Answer Key

Punctuation:

Mona Lisa
National Gallery
kids' toys
Tom and Jerry
teachers' lounge
Smiths'
Mary Had a Little Lamb
We've
Won't
That's

Best word:

excited
their
would consider
had opened
relief
its
sportsmanship
enthusiastically
wondering
advised

EULB Answer key:

1.A
2.B
3.B
4.C
5.B
6.B
7.B
8.C
9.C
10.B
12.B
31.B
14.B
15.B
16.B

Answer Key

Spelling:

yawned
dressed
backpack
hoping
friend
their
nervous
assured
improve

where
helpful
taught
rewarding
which
no error
would
enjoyed
commitment

Short Maths

1) 64
2) 96
3) 21,34
4) Isosecles
5) 21
6) 0.2013, 2.013
20.13, 201.3, 2013)
7) 2898
8) 1,2,3,4,6,8
12,16,24,48
9) 2x3x3x5
10) 15
11) 40
12) 15+16
13) 270 min
14) 92720
15) 96 min
16) 16
17) one million
18) 4.65
19) 1,2,5
20) -6
21) 10th July
22) 6
23) 12
24) Obtuse
25) 8

Problem Solving

1) 4cm
2) 4.8
3) £47.85
4) 40 ml
5) (9,4)
6) 50 sec
7) 20
8) 10
9) £0.55
10) 27
11) 56cm
12) 24
13) 20cm
14) 2
15) 11:00
16) 60 min
17) 18
18) 12
19) 36
20) 81,243

1 **d** When the net is folded to make the cube, the face with the star will wrap around to be next to the four circles on the face at the opposite end of the net. The face with the two concentric squares will then fold over to join them, in the position shown in answer option **d**.

2 **c** When the net is folded to make the cube, the chequered face and the face with the diamond will remain next to each other. The face with the triangle will then fold down into the position shown in answer option **c**.

3 **c** When the net is folded to make the cube, the face with the horizontal stripe will be next to the face with the diagonal stripe. When the face with the striped triangle is folded down to meet the diagonal, the corner of the triangle will be next to one end of the stripe, as in option **c**.

4 **e** When the net is folded to make the cube, the blank face will wrap around to join the face with the white circle. The black semi-circle will then fold down to meet the blank face, as in option **e**.

5 **c** When the net is folded to make the 3D shape in the position shown, the hexagon will be on the face to the left of the blank face. The triangle on the face above will be pointing downwards, as in option **c**.

6 **a, b, d** **a** sits at the top of the hexagon, next to **d**, then **b** fills in the remaining left-hand side of the shape.

7 **b, d, e** **e** rotates 90° anticlockwise and sits on top of **b** to make a rectangle, then **d** is placed beneath **a** to complete the shape.

8 **a, c, e** **e** rotates 90° clockwise to join with **a**, then **c** rotates 45° anticlockwise, fitting in the space at the top of **a** to complete the shape.

9 **a, b, c** **c** rotates 45° clockwise, **b** rotates 45° anticlockwise and sits beneath **c** to form the bottom portion of the shape, **a** then rotates 135° anticlockwise, fitting in the space at the top left to complete the shape.

10 **b, c, e** **e** rotates 180° to sit on top of **b**, **c** then rotates 90° clockwise to sit on top of **e** and complete the shape.

11 **e** The fold lines act as lines of reflection, with a separate line of reflection for each small shape. The small square folds to the right so sits at the bottom-left corner of the central square; the triangle reflects in the vertical line to its left so the right-angle sits in the bottom right-hand corner. Finally the quadrilateral at the top reflects in a horizontal line so the short edge is about one-third of the way down the picture.

12 **b** The fold lines act as lines of reflection, with a separate line of reflection for each small shape. All the triangles reflect in the horizontal lines at the top and bottom of the square, the quadrilateral reflects in the vertical line on the left-hand side of the square. Therefore the triangles turn upside down and the quadrilateral flips left to right.

13 **d** The fold lines act as lines of reflection, with a separate line of reflection for each small shape. The top triangle folds along the horizontal line at the top of the square, folding down like an envelope flap. The quadrilateral on the left flips to the right on the vertical line formed by the left-hand side of the square, the triangle on the right flips to the left on the vertical line formed by the right-hand side of the square.

