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

Year 9 WSAW 2 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.

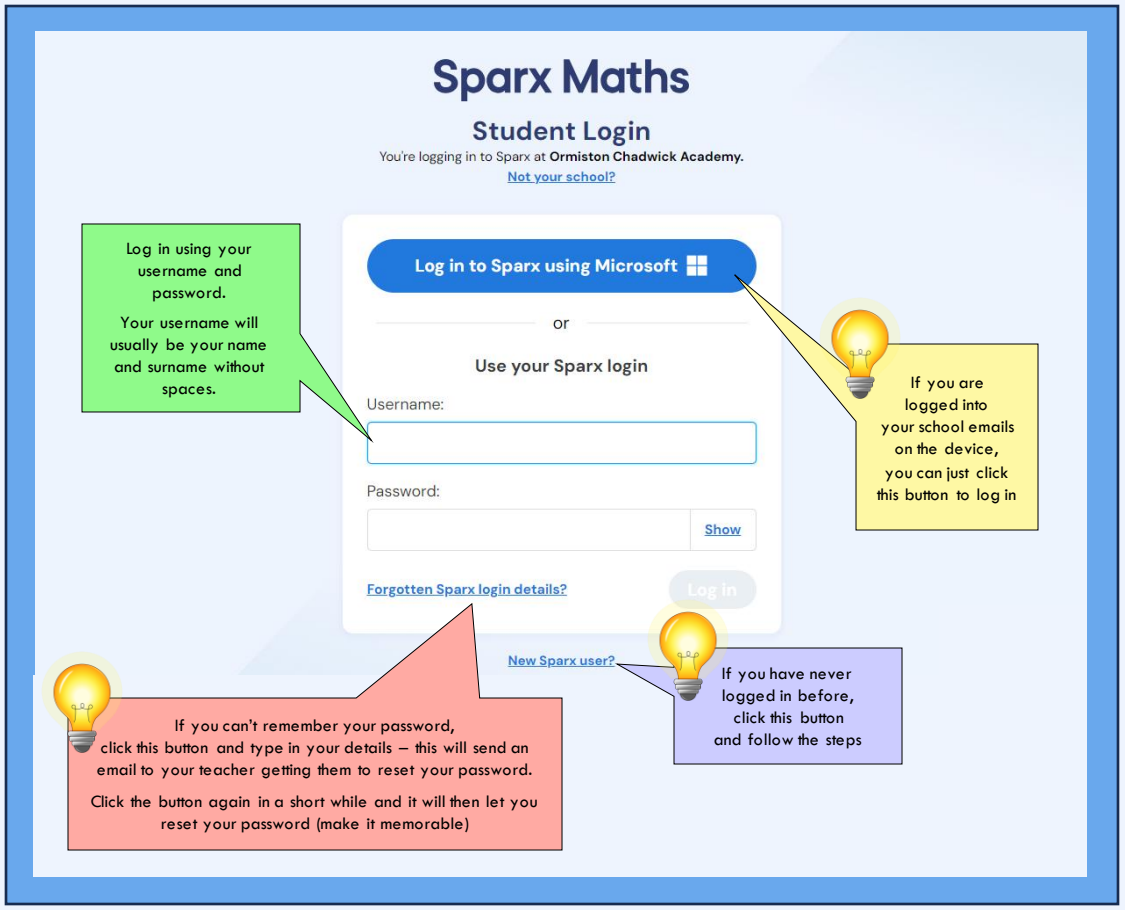
Use these codes in the Sparx Maths Independent Practice section of the website to enable you to effectively revise for your assessment and showcase your true mathematical ability.

