



“Although the main reason I chose to study maths was because I enjoyed the subject, it was also because I knew that having a BSc in this well-respected subject would give me an advantage for my future career.”



“This work involves using a wide variety of mathematical techniques that I can bring to bear on the issue of global climate change.”

I am studying uncertainty in climate prediction models, with an aim of better understanding global warming. This work involves using a wide variety of mathematical techniques that I can bring to bear on the issue of global climate change.



“The aim of our project is to try to understand the cellular mechanisms of ageing and how these processes are affected by nutrition.”



“I use mathematics every day to work out how to protect people from the effects of explosions.”

I have served in Germany, Bosnia and Iraq and am currently training to be a bomb disposal operator. Everything to do with military engineering uses maths.

To bring down a bridge explosively you need to know how much ‘bang’ it will take to shatter or cut a steel beam of a certain thickness



What maths is involved in stirring a cup of tea?

A man who has thought a lot about the maths behind stirring cups of tea has won one of the world's most lucrative academic prizes.

Professor Sir Martin Hairer from Imperial College in London won the 2021 Breakthrough Prize for Mathematics by applying complex maths to simple situations - like stirring a cup of tea.

He says he plans to spend his £2.3m winnings on a house and hopes the prize will inspire others to develop a passion for maths too.

Mathematics can be found in the names of many Coldplay songs; including: Twisted Logic, Square One, Proof, One I Love, Major Minus and 42.





He studied maths and physics at Imperial College, London. Before becoming a huge hit with “Queen” Mr May, was a mathematics teacher!

Mathematics plays an increasingly large role in the development of new technologies





**WE
REALLY
REALLY
LOVE
MATHS**

The only way
to learn
mathematics
is to do
mathematics.

PAUL HALMOS

Intelligence is something you can increase.	Be keen to work hard and learn as much as I can.
There are differences in how quick different students develop competence in mathematical skills	Everyone with effort and guidance can improve and make progress.
Love learning something new and challenging.	Throw yourself into difficult tasks and stick at it. Set yourself goals and keep to them.



Practise your **weaknesses** using

Mathswatch

Corbett Maths

On maths

Learn Key Maths facts using knowledge organisers

Ask your teacher for help

Work book—Practice writing solutions

The Big Picture – use topic lists to learn a new topic.

Exam Papers/Topic Tests – Rm 203/205

Study Buddy – peer/adult

Revision ideas

Fractions

1) In a pack 15 oranges, 3 of the oranges are mouldy. What fraction of the pack are mouldy?

2) Find the fraction half way between $\frac{1}{5}$ and $\frac{3}{10}$.

Complete the table.

Minutes	Hours
15	$\frac{1}{4}$
20	
	$1\frac{1}{2}$
100	

Fractions

Explain how you know the answer is wrong without working out the correct answer.

$\frac{3}{5} - \frac{2}{3} = \frac{1}{2}$

Number Properties

Make the statement true.

$12 \times 30 = 4 \times \square = 3 \times \square$

1) Write down a prime number between 20 and 30.

2) Write down an even multiple of 13.

3) Write down three different factors of 24 that add together to give a prime number.

A

0

B

Decimals

Harley has done some calculations. Explain how you know the answer is incorrect without working out the answer.

$0.2 \times 0.4 = 0.8$

Percentages

Amjad, Henry and Adil share a flat.

- Amjad pays 20% of the rent.
- Henry pays 35% of the rent.
- Adil pays £540.

How much do they pay altogether for the rent?

Decimals

1) Write the following in ascending order of size.

0.23, $\frac{1}{5}$, 22.3%, 0.203, $\frac{3}{16}$

2) Write down a number between 2.34 and 2.35.

In June, Madeline pays the same amount for each song she downloads. She pays £23.70 for 30 songs. In August, she pays 6p more for each song. She has a £25 gift card. What is the maximum number of songs she can purchase using this gift card?

Percentages

In the shop the normal price of a coat is £85. The shop has a sale. The price of the coat is reduced by 12%. Work out the price of the coat in the sale.

