

GCSE Foundation Maths

Recovery guidance

The COVID-19 pandemic has been disruptive for all learners, resulting in wider attainment gaps and reduced motivation. Disadvantaged students and those from lower socio-economic backgrounds have fallen further behind than their peers during this time, and face greater barriers to recovering lost learning and boosting engagement and confidence.

Targeted academic support

There are a wide range of evidence-based strategies that schools can implement to support recovery for all their students, and to help bridge gaps in learning and understanding. These could include:

- **Diagnostics** to help target interventions and focus on a small number of learning goals.
- **One-to-one and small group interventions** linked to in-class teaching and the curriculum to provide tailored support in a structured setting.
- **Homework** and homework clubs to help students progress towards mastery of key learning objectives, and to develop effective learning habits.

The booklet is intended to help teachers and teaching assistants use Pearson resources to deliver structured interventions and to provide targeted academic support for students preparing for **Pearson Edexcel GCSE Mathematics** at the **Foundation tier**. The Target and Bootcamp workbooks are designed to be used in a mediated setting or independently, and to provide an adaptable resource to support learning and recovery for all Foundation GCSE Maths students.

This booklet provides strategies for making the most of the Target and Bootcamp workbooks:

An overview of the Target and Bootcamp workbooks

Pages 2–3

Support for interventions and homework using Target and Bootcamp

Pages 4–5

Links to the Pearson Edexcel Scheme of Work to support core teaching

Pages 6–7

Addressing barriers to learning and links to further resources

Page 8

Target Grade 5 Workbooks

These books are designed to reinforce skills and build confidence to help your students succeed in Foundation GCSE Maths. They are available in separate versions for students targeting grade 3 and students targeting grade 5.

With an emphasis on targeting areas of underperformance and tackling common misconceptions, these workbooks can provide a framework for delivering recovery strategies for all Foundation GCSE Maths students.



Students using these books can follow a three-step process to catch up, keep up and make expected progress.

1. Get started

Students can check their prior learning, learn key skills and assess their own confidence.

1 Factorise
 $3x + xt$

How confident are you?

2 Factorise
 $4x^2 + 8x$

3 Expand
 $(x + 2)(x + 5)$

Guided practice

Work out
 $1\frac{1}{2} \times \frac{3}{4}$

Write as improper fractions.
 $= \frac{\quad}{2} \times \frac{\quad}{4}$

Multiply numerators and denominators.
 $= \frac{3 \times 3}{2 \times 4}$

Write as a mixed number.
 $= 1\frac{1}{8}$

The numerator is the 'top' of the fraction. The denominator is the 'bottom'.

$1\frac{1}{2} \times \frac{3}{4}$ means $1\frac{1}{2}$ lots of $\frac{3}{4}$

1 of $\frac{3}{4}$

1/2 of $\frac{3}{4}$

2. Skills boost

Guided practice questions on key skills provide scaffolding to help students overcome barriers to learning.

3. Get back on track

Students can check their skills and reinforce their learning with targeted practice. Opportunities to tackle exam-style questions and practise problem-solving skills can encourage goal setting and restore ambition.

Check up

Tick the calculation equivalent to $3\frac{1}{4} + 1\frac{3}{5}$.

A $\frac{31}{4} + \frac{13}{5} = \frac{207}{20}$

B $\frac{13}{4} + \frac{6}{5} = \frac{21}{9}$

C $\frac{13}{4} + \frac{6}{5} = \frac{97}{20}$

If you ticked C go to Q4. If you ticked A or B go to Q1 for more practice.

1 $1\frac{3}{5}$ a How many $\frac{1}{5}$ s in 1? b How many $\frac{1}{5}$ s in $1\frac{3}{5}$?

2 $3\frac{1}{4}$ a How many $\frac{1}{4}$ s in 3? b How many $\frac{1}{4}$ s in $3\frac{1}{4}$?

