

**7A**

**Year 7 Maths ILA (Units 9/10)**

**Mathslinks 7A Book**

**Unit 9 (SSM) & Unit 10 (Algebra)**

Level 3-5 Level 4

**ONLY USE A CALCULATOR WHERE YOU SEE THIS SYMBOL C:\Users\cblaymire\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\C0A4LQYK\MC900389698[1].wmf**

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| **What is the purpose of this ILA?** | |
| * To encourage independent learning by students outside the classroom. * To develop a stronger understanding shape, space and measure and algebra work at level 3-5. | |
| **What is expected from you?** | |
| * To complete your own work, to the best of your ability, with pride. * To show clear methods; show **all** your working out not just the answer. * Some students may struggle. If you find yourself “in the pit” you need to find a way out. * The Investigation is an important part of the ILA and must be attempted, showing reasonable effort. | |
| **Where can you get help?** | |
| * Look at the 7A Maths Links book (units 9 and 10). * Use the Maths ILA/homework Club after school on Tuesdays in S1. * Use the Unity College VLE (KS3). * Use the Learning Zone before or after school (8.00-8.35 Mon - Fri and 3.10-4.30 Mon - Thurs). * Use MyMaths.co.uk and Sam Learning. * Seek extra help at the Maths ILA Club. You are **expected** to attend to complete any parts you struggle with. | |
| **Learning Objectives** | |
| **SSM**   1. To be able to measure and draw angles up to 180°. 2. To be able to calculate angles on a straight line and angles that make a full turn of 360°. 3. To know the names of different types of triangle and recognise them. 4. To know the names of, and recognise 3D shapes.   **Algebra**   1. To know how to find factors of a number and list the multiples of a number. 2. To know what square numbers are. 3. To be able to plot points and connect them with straight lines. | Level 5c  Level 5c  Level 4c  Level 3b  Level 4c  Level 4c  Level 4c |
| **Hints and Tips** | |
| * Angles in a triangle add up to 180° * Angles at a point add up to 360° | |
| **Keywords**   |  |  |  |  | | --- | --- | --- | --- | | quadrilateral |  | faces |  | | vertices |  | factors |  | | edges |  | multiples |  | |  |  |  |  | | |
| **Learning Objective 1.** **To be able to measure and draw angles up to 180°. Level 5c** | |

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| 1.  a.  b.  c.  d.  2a.  b.  c. | Measure the marked angles:  Draw an angle at 70° to this line.  Draw an angle at 120° to this line.  Draw an angle at 150° to this line. | (4 marks)  (3 marks) |

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| ../../02_Illustrations/BMPS%20(grayscale)/03-06.bmp**Learning Objective 2. To be able to calculate angles on a straight line and angles that make a full turn of 360°. Level 5c** |

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| 3.  a.  b.  c.  d. | Calculate the size of the missing angles.  ../../02_Illustrations/BMPS%20(grayscale)/09-12.bmp  a \_\_\_\_\_\_˚  ../../02_Illustrations/BMPS%20(grayscale)/09-13.bmp  b \_\_\_\_\_\_˚  ../../02_Illustrations/BMPS%20(grayscale)/09-15.bmp  c \_\_\_\_\_\_˚  ../../02_Illustrations/BMPS%20(grayscale)/09-16.bmp  d \_\_\_\_\_\_˚ | (4 marks) |

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| **Learning Objective 3. To know the names of different types of triangle and recognise them. Level 4c** |

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| 4. | Match the triangles to their names: |  |
|  | Isosceles  Right-angled  Equilateral  Scalene | (5 marks) |

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| **Learning Objective 4. To know the names of, and recognise 3D shapes.**  **Level 3b** |