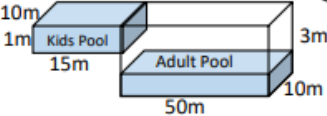
Percentages

The diagram shows two swimming pools. A kids pool and an adults pool. The kids pool is full. The adult pool is only 25% full. The wall connecting the two pools is lowered and the water from the Kids pool is released into the adults poo before the wall is raised again. What percentage of the adults pool is now filled?

Revision









Work out the answers to the questions in each separate section. Match up your answer to the colours in the grid below and colour in the section that colour.

Colour	Answer
Brown	7
Grey	30
Pink	-2
Blue	8.2
white	45
Green	5
Light Brown	110



www.missbsresources.com

Height

$0 \leq h < 4$	5
$4 \leq h < 6$	7
$6 \leq h < 10$	10
$10 \leq h < 20$	8

Find an estimate for the mean.

What is the gradient of the line $2y = 10x - 8$?

$\begin{pmatrix} 3 \\ x \end{pmatrix} - \begin{pmatrix} 2 \\ -3 \end{pmatrix} = \begin{pmatrix} 1 \\ 8 \end{pmatrix}$

It takes 5 people 12 hours to build a house. How long does it take 2 people?

$\frac{3}{10}$ is 1.5.

What is the number?

$2^3 + 6 = -$
 $3x = -6$
 $2^2 = 4$

Sally and Tom share 120 sweets in the ratio of 5:3. How many more sweets does Sally have?

$3(x+a) - 2(x+2) \equiv x+11$
 Find a

$1 - \frac{2}{x}$

6 cm
3 cm
 x°

$4x^2 = 100$

What is the value of x ?

$x_{n+1} = 2x_n^2 - 3$ and $x_1 = 2$.
 What is the value of x_2 ?

Regular hexagon and dodecagon. Find the size of x .

The speed limit is 30mph. How many people are caught speeding?

FD

3							
2							
1							
0							

Speed MPH

A rugby team's mean score in 5 games is 36 points. In six games the mean is 35 points. How many points did they score in the sixth game?

$x < 5$ and $y \leq 3$.
 What is the maximum value of $x + y$?

$x^2 = 16$ Find the value of x .

Calculate the arc length correct to 2 s.f.

75°
34.5 cm

A top in shop is sold at a 28% profit. The top is sold for £38.40. How much did the top cost to make?

Find the value of x .

$3x + 52$
 $7x + 24$
 15 cm

$\frac{1}{3}$ of 15

Express $x^2 + 6x + 16$ in the form $(x+p)^2 + q$. What is the value of q ?

Daniel invests £15 000 into a bank account at an interest rate of 1.9% per annum. How many years does it take for Daniel to have over £17 000?

Find the size of angle y .

x°
 30°

Revision ideas

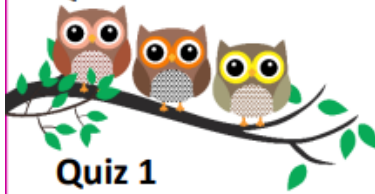
CREATE ACRONIMS

- KFC - Keep, Flip, Change (Dividing Fractions)
- FOIL - First, Inner, Outer and Lasts (Expanding Quadratics)
- TEAM - Times to make the End Add to make the Middle (Factorising Quadratics)
- HISS - Half in the Bracket Square and Subtract (Completing the Square)
- MARIAS - Multiply And Reduce Increase And Share by (Differentiation and Integration)

CREATE SONGS AND DANCE

- Circumference and Area of a Circle Song
- Squaring Numbers Song

Quizzes 1 to 3



Quiz 1

Q	Topic	Σ	R	A	G
1	Product of Prime Factors				
2	Difference of Two Squares				
3	Area Problem				
4	Cumulative Frequency				

Home Study Focus

Home Study
Completed

☐

Quiz 2

Q	Topic	Σ	R	A	G
1	Ratio Problem				
2	Expand and simplify				
3	Right Angled Trigonometry				
4	Cumulative Frequency				

