GCSE MATHEMATICS PARENT WORKSHOP Years 10 & 11

A guide to supporting your daughter's learning at home

Meet the Maths Department

- **Mrs Shields, Director of Mathematics & Senior Leader**
- **rshields@bggs.com**

- **Miss Ridge, Assistant Curriculum Leader**
- **sridge@bggs.com**

- **Mr Glascodine, Teacher of Mathematics**
- **rglascodine@bggs.com**

- **Mr Patel, Teacher of Mathematics**
- **mpatel@bggs.com**

- **Miss Williams, Teacher of Mathematics**
- **mwilliams@bggs.com**

- **Mr Moore, Teacher of Mathematics & IT**
- **amoore@bggs.com**

- **Dr Lillie, Teacher of Mathematics**
- **klillie@bggs.com**

Our Vision - Maths

We believe that it is our duty to inspire young people to see the true beauty of Mathematics by bringing maths alive, making it interesting, and developing and broadening their understanding of mathematical concepts for an ever more technical future.

MATHS SCHEME OF WORK

All year groups in our 'through school' use the 'White Rose Maths' programme with its philosophy of 'Everyone Can Do Maths'.

The schemes of work blend the teaching of new topics with 'retrieval' of previous learning interlaced throughout. The website for White Rose Maths can be found at;
https://whiterosemaths.com/

Schemes of work for Years 7 to 10 that we follow can all be found here;
https://wrm-13b48.kxcdn.com/wp-content/uploads/2021/08/Complete-Secondary-Small-Steps-2021.22.pdf

The scheme of work for Year 11 we are currently following can be found here;
https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/07/Year-11-Express-Curriculum-2020-21.pdf

The following pages display a sample of the detail available on the links above for Year 10 and Year 11 schemes of work, for your information.

YEAR 10 GCSE MATHS SCHEME OF WORK 2021-22
This is the current GCSE Maths Year 10 scheme of work which can be found here on pages 77 to 105;
https://wrm-13b48.kxcdn.com/wp-content/uploads/2021/08/Complete-Secondary-Small-Steps-2021.22.pdf

WRM – Year 10 Scheme of Learning

White Rose Maths

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Similarity						Developing Algebra					
	Congruence, similarity and enlargement		Trigonometry				Representing solutions of equations and inequalities			Simultaneous equations		
Spring	Geometry						Proportions and Proportional Change					
	Angles & bearings		Working with circles		Vectors		Ratios & fractions		Percentages and Interest		Probability	
Summer	Delving into data						Using number				Expressions	
	Collecting, representing and interpreting data			Non-calculator methods		Types of number and sequences		Indices and Roots		Manipulating expressions		

This is a sample of the information available on this White Rose Maths link. Below shows detail of the current unit of work being studied in Year 10 which is Unit 3 'Representing Solutions of Equations & Inequalities' (pages 82 & 83 on the web link);

Year 10 | Autumn Term 3 | Equations and Inequalities

Equations and Inequalities

Small Steps

- Understand the meaning of a solution
- Form and solve one-step and two-step equations **(R)**
- Form and solve one-step and two-step inequalities **(R)**
- Show solutions to inequalities on a number line
- Interpret representations on number lines as inequalities
- **Represent solutions to inequalities using set notation** **(H)**
- Draw straight line graphs **(R)**
- Find solutions to equations using straight line graphs

(H) denotes Higher Tier GCSE content
(R) denotes 'review step' – content should have been covered at KS3

Equations and Inequalities

Small Steps

- **Represent solutions to single inequalities on a graph** (H)
- **Represent solutions to multiple inequalities on a graph** (H)
- Form and solve equations with unknowns on both sides (R)
- Form and solve inequalities with unknowns on both sides
- Form and solve more complex equations and inequalities
- **Solve quadratic equations by factorisation*** (*Also Foundation tier. Higher cover now, Core will cover in Year 11) (H)
- **Solve quadratic inequalities in one variable** (H)

(H) denotes Higher Tier GCSE content

(R) denotes 'review step' – content should have been covered at KS3

As the key explains, Higher content is both bold and non-bold text. Foundation content is the text not in bold.

YEAR 11 GCSE MATHS SCHEME OF WORK 2021-22
This is the current GCSE Maths Year 11 scheme of work which can be found here;
https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/07/Year-11-Express-Curriculum-2020-21.pdf

Year 11
Express Curriculum

White Rose Maths

Suggested content coverage for 2020/21

As the new Year 11 students missed a significant portion of Year 10, moving directly ahead with our Year 11 scheme of learning would be challenging. For example, some topics, such as Handling Data, are not as well represented in the Year 11 content.

