

S4 STUDY SKILLS

**PUPIL AND PARENT
WORKSHOP**

Preparing for Assessments and Exams

Aims



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To Maximise Pupil Confidence and Progress by...

- Encouraging pupils to take responsibility for their own learning
- Working together with parents / carers and partners to help young people plan so they can achieve their best
- Exploring revision strategies and useful study techniques
- Identifying effective approaches to deal with exam related stress and anxiety



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Outline of Event



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1. The science of memory and revision
2. How to plan effective revision
3. Practical revision strategies
4. Revision resources
5. Support for health and wellbeing
6. Miss Harvey – Study Skills for Maths
7. Questions and feedback

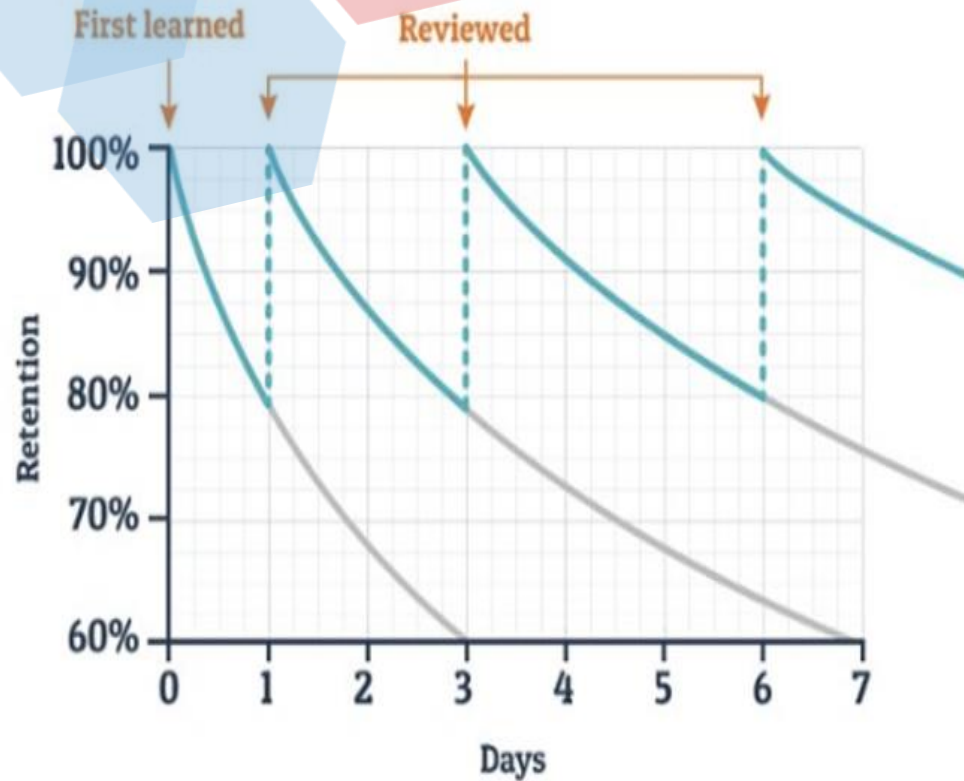
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The Science of Revision



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Typical Forgetting Curve for Newly Learned Information



Forgetting is completely natural and research has found that over time you forget the majority of what you've learnt, and it happens immediately. We lose 'memory of knowledge' over time unless the knowledge is consciously reviewed time and time again. If each day, repetition of learning occurs, and students take time to repeat information then the effects of forgetting are decreased.



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The Science of Revision

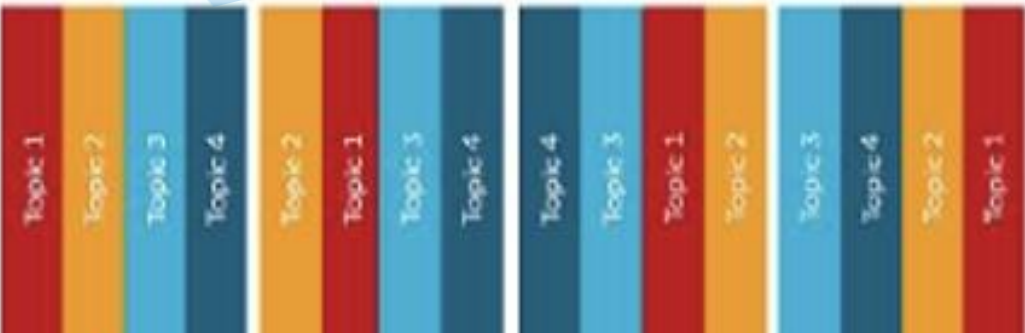


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Blocking



Interleaving



Interleaving involves switching between ideas and topics during a study session and not revising in blocks of topics. This ensures you are not studying one idea/topic for too long. **Mixing up/chunking** your revision supports learning and strengthens your memory.

How to Plan Effective Revision



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Divide up your revision into short manageable chunks of time . When revising aim for 20 - 30 minutes per session.

