



**CENTRAL  
FOUNDATION**  
BOYS' SCHOOL

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**Year 11-12 Bridging Materials**  
**(A Level)**  
**2020**

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## BRIDGING MATERIALS

Bridging materials will assist you in making the transition into the sixth form. This is the most substantial academic jump you will take, and the demands are significantly elevated. The resources within the booklet will allow you to explore some of the key topics that you will study over the next two years.

You should research all of the **Key Topics** outlined in your chosen subject and produce summary notes on them over the summer, in preparation for the year ahead. This will help you understand the information and help you make a positive start in September. Teachers will be expecting to see these notes on the first lesson of your sixth form studies.

Wider reading and research are integral to success in KS5. Each subject has a **Recommended Reading & Viewing** list. The more of these texts you read, the broader your understanding of the course will be. At GCSE, you needed to understand the set texts; at A-level, you need to go beyond the core curriculum. You will have 6-12 periods of independent study built into your timetable. It is important to begin this process over the summer, so it becomes habitual.

Finally, the **Useful Links** section provides you with further resources to supplement your interest and understanding of your subjects.

## A LEVEL SUBJECTS

<a href="#">3D DESIGN</a>	<a href="#">- 1 -</a>
<a href="#">BIOLOGY</a>	<a href="#">- 2 -</a>
<a href="#">BUSINESS</a>	<a href="#">- 3 -</a>
<a href="#">CHEMISTRY</a>	<a href="#">- 4 -</a>
<a href="#">COMPUTER SCIENCE</a>	<a href="#">- 5 -</a>
<a href="#">ECONOMICS</a>	<a href="#">- 6 -</a>
<a href="#">ENGLISH LITERATURE</a>	<a href="#">- 7 -</a>
<a href="#">FINE ARTS</a>	<a href="#">- 8 -</a>
<a href="#">GEOGRAPHY</a>	<a href="#">- 9 -</a>
<a href="#">HISTORY</a>	<a href="#">- 10 -</a>
<a href="#">LAW</a>	<a href="#">- 11 -</a>
<a href="#">MATHS &amp; FURTHER MATHS</a>	<a href="#">- 12 -</a>
<a href="#">PHYSICS</a>	<a href="#">- 13 -</a>
<a href="#">POLITICS</a>	<a href="#">- 14 -</a>
<a href="#">SOCIOLOGY</a>	<a href="#">- 15 -</a>
<a href="#">SPANISH</a>	<a href="#">- 16 -</a>
<a href="#">- SPANISH SUMMER LEARNING LOG -</a>	<a href="#">- 17 -</a>

## KEY TOPICS – TERM ONE:

- Design within the 20<sup>th</sup> Century – Focusing on Bauhaus & Post-War Design
- Three-dimensional Media, Processes & Techniques – Both Traditional & New Media
- Use of Drawing for Different Purposes through a variety of methods and media on a variety of scale:

Students are required to work in **one or more** area(s) of Three-dimensional design, such as those listed below. They may explore overlapping areas and combinations of areas:

- interior design
- product design
- environmental and architectural design
- 3D digital design

Students will develop a range of skills that include:

- Understanding 20<sup>th</sup> Century Design History
- Responding to a Design Brief
- Communication of Ideas
- Presenting Work in a Professional Manner
- Basic Health & Safety in the Workshop Skills
- Working with CAD

## RECOMMENDED READING & VIEWING:

- *The Design of Everyday Things* – Don Norman (1988)
- *Objectified* (2017):  
<https://vimeo.com/ondemand/objectified>
- *Architecture, art and design - 100 years of the Bauhaus* (2019) – DW Documentary:
  - bauhausWORLD - The Code (1/3): <https://youtu.be/rg3X1vZN5TA>
  - bauhausWORLD - The Effect (2/3): <https://youtu.be/LW1415Ddf8c>
  - bauhausWORLD - The Utopia (3/3): <https://youtu.be/2uVWAS6Q6AY>

