

Stretch and challenge · learner activities

GCSE Mathematics 1MA1 · L001–L108 · Review draft

Choose these optional activities after independent practice is secure. Allow about 10–15 minutes. Show a method and explain a check or counterexample. Your teacher can select one or both activities.

L001 Signed numbers

Stretch

Calculate $-18+27-35$ and check by grouping in a second way.

Deep challenge

A learner claims subtracting a negative always gives a positive answer. Test the claim with a counterexample.

L002 Multiplication, division and order

Stretch

Calculate $48 \div (-6) \times (-2) + 5$, showing equal-priority operations left to right.

Deep challenge

Insert brackets in $6 + 2 \times 5 - 4$ to make 36 and explain your choice.

L003 Place value, decimals and estimation

Stretch

Round 0.004976 to two significant figures and estimate 397×0.049 .

Deep challenge

A number rounds to 3.50 to two decimal places. Give its interval and explain the excluded endpoint.

L004 Number diagnostic and repair

Stretch

A learner calculates $-7 - (-12) = -19$. Locate the first error and repair it.

Deep challenge

Create an independent check for $35 \times 0.8 = 28$ that does not simply repeat the multiplication.

L005 Factors multiples and primes

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.

L006 Fractions and equivalent forms

Stretch

Simplify $42/70$ and give two different fractions equivalent to it.

Deep challenge

A fraction is equivalent to $5/8$ and its numerator is 35. Find its denominator and justify.

L007 Fraction operations

Stretch

Calculate $5/6 - 3/8$ and $2/3 \times 9/10$, simplifying each.

Deep challenge

A learner says $3/4 \div 2/5 = 6/20$. Explain and correct.

L008 Fraction reasoning and retrieval

Stretch

Without notes, calculate $\frac{7}{12} + \frac{5}{18}$ and explain the common denominator.

Deep challenge

Is $\frac{2}{3} + \frac{3}{4}$ greater than 1? Show a method without decimals.

L009 Fractions decimals and percentages

Stretch

Convert $\frac{7}{20}$ into a decimal and percentage, then order it with 0.3 and 32%.

Deep challenge

A learner claims $0.125 = 12.5/10$ percent. Correct the conversion.

L010 Fractions and percentages of amounts

Stretch

Find 35% of £240 using 10%, 5% and a combination.

Deep challenge

A class has 18 of 24 learners present. Express attendance as a simplified fraction and percentage.

L011 Percentage change and reverse percentages

Stretch

A coat costs £68 after a 15% reduction. Find its original price.

Deep challenge

A price rises 20% and then falls 20%. Explain the net change using multipliers.

L012 Number checkpoint and feedback

Stretch

Solve $\frac{3}{5}$ of $x=42$ and $0.2x=18$.

Deep challenge

Diagnose why 50% increase followed by 50% decrease does not restore the start.

L013 Ratio and sharing

Stretch

Split £126 in ratio 2:3:4 and check the parts total.

Deep challenge

A sum is split A:B=3:5 and B:C=2:3. Find A:B:C in whole numbers.

L014 Scale and proportion

Stretch

A scale drawing is 1:25,000. What actual distance does 8 cm represent?

Deep challenge

Similar shapes have length factor 1.5. Compare their area factor and explain.

L015 Unit rates and best buys

Stretch

A 750 g pack costs £2.40 and a 1.2 kg pack costs £3.60. Which is better value per kg?

Deep challenge

A 20% discount applies to the 750 g pack. Does the best buy change?

L016 Proportion problems and repair

Stretch

Four workers complete a job in 15 hours at constant rate. How long would six workers take?

Deep challenge

Explain why doubling workers may fail to halve time in a real job.

L017 Algebraic language and substitution

Stretch

If $a=-2$ and $b=5$, evaluate $3a^2-2b$ and $2(a+b)$.

Deep challenge

A learner interprets $3x^2$ as $(3x)^2$. Use $x=2$ to expose the error.

L018 Collect expand and factorise

Stretch

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

Deep challenge

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

L019 Linear equations

Stretch

Solve $5(2x-1)=3x+16$ and check.

Deep challenge

Explain why dividing $3x+6=12$ by 3 gives $x+6=4$ incorrectly.