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| 5.  a.  b. | Here are three 3-D shapes:  ../../02_Illustrations/BMPS%20(grayscale)/09-10.bmp  Find how many faces, edges and corners they each have. Enter your results in this table:   |  |  |  |  | | --- | --- | --- | --- | |  | **Faces** | **Edges** | **Corners** | | **Cube** |  |  |  | | **Cylinder** |  |  |  | | **Sphere** |  |  |  |   What is the name of a 3-D shape which has 6 faces, 12 edges and 8 corners and does not have all its edges the same length?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | (10 marks) |
| 6.  a. | Name the shape of:  C:\Users\cholden\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\EQV6JGFM\MC900353990[1].wmf Dice \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| b.  c.  d.  e. | C:\Users\cholden\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\0HST8M1T\MC900434769[1].png  Can of cola \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  C:\Users\cholden\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\4PSYBJJ0\MC900335188[1].wmf An Egyptian tomb \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  C:\Users\cholden\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\FYYHA2RW\MC900440401[1].pngA parcel \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  http://static.freepik.com/free-photo/clothing-wizard-s-hat-clip-art_422146.jpg A wizard’s hat \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | (5 marks) |

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| **Learning Objective 5. To know how to find factors of a number and list the multiples of a number. Level 4c** |

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| 7.  a.  b.  c.  d.  e.  8.  a.  b.  c.  d. | Find the factors of the following numbers:  28  35  20  12  30  Write a list of the first 10 multiples of the following numbers:  4  7  3  5 | (5 marks)  (4 marks) |

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| **Learning Objective 6.** **To know what square numbers are.**  **Level 4c** |

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| 9. | Look at the numbers in the box below and list all the square numbers you can find. |  |
| 10.  a.  b.  c.  d. | 25  23  18  81  32  4  24  30  6  36  85  16  Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Complete the following:  12 =  32 =  72 =  82 = | (3 marks)  (4 marks) |

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| **Learning Objective 7.**  **To be able to plot points and connect them with straight lines. Level 4c** |

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| 11.  12. | Plot the following points on the grid below. Then join them with a straight line.  (0,2) (3,2) (4,4) (5,6)  y  7    6  5  4  3  2  1  x  0 1 2 3 4 5 6 7  What are the coordinates of points A, B and C on below?  y  7 6 5 4 3 2 1  A  A is ( , )  x  B is ( , )  B  x  C is ( , )  C  x  x  0 1 2 3 4 5 6 7 | (4 marks)  (3 marks) |

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| **Investigation** |

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| 1.  a.  b  .  c. | 2D shapes in a circle  Joe has a board with a circle on it and some large elastic bands. He fixes 8 evenly spaced pegs on the circle and puts an elastic band round the pegs to make a triangle.  Using the circles A – H below, investigate how many different triangles Joe can make by putting his elastic bands on the pegs (A has been done for you already).  Note: these 2 triangles are the same (all you’ve done is rotate them):    A  B  C  D    E  F  G  H    (You may not need all the circles)  Joe now decides to make quadrilaterals (four sided figures) on his board. He starts off with a square:    Investigate how many other different quadrilaterals can he make. Draw them on the circles B – L below:  A  B  C  D    E  F  G  H    I  J  K  L    (You may not need all the circles)  Write down what sort of quadrilateral Joe has made in each case?  A square\_\_\_\_\_\_\_\_\_\_\_\_ .  B \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  C \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  D \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  E \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  F \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  G \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  H \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  J \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  K \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  L \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | (6 marks)  (9 marks)  (9 marks) |

**Year 7 ILA – Mathslinks Book 7A Units 9 & 10**

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| **Level** | **Learning Objective** | **Pupil Assessment** | **Teacher Assessment** |
| 5c | To be able to measure and draw angles up to 180°. | ☹ 😐 ☺ | ☹ 😐 ☺ |
| 5c | To be able to calculate angles on a straight line and angles that make a full turn of 360°. | ☹ 😐 ☺ | ☹ 😐 ☺ |
| 4c | To know the names of different types of triangle and recognise them. | ☹ 😐 ☺ | ☹ 😐 ☺ |
| 3b | To know the names and recognise 3D shapes. | ☹ 😐 ☺ | ☹ 😐 ☺ |
| 4c | To know how to find factors of a number and list the multiples of a number. | ☹ 😐 ☺ | ☹ 😐 ☺ |
| 4c | To know what square numbers are. | ☹ 😐 ☺ | ☹ 😐 ☺ |
| 4c | To be able to plot points and connect them with straight lines. | ☹ 😐 ☺ | ☹ 😐 ☺ |

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| **Parental Comment** |
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| **Teacher General Comment** |
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| **Teacher Investigation Comment** |
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