## USEFUL LINKS:

- The full specification studied at CFBS:  
[www.aqa.org.uk/subjects/art-and-design/as-and-a-level/art-and-design/subject-content/three-dimensional-design](http://www.aqa.org.uk/subjects/art-and-design/as-and-a-level/art-and-design/subject-content/three-dimensional-design)

## KEY TOPICS – TERM ONE:

- The Heart & Circulatory System – Functions and Cardiovascular Diseases
- Molecular Structure of Key Biological Molecules:
  - Glucose
  - Starch (Amylose & Amylopectin)
  - Amino Acids
  - Proteins
  - Lipids
  - Nucleic Acids
- Structure of the Cell Membrane and How Substances Pass Across It
- Genetics, DNA Replication and Protein Synthesis

## RECOMMENDED READING & VIEWING:

- *Darwin for Beginners* – Jonathan Miller & Borin Van Loon (2003)
- *Climate Change For Beginners* – Dean Goodwin (2016)
- *The Human Brain: a Guided Tour* – Susan Greenfield (1997)
- *Trees: A Complete Guide to Their Biology and Structure* – Roland Ennos (2016)
- *Very Short Introductions* – Oxford University Press  
Series of small books including titles on: molecular biology, the cell, genes, enzymes, marine biology, ecology, forests
- The Amoeba Sisters:  
[www.youtube.com/user/AmoebaSisters](http://www.youtube.com/user/AmoebaSisters)
- Khan Academy:  
[www.khanacademy.org/science/biology](http://www.khanacademy.org/science/biology)
- Professor Fink:  
[www.youtube.com/user/professorfink](http://www.youtube.com/user/professorfink)

## USEFUL LINKS:

- The specification at CFBS is Edexcel Spec A (Salters-Nuffield) (there is also a spec B). The specification can be found here which has a penguin on the front, together with past papers and mark schemes.  
<https://qualifications.pearson.com/en/qualifications/edexcel-a-levels/biology-a-2015.html>
- Journal Articles (with some free to read content):
  - The New England Journal of Medicine: [www.nejm.org](http://www.nejm.org)
  - The BMJ (British Medical Journal): [www.bmj.com](http://www.bmj.com)
  - Oxford Academic Journals: <https://academic.oup.com/journals>

**KEY TOPICS – TERM ONE:**

- The Market
- Market Research
- Market Positioning
- Internal Finance
- External Finance
- Liability

**RECOMMENDED READING & VIEWING:**

- *Revise Edexcel GCSE (9-1) Business Revision Guide* – Pearson Education (2017) [ISBN-10: 129219071X]
- *How I Made It: 40 Successful Entrepreneurs Reveal How They Made Millions* – Rachel Bridge (2010)
- *Shoe Dog: A Memoir by the Creator of NIKE* – Phil Knight (2018)
- Podcast: *How I Built This with Guy Raz* - Guy Raz dives into the stories behind some of the world's best-known companies. *How I Built This* weaves a narrative journey about innovators, entrepreneurs and idealists—and the movements they built.  
[www.npr.org/podcasts/510313/how-i-built-this?t=1593288912208](http://www.npr.org/podcasts/510313/how-i-built-this?t=1593288912208)

