

Year 12 Biology

Autumn Term		
What we are studying	What questions can you ask to support your child and stretch their thinking?	What do I do if my child was absent, or I want them to do extra work?
<p>3.1 All life on Earth shares a common chemistry. This provides indirect evidence for evolution.</p> <p>Biological Molecules- Starch, carbohydrates, proteins, fats, nucleic acids, ATP, water and inorganic ions</p> <p>3.2 Cells- Structure of eukaryotic and prokaryotic cells, Structure, and function of the different cell organelles. Importance of specialised cells.</p> <p>Methods of studying cells: The principles and limitations of optical microscopes, transmission electron microscopes and scanning electron microscopes.</p> <p>Recognise the stages of the cell cycle: interphase, prophase, metaphase, anaphase and telophase (including cytokinesis)</p> <p>The basic structure of all cell membranes, including cell-surface membranes and the</p>	<p>What are the tests for sugar, starch, protein and fats?</p> <p>Explain the structure of DNA</p> <p>Explain the structure of a glucose molecule.</p> <p>Explain the semi-conservative model of DNA replication.</p> <p>Compare a prokaryotic cell and an eukaryotic cell.</p> <p>Explain the limitations of scanning electron microscope.</p> <p>How is binary fission different from mitosis?</p> <p>Explain the different stages of mitosis.</p>	<p>YouTube – A level Biology</p> <p><u>BBC Bitesize – GCSE Science</u></p> <p><u>Seneca – Students are using this for homework already</u></p> <p><u>Physics and maths tutor – exam practice</u></p>

membranes around the cell organelles of eukaryotes.		
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Year 12 Business Studies

Autumn Term		
What we are studying	What questions can you ask to support your child and stretch their thinking?	What do I do if my child was absent, or I want them to do extra work?
<p>Half Term 1</p> <p>Exploring Business – Unit 1</p> <p>1.A – Exploring features of different businesses and what makes them successful</p> <p>1.B – Investigating how businesses are organised</p> <p>1.C – Examine the environment in which business operate</p> <p>Personal and Business finance – Unit 3</p>	<ol style="list-style-type: none"> 1) Can you explain different features of a business? 2) Can you explain how contrasting businesses are influenced by stakeholders? 3) Discuss how stakeholders communicate with different businesses 4) Can you investigate the main reasons for small and large business success 5) Explore different organisational structures 6) Can you make links between organisational structures and aims and objectives? 7) Discuss the internal, external and competitive environment of a given market 8) Can you produce a situational analysis? 	<p>Unit 1 content</p> <p>BTEC Textbook – each student has been provided with a copy</p> <p>MS Teams – All resources that has been covered will be available on the Teams channels</p>

<p>3.A – Understanding the importance of managing personal finance</p> <p>3.B Explore the personal finance stor</p> <p>3.C Understand the purpose of accounting</p> <p>3.D – Select and evaluate different sources of business finance</p>	<ol style="list-style-type: none"> 1) What are the functions of money? 2) Name different methods of payment 3) What is a current account? 4) Explain different methods of borrowing money 5) What are the risks and rewards of investment? 6) What is insurance? 7) State different features of financial institutions 8) What are the key methods of communication between banks and people? 9) What is the purpose of accounting? 10) Explain the different methods of income 11) Explain the different methods of expenditure 12) State the different methods of finance 	<p>Unit 3 content:</p> <p>Seneca learning – Mainly used for financial calculations</p> <p>BTEC Textbook – each student has been provided with a copy</p> <p>MS Teams – All resources that has been covered will be available on the Teams channels</p>
<p>Market research – Unit 22</p> <p>22.A – Examine the types of market research used by a business</p> <p>22.B – Plan a market research activity</p> <p>22.C – Implement a market research activity.</p>	<ol style="list-style-type: none"> 1) Can you explain a range of market research methods? 2) Can you assess different market research methods? 3) Can you explain how research methods help inform decision making? 4) Can you justify the use pf specialist marketing 	<p>Unit 22 content:</p> <p>www.mymarketreserchmethods.com/survey-design-best-practices</p> <p>www.greenbook.org/market-research</p>

