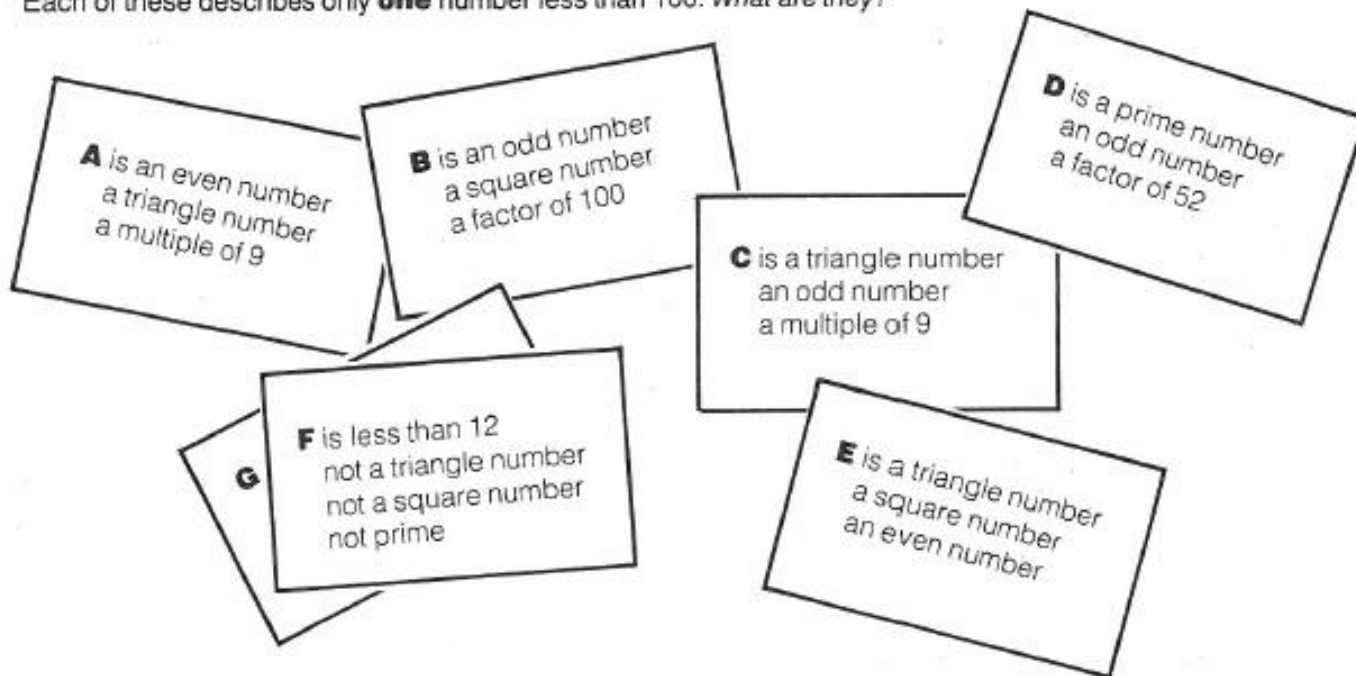


Number Names

Each of these describes only **one** number less than 100. *What are they?*



Write a description for **G** (you choose the number). Give it to a friend to solve.

The archive: STEM Learnings' maths resources collection

25th June 2024, Michael Anderson

National STEM Learning Centre and Network



Welcome!



www.stem.org.uk



Michael Anderson
m.anderson@stem.org.uk
[@STEMLearning_MA](https://twitter.com/STEMLearning_MA)