3 a $\frac{5}{4} + \frac{9}{8} =$ b $\frac{11}{6} + \frac{5}{3} =$ c $\frac{9}{5} + \frac{7}{2} =$

4 a $1\frac{1}{3} \div \frac{5}{8} =$ b $2\frac{1}{5} \div \frac{3}{5} =$ c $3\frac{2}{5} \div 1\frac{1}{4} =$

Answers

Unit 1 Mixed numbers

AO1 Fluency check

Glossary

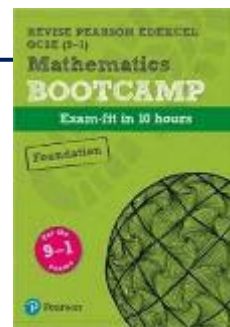
Unit 1 Mixed numbers

Mixed numbers have a whole-number part and a fraction part.
The lowest common multiple (LCM) of two numbers is the smallest number that is a multiple of both numbers.
The numerator is the top number of a fraction.
The denominator is the bottom number of a fraction.
An improper fraction has a numerator that is bigger than its denominator.
The reciprocal of a fraction is the 'upside down' or inverse of the fraction.

A glossary of common terms and answers in the back of the book support the use of these resources for homework and independent study.

Foundation GCSE Maths Bootcamp

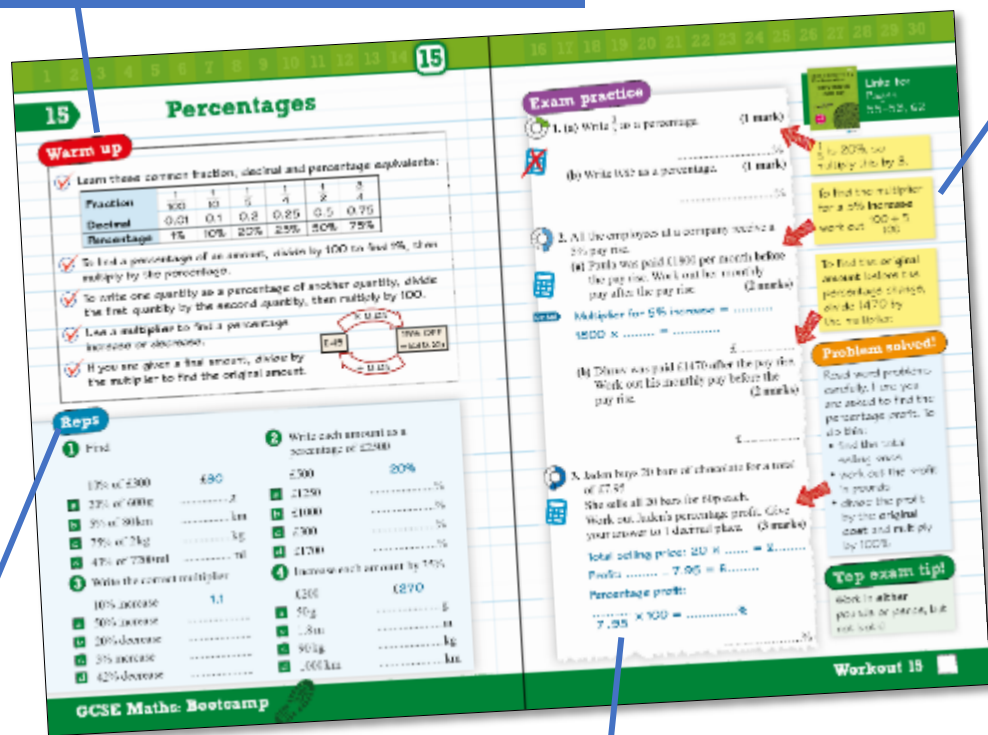
This book is designed to maximise the amount of targeted revision that can be achieved in the minimum amount of time, and to support students working to fill gaps in their learning and build their confidence and exam technique. It covers all the key topics in the Foundation GCSE specification in 30 short lessons, allowing students to track their progress and take ownership of their learning.