**USEFUL LINKS:**

- The full specification studied at CFBS:  
[https://qualifications.pearson.com/content/dam/pdf/A%20Level/Business%20Studies/2015/specification-and-sample-assessment-materials/9781446914694\\_GCE2015\\_A\\_BUS\\_WEB.PDF](https://qualifications.pearson.com/content/dam/pdf/A%20Level/Business%20Studies/2015/specification-and-sample-assessment-materials/9781446914694_GCE2015_A_BUS_WEB.PDF)
- Tutor 2 U – All topics covered with tutorials and activities:  
[www.Tutor2u.net](http://www.Tutor2u.net)
- TakingTheBiz – visual, engaging and memorable revision aides with each tutorial focusing on one of the key topics for the Business specifications.  
[www.youtube.com/channel/UCIJ4pk3uzyWoeoBkGs0hxQ](http://www.youtube.com/channel/UCIJ4pk3uzyWoeoBkGs0hxQ)
- Bitesize – GCSE Business on BBC:  
[www.bbc.co.uk/bitesize/subjects/zpsvr82](http://www.bbc.co.uk/bitesize/subjects/zpsvr82)
- Current Business News:
  - BBC: [www.bbc.co.uk/news/business](http://www.bbc.co.uk/news/business)
  - The Guardian: [www.theguardian.com/uk/business](http://www.theguardian.com/uk/business)
  - The Independent: [www.independent.co.uk/news/business](http://www.independent.co.uk/news/business)

**KEY TOPICS – TERM ONE:**

- Atomic Structure and the Periodic Table
- Bonding and Structure
- Redox I
- Inorganic Chemistry and the Periodic Table
- Formulae, Equations and Amounts of Substance

**RECOMMENDED READING & VIEWING:**General Chemistry

- *Reactions: The Private Life of Atoms* – Peter Atkins (2011)
- *What is Chemistry?* – Peter Atkins (2013)
- *The Joy of Chemistry: The Amazing Science of Familiar Things* – Cathy Cobb & Monty L. Fetterolf (2005)

History of Chemistry

- *Mendeleev's Dream: The Quest for the Elements* – Paul Strathern (2001)
- *The Big Bang!: History of Explosives* – G. I. Brown (1998)
- *The Periodic Table: Its Story and Its Significance* – Eric R. Scerri (2006)
- *A Tale of Seven Elements* – Eric R. Scerri (2013)

More Advanced Reading

- *Why Chemical Reactions Happen* – James Keeler & Peter Wothers (2003)
- *Made to Measure: New Materials for the 21st Century* – Philip Ball (1999)
- *Chemical Structure and Reactivity: An Integrated Approach* – James Keeler and Peter Wothers (2008)
- *Chemistry<sup>3</sup>: Introducing inorganic, organic and physical chemistry* – Andrew Burrows, John Holman, Andrew Parsons, Gwen Pilling & Gareth Price (2013)

**USEFUL LINKS:**

- The full specification studied at CFBS:  
<https://qualifications.pearson.com/en/qualifications/edexcel-a-levels/chemistry-2015.html>
- chemrevise - Resources for A-level and GCSE Chemistry:  
<https://chemrevise.org>
- A\* Chemistry – A Hub of Chemistry Learning:  
<http://astarchemistry.com>
- Chemistry Revision on Physics & Maths Tutor:  
[www.physicsandmathstutor.com/chemistry-revision](http://www.physicsandmathstutor.com/chemistry-revision)

**KEY TOPICS – TERM ONE:**

- Programming Techniques using Python and Pygame
- Computational Thinking:
  - Thinking abstractly
  - Thinking ahead
  - Thinking procedurally
  - Thinking logically
  - Thinking concurrently
- Computational Methods

**RECOMMENDED READING & VIEWING:**

- *OCR AS and A Level Computer Science Textbook* – PM Heathcote & RSU Heathcote (2016)  
[ISBN: 978-1-910523-05-6]
- *Code: The Hidden Language of Computer Hardware and Software* – Charles Petzold (2000)
- *Brown Dogs and Barbers: What's Computer Science All About?* – Dr. Karl Beecher (2014)
- *Computing with Quantum Cats: From Alan Turing to Teleportation* – John Gribbin (2015)
- *Craig 'n' Dave* – videos and resources for the teaching of Computer Science A level:  
[www.youtube.com/c/craigdave](http://www.youtube.com/c/craigdave)

