orange juice	750 ml

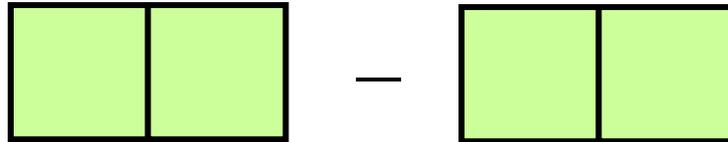
Makes enough for 6 people

Trina wants to make enough squash for **10 people**.

How many ml of **lemonade** will she need?

Use the digits 5, 1, 2 and 6.

Create a calculation ...



**... with the smallest
possible difference (>0)**

To be successful mathematically, you need ...



'Toolbox' of 'nuts and bolts' skills, understanding and knowledge PLUS strategies and procedures.

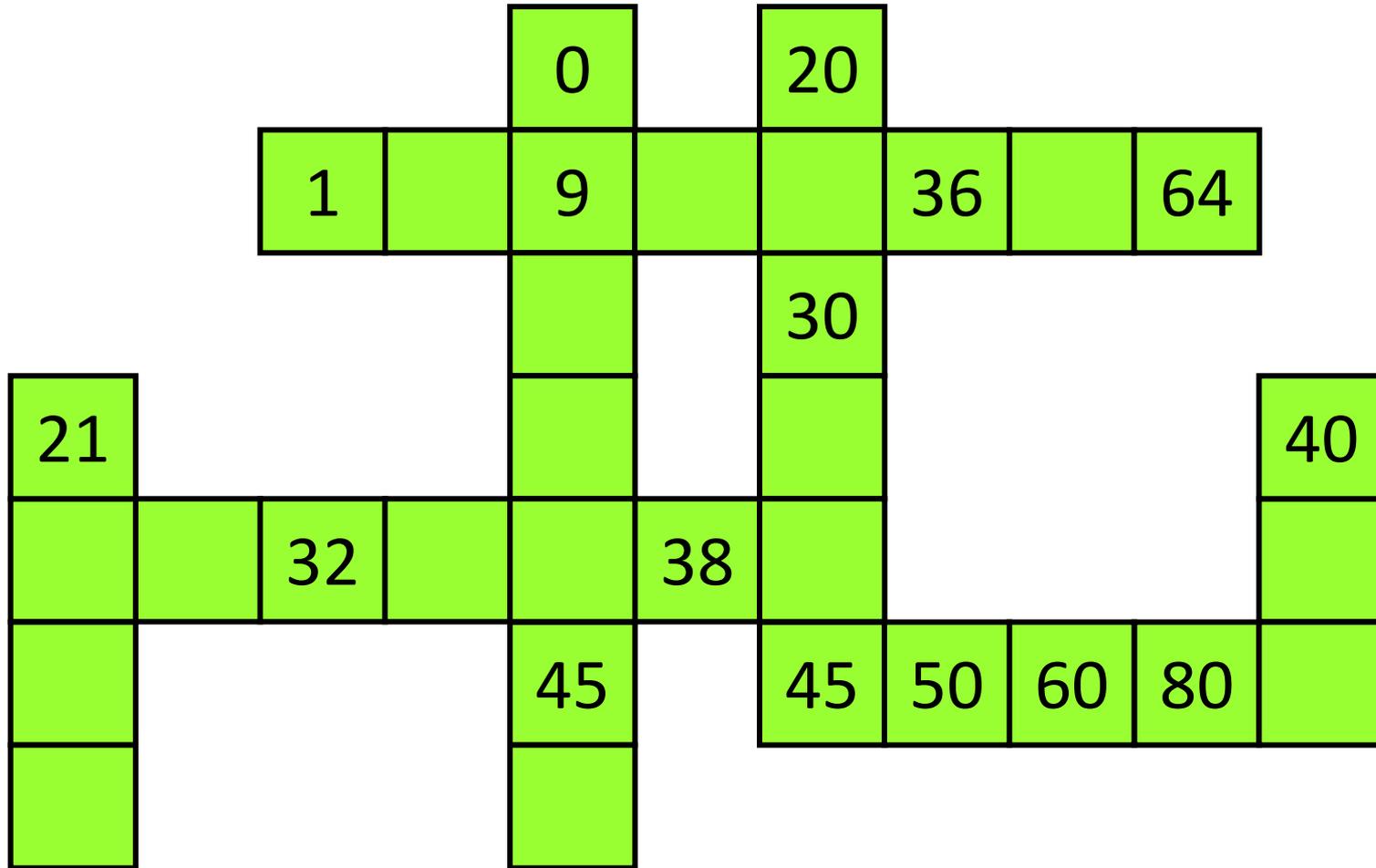
Mathematical reasoning and 'habits of mind'

The characteristics that make children able to reason mathematically and be successful problem-solvers.

- Pattern sniffing
- Inventing
- Visualising
- Experimenting
- Describing
- Tinkering
- Conjecturing
- Generalising



Sequence 'skrabble'



Investigate ...

