



## Maths Revision Session

### Examination Structure

Paper 1	Paper 2	Paper 3
33.3%	33.3%	33.3%
Non-calculator	Calculator	Calculator
80 marks	80 marks	80 marks
1 hr 30 mins	1 hr 30 mins	1 hr 30 mins

Two tiers of entry:  
Foundation and  
Higher



## Scheme of Learning- Exam Board is Edexcel

### Year 10 Expectations:

- Ready to learn
- Correct equipment including a scientific calculator

Students have been given the SOL to support independent study.

Unit	Topic	Grade	Hegarty - Foundation	Hegarty - Higher
Ch.1 Calculations 1	Place Value	2 - 4	Positive integers 13, 14;	Ordering positive integers 13,
	Rounding	2 - 4	Rounding 17, 56, 134;	Rounding 17, 56, 134;
	Integers & Decimal Calculations	2 - 4	Compare negative integers 37; Positive interger calculations	Compare negative integers 37; Positive interger calculations
Ch. 5 Fractions, Decimals, Percentages	Decimals and Fractions	3	Simplifying fractions 59, 61; Mixed numbers and improper	Converting decimals to/from fractions 52, 53, 73, 74, 149
	Fractions and Percentages	3	Fractions of amounts 62, 77; Percentages as picture 81;	Fractions of amounts 62, 77; Converting percentages
	Calculations with Fractions	2 - 4	Addition and subtraction of fractions 65, 66; Multiplication	Simplifying fractions 59, 61; Comparing fractions 60;
	Fractions, Decimals and Percentages	3 - 5	Converting decimals to/from fractions 52, 53, 73, 74, 149;	Percentage problems 98; Convert recurring decimals to
Ch. 2 Expressions	Terms and expressions	2 - 3	Algebraic expressions 151, 152, 153; Substitution 780, 781	Algebraic expressions 151, 152, 153; Quadratic expressions 222
	Simplifying expressions	2	Collecting like terms 156, 157; <del>Multiplying and dividing</del>	Collecting like terms 156, 157; <del>Multiplying and dividing</del>
	Indices	4	Index laws (algebra) 173; <del>Index form 102, 103, 105, 106</del>	Index laws 173, 174, 175
	Expanding and factorising 1	3 - 5	Expanding brackets 160, 161; Factorising expressions 168,	Expanding brackets 160, 161; Factorising expressions 167,
	Algebraic Fractions	8 / 9		Expressions with algebraic fractions 170, 172; Linear
Assessment 1				
End of September				
Ch. 3 Angles and Polygons	Angles and Lines	2 - 3	Geometric notation 456; Points and lines 821; Angle on	Geometric notation 456; Points and lines 821; Angle on
	Triangles and Quadrilaterals	2 - 3	Properties of 2D shapes 822, 823, 824, 825, 826, 827, 828;	Properties of 2D shapes 822, 823, 824, 825, 826, 827, 828;
	Congruence and Similarity	5 - 7	Congruence 680, 681; Congruent triangles 682;	Congruence 680, 681, 682, 683, 684, 685, 686, 687, 688