The archive: STEM Learnings' maths resources collection

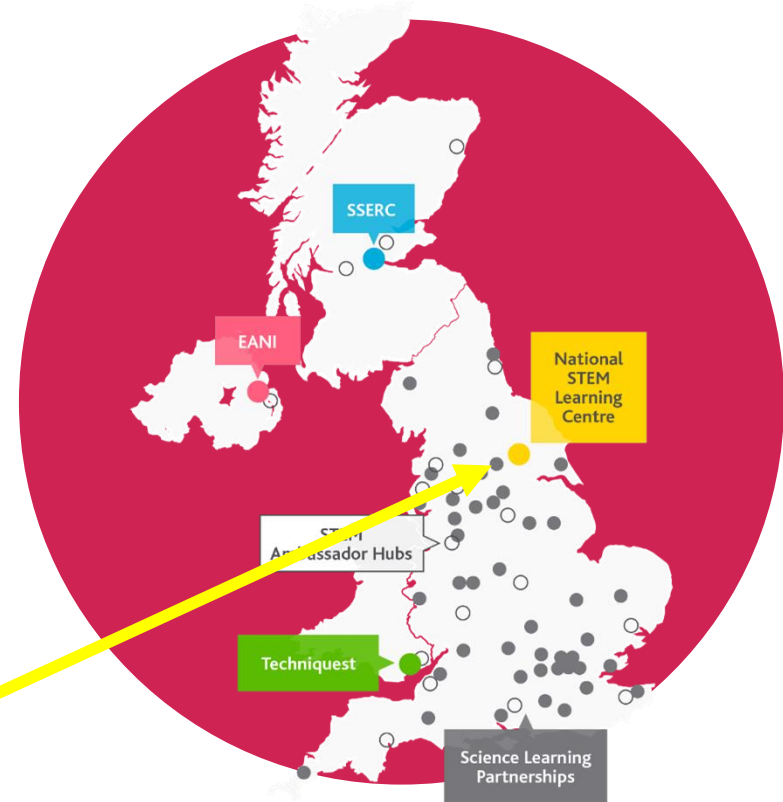
STEM Learning is home to thousands of free-to-access, quality-assured classroom resources to support the teaching and learning of science, technology, engineering and mathematics (STEM) subjects. In 2024, STEM Learning celebrates turning 20. Join us for a whistle-stop tour of our favourites in the collection: from SMILE Cards to The Standards Units; GAIM to Graphing Stories and many, many more.

The National STEM Learning Centre at 20



STEM Learning Network

The National STEM Learning Centre is part of our UK STEM Learning Network.



BRAND NEW CPD courses for 2024/25



STEM CPD for teachers and technicians at every career stage.

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We've listened to the challenges you face accessing professional development – workload, lack of time, geographical restrictions, covering your classes and more.

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Our fantastic, evidence-based CPD features greater choice than ever. We know you have limited time so you want to spend it wisely. We have years of experience and data that shows the hugely positive impact our CPD courses have on teachers and students.

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Residential

Residential, face-to-face CPD at the National STEM Learning Centre in York.

Face-to-face

Shorter 1-2 day CPD courses at selected venues across the country.

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STEM
LEARNING

STEM Learning 2024-25 CPD flyer



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for **Computing**
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We offer teachers, schools and trusts:

- courses for all experience levels
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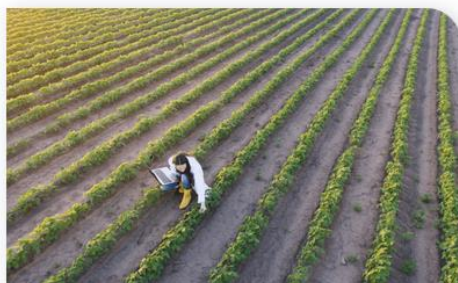


STEM
LEARNING

teachcomputing.org

STEM Ambassadors

Sector STEM Ambassadors



Climate Ambassadors

Led by the University of Reading, UKRI and STEM Learning to raise awareness of climate change and green careers.

[Find out more](#)



Space Inspirations

Inspiring the next generation of space professionals and supporting STEM Ambassadors.

[Find out more](#)



Employer Case Studies

Gavurin exciting data

Gavurin

IT consultancy Gavurin showcases the broad range of exciting jobs in the tech industry to the next generation.

[Read more](#)

Network Rail

Network Rail

Network Rail is changing young people's perceptions of engineering and the rail industry.

[Read more](#)

ROYAL AIR FORCE
Youth STEM

RAF

RAF Ambassadors share their enthusiasm and passion for STEM with the next generation.

[Read more](#)

SIEMENS

Siemens

Siemens explains how the STEM Ambassadors programme fits into their Corporate Citizenship Agenda.

[Read more](#)

STM

STM Quality

STM Quality explains how small businesses play a key role in inspiring young people to enter STEM.

[Read more](#)

babcock

Babcock

Babcock aims to break down barriers to engineering for young people.

[Read more](#)

BAE SYSTEMS

BAE Systems

Running STEM Clubs, careers fairs and work experience inspires their current and future workforce.

[Read more](#)

Royal Astronomical Society

Royal Astronomical Society

Royal Astronomical Society - Sheila Kavanagh, Education Outreach and Diversity Officer.