Home Study Focus

Home Study
Completed

☐

Quiz 3

Q	Topic	Σ	R	A	G
1	Ratio Problem				
2	Functions				
3	Volume and Mass				
4	Mean from a Table				

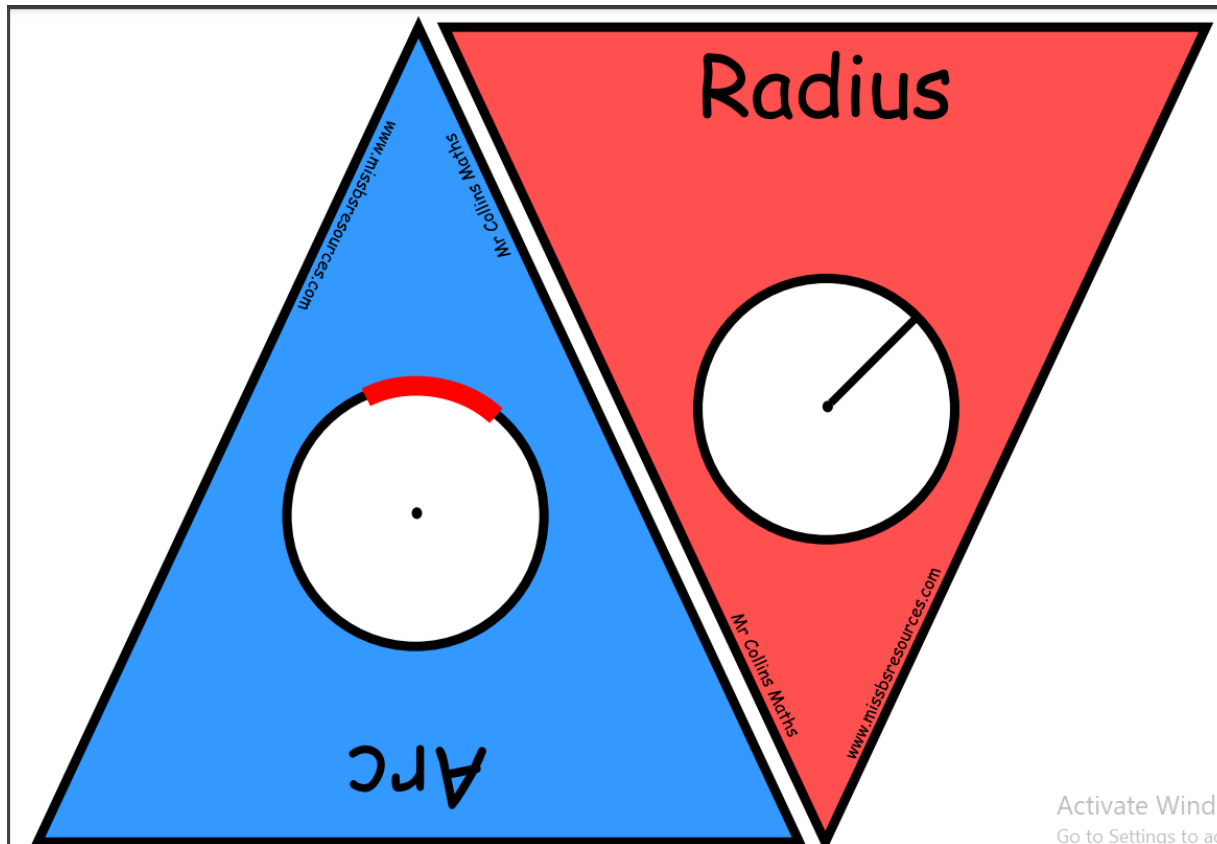
Home Study Focus

Home Study
Completed

☐

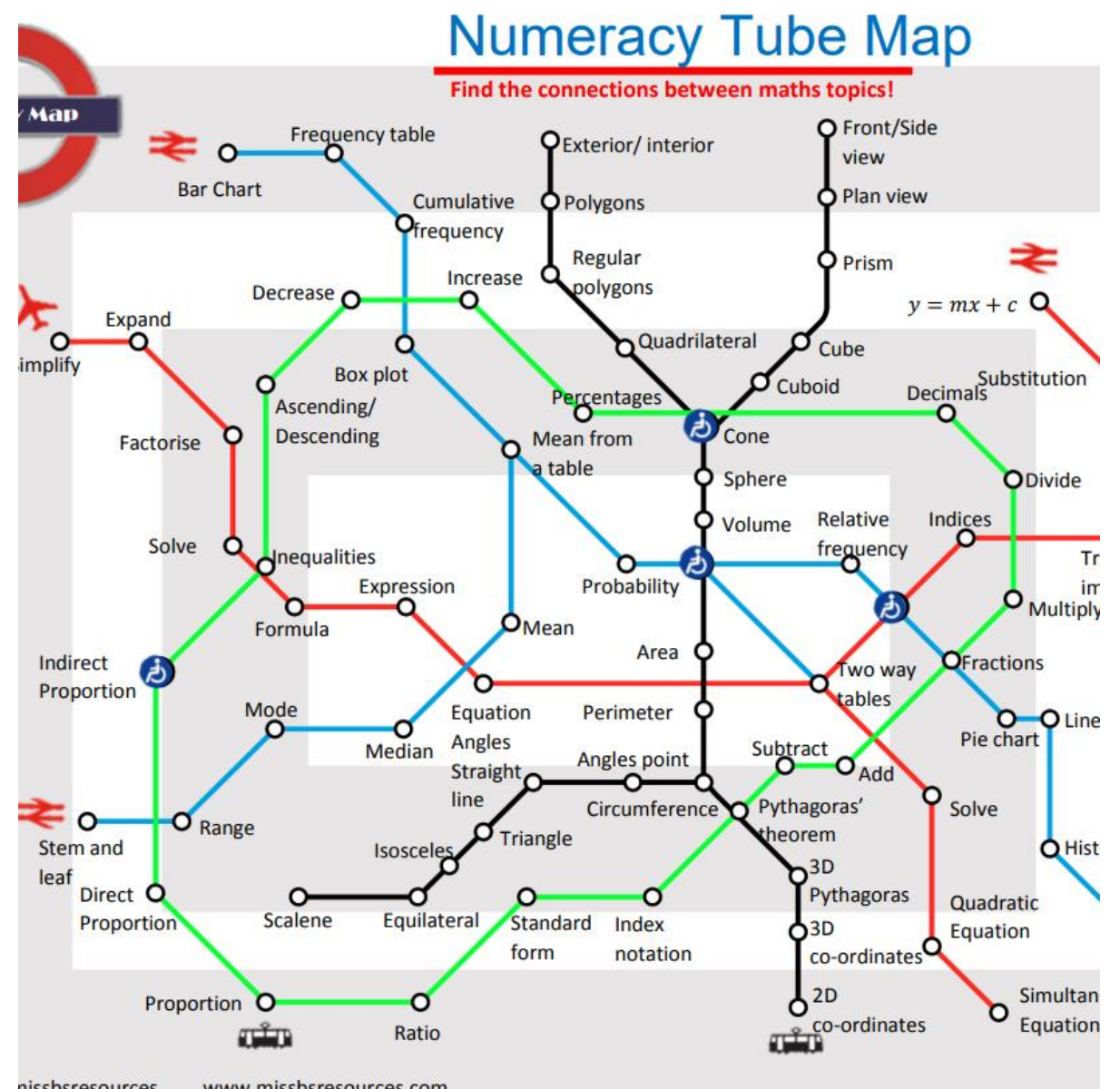
Revision ideas

Create bunting



[illegible]

www.missbsresources.com



The lead up to mocks

- Good attendance is vital
- Organisation and independence
- Engaged in lessons

What are the two biggest
errors people make when
revising?