# Challenge, Wellbeing, Teamwork

Oct Half term					
Ch. 4 Handling Data (Maths of Migration)	Sampling	Infer properties of populations or distributions from a sample, whilst knowing the limitations of sampling.	5		Sampling 394, 395; Stratified sampling 396, 397, 398; Surveys
	Organising Data	categorical data, vertical line charts for ungrouped discrete	2		Collecting data 401, 402, 403; Two-way tables 422, 423, 424;
	Representing Data 1	categorical data, vertical line charts for ungrouped discrete	2 - 4		Bar charts 425; Pictograms 426
	Representing Data 2		2 - 4		Pie charts 427, 428, 429;
	Averages and Spread 1	continuous and grouped data, including box plots appropriate measures of central tendency (median, mean, mode)	2 - 3		
	Combined mean		4-5		Averages and Spread 404, 405, 406, 407, 408, 409, 410;
Ch. 6 Formulae and Functions	Formulae	Understand and use standard mathematical formulae; rearrange formulae to change the subject. Change freely between related standard units (e.g. time, length,	4	3	Changing the subject 280, 281, 282, 283, 284, 285, 286, 287; Substitution 155, 780, 781, 782,
	Functions	Where appropriate, interpret simple expressions as functions with inputs and outputs; interpret the reverse process as the 'inverse function'; interpret the succession of two functions as a	3 - 8	3	Formulae 155, 279; Function notation 288, 289; Domain and range of functions 290, 291, 292;
	Equivalences in Algebra	equations, formulae, identities, inequalities, terms and factors. Know the difference between an equation and an identity; argue mathematically to show algebraic expressions are equivalent, and	3	3	Expressions, equations, identities & formulae 154
	Expanding and factorising 2	finding and factorising - taking out common factors - expanding products of two or more binomials - factorising quadratic expressions of the form $x^2 + bx + c$ ,	4 - 7	4/5	Expanding double brackets 162, 163, 164, 165; Factorising Quadratics 221, 222, 223, 224,
Assessment 2					
Ch. 13 Factors, Powers and Roots	Factors and Multiples	Apply systematic listing strategies including use of the product rule for counting (i.e. if there are $m$ ways of doing one task and $n$ ways of doing another, there are $m \times n$ ways of doing both tasks together).	4		Factors 27; Multiples 33; HCF and LCM, 31, 34
	Prime Factor Decomposition		4		Prime numbers, prime factorisation 28, 29, 30; HCF and LCM 32, 35, 36
	Powers and Roots	Use positive integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5; estimate powers and roots of any given positive number.	4		Powers and roots 99, 100, 101; Index form 102, 103, 105, 106, 107
	Surds	Calculate exactly with fractions, surds and multiples of $\pi$ ; simplify surd expressions involving squares (e.g. $\sqrt{12} = \sqrt{4 \times 3} = \sqrt{4} \times \sqrt{3} = 2\sqrt{3}$ ) and rationalise denominators.	5 - 8		Surds intro 111, 112; Surd operations 113, 114, 115; Expanding brackets with surds
Dec Holidays					

The chapters for this half term



## Year 10 Home learning: Hegarty Maths

- **TWO** Hegarty Tasks will be set by the teacher once a week. The task set will support deliberate practice and gaps identified in knowledge. This will be set both on Satchel:One and Hegarty.
- Students are required to watch the video, make detailed notes and complete the quiz in their Orange books.



## Revision in Maths- 4 steps to success!

- 1) Use your Learning Checks and Assessments to **identify gaps in knowledge**
- 2) Use your **revision guide to learn** topic/content (gaps)
- 3) Use **Hegarty Maths to practice** the topic (gaps)
- 4) Use Maths Genie to test your knowledge of the topic (gaps)

## 1) Use your Learning Checks and Assessments to **identify gaps** in knowledge

Topic: Decimals

a)  $2.59 \times 10 =$  ✓  

$$\begin{array}{r} 259 \\ \times 10 \\ \hline 2590 \end{array}$$

b)  $0.2 \times 0.3 =$  ✗  

$$\begin{array}{r} 0.2 \\ \times 0.3 \\ \hline 0.06 \end{array}$$

b)  $8.8 \div 0.2 =$  ✗  

$$\begin{array}{r} 88 \\ \div 0.2 \\ \hline 44 \end{array}$$

b)  $8.31 \times 6.2 =$  ✗  

$$\begin{array}{r} 831 \\ \times 62 \\ \hline 1662 \\ + 50460 \\ \hline 51662 \end{array}$$

Multiplying and dividing decimals

Maths Learning Check

Question 3  
Calculate the following:

a)  $0.7 \times 0.4 = 2.1$  ✗  

$$\begin{array}{r} 0.7 \\ \times 0.4 \\ \hline 0.28 \end{array}$$

c)  $1.23 \times 3.8 =$   

$$\begin{array}{r} 123 \\ \times 380 \\ \hline 000 \\ 1040 \\ + 36900 \\ \hline 37940 \end{array}$$
  

$$\begin{array}{r} 4.674 \\ \times 38 \\ \hline 984 \\ + 3690 \\ \hline 4674 \end{array}$$

Question 4  
Use brackets ( ) in this statement to make each statement correct. You may use more than one pair of brackets in each statement.