Mass practice or cramming is not effective & can be stressful. This is when you study for a very intense period of time just before the exam.

You need to plan your time carefully to ensure all subjects & topics are covered in shorter chunks over a longer period of time.

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How to Plan Effective Revision



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"Start planning early for exams and set aside a little bit of time everyday. Five hours spread out over two weeks is better than the same five hours all at once."



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Study Timetable



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Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:00							
9:00							
10:00							
11:00							
12:00							
1:00							
2:00							
3:00							
4:00							
5:00							
6:00							
7:00							
8:00							
9:00							
10:00							

You can also download an app from the SQA that will create a study plan for your phone.



SQA My Study Plan 12+

Organising your study time
Scottish Qualifications Authority
Designed for iPad

★★★★★ 3.3 • 140 Ratings

Free

[View in Mac App Store ↗](#)

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Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:00							
9:00							
10:00							
11:00							
12:00							
1:00							
2:00							
3:00							
4:00							
5:00							
6:00							
7:00							
8:00							
9:00							
10:00							

Creating the Perfect Study Zone



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- Ensure you have all the resources you feel you need before you begin.
- Have a plan: know what you want to achieve and how you will get there.
- Make sure the study area has the correct lighting and temperature for you to study effectively.
- Limit distractions: use the social media screen time feature to limit use or an app to block your social media apps for a certain amount of time.

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Strategies – Give it a go



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Read the article from the BBC Bitesize Parents' Toolkit and try out one of the strategies:

- Identifying key words.
- Summarising and chunking information.
- Flashcards.
- Mindmaps.
- Mnemonics.



Strategies – Identifying key words



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TASK ONE!

Identifying key words in a piece of text will help you to remember the main points more easily. Take the example on the next slide...

To remember the important parts of the above passage, we should take the time to identify key points by either underlining or **highlighting** certain words.

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Strategies – Identifying key words



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Napoleon was the Emperor of France and the many other countries in Europe that he invaded. His empire collapsed after he over-stretched his forces and tried to invade Russia. His final defeat came at the hands of the Duke of Wellington at the battle of Waterloo.”



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Strategies – Identifying Key Words



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"Napoleon was the Emperor of France and the many other countries in Europe that he invaded. His empire collapsed after he over-stretched his forces and tried to invade Russia. His final defeat came at the hands of the Duke of Wellington at the battle of Waterloo."

NAPOLEON REMINDERS

- *Napoleon, Emperor of France, Europe, invaded, empire collapsed,*
- *invade Russia, final defeat, Duke of Wellington, Waterloo*

When summarising your notes, you should concentrate on the key words in order to remember the facts more easily.

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Strategies – Summarising & Chunking Information



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Summarising involves extracting key information from sources/paragraphs of information.

Many historians argue that women's war efforts were vital in them gaining the vote in 1918. During the war, women took over the jobs of men as bus drivers, conductors and tram drivers. Also, over 700,000 women took on extremely dangerous jobs in ammunition factories. Without women taking over these previously male dominated jobs, Britain would have struggled to have been prepared for war. Historians argue that women were given the vote in 1918 as a "thank you" for their efforts.

Key points of information from paragraph

- Women took over the jobs of men as bus drivers and conductors and tram drivers.
- 700,000 women took on extremely dangerous jobs in ammunition factories.
- Without women taking over these jobs, Britain would have struggled to have prepared for war.
- Women were given the vote in 1918 as a "thank you" for their efforts.



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Strategies – Summarising & Chunking Information



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Chunking information into manageable chunks is a powerful strategy as it aids motivation and ensures your working memory is not overwhelmed.

1. Breaking up the information into paragraphs or section chunks – this ensures you can work through, revise and learn, one part of the text at a time. Give each section a heading to support your understanding.
2. Only highlight the core information and do not highlight everything – what is actually needed?
3. Take out the information you have highlighted and bullet point onto a revision technique of your choice – use this knowledge to explain the ‘story’ and test yourself.

Paragraph 1: 'Born':

Muhammad Ali, arguably the greatest boxer in the history of the sport. He was born in **1942**, in **Louisville, Kentucky** in the United States. He was named after his father, **Cassius Clay, Sr.**, who was named for the 19th century abolitionist and politician Cassius Clay. He changed it to Muhammad Ali in 1964. **He became a boxer at the age of 12.**

<u>Born:</u> <ul style="list-style-type: none">• 1942• Kentucky• Cassius Clay• 1964• 12	<u>Boxing:</u> <ul style="list-style-type: none">• 1960 Rome Olympics• Professional at 18• 100 wins, 5 losses at amateur
<u>World Champion:</u> <ul style="list-style-type: none">• 22• 'Float like a butterfly, sting like a bee'• Vietnam 1967• 3 times World Champion• \$50 million	<u>Life:</u> <ul style="list-style-type: none">• National of Islam• Married 4 times• 9 children• BBC Sportsman of the Century 1999

Strategies – Command Words



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Analyse - Examine something in detail and try to explain or interpret it.