<p><u>Half Term 2</u></p> <p>Exploring Business – unit 1</p> <p>1.D – Examining business markets</p> <p>1.E – Investigating roles and contribution of innovation and enterprise to business success</p> <p>Personal and Business finance – Unit 3</p> <p>3.E – Break-even and cash flow forecasts</p> <p>3.F – Completing statements of comprehensive income and financial position</p>	<p>agencies for market research?</p> <p>5) Undertake secondary market research</p> <p>6) Undertake primary market research</p> <p>7) Can you analyse the reasons for choosing certain research methods?</p> <p>8) Can you evaluate the purpose of pilot research?</p> <p>1) Can you explain how market structures influence supply and demand?</p> <p>2) Can you explain the affect pricing and output has on decisions of a business?</p> <p>3) Assess how market changes impact businesses</p> <p>4) What is innovation?</p> <p>5) What is enterprise?</p> <p>6) How does innovation and enterprise impact business success</p> <p>1) Can you calculate break-even?</p> <p>2) Can you create a cash flow forecast?</p> <p>3) Can you calulate contribution per unit?</p> <p>4) Can you complete a statement of comprehensive income?</p>	<p>BTEC Textbook – each student has been provided with a copy</p> <p>MS Teams – All resources that has been covered will be available on the Teams channels</p>
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<p>3.G – Evaluating business performance</p> <p>Market research – Unit 22</p> <p>22.C – Market research findings</p> <p>22.D – Making recommendation to improve processes</p>	<p>5) Can you evaluate business performance?</p> <p>6) Can you measure liquidity/liquid capital ratio?</p> <p>1) Can you interpret research findings?</p> <p>2) Can you present research findings in a range of formats?</p> <p>3) Can you use statistical techniques?</p> <p>4) Assess limitations of data</p> <p>5) Justify research planning processes</p>	
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Year 12 Economics

Autumn Term		
What we are studying	What questions can you ask to support your child and stretch their thinking?	What do I do if my child was absent, or I want them to do extra work?
<p><u>Half Term 1</u></p> <p>Microeconomic Foundations: How does the price mechanism operate?</p> <p>1.1.1 - 1.1.3: Social sciences; Positive and normative statements; The economic problem</p> <p>1.2.1 & 1.2.10: Rational Decision Making; Rational and Irrational Behaviour</p> <p>1.1.2: Demand</p> <p>1.2.3: Elasticity of Demand</p> <p>1.2.4: Supply</p> <p>1.2.5: Elasticity of Supply</p> <p>1.2.6: Price determination</p> <p>1.2.7: Price mechanism</p> <p>1.2.8: Consumer and producer surplus</p> <p>1.1.4: PPFs</p> <p>1.1.5: Specialisation and the division of labour</p> <p>1.1.6: Types of Economy</p>	<ol style="list-style-type: none"> 1. Name 2 factors that will determine government economic policy. 2. What is the “problem of scarcity”? 3. Define opportunity cost. 4. When we refer to economic agents being rational, what do we mean by this specifically? 5. Can you explain what is meant by “bounded rationality”? 6. What is the correlation between price and quantity demanded? 7. What is meant by “diminishing marginal utility”? 8. How would you explain PED in words? 9. How would you explain YED in words? 10. How would you explain XED in words? 11. What is the correlation between price and quantity supplied? 12. Can you explain what is meant by PES? 13. What factors influence PES? <p>Explain the following functions of the price mechanism:</p> <p>Rationing</p> <p>Signalling</p>	<p><u>Seneca Learning</u></p> <p>Microeconomic topics can be found under:</p> <p>Economics: Edexcel A A Level à Introduction to markets à choose one of the following:</p> <ul style="list-style-type: none"> • Nature of economics • How markets work

