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Note: Slides from all workshops will be shared after the evening.

Mathematics in S1 – S2

Mrs Clarke and Miss Mackenzie

Thinkers
a collection of activities to provoke mathematical thinking

Starter: (Use a Whiteboard)

Give me an example of a set of three numbers whose sum is 0; and another, and another.

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Session Aims

We aim to cover the following this evening:

- Curriculum and Pathways
- Events and Challenges
- Support

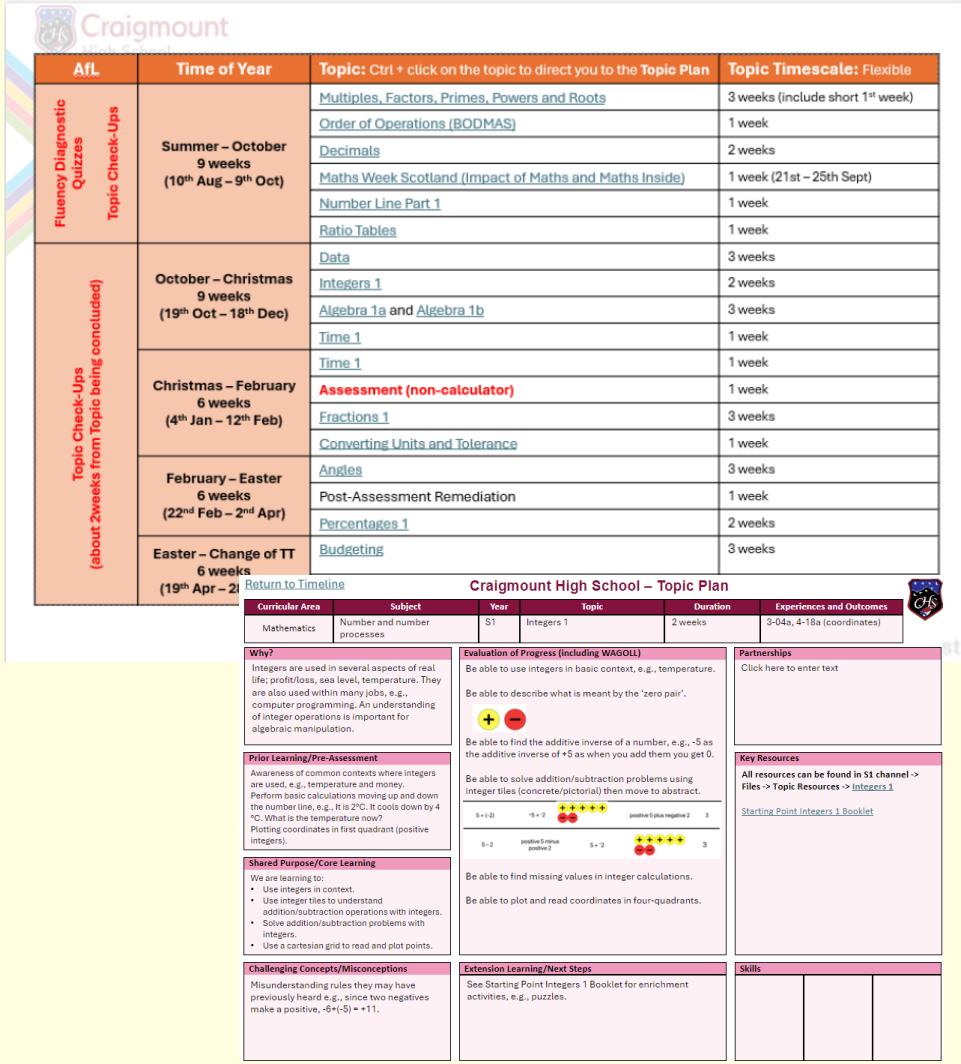
Please Note: Our website (scan the QR code) has information about our topic timelines with helpful resources.

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S1

- During S1, the majority of learners come in starting to or already working at level 3 of the Curriculum for Excellence.
- This means that the majority of learners will work through level 3 skills in S1 (with some level 2/4 where appropriate).
- Those who start S1 at level 2 or lower will follow an adapted curriculum which meets their needs, focusing largely on developing numerical fluency.
- We build and extend on what they have learned in primary and check their prior learning.
- We use concrete materials to develop understanding, including Integer Tiles and Algebra Tiles.
- We have also introduced technology by using basic excel with Money and Data.
- We complete short topic check-ups throughout the year to assessment understanding with one longer mixed assessment in January.