Annotate - Add to a diagram, image or piece of text to illustrate or describe features rather than just identify them which is labelling.

Assess - Consider different options/arguments/factors and weigh them up to reach a conclusion about their effectiveness or validity.

Calculate - Work out the value of something.

Compare - Give a point by point identification of similarities and differences.

Define - This means *what is meant by* ... give the precise meaning of a term or concept.

Describe - Provide an account in detail of an event/individual/concept etc.

Discuss - Set out both sides of an argument & reach a conclusion, including evidence.

Evaluate - Consider different options/factors & reach a conclusion about their importance/impact/value/worth.

Examine - Consider carefully & provide a detailed account of the topic.

Explain - Provide a detailed description or interpretation of a term/concept etc.

Identify - Point out & name from a number of possibilities.

Illustrate - Refer to a specific case study or example (not illustrate as in draw).

Label - Point out specific features on a diagram, image or piece of text.

Justify - Explain why your selected choice/judgement is better than other options.

Summarise - Sum up the main points/arguments this can be similar to outline.



Strategies - Flashcards




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Flash cards are an effective revision tool to use to help you memorise and understand key information.

Once you have made your flash card, you should revisit it regularly and have someone test you on it.

A flash card should have a key idea on one side with detailed information on the other.

Front of flash-card	Back of flash-card
 <p>WHY LIBERAL REFORMS WERE PASSED <u>1906-1914</u></p>	<p>National Security/Efficiency - <u>1/3</u> of recruits were unfit for service in Boer War => showed poor health linked to poverty</p> <p>Booth & Rowntree - Booth found <u>30% of London</u> in poverty/Rowntree found <u>28% in York/</u> revealed real reasons for poverty => Showed not always individual's fault</p> <p>Influence from Abroad - Germans had introduced national insurance & pensions => worked well/Britain could do same</p> <p>New Liberalism - David Lloyd George & Winston Churchill helped to change minds in Liberal Party</p>

Strategies – Mind Maps

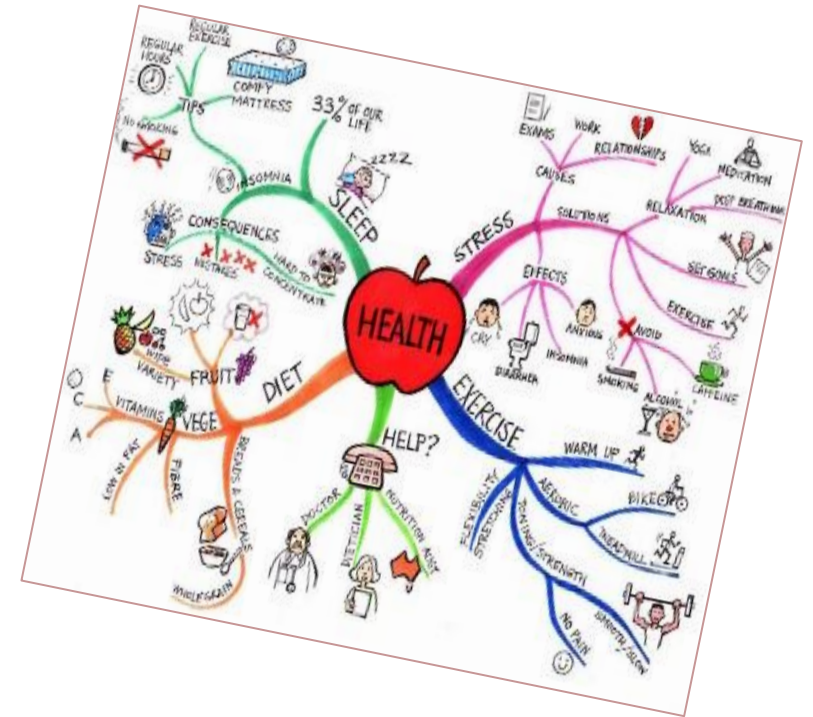


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Mind-maps allow you to 'map out' your ideas about a particular topic.

By creating a mind-map, you can connect your learning by highlighting relationships between concepts and ideas which should make the topic you are learning about much easier to understand.

Mind-maps are a way of **condensing** your knowledge of a topic; they should be revisited frequently as a way of memorising and reviewing what you have learned.



Strategies – Mind Maps



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TASK TWO!!!!