Topic	Sparx Maths Independent Practice Codes
Estimating	M878
Directed Number Calculations	M106, M288
Mixed Number Operations	M601, M265, M931, M197, M619
Fractions, Decimals & Percentages	M264, M958
Interest	U533, U332
Original Value Problems	M528
Ratio	M885, M801, M525, M543
Expanding	M237, M792, M960
Factorising	M100
Forming & Solving Equations	M707, M634, M957
Changing the Subject of a Formulae	M184
Equation of a Line	M888, M205
Proportion	M478, M681
Surface Area	M534, M661, M936

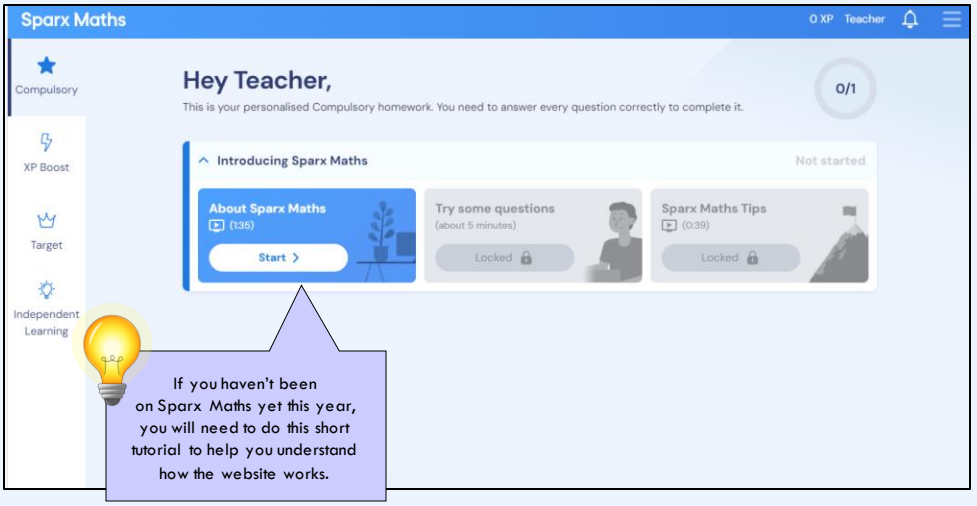
NOTE: These are all the topics we have covered this year, some aspects of each of the topics will be assessed in the assessment

