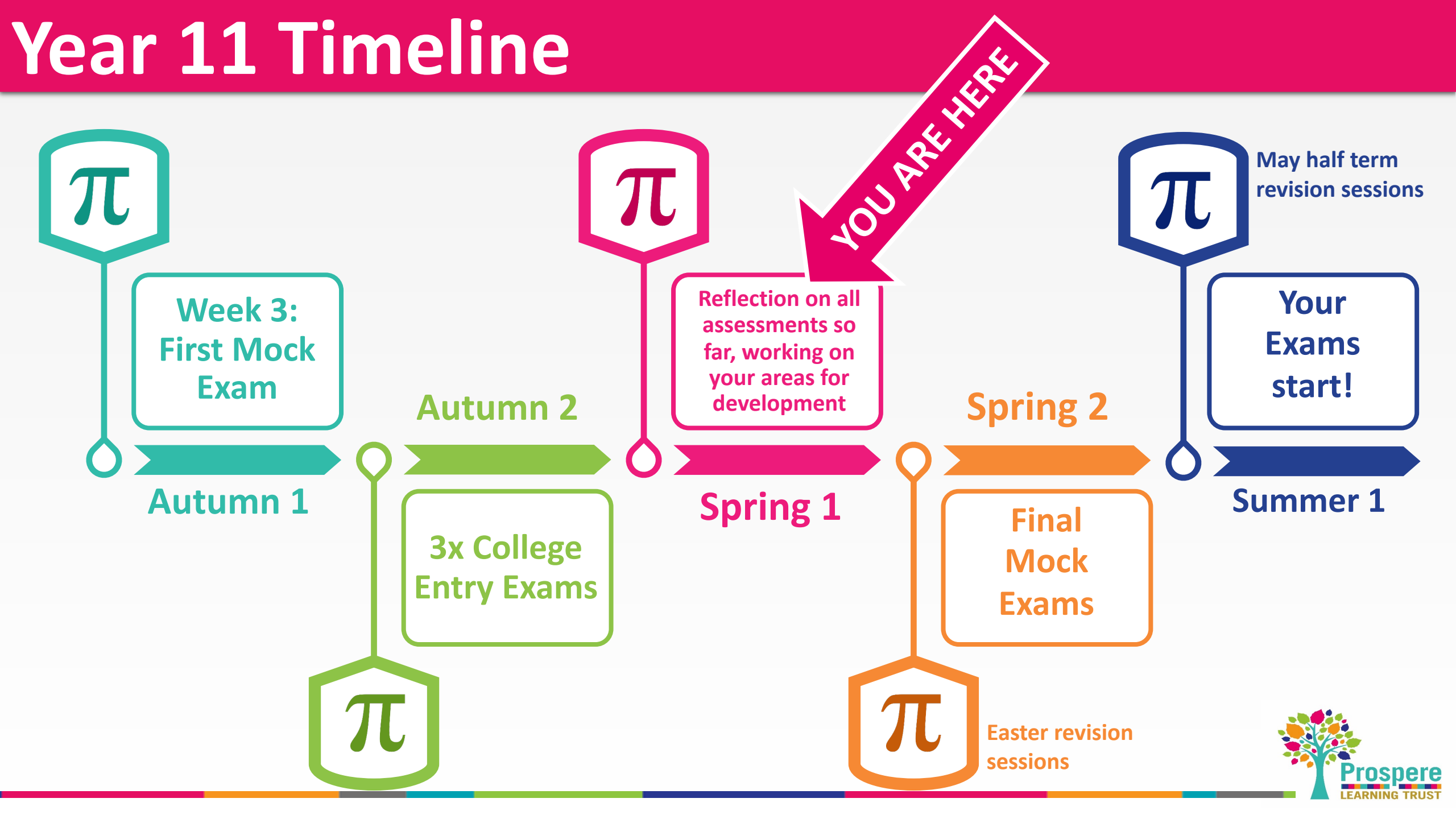
CHS South

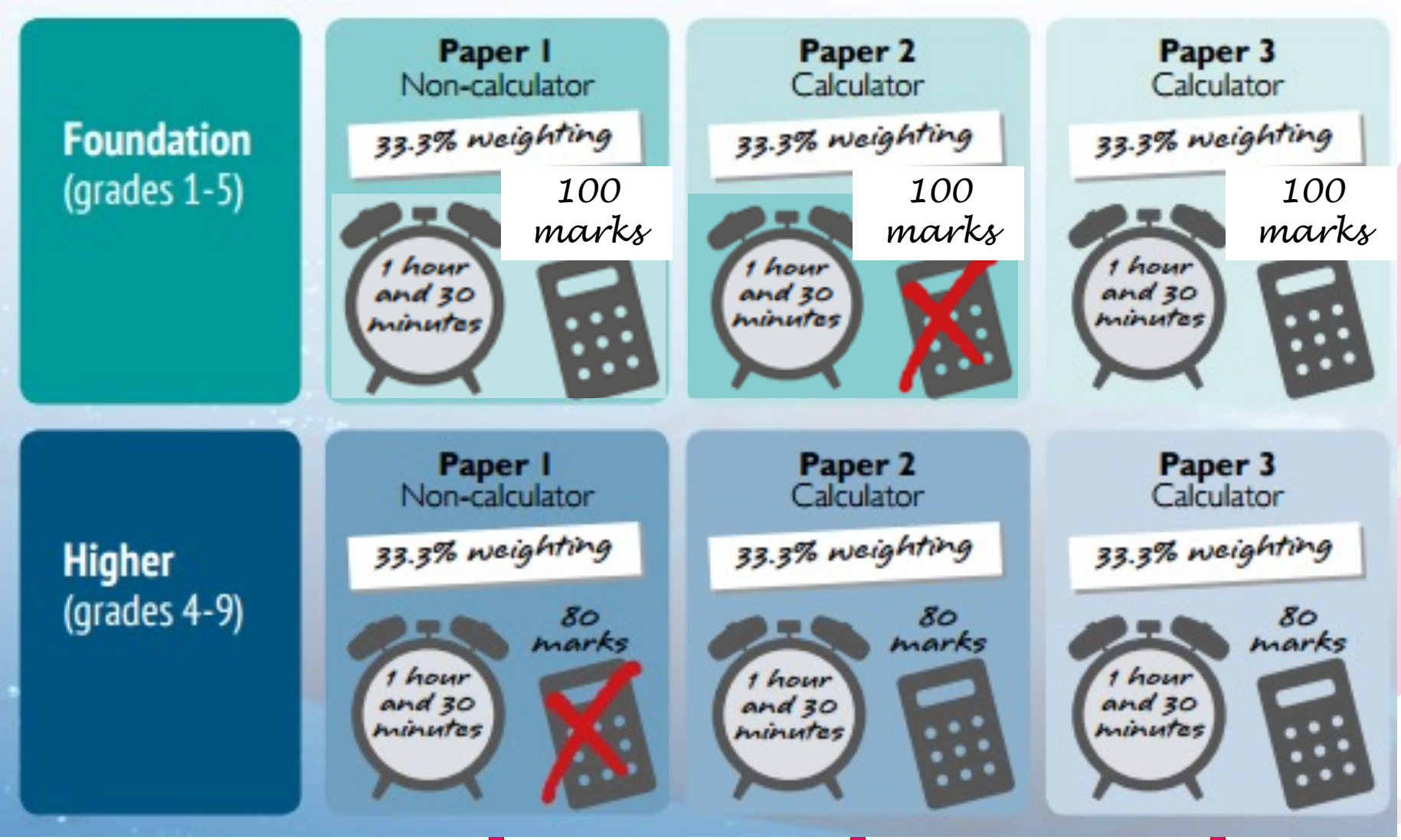
How to effectively revise for Maths, English and Science

Prospere LEARNING TRUST

Year 11 Timeline



Prospere LEARNING TRUST



OCR

Edexcel

16th May **3rd June** **10th June**

Prospere LEARNING TRUST

Corbettmaths

ExamQ by Mr Watts

sparx

Maths Genie

OCR
Oxford Cambridge and RSA

F

Friday 20 May 2022 – Morning

GCSE (9–1) Mathematics

J560/01 Paper 1 (Foundation Tier)

Time allowed: 1 hour 30 minutes

You must have:
- the Formulae Sheet for Foundation Tier (inside this document)

You can use:
- a scientific or graphical calculator
- geometrical instruments
- tracing paper

Please write clearly in black ink. **Do not write in the barcodes.**

Centre number | Candidate number

First name(s)

Last name

INSTRUCTIONS
- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided. If you need extra space, use the lined pages at the end of this booklet. The question numbers must be clearly shown.
- Answer **all** the questions.
- Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.
- Use the π button on your calculator or take π to be 3.142 unless the question says something different.

INFORMATION
- The total mark for this paper is **100**.
- The marks for each question are shown in brackets **[ ]**.
- This document has **24** pages.

ADVICE
- Read each question carefully before you start your answer.

© OCR 2022 [601/4606/0]
DC (LK/SW) 300048/6

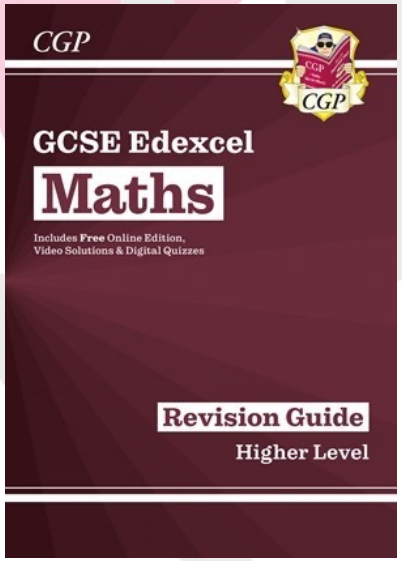
OCR is an exempt Charity

Turn over

Mathematics Assessment Feedback

aper	June 2018 Paper 1H
ame	Luizi, Samuela
eacher	Enter Teacher Name

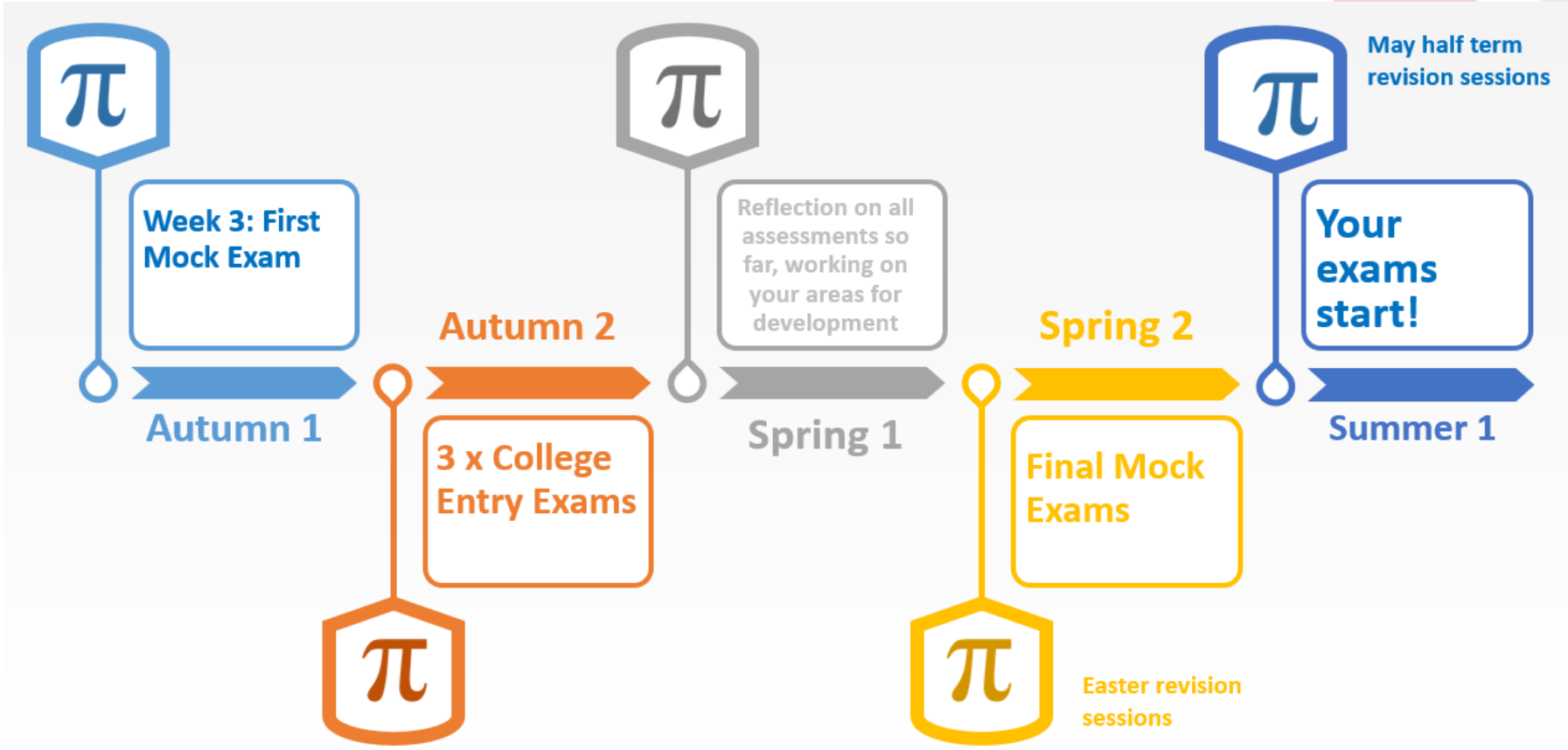
Questions	Question Title	Score			Clip Number
1a	Adding mixed numbers	2	/	2	66
1b	Dividing mixed numbers	1	/	2	70
2	Share in a given ratio	1	/	3	333
3	Percentage profit	0	/	4	760
4a	Speed, estimate complex calculations	3	/	3	719, 131
4b	Speed	1	/	1	719
5a	Plans and elevations	1	/	2	838
5b	Surface area of a pyramid	1	/	4	0
6	Gradient, quadrilaterals	0	/	5	199, 204, 824
7	Combined transformations	0	/	2	657
8	Share in a given ratio, area of a triangle	3	/	4	332, 557
9a	Index form (powers of unit fractions)	1	/	1	108
9b	Index form (power of 0 and 1)	1	/	1	103
9c	Index form (powers of non-unit fractions)	2	/	2	109
10a	Box plots	3	/	3	435
10b	Box plots	0	/	2	436
11	Circle theorems	0	/	5	599, 603, 605
12	Direct algebraic proof	0	/	4	325, 327
13	Expand single brackets with surds	1	/	3	116
14	Algebraic direct and inverse proportion	3	/	5	344, 346
15a	Factorise quadratic expressions	0	/	1	224
15b	Expand double brackets and simplify	0	/	3	164
16	Probability of single events, ratio	0	/	3	330, 351, 352
17	Simplifying algebraic fractions with quadratics	0	/	3	229
18	Sine graphs, graph transformations	0	/	2	303, 307
19	Straight line graphs (perpendicular lines)	0	/	5	215, 216
20	Solve linear and quadratic inequalities	0	/	5	269, 277
	Total	24	/	80	



Prospere LEARNING TRUST

STUDENT A

3+ **4=** **Grade 6**



Prospere LEARNING TRUST

How did Student A do it?