Each lesson can be completed in approximately 20 minutes, either independently or in a one-to-one or small group setting.

Quick **warm-ups** cover all of the key facts, formulae and techniques for each lesson. This material provides a quick reference for students working independently, or can be used to structure a review of prior learning at the beginning of a mediated intervention.

Hints and tips review and reinforce key points, formulae and techniques.



Reps are multiple choice questions covering the basic skills. They can be used as quick diagnostic tools, or to build confidence before tackling exam-style questions.

Exam-style practice questions at a range of difficulty levels increase students' familiarity with exam formatting and promote good technique for writing answers. Guided practice questions model best-practice and help students access trickier questions by completing partial answers, and the Pearson Progression Scale helps students identify the level of challenge of each question.

Complete **worked solutions** with the question text reproduced makes self-review easier and gives students access to model solutions. These best-practice solutions can also help non-specialist teachers and teaching assistants support students in their learning.

(b) Dhruv was paid £1470 **after** the pay rise. Work out his monthly pay **before** the pay rise.

$$1470 \div 1.05 = 1400$$

£1400

Resources to support structured intervention

One-to-one and small group structured interventions are very effective ways of improving student outcomes. They can be mediated by teachers, teaching assistants or other adults and provide students with targeted support to reinforce in-class teaching and recover lost learning.

There are a range of considerations to make sure that interventions are as effective as possible.

Intervention sessions should typically be brief (20–30 minutes) and regular (3–5 times a week), and delivered over a set period of time, up to 10 weeks.

Bootcamp provides 30 short lessons, each intended to be delivered in 20 minutes. These lessons cover all the key areas in the Foundation GCSE Maths specification and could be used as the framework for an intervention programme. A Target unit could form the basis of a longer lesson, or an individual skills boost could be used to scaffold a short intervention.

Interventions should have structured supporting resources and should cover clear learning objectives. Clear lesson plans can help teaching assistants or non-specialists deliver effective sessions.

Using a small set of manageable and consistent resources will help students build confidence, stay organised and take ownership of their learning. Structuring sessions around a workbook provides an easy-to-follow lesson order and allows teachers or teaching assistants to assign work quickly and easily. Write-on workbooks help students keep all of their work in one place and allow students to review material either in advance of or after a session.

Programmes involving teaching assistants or other adults can often be less effective than those involving subject-specialist teachers.

Resources designed for independent study such as Target and Bootcamp provide scaffolding, guided solutions, and hints and tips which can provide additional structure to support non-specialists. Worked examples and answers makes it easier for non-specialists to provide feedback, and key points and learning objectives help ensure that tasks closely match the objectives of the session.

Small-group interventions can be cost-effective to implement but are most impactful when group sizes are smaller (fewer than five or six students). A strong resourcing plan is particularly important in group settings as interventions will need to be more clearly structured.

Structuring an intervention around the available resources, such as using a single unit of a Target workbook or a single lesson in the Bootcamp workbook can help keep a small group focused on common learning objectives. Peer support such as using worked solutions to check a partner's answers can promote engagement and reinforce good technique for written answers.



Peer tutoring can allow students to take responsibility for their own learning and for evaluating their own success. Peer tutoring is most effective when used to review and consolidate prior learning, and where resources are used which provide scaffolding to support independent study.

Diagnosing learning gaps and targeting support

Recovery interventions are most effective when they target the needs of specific students.

- Multiple choice questions in every Bootcamp lesson can be used as hinge questions, to provide a quick and informal check of initial understanding.
- The fluency check in Target can identify gaps in prior learning which may need to be remediated before focusing on the main learning objectives of the session.
- Skills checks in Target direct students to practise questions at different levels depending on their response to a short diagnostic question.
- Using full worked solutions in Bootcamp, students can identify their own mistakes and misconceptions. Discussions of these in small groups can reinforce learning.

