**BGCFL**

#### MATHS DEPARTMENT



# YEAR 7

**SCHEME OF WORK and Curriculum Overview**

**Every student in year seven will have five 45-minute lessons a week. Most of these lessons will comprise of a starter at the beginning of the lesson. This is designed to settle the students and to get them thinking Mathematically straight away. This starter can be related to the lesson but can also be used to reinforce previous knowledge. At the end of the lesson the main teaching points will be recapped. As well as normal lessons, all year seven students will receive** **some one to one teaching sessions with the HTLA.**

**This scheme of work is to be used as a guide only. Sometimes due to unforeseen circumstances the class may be a week behind or sometimes may even be a week ahead of schedule. The topics will still be covered in the same order.**

Term 1 Year 7

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| **Number** | Learning Objectives. | Resources. |
| Week 1 | Stage 1: Read and write, add and take away numbers up to 10. | Play money. Number lines.Dice.Cubes.Counters.Textbooks.Worksheets.Follow me cards.Test sheets.ICT: Bitesize, Twinkl and many more resources. |
| Stage 2: Order numbers up to 100. Write numbers in words and vice versa. Understand place value for HTU. |
| Stage 3: Understand place value up to 1000. |
| Stage 2/3: Know addition and subtraction facts up to 20. |
| Notes For Week 1 | This week will allow us to assess the new intake. Higher achieving students can be given sums with larger numbers. |
| Week 2 | Stage 3: Solve problems involving money. Know that add is opposite to take away. (Change) |
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| Stage 5: Introduce decimals using money. |
| Notes for week 2 | This week we can introduce what we learnt last week into real life situations involving money. This will range from estimating prices to adding up a shopping list and working out the change. |
| Week 3 | Stage 3: Add and subtract 2-digit numbers mentally and on paper. |
| Stage 3: Add and subtract 3-digit numbers on paper.  |
| Week 3 notes | This is obviously a key skill that underpins most of the work we will be teaching in the future. Although some students will struggle to master these skills and others will want to move on, it is important to embed these skills. |
| Week 4 | Stage 4: Know 2,3,4,5 and 10 times tables. |
| Stage 6: Solve times and divide problems including remainders. |
| Week 4 notes | As with last week, the skills learnt this week are vitally important and every student needs to make as much progress as possible. Real life examples such as multi buys or working out wages can be used. |
| Week 5 | Stage 4: Introduce times tables up to 10 x 10. |
| Stage 4: Multiply 2-digit numbers by single digit numbers. |
| Week 5 notes | Times tables will be taught explicitly this week but need to be incorporate regularly in lesson starters throughout the year. |
| Week 6 | Consolidation and end of term test.This week can be used as catch up for some students or consolidation and mastery for others. |
| Notes | If this term is more than six weeks the time can be used to recap all the terms work.  |  |
| Advice: Less able pupils may not complete all sections. They can concentrate on understanding number and simple addition and subtraction. Most able pupils can progress further by solving problems involving 4 or more digits.Many activities can be taught as starters or games at the end of each lesson. |

 Term 2 Year 7

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| **Measures** | Learning Objectives. | Resources. |
| Week 1 | Stage 1: Order events. | Clocks. Number lines.Rulers.Metre rules.Trundle wheels.Weighing scales.Measuring jugs.Maps.Textbooks.Worksheets.Test sheets.ICT: Bitesize, Twinkl and many more resources. |
| Stage 2: Use measures of time. |
| Stage 2: Work out elapsed time. |
| Notes  | Some students may still need help telling the time, they can work with LTA or HTLA. This is obviously a huge life skill and time should be found for interventions if needed. The most able will be able to work out the finishing time of a film given the start time and duration. |
| Week 2 | Stage 1: Begin to measure length. |
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| Stage 4: Use metric units to measure length. |
| Stage 4: Use correct instruments and units to read measurements of length. |
| Notes | Measuring length is a skill used in many careers including building work and gardening. Use rulers, metre sticks and tape measures to measure everyday objects. Show how measurement in used in real life and include travel distances. Most able can investigate imperial measurements and see how difficult they are to calculate. Show several times that a door is 2 metres and use trundle wheels to measure field. |
| Week 3 | Stage 2: Begin to measure mass. |
| Stage 4: Use metric units to measure mass.  |
| Stage 4: Use correct instruments and units to read measurements of mass. |
| Notes | Measuring mass is a skill used in many careers including cooking, shop work, warehousing and nursing. Use kitchen, luggage and bathroom scales to measure everyday objects. Show how measurement in used in real life and include recipes. Most able can investigate imperial measurements and see how difficult they are to calculate. Show several times that a bag of sugar is 1KG; |
| Week 4 see also week 5 | Stage 3: Begin to measure capacity. |
| Stage 4: Use metric units to measure capacity. |
| Stage 4: Use correct instruments and units to read measurements of capacity. |
| Notes | Measuring capacity is a skill used in many careers including hospitality work and food industry. Show how measurement in used in real life and include mechanics. (Car engines and fuel tanks.) Most able can investigate imperial measurements and see how difficult they are to calculate. Show several times that a bottle of drink varies between 500ml and 2L |
| Week 5 | Stage 4: Estimate everyday measurements, including length, mass and capacity. |
| Notes | This week's work can also be incorporated into the work of previous weeks. It is important that all students at least get a good grasp on what 1 metre looks like, how heavy 1KG feels and how much liquid 1 litre is. |
| Week 6 | Consolidation and end of term test.This week can be used as catch up for some students or consolidation and mastery for others. |
| Notes | If this term is more than six weeks the time can be used to recap all the terms work and do some fun Christmas themed Maths. |  |
| Advice: Less able pupils may not complete all sections. They can concentrate on being able to tell the time and measuring simple objects. Most able pupils can progress further by solving problems timetables etc and estimating and measuring more difficult objects.Many activities can be taught as starters or games at the end of each lesson. Previous topics such as number bonds and times tables can also be revisited and reinforced in starter or plenary activities. |