[Read more](#)

St George's University of London

St George's University

Dr Clara Giamella - Senior Lecturer in Molecular Biology & Principal Investigator, Precision Cancer Biology Lab.

[Read more](#)

Ulster University

Ulster University

Seveta McCormick - STEM Ambassador and Primary PGCE Lecturer, Ulster University.

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citb

Construction Industry Training Board

Construction Industry Training Board - Robert Smith.

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CIHT

CIHT

Chartered Institution of Highways and Transportation - John Hall.

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STEM Ambassadors



Classroom



STEM Club activities



Careers talks



Speed networking



Online mentoring



Site visits and hosting
work experience

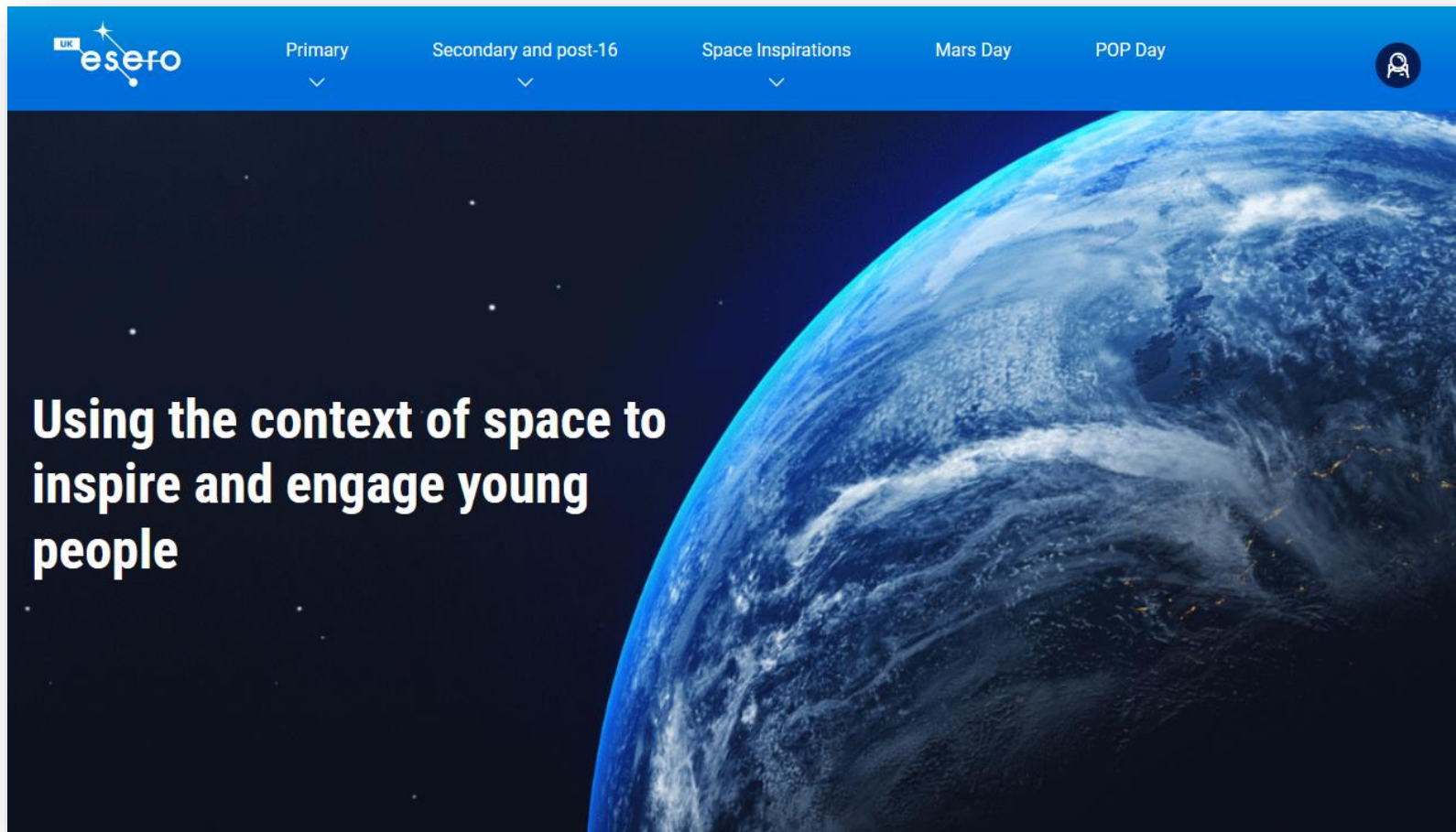


Large science festivals
and fairs



Non-school group

ESERO-UK



ESERO-UK

Fermi estimations

Fermi-style questions

Find plausible estimations to the following questions:

Hair

If Tim didn't cut his hair during the mission, how long would it be on his return?