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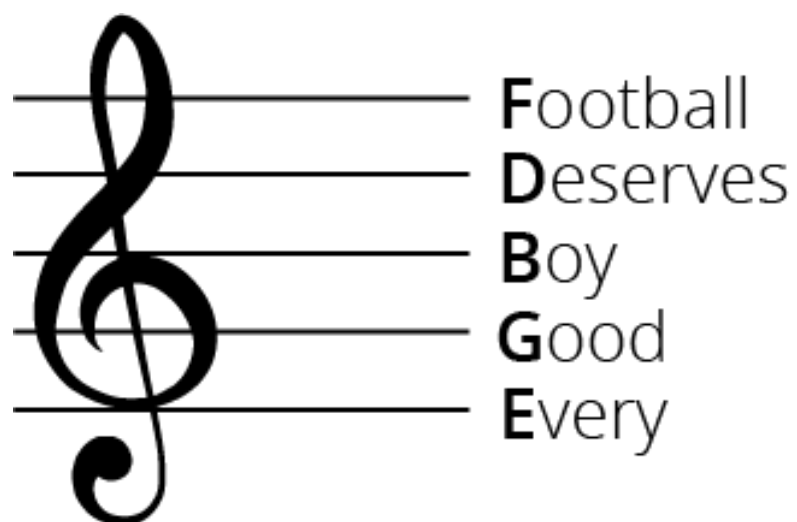
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Strategies – Mnemonics

A mnemonic is a made-up word that helps you to remember things more easily.

For example, there is a mnemonic which makes it easier to remember the letter names of the spaces on a musical stave:



Another way to remember things with mnemonics is to use each of the letters in a made-up sentence. You only have to remember the sentence and you have the key points for your answer, e.g.

This is especially useful in subjects where you have to remember a sequence of events. Memorise each of these mnemonics and you will remember them under exam pressure.

Strategies – What Doesn't Work?



INEFFECTIVE REVISION STRATEGIES – WHAT DOESN'T WORK

With the above in mind, it is vitally important to think about strategies that students may employ that have a limited or no real benefit on learning or memory. These include:

- Simply writing out notes or copying from a textbook/exercise book.
- Cramming revision to the 'final minute' overloads your working memory so you can't learn at all. It can also cause stress/anxiety before exams.
- Re-reading and doing nothing with the information. Trying to focus on 'too much information' on a single page and cramming revision.
- Highlighting information for the sake of it.
- Not enough silent work or attention to a given task. Attempting to revise while multitasking and doing other things.
- Comfort zone revision of easy material that pupils have already mastered because it makes you 'feel good'.

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Strategies – What Parents Can Do?



Basic

*The following techniques can be completed with your child with **no preparation** from you.*

- **Power tickets** – Ask your child to write down three facts that they learnt in one subject last lesson, last week, last month and last term.
- **Keyword retrieval** – Ask your child to identify 5 or 10 key words/phrases in a topic. Once these have been identified, ask them to write down the definitions for 3 - 5 key words chosen.
- **Brain dump** – Ask your child to write down as much as they can remember about a topic.
- **List it** – Ask your child to list as many points as they can under headings generated from the topic they are studying or one studied previously.
- **Essay retrieval** – If your child has an essay to complete, ask them to write the essay question at the top of the page. Underneath they should write subheadings such as introduction, paragraph 1, conclusion etc. Under each subheading they should bullet point what they would need to include in the essay.



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Strategies – What Parents Can Do?



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Advanced

The following techniques will need some preparation in advance before being completed with your child.

- **‘Fix the Errors’ grid** – Create a grid for your child with errors. Then ask your child to correct the statements to ensure they are correct.
- **Retrieval clocks** – Ask your child to draw a clock. They should split the clock up into the number of areas they want to revise (2, 4, 6, 8, 16 etc) and write a heading on each area. Finally, they should spend five minutes retrieving their knowledge on each topic.
- **Improve the answer** – Once your child has completed an answer and received feedback as to why they have lost marks they should repeat the answer putting the feedback into place. For example - rewrite a paragraph, complete a full answer etc.

Useful Resources



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- Resources for Pupils

- BBC Bitesize: videos, revision materials and quizzes. <https://www.bbc.co.uk/bitesize/levels/z6gw2hv>
- E-Sgoil: live lessons and you-tube videos, resources and revision guides. <https://e-sgoil.com/>
- Department Teams on Glow: revision materials from classes.
- SQA: Understanding Standards materials and past papers. <https://www.understandingstandards.org.uk/Subjects/>
- ACHIEVE: videos, revision materials and quizzes. Students can sign up for an ACHIEVE account at: <https://achieve.hashtag-learning.co.uk>
- Please ask your teacher for the school code to gain access.

- Resources for Parents/Carers

- A YouTube Video on Retrieval Practice: [*Retrieval Practice: A Guide for Parents, Carers and Families*](#)
- Information and advice: <https://education.gov.scot/parentzone/learning-at-home/supporting-study/>
- A podcast: [*The Learning Parent*](#)

Supported Study



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There is a wide variety of supported study sessions for a range of subjects in school. Your child can speak to their class teacher, principal teacher for each subject, and their guidance teacher for more information.

This is a really effective revision resource, and we want all pupils to take advantage of these opportunities.



Prelims



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- Practice not perfection.
- Skills based courses.
- There to identify what is working well and what needs improved.
- Plenty of time post-prelim to build on performance (more time between prelim and SQA exams).
- Important they prepare and try their best but it's another step on the journey to success and if some don't go to plan, it's not the end of the line.



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Health and Wellbeing



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- Plan. One thing a time. You are a person, not a machine.
- Sleep well.
- Eat well.
- If you are hugely anxious or concerned, speak to somebody.