We have therefore produced this Year 11 'Express Curriculum' to help guide teachers towards the key topics to prepare students for their examinations and for life beyond school. We have based this on 30 weeks of teaching including one consolidation week.

We expect students who are aiming for a grade 4 to concentrate almost entirely on material in the first column. Those aiming for 5/6 should be able to cover this more quickly and also cover the material in the middle column. Those aiming for the highest grades may need to cover some of the first column, but focus mainly on the second and third columns. This is a framework, and we would expect teachers to adapt it for the particular needs of their classes, making amendments based on ongoing assessment of students' needs.

Week	Topic	Aiming for a grade 4	Aiming for a grade 5/6	Aiming for a grade 7/8/9
1 2	Algebra 1	• Simplifying expressions • Substitution • Solving linear equations	• Linear Inequalities and number lines • Solve quadratics by factorisation	• Completing the square
3	Fractions, decimals and percentages	• FDP equivalence • Calculating percentages	• Reverse percentages	• Recurring decimals
4 5	Shape 1	• Basic angle facts • Properties of shapes • Interior and exterior angles	• Bearings	• Circle theorems

Week	Topic	Aiming for a grade 4	Aiming for a grade 5/6	Aiming for a grade 7/8/9
6 7	Number 1	• Four rules with integers and fractions • Rounding and Estimation • Directed number arithmetic	• Roots and indices • Limits of accuracy	• Fractional indices • Upper and lower bounds
8 9	Graphs	• Plot $y = mx + c$ • Interpret real-life graphs • Plot quadratics	• Parallel lines • Find the equation of a line • Cubic and reciprocal graphs	• Perpendicular lines
10 11	Ratio and Proportion	• Simplify ratios • Share in a ratio • Direct proportion	• Use fractions in ratios • Density and pressure • Inverse proportion	• Equations with proportion • Gradients of curves
12 13	Shape 2	• Perimeter and Area of 2-D shapes • Volume and Surface Area of prisms	• Arc length and the area of a sector. • Volume of cones etc. • Plans and elevations	
14	Consolidation			

Week	Topic	Aiming for a grade 4	Aiming for a grade 5/6	Aiming for a grade 7/8/9
15 16	Data	• Finding averages • Charts and graphs • Recognise correlation	• Cumulative frequency graphs • Box plots • Lines of best fit	• Histograms
17 18	Algebra 2	• Laws of Indices • Linear sequences • Changing the subject of a formula	• Quadratic sequences • Factorise quadratics	• Geometric sequences • Complex changing the subject of a formula • Proof Functions
19 20	Pythagoras and Trigonometry	• Find sides using Pythagoras • Find sides and angles using trig ratios	• Use trig in 3-D	• Use sine and cosine rules • Find the area of triangles using A = 1/2 ab sin C
21	Probability	• Single event probability • Listing outcomes	• Tree diagrams – independent events	• Dependent events • Conditional probability
22 23	Number 2	• Calculate with percentages • Convert to/from standard form • Product of prime factors	• Compound interest • Growth and decay • Calculate with standard form	• Surds

| Week	Topic	Aiming for a grade 4	Aiming for a grade 5/6	Aiming for a grade 7/8/9
24 25	Transformations	• Perform reflections, rotations, translations and positive enlargements	• Negative and fractional enlargements • Identify and describe transformations	• Transform graphs (include trig graphs here)
26	Constructions	• Construct triangles	• Construct bisectors	• Loci
27 28	Algebra 3	• Simultaneous linear equations • Read solutions from graphs	• Simultaneous equations, one linear, one quadratic	• Quadratic inequalities • Iteration
29	Vectors	• Add and subtract vectors	• Multiply vectors by scalars	• Proof with vectors
30	Similarity	• Find missing sides in similar shapes • Understand congruency	• Solve complex similar triangles problems • Recognise congruent triangles	• Solve problems with similar areas and volumes • Prove triangles are congruent

Finding Your Own Way Around www.whiterosemaths.com

To find your own way around the White Rose Maths website click on 'For Teachers and Schools'

Then click on 'Secondary Resources' and you'll find various boxes for you to look in.