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AfL	Time of Year	Topic: Ctrl + click on the topic to direct you to the Topic Plan	Topic Timescale: Flexible
Fluency Diagnostic Quizzes Topic Check-Ups	Summer – October 9 weeks (10th Aug – 9th Oct)	Multiples, Factors, Primes, Powers and Roots	3 weeks (include short 1st week)
		Order of Operations (BODMAS)	1 week
		Decimals	2 weeks
		Maths Week Scotland (Impact of Maths and Maths Inside)	1 week (21st – 25th Sept)
		Number Line Part 1	1 week
		Ratio Tables	1 week
Topic Check-Ups (about 2weeks from Topic being concluded)	October – Christmas 9 weeks (19th Oct – 18th Dec)	Data	3 weeks
		Integers 1	2 weeks
		Algebra 1a and Algebra 1b	3 weeks
		Time 1	1 week
	Christmas – February 6 weeks (4th Jan – 12th Feb)	Time 1	1 week
		Assessment (non-calculator)	1 week
		Fractions 1	3 weeks
		Converting Units and Tolerance	1 week
	February – Easter 6 weeks (22nd Feb – 2nd Apr)	Angles	3 weeks
		Post-Assessment Remediation	1 week
		Percentages 1	2 weeks
	Easter – Change of TT 6 weeks (19th Apr – 2	Budgeting	3 weeks

Return to Timeline

Craigmount High School – Topic Plan

Curricular Area	Subject	Year	Topic	Duration	Experiences and Outcomes
Mathematics	Number and number processes	S1	Integers 1	2 weeks	3-04a, 4-18a (coordinates)

Why?
Integers are used in several aspects of real life; profit/loss, sea level, temperature. They are also used within many jobs, e.g., computer programming. An understanding of integer operations is important for algebraic manipulation.

Prior Learning/Pre-Assessment
Awareness of common contexts where integers are used, e.g., temperature and money.
Perform basic calculations moving up and down the number line, e.g., It is 2°C. It cools down by 4 °C. What is the temperature now?
Plotting coordinates in first quadrant (positive integers).

Shared Purpose/Core Learning
We are learning to:
- Use integers in context.
- Use integer tiles to understand addition/subtraction operations with integers.
- Solve addition/subtraction problems with integers.
- Use a cartesian grid to read and plot points.

Challenging Concepts/Misconceptions
Misunderstanding rules they may have previously heard e.g., since two negatives make a positive, -6+(-5) = +11.

Evaluation of Progress (including WAGOLL)
Be able to use integers in basic context, e.g., temperature.
Be able to describe what is meant by the 'zero pair'.
Be able to find the additive inverse of a number, e.g., -5 as the additive inverse of +5 as when you add them you get 0.
Be able to solve addition/subtraction problems using integer tiles (concrete/pictorial) then move to abstract.
Be able to find missing values in integer calculations.
Be able to plot and read coordinates in four-quadrants.

Extension Learning/Next Steps
See Starting Point Integers 1 Booklet for enrichment activities, e.g., puzzles.

Partnerships
Click here to enter text

Key Resources
All resources can be found in S1 channel -> Files -> Topic Resources -> Integers 1
Starting Point Integers 1 Booklet

Skills

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S2

- S2 continues naturally from S1, with the majority of learners working mainly on level 4 concepts. Some will work predominantly in level 2/3.
- At the end of S2, pupils will specialise into a pathway with recommendations from their teacher. These decisions are made with pupils in Jan – Mar.
- We complete short topic check-ups throughout the year to assess understanding with two longer mixed assessments in October (non-calculator) and January (calculator).

AfL	Time of Year	Topic: Click on the topic below to direct you to the Topic Plan	Topic Timescale: Flexible
Topic Check-Ups from S1	Change of TT – Summer 4 weeks (1st – 26th June)	Circumference of a Circle	2 weeks
		Integers 2	1.5 weeks
		Properties of 2D Shapes	0.5 week
Topic Check-Ups (about 2weeks from Topic being concluded)	Summer – October 9 weeks (10th Aug – 9th Oct)	Algebra 2 (expanding brackets)	2 weeks
		Fractions 2	2 weeks
		Rounding (Significant figures)	1 week
		Area 1	2 weeks
		Maths Week Scotland **Assessment (non-calculator)**	1 week
		Properties of 2D Shapes	1 week
	October – Christmas 9 weeks (19th Oct – 18th Dec)	Algebra 3 (solving equations)	3 weeks
		Ratio and Proportion	2 weeks
		Pythagoras	2 weeks
		Time 2 (DST)	2 weeks
	Christmas – February 6 weeks (4th Jan – 12th Feb)	Algebra 4 (change the subject)	1 week
		Assessment (calculator)	1 week
		Gradient	1 week
	February – Easter 6 weeks (22nd Feb – 2nd Apr)		
	Easter – Change of TT 6 weeks (19th Apr – 28th May)		

Return to Timeline

Craigmount High School – Topic Plan

Curricular Area	Subject	Year	Topic	Duration	Experiences and Outcomes
Mathematics	Fractions, decimals and percentages	S2	Fractions 2	1 week	4-07b

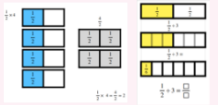
Why?
Fractions are a core numerical skill used as pupils progress through school.