Really reflected on her QLAs – used Sparx to plug the gaps

Week 3 QLA

Mathematics Assessment Feedback

aper June 2018 Paper 1H
ame
eacher Enter Teacher Name

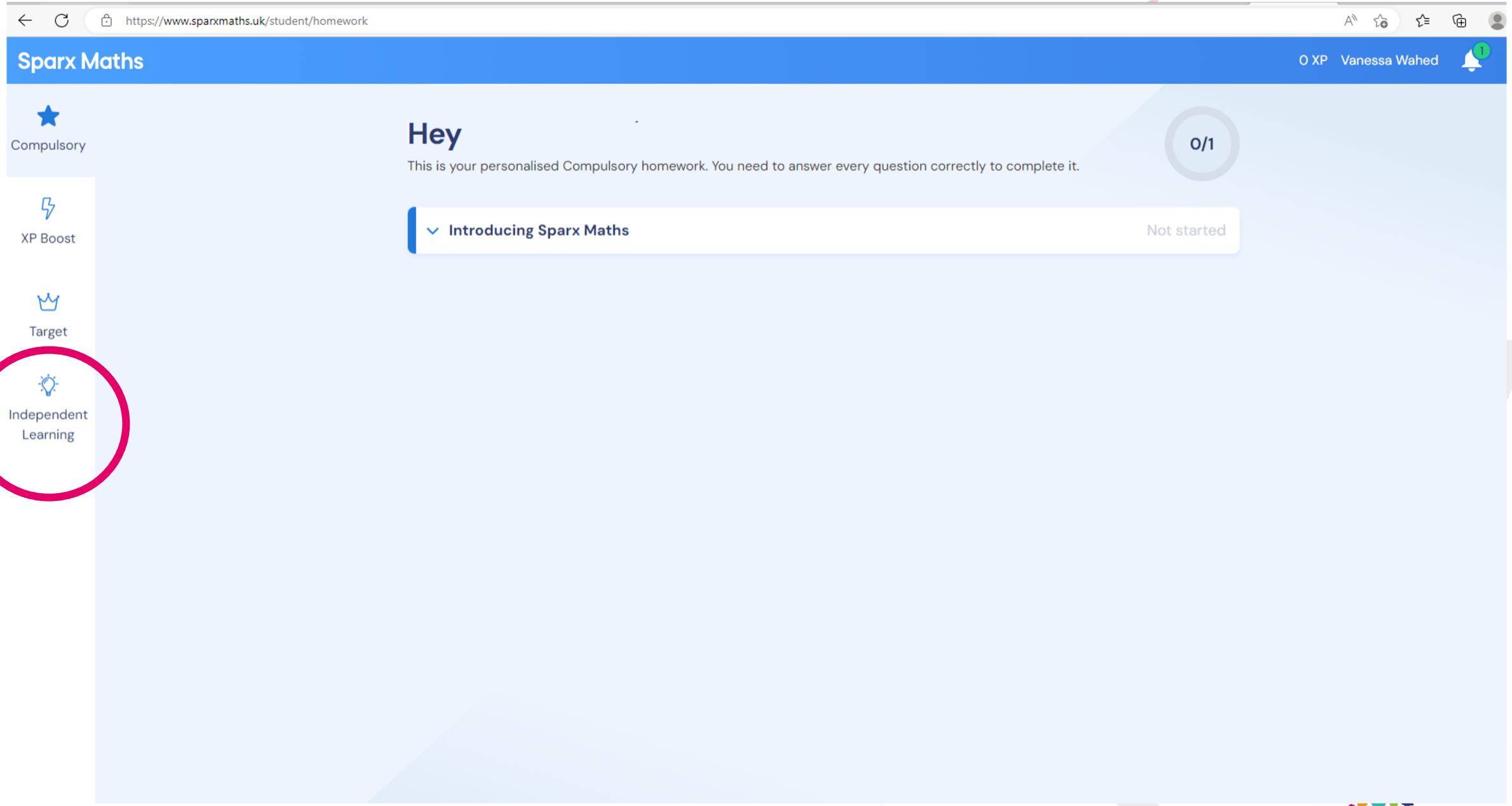
Questions	Question Title	Score			Clip Number
1a	Adding mixed numbers	2	/	2	66
1b	Dividing mixed numbers	1	/	2	70
2	Share in a given ratio	1	/	3	333
3	Percentage profit	0	/	4	760
4a	Speed, estimate complex calculations	3	/	3	719, 131
4b	Speed	1	/	1	719
5a	Plans and elevations	1	/	2	838
5b	Surface area of a pyramid	1	/	4	0
6	Gradient, quadrilaterals	0	/	5	199, 204, 824
7	Combined transformations	0	/	2	657
8	Share in a given ratio, area of a triangle	3	/	4	332, 557
9a	Index form (powers of unit fractions)	1	/	1	108
9b	Index form (power of 0 and 1)	1	/	1	103
9c	Index form (powers of non-unit fractions)	2	/	2	109
10a	Box plots	3	/	3	435
10b	Box plots	0	/	2	436
11	Circle theorems	0	/	5	599, 603, 605
12	Direct algebraic proof	0	/	4	325, 327
13	Expand single brackets with surds	1	/	3	116
14	Algebraic direct and inverse proportion	3	/	5	344, 346
15a	Factorise quadratic expressions	0	/	1	224
15b	Expand double brackets and simplify	0	/	3	164
16	Probability of single events, ratio	0	/	3	330, 351, 352
17	Simplifying algebraic fractions with quadratics	0	/	3	229
18	Sine graphs, graph transformations	0	/	2	303, 307
19	Straight line graphs (perpendicular lines)	0	/	5	215, 216
20	Solve linear and quadratic inequalities	0	/	5	269, 277
	Total	24	/	80	

Spring Mock

Mathematics Assessment Feedback

Paper November 2022 Paper 2H
Name
Teacher Enter Teacher Name

Questions	Topic	Score			Clip number
1a	Scatter diagrams	1	/	1	453
1b	Scatter diagrams	1	/	1	453
1c	Scatter diagrams	2	/	2	453,454
2	Plans and elevations	0	/	2	843
3a	Linear sequences (nth term)	1	/	2	198
3b	Linear sequences (nth term)	1	/	2	198
4	Area of a circle, area of triangles, money (problem solving)	4	/	5	541,558,754
5	Right-angled trigonometry	2	/	2	509
6	Repeated percentage increase or decrease, percentages (worded problems)	3	/	3	92,98
7a	Drawing quadratic graphs from a table	1	/	1	251
7b	Find the turning point of quadratic graphs	1	/	1	255
7c	Drawing quadratic graphs from a table	2	/	2	251
8	Percentage profit	3	/	3	760
9	Straight line graphs (parallel)	2	/	2	214
10	Repeated percentage increase or decrease, reverse percentages	0	/	3	92,96
11	Box plots	3	/	3	440
12a	Sequences from recurrence relations, real life exponential growth	0	/	2	262,804,807
12b	Sequences from recurrence relations, real life exponential growth	0	/	1	262,804,807
13	Cartesian axes and coordinates, Pythagoras' (applied)	0	/	2	199,502
14	Convert recurring decimals to fractions	3	/	3	54
15a	Capture-recapture	3	/	3	872
15b	Capture-recapture	1	/	1	872
16	Inequalities as graph regions	0	/	4	276
17	Volume of similar shapes, area of triangles	1	/	4	620,557
18	Area of triangle (1/2absinC)	2	/	2	517
19	Solving quadratic equations (by factorising)	1	/	3	232
20	3D trigonometry	4	/	4	858
21a	Instantaneous rate of change	0	/	3	890
21b	Instantaneous rate of change	0	/	1	890
22	Composite functions, inverse functions	1	/	3	294,296
23	Appropriate degrees of accuracy, upper and lower bounds, error intervals	0	/	5	132,139,777
24	Circles, normals and tangents	0	/	4	320
	Total	43	/	80	



Prospere LEARNING TRUST

Independent Learning

Find topics | My activity

Search for topics: U277

Your curriculum: GCSE

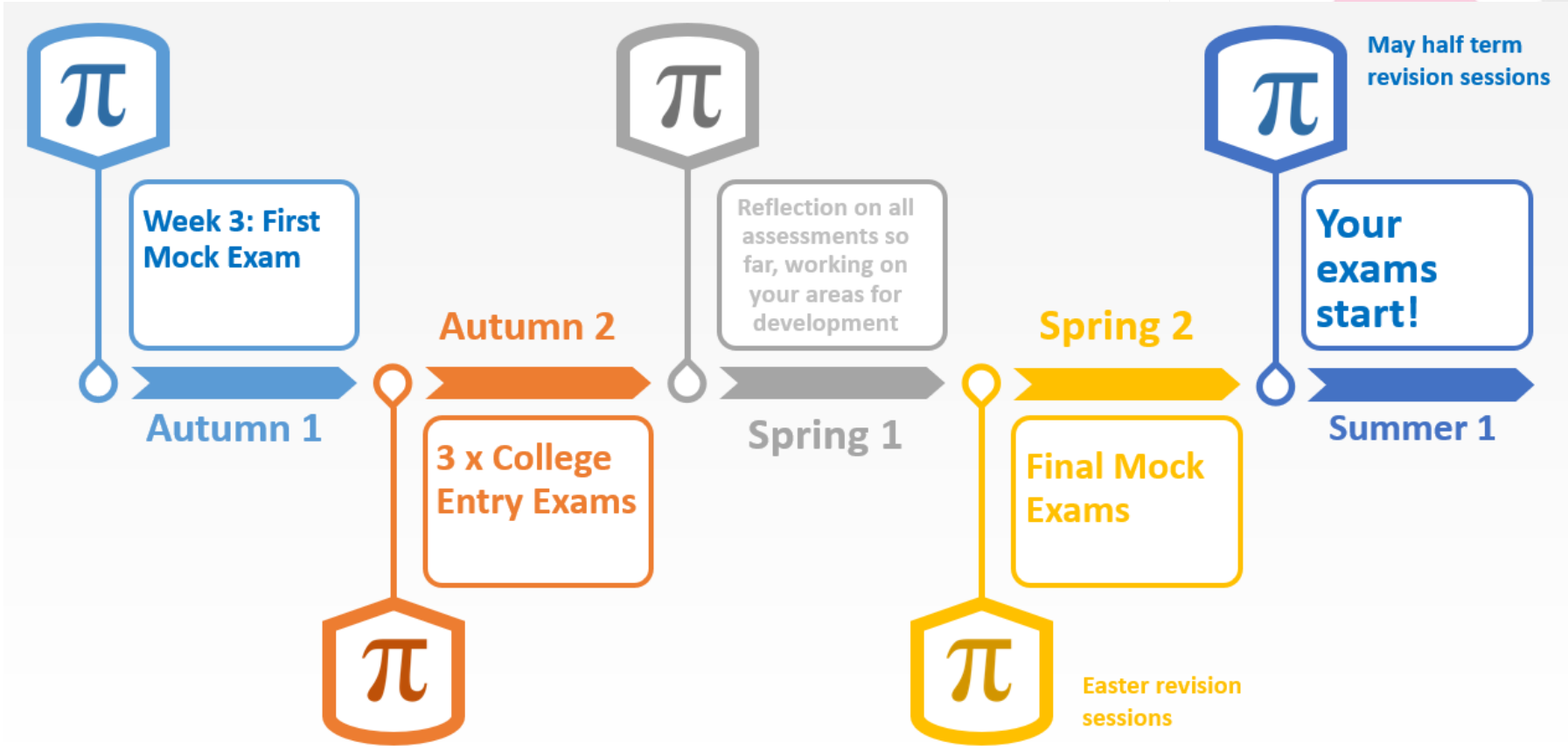
Default level: Level 3

Select a topic:

- Number
- Algebra
- Ratio and Proportion
- Geometry
- Probability
- Statistics

STUDENT B

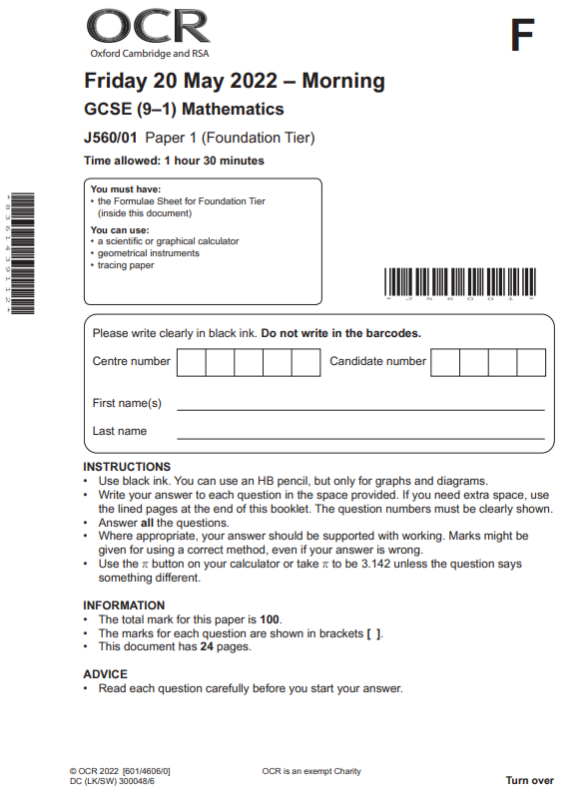
3- **4+** **Grade 5**



Prospere LEARNING TRUST

How did Student B do it?