<p>Half Term 2</p> <p>Macroeconomic Foundations: What is the best way of collecting economic data?</p> <p>2.1.1: Economic Growth</p> <p>2.1.2: Inflation</p> <p>2.1.3: Employment and unemployment</p> <p>2.1.4: Balance of payments</p> <p>Macroeconomic Foundations: Why do Keynesians and classical economists disagree?</p> <p>2.2.1: Aggregate demand</p> <p>2.3.1: Aggregate supply</p> <p>Macroeconomic Foundations: Is growth always a good thing?</p>	<p>Incentive</p> <p>14. Draw a fully labelled production possibility frontier graph.</p> <p>15. What was Adam Smith's theory about specialisation and the division of labour?</p> <p>16. Explain the schools of thought of each of the following: Adam Smith, Friedrich Hayek, and Karl Marx.</p> <p>Can you define GDP? (there are three ways)</p> <p>Can you explain clearly what the difference between economic growth and inflation is?</p> <p>Can you define inflation/deflation/disinflation?</p> <p>Can you explain how the claimant count measure of unemployment is calculated?</p> <p>Can you explain how the ILO measure of unemployment is calculated?</p> <p>Can you explain why the two measures might give you different answers?</p> <p>Can you explain the three components of the balance of payments?</p> <p>Can you explain the components of the current account?</p> <p>Can you explain what a trade deficit/surplus is? (with references to value not volume)</p> <p>Can you recall the formula for AD? Can you explain how each component relates to different economic agents?</p> <p>Can you explain the shapes of the Classical and Keynesian AS curves?</p>	<p>Macroeconomic topics can be found under:</p> <p>Economics: Edexcel A A Level à The UK</p> <p>Macroeconomy à choose one of the following:</p> <ul style="list-style-type: none"> • Measures of economic performance • Aggregate demand • Aggregate supply • National income
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<p>2.4.1: National income</p> <p>2.4.2: Injections and withdrawals</p> <p>2.4.3: Equilibrium output</p> <p>2.5.3: The business (trade) cycle</p>	<p>Can you draw the circular flow of income, with all four channels?</p> <p>Can you explain the difference between income and wealth?</p> <p>Can you identify the withdrawals/leakages and injections into the circular flow of income?</p> <ol style="list-style-type: none">1. Do you understand how the starting point for the economy in terms of where it is on the AS curve determines the size of the effect on price level and GDP?	
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Year 12 A Level English Literature

Autumn Term		
What we are studying	What questions can you ask to support your child and stretch their thinking?	What do I do if my child was absent, or I want them to do extra work?
<p>The Edexcel Level 3 Advanced GCE in English Literature consists of three externally examined papers and one non-examination assessment component. The qualification requires the study of eight literary texts plus unseen poetry across two years.</p> <p>Students in Year 12 will study:</p> <p>Paper 1 Drama:</p> <p><i>Othello</i> by William Shakespeare</p> <p><i>A Streetcar Named Desire</i> by Tennessee Williams</p> <p>Paper 2 Prose:</p>	<ol style="list-style-type: none"> Should <i>A Thousand Splendid Suns</i> be part of the literary canon? Why is it so important to study <i>Othello</i> in the 21st century? What texts are written before 1900? Which text would you like to have written? What GCSE texts helped you understand A Level texts? 	<ol style="list-style-type: none"> Log into the lesson on Teams Watch and take notes on academic lectures MASSOLIT – Short video lectures from the world's best academics for school teachers and students around the world. Complete independent study notes

*Tess of the
D'Urbervilles* by
Thomas Hardy

*A Thousand
Splendid Suns* by
Khaled Hosseini

Year 12 Mathematics

What we are studying	What questions can you ask to support your child and stretch their thinking?	What do I do if my child was absent, or I want them to do extra work?
<p><u>Algebra manipulation, Quadratic Equations and Simultaneous Equations</u></p> <p>Understand and use the laws of indices for all rational exponents.</p> <p>Use and manipulate surds, including rationalising the denominator.</p> <p>Using the discriminant of a quadratic function, including the conditions for real and repeated roots</p> <p>Completing the square Solution of quadratic equations including solving quadratic equations in a function of the unknown</p> <p>Manipulate polynomials algebraically, including expanding brackets and collecting like terms, factorisation and simple algebraic division</p> <p>Use of the factor theorem.</p> <p>Solve simultaneous equations in two variables by elimination and by substitution, including one linear and one quadratic equation.</p>	<p>Let $N = 2^k \times 4^m \times 8^n$ where k, m, n are positive whole numbers. Then N will definitely be a square number whenever:</p> <ul style="list-style-type: none"> ○ k is even; ○ $k + n$ is odd; ○ k is odd but $m + n$ is even; ○ $k + n$ is even. <p>Prove that $x^{12} = x^{-\sqrt{x^{12}}}$</p> <p>If $b = \sqrt{19a^2b} = \sqrt{19a^2}$, determine $3b - 23b - 2$ in the form kbn where k, n, n are constants.</p> <p>Express $(x + x - \sqrt{x})^{22} = \sqrt{x + x^{22}}$ as powers of x.</p> <p>Solve $9 - \sqrt{427} - \sqrt{5} = 3 - \sqrt{x^9 4275} = 3x$</p>	<p>https://sparxmaths.com/</p> <p>www.senecalearning.com</p> <p>uplearn</p> <p>AS level maths 1 - Indices</p> <p>AS level maths 2 - Surds</p> <p>AS level maths 3 - Quadratic functions</p> <p>AS level maths 4 - Quadratic graphs</p> <p>AS level maths 5 - Factor theorem</p> <p>AS level maths 6 - Algebraic division</p> <p>AS level maths 7 - Simultaneous equations</p>

