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

Year 11 Foundation Revision Topics

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Number Topic	Sparx Maths Independent Practice Codes
Ordering positive integers	U600
Ordering decimals	U435
Ordering negative numbers	U947
Adding and subtracting positive integers	U417
Multiplying and dividing positive integers	U127, U453
Adding and subtracting negative numbers	U742
Multiplying and dividing negative numbers	U548
Adding and subtracting decimals	U478
Multiplying and dividing with place value	U735
Multiplying and dividing with decimals	U293, U868
Order of operations	U976
Prime numbers, prime factorisation	U236, U739
Factors, multiples, HCF and LCM	U211, U751, U529
Powers and roots	U851
Using standard form	U330, U534
Calculating with standard form	U264, U290, U161
Equivalent fractions and simplifying fractions	U704, U646
Mixed numbers and improper fractions	U692
Ordering fractions	U746
Addition and subtraction of fractions	U736, U793
Multiplication and division of fractions	U475, U544
Converting and ordering fractions, decimals and percentages	U888, U594
Fractions of amounts	U881, U916
Percentages of amounts	U554, U349
Percentage change	U773, U671
Reverse percentages	U286, U278
Simple interest	U533
Rounding	U480, U298
Fractions	U224, U538, U793
Factors, multiples and primes	U739, U250
Percentage change	U671, U332, U988
Standard form	U330, U534, U264, U290
Error intervals	U657

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Algebra Topic	Sparx Maths Independent Practice Codes
Algebraic expressions	U613
Collecting like terms	U105
Substitution	U201, U585, U144
Expanding brackets	U179, U768
Factorising expressions	U365
Index laws	U235, U694, U662, U103
Changing the subject	U556
Coordinates	U789, U889
Midpoints	U933
Plotting straight line graphs	U741
Equations of straight line graphs	U315, U669
Parallel lines	U377
Distance-time graphs	U403, U914, U462, U966
Quadratic graphs	U989, U667
Linear equations	U755, U325, U870, U505, U599
Quadratic expressions and equations	U178, U228
Linear sequences	U213, U530, U498, U978
Other sequences	U958, U680
Linear equations	U325, U870, U599
Linear inequalities	U759, U738, U145, U337
Index laws	U662
Linear simultaneous equations	U760, U757, U836, U137
Linear graphs and coordinates	U315, U669, U477, U848, U377
Quadratic graphs and equations	U989, U667, U228, U601

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Ratio & Proportion Topic	Sparx Maths Independent Practice Codes
Simplifying ratios	U687
Sharing amounts in a ratio	U753, U577
Converting between ratios, fractions and percentages	U176
Direct proportion	U721, U640
Inverse proportion	U357, U364
Proportion graphs	U238
Units of measure: Length, Mass and Capacity	U102, U388
Units of measure: Time	U902
Units of measure: Area	U248
Currency conversion	U610
Conversion graphs	U652, U638, U862
Compound units: Speed	U151
Ratio	U687, U753, U176, U577, U921, U865
Speed	U151
Density and pressure	U910, U527
Proportion	U721, U357, U610

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Geometry Topic	Sparx Maths Independent Practice Codes
Properties of 2D shapes	U121, U849
Properties of 3D shapes	U719
Nets of 3D shapes	U761
Angles: Measuring, Drawing and Estimating	U447
Angle on a line and about a point	U390
Vertically opposite angles	U730
Angles on parallel lines	U826
Angles in a triangle	U628
Combining angle facts	U655
Angles in a quadrilateral	U732, U329
Angles in polygons	U427
Bearings	U525, U107
Translations	U196
Reflections	U799
Enlargements	U519
Rotations	U696
Congruence	U790, U866
Area and perimeter of simple shapes	U993, U970, U351, U226
Area of triangles, parallelograms and trapeziums	U945, U575, U424, U265, U343
Circles	U767
Circumference	U604, U221
Circle area	U950, U373
Surface area	U929, U259, U871
Volume of cuboids	U786
Volume of prisms and cylinders	U174, U915
Similar shapes	U551, U578
Scale diagrams	U257
Properties of 2D shapes	U121, U849
Area	U226, U343, U950
Volume	U786, U174, U915
Angles	U655, U826, U329, U427
Pythagoras' theorem	U385
Trigonometry	U605, U283, U545