 Term 3 Year 7

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| **Data Handling** | Learning Objectives. | Resources. |
| Week 1 | Stage 1: Read information in tables and lists. | Probability lines.Dice.Cubes.Playing cards.Textbooks.Worksheets.Test sheets.ICT: Bitesize, Twinkl and many more resources. |
| Stage 2: Draw bar charts. |
| Stage 3: Interpret bar charts. |
| Notes | Show that we use bar charts and graphs to show data in a more user-friendly manner. Make a point of leaving gaps between bars when using discrete data. Find a variety of contexts to show when and why bar charts are used in media. |
| Week 2 | Stage 2: Draw pictograms. |
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| Stage 3: Interpret pictograms. |
| Stage 3: Collect data and record it in a frequency table/tally chart. |
| Notes | Show that we use pictograms to show data in a more user-friendly manner. Show how to use a key and that all pictures must be the same. Find a variety of contexts to show when and why pictograms are used in media. |
| Week 3 | Stage 4: Group data in groups |
| Stage 4: Sort, analyse and present data.  |
| Notes |  |
| Week 4 | Stage 3: Understand and use the probability scale using words such as impossible, likely etc. |
| Stage 3: Understand and use the probability scale from 0 to 1. |
|  | Stage 3: Place events such as the probability of throwing a 6 on a die on the probability scale. |
| Notes | Probability is used for insurances and actuary work. Mention gambling and how the odds are worked out to ensure the customer loses. Excellent chance to use oracy skills. Write sentences for something that is impossible or certain etc. Role-play a weather forecast using vocabulary such as likely, unlikely etc. |
| Week 5 | Stage 5: Find and interpret probabilities from an experiment using all the skills learnt so far this term. |
| Notes | Roll a die or dice 50 times to show that all numbers have an equal chance or a score of 7 is most likely with 2 dice. Do a survey of cars to find the probabilities of certain colours. |
| Week 6 | Consolidation and end of term test.This week can be used as catch up for some students or consolidation and mastery for others. |
| Notes | If this term is more than six weeks the time can be used to recap all the terms work.  |  |
| Advice: Less able pupils may not complete all sections. They can concentrate on drawing and interpreting simple bar charts and pictograms. They can collect and analyse simple data such as favourite colours etc. Most able pupils can progress further by working independently to collect and analyse more difficult data such as heights of other pupils. Previous topics such as number bonds and times tables can also be revisited and reinforced in starter or plenary activities. |

 Term 4 Year 7

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| **Shape** | Learning Objectives. | Resources. |
| Week 1 | Stage 1: Describe things about shapes such as straight lines, curved lines etc. | Sets of plastic shapes.Lesson templates.Textbooks.Worksheets.Follow me cards.Flip charts.Mirrors.Pairs of compasses.Angle measures.-]ICT: Bitesize, Twinkl and many more resources. |
| Stage 1: Know maths names for simple shapes: Circle, triangle, square, rectangle, pentagon, heptagon and octagon. |
| Notes | Use oracy skills to name and describe shape. All groups will work with up to five sided shapes and more able can work with up to ten sides.  |
| Week 2 | Stage 2: Be able to recognise numbers of sides and corners of shapes. |
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| Stage 2: Group shapes in many ways.  |
| Notes | Another chance to use oracy skills including corners, edges, faces and vertices. Group shapes in colours, sides, lines of symmetry, order of rotational symmetry, according to ability. |
| Week 3 | Stage 1: Recognise reflective symmetry. |
| Stage 2: Reflect simple shapes in a mirror line.  |
| Notes | Start with simple reflections of an object touching the mirror line. Progress to reflections away from a mirror line. More able can produce more difficult images. |
| Week 4 | Stage 1: Know angles measure turn. |
| Stage 2: Draw and recognise acute, obtuse, reflex and right angels. |
| Stage 3: Measure and draw angles to the nearest degree. |
| Notes | Oracy skills using the correct vocabulary for acute, obtuse, right angle etc. Many students find using a protractor difficult. Lots of individual help will be required. |
| Week 5 | Stage 4: Know the angle sum on a straight line and find missing angles from this fact. |
|  | Stage 4: Know the angle sum in a triangle and find missing angles based on this fact. |
| Notes | All students should remember that a right angel has 90 degrees a straight line 180. Start with the missing angles being multiple of ten and then any number. |
| Week 6 | Consolidation and end of term test.This week can be used as catch up for some students or consolidation and mastery for others. |
| Advice: Less able pupils may not complete all sections. They can concentrate on understanding basic shapes and angles. Angle / triangle sum questions can be fully differentiated so that less able pupils can consolidate number bonds using sums involving tens and more able can be given any missing angles..Many activities can be taught as starters or games at the end of each lesson. Previous topics such as number bonds and times tables can also be revisited and reinforced in starter or plenary activities. |