14 **d** The fold lines act as lines of reflection, with a separate line of reflection for each small shape. The shapes fold to meet each other so the pattern is difficult to follow but **d** is the only possible answer. The triangles at the top and bottom fold along horizontal lines so the sides toward the middle of the square form a continuous line. The triangles to the left and right fold along vertical lines with the left-hand triangle touching the central line formed by the top and bottom triangles. The triangle on the right then forms a diagonal since the top of the triangle is hidden on the top edge of the square.

15 **d** The fold lines act as lines of reflection, with a separate line of reflection for each small shape. The triangles fold along horizontal lines: the top two fold down, so their right-angles stay on the left, but the triangles point downwards; the bottom triangle points upwards with the right-angle staying on the left. The quadrilateral on the left flips to the right on the vertical line formed by the left-hand side of the square, the square on the right flips to the left on the vertical line formed by

16 **e** **reflection** – the complete picture is reflected in a vertical mirror line, so instead of the 'arrow' shape on the left of the picture pointing to the right, it will be on the right, pointing to the left.
Distractors: **position** – the two lines coming up from the base are angled to the right and parallel to each other; **number** – the picture is made up of five lines.

17 **e** **reflection** – the complete picture is reflected in a vertical mirror line, so instead of the shaded semi-circle being on the left-hand side, it will be on the right-hand side.
Distractors: **shape** – the semi-circle doesn't change shape; **reflection** – the shapes do not reflect horizontally; **position** – the double lines do not change position.

18 **c** **reflection** – the complete picture is reflected in a vertical mirror line, so instead of the diagonal line running from top right to bottom left, it will run from top left to bottom right.
Distractors: **shading** – the two triangles keep their original shading; **reflection** – (a) the diagonal shading reflects so runs top left to bottom right, (b) the black triangle does not reflect horizontally; **proportion** – the length of the diagonal line doesn't change.

19 **d** **reflection** – the complete picture is reflected in a vertical mirror line, so instead of the 45° angle pointing up to the right, it will point up to the left.
Distractors: **shape** –the inner semi-circle doesn't join to the base of the outer ring; **position** – (a) the two shaded bars in the outer ring do not move up and down, (b) the two small lines don't swap, (c) the thinner short line is always on the diagonal line joined to the inner semi-circle.

20 **b** **reflection** – the complete picture is reflected in a vertical mirror line, so instead of the concentric circles being at the top left, they will be on the top right.
Distractors: **reflection** –there is no horizontal reflection taking place; **rotation** – the 'L' shape does not rotate so the single vertical line will be on the right; **position** – (a) the diagonal line at the bottom of the picture always goes to the white circle, (b) this line finishes at the centre of the white circle.

1 **e** When the net is folded to make a cube, the two squares will be next to each other. As these are folded down, the face to the right (the white circle) will join to show the cube in answer **e**.

2 **b** When the net is folded to make the cube, the top of the 'U' shape folds in to meet a black square in the chequered face. The face below the 'U' will be the single black triangle in the position shown. If the net is turned 90° anticlockwise, it is easier to see that **b** is the correct answer.

3 **b** Looking at the flat net, the side with the diagonal stripe goes to the corner between the cross and the diamond. Therefore, when the net is folded to make a cube, the top of the diagonal will be between these two faces, as in answer **b**.

4 **a** Thinking of the central faces of the net as a continuous loop, when it is folded to make a cube, the face with the black triangle will point towards the face with the horizontal stripes. The face with the white rectangle will fold down to meet the striped face on the left-hand side, so **a** must be the correct answer.

5 **b** Imagine turning the net upside down so that the bottom face is at the top, the triangle sits across the top, pointing to the right, as in option **b**. It is then easy to see that the circle will then face beneath this when the net is folded and the star will be on the right.

6 **d** Shape **d** is rotated 90° clockwise around a horizontal line.

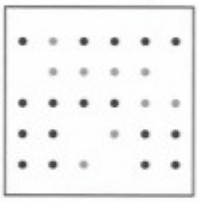
7 **a** Shape **a** is rotated 90° clockwise around a horizontal line.

8 **c** Shape **c** is rotated 90° clockwise around a horizontal line and then 90° clockwise around a vertical line.

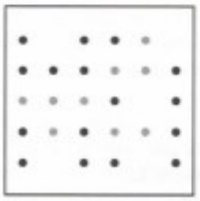
9 **e** Shape **e** is rotated 90° away from view, and then rotated 90° clockwise on its base.

10 **b** Shape **b** is rotated 90° clockwise around a vertical line.