How to avoid the big errors

1. Studying things I already know

Prioritise

How to avoid the big errors

2. Just reading

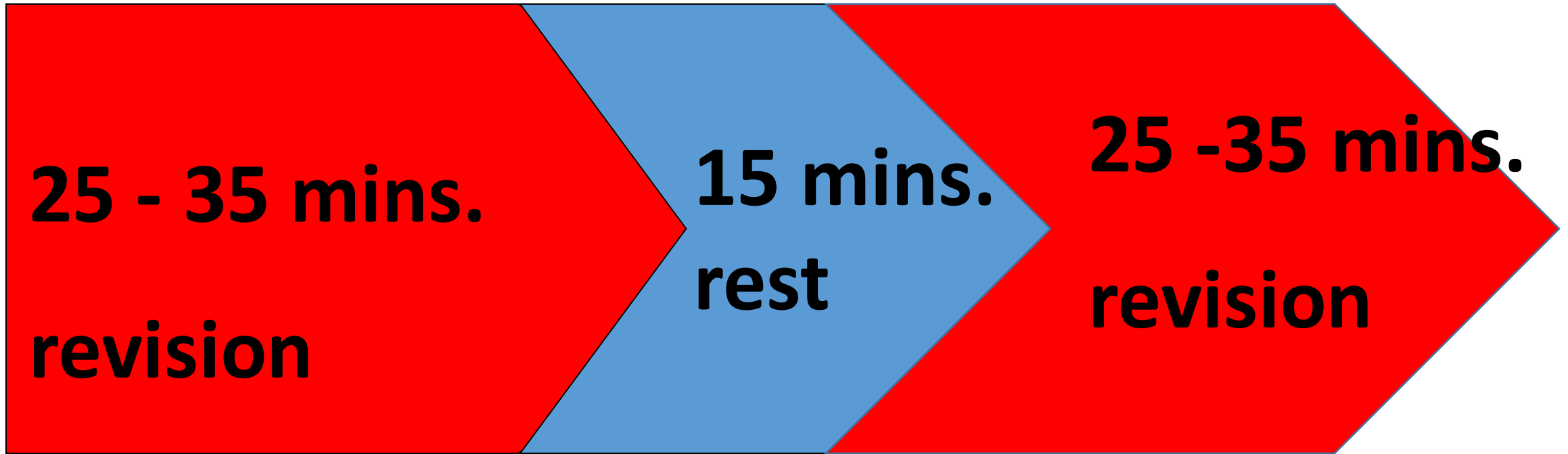
Get active

Active methods of revising

- Mind mapping
- Flash cards
- Teaching others
- Make a story
- Pictures
- Past papers and mark schemes
- Web sites, media, study support

How long do I revise
for?