L020 Equations in contexts

Stretch

A taxi charges £3.50 plus £1.80 per mile. Find miles travelled for a £21.50 fare.

Deep challenge

A rectangle's perimeter is 38 cm and its length is 3 cm more than width. Find dimensions.

L021 Formulae and rearranging

Stretch

Rearrange $A = \pi r^2$ for positive r , then find r when $A = 49\pi \text{ cm}^2$.

Deep challenge

Rearrange $v = u + at$ for t and identify when the rearrangement is invalid.

L022 Inequalities and number lines

Stretch

Solve $3-2x < 11$ and show the solution in words.

Deep challenge

Why does dividing $-3x \geq 12$ by -3 reverse the sign? Give a numerical check.

L023 Sequences and nth terms

Stretch

Find nth term of 4,9,14,19,... and its 25th term.

Deep challenge

Can 7,11,15,19,... contain 100? Justify algebraically.

L024 Cumulative checkpoint and feedback

Stretch

Solve $2x+5=17$, then give the third term of $3n+2$.

Deep challenge

A learner extends 2,5,8,11 with 15. Diagnose and find the 20th term.

L025 Angle facts and parallel lines

Stretch

Two parallel lines have co-interior angles $3x+10$ and $2x+20$. Find x .

Deep challenge

A student says alternate angles always add to 180° . Correct the claim.

L026 Triangles and polygons

Stretch

Find each interior angle of a regular 15-sided polygon.

Deep challenge

A regular polygon has interior angle 165° . Find its number of sides.

L027 Congruence and geometric reasoning

Stretch

State a valid congruence test for sides 5,7,8 cm in two triangles and explain.

Deep challenge

Two triangles have equal side lengths 5 and 7 cm and a non-included equal angle. Must they be congruent?

L028 Constructions and loci

Stretch

Construct the perpendicular bisector of an 8 cm segment. How far is its midpoint from either endpoint?

Deep challenge

A point is 3 cm from A and 4 cm from B. Describe the intersection of its loci.

L029 Coordinates and transformations

Stretch

Translate $(-3, 4)$ by $(5, -7)$ and reflect the result in the x-axis.

Deep challenge

Do reflection and translation always commute? Use a point and transformations as a counterexample.

L030 Enlargement and scale factors

Stretch

Enlarge a rectangle 3 cm by 5 cm by factor 2.5. Find new area.

Deep challenge

An enlargement factor is -2 about the origin. Where does $(3, -4)$ map, and what happens to orientation?

L031 Bearings and scale drawings

Stretch

A map scale is 1 cm:4 km. Two points are 7.5 cm apart. Find actual distance.

Deep challenge

The bearing of B from A is 065° . Find the bearing of A from B.

L032 Geometry checkpoint and feedback

Stretch

A regular hexagon has side 6 cm. Find perimeter and each exterior angle.

Deep challenge

A shape is enlarged by factor 3 and its original perimeter is 18 cm. A learner says new area is three times. Correct the reasoning.

L033 Perimeter and compound area

Stretch

A rectangle 12 cm by 8 cm has a 3 cm by 2 cm corner cut out. Find area and perimeter.

Deep challenge

Two shapes each have area 36 cm^2 . Must their perimeters be equal? Give a counterexample.

L034 Circles arcs and sectors

Stretch

A sector has radius 9 cm and angle 80° . Find arc length and area exactly.

Deep challenge

A learner finds the perimeter of a semicircle of radius 5 cm as 5π cm. Explain the missing part.

L035 Prisms and cylinders

Stretch

A prism has a trapezium cross-section with parallel sides 4 cm and 8 cm and height 3 cm. Its length is 11 cm. Find the volume.

Deep challenge

A cylinder and a triangular prism both have cross-sectional area 24 cm^2 and length 7 cm. Compare their volumes and explain.

L036 Surface area and volume

Stretch

A closed cuboid has volume 120 cm^3 and dimensions 4 cm by 5 cm by h . Find h and surface area.

Deep challenge

A cylinder has radius r and height $2r$. Express its total surface area and volume in terms of r .

L037 Plans elevations and measures

Stretch

A scale plan measures 6 cm by 4 cm at 1:100. Find the real floor area in m^2 .

Deep challenge

Two solids have identical front and side elevations. Must their plans be identical? Explain with an example.