Face to face

How many astronauts are there currently living on Earth? What are your chances of meeting one in your day-to-day life? What is the chance of meeting one tomorrow? This month? This year? Ever? How about someone that you know?

TV

Tim won't have a TV in space. How many episodes of Match of the Day will be on his series record when he arrives home? How many goals do you think this will be?

Heartbeats

Tim thinks his heartbeat might increase by an average of 10% during his mission. He thinks this could equate to one million extra heartbeats. Do you agree?

Oxygen


Tim will take around 6 hours to reach the International Space Station. How much oxygen do you think he will need?



principia
mission



Explorify

 Explorify

HomeMy dashboardWhat's new?Teacher support

Michael

Year group (all)

Science topic (all)

Activity type (all)

Search 800+ activities

Pick one of these low-prep activities to do next.

These are recommended based on All topics. Update your topics to get more specific recommendations. [Update topics](#)




ODD ONE OUT

Three weeds

All year groups

Plants • Living things and their hab...



WHAT'S GOING ON?

To flee or not to flee

All year groups

Animals, including humans • Living...



ZOOM IN, ZOOM OUT

Blackened edges

All year groups

Animals, including humans • Living...

[Browse all activities](#)

explorify.uk

Explorify



explorify.uk/en/activities/zoom-in-zoom-out/pitcher

Destination STEM

Welcome to Destination STEM

Destination STEM provides support, advice, and opportunities to help you explore pathways into STEM careers, develop your STEM skills, and connect you with STEM employers. Explore our pages to find out more.

About Destination STEM

Powered by STEM Learning, Destination STEM aims to support young people into STEM careers. Find out more.

How can a mentor help you?



Destination STEM supports young people to:

- develop your knowledge of STEM careers,
- take part in opportunities to build your skills,
- develop your experience of the STEM sector.

It is designed to help you find your way in the diverse and exciting fields of STEM and to see the possibilities and opportunities that they can offer you.

Resource collections

Secondary and A level mathematics



Secondary Maths (11-16)

The best resources for teaching the secondary mathematics curriculum.



A Level Mathematics

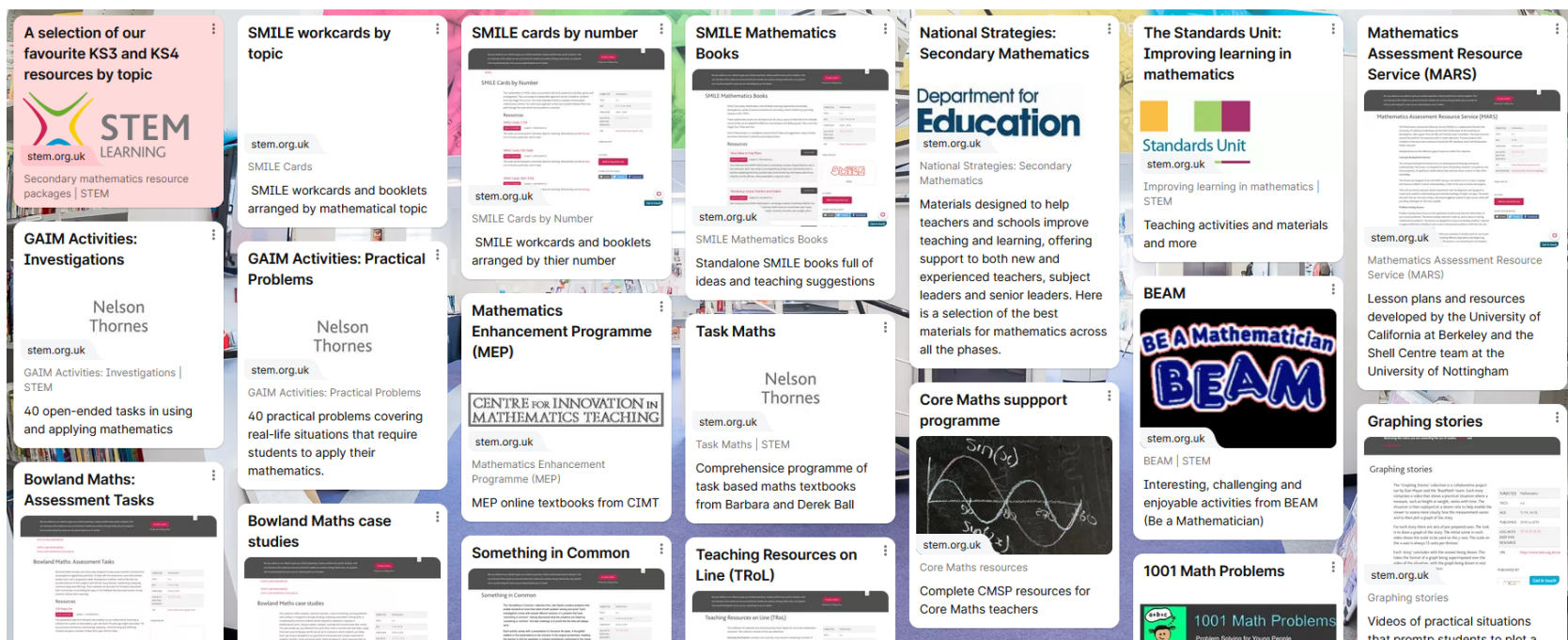
Explore our selection of key stage 5 mathematics teaching materials chosen from the STEM Learning resource collection.