Prior Learning/Pre-Assessment
Conceptual understanding of fractions using shapes.
Using equivalent and simplifying fractions.
Finding fractions of an amount.
Multiplying and dividing fractions.
Converting between mixed numbers and improper fractions.
Converting between fractions, decimals and percentages.

Shared Purpose/Core Learning
We are learning to:
- Multiply and divide fractions and mixed numbers.

Challenging Concepts/Misconceptions
When multiplying a fraction by a whole number, multiply both he numerator and denominator.
Trying to multiply using addition/subtraction rules.

Evaluation of Progress (including WAGOLL)
Be able to multiply and divide a fraction by a whole number.



Be able to multiply two fractions, writing answer in simplified form (either at end or before multiplying).

Be able to divide two fractions, writing answer in simplified form.

Being able to multiply and divide mixed numbers.

$$3\frac{1}{3} \times \frac{1}{3} \times 1\frac{2}{3}$$

Extension Learning/Next Steps
Extension:
- Applying multiplication rules to area of shapes, e.g., rectangles.
- Algebraic substitution with fractions.

Next steps:
- Working with fractions across various topics.



Partnerships
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Key Resources
All resources can be found in S2 channel -> Files -> Topic Resources -> Fractions 2

Starting Point Fractions 1

Skills

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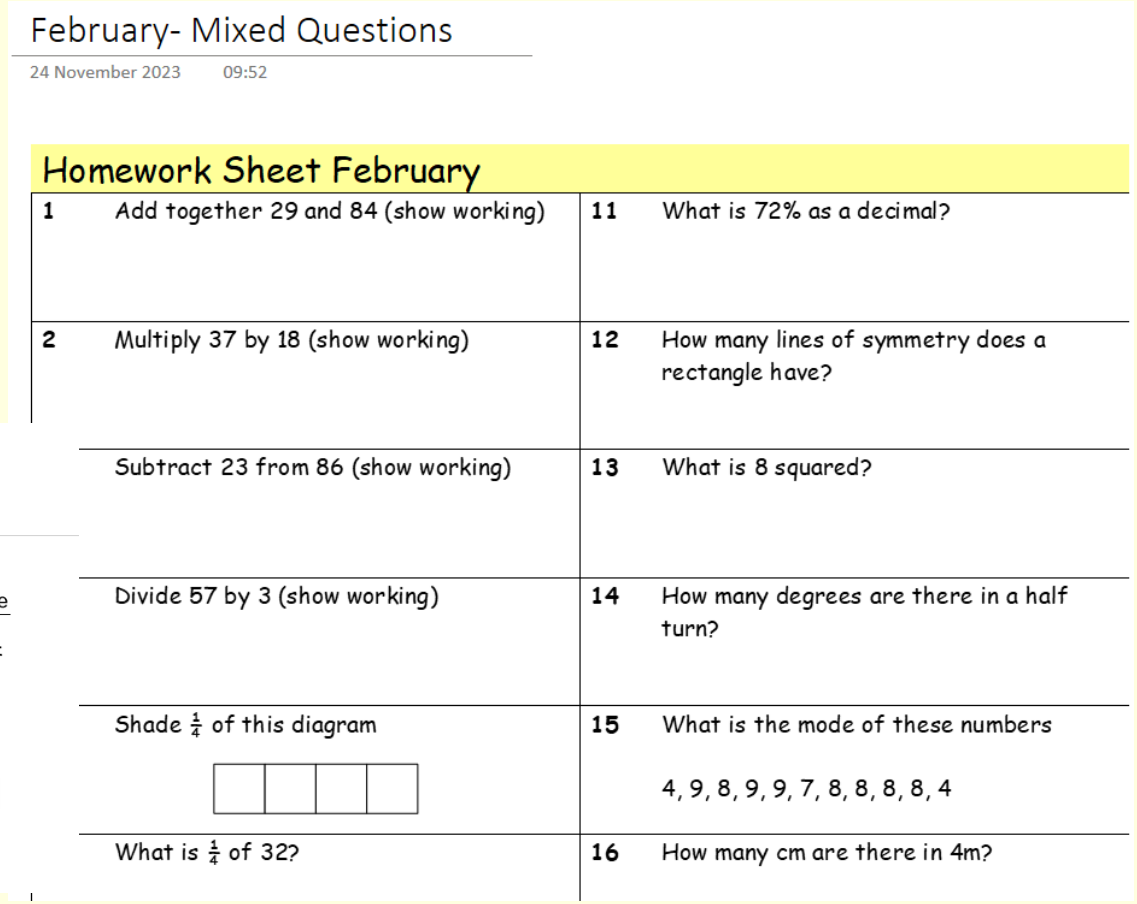
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Homework

Once a month (roughly) S1 and S2 students will be set a more extended homework. This can cover a variety of topics or be more focused on a new skill.