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

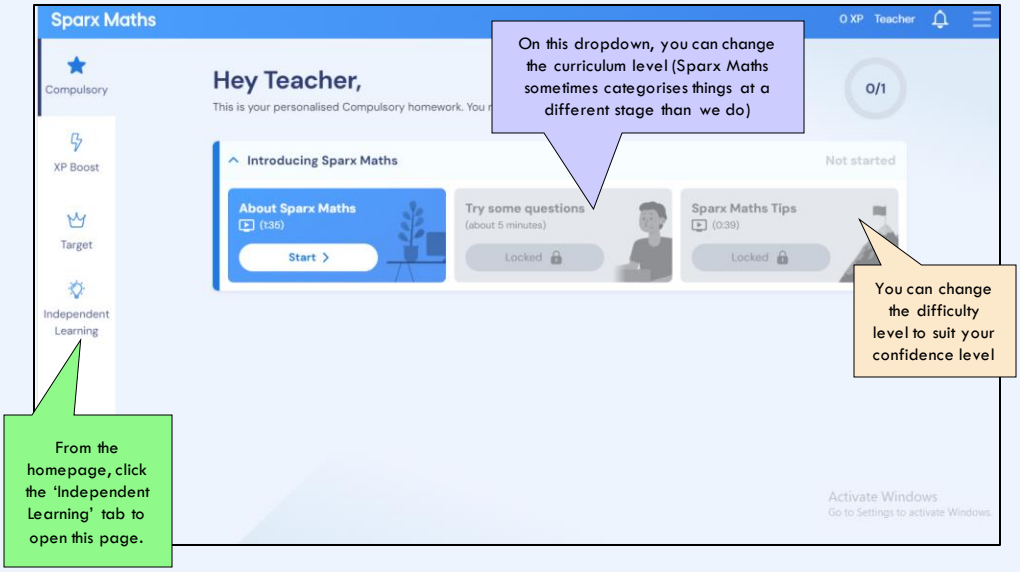
How to Log Into Sparx Maths

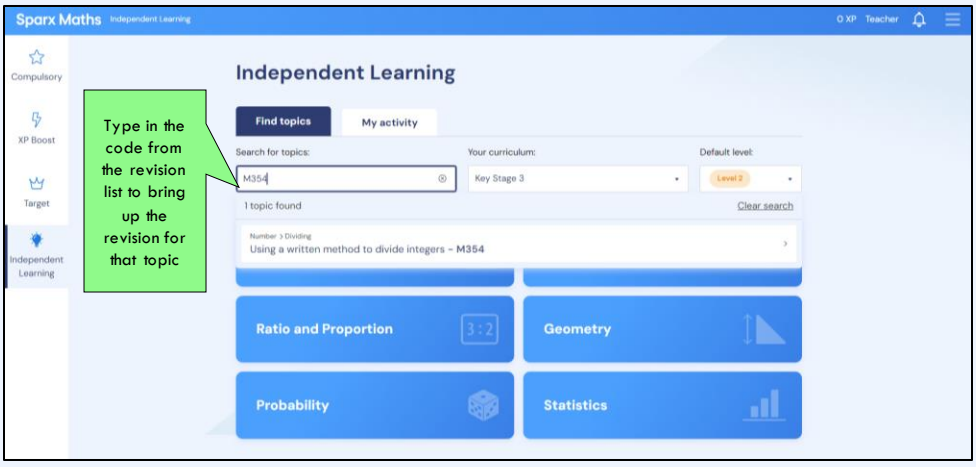


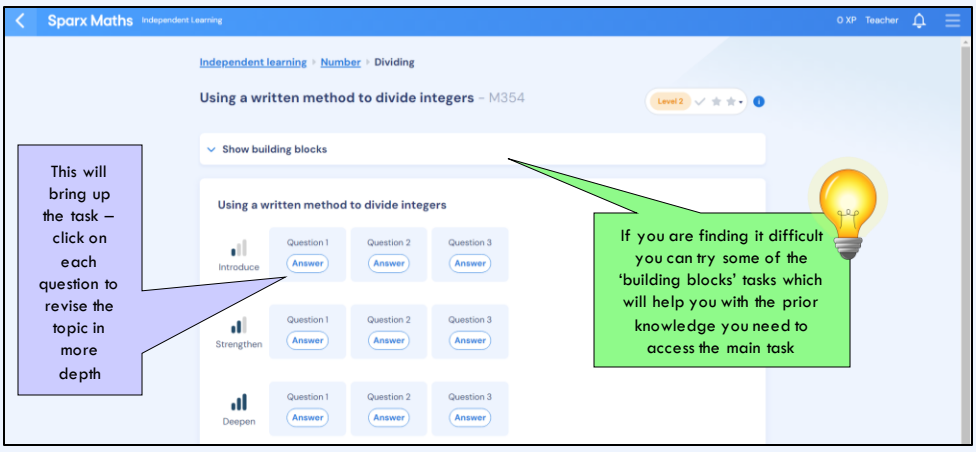
You will then be brought to the following page where you will find any compulsory homework set for you by your teacher – you need to be completing this weekly to ensure you are retrieving the knowledge that you have learnt throughout the year.