For example, if you click on 'Schemes of Learning', this contains all schemes of work

Or if you click on 'Assessments', this contains assessments that can be used as practice for preparation of the End of Unit tests used in class.
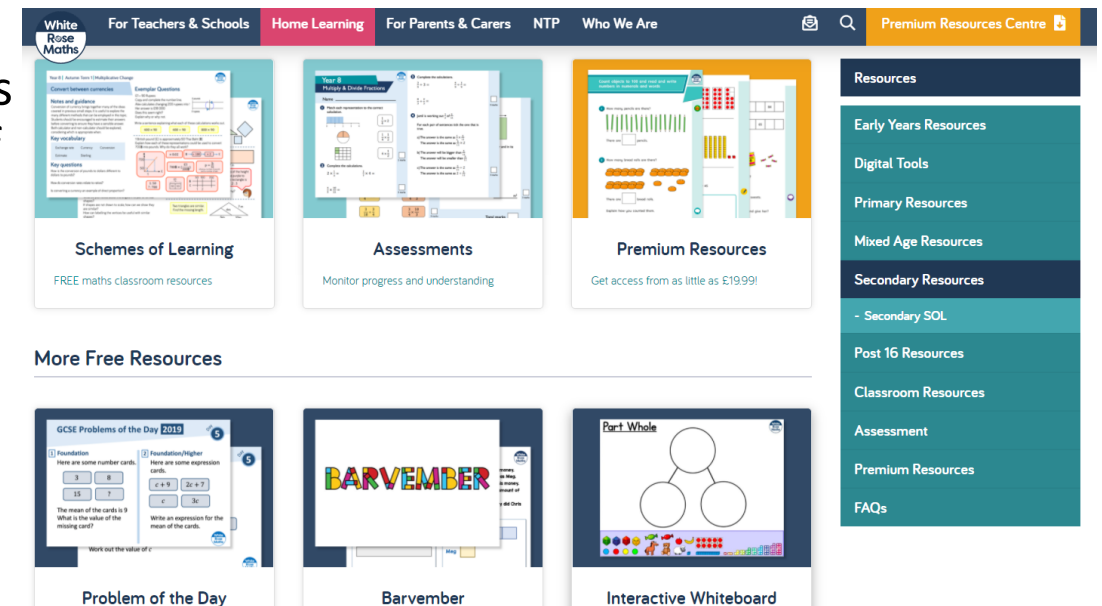
GCSE Maths Website Resources

Useful Maths revision websites include;

www.corbettmaths.com
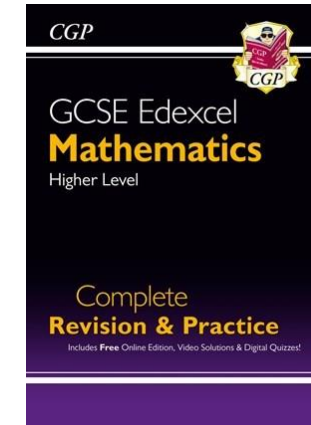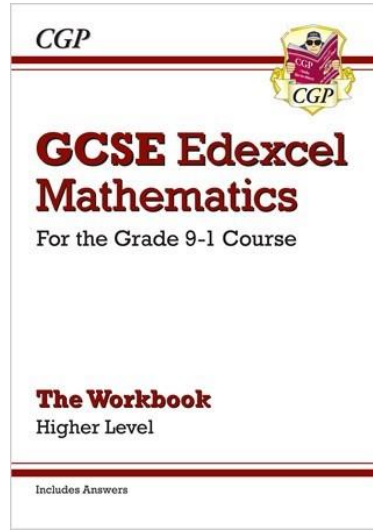
www.mathsgenie.co.uk

www.piximaths.co.uk

https://www.bbc.co.uk/bitesize/examspecs/z9p3mnb

The exam board used for GCSE Maths is Edexcel. This is their homepage;
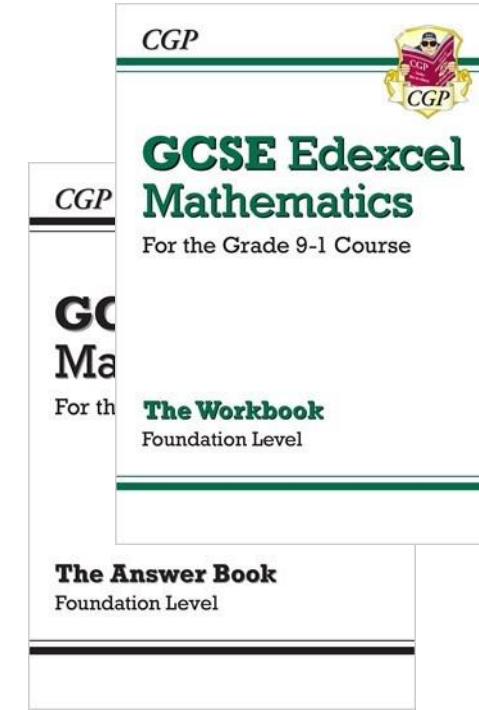
https://qualifications.pearson.com/en/home.html

GCSE Maths Resources

Higher Workbook With Answers
ISBN: 9781782944072

Foundation Workbook
ISBN: 9781782944010
AND
Foundation Answers Book
ISBN: 9781782943983