It has been planned to allow some time to have passed between the content being delivered and then checked through homework. This should allow students to identify if they have retained the new content delivered to them.

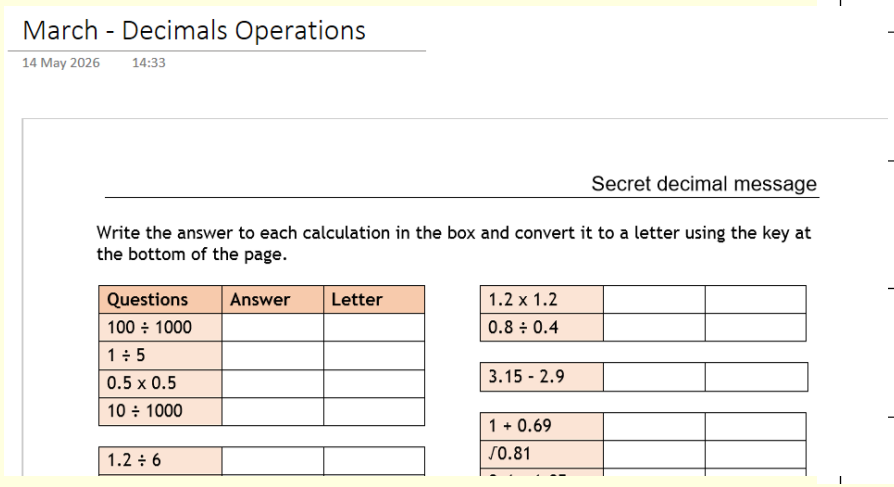


February- Mixed Questions

24 November 2023 09:52

Homework Sheet February

1	Add together 29 and 84 (show working)	11	What is 72% as a decimal?
2	Multiply 37 by 18 (show working)	12	How many lines of symmetry does a rectangle have?
	Subtract 23 from 86 (show working)	13	What is 8 squared?
	Divide 57 by 3 (show working)	14	How many degrees are there in a half turn?
	Shade $\frac{1}{4}$ of this diagram	15	What is the mode of these numbers 4, 9, 8, 9, 9, 7, 8, 8, 8, 8, 4
	What is $\frac{1}{4}$ of 32?	16	How many cm are there in 4m?



March - Decimals Operations

14 May 2026 14:33

Secret decimal message

Write the answer to each calculation in the box and convert it to a letter using the key at the bottom of the page.

Questions	Answer	Letter
100 ÷ 1000		
1 ÷ 5		
0.5 x 0.5		
10 ÷ 1000		
1.2 ÷ 6		

1.2 x 1.2		
0.8 ÷ 0.4		
3.15 - 2.9		
1 + 0.69		
/0.81		

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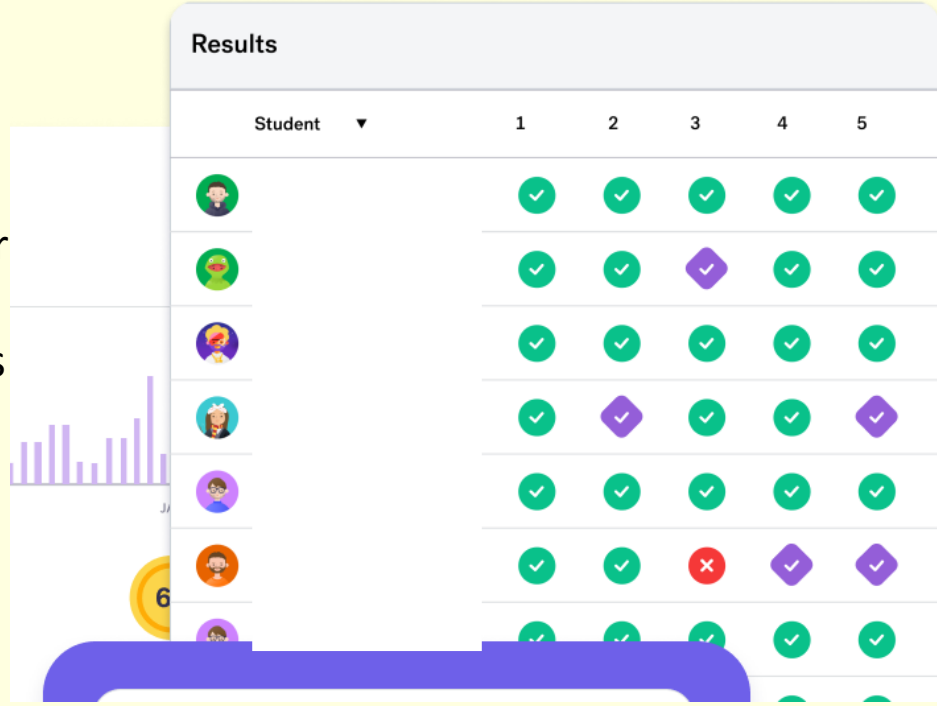
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Eedi Homework