4) Factorise:

a)  $8x + 12 = 4(2x + 3)$  ✓

b)  $10x - x^2 = x^2(10 - x)$  ✗

c)  $21ab^3 - 14b^2c = 7b^2(3ab - 2c)$  ✗

Factorising- single bracket



## 1) Use your Learning Checks and Assessments to identify gaps in knowledge

Question .....	Marks	WWW	EBI
1. Proportion	2 / 2	✓	
2. Proportion	1 / 2	✓	
3. Fractions – adding and subtracting	5 / 5	✓	
4. Fractions – multiplying and dividing	5 / 5	✓	
5. Fraction of an amount	2 / 2		✓
6. Percentages	1 / 3		✓
7. Fractions – problem solving	3 / 3	✓	
8. Expanding and factorising	0 / 0		
9. Algebraic fractions			✓
10. Substituting into formulae	1 / 2	✓	
11. Ordering fractions, decimals and percentages	2 / 2	✓	
12. Simplifying expressions, factorising and expanding	7 / 8	✓	
13. Percentages – reverse calculation			✓
14. Decimals – multiplying and dividing	3 / 3	✓	
15. Indices	4 / 4	✓	
16. Indices	2 / 2	✓	
17. Recurring decimals	2 / 2	✓	

Algebraic Fractions

Reverse percentage

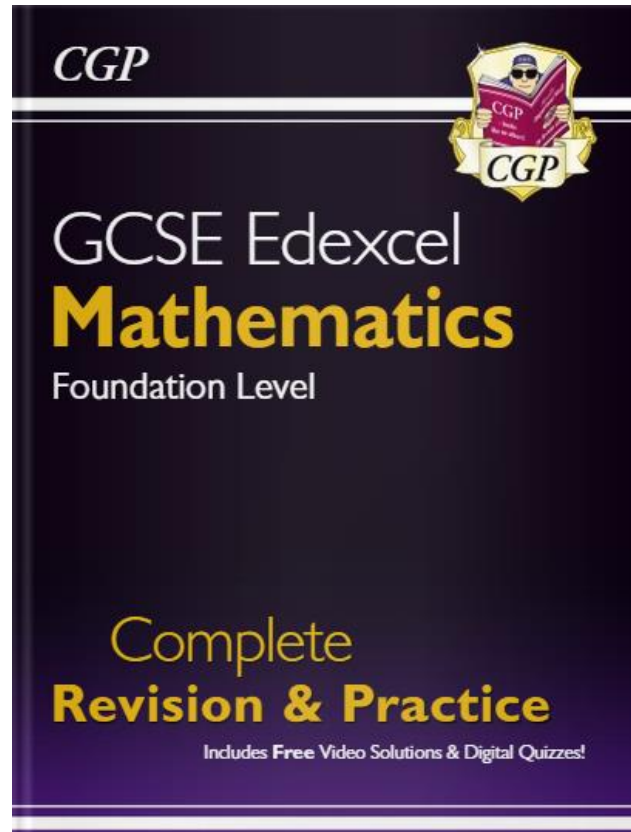
Question .....	Marks	WWW	EBI
1. Proportion	1 / 2		✓
2. Proportion	2 / 2		
3. Fractions – adding and subtracting	4 / 5		
4. Fractions – multiplying and dividing	4 / 5		
5. Fraction of an amount	0 / 2		✓
6. Percentages	0 / 3		✓
7. Fractions – problem solving	0 / 3		✓
8. Expanding and factorising	7 / 9		
9. Algebraic fractions	0 / 3		✓
10. Substituting into formulae	2 / 2		
11. Ordering fractions, decimals and percentages	0 / 2		✓
12. Simplifying expressions, factorising and expanding	7 / 8		
13. Percentages – reverse calculation			✓
14. Decimals – multiplying and dividing			✓
15. Indices	2 / 4		
16. Indices	0 / 2		✓
17. Recurring decimals	2 / 2		

Multiplying and dividing decimals



## 2) Use your **revision guide to learn** topic/content (gaps)

- Choose on topic- lets look at multiplying and dividing decimals (skill that is used in both higher and foundation tier!)



