

Factors multiples and primes

Pearson Edexcel GCSE Mathematics 1MA1

Foundation and Higher • L005

Number and proportion • Review v0.9

The goal and the evidence

Connect & Check → Share → Present → Apply → Recall & Review

Find factors, prime factorisations, HCFs and LCMs.

Choose and justify the right method for a problem.

Starting-point diagnostic

R1–R3 • Attempt without notes

$$6 \times 7; 42 \div 6$$

3^2 as a product

Which are prime: 2, 9, 11?

Factor pairs

18: 1×18 , 2×9 , 3×6

Your turn: factors of 20.

How do you know the list is complete?

Prime factorisation

$$18 = 2 \times 3^2$$

$$24 = 2 \times 2 \times 6 = \dots$$

Finish with prime factors only.

Highest common factor

$$12 = 2^2 \times 3; 18 = 2 \times 3^2$$

$$\text{HCF} = 2 \times 3 = 6$$

Your turn: HCF of 18 and 24.

Lowest common multiple

$$\text{LCM}(12, 18) = 2^2 \times 3^2 = 36$$

Your turn: LCM of 8 and 12.

Check divisibility by both.

FACTORS DIVIDE; MULTIPLES CONTAIN

HCF divides both original numbers.

LCM is divisible by both.

Diagnostic pause

Choose and explain before moving on.

HCF of 12 and 18?

A 6 B 36 C 3

Careful variation

A1 • Explain your decisions

For 6 and 9, then 6 and 12, find both HCF and LCM.
Explain what changes.

Show your method and check the result.

Independent application

A2 • Without prompts

Write 30 and 45 as products of primes. Find their HCF and LCM.

Show your method and check the result.

Use the method in context

A3 • Explain your decisions

Two lights flash every 12 seconds and 18 seconds. They flash together now. After how many seconds will they next flash together?

Show your method and check the result.

Intentional practice feedback

Read after attempting A3

36 seconds.

Check the interpretation as well as the arithmetic.

A claim to test

C1 • Explain your decisions

Are two different prime numbers always coprime?
Explain using factors.

Show your method and check the result.

Deepen the reasoning

C2 • Explain your decisions

For 12 and 18, compare $\text{HCF} \times \text{LCM}$ with 12×18 .
Explain using the prime powers.

Show your method and check the result.

Retrieval without notes

Q1–Q6 • Use full prompts in your workbook

Q1–Q3

HCF(12,20)

LCM(6,8)

Factor count for 13

Q4–Q6

$30 = 2 \times 3 \times ?$

$-9 - (-4)$

0.46×100

Independent exit evidence

P1 • 2 marks • Without notes

Find HCF of 20 and 30. Show the shared factors. [2]

Show working. Teacher review follows.

Independent exit evidence

P2 • 2 marks • Without notes

Find LCM of 4 and 10 and show that it is divisible by both. [2]

Show working. Teacher review follows.

Feedback and next steps

P3 • Completion is not mastery

Name one decision you can now explain.

Choose a fresh question and a delayed check.

Before the next lesson

L006: Fractions and equivalent forms

Complete F1 tomorrow without notes.

Read and attempt F2; bring one question.

Optional stretch

Find the HCF and LCM of 84 and 126 using prime factors.

Show a method. Explain a check or counterexample.

Optional deep challenge

Two numbers have HCF 6, LCM 180 and one number 30. Find the other.

Show a method. Explain a check or counterexample.

L005 Recall & Review

Factors multiples and primes



Fresh evidence: prove the objective

Solve a new question without prompts. Explain one check, then correct one error in your working.

Objective: Find and justify factors, prime factorisations, HCFs and LCMs; choose the right structure for a problem.

Write the next practice step before you leave. It must test the method again, not simply copy today's example.

Feedback language

Use the full phrases before the abbreviations.

What Went Well (WWW)

I selected an efficient numerical method, showed the key steps clearly and checked the sign, size or accuracy of my answer.

Identify the mathematical method, representation, reasoning or check that improved.

Even Better If (EBI)

I will make the place-value, sign or operation decision explicit and use estimation or an inverse calculation to check a fresh question.

Set one precise next-step action and test it on a fresh question.

Extension route

Choose this route only after the core evidence is secure.

Stretch

Find the HCF and LCM of 84 and 126 using prime factors.

Deep challenge

Two numbers have HCF 6, LCM 180 and one number 30. Find the other.

Explain your reasoning clearly enough that another learner could check it.