- Worked hard EVERY single and EVERY single intervention
- Completion of past papers, using mark schemes to help
- ASKED FOR HELP!



OCR
Oxford Cambridge and RSA

F

Friday 20 May 2022 – Morning

GCSE (9–1) Mathematics

J560/01 Paper 1 (Foundation Tier)

Time allowed: 1 hour 30 minutes

You must have:
- the Formulae Sheet for Foundation Tier (inside this document)

You can use:
- a scientific or graphical calculator
- geometrical instruments
- tracing paper

Please write clearly in black ink. **Do not write in the barcodes.**

Centre number | Candidate number

First name(s)

Last name

INSTRUCTIONS
- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided. If you need extra space, use the lined pages at the end of this booklet. The question numbers must be clearly shown.
- Answer **all** the questions.
- Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.
- Use the π button on your calculator or take π to be 3.142 unless the question says something different.

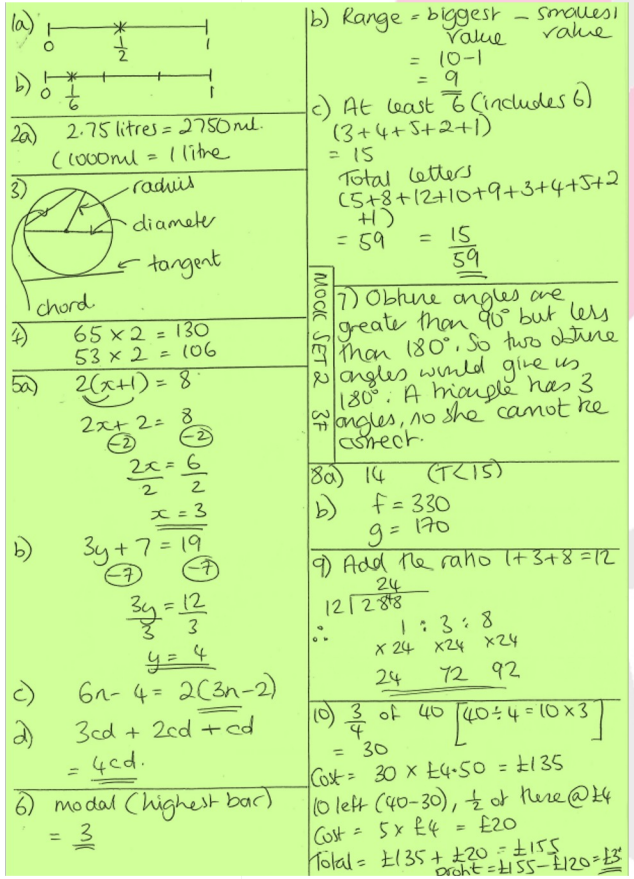
INFORMATION
- The total mark for this paper is **100**.
- The marks for each question are shown in brackets **[ ]**.
- This document has **24** pages.

ADVICE
- Read each question carefully before you start your answer.

© OCR 2022 [601/4606/0]
DC (LK/SW) 300048/6

OCR is an exempt Charity

Turn over



1a) 0 ½ 1

b) 0 ⅙ 1

2a) 2.75 litres = 2750ml. (1000ml = 1 litre)

3) radius, diameter, tangent, chord

4) 65 × 2 = 130
53 × 2 = 106

5a) 2(x+1) = 8
2x + 2 = 8
−2 −2
2x = 6
x = 3

b) 3y + 7 = 19
−7 −7
3y = 12
y = 4

c) 6n − 4 = 2(3n−2)

d) 3cd + 2cd + cd
= 4cd.

6) modal (highest bar)
= 3

b) Range = biggest value − smallest value
= 10 − 1
= 9

c) At least 6 (includes 6)
(3+4+5+2+1)
= 15
Total letters
(5+8+12+10+9+3+4+5+2+1)
= 59 = 15/59

MOCK SET 2 3F

7) Obtuse angles are greate than 90° but less than 180°. So two obtuse angles would give us 180°. A triangle has 3 angles, no she cannot be correct.

8a) 14 (T<15)

b) f = 330
g = 170

9) Add the ratio 1+3+8 = 12

24
12 | 288

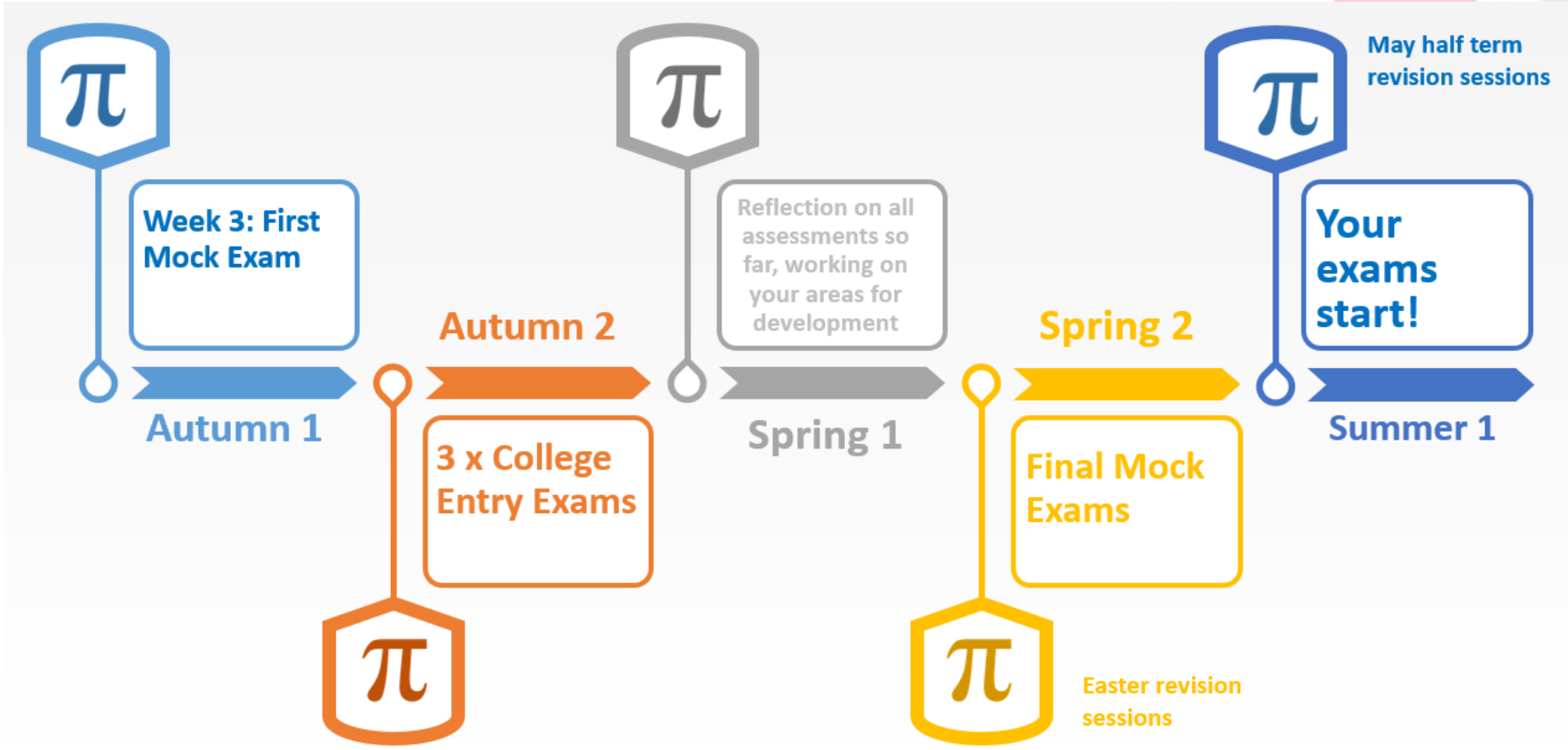
1 : 3 : 8
×24 ×24 ×24
24 72 92

10) ¾ of 40 [40÷4 = 10×3]
= 30
Cost = 30 × £4.50 = £135
10 left (40−30), ½ of here @ £4
Cost = 5 × £4 = £20
Total = £135 + £20 = £155
Profit = £155 − £120 = £35

Pupil friendly mark-scheme

STUDENT C

2- **2+** **Grade 4**



Prospere LEARNING TRUST

How did Student C do it?

- Not once did Student C say it's too easy, they kept practising every skill
- On time to all lessons and completed ALL of their Retrieval Practice starters
- Giving their teacher extra papers to mark – going above and beyond!

Retrieval Practice

Retrieval Practice A1

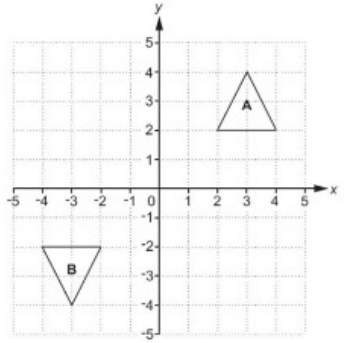
Simplify $(4ab^2)^3$

If there are 25 balls in the bag, complete the table:

Colour	Green	Teal	Red	Pink
Freq.	4	10	?	?
Rel. Freq.	0.16	?	0.32	0.12

Relative frequency is probability of picking that colour!

The diagram shows two triangles on a square grid.



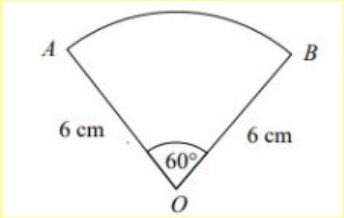
(a) Reflect triangle **A** in the line $y = 0$. [2]

(b) Describe fully the **single** transformation that maps triangle **A** onto triangle **B**.

.....

..... [3]

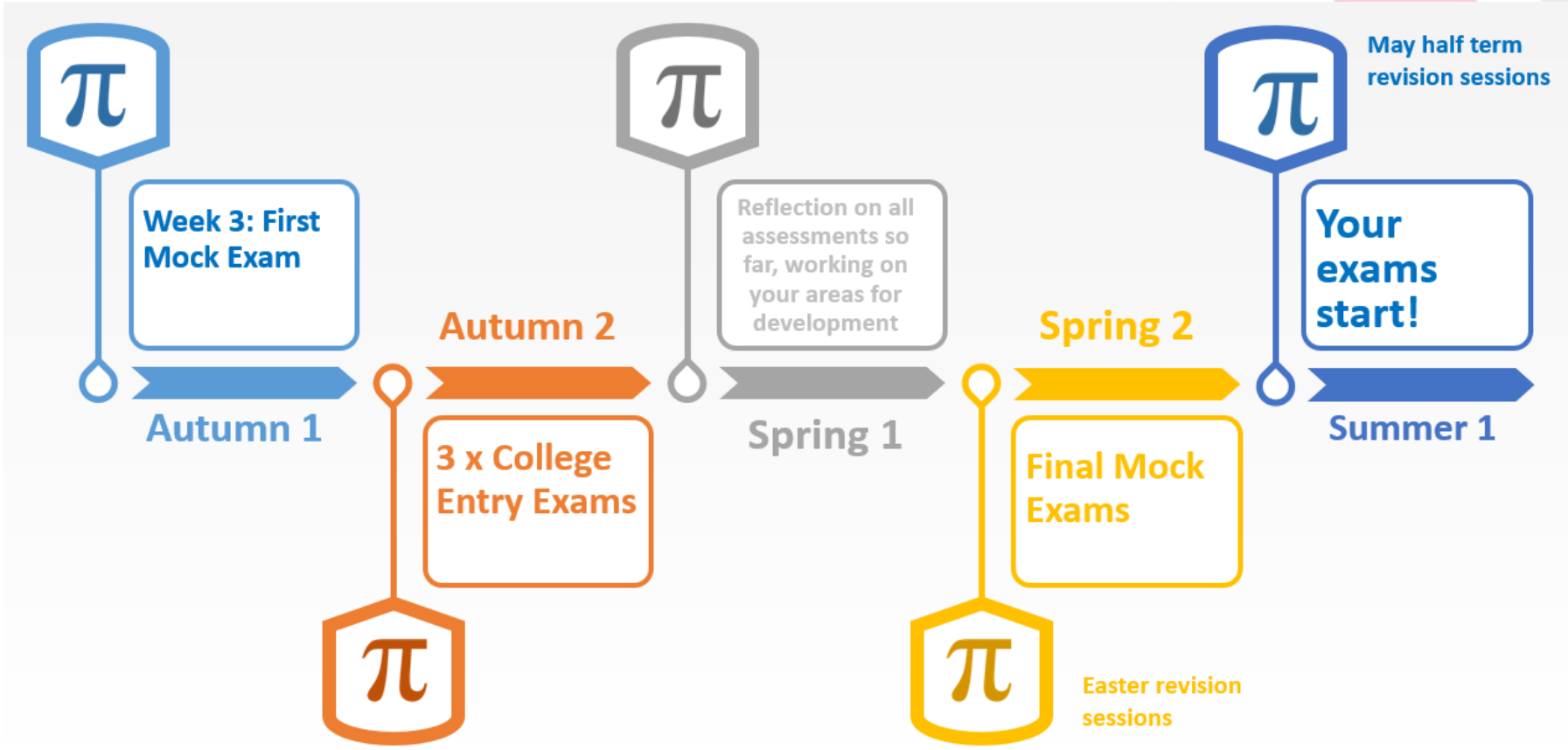
Calculate the:
a) arc length
b) perimeter



Write down the highest common factor of 20, 84 and 58.