### Section One — Number

Types of Number and BODMAS.....	1
Wordy Real-Life Problems .....	2
Multiplying and Dividing by 10, 100, etc. ....	3
Multiplying and Dividing Whole Numbers ...	4
Multiplying and Dividing with Decimals .....	5
Negative Numbers.....	6
Questions .....	7
Prime Numbers .....	9
Multiples, Factors and Prime Factors.....	10
LCM and HCF .....	11
Questions .....	13
Fractions without a Calculator .....	15
Fraction Problems.....	18
Fractions, Decimals and Percentages .....	19
Questions .....	20
Rounding Numbers .....	22
Estimating.....	24
Rounding Errors.....	25
Questions .....	26
Powers.....	28
Roots .....	29
Standard Form .....	30
Questions .....	32
Revision Questions for Section One .....	34

### Multiplying and dividing decimals

#### Multiplying Decimals

- Start by **ignoring** the decimal points. Do the multiplication using **whole numbers**.
- Count the **total** number of digits after the **decimal points** in the original numbers.
- Make the answer have the **same number** of decimal places.

**EXAMPLE** Work out  $4.6 \times 2.7$   
We worked this out on page 4.

$46 \times 27 = 1242$

$4.6 \times 2.7$  has 2 digits after the decimal points.

$4.6 \times 2.7 = 12.42$

#### Dividing a Decimal by a Whole Number

For these, you just set the question out like a whole-number division but put the **decimal point** in the answer **right above** the one in the question.

**EXAMPLE** What is  $52.8 \div 3$ ? Put the decimal point in the answer above the one in the question.

$3 \overline{) 52.8}$        $3 \overline{) 22.8}$        $3 \overline{) 18.6}$       So  $52.8 \div 3 = 17.6$

3 into 5 goes once, carry the remainder of 2.      3 into 22 goes 7 times, carry the remainder of 1.      3 into 18 goes 6 times exactly.

#### Dividing a Number by a Decimal

Two-for-one here — this works if you're dividing a whole number by a decimal, or a decimal by a decimal.

**EXAMPLE** What is  $36.6 \div 0.12$ ?

1) The trick here is to write it as a fraction:  $36.6 \div 0.12 = \frac{36.6}{0.12}$

2) Get rid of the decimals by multiplying top and bottom by 100 (see p.3):  $= \frac{3660}{12}$

3) It's now a decimal-free division that you know how to solve:

$12 \overline{) 3660}$        $12 \overline{) 3660}$        $12 \overline{) 3660}$        $12 \overline{) 3660}$       So  $36.6 \div 0.12 = 305$

12 into 3 won't go so carry the 3      12 into 36 goes 3 times exactly      12 into 6 won't go so carry the 6      12 into 60 goes 5 times exactly





## 3) Use **Hegarty Maths to practice** the topic (gaps)

The screenshot shows the Hegarty Maths website interface. At the top left is the logo 'hegartymaths'. To its right are navigation links: 'Progress', 'Set work', and a search bar containing the text 'decimals'. Below the search bar, a dropdown menu displays a list of video clips with their IDs and titles:

Clip ID	Clip Title
55	Convert simple decimals to percentages
54	Convert recurring decimals to fractions 2
53	Convert recurring decimals to fractions 1
52	Convert simple decimals to fractions
50	Division of decimals
48	Multiplication with decimals
83	Convert percentages to decimals
74	Convert fractions to decimals 2

Other visible elements include a 'Me' link with a checkmark icon, a 'Important' banner, and a large blue area with text: 'As of 1st Se...', 'be succeed...', and 'Here's what your...'.