**USEFUL LINKS:**

- Pygame Tutorials on KidsCanCode:  
<https://kidscancode.org/lessons>
- General Python Tutorials on PythonProgramming:  
<https://pythonprogramming.net>

**KEY TOPICS – TERM ONE:****THEME 1: Introduction to Markets and Market Failure – Focusing on Microeconomic Concepts.**

- Nature of economics
- How markets work
- Market failure
- Government intervention

**THEME 2: The UK Economy – Performance & Policies**

- Measures of economic performance
- Aggregate demand
- Aggregate supply
- National income
- Economic growth
- Macroeconomic objectives and policy

Research into the lives and thinking of economists such as Keynes, Smith, Freidman, Hayek, Marx, Marshal, Ricardo etc. – Simply typing their names in Google will help you understand who they were and what they thought

Read the following PDF link which has a basic introduction to economics:

[www.bws-school.org.uk/main/Sixth\\_Form/Summer\\_Work/2015/Economics/Economics.pdf](http://www.bws-school.org.uk/main/Sixth_Form/Summer_Work/2015/Economics/Economics.pdf)

**RECOMMENDED READING & VIEWING:**

- *Edexcel AS/A Level Economics: Student book* – Alain Anderton (2015)
- *Edexcel A-level Economics A Student Guide: Theme 1 Introduction to markets and market failure* – Mark Gavin (2015)
- *Edexcel Economics A Student Guide: Theme 2 The UK economy - performance and policies* – Rachel Cole (2015)
- *Edexcel A-Level/AS Economics A Theme 1 Workbook: Introduction to markets and market failure* – Peter Davis (2015)
- *Edexcel A-Level/AS Economics A Theme 2 Workbook: The UK economy - performance and policies* – Andrew Sykes (2015)

**USEFUL LINKS:**

- Tutor 2 U:  
[www.Tutor2u.net](http://www.Tutor2u.net)
- Financial Times:  
[www.ft.com](http://www.ft.com)
- Investing.com:  
[www.investing.com](http://www.investing.com)



**KEY TOPICS – TERM ONE:****THE GENRE OF CRIME**

Research the Crime genre (a genre like any other –e.g. Fantasy, Gothic, and Historical) and the following three authors through this genre:

- Samuel Coleridge
- Graham Greene
- Kate Atkinson

**RECOMMENDED READING & VIEWING:****Suggested wider reading list (not compulsory)**

The following novels explore a variety of crime types, including State crime and moral crime:

- *If Beale Street Could Talk* – James Baldwin (1974)
- *Lullaby* – Leïla Slimani (2018)
- *Reservoir 13* – Jon McGregor (2017)
- *Mr Loverman* – Bernardine Evaristo (2013)
- *Giovanni's Room* – James Baldwin (1956)
- *The Confessions of Frannie Langton* – Sara Collins (2019)
- *Waiting for Sunrise* – William Boyd (2012)
- *Nineteen Eighty-Four [1984]* – George Orwell (1949)

**Other recommended reading (not compulsory)**

The following novels are all by your A level writers if you want to widen your reading around them:

- Kate Atkinson
  - The Jackson Brodie* series - 5 books in the series. Jackson Brodie is the 'detective'. It's in quotation marks as he does not actually do what detectives are meant to do, solve crimes.
- Graham Greene
  - *The Power and the Glory* (1940) - starring Greene's famous 'whiskey priest'.
  - *The Third Man* (1950) - excellent mystery/thriller
  - *The Heart of the Matter* (1948) - the struggle between moral righteousness & religious doctrine.
- TV Series available on Netflix:
  - *Mindhunter* (Season 1 only)
  - *Conversations with a Killer: The Ted Bundy Tapes*
  - *The People v. O. J. Simpson: American Crime Story*

**USEFUL LINKS:**

- Recommended Podcast: *Criminal* - all on it are recommended but specifically the following few provide a 'fun' introduction (all are true-life crime): Episode 133, Episode 94, Episode 38, Episode 79, Episode 123, Episode 113, Episode 85, Episode 61, and Episode 99.