Graphs, linear and quadratic inequalities

Understand and use the equation of a straight line, including the forms

$$y - y_1 = m(x - x_1) \quad y - y_1 = mx - x_1$$

$$ax + by + c = 0 \quad ax + by + c = 0$$

Gradient conditions for two straight lines to be parallel or perpendicular.

Be able to use straight line models in a variety of contexts.

Solve linear and quadratic inequalities in a single variable and interpret such inequalities graphically, including inequalities with brackets and fractions.

Express solutions through correct use of 'and' and 'or', through set notation.

Represent linear and quadratic inequalities such as $y > x + 1$ and $y > ax^2 + bx + c$ graphically

Understand and use graphs of functions

- (i) Use the substitution $\sqrt{x} = y$ (where $y \geq 0$) to find the real root of the equation $x + 3\sqrt{x} - \frac{1}{2} = 0$.
- (ii) Find all real roots of the following equations:
 - (a) $x + 10\sqrt{x+2} - 22 = 0$;
 - (b) $x^2 - 4x + \sqrt{2x^2 - 8x - 3} - 9 = 0$.

Express $2x^2 + 12x + 7$ in the form $a(x+b)^2 + cx + d$

Into how many regions is the plane divided when the following three parabolas are drawn?

$$y = x^2 \quad y = x^2 - 2x \quad y = x^2 + 2x + 2$$

$$x^2 + 5kx + (10k + 5) = 0 \quad x^2 + 5kx + 10k + 5 = 0$$

where

[AS level maths 8 - Straight Lines](#)

[AS level maths 9 - Inequalities](#)

[AS level maths 10 - Graphs of functions](#)

[AS level maths 11 - Proportional functions](#)

[AS level maths 12 - Transformations of graphs](#)

<p>Sketch curves defined by simple equations including polynomials.</p> <p>$y=axy=ax$ and $y=ax^2y=ax^2$ (including their vertical and horizontal asymptotes)</p> <p>Interpret algebraic solution of equations graphically</p> <p>Use intersection points of graphs to solve equations.</p> <p>Understand and use proportional relationships and their graphs.</p> <p><u>Circles</u></p> <p>Understand and use the coordinate geometry of the circle including using the equation of a circle in the form $(x-a)^2 + (y-b)^2 = r^2$ $x-a^2 + y-b^2 = r^2$</p> <p>completing the square to find the centre and radius of a circle;</p> <p>Use of the following properties:</p> <ul style="list-style-type: none"> • The angle in a semicircle is a right angle • The perpendicular from the centre to a chord bisects the chord <p>The radius of a circle at a given point on its circumference is</p>	<p>kk is a constant. Given that this equation has equal roots, determine the value of kk.</p> <p>.</p> <p>Sketch the curve with equation $y=(x-2)(1-x)(1+x)y=(x-2)(1-x)(1+x)$</p> <p>Sketch the curve with equation $y=x^2(x-1)y=x^2(x-1)$</p> <p>The diameter of a circle is $ABAB$ where AA and BB have the coordinates $(2,5)2,5$ and</p>	<p><u>AS level maths 13 - Circles</u></p> <p><u>AS level maths 14 - Binomial Expansion</u></p>
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<p>perpendicular to the tangent to the circle at that point.</p>	<p>$(8,13)$. Determine the equation of the circle. Show that the line $y=x-7$ does not meet the circle $(x+2)^2+y^2=33$</p>	
<p><u>Binomial expansions</u> Understand and use the binomial expansion of $(a+bx)^n$ for positive integer n the notations $n!$ and ${}^n C_r$</p>	<p>A circle C has the equation $(x-5)^2+(y+3)^2=10$. Find the equations of the two possible tangents whose gradient is -3.</p>	
<p>Link to binomial probabilities</p>	<p>Find the equation of the circle that passes through the points $A(-8,1)$, $B(4,5)$, $C(-4,9)$. Given that $(8^3)=8!3!a!$, find the value of a . Find the first 4 terms in the binomial expansion of $(4+5x)^{10}$, giving terms in ascending powers of x .</p>	