How to do Sparx Maths independent Practice

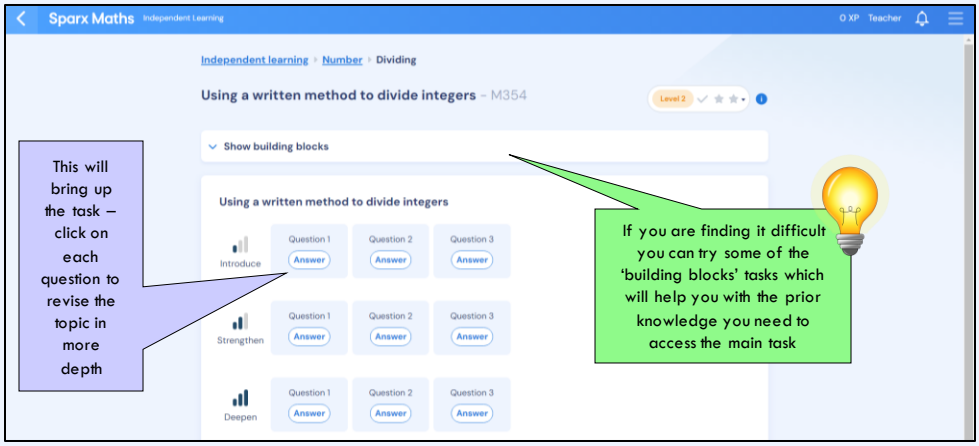


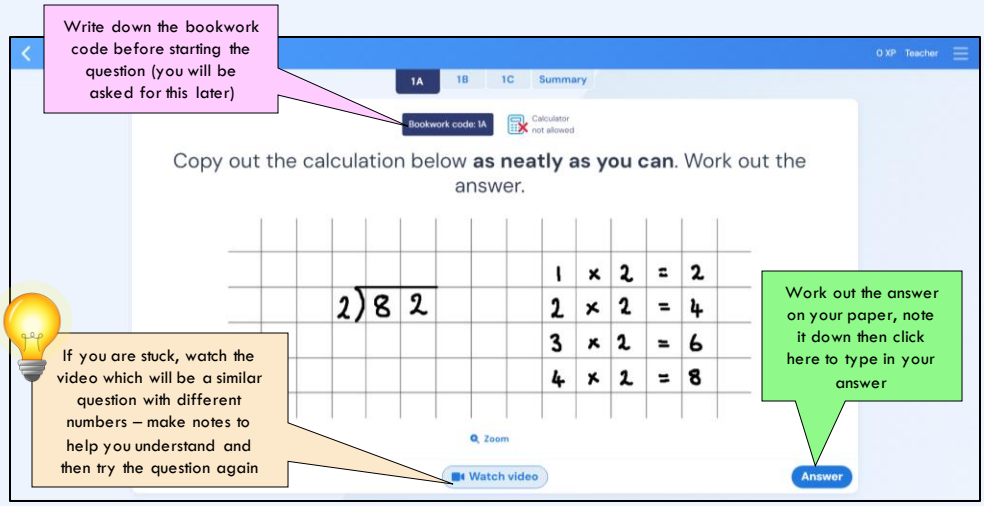




How to complete a Sparx Maths task

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





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

Key Examples for Year 9 WSAW 2

TIP: To estimate answers to calculations, round all numbers to 1 s.f. before calculating.

e.g. 3453×253
$\approx 3000 \times 300$
$= 900\,000$

To write a ratio as a fraction:

Part you want / Total parts

e.g.

boys : girls
5 : 8 (5 + 8 = 13)

5/13 are boys 8/13 are boys

Compound Interest/ Depreciation Formula

Amount × (Multiplier)$^{\%^{years}}$

TIP: To find the multiplier, add or subtract the % from 100%

e.g.

If £300 invested for 3 years with 2% interest, the calculation would be:

$£300 \times 102\%^3 = £318.36$

TIP: To add or subtract mixed numbers, convert to improper fractions first

$9\frac{1}{2} - 5\frac{3}{4}$

$9\frac{1}{2} = \frac{2 \times 9 + 1}{2} = \frac{19}{2}$

$5\frac{3}{4} = \frac{4 \times 5 + 3}{4} = \frac{23}{4}$

$= \frac{19}{2} - \frac{23}{4}$ (2 → 4)

$= \frac{38}{4} - \frac{23}{4}$

$= \frac{15}{4}$

How many are left?

$\frac{15}{4} = 3\frac{3}{4}$

How many of the bottom number fit into the top number?

TIP: To multiply mixed numbers, convert to improper fractions first

$2\frac{1}{2} \times 1\frac{2}{3}$

$2\frac{1}{2} = \frac{2 \times 2 + 1}{2} = \frac{5}{2}$

$1\frac{2}{3} = \frac{1 \times 2 + 2}{3} = \frac{5}{3}$

$= \frac{5}{2} \times \frac{5}{3}$

$= \frac{5 \times 5}{2 \times 3}$

$= \frac{25}{6}$

How many are left?

$\frac{25}{6} = 4\frac{1}{6}$

How many of the bottom number fit into the top number?