Teachers

Parents

Guidance

School Counsellor

- Remember that your best is more than good enough.

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How to
Study
Maths



PRACTICE

makes

PROGRESS,

NOT

PERFECT.



Identify the Issues

- Maths is a practical subject
- **Never** just read your notes
- You need to do

Past Exam Questions

- Make a **list** of your mistakes
- Write out the correct solutions, don't just read them
- If you don't understand a question, **ask for help!**
- Go back a few days later and do the questions on your mistake list again

Be Strategic & Get Support

Be Strategic

- Sometimes do whole past papers; sometimes focus on one topic.
- E.g. have a day where you focus on you least favourite topic

Homework

- Make sure it is done
- Go back and fix your mistakes
- Don't ignore the ones you get wrong

Get Support

- Ask you teacher for help
- Attend supported study
- DLB maths on

Help Yourself Remember

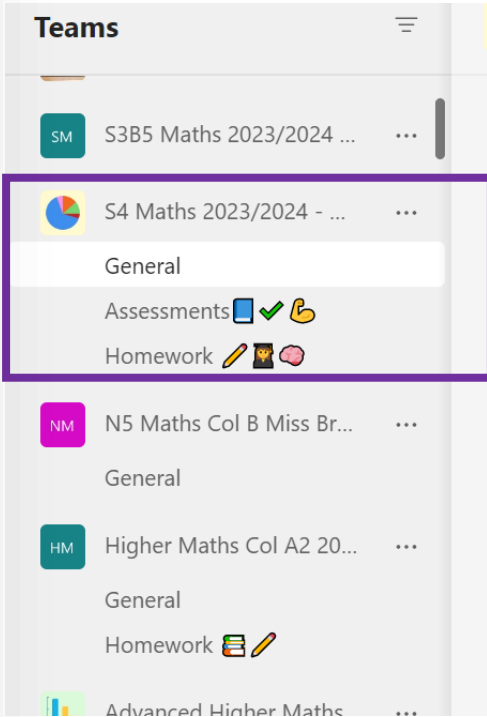
- Do past papers without your notes
- See what you *really* know
- Re-do your incorrect questions a few days later
- See if you have

Space Your Practice

- An hour of study done often throughout the year is much better than cramming at the end. You will remember more this way.

Teams and One Note

Your child will be a member of a class Team and this is where they will find all of the information they need.



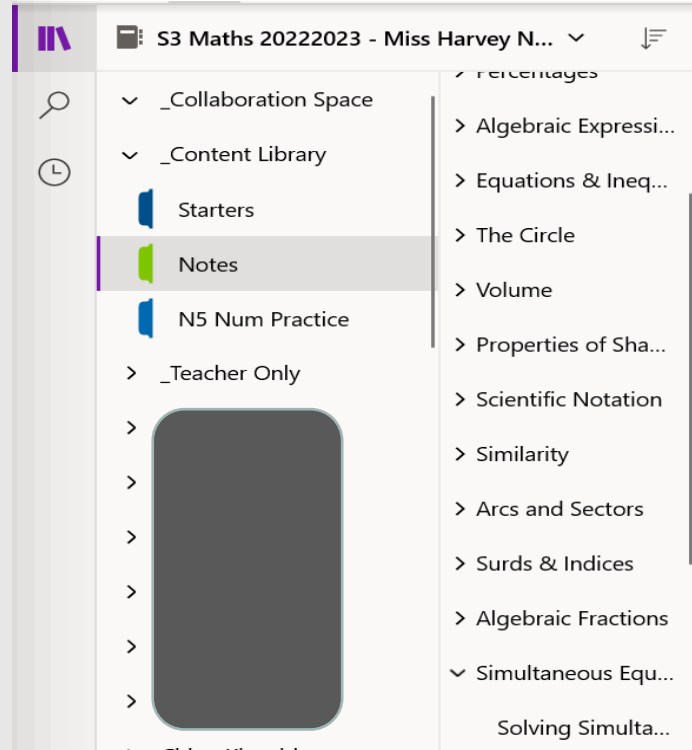
Pupils need to download the Teams and

OneNote apps:



Pupils can then navigate to OneNote from the main Team or use the OneNote App.

This must be opened via Teams for the first time only on each device.



OneNote is where pupils will find notes, videos, practice examples and past papers.

Pupils will also find a full list of topics with textbook exercises.