Core Maths

All the resources you need to bring Core Maths into your school or college.

Our favourite collections



SMILE

SMILE Cards

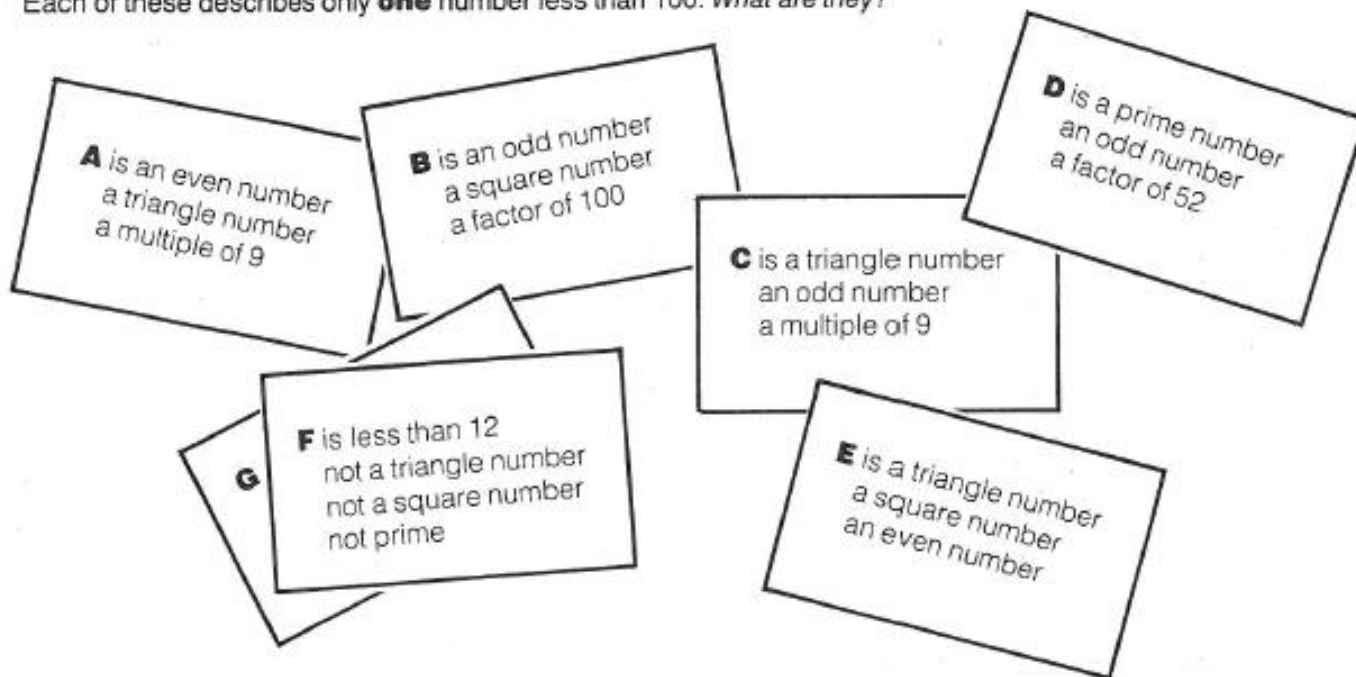
SMILE (Secondary Mathematics Individualised Learning Experiment) was initially developed as a series of practical activities for secondary school students by practising teachers in the 1970s. It became a complete individualised scheme based around a network of activity cards and assessments. The cards were organised so that each student followed their own path through the work which was recorded on a network.