We use Eedi for weekly homework. This is an online platform which provides support for pupils as they complete the homework.

Eedi Homework will consist of:

1. Topic quizzes with 5 questions. If learners are unsure of answers, the platform will provide support videos and further questions with the aim of fixing the misconception.
2. Retrieval (mixed topic) quizzes focused on recapping previous learning.



Eedi also provides an 'Independent Learning' section where learners can further their own mathematical skill and knowledge at home. Parents are able to set up accounts linked to their child to view progress.

Class teachers will also set one monthly written homework.

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Student Login Page:

School.eedi.com

Parental Login Page:

Family.eedi.com

Activity - Eedi

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Our Pathways



S1/2 Apps and Maths Level 3/4

S1/2 Apps and Maths Level 2/3

S1/2 Apps and Maths Level 1/2

S3 Maths Level 4/5

S3 Apps Level 4/5

S3 Apps Level 3/4

S3 Apps L2

National 5 Maths

Higher Maths

National 5 Apps

Higher Apps

National 4 Apps

N5 SfW Financial Services (new for 27-28)

National 3 Apps

National 2 Lifeskills

Apps = Applications of Maths

Maths = Mathematics

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Applications of Maths vs Maths

- Our S1-2 curriculum prepares learners to study any of our pathways. In S3, they will specialise into one pathway. We offer National 5 and Higher in two maths pathways:
  - Applications of Mathematics
    - Managing finances
    - Analysing statistics, data and probability
    - Working with geometry and measures
    - All questions are based in a context where learners need to decide what operations and skills they need to use to solve the problem.
    - Higher Apps includes computer work to extend on financial and statistical analysis. We use Excel and R Studio to do this.
  - Mathematics
    - Applying skills with algebra, geometry, trigonometry and (some statistics only at N5).
    - Using and understanding patterns and relationships.
    - Questions are more abstract.
    - Compulsory for some (but not all) STEM subjects.

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Applications of Maths vs Maths

Time for you to decide – are the questions N5 Maths or Apps?
Put your answer on your whiteboard.

1. Evaluate $2\frac{1}{6} \div \frac{8}{9}$.

   Give your answer in its simplest form.

N5 MATHS

1. A lake had a volume of 14 730 000 litres.

   Due to decreasing rainfall the volume of the lake is expected to decrease by 2.8% annually.

   Calculate the expected volume of the lake after 3 years.

   Give your answer to **3 significant figures.**

National 5 Applications Of Maths

The votes in a school for a class representative were split as follows

- $\frac{2}{5}$ for Sam
- $\frac{4}{9}$ for Ashley
- the remaining votes were for Lesley.

Calculate the fraction of votes that were for Lesley.

National 5 Applications Of Maths

1. A caravan was bought for £20,000.

   It depreciated by 11% in the first year.

   It then depreciated by a further 6% each year over the next two years.

   Calculate the value of the caravan three years after it was bought.

N5 MATHS

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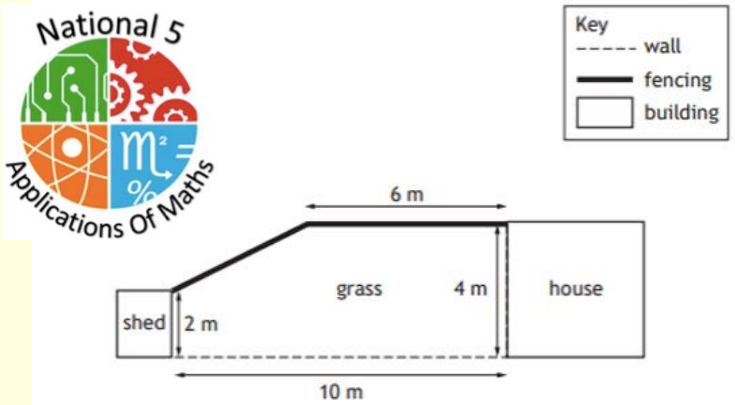
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Applications of Maths vs Maths

Time for you to decide – are the questions N5 Maths or Apps?
Put your answer on your whiteboard.