L038 Pythagoras in two dimensions

Stretch

A rectangle is 9 cm by 12 cm. Find its diagonal and the perimeter of one of the right triangles formed by that diagonal.

Deep challenge

A triangle has sides 8, 15 and 17 cm. Prove it is right-angled and find its area.

L039 Trigonometry in right triangles

Stretch

A right triangle has adjacent side 8 cm and an angle of 35° . Find the opposite side to 2 d.p.

Deep challenge

Two right triangles share angle 30° but have hypotenuses 10 cm and 25 cm. Compare their opposite sides.

L040 Cumulative checkpoint 2 and feedback

Stretch

A cylinder has radius 4 cm and height 5 cm. Find its volume exactly, then state the units of surface area.

Deep challenge

A learner uses $8^2 + 15^2 = 17$ in a Pythagoras check. Identify and repair the error.

L041 Coordinates gradient and intercept

Stretch

A line passes through $(-3, 4)$ and $(3, -2)$. Find gradient and y-intercept.

Deep challenge

Can two distinct parallel lines have different gradients? Explain using $y=mx+c$.

L042 Straight line equations

Stretch

Find the equation of the line through $(2, -1)$ and $(6, 7)$.

Deep challenge

The lines $y=3x-4$ and $6x-2y=8$ are claimed to intersect. Test the claim.

L043 Distance time and speed graphs

Stretch

A runner covers 400 m in 80 s, rests for 20 s, then covers 200 m in 40 s. Find average speed for the whole journey.

Deep challenge

A distance-time graph has a downward segment. Explain what the vertical axis must represent if the graph is valid.

L044 Graph problems and repair

Stretch

A journey has two equal 30 km legs at 30 km/h and 60 km/h. Find overall average speed.

Deep challenge

Explain why the mean of 30 and 60 is not the overall speed for equal distances.

L045 Sampling and data quality

Stretch

A school has 800 learners, 200 in Year 11. How many Year 11 learners belong in a proportional sample of 64?

Deep challenge

A survey about canteen food is sent only to the school's sports team. Give two distinct sources of bias and improve selection.

L046 Tables charts and time series

Stretch

A pie chart represents 72 people. A sector angle is 135° . Find its frequency.

Deep challenge

A time-series graph starts its vertical axis at 90 instead of 0. Does this make the data wrong? Explain the risk.

L047 Averages and spread

Stretch

Five numbers have mean 12. Four are 8, 11, 13 and 15. Find the fifth and the range.

Deep challenge

A data set has mean 10. One new value of 100 is added. Must the median increase?

L048 Statistical comparisons

Stretch

Class A has median 14 and IQR 3; class B median 16 and IQR 9. Compare typical score and consistency.

Deep challenge

Two groups share mean 20. One has range 2 and the other 30. What can and cannot be concluded?

L049 Probability and expected frequency

Stretch

A biased coin shows heads 78 times in 120 tosses. Estimate heads in the next 400 tosses.

Deep challenge

Why is an expected frequency of 26 not a guarantee of exactly 26 successes?

L050 Sample spaces and systematic lists

Stretch

Two fair dice are rolled. Count the outcomes with a sum of 9 and find the probability.

Deep challenge

A learner lists (1,3) and (3,1) as one outcome when two distinct dice are rolled. Explain the effect.

L051 Venn diagrams and set notation

Stretch

Of 50 learners, 24 study art, 22 music and 8 both. Find how many study exactly one.

Deep challenge

If $P(A)=0.6$, $P(B)=0.5$ and $P(A \cap B)=0.2$, find $P(\text{neither})$.

L052 Cumulative checkpoint 3 and feedback

Stretch

A line has equation $y = -3x + 4$. Find its gradient and y when $x = -2$.

Deep challenge

A student says a probability of 1.2 is possible because it came from a frequency table. Diagnose the error.

L053 Powers roots and index laws

Stretch

Simplify $(3x^2y^3)(2x^4y)$ and state any assumptions.

Deep challenge

Is $x^5 + x^3 = x^8$? Show why or give a counterexample.

L054 Standard form

Stretch

Write 0.00000056 in standard form, then multiply it by 3×10^5 .

Deep challenge

Explain why 12×10^4 is not in standard form and rewrite it.