Topic	Textbook Ex	Rigour Videos
Common Factor Recap	Ex 6.2 p 38 Ex 6.2 p 38 Ex 6.3 p 39	
Difference of 2 Squares Recap	Ex 6.4 p 39 Ex 6.5 p 40	
Trinomials Recap	Ex 6.6 - 6.10 p 41	
Simplifying Algebraic Fractions	Ex 8.1 p 53 Ex 8.2 A/B p 54	Simplifying Algebraic Fractions: no factorising required - https://youtu.be/ITy9EiUzCE Simplifying Algebraic Fractions: cancelling brackets - https://youtu.be/9kA_Zfz1D0Q Simplifying Algebraic Fractions: factorising required - https://youtu.be/Eqz100_Sz4E
Multiplying and Dividing Algebraic Fractions	Ex 8.3 p 56 Ex 8.4 p 57	Multiplying Basic Algebraic Fractions - https://youtu.be/KTRoelQ2y4E Dividing Basic Algebraic Fractions - https://youtu.be/872r_49E84I Multiplying Algebraic Fractions: simplifying required (no brackets) - https://youtu.be/036v0ndrTCE Dividing Algebraic Fractions: simplifying required (no brackets) - https://youtu.be/MS5nuKx5LE Multiplying Algebraic Fractions - https://youtu.be/0mVrEw5LM4c Dividing Algebraic Fractions - https://youtu.be/H3b4_73rXQc
Adding & Subtracting Algebraic Fractions	Ex 8.5 A/B p 58	Adding and subtracting basic algebraic fractions same denominator - https://youtu.be/00UqerL4tU Adding and subtracting basic algebraic fractions: different denominators - https://youtu.be/5rWmR8aB8 Adding and Subtracting Algebraic Fractions: factorising required - https://youtu.be/9m8d4u54Ks

There are also links to recap videos for many different topics.

In addition, there is also a link to our virtual bookshelf.

Study guides for forthcoming assessments will be issued via Teams.

Teams and OneNote - Study Guides



Belmont Academy
Mathematics Department
S4 National 5 Study Guide 2025

Topics	Zeta Maths Textbook	Comments/Queries
<p>The Zeta Maths link above will take you to the "Belmont Bookshelf". You will then need to navigate to the book listed using the password "Belmnt".</p> <p>Where it is full topics that you have to revise, I have listed the "Review Exercises" only. This is so that you can practice a mixture of different questions at a time. If necessary, you can go further back in the chapter to practice individual skills on their own.</p>		
1. Arc and Sectors of a Circle	<p>National 5 Book Ex 10.4 page 76 (Arc Length) National 5 Book Ex 10.5 page 78 (Sector Area) National 5 Book Ex 10.6 page 79 (Working Backwards to find angle/radius/diameter) National 5 Book Ex 10.7 page 82 (Review)</p>	
2. Surds/Indices	<p>National 5 Book Ex 3.11 page 22 National 5 Book Ex 2.8 page 12</p>	
3. Simplifying Algebraic Fractions	<p>National 5 Book Ex 8.6 page 59 (Question 1)</p>	

The links on the document will take pupils to the relevant exercise in a Zeta Maths textbook.

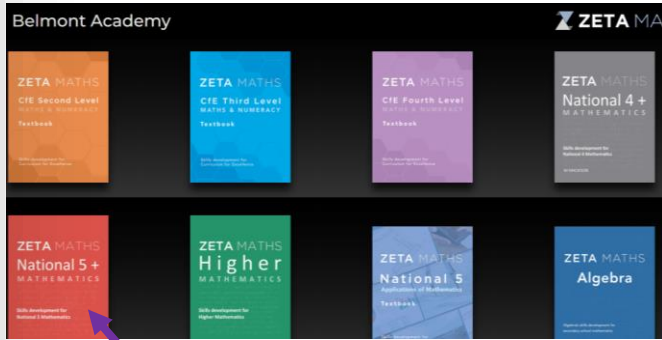
They can use the linked exercises or look at the book as a whole.

This has been issued via Teams.



We have a subscription to a number of textbooks, allowing pupils access to a wide array of materials.

Zeta Maths - Virtual Bookshelf



The most useful, for N5 candidates will be the Red N5 book.

The link has been posted on all Teams at the start of the year.



Entering the password "Belmnt" will give pupils access to the textbook.

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They can then either use the list of exercises or the hyperlinked contents page.

Questions/Exercise

Exercise 8.5A

Add or subtract the following fractions, giving your answer in its simplest form:

- $\frac{1}{i} + \frac{5}{i}$
- $\frac{2}{j} + \frac{i}{j}$
- $\frac{4}{k} + \frac{m}{k}$
- $\frac{8}{2q} - \frac{4}{q}$
- $\frac{9}{r} - \frac{5}{r}$
- $\frac{s}{t} - \frac{2s}{t}$

Answers

Exercise 8.5A

- $\frac{6}{i}$
- $\frac{2+i}{j}$
- $\frac{4+m}{k}$
- $\frac{3-2p}{n}$
- 0
- $\frac{4}{r}$
- $\frac{-s}{t}$
- $\frac{u^2-u}{v}$
- $\frac{4x+3w}{wx}$
- $\frac{2z-y}{yz}$
- $\frac{5b-4a}{ab}$
- $\frac{9b-3c}{cb}$

Dynamic Maths is one of the best free resources available.