A property developer has the garden plans for a new housing project.



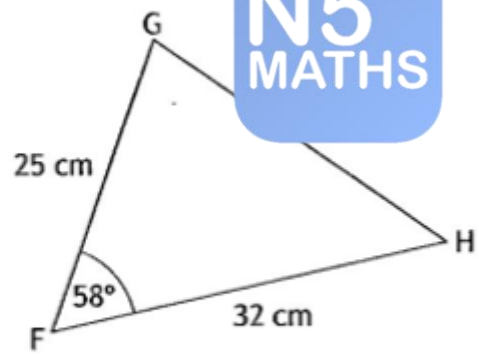
The fencing is at a right angle to the house.
The wall is at a right angle to the house and the shed.
Fencing panels are sold in 2 m sections costing £21·40 each.

(a) Calculate the minimum cost of buying fencing.

1. Josh earns £9 per hour and works 30 hours a week.
His weekly outgoings are £220 a week.
Josh saves all his remaining money.
He books a holiday costing £566.
He will take £800 spending money with him.
Calculate the minimum number of weeks it will take him to save the total amount.

The diagram shows triangle FGH.

- FG = 25 centimetres
- FH = 32 centimetres
- Angle GFH = 58°



Calculate the area of triangle FGH.

Change the subject of the formula $P = \frac{1}{3}mn - r$ to m.

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Applications of Maths vs Maths

In S2, when selecting Applications of Maths or Maths, pupils need to:

- Listen to their teacher's recommendation. We use work in S1-2 to support our decisions about what pathway each pupil would be **most successful** in. This will be discussed in January.
- Consider which pathway would be **most relevant** to the pupil's career options and life. Research into the following areas is recommended:
  - Job requirements
  - Apprenticeship requirements
  - College entry requirements
  - University entry requirements
- If unsure, you should contact some of the above to ask for clarification.

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Events and Challenges

- We challenge our learners in each topic by extending ideas or providing problem solving questions.
- We also offer a number of events and challenges throughout the year – our stall in the Concourse shows our calendar.
- Your child can join our Maths Challenge Team using the code: **7dujmpy**. On this team, we share information about the different maths challenges, puzzles, any extra events. If the code does not work for your child, please leave their name at our stall in the Concourse this evening or ask your child to speak with their teacher.