Homework

Homework is a very effective way of reinforcing learning from a lesson or intervention, developing fluency with key techniques and promoting independent study skills.

Homework that is linked to classroom work tends to be more effective.

Student-owned resources allow students to continue in-class tasks as homework. Using the practice exercises in the Get Back on Track section of the Target workbook allows students to build directly on skills they have covered in a session. Using resources both in-class and at home also allows for ‘flipped learning’, where students review learning objectives and key points in advance of an upcoming session.

Quality is more important than quantity; struggling students find shorter tasks more accessible.

A successful outcome on a single exam-style question can boost confidence and demonstrate mastery of a particular topic. Write-on materials such as Target and Bootcamp are more accessible and give students a better understanding of the total length of an assigned task. A single Skills Boost in the Target Workbook would be suitable for a short and accessible homework.

Feedback on homework can significantly increase its positive impact.

Fully worked solutions to exam-style questions in Bootcamp mean students can check their own work and identify learning gaps. Remind students of the importance of fully attempting questions before reviewing worked solutions. Challenge them to lay out answers neatly and clearly.

It is important for students to understand the purpose of a particular homework.

Linking homework tasks to key points and learning reminders (e.g., in the Warm Up sections of Bootcamp), can help students see which skills and knowledge they are applying. Simple learning objectives and clearly labelled skills in Target help students understand the objectives of a task. Explain that simpler AO1 questions can build fluency and confidence, whereas exam-style and problem-solving questions can restore ambition and assess mastery.

Explicitly teaching strategies for independent learning can improve homework outcomes.

Target and Bootcamp are designed to be accessible to students working independently, with key skills and facts, scaffolded questions and simple and clear hints and tips. Write-on resources also promote organisation and reduce the likelihood of homework being misplaced.

Linking to in-class teaching and the curriculum

Targeted interventions and homework are most effective when they are closely linked to normal lessons and the core curriculum. Use this **matching chart** to identify the sections of the Target and Bootcamp workbooks which are most relevant to each unit of the Pearson Edexcel Scheme of Work.

Selecting learning objectives which support in-class work will make small group or one-to-one interventions more accessible and will reinforce in-class learning. A close alignment of learning objectives with normal lessons will also reduce the impact of missed classroom time and make it easier to monitor the effectiveness of interventions which are not being delivered by the class teacher.

Scheme of Work unit / topic	Target Grade 3 Number & Statistics	Target Grade 3 Algebra & Shape	Target Grade 5 Number & Algebra	Target Grade 5 Shape & Statistics	Foundation Bootcamp
Unit 1: Number					
Integers and place value	Unit 1				Workout 1
Decimals	Unit 1				Workouts 2, 4
Indices, powers and roots			Unit 6		Workout 3
Factors, multiples and primes					Workout 5
Unit 2: Algebra					
Algebra: the basics					Workout 6
Expanding and factorising single brackets		Unit 1	Unit 2		Workout 7
Expressions and substitution into formulae		Unit 2	Unit 3		Workout 9
Unit 3: Graphs, tables and charts					
Data collection	Unit 8				
Tables	Unit 9				Workout 17
Charts and graphs	Unit 9				Workout 27
Pie charts	Unit 9				Workout 27
Scatter graphs				Unit 8	Workout 27
Unit 4: Fractions and percentages					
Fractions	Unit 3				Workout 2
Fractions, decimals and percentages	Unit 3				Workout 2
Percentages	Unit 3			Unit 10	Workout 15
Unit 5: Equations, inequalities and sequences					
Equations		Unit 2	Unit 4		Workout 8
Inequalities			Unit 10		Workout 8
Sequences		Unit 4		Unit 9	Workout 10