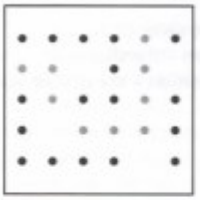
11 The pattern is revealed by overlaying the pattern of circles in the first box onto the second box, with the top-left circle being placed on the second circle from the left on the top row.



12 The pattern is revealed by overlaying the pattern of circles in the first box onto the second box, with the top-right circle being placed on the first circle in from the right on the top row.

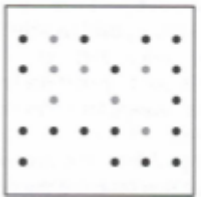


13 The pattern is revealed by overlaying the pattern of circles in the first box onto the second box. The picture rotates 90° anticlockwise with the resulting top-right circle placed on the second circle in from the right on the top row.



14 The pattern is revealed by overlaying the pattern of circles in the first box onto the second box. The picture rotates 90° anticlockwise and the resulting circle at the bottom right is placed on the bottom-right circle of the grid.

15 The pattern is revealed by overlaying the pattern of circles in the first box onto the second box. The picture rotates 90° anticlockwise with the resulting top left circle placed on the second circle in from the left on the top row.



16 **c** One of the three-cube cuboids lies flat with the other placed on top of it. The two single cubes then sit to the left and right.

17 **a** One of the 'L'-shaped cuboids rotates 90° anticlockwise around a vertical line to face forward, the other then drops back to fit around the base. The three cubes then stack up at the front of the upright 'L'.

18 **e** The 'T'-shaped cuboid rotates 90° anticlockwise around a horizontal line to stand upright. The 'L'-shaped cuboid then moves back to sit beneath the right-hand side of the 'T'. The two single cubes the sit on top of the 'T' and the two-cube cuboid moves beneath the left-hand side of the 'T'.

19 **d** The 'U'-shaped cuboid stays in the position shown in **d**, and the 'L'-shaped cuboid rotates 90° clockwise around a horizontal line to sit on the back of this shape. The two single cubes then stack in front of the 'L' to complete the image.

20 **b** The 'corner'-shaped cuboid stays in the position shown in **b**, and the longer 'L'-shaped cuboid rotates 90° clockwise around a horizontal line to sit on the top of this shape at the front. The smaller 'L' shape then falls on its side to the right and wraps around the bottom of the 'corner' shape (so is only visible at the front and on the right-hand side). The single cube then sits on top at the back to complete the image.

Letter Sequences: Forwards and Backwards

1. OZ (+1=O, +2=Z)
2. BT (−3=B, +3=T)
3. UF (−1=U, +1=F)
4. PA (+2=P, −1=A)

Letter Sequences: Increasing/deceasing/alternating

1. XZ (+3 +1 +3 +1 +3=XZ)
2. IJ (+5 +4 +3 +2 +1=IJ)
3. II (−2 −1 −2 −1 −2=I, −1 −2 −1 −2 −1=I)
4. SY (−1 −2 −3 −4 −5=S, +1 +2 +3 +4 +5=Y)

Letter Sequences: Leapfrogging

5. **AC** SU **DF** VX **GI** YA = **JL** (+3)
6. **PO** DC **ML** BA **JI** ZY = **GF** (−3)
7. **RO** FD **SP** GE **UR** IG **XU** LJ = **BY** (+1+2+3+4)
8. **PT** DC **OS** FE **LP** GF **KO** IH = **HL** (−1−3−1−3)

Letter Codes: Letter Partners

1. Y (both numbered 2)
2. O (both numbered 12)
3. T (both numbered 7)
4. F (both numbered 6)
5. L (both numbered 12)
6. H (both numbered 8)
7. R (both numbered 9)
8. C (both numbered 3)
9. V (both numbered 5)
10. D (both numbered 4)
11. M (both numbered 13)
12. P (both numbered 11)

Letter Codes: Pair Partners

1. IH (numbered 9 8)
2. EC (numbered 5 3)
3. KO (numbered 11 12)
4. AF (numbered 1 6)
5. IW (numbered 9 4)
6. OP (numbered 12 11)

Letter Codes: Jumping

1. GI (+3+3)
2. NQ (−2−2)
3. MH (+3−2)
4. IL (+5+4)
5. OR (−8−8)
6. TH (+5−5)
7. VH (+8−2)
8. MD (−3+4)

EULB Answer key:

1.A
2.B
3.B
4.C
5.B
6.B
7.B
8.C
9.C
10.B
12.B
31.B
14.B
15.B
16.B