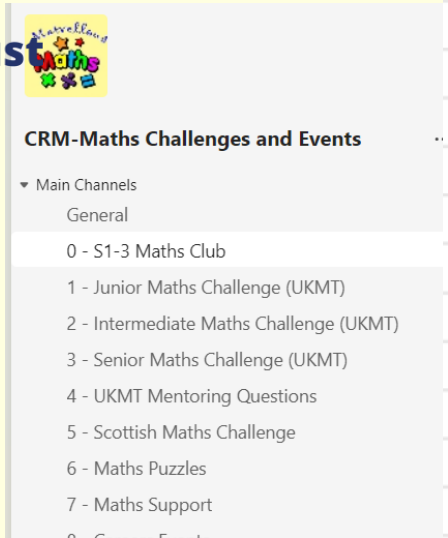
Maths Week Scotland

DYW

UK Maths Trust







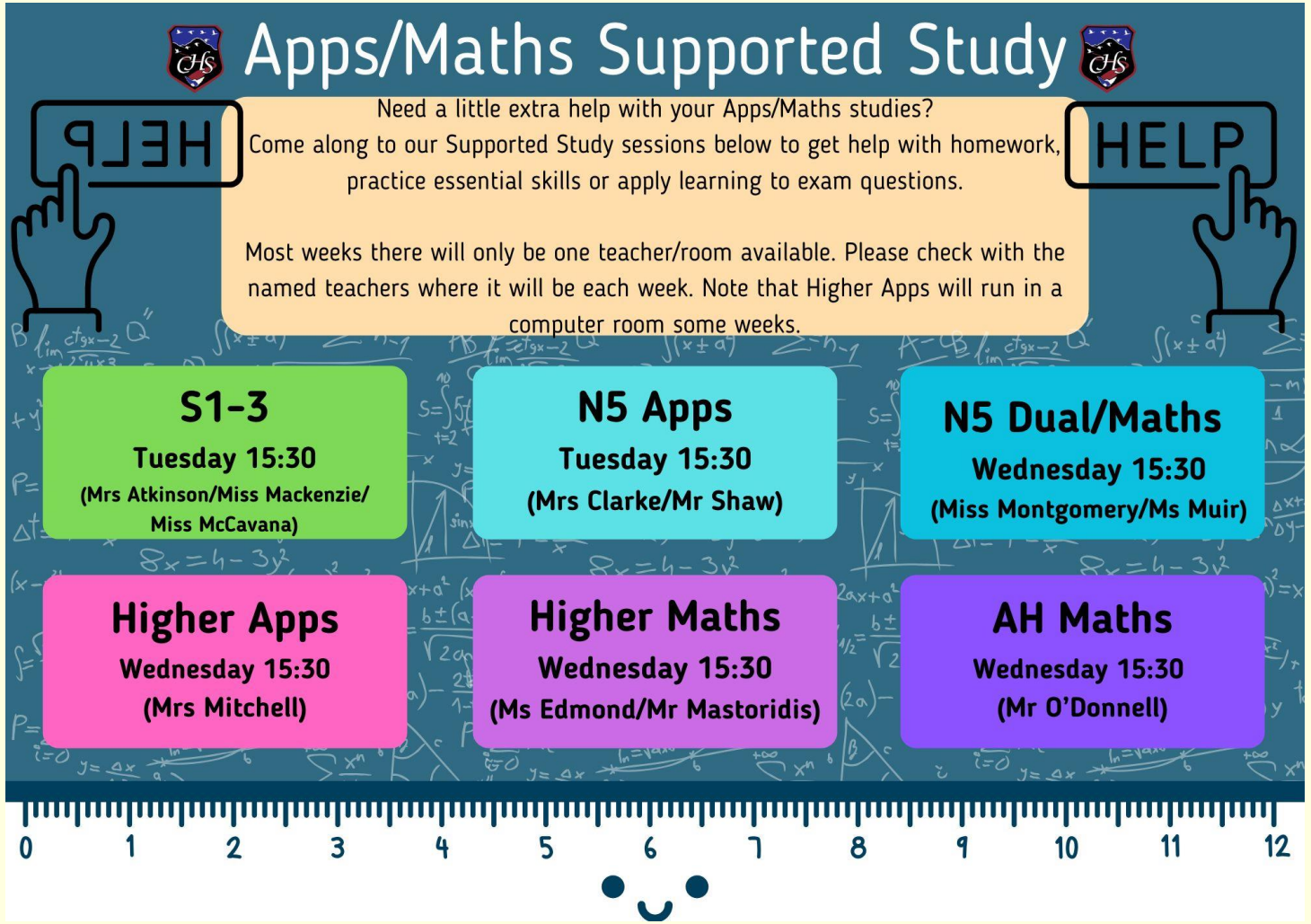
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Support

- Class Teacher
- Teams
- Supported Study

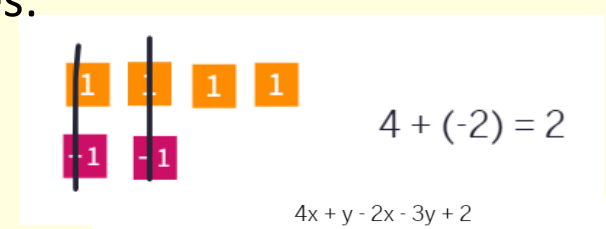


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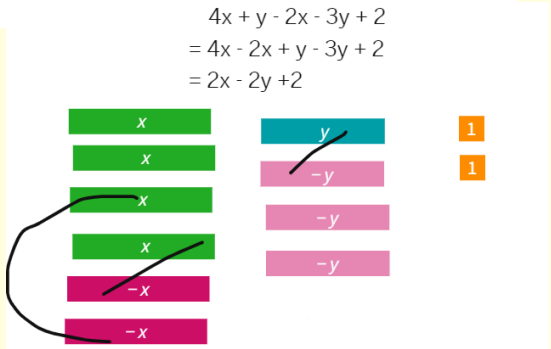
Resources & Strategies

We use a number of resources and strategies in class to support learning.
This includes:

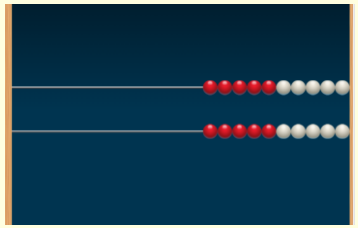
- Concrete materials and digital manipulatives for conceptual understanding – not just rote learning the rules:
  - Integer tiles



  - Algebra tiles



  - Rekenrek (number rack)



The MATH LEARNING CENTER

The Maths Learning Centre

Mathigon
Polypad
Virtual Manipulatives

Polypad

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Resources & Strategies

We use a number of resources and strategies in class to support learning.
This includes:

- Variety of questions from websites, created by ourselves and textbooks.
  - Maths Bot
  - Maths Whiteboard
  - Free N5 Maths Website – provides for all levels
  - Mathsbox (teacher only login)
  - DESMOS (iPad app):
    - Graphing Calculator
    - ART



MathsBot.com
Tools for Maths Teachers

desmos

national5maths.co.uk

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How can you support?