- 1) Use the search function to find the topic: decimals
- 2) Click on the relevant clip



## 3) Use **Hegarty Maths to practice** the topic (gaps)

Number > Decimals

### 48 - Multiplication with decimals

Learn how to use the column method and multiplying by powers of 10 for decimal multiplication

📺 Video length: 9 mins

🕒 Average score: 89%

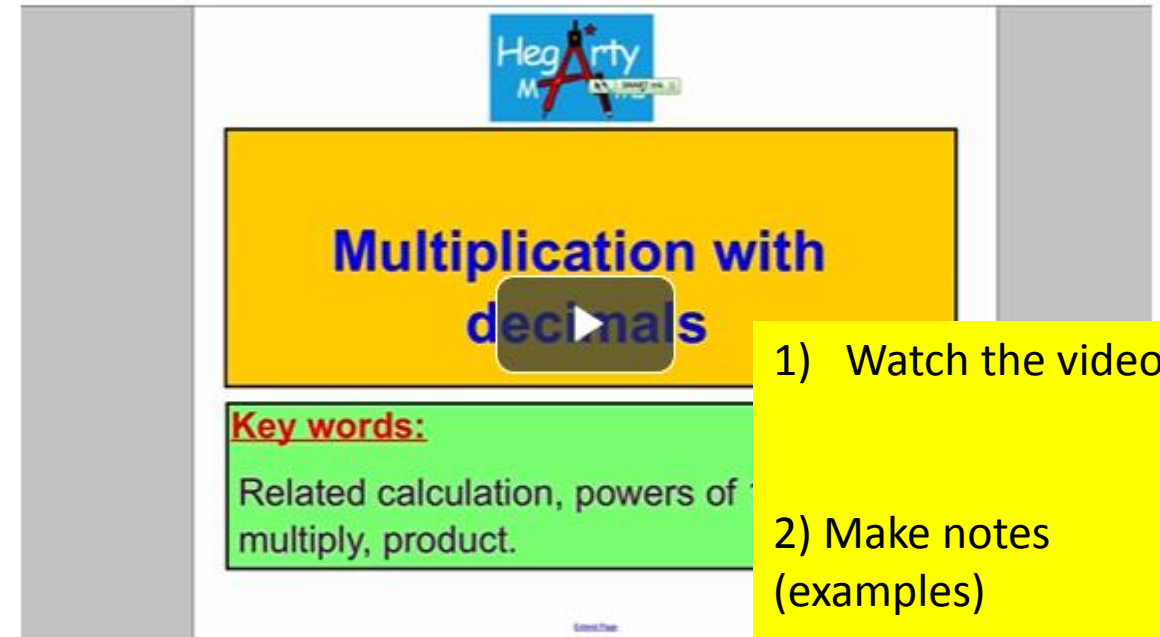
🕒 Average time to complete assessment: 8 mins

Set task

 **hegartymaths** + **Sparx Maths**

« Addition & subtraction with decimals

Division with decimal answers »



The screenshot shows a video player interface. At the top, there is a navigation bar with two buttons: « Addition & subtraction with decimals and Division with decimal answers ». Below this, the video player has a blue header with the 'Hegarty Maths' logo. The main content area features a large yellow box with the text 'Multiplication with decimals' and a play button. Below the yellow box is a green box with the text 'Key words: Related calculation, powers of multiply, product.' At the bottom of the video player, there is a small icon and the text 'Spotted a mistake in this video?'.

