

Working From Home Independent Learning tasks March 2022

Subject: **Mathematics**

Year group	Spring topic	Sites for learning tasks, videos and worksheets	
7	<p>Multiplying and dividing</p> <ul style="list-style-type: none">• Properties of multiplying and dividing• Multiply and divide by powers of 10• Use formal methods for multiplying integers and decimals• Use order of operations• Problem solve using areas of rectangles, parallelograms, triangles and trapeziums.• Solve problems using the mean <p>Fractions and percentages of amounts</p> <ul style="list-style-type: none">• work out simple fractions and percentages of amounts with and without a calculator. <p>Directed number</p> <ul style="list-style-type: none">• Order directed numbers• Revisit four operations using negatives• Use a calculator with directed numbers• Solve two step equations <p>Adding and subtracting fractions</p> <ul style="list-style-type: none">• Represent tenths and hundredths on diagrams• Convert mixed numbers to improper fractions• Add and subtract fractions	<p>Mathswatch.co.uk/vle initialsurname@bideford square</p> <p>Please use the overviews on the website for full content and mathswatch clips.</p>	
8	<p>Sequences</p> <ul style="list-style-type: none">• Generate sequences using a rule• Generate a sequence using brackets and squares. <p>Indices</p> <ul style="list-style-type: none">• Form expressions using indices• Understand and use the addition and subtraction rules <p>Fractions and percentages</p> <ul style="list-style-type: none">• Develop the understanding of fractions, decimals and percentages• Find percentage increase and decrease.	<p>Mathswatch.co.uk/vle initialsurname@bideford square</p> <p>Please use the overviews on the website for full content and mathswatch clips.</p>	

	<ul style="list-style-type: none"> • Use multipliers to problem solve • Express one amount as a percentage of another <p>Standard index form</p> <ul style="list-style-type: none"> • Convert between ordinary numbers and standard form • Compare numbers given in standard form • Calculate with numbers given in standard form, with and without a calculator 		
9	<p>Money and maths Explore financial mathematics including, bills and bank statements, interest, and best buys.</p> <p>Deduction</p> <ul style="list-style-type: none"> • Revisit angles rules including special quadrilaterals • Find angles using algebraic methods <p>Rotation and translation</p> <ul style="list-style-type: none"> • Identify the order of rotational symmetry • Find the result of rotating a shape • Translate points and shapes by a given vector <p>Pythagoras' Theorem</p> <ul style="list-style-type: none"> • Identify the hypotenuse of a right angled triangle • Determine whether a triangle is right angled • Calculate missing sides in right angled triangles 	<p>Mathswatch.co.uk/vle initialsurname@bideford square</p> <p>Please use the overviews on the website for full content and mathswatch clips.</p>	Corbettmaths.co.uk
10	<p>Set 1-3 Unit 9 equations and inequalities</p> <ul style="list-style-type: none"> • find roots of quadratic functions • rearrange and solve equations • use the quadratic formula to solve equations • complete the square for quadratic expressions and use to solve • solve simultaneous equations • solve simultaneous equations and quadratic equations 	<p>Mathswatch.co.uk/vle initialsurname@bideford square</p> <p>Please use the overviews on the website for full content and mathswatch clips.</p>	Corbettmaths.co.uk

- solve linear inequalities

Unit 10 probability

- Listing all possible outcomes
- Use the product rule to find the number of outcomes of an event
- Identify mutually exclusive events
- Work out expected probabilities and theoretical probabilities
- Draw and use frequency trees
- Use tree diagrams to problem solve
- Use Venn diagrams to calculate conditional probabilities

Unit 11 percentages and change

- Find amounts after a repeated change
- Solve growth and decay problems
- Calculate rates
- Convert between units of speed
- Use the formula to calculate speed and acceleration
- Solve problems using compound measures
- Use relationships involving ratios
- Use direct and inverse proportion

Set 4-9

Unit 11 ratio and proportion

- use ratio notation
- write a ratio in its simplest form
- solve problems using ratios
- use ratios to convert measures
- divide by a given ratio
- compare ratios
- solve proportion problems
- use and know direct and inverse proportion

Unit 12 Right angled triangles

- Understand Pythagoras' Theorem
 - Calculate the length of the hypotenuse in a right angled triangle
 - Calculate the length of the short side using Pythagoras'
 - Calculate the length of a line segment
- Understand and recall trigonometry
- Find missing lengths and angles using trigonometry.

Unit 13 Probability

	<ul style="list-style-type: none"> • Calculate simple probabilities • Understand mutually exclusive Events • Use two way tables • Work out probabilities from a sample space diagram • Find and interpret experimental probabilities • Make predictions from experimental probabilities • Use Venn diagrams to work out probabilities • Use the language of sets and Venn diagrams • Use tree diagrams and frequency trees 		
11	<p>Foundation tier</p> <p>Unit 16 quadratics, equations and graphs</p> <ul style="list-style-type: none"> • expanding brackets • plotting quadratic functions • problem solve with quadratics • factorise quadratics • solve quadratics using factorising <p>Higher tier</p> <p>Unit 17. More algebra</p> <ul style="list-style-type: none"> • Rearrange formulae • Simplify algebraic fractions • Simplifying surds • Solving algebraic fractions • Using functions <p>Using the released topic list from EDEXCEL for each of the papers we will be using lessons to GAP FILL topics that students struggle with on centre assessed papers.</p>	<p>Mathswatch.co.uk/vle initialsurname@bideford square</p> <p>Please use the overviews on the website for full content and mathswatch clips.</p>	<p>Corbettmaths. co.uk</p>
12	<p>Statistical Hypothesis Unit 7</p> <p>Differentiation Unit 12</p> <p>Forces and Newton's Laws</p> <p>Newton's second law,</p> <p>Integration part 1 Unit 13.1-13.3</p>	<p>The following websites are all used regularly at A Level Mathematics and in many cases are an excellent source of further questions.</p> <p>Graphing Desmos.com Geogebra.org</p>	

		<p>Self-study/questions/resources Drfrostmaths.com Integralmaths.org Additional questions Physicsandmathstutor.com Naikermaths.com – questions by topic Mathsmadeeasy.co.uk – exam papers sites.google.com/view/sxpmaths/home alevelmathsrevision.com mathsgenie.co.uk</p>	
13	<p>Integration Pure 2 book</p> <p>The Normal Distribution stats book 2</p> <p>Applications of Forces Stats book 2</p>	<p>The following websites are all used regularly at A Level Mathematics and in many cases are an excellent source of further questions.</p> <p>Graphing Desmos.com Geogebra.org Self-study/questions/resources Drfrostmaths.com Integralmaths.org Additional questions Physicsandmathstutor.com Naikermaths.com – questions by topic Mathsmadeeasy.co.uk – exam papers sites.google.com/view/sxpmaths/home alevelmathsrevision.com mathsgenie.co.uk</p>	

NB If you are 'stuck' on a task, please email your subject teacher (all email addresses are on the college website [here](#))