Higher All-In-One Revision
Guide & Workbook
ISBN: 9781782944058

Higher Practice Exam
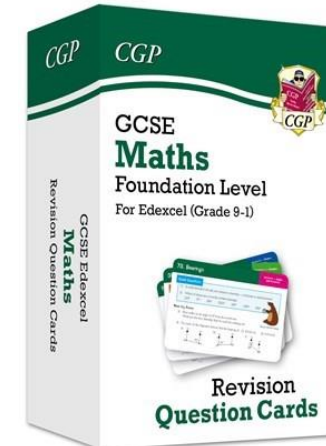Papers
ISBN: 9781782946595
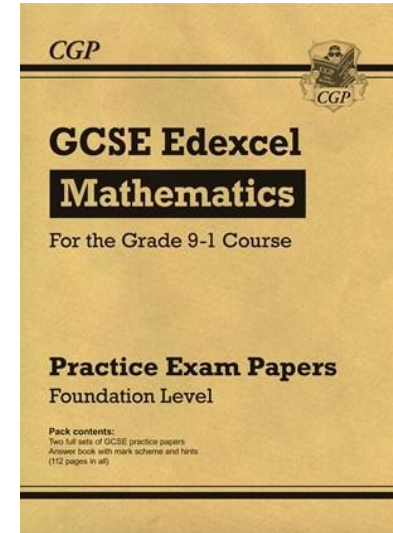
Foundation Practice Exam
Papers
ISBN: 9781782946601
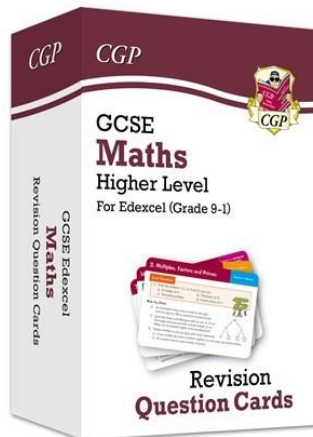
Higher Revision Cards
ISBN: 9781789083385
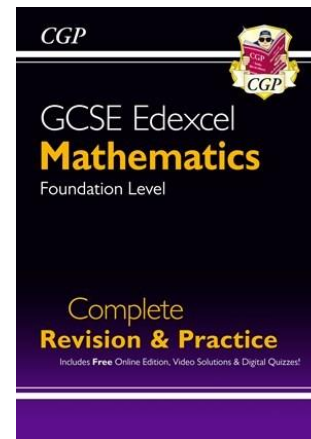
Foundation All-In-One
Revision Guide & Workbook
ISBN: 9781782949985

Foundation Revision Cards
ISBN: 9781789083378

White Rose Maths - with Michael!

The White Rose Maths website also has helpful videos to help you help your daughter with concepts such as algebra!

Episode 6 - Algebra

...just click on 'Maths with Michael' under the 'Parents and Carers' tab!

Assessments

In Year 10

Your daughter will sit an End Of Unit test at the end of every unit of work which is usually either every 2 or 3 weeks, depending upon the length of the unit. There will be a mock exam in the summer term.

In Year 11

The next assessment for Year 11 students will be a mock exam during week starting Monday 6th December. It would be most helpful to your daughter for her to start revising at home for this now using some of the resources mentioned.

Maths homework

hegartymaths

YEARS 10 & 11

- Your daughter will be set one or two clips for her Maths homework on the Hegarty Maths website every week. This is at;

  ### www.hegartymaths.com

- At the prompt for the School, type 'Bradford Girls' Grammar School'

- The next prompt asks for name and date of birth

- On first log-in, your daughter is asked to create her own password. Your daughter will know their password. (As teachers, we never know these passwords. If your daughter later forgets her password, she must let her teacher know immediately and her teacher can re-set this log-in stage to ask again for input of a password next time she logs in).

- Once logged in, they can see their set tasks. Each task has a video which your daughter should watch first before attempting each clip.

- All work is accessible on any device (e.g smartphone, tablet, laptop).

- A demo video, for parental information, is available to watch at https://hegartymaths.com/

YEAR 11

Additional to weekly Hegarty Maths clips, every 2 weeks your daughter will also be set a paper booklet of questions which she will have one week to complete and hand back in to her teacher.

Enter your details

Logging into **Bradford Girls' Grammar School**. Not your school?

First name

Last name

What's this for?

| 1 | ∨ | January | ∨ | 2016 | ∨ |

What's this for?

Next

What resources do BGGS students need?

Every student should attend each Maths class with;

- Black or blue biro

- Purple biro & a highlighter

- Pencil, eraser & pencil sharpener

- Ruler, protractor & compass

- Scientific calculator

- Maths exercise book & Maths notebook

ALSO, AT HOME, A QUIET PLACE TO WORK