This collection contains:

- SMILE workcards organised into mathematical topics based upon the SMILE networks.
- SMILE booklets, which are cards that are booklets in themselves.
- Supplementary materials.

Number Names

Each of these describes only **one** number less than 100. *What are they?*



Write a description for **G** (you choose the number). *Give it to a friend to solve.*

Number words

Start with a number.

How many letters are there?

Write down the number.

How many letters are there?

... and so on ...

TWO

3

THREE

5

FIVE

4

FOUR

4

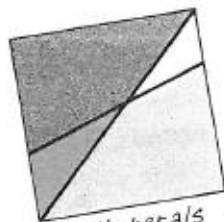
Start chains with different numbers.

What do you notice?

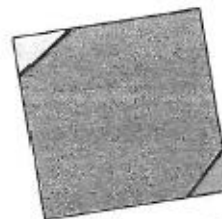
Try making chains in other languages.

You will need some copies of worksheet 1592A

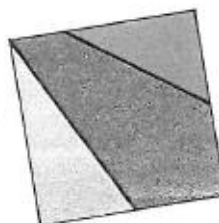
Two Cuts Investigation



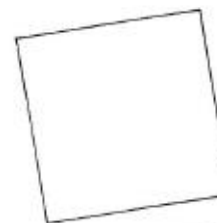
2 quadrilaterals
2 triangles



1 hexagon
2 triangles



2 triangles
1 pentagon

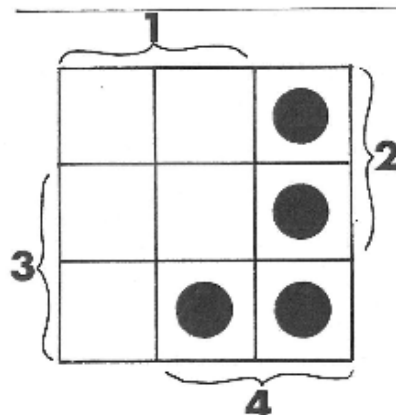


Using 2 cuts on a square, what shapes can you make?

Record your work on copies of the worksheet.

You will need: Counters

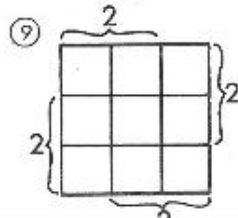
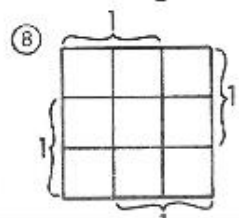
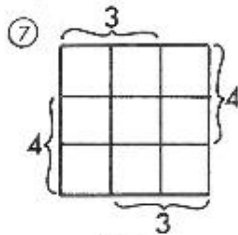
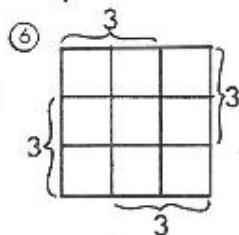
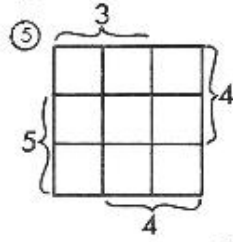
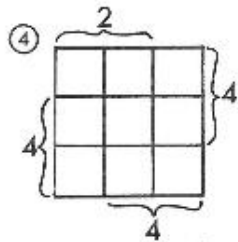
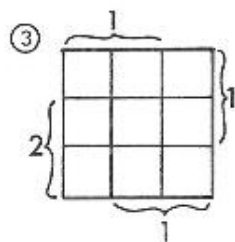
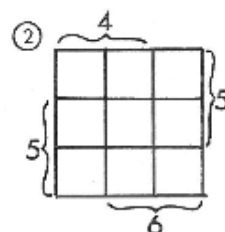
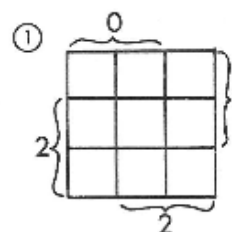
Counter Placing



Look carefully at the counters on this grid.
Find the connection between the numbers and the counters.

