

"Success is not final, failure is not fatal: it is the courage to continue that counts." – Winston Churchill

Year 8 W&AW 3 Revision Topics

Revising for a maths exam is not about simply reading through notes. To improve and make progress with maths you need to 'do maths' – do lots of questions on topics that you need to become more confident with.

Use these codes in the Sparx Maths Independent Practice section of the website to enable you to effectively revise for your assessment and showcase your true mathematical ability.

Topic	Sparx Maths Independent Practice Codes
Rounding	M111, M131, M431, M994
4 Operations	M429, M152, M187, M928, M347, M803, M262, M354, M491
Directed Number Operations	M106, M288
Standard Form	M678, M719
Substitution	M208, M327, M417, M979
Collecting Like Terms	M531, M795, M949
Simplifying with Indices	M150, M608
Expanding	M237, M792, M960
Solving Equations	M387, M634, M647, M707
Perimeter	M635, M690
Area	M269, M291, M303, M390, M610, M705, M996
Area & Circumference of a Circle	M595, M169, M231
Volume	M765, M722
Prime Factorisation	M108, M365
Fractions Operations	M110, M835, M931
Fractions, Decimals and Percentages	M264, M958
Percentage Increase/Decrease	M476, M533
Ratios	M885, M543, M267
n^{th} term	M991, M166
Drawing Graphs	U593, U229
Graphical Simultaneous Equations	M658
Probability	M718, M332, M941, M938, M892, M419, M834
Averages from Tables	M127, M287

NOTE: These are all the topics we have covered this year, some aspects of each of the topics will be assessed in the assessment

"Success isn't overnight. It's when every day you get a little better than the day before. It all adds up." – Dwayne Johnson

How to Log Into Sparx Maths

Sparx Maths

Student Login

You're logging in to Sparx at **Ormiston Chadwick Academy**.
[Not your school?](#)

Log in using your username and password.

Your username will usually be your name and surname without spaces.

Log in to Sparx using Microsoft

or

Use your Sparx login

Username:

Password:
 [Show](#)

[Forgotten Sparx login details?](#) Log in

If you are logged into your school emails on the device, you can just click this button to log in

If you can't remember your password, click this button and type in your details – this will send an email to your teacher getting them to reset your password.

Click the button again in a short while and it will then let you reset your password (make it memorable)

If you have never logged in before, click this button and follow the steps

[New Sparx user?](#)

You will then be brought to the following page where you will find any compulsory homework set for you by your teacher – you need to be completing this weekly to ensure you are retrieving the knowledge that you have learnt throughout the year.

Sparx MathsO XP Teacher

- Compulsory
- XP Boost
- Target
- Independent Learning

Hey Teacher,

This is your personalised Compulsory homework. You need to answer every question correctly to complete it.

0/1

Introducing Sparx Maths Not started

About Sparx Maths (1:35)

Start >

Try some questions (about 5 minutes)

Locked

Sparx Maths Tips (0:39)

Locked

If you haven't been on Sparx Maths yet this year, you will need to do this short tutorial to help you understand how the website works.

How to do Sparx Maths independent Practice

Sparx Maths Hey Teacher, This is your personalised Compulsory homework. You have 0/1

On this dropdown, you can change the curriculum level (Sparx Maths sometimes categorises things at a different stage than we do)

You can change the difficulty level to suit your confidence level

From the homepage, click the 'Independent Learning' tab to open this page.

XP Boost
Target
Independent Learning

Introducing Sparx Maths (Not started)

About Sparx Maths (1:35) Start >

Try some questions (about 5 minutes) Locked

Sparx Maths Tips (0:39) Locked

Activate Windows
Go to Settings to activate Windows.

Sparx Maths Independent Learning

Independent Learning

Find topics My activity

Type in the code from the revision list to bring up the revision for that topic

Search for topics: M354 Your curriculum: Key Stage 3 Default level: Level 3

1 topic found

Number > Dividing
Using a written method to divide integers - M354

Ratio and Proportion 3:2

Geometry

Probability

Statistics

Sparx Maths Independent Learning

Independent learning > Number > Dividing

Using a written method to divide integers - M354 Level 2

Show building blocks

Using a written method to divide integers

This will bring up the task - click on each question to revise the topic in more depth

If you are finding it difficult you can try some of the 'building blocks' tasks which will help you with the prior knowledge you need to access the main task

Introduce Question 1 Answer Question 2 Answer Question 3 Answer

Strengthen Question 1 Answer Question 2 Answer Question 3 Answer

Deepen Question 1 Answer Question 2 Answer Question 3 Answer

How to complete a Sparx Maths task

BEFORE beginning the task you need to have paper to do your working out and to write down the bookwork codes.

This will bring up the task – click on each question to revise the topic in more depth

If you are finding it difficult you can try some of the 'building blocks' tasks which will help you with the prior knowledge you need to access the main task

Write down the bookwork code before starting the question (you will be asked for this later)

Copy out the calculation below **as neatly as you can**. Work out the answer.

If you are stuck, watch the video which will be a similar question with different numbers – make notes to help you understand and then try the question again

Work out the answer on your paper, note it down then click here to type in your answer

The most important thing to remember is not to give up – if you write nothing for a question, you will definitely get it wrong, so have a guess, you will get marks for working out.