Optimum revision time

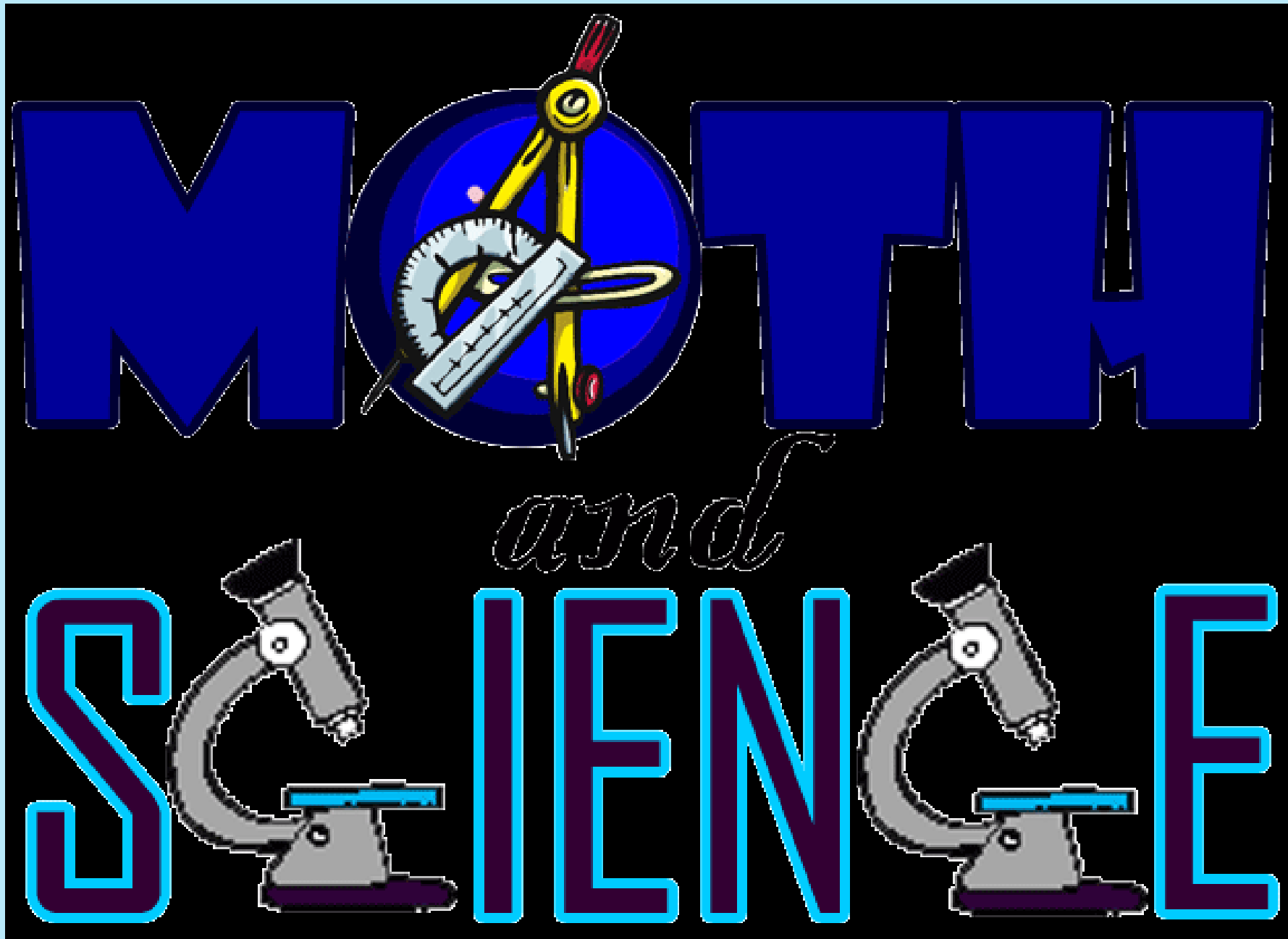


How should you plan your revision?

- Only focus on your uncertainties and weaknesses
- **Session 1:** 25-35 minute **ACTIVE** session
- **Session 2:** 5-10 minute session a day after
- **Session 3:** 5-10 minute session a week after
- **Session 4:** 5-10 minute session a month after

Oct 2021	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Week A	1 Finding areas of circles	2 Finding areas of circles 5 mins	3	4	5 Expanding brackets	6Expanding brackets 5 mins	7
Week B	8	9 Finding areas of circles 5 mins	10	11	12	13 Expanding brackets 5 mins	14
Week A	15	16	17	18	19	20	21
Week B	22	23 Finding areas of circles 5 mins	24	25	26	27Expanding brackets 5 mins	28
Week A	29	30	31	1 st			





DON'T YOU
DARE GIVE
UP



**KEEP
CALM
AND
LOVE
MATHS**

Advice from previous students

Break topics down and work through them steadily – don't try and tackle all the information at once

Start finding the revision method that works for you as soon as possible.

Do paper after paper all throughout the year to drill out those silly mistakes

Cambridgeshire man, 92, passes GCSE maths exam with top mark



THAT FEELING WHEN

**YOU UNDERSTAND
SOMETHING IN MATHS**