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Probability Topic	Sparx Maths Independent Practice Codes
Probability scale	U803
Probability of single events	U408, U510, U683
Experimental probability	U580
Expected outcomes	U166
Calculating probabilities	U408, U510, U683, U580
Listing elements in a set	U748, U296
Probability from Venn diagrams	U476
Frequency trees	U280
Sample space diagrams	U104
Tree diagrams	U558, U729

Statistics Topics	Sparx Maths Independent Practice Codes
Collecting data, frequency tables	U322, U120
Two-way tables	U981
Bar charts	U363, U557
Pictograms	U506
Pie charts	U508, U172
Stem and leaf diagrams	U200, U909
Mode	U260
Mean	U291
Median	U456
Range	U526
Choosing averages	U717
Scatter graphs	U199, U277, U128
Averages	U569
Averages with grouped data	U877
Sampling	U162
Frequency polygons	U840

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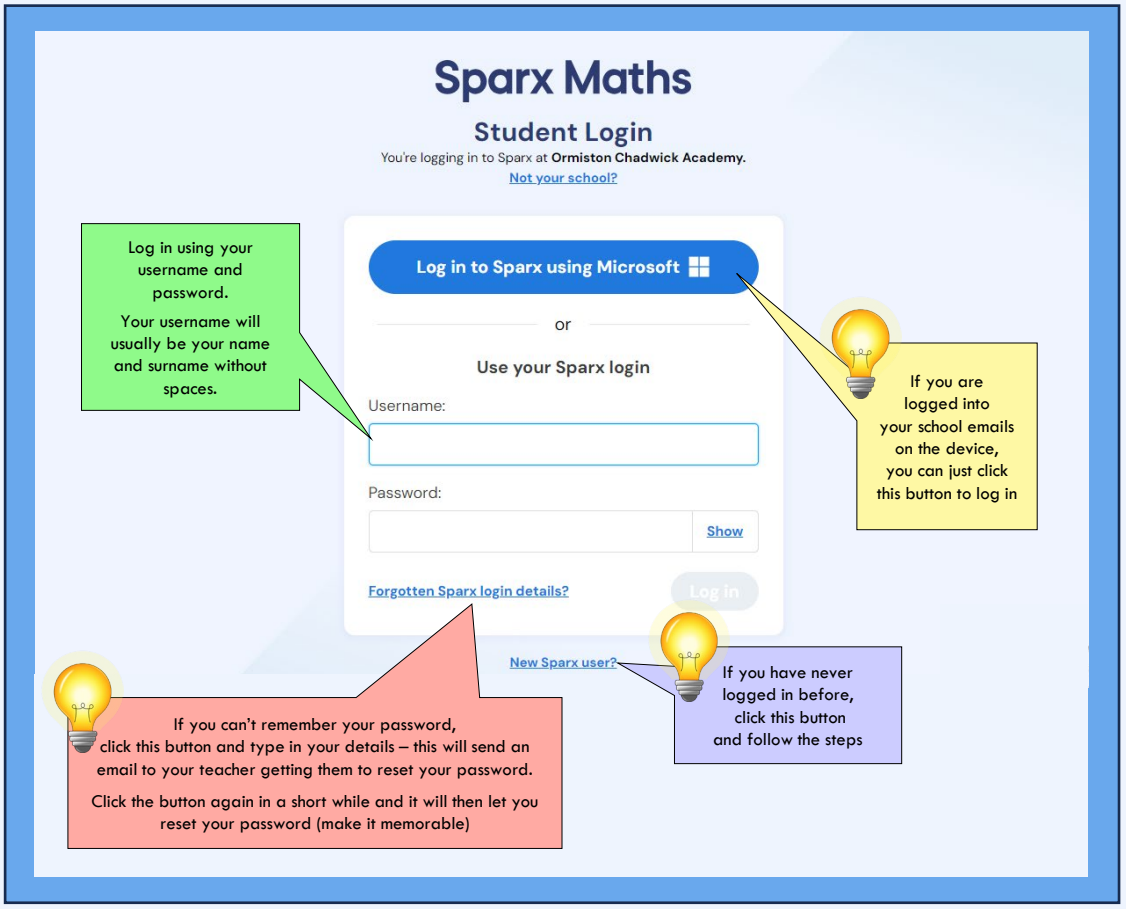
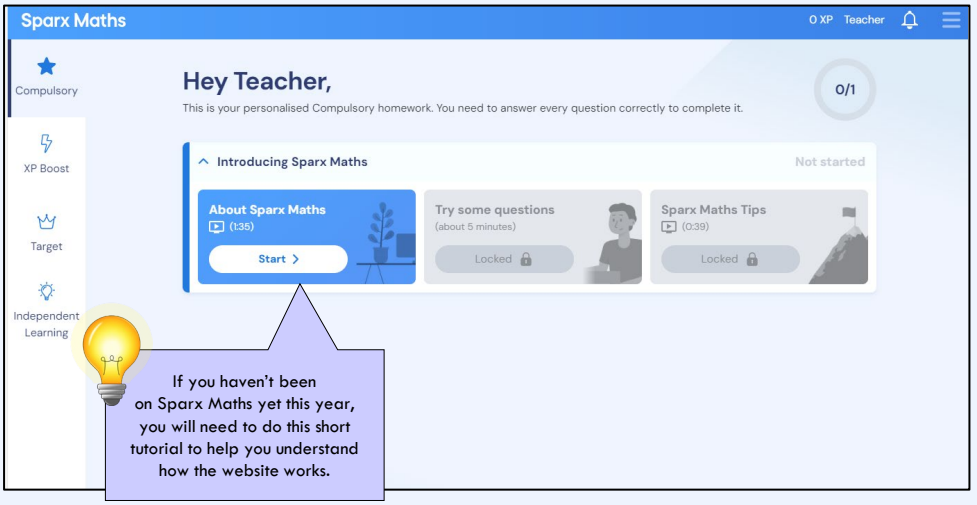
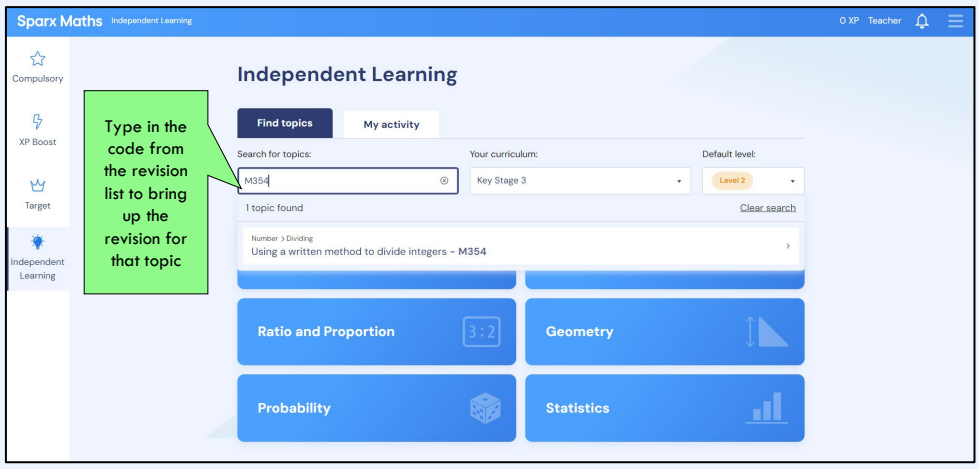
How to Log Into Sparx Maths