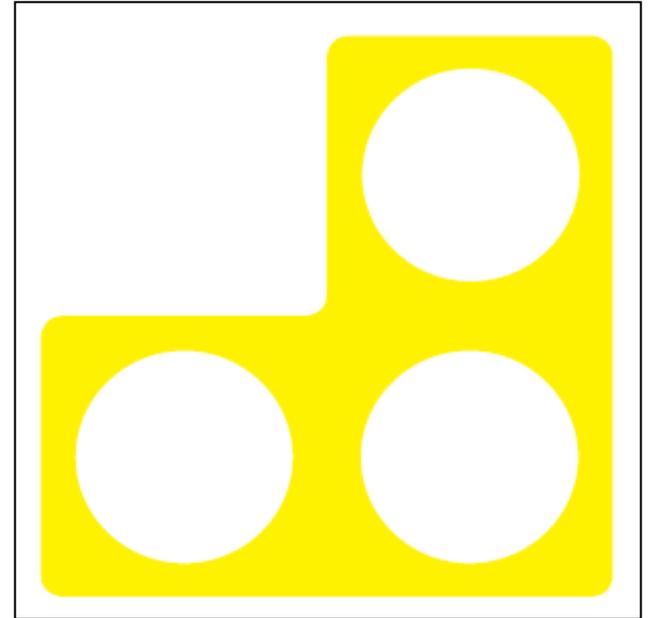
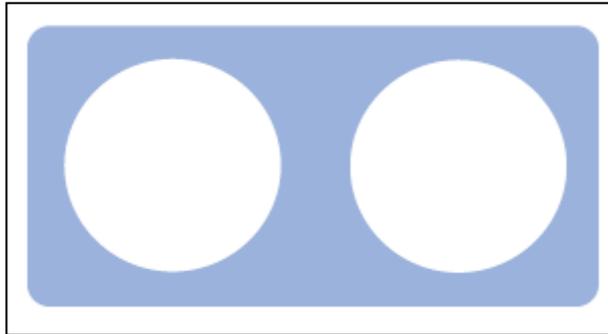
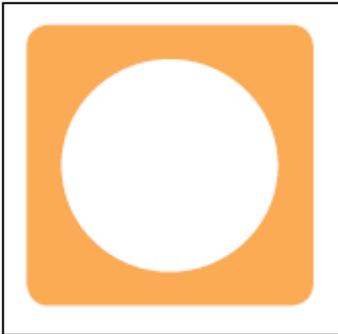
... the sum of three consecutive numbers.

... why there are always fewer orange Smarties in a tube than any of the other colours?

... repeating patterns that you can make using 2 (3) coloured beads.

... the relationship between the maximum number of (internal) right angles in a polygon and its number of sides.

... whether there is a relationship between the size of a ball and the height of its bounce.



BBC



**39045 m or 128100 ft
(24.2 miles)**

4 mins 20 secs

9 mins 3 secs

**36529 m or 119846 ft
(22.7 miles)**

**1342.8 km/h (373 m/s)
or 833.9mph**

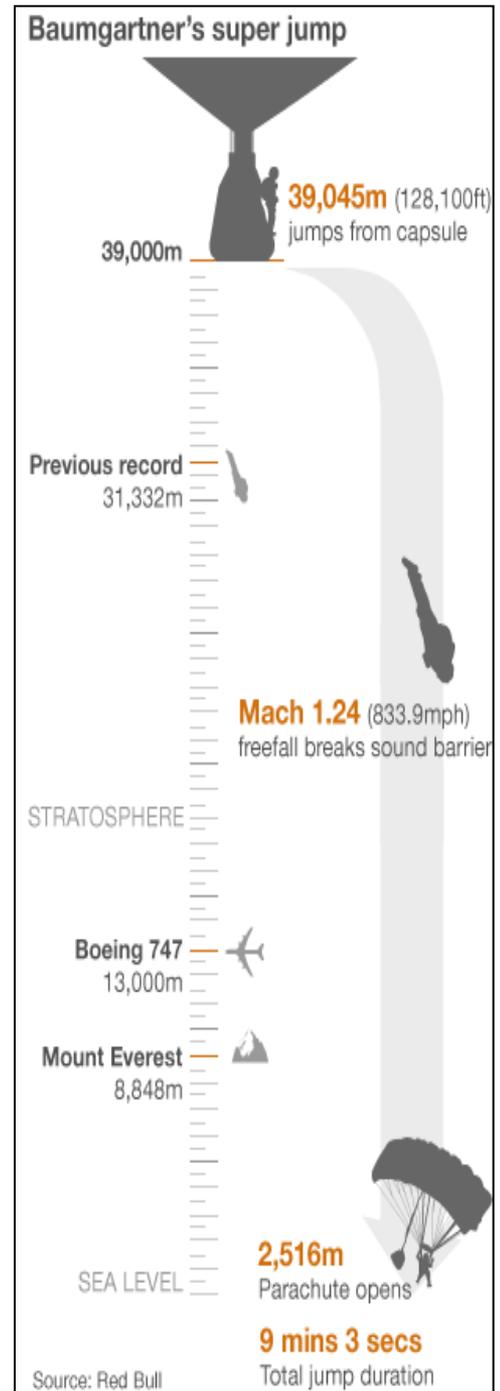
2516 m

8848 m

340.29 m/s

13000 m

<http://www.bbc.co.uk/news/science-environment-19943590>



Useful websites

LASCO Maths <http://www.lascomaths.com/>

Annual Challenge event for Primary pupils (and Secondary students)

Transum <http://www.transum.org/Software/>

Provides a mathematics challenge for every day of the year!

Nrich <http://nrich.maths.org/public/>

FREE enrichment materials for ages 5-19. The resources are designed to develop problem-solving and mathematical thinking skills.

BBC Bitesize <http://www.bbc.co.uk/bitesize/>

Useful summary of KS1/KS2 content with interactive activities [also has KS3/KS4 materials].

Kangaroo Maths <http://www.kangaroomaths.com/index.php>

I Love Maths Games <http://www.ilovemathsgames.com/>

Games, puzzles and investigations