	Use your expansion to estimate the value of $1.05101.0510$ to 5 decimal places.	
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Year 12 Politics

Autumn Term		
What we are studying	What questions can you ask to support your child and stretch their thinking?	What do I do if my child was absent, or I want them to do extra work?
<p><u>Half Term 1</u></p> <p>UK Democracy (4 lessons a week):</p> <p><u>Content:</u></p> <p>This unit will give students an understanding of the various ways democracy manifests in the UK. Students will study:</p> <ul style="list-style-type: none"> - Direct and representative democracy - Pressure groups - Rights in context <p>Liberalism (2 lessons a week) :</p> <p><u>Content:</u></p>	<ul style="list-style-type: none"> - What is the difference between representative and direct democracy? - What types of direct democracy is used in the UK today? - What does franchise mean? - What does suffrage mean? - What key acts have been passed to widen the franchise? - What was the main reason women won equal voting rights to men in 1928? - How do some people argue the franchise should be extended further? - What are access points? 	<p>Seneca: Students should go onto the Edexcel Politics Course online and work through the sections on UK politics and liberalism.</p>

This unit will examine the defining features of the liberal ideology as well as its history.

Students will look at:

- **Key principles ie. individualism, rationalism, the state**
- **Key thinkers ie. John Locke/Mary Wollstonecraft**

Half Term 2

Political Parties (4 lessons a week)

Content:

This unit is an overview of the key political parties in UK democracy. Students will study:

- **The Conservative Party**
- **The Labour Party**
- **The Liberal Democrat Party**
- **The Scottish National Party**
- **The United Kingdom Independence Party**

- **What is the difference between insider and outsider pressure groups?**
- **What is the difference between cause and sectional pressure groups?**
- **What example is there of an outsider, cause pressure group?**
- **What example is there of an insider, sectional pressure group?**
- **What is the ECHR?**
- **What is the HRA?**
- **How effective has the HRA been in creating a rights based culture in the UK?**

Half Term 2

**Conservatism (2 lessons
a week)**

Content:

**This unit will examine
the defining features of
the conservative
ideology as well as its
history:**

Students will look at:

Year 12 Sociology

Autumn Term		
What we are studying	What questions can you ask to support your child and stretch their thinking?	What do I do if my child was absent, or I want them to do extra work?
<p>Half Term 1</p> <p>Families and households</p> <p>In this unit, students learn about the structure of the family and changes in the family over time. This topic involves the investigation of the family unit, structure, demographics, sociology of personal life and child rearing.</p>	<ol style="list-style-type: none"> 1. According to Young and Willmott, which couples are most likely to be symmetrical? 2. Why do feminists reject the 'march of progress' view? 3. What did Boulton find in relation to men's involvement in childcare? 4. What three activities make up the 'triple shift'? 5. Give the two main reasons why official statistics understate the true extent of domestic violence. 6. Give two ways in which children were seen to be the same as adults in the Middle Ages. 7. How are children seen by the 'new sociology of childhood'? 8. What two essential or 'irreducible' functions does Parsons suggest that the nuclear family now performs? 	<p>Your child can complete online based work on Seneca.</p>  

Education

In this topic, students will examine the role and function of the education system, including how it relates to the economy; why some social groups perform differently in education (considering social class, gender and ethnicity); relationships and processes within schools including pupil identities, the hidden curriculum and the way teaching and learning is organised; a range of government policy on education, especially relating to selection, privatisation, marketisation and equal opportunities; and also the impact of globalisation on education policy. Education is assessed alongside Theory and Methods.

1. According to cultural deprivation theorists, why do many working-class children underachieve in education?
2. Explain what Gillborn and Youdell mean by the A-to-C economy.
3. Why does the school's habitus disadvantage working-class pupils?
4. According to Archer, how do working-class pupils view education?
5. Why do some working-class pupils need to create a 'Nike' identity?
6. According to Evans, which universities are working-class pupils more likely to go to?
7. What evidence is there that ethnicity may sometimes be more important than class in pupils' achievement?
8. How does Sewell criticise Gillborn's view?