1) Help with consolidating/developing number fluency (regular practice)

- Education Scotland Parentzone
- National Numeracy Family Toolkit
- BBC Bitesize Numeracy
- Factfreaks
- Mental maths games/challenge – e.g., on a car journey
- Kahoot! Multiplication Games

2) Support with getting a Casio Scientific Calculator

- It is very useful to get one early in secondary to become comfortable with all the functions. If looked after, it will last all of secondary and beyond.

3) Support pupils in accessing/completing any homework on time

I= Eedi

4) Speak positively about maths

- It is important for learners to understand that it won't always be easy and will take deep thinking but this is worth it.

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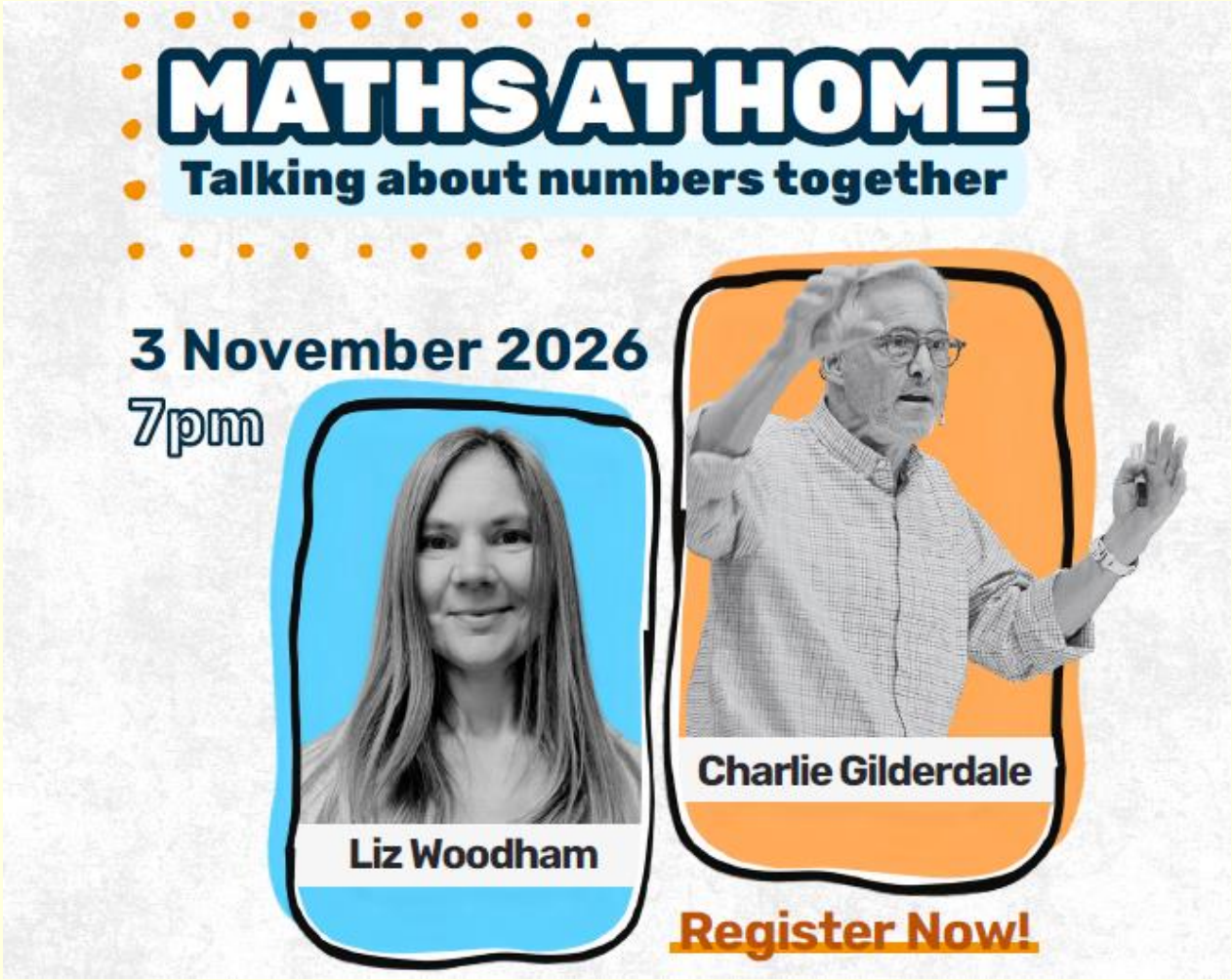
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How can you support?

Online Webinar by National Numeracy to support Number Confidence Week.

Sign up here:



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Questions

We thank you for your time this evening.

Our website will be updated shortly, with the timelines and some links for S1/2.

If you have any questions, please scan the QR code.