STUDENT D

5+ **6=** **Grade 8**



Prospere LEARNING TRUST

How did Student D do it?

ExamQ
by Mr Watts

Qualification: Edexcel GCSE Maths - Higher

Series: Select...

Paper: Select...

459 questions found

Autumn 2017 Paper 1
Question 01
Write 36 as a product of its prime factors.
Number

Autumn 2017 Paper 1
Question 02
Kiera is 7 years older than Jay.
Martha is twice as old as Kiera.
The sum of their three ages is 77
Find the ratio of Jay's age to Kiera's age to Martha's age.
Algebra
Ratio, proportion and rates of change

Autumn 2017 Paper 1
Question 06
Here is a rectangle.
$2x + 6$
$5x - 9$

Autumn 2017 Paper 1
Question 07
Brogna needs to draw the graph of $y = x^2 + 1$
Here is her graph.

CHS South

GCSE Maths Revision Pack: HIGHER

The following pack consists of all of the topics you need for your GCSE Maths exam, along with ONE question for you to try. Please try each question and check the solutions using the video solutions available through the QR code on page 2. If you are unable to do the question, then please use the following resources to help guide your revision:

Sparx	You are familiar with Sparx as it has been used as our online independent learning platform. It provides: • Online Videos for over 900 topics • Mini quizzes for 900 topics Ensure you complete any tasks you are given by your teachers.
Maths Genie	• Video Clips • GCSE Exam Questions broken down by grade & their solutions • Topic Booklets www.mathsgenie.co.uk
ExamQ by Mr Watts	• Exam Questions for a particular topic, taken directly from actual exam papers. • Mark schemes available so that students can familiarise themselves with mark allocation. www.examq.co.uk
onmaths	• On Maths allows students to complete past papers online and it tracks assessment and provides a grade so that you are aware of which level you are working at www.onmaths.com
Corbettmaths	Similar to MathsGenie with video clips and worksheets organised by topic.

Dates of your GCSE Maths Exam:
Paper 1 - Thursday 16th May (Non- Calculator)
Paper 2 - Monday 3rd June (Calculator)
Paper 3 - Monday 10th June (Calculator)

English GCSE Specification

What do I need to know?

English Language Paper 1
50% of Language GCSE

Explorations in creative reading and writing

Reading section
4 questions based on 1 source

Writing section
A narrative or descriptive piece. 45 mins. 3 pages of A4

English Language Paper 2
50% of Language GCSE

Writers' viewpoints and perspectives

Reading section
4 questions based on 2 sources

Writing section
A discursive piece.
45 mins. 3 pages of A4

English Literature Paper 1
40% of Literature GCSE

Shakespeare and 19th Century novel

Macbeth
With extract

Jekyll and Hyde
With extract

English Literature Paper 2
60% of Literature GCSE

Modern text and poetry

Section A
LOTF
No extract

Section B
Poetry: Anthology
Comparison

Section C
Unseen
Unseen comparison

Prospere LEARNING TRUST

BUT HOW DO I REVISE ENGLISH?

gcsepod
education on demand

- Covers all aspects of our English GCSEs and is brilliant for Literature
- As you watch the Pods you can make mind maps capturing the key information
- There are check and challenge quizzes so you can recall the key information
- Target your revision at the areas you are getting wrong

Student Activation

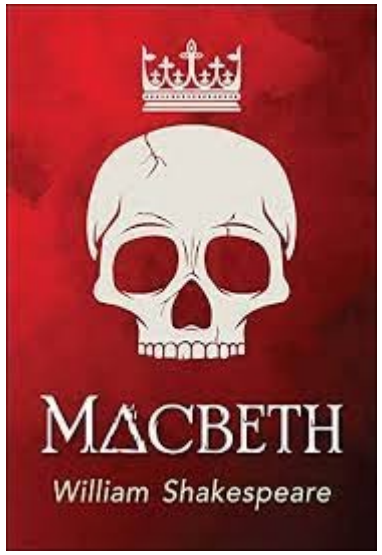
Please follow these instructions if your child has not yet activated their GCSEPod account:

1. Go to GCSEPod.com and click **'LOG IN'**
2. Click **'New to GCSEPod? Get Started'**
3. Enter your child's details and confirm the name of the school they attend
4. Create a username and password

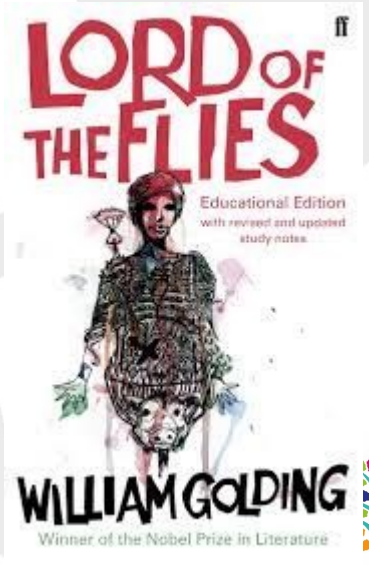
www.gcsepod.com

Prospere LEARNING TRUST

BUT HOW DO I REVISE ENGLISH?

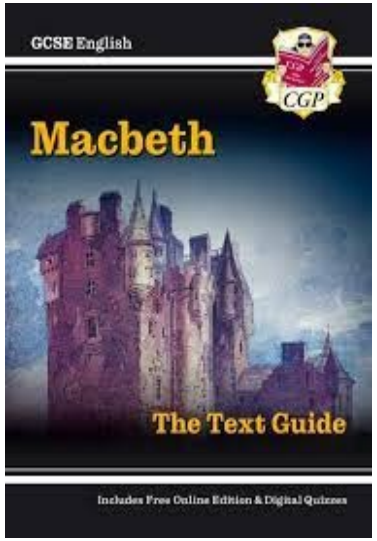


- Download the free revision app
- Select your topics
- The app will prompt you what to revise, how to do it and give mini quizzes



Prospere LEARNING TRUST

BUT HOW DO I REVISE ENGLISH?

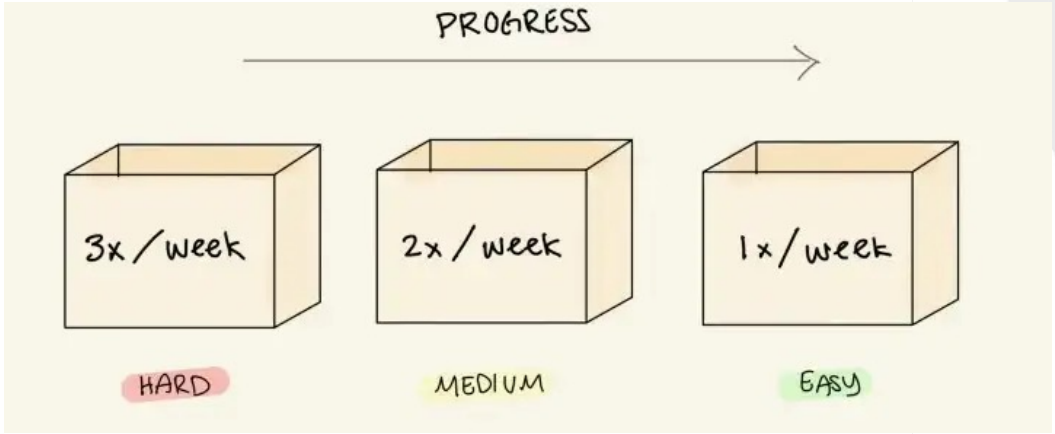


- For each of the literature texts, create flashcards of:

- The key moments
- Key characters and their traits/what they do
- Key quotations
- Links to context and wider themes

- Use your English book, CGP revision guides, GCSEPod to gather the information to put onto your flashcards

- Test yourself on flashcards, ask friends and family to test you too!



Prospere LEARNING TRUST

BUT HOW DO I REVISE ENGLISH?

- All lessons are available on TEAMS – when you are completing a past paper you can use these lessons to guide you through the process
- Revision booklets are available to download and work through
- Message your teacher for support and ask them to give you feedback on pieces of work

Prospere LEARNING TRUST

BUT HOW DO I REVISE ENGLISH?

CHS South

AQA English Language and Literature Revision Pack

Everything you need for a snapshot of all of your courses
Use this guide to help you focus on what you need to revise and what to do for each exam question

Name:

Exam dates
Literature Paper 1:
Literature Paper 2:
Language Paper 1:
Language Paper 2:

Holiday/Weekend revision dates

Making Revision Count - Language

Language Paper 1	R	A	G
Am I confident with Q2 (Language Analysis)			
Am I confident with Q3 (Structure Analysis)			
Do I know the difference between language techniques and structural techniques?			
Do I feel confident with Q4 (student statement)			
Do I know 4 connectives to link ideas together?			
Do I know how to zoom into a picture for Q5			
Do I use my time correctly?			
Have I got my order of questions planned?			
Do I feel confident with descriptive writing?			
Do I use my Q5 5 part plan to structure my story?			

Language Paper 2	R	A	G
Am I confident with Q2 (Summary Analysis)			
Am I confident with Q3 (Language Analysis)			
Do I know how Language Paper 2 is different to Language Paper 1?			
Do I feel confident with Q4 (comparing 2 sources)			
Do I know 4 connectives to compare and contrast the sources?			
Do I know how to start and end a letter?			
Do I know how to use DR SCREAM at the beginning for Q5?			
Have I got my order of questions planned?			
Do I feel confident with SPEECH/LETTER/ARTICLE writing?			
Do I use my trigger list to vary my ideas in Q5?			

From my reflections, I need to spend my time revising:

1.

2.

3.

I will use:

1.

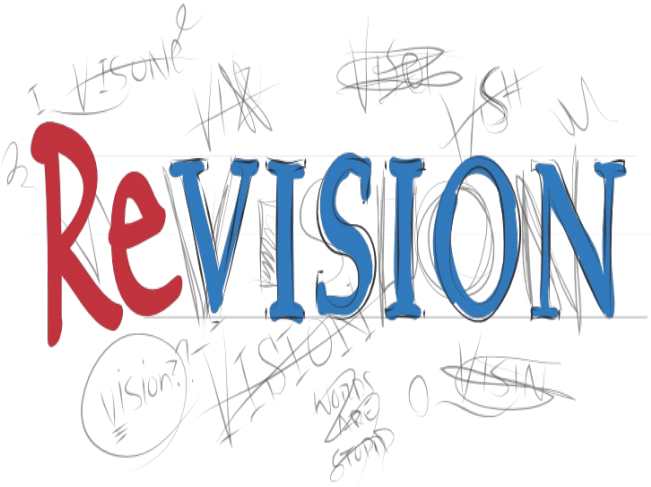
2.

3

- Use your English bible to guide you through the step-by-step process to each question
- Use the knowledge organisers in here to identify what you must know
- Use the self-reflections to identify your areas of need

Prospere LEARNING TRUST

BUT HOW DO I REVISE ENGLISH?



- Attend your English lessons, be on time
- Attend your P6 sessions
- Attend your interventions
- Complete your weekly homework tasks

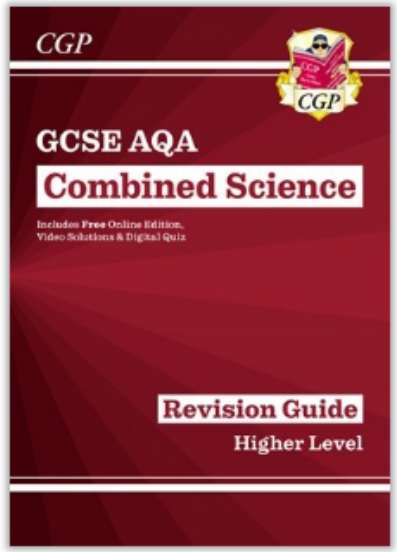
Prospere LEARNING TRUST

LIBRARY SCHEDULE

DAY	BREAK	YEAR GROUP	LUNCH	YEAR GROUP	AFTER SCHOOL
MONDAY	A	YEAR 8	A	YEAR 10 & YEAR 11	ALL YEARS
	B	YEAR 7	B	YEAR 9	
TUESDAY	A	YEAR 10 & YEAR 11	A	YEAR 8	ALL YEARS
	B	YEAR 9	B	YEAR 7	
WEDNESDAY	A	YEAR 8	A	YEAR 10 & YEAR 11	ALL YEARS
	B	YEAR 7	B	YEAR 9	
THURSDAY	A	YEAR 10 & YEAR 11	A	YEAR 8	ALL YEARS
	B	YEAR 9	B	YEAR 7	
FRIDAY	A	YEAR 8	A	YEAR 10 & YEAR 11	ALL YEARS
	B	YEAR 7	B	YEAR 9	

Prospere LEARNING TRUST

How to revise in Science

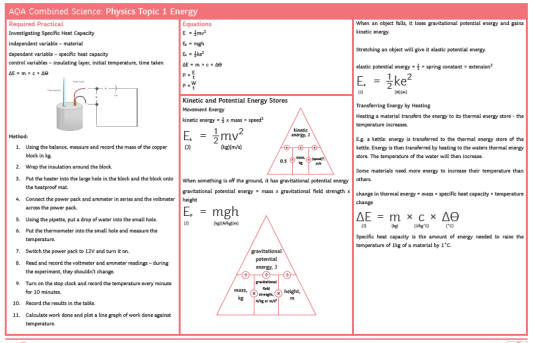


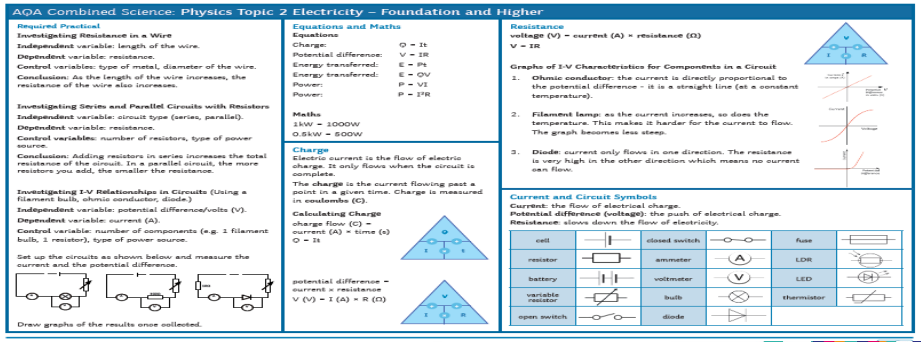
There is an incredible amount of content to learn in Science and the biggest issue students face is where to start, as it can often be overwhelming.