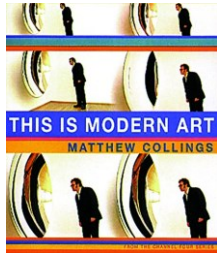
<https://thisiscriminal.com>

## KEY TOPICS – TERM ONE:

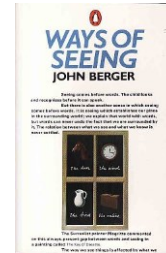
- Elements of Art:
  - Line
  - Texture
  - Form
  - Colour
  - Shape
  - Space

## RECOMMENDED READING & VIEWING:

- *This is Modern Art* – Matthew Collings (1999)



- *Ways of Seeing* – John Berger (1972)



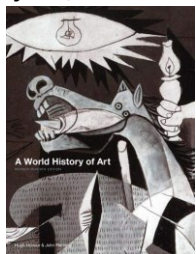
- *Art Now! Vol. 4* – Hans Werner Holzwarth (2013)



- *Illustration Now! 5* – Julius Wiedemann (2014)



- *A World History of Art, Revised 7<sup>th</sup> edition* – John Fleming & Hugh Honour (2009)



## USEFUL LINKS:

- Tate Coursework Guides:  
[www.tate.org.uk/art/student-resource/exam-help](http://www.tate.org.uk/art/student-resource/exam-help)
- Art2day:  
[www.art2day.co.uk](http://www.art2day.co.uk)
- Student Art Guide:  
[www.studentartguide.com](http://www.studentartguide.com)
- The Art Story:  
[www.theartstory.org/artists](http://www.theartstory.org/artists)
- Photo Pedagogy – Student Sketchbook Examples:  
[www.photopedagogy.com/student-sketchbooks.html](http://www.photopedagogy.com/student-sketchbooks.html)

**KEY TOPICS – TERM ONE:**

- Water and Carbon Cycle – Physical Unit 1
- Population and the Environment – Human Unit 1

**RECOMMENDED READING & VIEWING:**

- *The Revenge of Gaia: Why the Earth is Fighting Back and How We Can Still Save Humanity* – James Lovelock (2006)
- *Prisoners of Geography: Ten Maps That Tell You Everything You Need To Know About Global Politics* – Tim Marshall (2015)
- *Sapiens: A Brief History of Humankind* – Yuval Noah Harari (2015)
- *Ghosts of the Tsunami: Death and Life in Japan's Disaster Zone* – Richard Lloyd Parry (2017)
- *Key Thinkers on Cities* – Regan Koch & Alan Latham (2017)
- *Space And Place: The Perspective of Experience* – Yi-Fu Tuan (2001)
- *Fundamentals of the Physical Environment* – Peter Smithson, Ken Addison & Ken Atkinson (2008)
- *Factfulness: Ten Reasons We're Wrong About The World - And Why Things Are Better Than You Think* – Hans Rosling, Ola Rosling, Anna Rosling Rönnlund (2018)
- *Population 10 Billion* – Danny Dorling (2013)
- Documentary Series *with Simon Reeve* - are particularly good at exploring the social, economic and environmental issues in different places around the world. Available on the BBC iPlayer:  
[www.bbc.co.uk/iplayer/search?q=simon+reeve](http://www.bbc.co.uk/iplayer/search?q=simon+reeve)
- *Ask the Expert* by The Royal Geographical Society with the Institute of British Geographers:  
[www.rgs.org/schools/teaching-resources/ask-the-expert-podcasts](http://www.rgs.org/schools/teaching-resources/ask-the-expert-podcasts)
- Top 10 Geography Podcasts:  
[https://blog.feedspot.com/geography\\_podcasts](https://blog.feedspot.com/geography_podcasts)

