

# Slide by slide delivery map

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Pearson Edexcel GCSE Mathematics 1MA1 • L018

21 slides • 60 minutes • Teacher use only • Lesson resources

REACH FOR THE STAR | GCSE MATHEMATICS

## 01 Collect expand and factorise 1 min Recall

Collect like terms, expand a single bracket and factorise a common factor. Explain how these equivalent forms are connected.

## 02 The goal and the evidence 1 min Recall

L017 notation and substitution; integer products and common factors.

## 03 Starting-point diagnostic 5 min Recall

If only the first term is multiplied, draw two product arrows. If unlike powers are collected, compare  $x=3$ . For negative brackets, write each signed product. Recheck  $-2(x-3)=-2x+6$ .

## 04 See the distributive law 2 min Discover

Area model illustrates  $3(x+4)=3x+12$ . The dimensions assume positive lengths; the distributive identity also holds for negative  $x$ . Not drawn to scale.

## 05 Worked example and your turn 3 min Discover

$3a+4$ . Collect a terms; the constant stays separate.

## Delivery continued

### 06 Worked example and your turn 3 min Discover

$4y - 12$ .  $4 \times (-3) = -12$ .

### 07 Worked example and your turn 3 min Discover

$-3a - 6$ . Multiply the positive 2 by  $-3$ .

### 08 Worked example and your turn 3 min Discover

$4(2a + 3)$ . HCF of coefficients is 4.

### 09 A method you can explain 2 min Discover

Group only like terms. Multiply every term inside a bracket, including its sign. To factorise, take a common factor from every term. Expand again and substitute a value to check.

### 10 Diagnostic pause 3 min Apply

Expand  $3(x + 4)$ : A  $3x + 4$ , B  $3x + 12$ , C  $7x$ . Answer B: multiply both terms.

## Delivery continued

### 11 Careful variation 4 min Apply

$5x$ ;  $3x+2y$ ;  $5x^2$ ;  $3x^2+2x$ . Only identical letter parts combine.

### 12 Independent application 4 min Apply

$5x-10$ ;  $8x-6$ . Expand first, then collect terms.

### 13 Use the method in context 4 min Apply

$2(x+2)+6=2x+10$  cm. Two lengths and two widths.

### 14 Intentional practice feedback 2 min Apply

Two lengths and two widths. Optional check after C2: substitute  $x=2$  in  $3(x+4)-2(x+1)$  and  $x+10$ ; both give 12. Numerical agreement is a check, not proof for every  $x$ .

### 15 A claim to test 4 min Challenge

Expanding gives  $6x+72$ . Correct:  $6(x+2)$ . Divide every original term by the factor.

## Delivery continued

### 16 Deepen the reasoning 4 min Challenge

$3x+12-2x-2=x+10$ . Algebra proves all values; a substitution only checks one.

### 17 Retrieval without notes 4 min Prove

Answers: 8, 12, 10, 6, 16, -4. Completion is not mastery.

### 18 Independent exit evidence 2 min Prove

$2x+10+3x$  M1;  $5x+10$  A1. Multiply both bracket terms.

### 19 Independent exit evidence 3 min Prove

$6(2x+3)$  B1; correct expansion  $12x+18$  B1. Equivalent full factorisations accepted.

### 20 Feedback and next steps 2 min Prove

If only the first term is multiplied, draw two product arrows. If unlike powers are collected, compare  $x=3$ . For negative brackets, write each signed product. Recheck  $-2(x-3)=-2x+6$ .

## Delivery continued

### 21 Before the next lesson 1 min Recall

An equation states that two expressions are equal. Solve by applying the same inverse operation to both sides, then substitute the solution into the original equation.

# Recall & Review: feedback and extension integration

Source-integrated WWW/EBI and extension page

## Lesson L018: Collect expand and factorise

Objective: Collect like terms, expand a single bracket and factorise a common factor. Explain how these equivalent forms are connected.

### Timing for a 60-minute lesson

0-7 Connect & Check; 7-14 Share; 14-25 Present/model; 25-44 Apply route choice/practice; 44-52 independent exam-style check; 52-60 Recall & Review, WWW/EBI and next step.

### Recall & Review evidence

At the end of the lesson, solve a fresh question without prompts, explain a check, correct one error and record the next practice step.

### What Went Well (WWW)

I wrote the algebraic structure accurately and used a valid step-by-step method.

### Even Better If (EBI)

I will show inverse operations clearly, keep signs/brackets accurate and substitute back to check.

### Integrated stretch and deep challenge

Stretch: Expand and simplify  $3(2x-5)-2(x+4)$ .

Deep challenge: Factorise  $6x^2+9x$  fully and check by expansion.

### Teacher use

Use the WWW/EBI prompts to write mathematics-specific feedback linked to the objective. Do not accept generic praise; feedback should identify the method, representation, reasoning or checking step that improved, then set a fresh next-step question.

Assessment evidence to inspect: Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.