L055 Rounding error intervals and bounds

Stretch

A rectangle is 8.2 cm by 5.6 cm to the nearest 0.1 cm. Find its lower area bound.

Deep challenge

A rounded length is 10 cm to nearest cm. Is 10.5 cm included? Explain.

L056 Number accuracy pathway

Stretch

Estimate 398×0.051 to one significant figure, then calculate exactly.

Deep challenge

A measurement rounds to 1.20 to two decimal places. State the interval and explain why 1.205 is excluded.

L057 Quadratic expressions

Stretch

Factorise $2x^2+7x+3$ and check by expansion.

Deep challenge

A learner writes $(x-4)(x+2)=x^2-8$. Find the missing terms.

L058 Quadratic graphs and roots

Stretch

For $y=x^2-4x+3$, find both roots and the turning point.

Deep challenge

A quadratic has roots -1 and 5 . Write a monic equation and state its axis of symmetry.

L059 Solving quadratics

Stretch

Solve $3x^2 - 12x = 0$ and check both roots.

Deep challenge

Explain why dividing $x^2 = 9$ by x can lose a solution.

L060 Algebra pathway and repair

Stretch

Solve $2(x+4)=3x-5$ and check by substitution.

Deep challenge

A learner cancels x from $x^2+x=0$ and gets $x=-1$ only. Find every solution.

L061 Simultaneous equations

Stretch

Solve $3x+2y=16$ and $x-2y=0$.

Deep challenge

Can $x+y=5$ and $2x+2y=12$ have a solution? Justify.

L062 Equations from situations

Stretch

Three adult tickets and two child tickets cost £37. Adults cost £9 each. Find child price.

Deep challenge

A rectangle's length is twice its width and its area is 50 cm^2 . Find positive dimensions.

L063 Cubic reciprocal and other graphs

Stretch

For $y=12/x$, find points when $x=-3$ and $x=4$, and identify the missing x -value.

Deep challenge

Compare $y=x^3$ and $y=-x^3$ at $x=-2$ and $x=2$. What symmetry relates them?

L064 Cumulative checkpoint 4 and feedback

Stretch

Solve $x^2+2x-15=0$ and $2a^3 \times 3a^2$.

Deep challenge

A student obtains $x=2, y=3$ from $x+y=5$ and $x-y=1$. Test and repair.

L065 Direct and inverse proportion

Stretch

y is inversely proportional to x^2 . If $y=12$ at $x=2$, find y at $x=4$.

Deep challenge

A graph through the origin appears curved upward. Can y be directly proportional to x ? Explain.

L066 Speed density and pressure

Stretch

A solid has density 7.8 g/cm^3 and volume 25 cm^3 . Find mass.

Deep challenge

Pressure doubles while force is constant. What happened to contact area? Explain algebraically.

L067 Growth decay and compound interest

Stretch

£1,000 grows 4% annually for three years. Find final value to the nearest penny.

Deep challenge

A price rises 20% then falls 20%. Prove it does not return to the starting price.

L068 Rates pathway and repair

Stretch

A car uses 18 litres over 240 km. Express fuel use in litres per 100 km.

Deep challenge

A distance is fixed. If speed increases by 25%, what happens to journey time?

L069 Similarity and lengths

Stretch

Similar triangles have corresponding sides 6 cm and 15 cm. A 9 cm side corresponds to what length?

Deep challenge

Are triangles with side sets 3,4,5 and 6,8,11 similar? Explain.

L070 Area and volume scale factors

Stretch

Two similar solids have lengths ratio 3:4 and smaller surface area 54 cm^2 . Find larger area.

Deep challenge

Volume ratio of similar solids is 27:64. Find length and area ratios.

L071 Triangle problems and bearings

Stretch

A traveller goes north 12 km and east 5 km. Find distance and bearing from start to nearest degree.

Deep challenge

A bearing from A to B is 315° . State reverse bearing and explain the 180° change.

L072 Cumulative checkpoint 5 and feedback

Stretch

A similar shape has length factor 1.5. Its original area is 80 cm^2 . Find new area.

Deep challenge

A learner uses a length factor of 3 to triple volume. Correct the claim.

L073 Probability trees and combined events

Stretch

Two independent events have probabilities 0.4 and 0.7. Find $P(\text{both})$ and $P(\text{neither})$.