**USEFUL LINKS:**

- The full specification studied at CFBS:  
[www.aqa.org.uk/subjects/geography/as-and-a-level/geography-7037](http://www.aqa.org.uk/subjects/geography/as-and-a-level/geography-7037)
- List of Recommended Wider Reading for A Level Geography:  
[www.brookeweston.org/attachments/download.asp?file=98&type=pdf](http://www.brookeweston.org/attachments/download.asp?file=98&type=pdf)
- Current News:
  - The Guardian – Environment section: [www.theguardian.com/uk/environment](http://www.theguardian.com/uk/environment)
  - The Economist – Science & Technology section: [www.economist.com/science-and-technology](http://www.economist.com/science-and-technology)

## KEY TOPICS – TERM ONE:

### America in the Twentieth Century from 1917 to the 1990s

- Presidential leadership style
- The effects of wars from the First World War to Vietnam
- Changes in society:
  - The role of film, television and sport
  - Civil rights for black Americans, Hispanic Americans, gay Americans
  - Women's rights

### Indian Nationalism Against the British Empire from 1914 to 1947

- The nationalist campaigns of Gandhi and the Indian National Congress, and Jinnah and the Muslim League
- Tension between Muslim and Hindu nationalists
- Actions of the British in exploiting and controlling their Empire, including the Amritsar Massacre of 1919
- The path to independence in the 1940s including the mass communal violence between Hindus, Sikhs and Muslims from 1946 to 1948.

### British warfare in the Nineteenth and Twentieth century

- The overall nature of change in organising the military, the weaponry and tactics used
- The role of civilians in war
- The Napoleonic Wars
- Crimean War
- Second Boer War
- First World War

## RECOMMENDED READING & VIEWING:

- *American Caesars: Lives of the Presidents from Franklin D. Roosevelt to George W. Bush* – Nigel Hamilton (2010)
- *The Lion and the Tiger: The Rise and Fall of the British Raj 1600-1947* – Denis Judd (2004)
- *Crimea: The Last Crusade* – Orlando Figes (2010)
- *From Boer War to World War: Tactical Reform of the British Army, 1902-1914* – Spencer Jones (2012)
- *Eyes on the Prize* - One of the most acclaimed history documentaries which will help you with parts of the America course.  
[www.youtube.com/playlist?list=PL0wK3r1sMvSZVth7XGlcplLSjS3tAp90T](http://www.youtube.com/playlist?list=PL0wK3r1sMvSZVth7XGlcplLSjS3tAp90T)

It would be useful for you to regularly read articles on history in weekly or fortnightly magazines such as *The New Statesman* and *The London Review of Books*. These will help you develop wider knowledge of history and make it easier for you to learn new things.

Alternatively, you could read history specific magazines such as the *BBC History Magazine* or *History Today*.

## USEFUL LINKS:

- Documentaries in the History section of the BBC iPlayer:  
[www.bbc.co.uk/iplayer/categories/history](http://www.bbc.co.uk/iplayer/categories/history)

**KEY TOPICS – TERM ONE:****Criminal Law:**

- Identify the different criminal courts and their function
- Explain the role and assess the effectiveness of a jury in a criminal trial
- Explain the role of the judge in a criminal trial

