**Y9 Maths ‘at home learning’ resource Sheet 4**

**Task: Aim to complete one activity a day to help support and further your revision and subject knowledge.**

**Useful websites**

To assist with your learning you could use:

[**https://vle.mathswatch.co.uk/vle/**](https://vle.mathswatch.co.uk/vle/) **-There are homeworks set on here each week!)**

Username: r23surnamef@rosebridge (e.g. r23banksk@rosebridge)

Password: same as your username (e.g. r23banksk@rosebridge)

<https://www.bbc.co.uk/bitesize>

<https://corbettmaths.com/> and https://www.mathsgenie.co.uk/

<https://www.mathsgenie.co.uk/gcse.html>

**Key Topics to revise:**

Number

Algebra

Shape

Data and probability

Ratio and proportion

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| Create a powerpoint showing the steps showing how to perform the multiplication of a 3-digit decimal number by a 2-digit decimal number (Grid method or vertical method). | Create revision cards with examples on BIDMAS. | Design a lesson to tech to a Y7 class on how to how to add, subtract, multiply and divide fractions. | Create 5 context questions where you have to find the HCF. | Find the lowest common multiple of the house door number of yours and you best friends. | Create revision cards on how to add and subtract negative numbers. The revision cards need to start with easier questions and progressively get harder (two signs in the middle of the question. Eg 4 + -5). | Create a revision cards showing how to multiply and divide negative numbers. | Design a lesson for a y7 pupil to teach them how to calculate a fraction of an amount. |
| Create a powerpoint on how to teach percentage of an amount and show how this will be used to do percentage increase/ decrease. | Create a powerpoint showing where rounding is used. Include rounding off measurements to particular degrees of accuracy and how it is used in the media. | Get the most recent gas, electricity and phone bills. Using rounding calculate how much each utility costs per day. How much are you away from the exact daily cost? | Create a powerpoint giving pupils a method to solve problems. Eg RUCSAC  R- read the problem, U- Understand, C-Choose the correct maths, S-solve the problem, A- Answer the problem, C- Check the working out. | Create some revision notes on how to calculate percentage error. Guess your height, measure it accurately then calculate your percentage error. | Create a game of snap. Create cards with fractions decimals and percentage equivalents. Include equivalents for all the multiples 5%, 1/3 and 2/3, and all the 1/8ths. | Play the game of SNAP. | Create some revision card to show the techniques used to to compare the size of fractions, decimals and percentages. |
| Create a flow diagram to help decide the name of each of the different types of quadrilaterals. Questions you could use could include  Does the shape have more than one set of parallel sides?  Does it have two lines of symmetry? | Draw accurately each polygon (up to 12 sides). For this you will need to calculate:-  Angle sum for a polygon  Interior angle of a regular polygon.  Exterior angle of a regular polygon. | Create a lesson about angles in parallel lines. Include:-  Alternate angles Corresponding angles. Co-interior angles. | Create a journey around your house/garden using bearings and steps. See if someone else in your house can follow your instructions and get to the destination. | Create a powerpoint showing elevations of famous buildings.  Include the front, side and plan elevations. | Create a lesson showing how to teach constructing an angle bisector. Show all the steps needed. Remember to leave the construction lines. | Create a lesson showing how to teach constructing a perpendicular bisector. Show all the steps. Remember to leave the construction lines. | Create a lesson showing how to teach constructing a perpendicular line that does not pass through the midpoint. Show all the steps. Remember to leave the construction lines. |
| Create 20 of each of the following:-  Equation  Identity  Formula. | Create a lesson for a Y7 pupil showing how to solve equations using the balancing method. Include questions such as:-  g -3 = 15  5t = 30  2x + 7 = 20 | Create a lesson for a y8 pupil to teach the rules of how to simplify algebra involving +/-.  Include examples of common errors. | Create a lesson for a y8 pupil to teach the rules of how to simplify algebra involving multiplying and dividing terms. Include examples of common errors. | Create a lesson for a y8 pupil to teach applying rules of indices including examples common errors made. | Create a lesson to explain how to expand bracket. eg. 7 (5x + 4)  and  5(8x-1) +4(7x-2)  Explain how to ensure the sign is correct when expanding the bracket. | Create a lesson explaining how to expand double brackets. eg. (g - 3)(g + 5) and  (3a+4)(7a-6) | Create revision notes on how to expand triple brackets.  Eg.(x-3)(x+3)(x+2) |
| Create a lesson to teach factorising a simple algebraic expression.  Eg. 12x – 8  = 4(3x –2) | Review expanding /factorising by completing the following work <https://www.mathsgenie.co.uk/resources/58_expand-and-factorise.pdf> | Create a lesson to teach factorising a quadratic expression. Include with step by step guide to explain how to factorise expressions such as:-  *x*2 + 7*x* +10  *x*2 + 4*x* –12 | Create a lesson showing how to factorise a quadratic expression using the Quadratic Formula. Help can be found on Mathswatch or www.mathsgenie.co.uk. | Watch a video on mathswatch showing how to transform shapes using:-   * Reflection * Rotation. | Watch a video on mathswatch showing how to transform shapes using translation. | Watch a video on mathswatch showing how to transform shapes using enlargement. | Create a lesson teaching how to calculate the area of plane shapes. (rectangle/triangle/ circle/ parallelogram/ trapezium) |
| Watch a video on mathswatch or mathsgenie on how to calculate the area of composite shapes. | Either  Calculate the area of your garden or yard.  Or  Calculate the area of shelf space in the kitchen. | Create a revision card showing how to calculate the area and perimeter of plan shapes. | Find 3 food recipes from a cookbook or the internet. If the recipe is designed for 4 people calculate the ingredients needed to make the recipe for 10 or 3 people. Using the internet try to work out the cost of making the recipe for 4 people. | Find a recipe from a cookbook or the internet. If the recipe makes enough for 4 people calculate the cost of the meal when buying the ingredients from  a) Tesco  b) Asda  c) Aldi  (Hint-Comparasaurus is a supermarket comparison app  that might help.) | Using prices from confused.com. Find the difference in prices for diesel and petrol in different parts of the country eg Wigan, London and Carlisle. Work out the percentage difference between the least expensive and the most expensive. | Create a lesson showing how to calculate the best value product when buying things from a supermarket. The biggest is not always the cheapest. | Research density. Calculate the density of 5 things around your home. Choose cuboid or cylindrical shapes. Find out how to find the volume of difficult shapes. |
| Research world land speed record. Produce a graph showing the increase in the record. In which decade was the largest increase made? | Research the speed of the fastest transport on land, sea and in the air. Create a graph to compare the fastest of each compared to the fastest of each at the start of the 20th century. | Create a lesson showing how to rearrange formulae using the algebra balancing equations skills. | Create a lesson showing how to us the scale of a map. Explain what 1:50000 or 1:25000 means on a map and explain how that can help calculate distances on maps. | Research bar modelling technique for ratio (can be found on Youtube).  Create lesson showing how to split an amount using a ratio. | Create revision cards on how to simplify a ratio and how to split using a ratio. Include bar modelling. | Create a lesson showing how the unitary method to can be used to find the best value. | Create a frequency table to collect data and collect some data using it.  Eg. Watch the news – how many times particular words are mentioned. Also create a diagram to show the data. |