Deep challenge

Toss a biased coin with $P(H)=0.7$ three times. Find $P(\text{exactly two heads})$.

L074 Dependent events and assumptions

Stretch

A bag holds 5 red and 4 blue. Find $P(\text{two blue without replacement})$.

Deep challenge

A bag has 4 red and 1 blue. Given the first draw was red, find $P(\text{second red without replacement})$.

L075 Frequency trees and probability models

Stretch

Of 80 people, 45 cycle. Of those who cycle, 27 are adults. Find the conditional proportion of adults among cyclists.

Deep challenge

A frequency tree has root 60 and first branches 28 and 31. Diagnose the issue and state a possible repair.

L076 Probability pathway and repair

Stretch

Two fair dice are rolled. Find $P(\text{at least one six})$.

Deep challenge

A bag with 3 red and 2 blue is drawn twice without replacement. Are the events independent?
Show with probabilities.

L077 Scatter graphs and correlation

Stretch

A trend line predicts 45 at $x=8$ from data spanning $x=2$ to 10. Is this interpolation or extrapolation?

Deep challenge

A scatter graph shows strong negative correlation between screen time and sleep. Can it prove screen time causes less sleep?

L078 Statistical graphs pathway

Stretch

A histogram class 10–14 has frequency 20 and width 4; class 14–24 has frequency 30 and width 10. Compare densities.

Deep challenge

Why must a histogram use area rather than bar height for frequency when widths differ?

L079 Comparing distributions pathway

Stretch

Group A has $Q_1=7, Q_3=19$; group B has $Q_1=10, Q_3=17$. Compare IQRs.

Deep challenge

Can one distribution have both a higher median and a larger IQR than another? Explain the practical interpretation.

L080 Cumulative checkpoint 6 and feedback

Stretch

A class interval width 6 has frequency 27. Find density, then expected frequency for width 10 at the same density.

Deep challenge

Explain why a single experimental probability estimate may change when more trials are added.

L081 Circle geometry pathway

Stretch

A central angle is 146° . Find the circumference angle subtending the same arc.

Deep challenge

In a cyclic quadrilateral, opposite angles are $2x+10$ and $3x-5$. Find x and both angles.

L082 Vectors and translations

Stretch

A triangle has vertices $(0,0)$, $(2,1)$, $(1,4)$. Translate by $(-3,2)$. State all new vertices.

Deep challenge

A translation maps $A=(-2,5)$ to $A'=(4,-1)$. Show where $B=(3,3)$ maps.

L083 Vector reasoning pathway

Stretch

If $a=(4,-1)$ and $b=(-2,5)$, find $3a+2b$.

Deep challenge

Prove vector $AB+BC=AC$ for $A=(1,1), B=(4,3), C=(7,-2)$.

L084 Geometry connections and repair

Stretch

A circle has centre O, tangent at T and chord through T. Explain the right angle between OT and tangent.

Deep challenge

A translated quadrilateral keeps all side lengths. Explain why translation also preserves parallel sides.

L085 Functions pathway

Stretch

If $f(x) = x^2 + 2x$, find $f(-3)$ and solve $f(x) = 0$.

Deep challenge

Let $f(x) = 2x + 1$ and $g(x) = x^2$. Compare $f(g(3))$ and $g(f(3))$.

L086 Graph transformations pathway

Stretch

Describe transformations from $y=x^2$ to $y=(x+3)^2+2$ and state turning point.

Deep challenge

A learner says $y=(x-4)^2$ moves left 4. Correct using a point on the original graph.

L087 Equation-solving pathway

Stretch

Solve $3x^2 - 15x = 0$ and check both solutions.

Deep challenge

Solve $x + y = 11$ and $2x - y = 4$, then show both checks.

L088 Cumulative checkpoint 7 and feedback

Stretch

A line $y=2x-3$ and a quadratic $y=x^2-4x+1$ intersect. Form the equation for their x-coordinates.

Deep challenge

Why is substituting a found root back into the original equations stronger than repeating the same algebra?

L089 Rates from graphs pathway

Stretch

A velocity increases uniformly from 4 to 16 m/s in 6 s. Find acceleration and distance.

Deep challenge

A velocity-time graph dips below the time axis. What does negative area mean?