If you haven't purchased a revision guide it is strongly recommended that you buy a CGP revision guide. This can be purchased from Arbor and is great starting point for revising content.

In addition to this we have also uploaded all the knowledge organisers onto teams so you can use these for free.

https://prosperetrust.sharepoint.com/sites/CHSScienceYear11





What topics do I need to revise

Unit 1

Biology 4.1 Cell Biology)
- Cell structure, microscopes, specialised cells, eukaryotic and prokaryotic cells.
- Cell division, mitosis and stem cells
- Transport in cells, diffusion, active transport, osmosis

Biology 4.2 (organisation)
- Organisation of organisms. The digestive system. Enzymes and food tests.
- Structure of the lungs and heart. Components of the blood. Coronary heart disease
- Non-communicable disease and cancer
- Plant tissues, organs and systems

Biology 4.3 (Infection and response)
- Types of pathogen. Disease transmission. The primary and secondary defence. Immune system. Vaccination. Antibiotics and pain killers.
- Drugs and Drug testing. Clinical trials.

Biology 4.4 (Bioenergetics)
- Photosynthesis. The equation. Limiting factors, analysing graphs. Inverse proportion and rate.
- Respiration. Equations for aerobic and anaerobic. Fermentation. Response to exercise - Heart rate, oxygen debt and metabolism.

10.05

Chemistry

Unit 1

Chemistry 5.1 Atomic structure and the periodic table
- Atomic structure, elements, compounds and mixtures. Model of the atom. Periodic table and history of atom and periodic table. Group 1, 7 and 0.

Chemistry 4.2 Bonding and properties of matter
- Ionic, covalent and metallic bonding. Solids, liquids, gases and state symbols. Properties of ionic, covalent and metallic. Specific examples: graphite, diamond, sodium chloride, water.

Chemistry 4.3 Quantitative chemistry
Conservation of mass, formula mass, moles, balancing equations, concentration.

Chemistry 4.4 Chemical changes
Reactivity series. Extraction of metals. Electrolysis. REDOX reactions. Acids and alkalis. Neutralisation. pH. Salts (soluble and insoluble). Strong and weak acids.

Chemistry 4.5 Energy changes
Exothermic and Endothermic. Reaction profiles. Bond energies.

17.05

Physics

Unit 1

Physics 6.1 Energy
- Energy stores and diagrams, changes in energy. Work done. KE, EPE,GPE. Conservation of energy. Specific heat capacity. Power. Efficiency. Renewable and Non-Renewable energy resources. Evaluating impacts on the environment.

Physics 6.2 Electricity
- Circuit symbols, V=IR. Series and parallel circuits. Resistors. Mains power. Work, power and charge equations. Domestic electricity and the national grid.

Physics 6.3 Particle model of matter
- Density, internal energy, particles. Specific heat capacity and changes in latent heat. Particle motion in gases.

Physics 6.4 Atomic structure
- Atomic structure. Model of the atom. Radioactive decay and nuclear radiation. Nuclear equations, half-life, nuclear contamination.

22.05

What topics do I need to revise

Unit 2

Biology 4.5 (Homeostasis and response)
- Homeostasis, nervous system, hormonal responses - insulin.
- Hormones in reproduction, contraception, IVF

Biology 4.6 (Inheritance variation and evolution)
- Sexual/asexual reproduction and meiosis.
- Variation, evolution, natural selection, genetic engineering, evidence for evolution.
- Extinction and classification.

Biology 4.7 (Ecology)
- Adaptation, levels of organisation, biodiversity and land management.
- Deforestation and Global warming.
- Maintaining biodiversity.

07.06

Chemistry

Unit 2

Chemistry 5.6 The rate and extent of chemical change
- Reaction rates, equilibrium, reaction profiles. Factors that affect the rate of a chemical reaction.

Chemistry 5.7 Organic chemistry
- Crude oil, fractional distillation. Alkanes and alkenes. Testing for alkenes.

Chemistry 5.8 Chemical tests
- Pure substances, formulations and chromatography.
- Testing for oxygen, chlorine, carbon dioxide and hydrogen.

Chemistry 5.9 Chemistry of the atmosphere
- The Earth's early atmosphere and how it has changed.
- The modern atmosphere and its constituents.
- Global warming and environmental impacts

Chemistry 5.10 Using resources
Human resources, potable water, waste water. Life cycle assessment.

11.06

Physics

Unit 1

Physics 6.5 Forces
- Displacement, velocity, acceleration, momentum.
- Hooke's law, weight, work done. Newton's Laws

Physics 6.6 Waves
- Types of wave, properties of wave, electromagnetic spectrum

Physics 6.7 Magnetism and electromagnetism
- Permanent magnets, magnetic fields, the motor effect, Flemings left hand rule.

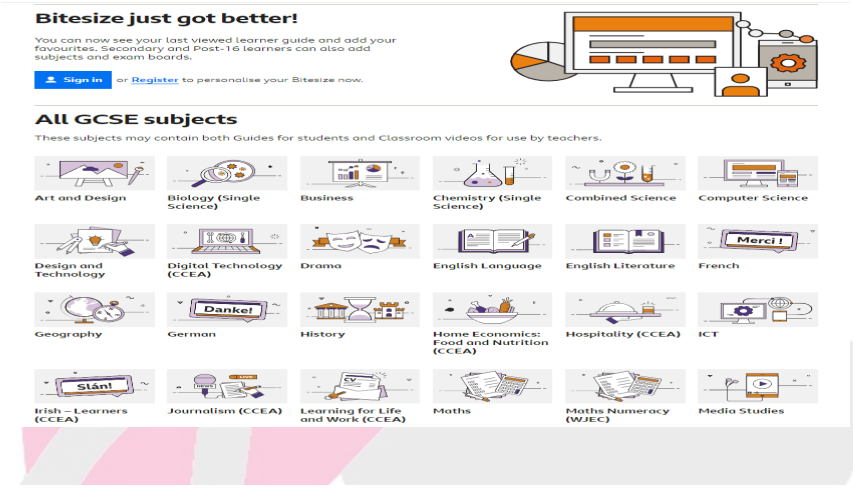
14.06

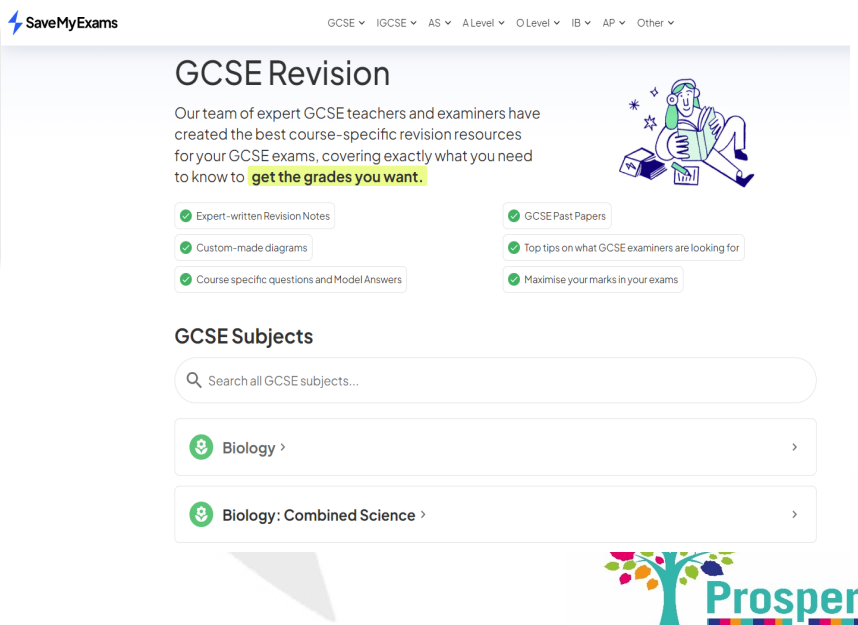
Combined – 1h 15m 70 marks x 6 papers

Triple – 1h 45m 100 marks x 6 papers

The best websites for information:

- https://www.bbc.co.uk/bitesize/levels/z98jmp3
- (BBC bitesize)
- https://www.savemyexams.com/gcse/
- (save my exams)

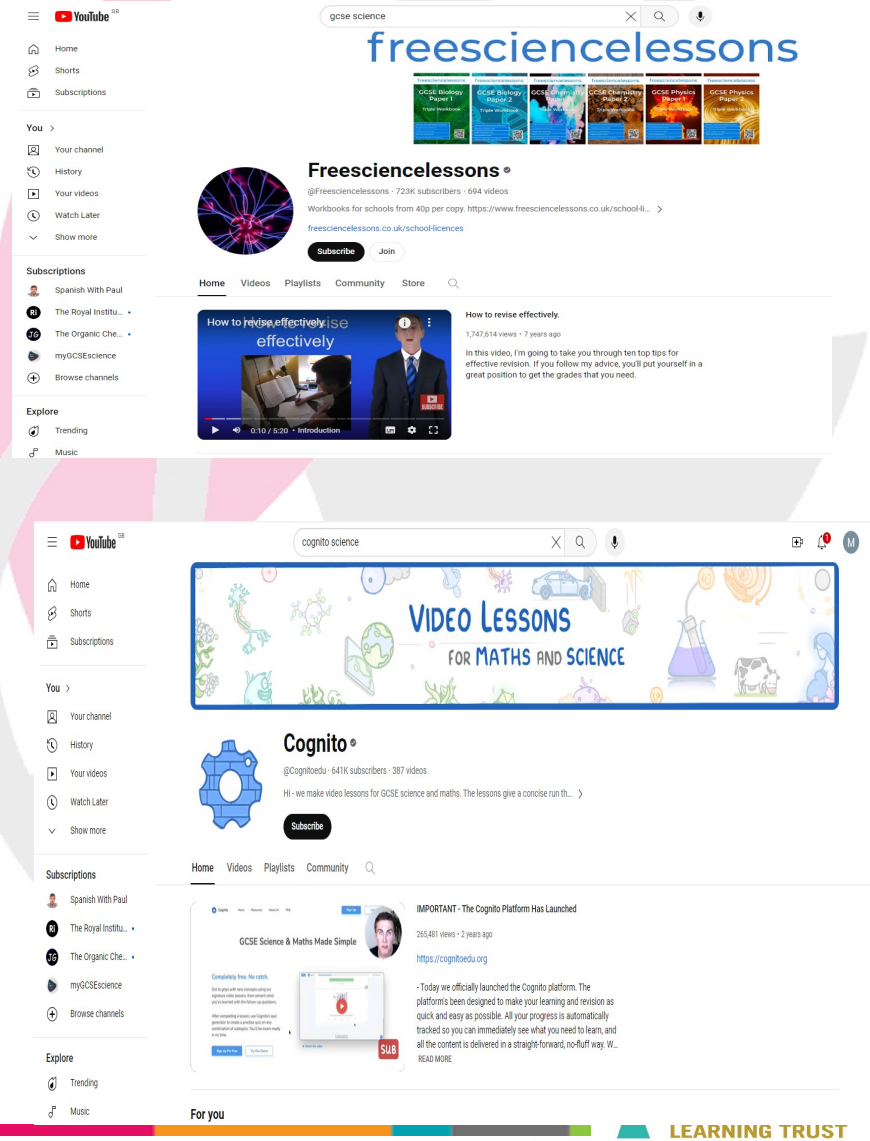




The best video resources on YouTube:

- https://www.youtube.com/@Freesciencelessons
- (Free science lessons)

- https://www.youtube.com/@Cognitoedu
- (cognito)

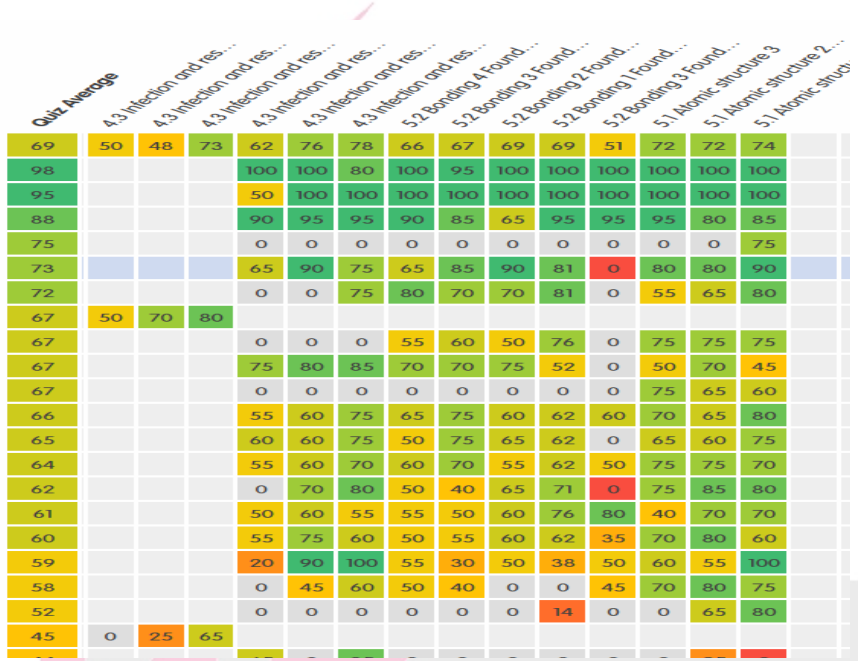


What are we using in science:

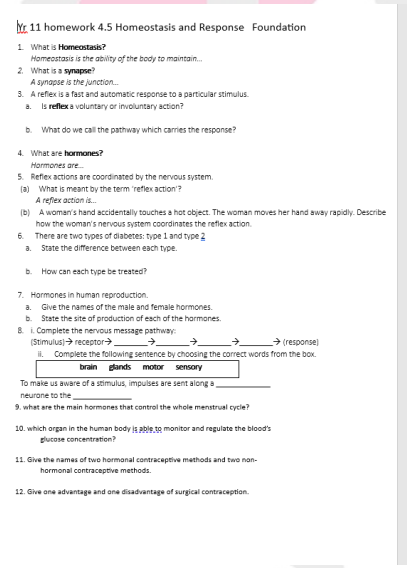
Over Christmas – pupils have been set 3 quizzes for each subject (B/C and P) using educake (online platform). 9 in total.