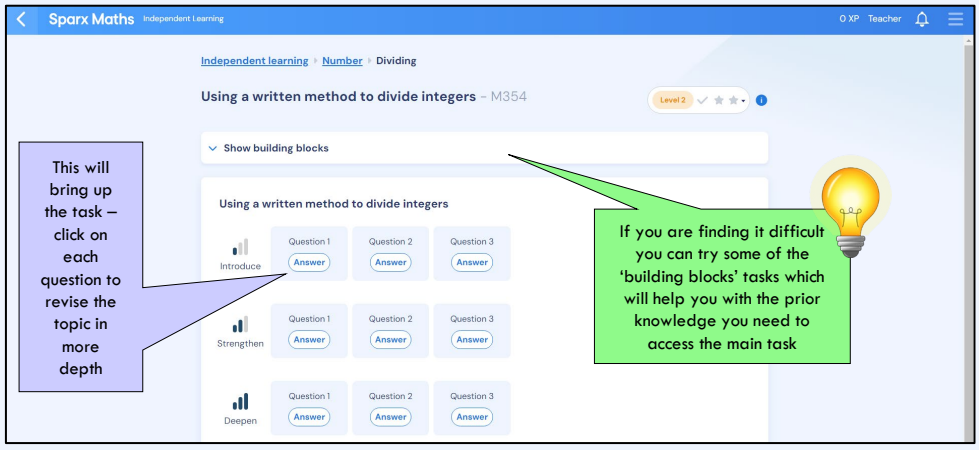


You will then be brought to the following page where you will find any compulsory homework set for you by your teacher – you need to be completing this weekly to ensure you are retrieving the knowledge that you have learnt throughout the year.



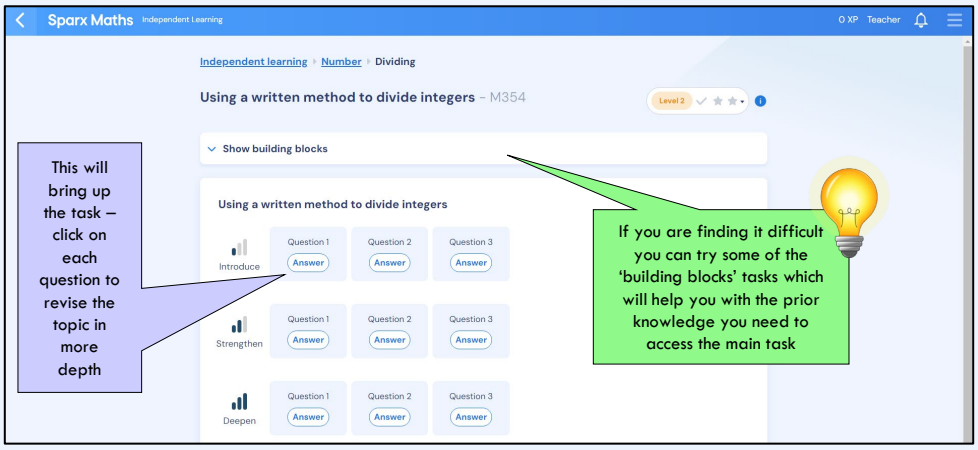
How to do Sparx Maths independent Practice