1) Watch the video

2) Make notes  
(examples)

3) Complete the quiz  
to practice the topic



## 4) Use **Maths Genie to test** your knowledge of the topic (gaps)

The screenshot shows the Maths Genie website homepage. At the top is a dark grey navigation bar with the Maths Genie logo and menu items: GCSE Revision, GCSE Papers, A Level Revision, A Level Papers, KS2 Revision, and Resources. Below the navigation bar is a white header area with the text 'Welcome to Maths Genie'. The main content area is divided into two columns. The left column contains four grey boxes: 'GCSE Revision' (with subtext 'Video tutorials, practice exam style questions and answers.'), 'Edexcel GCSE Papers' (with subtext 'Edexcel GCSE past papers with model solutions and video explanations.'), 'AQA GCSE Papers' (with subtext 'AQA GCSE past papers with model solutions.'), and a partially visible 'OCR GCSE Papers' box. The right column contains a white box with the text 'Maths Genie will always be free.', a search bar with the text 'Search Maths Genie' and a magnifying glass icon, and a grey box with the text '2022 Exam Advance Information' and subtext 'Advance Information (topics appearing in each paper in the November resit 2022 exam series) for all exam boards.' A yellow callout box on the left side of the page contains the text '1) Click on GCSE revision' with a blue arrow pointing to the 'GCSE Revision' link in the navigation bar.

**1) Click on GCSE revision**

*Maths Genie* GCSE Revision GCSE Papers ▾ A Level Revision A Level Papers ▾ KS2 Revision Resources

### Welcome to Maths Genie

**GCSE Revision**  
Video tutorials, practice exam style questions and answers.

**Edexcel GCSE Papers**  
Edexcel GCSE past papers with model solutions and video explanations.

**AQA GCSE Papers**  
AQA GCSE past papers with model solutions.

**OCR GCSE Papers**

Maths Genie will always be free.

Search Maths Genie

**2022 Exam Advance Information**  
Advance Information (topics appearing in each paper in the November resit 2022 exam series) for all exam boards.



## GCSE Revision

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### Grade 1

Videos	Exam Questions	Exam Questions Booklet	Solutions
<a href="#">Addition and Subtraction</a>	<a href="#">Exam Questions</a>	<a href="#">Addition and Subtraction</a>	<a href="#">Solutions</a>
<a href="#">Multiplication and Division</a>	<a href="#">Exam Questions</a>	<a href="#">Multiplication and Division</a>	<a href="#">Solutions</a>
<a href="#">Time</a>	<a href="#">Exam Questions</a>	<a href="#">Time</a>	<a href="#">Solutions</a>
<a href="#">Writing, Simplifying and Ordering Fractions</a>	<a href="#">Exam Questions</a>	<a href="#">Writing, Simplifying and Ordering Fractions</a>	<a href="#">Solutions</a>
<a href="#">Place Value</a>	<a href="#">Exam Questions</a>	<a href="#">Place Value</a>	<a href="#">Solutions</a>
<a href="#">Rounding</a>	<a href="#">Exam Questions</a>	<a href="#">Rounding</a>	<a href="#">Solutions</a>
<a href="#">Negative Numbers</a>	<a href="#">Exam Questions</a>	<a href="#">Negative Numbers</a>	<a href="#">Solutions</a>

Click on these questions to see if it is appropriate- Do the exam questions and check using the solutions

<https://www.mathsgenie.co.uk/resources/1-multiplication-and-division.pdf>



## Activity

- Identify a topic you need to revise from your Learning Checks or Assessment
- Find the topic in your revision guide
- Find the clip for that topic on Hegarty Maths
- Find the topic on Maths Genie



## Resources

- [www.hegartymaths.com](http://www.hegartymaths.com)
- [www.kerboodle.com](http://www.kerboodle.com) Access to textbook
- [www.mathswatchvle.com](http://www.mathswatchvle.com)
- Just Maths 9-1 <https://justmaths.co.uk/>
- Maths Genie <https://www.mathsgenie.co.uk/gcse.html>
- CGP Revision guides and Workbooks have been given to students.
- **Past Papers!**

- Practice
- Practice
- Practice
- And More Practice

The only way to LEARN maths is to DO maths



**WORK HARD**

**USE YOUR  
MANNERS**

THANK YOU

I'M SORRY

PLEASE

EXCUSE ME



**BE KIND**