

**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.
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| **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.
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| **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.
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| **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 5cLevel 5cLevel 4cLevel 3bLevel 4cLevel 4cLevel 4c |
| **Hints and Tips** |
| * Angles in a triangle add up to 180°
* Angles at a point add up to 360°
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| **Keywords**

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| quadrilateral |  | faces |  |
| vertices |  | factors |  |
| edges |  | multiples |  |
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| **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: |  |
|  | IsoscelesRight-angledEquilateralScalene | (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.bmpFind how many faces, edges and corners they each have. Enter your results in this table:

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|  | **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].pngCan 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:2835201230Write a list of the first 10 multiples of the following numbers:4735 | (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. | 2523188132424306368516Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_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) y7 654321x0 1 2 3 4 5 6 7 What are the coordinates of points A, B and C on below?y7 6 5 4 3 2 1 A A is ( , )x B is ( , )Bx C is ( , )Cxx0 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 circleJoe 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): ABCD   EFGH   (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:ABCD   EFGH   IJKL   (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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