TIP: To divide mixed numbers, convert to improper fractions first

$2\frac{1}{2} \div 1\frac{2}{3}$

$2\frac{1}{2} = \frac{2 \times 2 + 1}{2} = \frac{5}{2}$

$1\frac{2}{3} = \frac{1 \times 2 + 2}{3} = \frac{5}{3}$

$= \frac{5}{2} \div \frac{5}{3}$

$= \frac{5}{2} \times \frac{3}{5}$

$= \frac{15}{10} = \frac{3}{2}$

How many are left?

$\frac{3}{2} = 1\frac{1}{2}$

How many of the bottom number fit into the top number?

To answer reverse percentage problems:

STEP 1: Work out what % the amount given is

STEP 2: Divide by the % number

STEP 3: Multiply by 100

e.g.
John pays £60 for a bag after getting 20% discount. How much did it originally cost?

100% - 20% = 80%

80% = 60 (÷ 80)
1% = 0.75 (× 80 / ÷ 100)
100% = 75 (× 100)

TIP: When answering a ratio question, think carefully about which part of the information you have been given. (In this example, it is the difference):

e.g.
Paul and Luke share some money in the ratio 4:7. **Paul gets £12 less than Luke.** How much did they have in total?

P	:	L	Total	Difference
4	:	7	11	3 (× 4)
16	:	28	44	12

They had £44 in total

TIP: When there are 3 numbers in the ratio, only include a difference column when it says 'less/more than'

TIP: To turn a fraction to a percentage, make the denominator 100:

e.g.

$\frac{7}{20} \overset{\times 5}{=} \frac{35}{100} = 35\%$

$\frac{13}{25} \overset{\times 4}{=} \frac{52}{100} = 35\%$

TIP: To change a percentage to a fraction, write the percentage over 100 and simplify.

$55\% = \frac{55}{100} \overset{\div 5}{=} \frac{11}{20}$

$8\% = \frac{8}{100} \overset{\div 4}{=} \frac{2}{25}$

TIP: To convert a decimal to a percentage, multiply the decimal by 100 (and add a percentage sign)

e.g.

$0.83 \overset{\times 100}{=} 83\%$

$0.03 \overset{\times 100}{=} 3\%$

e.g.

Factorise $4a + 20$

TIP: Think of the highest common factor of both terms

The HCF of 4a and 20 is 4
So divide both terms by 4

$4a \div 4 = a$
$+ 20 \div 4 = + 5$

$= 4(a + 5)$

TIP: Use the grid method for double brackets

e.g.

Expand and simplify
$(x + 2)(x + 3)$

×	x	+ 2
x	x^2	+ 2x
3	+ 3x	+ 6

$= x^2 + 2x + 3x + 6$
$= x^2 + 5x + 6$

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

e.g.

Solve $8a - 5 = 11$

TIP: To keep the equation balanced, do the same to both sides

$+ 5 \quad + 5$
$8a = 16$
$\div 8 \quad \div 8$
$a = 2$

e.g.

Solve $+10 + 6y = 32$

TIP: If there isn't a sign in front of the number/ letter, it is a +

$- 10 \quad - 10$
$6y = 22$
$\div 6 \quad \div 6$
$a = \frac{22}{6}$

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

TIP: Get rid of the smallest letter first

e.g.

Solve $4a + 3 = 2a + 15$

$- 2a \quad - 2a$
$2a + 3 = 15$
$- 3 \quad - 3$
$2a = 12$
$\div 2 \quad \div 2$
$a = 6$

TIP: Make x the subject means we need to get x on its own.

TIP: This is basically the same as solving equations, but instead of x = a number it will be x = an expression (mixture of letters and numbers)

e.g.

$y = 3x - 5$
$- 5 \quad - 5$
$y - 5 = 3x$
$\div 3 \quad \div 3$
$\frac{y - 5}{12} = x$

TIP: Make x the subject means we need to get x on its own.

TIP: If there are any powers, get rid of them first. Remember the inverse of ^{2} is $\sqrt{}$

e.g.

$y = (3x + 1)^2$
$\sqrt{} \quad \sqrt{}$
$y = 3x + 1$
$- 1 \quad - 1$
$y - 1 = 3x$
$\div 3 \quad \div 3$
$\frac{y - 1}{3} = x$

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.