Now use this rule to put counters in the correct places in these grids - one counter per square.

Draw the answer in your book.



Find 2 different solutions for each of these grids;

How many different solutions can you find for each of these?
Look for patterns in your answers to question 9

Active A level Maths – Susan Wall

For each set of 3 expressions find the odd one out and create a new expression that matches it.

$8^{\frac{x}{3}}$	$4^{\frac{x}{2}}$	2^{2x}	
27^x	9^{2x}	3^{3x}	
4^{2x}	8^x	2^{3x}	
$4^{\frac{5x}{6}}$	$8^{\frac{x}{6}}$	$2^{\frac{5x}{3}}$	

MEI - Scams



Genuine Psychic

Would you like to know whether your next child will be a boy or a girl, before conception?

I am so confident that I can predict the gender of your next child that I will return your fee and give you an extra £50 if I'm not correct!!!

Fee £100 per prediction

<https://www.stem.org.uk/rx35a4>

BEAM



Maths of the Month

You need:

- set of 0 – 9 digit cards
- calculator (optional)

Percentage cards



Arrange some of the 0 – 9 digit cards to make as many different percentage calculations as you can.
You can only use each digit card once in each calculation.



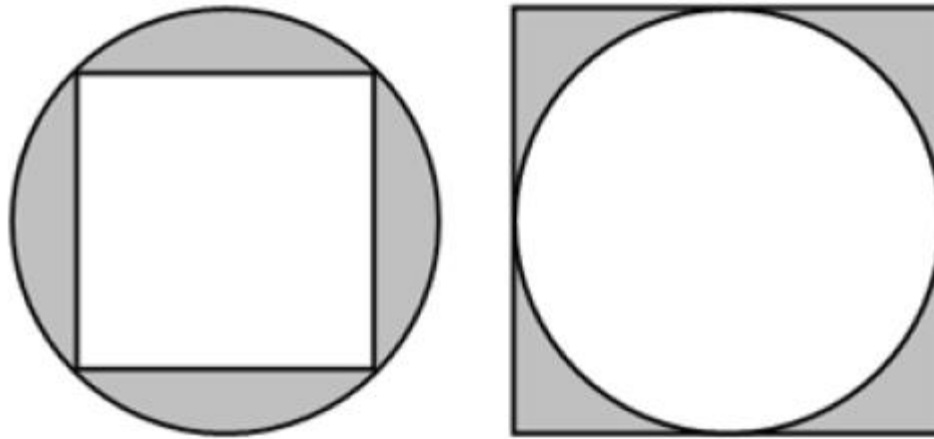
$$\boxed{2}\boxed{0}\% \times \boxed{4}\boxed{5} = \boxed{9}$$



$$\boxed{2}\boxed{5}\% \times \boxed{1}\boxed{2} = \boxed{3}$$

Inquiry Maths

A square fits better into a circle than a circle fits into a square.



Instant Maths Ideas

2.7.14 A cable 1 km long is lying flat along the ground with its ends fixed. If its length is increased by 1 m but the ends are still fixed 1 km apart, how high up can the mid-point of the cable be raised before it becomes taut? (Assume the cable doesn't stretch or sag.)

Bowland Maths

110 years on

This photograph was taken about 110 years ago.
The girl on the left was about the same age as you.
As she got older, she had children, grandchildren, great grandchildren and so on.