"Mistakes are the stepping stones to wisdom." - Oprah Winfrey

Key Examples for Year 8 W&AW 3

1, 2, 3, 4 "Round down/off"
5, 6, 7, 8, 9 "Round up"

TIP: Decimal places are the digits after the decimal point

e.g. Round 7.562 to 1 decimal place

$$\begin{array}{r} 7.562 \\ \downarrow \\ = 7.6 \end{array}$$

e.g. Round 0.02147 to 3 decimal places

$$\begin{array}{r} 0.02147 \\ \downarrow \\ = 0.021 \end{array}$$

TIP: When rounding down, the digits on the left of the rounding line stay the same - don't add place holders if they are after the decimal place

1, 2, 3, 4 "Round down/off"
5, 6, 7, 8, 9 "Round up"

TIP: Significant figures start from the first non-zero digit in the number

e.g. Round 0.0021527 to 3 significant figures

$$\begin{array}{r} 0.0021527 \\ \downarrow \\ = 0.00215 \end{array}$$

TIP: When rounding down, the digits on the left of the rounding line stay the same

Every calculation must be done using the order of operations:

1st { B rackets

2nd { I ndices

3rd { D ivision
M ultiplication

4th { A ddition

S ubtraction

TIP: Do addition and subtract in whichever appears first from left to right

e.g. Calculate $25 - 3 \times 2 + 3^2$

$$\begin{aligned} &= 25 - 3 \times 2 + 9 \\ &= 25 - 6 + 9 \\ &= 19 + 9 \\ &= 28 \end{aligned}$$

Standard form is a number written in the form:

$$a \times 10^n$$

a must be a number between 1 and 10 (can be 1 but not 10)
n must be a whole number (can be positive or negative)

TIP: For numbers between 0 and 1, the power is negative (the negative power means divide)

Express 43 000 000 in standard form

$$43\,000\,000 = 4.3 \times 10\,000\,000 = 4.3 \times 10^7$$

To add/subtract numbers in standard form:

STEP 1: Convert to ordinary numbers

STEP 2: Use the column method

STEP 3: Convert back to standard form

e.g. $(3 \times 10^8) + (2 \times 10^6)$

$$\begin{array}{r} 300000000 \\ + 2000000 \\ \hline 302000000 \\ = 3.02 \times 10^8 \end{array}$$

TIP: When substituting, 'swap' the letter for the number (use brackets)

e.g. $3a - 2b$ given that $a = -3, b = -4$

$$3(-3) - 2(-4) = 9 + 8 = 17$$

TIP: Multiply the number outside the bracket by the number inside the bracket

TIP: If operations are directly next to each other (and no numbers in between):
- - - - -
- - - - -
- - - - -

TIP: When multiplying and dividing with directed numbers:

$$\begin{array}{ll} - \times - = + & - \div - = + \\ - \times + = - & - \div + = - \\ + \times - = - & + \div - = - \\ + \times + = + & + \div + = + \end{array}$$

TIP: When collecting like terms, remember that a^2 is not the same as a , so you can't add these together.

$$\begin{aligned} &3a^2 + 7a + 4a^2 - 3a \\ &= 7a^2 + 4a \end{aligned}$$

TIP: Don't change the indices when adding, so $a^2 + a^2 = 2a^2$

TIP: Use the grid method to expand the brackets

e.g.

Expand $5(3x + 4)$

\times	$3x$	$+ 4$
5	$15x$	$+ 20$

$$= 15x + 20$$

TIP: To solve an equation we need to find the value of the letter

e.g. Solve $8a - 5 = 11$

$$\begin{array}{r} +5 \quad +5 \\ 8a = 16 \\ \div 8 \quad \div 8 \\ a = 2 \end{array}$$

e.g. Solve $+10 + 6y = 32$

$$\begin{array}{r} -10 \quad -10 \\ 6y = 22 \\ \div 6 \quad \div 6 \\ a = \frac{22}{6} \end{array}$$

TIP: If the number doesn't divide evenly, write as a fraction

TIP: Get rid of the smallest letter first

e.g. Solve $4a + 3 = 2a + 15$

$$\begin{array}{r} -2a \quad -2a \\ 2a + 3 = 15 \\ -3 \quad -3 \\ 2a = 12 \\ \div 2 \quad \div 2 \\ a = 6 \end{array}$$

Perimeter means the distance around the shape. Remember to add ALL the sides.

Look at the horizontal lines: $11 + 5 = 6$

Look at the vertical lines: $8 + 9 = 17$

$$\text{Perimeter} = 11 + 9 + 8 + 5 + 6 + 17 = 56\text{cm}$$

Area means the space inside the shape

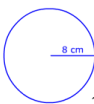
TIP: Split the shape up into shapes you know how to work out the area for.

1 $5 \times 8 = 40\text{cm}^2$

2 $11 \times 9 = 99\text{cm}^2$

Total Area: $= 40 + 99 = 139\text{cm}^2$

Area $= \pi \times r^2$



TIP: Radius is halfway, diameter is all the way across

$$\begin{aligned} &\pi \times 8^2 \\ &= 64\pi \text{ cm}^2 \text{ (in terms of } \pi) \\ &= 201.06 \text{ cm}^2 \text{ (2d.p.)} \end{aligned}$$

TIP: If you are given the diameter, remember to halve to find the radius

Circumference $= \pi \times d$



TIP: Radius is halfway, diameter is all the way across

$$\begin{aligned} &\pi \times 16 \\ &= 16\pi \text{ cm (in terms of } \pi) \\ &= 50.27 \text{ cm (2d.p.)} \end{aligned}$$

TIP: If you are given the radius, double to find the diameter

To find the volume of a prism: Cross sectional area \times length

TIP: The cross section is the front face that goes all the way through the shape

TIP: Remember to $\div 2$ for triangles