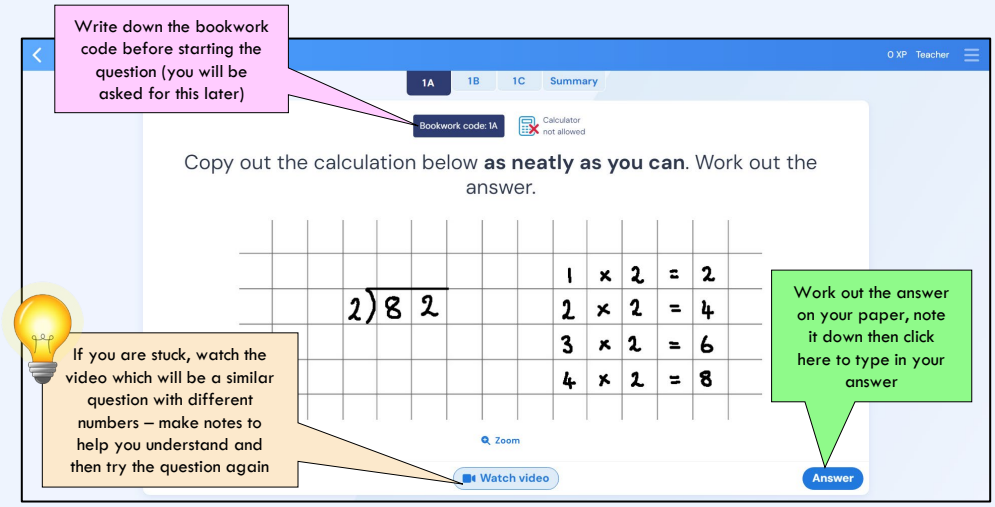




How to complete a Sparx Maths task

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 Frequent Questions

e.g. Find $\frac{2}{3}$ of 12

STEP 1: Divide the amount by the denominator (bottom number)

12 ÷ 3 = 4

STEP 1: Multiply the answer by the numerator

4 × 2 = 8

TIP: To find a percentage of an amount:

Percentage × Amount ÷ 100

e.g.

Find 82% of 444.

82 × 444 ÷ 100 = 364.08

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: 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: To simplify an expression, collect 'like' terms

4a + b – 6a – 3b

= – 2a – 2b

TIP: Use a number line to help with the negatives

TIP: To find the time passed, count to the next hour, then the hour needed, then the final time

e.g.

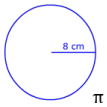
How many minutes are between 5:24pm and 7:10pm?

+ 36 mins + 60 mins + 10 mins

5:24pm 6:00pm 7:00pm 7:10pm

36 + 60 + 10 = **106 mins**

Area = $\pi \times r^2$



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

$\pi \times 8^2$

$= 64\pi$ cm^2 (in terms of π)

$= 201.06$cm^2 (2d.p.)

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

TIP: Factors are numbers that fit into a number without remainders

e.g.

List the factors of 36

Find the numbers that 'multiply' to make 36

1 × 36 = 36
2 × 18 = 36
3 × 12 = 36
4 × 9 = 36
6 × 6 = 36

So the factors are **1, 2, 3, 4, 5, 9, 12, 18, 36**

TIP: Do them in this order so you don't miss any out

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 + 5

8a = 16

÷ 8 ÷ 8

a = 2

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

TIP: Multiples are the numbers in your times tables

e.g.

The multiples of 6 are

6, 12, 18, 24, 30, ...

What is the 7th multiple of 6?

7 × 6 = 42

What is the 10th multiple of 16?

10 × 16 = 160

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 ÷ 4 = a

+ 20 ÷ 4 = + 5

= 4(a + 5)

TIP: Use the grid method to expand the brackets

e.g.

Expand 5(3x + 4)

×	3x	+ 4
5	15x	+ 20

= 15x + 20

1, 2, 3, 4 "Round down/off"

5, 6, 7, 8, 9 "Round up"

TIP: Draw the rounding line after the 'rounding column'

e.g.

Round 7562 to the nearest 100

7562

= 7600

e.g.

Round 18 329 to the nearest 1000

18329

= 18000

TIP: When rounding down, the digits on the left of the rounding line stay the same (the ones on the right become zeros)

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 × 10 000 000

$= 4.3 \times 10^7$

Area of a Parallelogram:
The area of a parallelogram is base × perpendicular height
(Perpendicular means 90°)

Area of a Rectangle:
The area of a rectangle is base × height

Area of a Triangle:
The area of a triangle is base × perpendicular height ÷ 2
(Perpendicular means 90°)

Area of a Trapezium:
Half the sum of the parallel sides, then times the height between them. That is how to calculate the area of a trapezium

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.