Twentieth Century facts

At the beginning of the 20th century the average number of children per family was 3.5

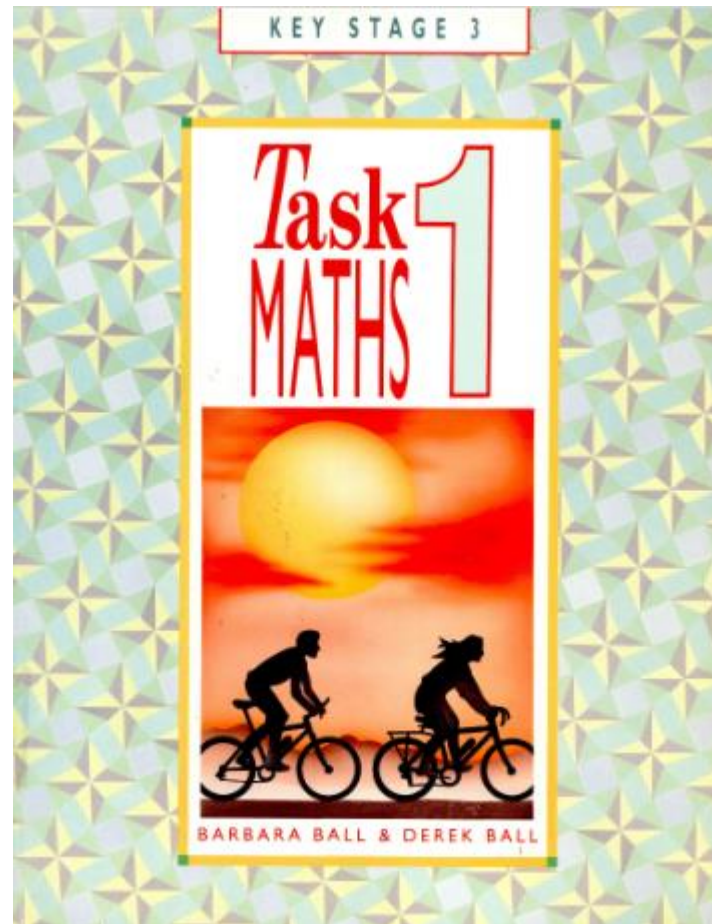
By the end of the century this number had fallen to 1.7

In 1900, life expectancy of new born children was 45 years for boys and 49 years for girls. By the end of the century it was 75 years for boys and 80 years for girls.

Now, 110 years later, all this girl's descendants are meeting for a family party.

How many descendants would you expect there to be altogether?

Task Maths



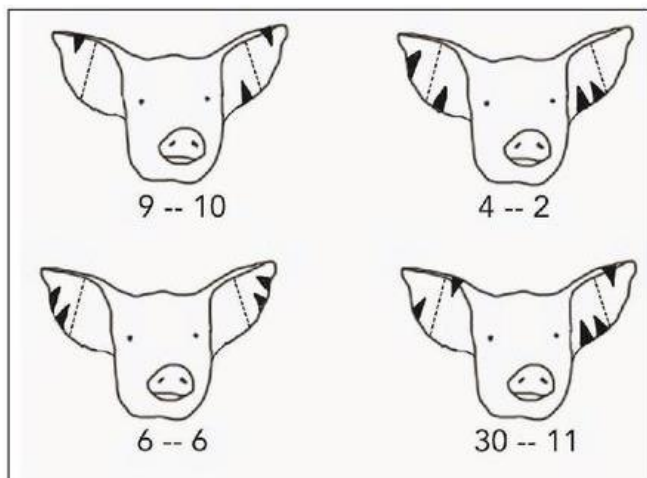
1001 Math Problems

The Pig Problem

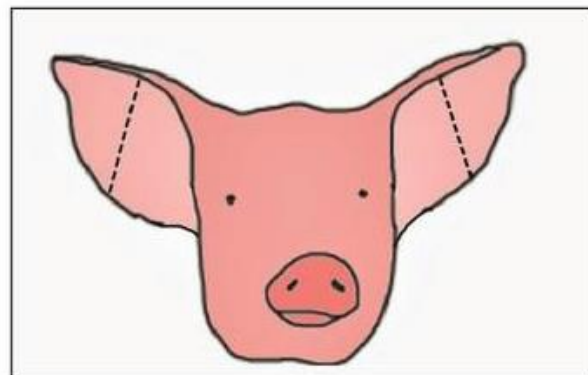
Created by Sian Zelbo, 1001mathproblems.com

Farmers have a system for notching the ears of pigs to help identify them. The notches in each ear represent a number. There are four places for notches in each ear, and each place can hold either 0, 1, or 2 notches.

Use the clues below to decode the system and then notch your own pig at the bottom of the page.



Your turn! This is pig number 14 -- 12. Can you place the ear notches so that he can be correctly identified?



Graphing Stories



The archive: STEM Learnings' maths resources collection

25th June 2024, Michael Anderson

National STEM Learning Centre and Network



Thank you!



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