Alongside this they are given weekly homework sheets that enable them to practise recall and apply their knowledge.

It is really important that pupils don't just answer what they know. **If they don't know it that is what they need to learn!**



Quiz Average	4.3 Infection and res...	4.3 Infection and res...	4.3 Infection and res...	4.3 Infection and res...	4.3 Infection and res...	4.3 Infection and res...	5.2 Bonding 4 Found...	5.2 Bonding 3 Found...	5.2 Bonding 2 Found...	5.2 Bonding 1 Found...	5.2 Bonding 3 Found...	5.1 Atomic structure 3	5.1 Atomic structure 2...	5.1 Atomic struct
69	50	48	73	62	76	78	66	67	69	69	51	72	72	74
98				100	100	80	100	95	100	100	100	100	100	100
95				50	100	100	100	100	100	100	100	100	100	100
88				90	95	95	90	85	65	95	95	95	80	85
75				0	0	0	0	0	0	0	0	0	0	75
73				65	90	75	65	85	90	81	0	80	80	90
72				0	0	75	80	70	70	81	0	55	65	80
67	50	70	80											
67				0	0	0	55	60	50	76	0	75	75	75
67				75	80	85	70	70	75	52	0	50	70	45
67				0	0	0	0	0	0	0	0	75	65	60
66				55	60	75	65	75	60	62	60	70	65	80
65				60	60	75	50	75	65	62	0	65	60	75
64				55	60	70	60	70	55	62	50	75	75	70
62				0	70	80	50	40	65	71	0	75	85	80
61				50	60	55	55	50	60	76	80	40	70	70
60				55	75	60	50	55	60	62	35	70	80	60
59				20	90	100	55	30	50	38	50	60	55	100
58				0	45	60	50	40	0	0	45	70	80	75
52				0	0	0	0	0	0	14	0	0	65	80
45	0	25	65											

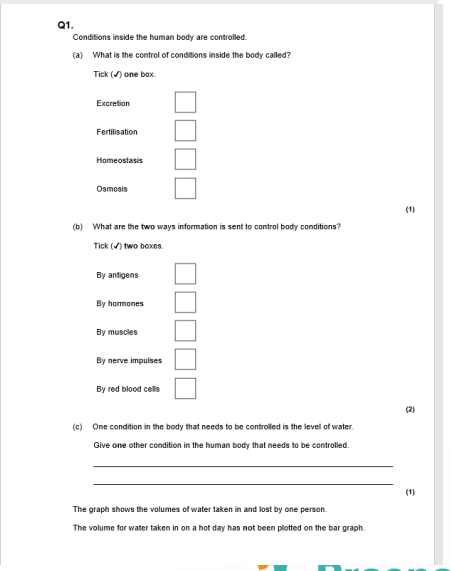


Yr 11 homework 4.5 Homeostasis and Response Foundation

1. What is **Homeostasis?**
   Homeostasis is the ability of the body to maintain...
2. What is a **synapse?**
   A synapse is the junction...
3. A reflex is a fast and automatic response to a particular stimulus.
   a. Is **reflex** a voluntary or involuntary action?
   b. What do we call the pathway which carries the response?
4. What are **hormones?**
   Hormones are...
5. Reflex actions are coordinated by the nervous system.
   (a) What is meant by the term 'reflex action'?
   A reflex action is...
   (b) A woman's hand accidentally touches a hot object. The woman moves her hand away rapidly. Describe how the woman's nervous system coordinates the reflex action.
6. There are two types of diabetes: type 1 and type 2
   a. State the difference between each type.
   b. How can each type be treated?
7. Hormones in human reproduction.
   a. Give the names of the male and female hormones.
   b. State the site of production of each of the hormones.
8. i. Complete the nervous message pathway:
   (Stimulus)→ receptor→ _____→ _____→ _____→ (response)
   ii. Complete the following sentence by choosing the correct words from the box.

brain	glands	motor	sensory

   To make us aware of a stimulus, impulses are sent along a _____ neurone to the _____
9. what are the main hormones that control the whole menstrual cycle?
10. which organ in the human body is able to monitor and regulate the blood's glucose concentration?
11. Give the names of two hormonal contraceptive methods and two non-hormonal contraceptive methods.
12. Give one advantage and one disadvantage of surgical contraception.



Q1.

Conditions inside the human body are controlled.

(a) What is the control of conditions inside the body called?

Tick (✓) one box.

- Excretion ☐
- Fertilisation ☐
- Homeostasis ☐
- Osmosis ☐

(1)

(b) What are the two ways information is sent to control body conditions?

Tick (✓) two boxes.

- By antigens ☐
- By hormones ☐
- By muscles ☐
- By nerve impulses ☐
- By red blood cells ☐

(2)

(c) One condition in the body that needs to be controlled is the level of water.

Give one other condition in the human body that needs to be controlled.

_____

_____

(1)

The graph shows the volumes of water taken in and lost by one person.

The volume for water taken in on a hot day has not been plotted on the bar graph.

Prospere LEARNING TRUST

Where do I start?

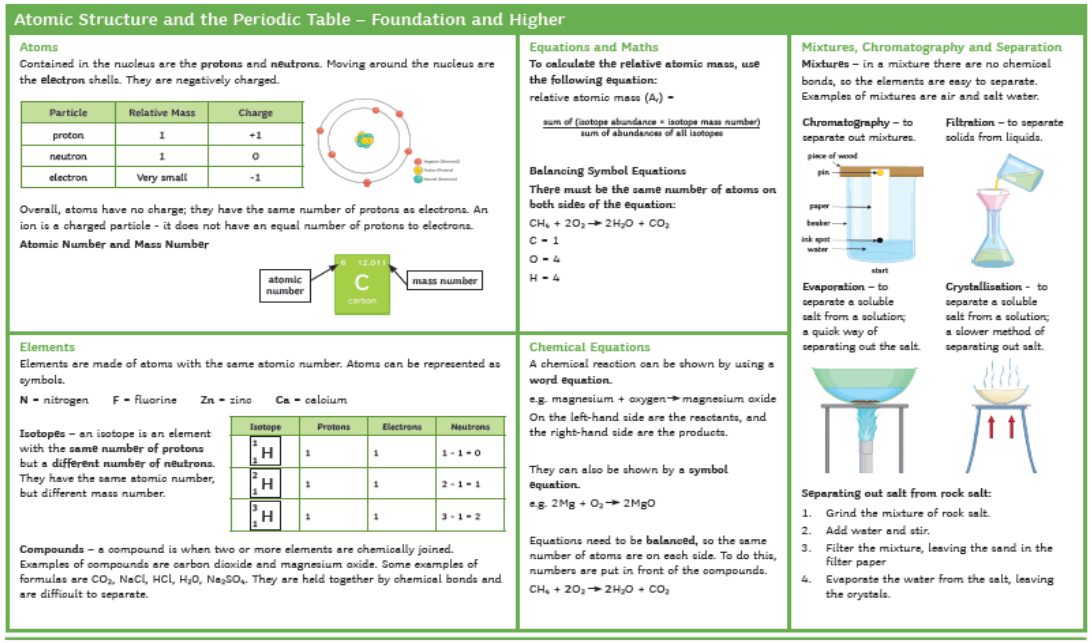
In every subject, pupils will have received a QLA (question level analysis) from their college entry exams.

They should now be using this to inform the key topics they need to work on alongside the new content still being delivered.

Specific Heat Capacity and Latent Heat	Energy Transfers	Ionising Radiation	Circuit Components	Renewables and the National Grid	Resistance	0	Biology	Photosynthesis	Digestion	Cells	Heart and Blood	Breathing System	Disease	Microscopy	0	Chemistry	Energy in Reactions	Atomic Models	Bonding	Electrolysis	Extraction of Metal	Carbon Dioxide	Percentage Mass
8.88	5.96	5.32	5.96	2.12	4.56			3.2	2.76	6.88	3.72	3.64	6.32	0.2	#####	#####	4.75	5.42	5	3.58	2.04	2	0.83
14	9	11	13	8	15	0	0	8	8	11	13	10	14	6	0	0	8	8	13	9	10	12	10
1	2	3	4	5	6	0	0	1	2	3	4	5	6	7	0	0	1	2	3	4	5	6	7
3	8	2	1	1	4			2	5	8	7	3	7	0			2	4	4	3	0	1	0
12	8	7	6	3	4			3	3	2	1	1	7	0			6	7	3	1	3	2	2
13	7	6	9	2	6			4	2	8	6	6	7	2			7	3	6	2	5	5	5
10	6	8	8	1	5			6	3	11	4	4	10	0			7	7	7	8	4	3	2
5	5	1	2	1	1			3	5	8	0	3	3	0			2	4	3	1	0	2	0
5	6	4	4	3	6			3	3	3	2	2	6	0			2	6	2	2	1	1	0
10	7	7	6	2	6			5	0	7	3	3	11	0									
14	7	4	10	2	7			5	3	4	1	5	8	0			3	6	1	2	0	2	0
6	7	8	5	3	7			4	3	6	5	4	10	0			7	8	10	5	3	2	1
12	5	4	6	3	5			2	2	7	4	4	6	2			5	6	2	3	3	2	0
6	4	3	6	5	3			1	1	5	3	5	2	1			5	5	5	2	1	6	3
12	7	7	7	5	4			4	3	9	8	7	7	0			5	6	6	6	4	0	0
9	4	4	7	1	5			2	4	6	2	4	8	0			8	6	4	3	2	1	0
10	4	2	10	2	5			3	3	8	2	2	10	0			4	6	6	7	2	4	0
7	4	6	8	5	6			5	2	7	4	0	6	0			5	4	5	4	1	1	0
6	6	6	4	0	6			3	3	9	5	3	5	0			3	3	7	5	2	1	0
11	6	6	9	2	0			1	4	7	5	5	6	0			7	7	9	3	3	1	0
9	6	5	4	0	4			5	1	9	8	4	7	0			7	5	10	5	2	2	5
9	8	8	3	4	4			2	2	8	4	5	5	0			4	5	10	6	2	3	1
10	6	9	6	3	6			6	3	8	2	4	8	0			6	5	3	3	2	2	1
9	7	4	2	1	1			2	2	5	1	1	2	0			4	4	0	1	0	1	0
10	5	9	6	1	7			3	1	9	3	4	4	0			4	6	6	3	2	0	0
2	2	1	3	0	0			0	3	4	1	2	0	0			2	3	1	1	1	2	0
12	8	3	8	3	7			5	3	6	4	5	7	0			5	6	2	5	1	2	0
10	6	9	9	0	5			1	5	8	8	5	6	0			4	8	8	5	5	2	0

What to do with the content?

Knowledge organiser (content source)



Atomic Structure and the Periodic Table – Foundation and Higher

Atoms

Contained in the nucleus are the **protons** and **neutrons**. Moving around the nucleus are the **electron** shells. They are negatively charged.

Particle	Relative Mass	Charge
proton	1	+1
neutron	1	0
electron	Very small	-1

Overall, atoms have no charge; they have the same number of protons as electrons. An ion is a charged particle - it does not have an equal number of protons to electrons.

Atomic Number and Mass Number

atomic number — mass number

Elements

Elements are made of atoms with the same atomic number. Atoms can be represented as symbols.

N = nitrogen **F** = fluorine **Zn** = zinc **Ca** = calcium

Isotopes – an isotope is an element with the **same number of protons** but a **different number of neutrons**. They have the same atomic number, but different mass number.

Isotope	Protons	Electrons	Neutrons
$^{1}_{1}H$	1	1	1 - 1 = 0
$^{2}_{1}H$	1	1	2 - 1 = 1
$^{3}_{1}H$	1	1	3 - 1 = 2

Compounds – a compound is when two or more elements are chemically joined. Examples of compounds are carbon dioxide and magnesium oxide. Some examples of formulas are CO_2, NaCl, HCl, H_2O, Na_2SO_4. They are held together by chemical bonds and are difficult to separate.

Equations and Maths

To calculate the relative atomic mass, use the following equation:

relative atomic mass (A_r) =

$$\frac{\text{sum of (isotope abundance} \times \text{isotope mass number)}}{\text{sum of abundances of all isotopes}}$$

Balancing Symbol Equations

There must be the same number of atoms on both sides of the equation:

$CH_4 + 2O_2 \rightarrow 2H_2O + CO_2$

C = 1

O = 4

H = 4

Chemical Equations

A chemical reaction can be shown by using a **word equation**.

e.g. magnesium + oxygen → magnesium oxide

On the left-hand side are the reactants, and the right-hand side are the products.

They can also be shown by a **symbol equation**.

e.g. $2Mg + O_2 \rightarrow 2MgO$

Equations need to be **balanced**, so the same number of atoms are on each side. To do this, numbers are put in front of the compounds.

$CH_4 + 2O_2 \rightarrow 2H_2O + CO_2$

Mixtures, Chromatography and Separation

Mixtures – in a mixture there are no chemical bonds, so the elements are easy to separate. Examples of mixtures are air and salt water.

Chromatography – to separate out mixtures.

Filtration – to separate solids from liquids.

piece of wood, pin, paper, beaker, ink spot, water, start

Evaporation – to separate a soluble salt from a solution; a quick way of separating out the salt.

