

GCSE Maths Practice

Foundation to Intermediate

uklearninghub.com

21 original worksheets for Foundation practice (Grades 1-5) and an intermediate Grade 6 bridge.

Independently created and aligned by topic to Edexcel GCSE Maths Foundation (1MA1); not affiliated with Pearson or copied from Pearson materials. The first 16 sheets focus on Foundation fluency and application; B01-B05 stretch towards Grade 6.

Use with the separate answer booklet. Mark method as well as answers.

F01 Number and place value

Foundation | Non-calculator fluency.

Name: _____ Date: _____

1. Write 0.0047 as a fraction of 10,000.

2. Order: -3.2, -3.02, 0.3, -0.32.

3. Round 8,746 to 2 significant figures.

4. Find 15% of 260.

Stretch - Calculate: $-14 - 7 + 23$.

F02 Fractions

Foundation | Show common denominators.

Name: _____ Date: _____

1. Simplify $18/30$.

2. $3/4 + 5/12 =$

3. $5/6 - 1/4 =$

4. Find $3/8$ of 240.

Stretch - A recipe uses $3/5$ of a 750 g bag of flour. How much flour is used?

F03 Decimals and percentages

Foundation | Convert and calculate.

Name: _____ Date: _____

1. Write 0.375 as a percentage.

2. Write 62% as a decimal.

3. Increase £48 by 15%.

4. A price of £80 is reduced by 25%. Find the sale price.

Stretch - A quantity increases from 120 to 150. Find the percentage increase.

F04 Ratio and proportion

Foundation | Use equivalent ratios.

Name: _____ Date: _____

1. Simplify 18:24.

2. Share £84 in the ratio 3:4.

3. 5 pencils cost £3.75. Find the cost of 8 pencils.

4. A map uses 1 cm : 2.5 km. What does 7.2 cm represent?

Stretch - Paint is mixed red:yellow = 2:5. For 42 litres total, how much is red?

F05 Standard arithmetic

Foundation | Show a reliable written method.

Name: _____ Date: _____

1. $3.74 \times 0.6 =$

2. 8.52 divided by 0.4 =

3. Find the HCF of 36 and 54.

4. Find the LCM of 8 and 12.

Stretch - A taxi charges £3.20 plus £1.45 per mile. Find the cost of 7 miles.

F06 Powers, roots and standard form

Foundation | Use index notation.

Name: _____ Date: _____

1. $2^5 =$

2. $\sqrt{196} =$

3. Write 0.00063 in standard form.

4. Write 4.8×10^5 as an ordinary number.

Stretch - Calculate $(3 \times 10^4) \times (2 \times 10^3)$.

F07 Algebra basics

Foundation | Collect like terms and substitute.

Name: _____ Date: _____

1. Simplify: $7x - 3 + 5x + 8$.

2. Expand: $4(2y - 3)$.

3. Factorise: $15a + 20$.

4. When $x = -2$, find $3x^2 - 4$.

Stretch - A rectangle has length $3x + 2$ and width x . Write an expression for its perimeter.

F08 Linear equations

Foundation | Keep equations balanced.

Name: _____ Date: _____

1. $5x - 7 = 18$.

2. $3(y + 4) = 27$.

3. $4a + 9 = 2a + 21$.

4. $7 - 2m = 19$.

Stretch - The cost $C = 4n + 12$. If $C = 60$, find n .

F09 Sequences and coordinates

Foundation | Use patterns and graphs.

Name: _____ Date: _____

1. Find the next two terms: 6, 11, 16, 21, ...

2. Find the n th term of 4, 7, 10, 13, ...

3. For $y = 2x - 3$, find y when $x = 5$.

4. Translate $(-1, 4)$ by vector $(3, -2)$.

Stretch - Is 100 in the sequence $3n + 1$? Explain.

F10 Angles and polygons

Foundation | Give reasons.

Name: _____ Date: _____

1. Find the third angle of a triangle with angles 38 and 79 degrees.

2. An angle on a straight line is 128 degrees. Find the other angle.

3. Find each exterior angle of a regular octagon.

4. Find the sum of interior angles of a pentagon.

Stretch - A regular polygon has interior angle 150 degrees. How many sides?

F11 Perimeter, area and volume

Foundation | Include correct units.

Name: _____ Date: _____

1. Find the area of a triangle with base 14 cm and height 9 cm.

2. Find the volume of a cuboid 8 cm by 5 cm by 3 cm.

3. A rectangle has perimeter 46 cm and length 15 cm. Find its width.

4. A circle has diameter 10 cm. Find circumference, to 1 d.p.

Stretch - A 12 m by 8 m lawn has a 3 m by 2 m pond. Find grass area.