L090 Circle equations pathway

Stretch

A circle has equation $x^2 + y^2 = 49$. Find y -values when $x=0$ and when $x=5$.

Deep challenge

Can $(7,7)$ lie on the circle $x^2 + y^2 = 49$? Justify by substitution.

L091 Proof and algebraic structure

Stretch

Prove the product of two consecutive integers is even.

Deep challenge

Prove the sum of three consecutive integers is divisible by 3.

L092 Mixed modelling and checking

Stretch

A phone plan costs £12 plus 8p per text. Write a formula and find the cost for 125 texts.

Deep challenge

A rectangle has perimeter 40 cm. Express area in terms of width x and find width for length 12 cm.

L093 Number and ratio consolidation

Stretch

Split £96 in ratio 1:3:4 and check the total.

Deep challenge

A price increases 10% then 10%. Explain why total increase is 21%, not 20%.

L094 Algebra consolidation

Stretch

Solve $x^2 - x - 20 = 0$ and verify by expansion.

Deep challenge

Find k so that $x^2 + kx + 12 = (x + 3)(x + 4)$.

L095 Geometry probability and statistics consolidation

Stretch

A fair spinner has sectors 1,2,3,4. Find mean score over one spin and $P(\text{score} \geq 3)$.

Deep challenge

A radius doubles. Compare the circle's area and circumference multipliers.

L096 Coverage diagnostic and repair

Stretch

Find area of a triangle with base 14 cm and height 9 cm, and $P(\text{red})$ from 7 red and 5 blue.

Deep challenge

An error log shows repeated percentage and equation mistakes. Propose two different fresh checks and what they test.

L097 Mock paper 1 non-calculator

Stretch

Without a calculator, find $\frac{7}{12}$ of 84 and show a division-first method.

Deep challenge

A learner gets 49 but writes only the answer on a two-mark question. Explain what evidence of method to add.

L098 Mock paper 2 calculator

Stretch

Using a calculator, find 13.5% of £780 and round currency correctly.

Deep challenge

A display shows 6.999999 after a calculation expected to be whole. What should the learner check before rounding?

L099 Mock paper 3 calculator

Stretch

A cylinder of radius 2.5 cm and height 12 cm has what volume to 1 d.p.?

Deep challenge

A learner rounds π to 3 before multiplying in a multistep question. Explain the risk and repair.

L100 Paper 1 feedback and repair

Stretch

Rework $5/6 - 1/4$ without a calculator and simplify.

Deep challenge

A learner adds denominators in $2/3 + 1/4$ to get $3/7$. Explain and correct.

L101 Paper 2 feedback and repair

Stretch

£420 grows 7% for two years. Find value to nearest penny.

Deep challenge

A calculator input $420 \times 1 + 0.07^2$ is used for growth. Identify the bracket error.

L102 Paper 3 feedback and repair

Stretch

A solid enlarges by length factor 2.5. Find surface area and volume factors.

Deep challenge

A learner uses the area factor for volume. Explain why this fails with dimensions.

L103 Delayed reassessment

Stretch

Solve $x^2 - 8x + 15 = 0$ after a one-week delay and check roots.

Deep challenge

Why does copying a corrected example immediately after feedback give weaker retention evidence than a delayed fresh problem?

L104 Non-calculator number and algebra

Stretch

Calculate $5/8 - 1/6$ exactly and simplify.

Deep challenge

Solve $2(3x-1)=4x+10$ without a calculator and check.

L105 Calculator fluency and accuracy

Stretch

Find the value of 250×1.035^4 to the nearest penny.

Deep challenge

A result is 0.00048372. Round to three significant figures and explain the first significant digit.

L106 Reasoning and multi-step problems

Stretch

A £120 item is discounted 15% then its new price increases 10%. Find final price.

Deep challenge

Explain why the order of two percentage multipliers does not affect the final number, but the story still matters.

L107 Paper readiness

Stretch

A learner spends 18 minutes on a 6-mark question. At 90 minutes for 80 marks, how many minutes above proportional allocation is that?

Deep challenge

Give a practical paper strategy after finding an unfamiliar question.

L108 Personal revision plan and flexible repair

Stretch

Plan three short spaced checks for fractions over two weeks, with one fresh question in each.

Deep challenge

A learner can answer only when following a model. What evidence would justify removing the scaffold?