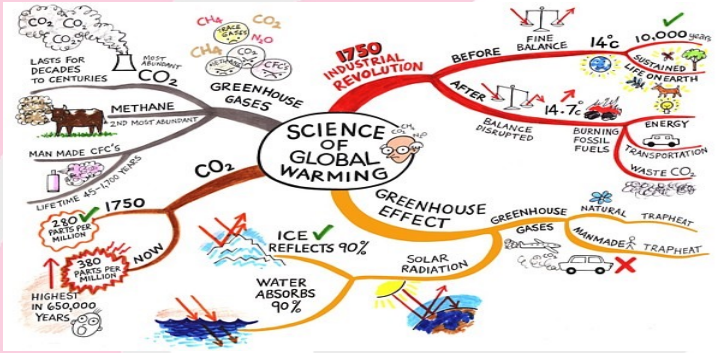
Crystallisation - to separate a soluble salt from a solution; a slower method of separating out salt.

Separating out salt from rock salt:

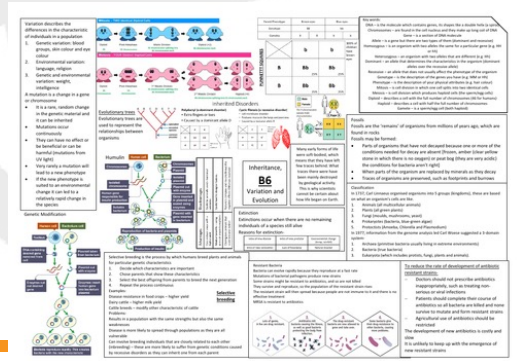
1. Grind the mixture of rock salt.
2. Add water and stir.
3. Filter the mixture, leaving the sand in the filter paper
4. Evaporate the water from the salt, leaving the crystals.

Flash Cards

Mind Map



Summarise



Check what you have learnt

Recall practice

1. Name the three subatomic particles.
2. What is the charge of the Atom? Explain your answer
3. What is found in the shells of an atom?
4. Given : ${}^{X}_{Y}W$
   Give the name of X and Y.
5. What is the difference between an atom and an ion?
6. Define an element.
7. Draw a Carbon atom.
8. Give the name of the following symbols:
   N; Ca; K; Cl
9. Complete the following table:

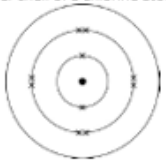
Element	Protons	Electrons	Neutrons
${}^{11}_{5}B$			
${}^{23}_{11}Na$			

10. Define an isotope.
11. What is a compund?
12. Give 3 examples on compunds.
13. Carbon (C) reacts with oxygen gas (O_2)to produce carbon dioxide.
    a) Write the word equation of this chemical reaction.
    b) Write the symbol equation for the above reaction
14. Define a mixture. Give 3 examples of mixtures.
15. Give one difference and one similarity between Evaporation and crystallisation.
16. The list below gives six substances.
    Aluminium, beer, copper, milk, pure water, sodium chloride
    Put each substance in the correct column of the table.

ELEMENTS	COMPOUNDS	MIXTURES

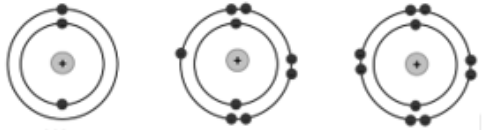
17. List the steps to separate salt from rock salt.
18. What equipment is used for simple distillation?
19. Where can we find metals in the periodic table?
20. Give 3 properties for each metals and non-metals.
21. Where are transition metals located in the modern periodic table?

22. What did JJ Thomson discovered?
23. Who discovered the presence of neutrons?
24. How many electrons are found in the first, second and third shells of an atom?
25. Describe trends in boiling point and melting points for group 1 & 7.
26. Explain why Noble gases are not reactive.
27. What is the criteria used by Mendeleev for the arrangment of elements in the periodic table?
28. A chlorine atom has 17 electrons.
    On the figure below, use crosses to show the arrangement of electrons in the outer shell of a chlorine atom.



Higher:

29. What is the equation to calculate the relative atomic mass?
30. Find the relative atomic mass of chlorine gas
    ${}^{35}_{17}Cl$ 70% ; ${}^{37}_{17}Cl$ 30 %
31. Which one has a greater intermolecular forces :
    Chlorine or Fluorine and why ?
32. Compare the structure and reactivity of the elements below from Group 1, Group 7 and Group 0.



Prospere LEARNING TRUST

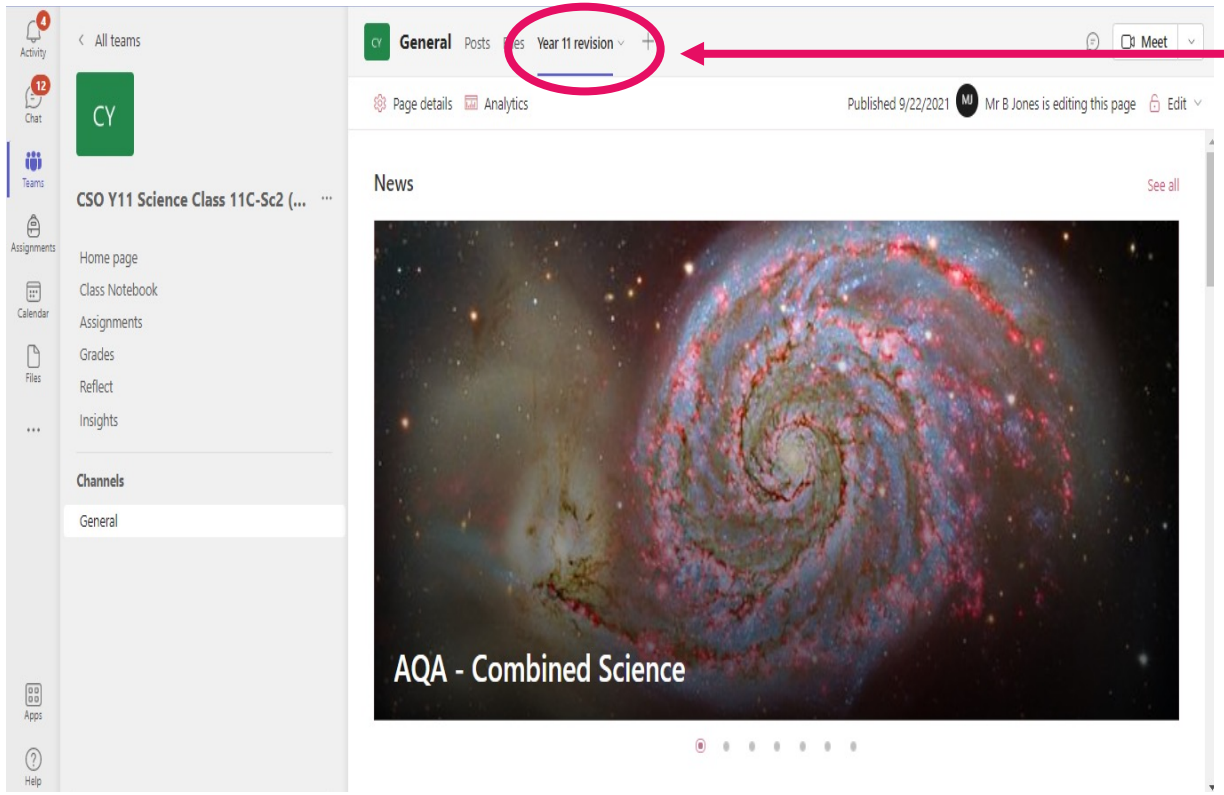
Apply your knowledge

The most effective way of revising in Science is to practise past papers. To access past papers in Science you can simply log on to SharePoint (through Teams). **CSO Science year 11 – team name.**

All the exam questions have mark schemes to support and there are questions for all the topics shown below:

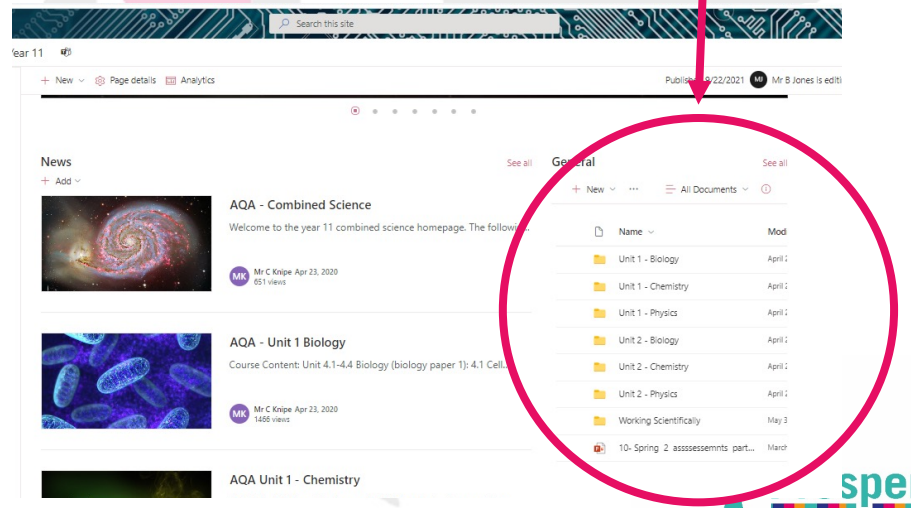
Year 10 Unit 1 Biology, Unit 1 Chemistry, Unit 1 Physics.

Year 11 Unit 2 Biology, Unit 2 Chemistry, Unit 2 Physics.



To log on click the year 11 revision tab in Teams

Then click on the folders to access the papers for the topics you want to revise



spere LEARNING TRUST

Goals vs. Habits

GOALS are good for setting a direction but changing your **HABITS** are the best for making progress

Prospere LEARNING TRUST

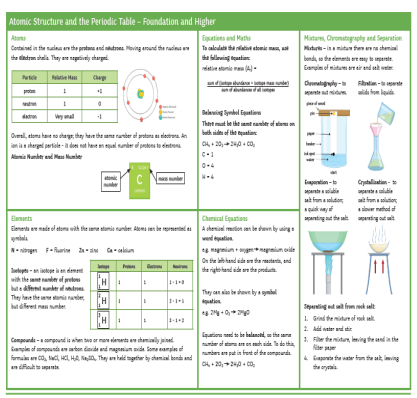
Repetition is key!

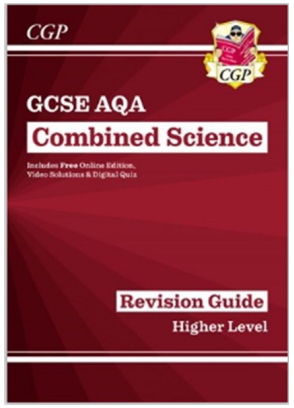
It is very easy to fall into the trap of:

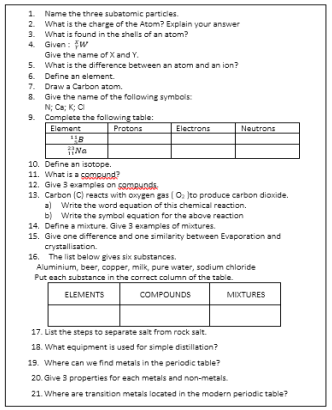
1. **Revising what you know because it makes you feel better.**
2. **Reading pages of text / or from exercise books and hoping it will sink in (it won't)**

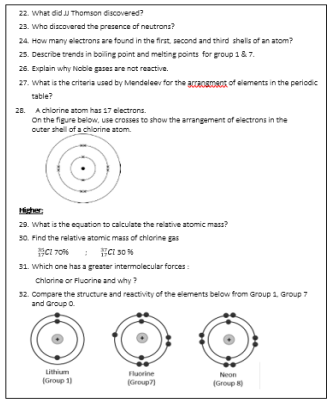
Be effective. Doing small amounts of regular **EFFECTIVE** revision is proven to have the greatest effects and this should carry out using the method shown below. **It is a great method for any content heavy subject.**

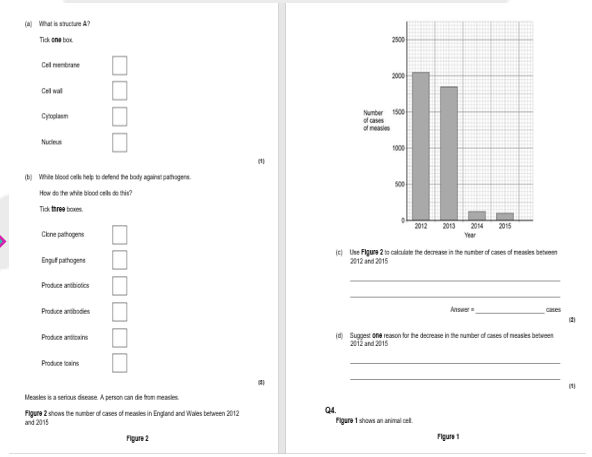
It also reduces the anxieties of trying to cram too much information in at once and becoming overwhelmed.