Scheme of Work unit / topic	Target Grade 3 Number & Statistics	Target Grade 3 Algebra & Shape	Target Grade 5 Number & Algebra	Target Grade 5 Shape & Statistics	Foundation Bootcamp
Unit 6: Angles					
Properties of shapes, parallel lines and angle facts		Unit 5, 6, 7			Workout 19
Interior and exterior angles of polygons				Unit 3	Workout 19
Unit 7: Averages and range					
Averages and range	Unit 7			Unit 6	Workout 28
Unit 8: Perimeter, area and volume					
Perimeter and area		Unit 6			Workouts 17, 20
3D forms and volume				Unit 2	Workout 21
Unit 9: Graphs					
Real-life graphs		Unit 3			Workout 12
Straight-line graphs		Unit 3	Unit 8		Workout 11
Unit 10: Transformations					
Translations, rotations and reflections				Unit 5	Workout 23
Enlargements				Unit 5	Workout 23
Unit 11: Ratio and proportion					
Ratio	Unit 6				Workout 16
Proportion	Unit 6		Unit 11		Workout 16
Unit 12: Right-angled triangles					
Right-angled triangles			Unit 7		Workout 24
Unit 13: Probability					
Probability	Unit 5			Unit 7	Workouts 29, 30
Unit 14: Multiplicative reasoning				Unit 10	Workouts 15, 18
Multiplicative reasoning				Unit 10	Workouts 15, 18
Unit 15: Constructions, loci and bearings					
Plans and elevations					
Constructions, loci and bearings		Unit 8			Workout 25
Unit 16: Quadratic equations and graphs					
Quadratic equations: expanding and factorising			Units 2, 4		Workout 14
Quadratic graphs			Unit 9		Workout 13

Scheme of Work unit / topic	Target Grade 3 Number & Statistics	Target Grade 3 Algebra & Shape	Target Grade 5 Number & Algebra	Target Grade 5 Shape & Statistics	Foundation Bootcamp
Unit 17: Circles, cylinders, cones and spheres				Unit 1	Workout 22
Unit 18: Fractions, indices and standard form					
Fractions and reciprocals			Units 1, 6		Workout 2
Indices and standard form					Workout 3
Unit 19: Congruence, similarity and vectors					
Similarity and congruence in 2D					Workout 26
Vectors				Unit 4	
Unit 20: More algebra					
More algebra			Units 3, 5, 9, 11		Workouts 13, 14

Addressing barriers to recovery

Students from disadvantaged backgrounds often encounter significant barriers to progress and learning. Identifying and addressing these barriers is an essential part of any recovery strategy.

Prolonged absences from school can lead to significant gaps in understanding.

Resources designed specifically to remediate and boost skills can help students bridge learning gaps, especially when deployed in structured interventions. Effective use of diagnostics, and linking homework and interventions to the curriculum and to in-class teaching, will help ensure they are targeting areas of lost learning.

Students may have limited access to devices or the internet when learning remotely, revising or completing homework.

Print resources are easily accessible and don't require additional devices. Write-on materials help students keep learning materials together in one place and increase the likelihood of homework tasks being attempted and completed.

Low expectations and prolonged absences can reduce motivation and ambition.

Ownership of resources can improve motivation, and visibility of outcomes and progress through a resource can help with goal setting and measurable achievement. Exam-focused resources can restore ambition and motivate students to revise in their own time.

Students may be less likely to receive parental support to complete homework and develop effective learning habits and may lack a quiet working space or a suitable home-learning environment.

Write-on workbooks improve organisation and can help to mitigate the lack of a dedicated workspace. Student-owned resources which are designed for independent use promote good study skills and make it easier for parents and guardians to engage with students learning and support them with revision and homework activities.

Resources for higher-tier students

Recovery funding can be used to support all of your students. Additional Target and Bootcamp Workbooks are available for students preparing for Pearson Edexcel GCSE Maths at the **Higher tier**. Using a range of resources targeted at different ability levels can help support a recovery strategy for students of all abilities.



For more information on these books and other resources to support recovery, visit:

pearsonschools.co.uk/recovery.