It is a database of past paper questions going all the way back to pre-2000

Dynamic Maths

Question Bank

Dynamic Maths: SQA Exam Question Bank
FREE adaptable dynamic worksheets and other resources for teaching maths. Also selling revision notes for Scottish SQA maths too

FREE Worksheets and Resources - SQA Exam Question Bank - Buy REVISION NOTES - Subscribe to

This Question Bank from Dynamic Maths is FREE and always will be. It allows you to search for SQA past exam questions by and mark schemes are owned by the SQA, and used with their permission. Direct links to the original paper on

Please report problems, errors and suggestions to us by emailing david@dynamicmaths.co.uk

Advanced Higher Maths Question Bank | Higher Maths Question Bank | **National 5 Maths Question Bank** | National 5 Applications of Maths Question Bank

Dynamic Maths also has lots of other free resources for this course on our website: [click here](#) to see what else we have to offer

Candidates select their exam and filter questions from their chosen topic(s).



Pupils then select the topic they wish to work on.

Choose the National 5 Maths topics for you wish to search for questions

R 1.1 Equations and Straight Lines
Linear equations and inequations
Changing the subject of a formula
Straight Line Equation, gradient, y-intercept, $y=mx+c$
Function notation
Coordinate Geometry with straight line equation
Simultaneous equations
Miscellaneous - not covered by any other subcategory

R 1.2 Quadratic graphs
Identify Parabola Equation from Graph: Equation $y = (x - a)^2 + b$
Identify Parabola Equation from Graph: Equation $y = kx^2$
Sketch a parabola from equation
Turning Points and Axis of Symmetry
Miscellaneous - not covered by any other subcategory

R 1.3 Quadratic equations
Quadratic equation by factorising
Quadratic formula
Create equation in geometric context
Discriminant
Miscellaneous - not covered by any other subcategory

If they wish to select more than one topic they can hold in "ctrl" and select as many topics as they wish.

Year/Paper/Topic will appear here

Result Number 1
National 5 Mathematics 2023 Paper 1, Question 03. Source: (SQA, #3786).
Solve, algebraically, the system of equations
$$\begin{aligned} 2x+3y &= 8 \\ 5x+2y &= -2 \end{aligned}$$

Click the image for a larger version (opens in new frame). Alternatively use this link for the original full exam paper on the SQA website.

Result Number 2
A storage unit, built in the shape of a cuboid, is shown.

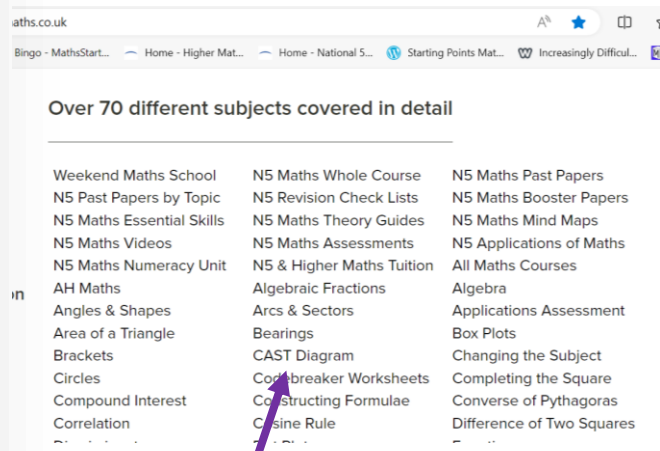
Answer: $x = -2, y = 4$
View full mark scheme (opens in new frame).
Alternatively use this link for the original full mark scheme document on the SQA website.

Answer: (a) result shown (b) 2.4 m
View full mark scheme (opens in new frame).

The solution and link to full marking scheme will appear here.

If your child is not confident, full past papers can be a bit overwhelming. This is a great place to start as they can choose 1/2 things to focus on.

Another excellent, and free, resource, is National5Maths.co.uk



The vast majority of material is free to access.

There is a "paid" section to this website but most things are free.

National 5 Maths - Free Website



One of the best sections is the "essential skills" section.

National 5 Maths Resources

1. N5 Maths Essential Skills

Thanks to Mr G Rennie for making the excellent resources below freely available. The Essential Skills Worksheets can be used to prepare for assessments, tests and exams. Clear, easy to follow, step-by-step worked solutions to all 33 Essential Skills Worksheets below are available in the [Online Study Pack](#).

Essential Skills	Topic - Answers Included	Without Answers
ES - 2023 Paper	N5 Maths - Whole Paper	Without Answers
ES - 2022 Paper	N5 Maths - Whole Paper	Without Answers
Essential Skills 1	Multiplying Brackets - Indices	Without Answers

This is particularly useful for pupils who are finding the course challenging.