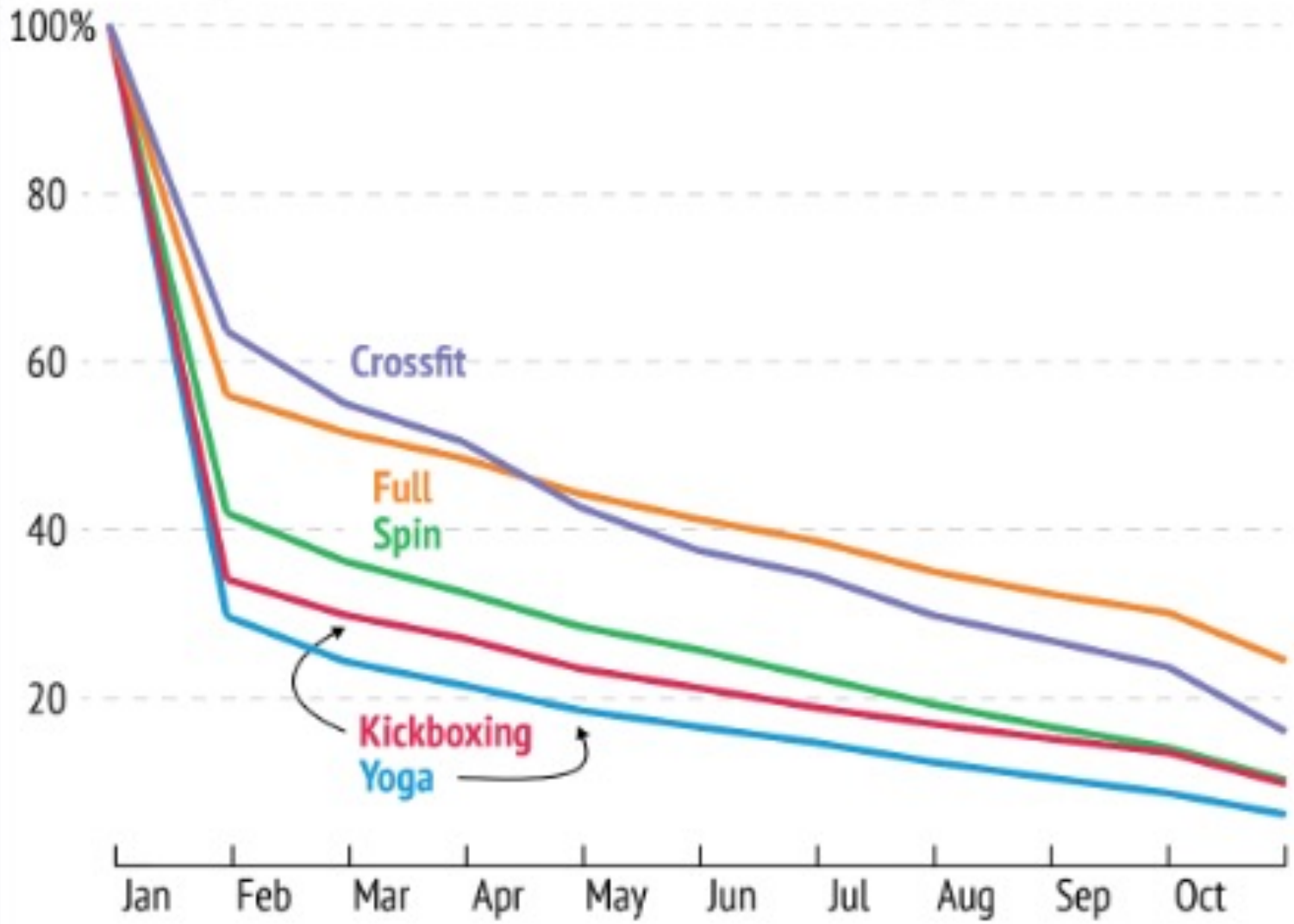






One-month resolutions

New gym customers tend to give up after the first month, but some types of gym-goers last longer than others. Percent new customers remaining each month:



Prospere LEARNING TRUST

“Success is the product of daily habits, not once in a life-time transformation”

Prospere LEARNING TRUST

How to develop a good habit....

... but do it regularly

Prospere LEARNING TRUST

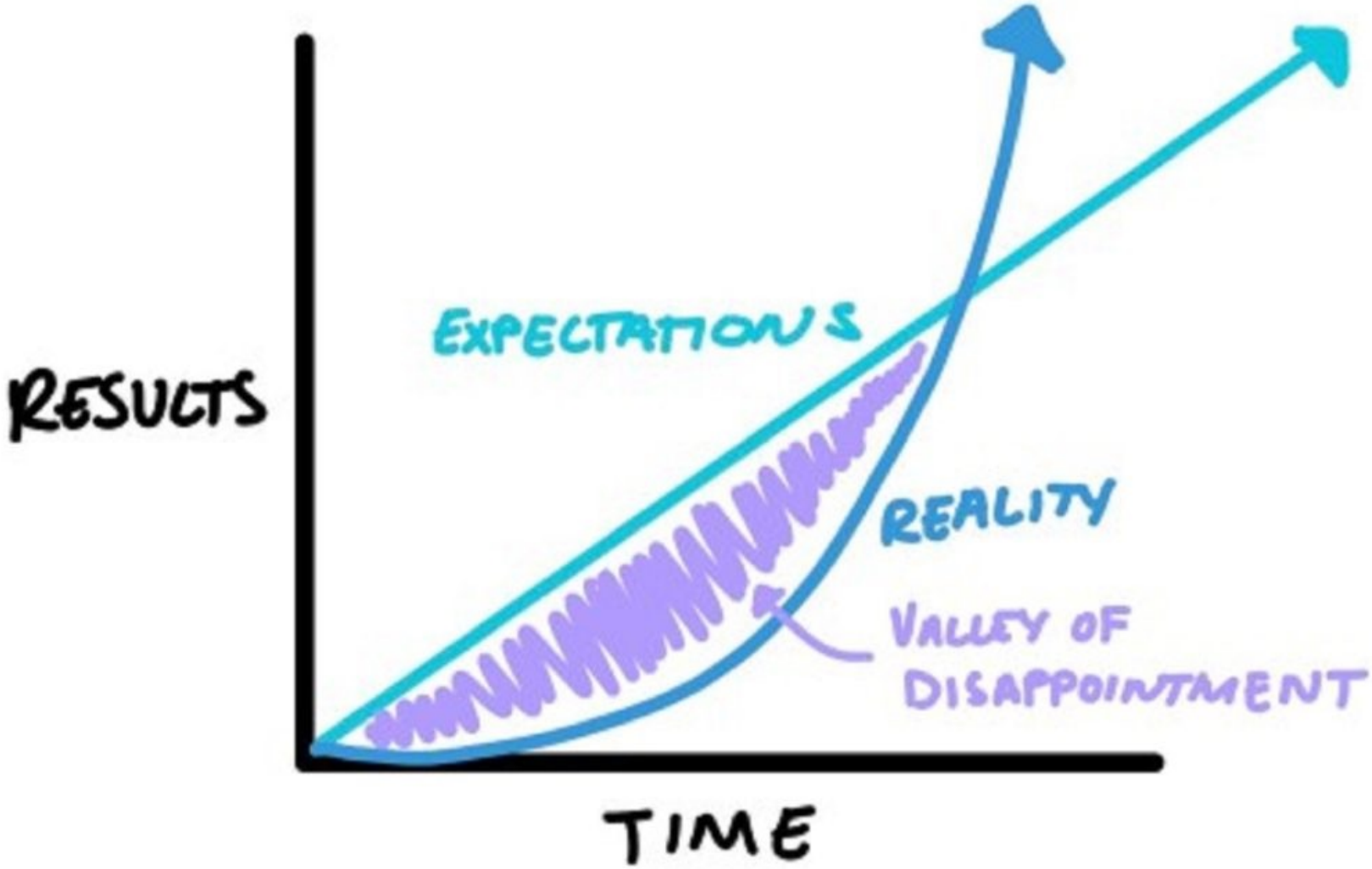
Habits are tied to a context

Prospere LEARNING TRUST

Make it difficult to get out of doing

Prospere
LEARNING TRUST

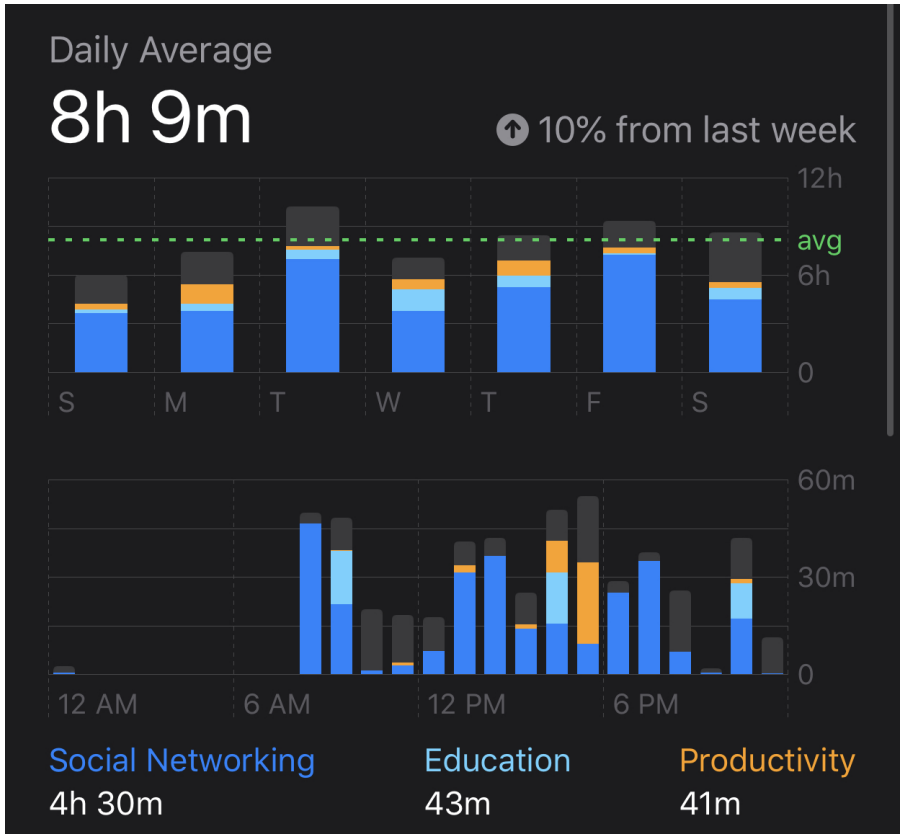
Don't be too hard on yourself, you are making progress

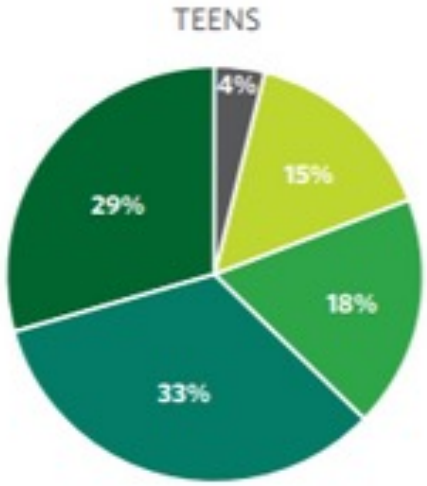


Prospere LEARNING TRUST

Surround yourself with like-minded people

“I DON’T HAVE TIME”





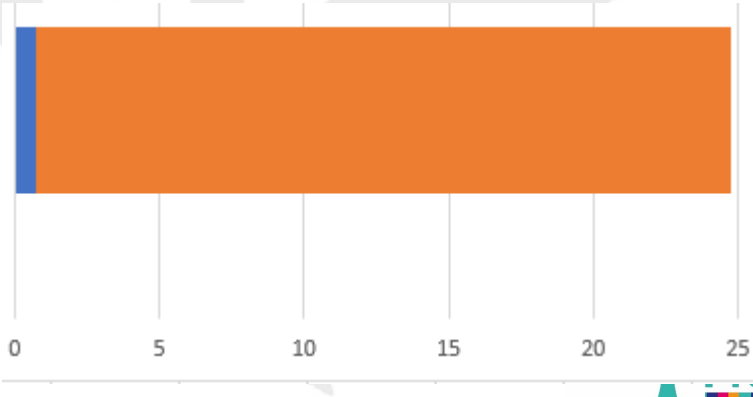
*Includes from 2:01 up to and including 4 hours.
†Includes from 4:01 up to and including 8 hours.
Note: Segments may not total 100% due to rounding.

- None
- 2 hours or less
- 2–4 hours*
- 4–8 hours†
- More than 8 hours

Prospere LEARNING TRUST

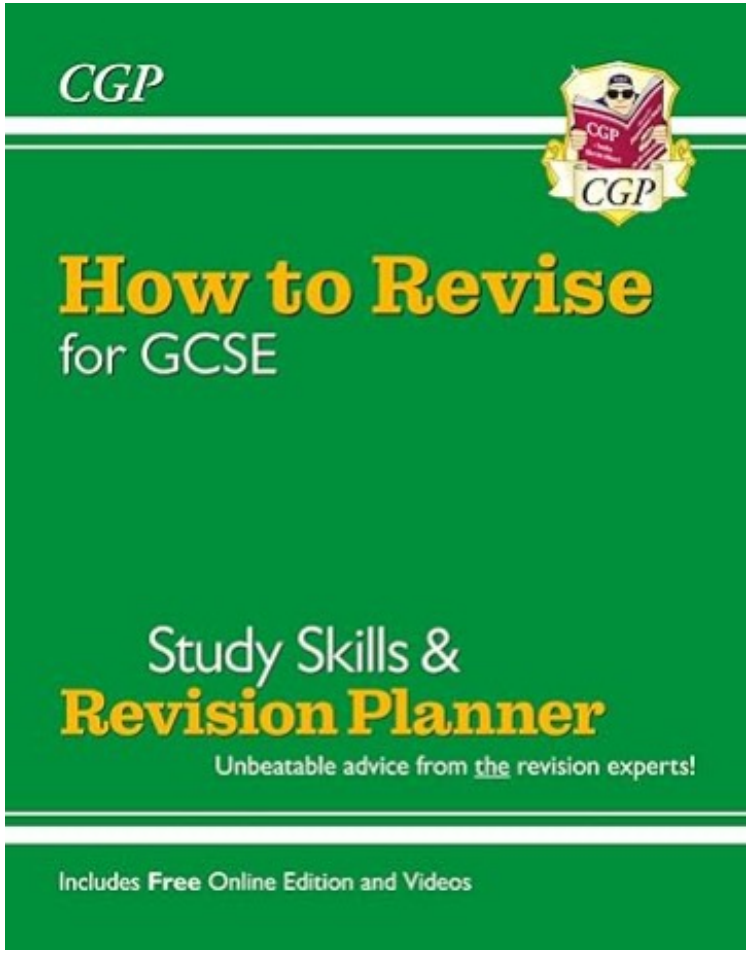
30 minutes of your day…

2% 98%



“YOU HAVE TIME”

Resources to help you get started..



Strategies for:

- Getting started
- Staying motivated
- Subject Specific strategies
- Understanding command words
- Making a revision timetable
- Before/During/After the Exam
- Revision Timetable

Prospere LEARNING TRUST