F12 Pythagoras and right-angled triangles

Foundation | Draw and label a sketch.

Name: _____ Date: _____

1. A right triangle has shorter sides 5 cm and 12 cm. Find the hypotenuse.

2. A 10 m ladder reaches 8 m up a wall. How far is its base from the wall?

3. State Pythagoras' theorem.

4. Is a triangle with sides 6, 8 and 11 right-angled?

Stretch - A square has diagonal 14.1 cm. Estimate its side length.

F13 Transformations

Foundation | Describe fully.

Name: _____ Date: _____

1. Reflect (3, -2) in the x-axis.

2. Rotate (2, 1) 90 degrees anticlockwise about origin.

3. Enlarge a 4 cm line by scale factor 1.5. New length?

4. A shape moves 5 right and 2 down. Give the vector.

Stretch - A shape is enlarged by scale factor 2 about the origin. Point (3, -1) maps to?

F14 Probability

Foundation | Give answers as fractions where possible.

Name: _____ Date: _____

1. A fair spinner has 8 equal sectors, 3 blue. $P(\text{blue}) =$

2. $P(\text{not blue})$ for the spinner above =

3. A bag has 4 red and 6 green counters. $P(\text{red}) =$

4. Two fair coins are tossed. $P(\text{exactly one head}) =$

Stretch - A game is won with probability 0.3. Estimate wins in 250 games.

F15 Statistics

Foundation | Select the right measure.

Name: _____ Date: _____

1. Find the mean of 4, 7, 9, 10, 15.

2. Find the median of 3, 5, 8, 8, 11, 14.

3. Find the range of 21, 12, 18, 27.

4. Which average is affected most by an extreme value?

Stretch - The mean of five scores is 12. Four scores total 39. Find the fifth.

F16 Financial maths and measures

Foundation | Calculator allowed.

Name: _____ Date: _____

1. Simple interest on £600 at 4% for one year.

2. A salary of £18,500 rises by 3%. Find new salary.

3. Convert 2.35 m³ to litres.

4. Convert 72 km/h to m/s.

Stretch - A car travels 168 miles using 24 litres. Find miles per litre.

B01 Bridge: simultaneous equations

Intermediate bridge | Grade 6 preparation.

Name: _____ Date: _____

1. Solve: $x + y = 13$ and $x - y = 5$.

2. Solve: $2x + y = 11$ and $x - y = 1$.

3. A pen and book cost £7. A book costs £3 more than a pen. Find both prices.

Stretch - Solve: $3x + y = 17$ and $x + y = 9$.

B02 Bridge: quadratics

Intermediate bridge | Expand and factorise.

Name: _____ Date: _____

1. Expand: $(x + 4)(x + 7)$.

2. Factorise: $x^2 + 9x + 20$.

3. Solve: $x^2 - 5x = 0$.

4. Solve: $x^2 - x - 12 = 0$.

Stretch - The area of a rectangle is $x^2 + 7x + 12$. Factorise to find possible side expressions.

B03 Bridge: trigonometry

Intermediate bridge | Right-angled triangles.

Name: _____ Date: _____

1. In a right triangle, opposite = 6 and hypotenuse = 10. Find $\sin \theta$.

2. Find θ if $\sin \theta = 0.5$.

3. A 12 m ramp rises 3 m. Find angle to horizontal, to 1 d.p.

4. State which ratio uses opposite and adjacent.

Stretch - A kite string is 25 m at an angle of 38 degrees to ground. Estimate height.

B04 Bridge: graphs and gradients

Intermediate bridge | Interpret linear functions.

Name: _____ Date: _____

1. Find gradient of line through (1, 3) and (5, 11).

2. Find equation of line with gradient 3 and y-intercept -4.

3. Find x-intercept of $y = 2x - 8$.

4. Are $y = 4x + 1$ and $y = 4x - 6$ parallel?

Stretch - Find equation of line through (0, 5) and (2, 1).

B05 Bridge: compound change

Intermediate bridge | Multiplier methods.

Name: _____ Date: _____

1. Increase £250 by 8% then decrease the result by 8%.

2. A population of 12,000 grows by 2.5%. Find new population.

3. A value is multiplied by 0.84. What percentage decrease is this?

4. After a 20% discount, a coat costs £56. Find original price.

Stretch - A value grows by 5% each year for 3 years from 400. Calculate final value.