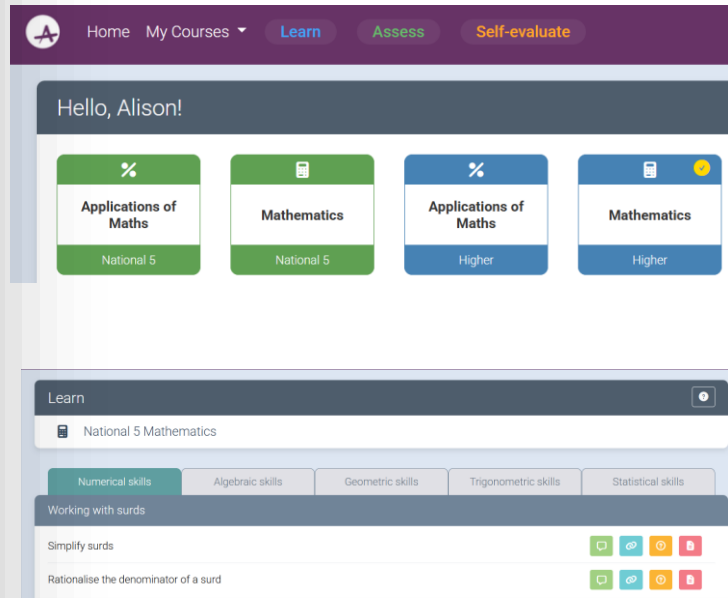
Practicing these skills will build confidence and pick up easy marks.

Key Topics to focus on?

1. Expanding brackets
2. Equation of a Straight Line
3. Compound Interest
4. Quadratic Formula
5. Standard Deviation
6. Adding/Subtracting Algebraic Fractions
7. Simultaneous Equations

If all of these questions were to come up, they could account for around 30 marks out of the 90 in total.

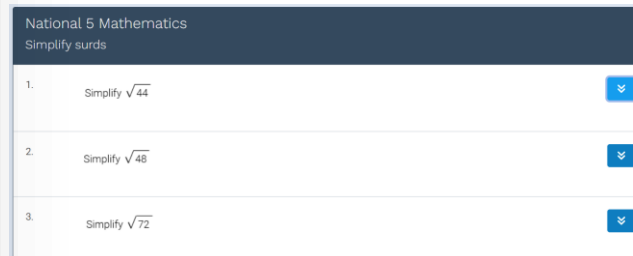
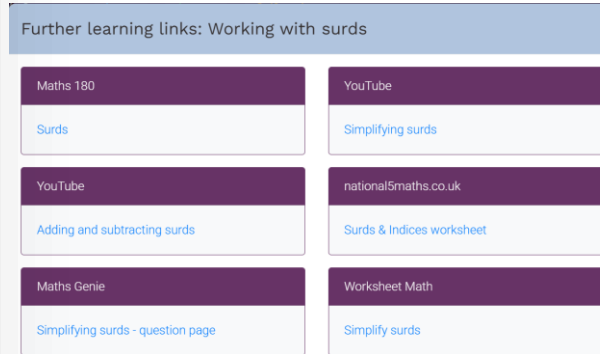
Achieve is a one stop shop for all things revision.



Each subject will be broken down into sections and then sub-topics. Each sub-topic will contain:

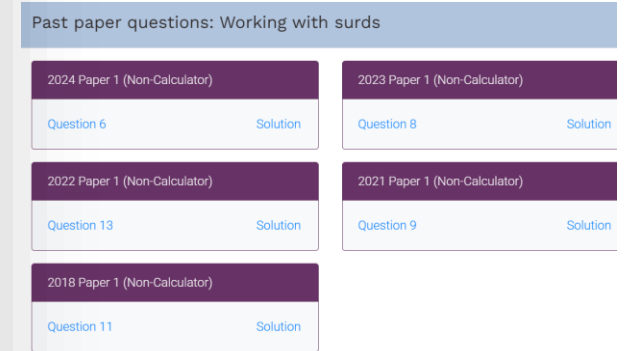
- A definition
- Links
- Questions
- Past Papers

Each subject will be slightly different, for Maths the links will take you to other websites which are free to access.

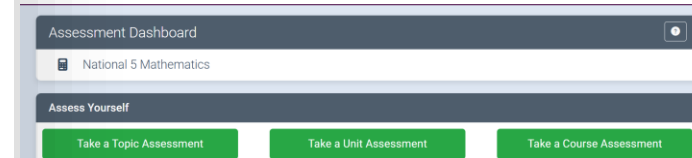


The questions section will pose a selection of questions with worked solutions available to view.

The past paper section pulls together past papers from the selected topic - with solutions.



In addition, there is an "assess" section which will generate short assessments that pupils can use to practise skills and self-evaluate.



Achieve - Revision Module

School code:
kwXg6q6M



On offer, weekly, in the department.

Maths Supported Study Dates



Supported study will run on the following dates after school for an hour. Spaces will be limited and a sign-up sheet will be in the Maths corridor at the start of each week.

Tuesdays - 3.40pm until 4.40pm

Wednesday/Thursdays - 2.50pm until 3.50pm

There may be more dates added to the list below which will be advertised ASAP.

<u>Dates</u>
Tuesday 23 rd September
Wednesday 1 st October
Wednesday 8 th October
Wednesday 22 nd October
Thursday 30 th October
Wednesday 5 th November
Thursday 13 th November
Tuesday 18 th November
Thursday 27 th November
Tuesday 2 nd December
Tuesday 9 th December

Supported Study - Dates