Term 5

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| **Number and algebra.** | Learning Objectives. | Resources. |
| Week 1 | Stage 2: Recognise simple number patterns including odd and even etc. | Lesson templates.Cubes.Counters.100 square paper.Flip charts.Fraction discs.Play pizza.Follow me cards.Worksheets.Test sheets.ICT: My Bitesize, Twinkl and many more resources. |
| Stage 2: Describe number patterns and number pattern rules. |
| Stage 2: Find the next 2 numbers in a sequence. |
| Notes | Starting with very simple number patterns and patterns using shapes –square, circle, square etc. Then moving on to more difficult arithmetic sequences and some geometric sequences for advanced students. |
| Week 2 | Stage 1: Recognise simple fractions. |
| Stage 2: Use simple fractions. |
| Stage 2: Recognise equivalent fractions. |
| Notes | Starting with recognising half, quarter etc then progressing to 2/5, 5/8 etc. Lots of manipulatives available for this. Then find half, third, quarter of an amount.  |
| Week 3 | Stage 4: Understand that percentage means out of 100. |
| Stage 4: Represent percentages on 100 square paper. |
| Stage 5: Recognise simple percentage and fraction equivalents. Half, quarter etc. |
| Notes | Have a discussion of where we meet percentages. Money off when shopping or pay rises etc. Explain that percent means out of 100 and makes it easy to compare things. Such as 23 out of 35 is more than 40 out of 71. |
| Week 4 | Stage 1: Use positive co-ordinates. |
| Stage 2: Use co-ordinates in all 4 quadrants. |
| Notes | This will range from simple plotting to difficult coordinate pictures. |
| Week 5 | Up to Stage 5: Revisit all number work to include addition, subtraction, multiplication and division. |
| Notes | This is a good opportunity to look back at all number work and embed knowledge. |
| Week 6 | Consolidation and end of term test.This week can be used as catch up for some students or consolidation and mastery for others. |
| Advice: Less able pupils may not complete all sections. They can concentrate on understanding simple fractions.Most able pupils can progress further by solving problems involving more difficult fraction or percentages.Many activities can be taught as starters or games at the end of each lesson. Previous topics such as number bonds and times tables can also be revisited and reinforced in starter or plenary activities. |

Term 6

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| **Shape and Measure** | Learning Objectives. | Resources. |
| Week 1 | Stage 2: Find perimeters of simple shapes. | Sets of plastic shapes.Lesson templates.Textbooks.Worksheets.Follow me cards.Flip charts.Worksheets.Test sheets.ICT: Bitesize, Twinkl and many more resources. |
| Stage 5: Find perimeters of other shapes. |
| Stage 5: Find the perimeter of compound shape. |
| Notes | Discuss building and gardening work. Start with simple counting on worksheets. Then more work on how to mathematically find the perimeter. This is a great time to improve ruler skills and general question layout, leaving space for the workings out. |
| Week 2 | Stage 3: Find area by counting squares. |
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| Stage 3: Know the formula for the area of a rectangle. |
| Notes | Again, discuss real life applications. Mention painting and how you want to buy the right amount. When starting to find areas mathematically, allow students to find the formula themselves.  |
| Week 3 | Stage 5: Find the areas of shapes made by rectangles. |
| Stage 5: Find the areas of compound shapes.  |
| Notes | Move on to compound shapes involving triangles and parallelograms for more able. |
| Weeks 4,5and 6Notes | Consolidation and end of year test.End of year activities.These weeks will also incorporate school activities week and various other things. Aswell as the end of term test, use the time to consolidate times tables, square numbers or money work, depending on what you think your group needs more time to look at. |
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| Advice: Less able pupils may not complete all sections. They can concentrate on understanding number and simple addition and subtraction. Most able pupils can progress further by solving problems involving 4 or more digits.Many activities can be taught as starters or games at the end of each lesson. Previous topics such as number bonds and times tables can also be revisired and reinforced in starter or plenary activities. |