**RECOMMENDED READING & VIEWING:**

- *The Rule of Law* – Tom Bingham (2010)
- *Letters to a Law Student: A guide to studying law at university* – Nicholas J McBride (2010)
- *Glanville Williams: Learning the Law* – A.T.H. Smith (2016)
- *What About Law?* – Catherine Barnard, Janet O'Sullivan & Graham Virgo (2011)
- *Eve Was Framed: Women and British Justice* – Helena Kennedy (1993)
- *Bleak House* – Charles Dickens (1853)
- *Landmarks in the Law* – Lord Alfred Thompson Denning (1984)
- *About Law: An Introduction* – Tony Honoré (1995)
- *On Liberty* – John Stuart Mill (1859)
- *Using a Law Library: A Student's Guide to Legal Research Skills* – Peter Clinch (1992)
- *Law in Action* on BBC Radio 4 – Listen for free using the BBC Sounds app:  
[www.bbc.co.uk/programmes/b006tgy1](http://www.bbc.co.uk/programmes/b006tgy1)
- Films
  - *To Kill a Mockingbird* (1962)
  - *12 Angry Men* (1957)
  - *Erin Brockovich* (2000)
  - *A Time to Kill* (1996)
  - *A Civil Action* (1998)
  - *The Client* (1994)
  - *The Lincoln Lawyer* (2011)
  - *The Firm* (1993)
  - *Philadelphia* (1993)
  - *Runaway Jury* (2003)
  - *Double Jeopardy* (1999)
  - *Primal Fear* (1996)
  - *Class Action* (1991)
  - *The Paper Chase* (1973)
  - *A Few Good Men* (1992)
  - *The Verdict* (1982)
  - *The Rainmaker* (1997)

**USEFUL LINKS:**

- The Guardian – Law: [www.theguardian.com/law](http://www.theguardian.com/law)
- Counsel Magazine: [www.counsellmagazine.co.uk](http://www.counsellmagazine.co.uk)
- Pupillage and how to get it: <https://pupillageandhowtogetit.com>
- The Law Society – Index of useful legal websites:  
[www.lawsociety.org.uk/for-the-public/index-of-useful-legal-websites](http://www.lawsociety.org.uk/for-the-public/index-of-useful-legal-websites)
- The Bar Council: [www.barcouncil.org.uk](http://www.barcouncil.org.uk)
- Justice on Gov.UK: [www.justice.gov.uk](http://www.justice.gov.uk)

**KEY TOPICS – TERM ONE:****MATHS**

- Surds: Simplifying and rationalising
- Algebraic manipulation: Collecting like terms, simplifying algebra, simplifying indices, expanding brackets and factorising
- Equations of straight lines and coordinate geometry: Equations of lines, distances between points, midpoints, parallel and perpendicular lines
- Quadratics: Factorising, solving, sketching, completing the square
- Algebraic methods: Simplifying and manipulating algebraic fractions
- Trigonometry: SOH, CAH, TOA, Sine rule, cosine rule, area of any triangle, bearings
- Statistics: Histograms, box plots, cumulative frequency, probability, correlation, measures of spread (mean, median, mode, range and interquartile range)
- Mechanics: Using graphs to find distance travelled and velocity and acceleration

**FURTHER MATHS**

- Complex numbers: Manipulating, plotting, solving equations with complex solutions
- Matrices: Manipulating and applying matrices
- Linear transformations: Using matrices as transformations
- Roots of polynomials: Solving higher powered polynomials – cubics and quartics
- Vectors: 2D and 3D vectors
- Decision Maths: [www.stem.org.uk/elibrary/collection/4004](http://www.stem.org.uk/elibrary/collection/4004)

**RECOMMENDED READING & VIEWING:**

- *How Long Is a Piece of String?* – Rob Eastaway & Jeremy Wyndham (2003)
- *Why Do Buses Come in Threes?* – Rob Eastaway & Jeremy Wyndham (2005)
- *Maths on the Back of an Envelope: Clever ways to (roughly) calculate anything* – Rob Eastaway (2019)
- *The Music of the Primes: Why an Unsolved Problem in Mathematics Matters* – Marcus Du Sautoy (2004)
- *Alex's Adventures in Numberland* – Alex Bellos (2011)
- *Alex Through the Looking-Glass: How Life Reflects Numbers, and Numbers Reflect Life* – Alex Bellos (2015)
- *The Code Book: The Secret History of Codes and Code-breaking* – Simon Singh (2002)
- Hegarty Maths A Level Prep Lessons Playlist:  
[www.youtube.com/playlist?list=PLxHVbxhSvleR5tntP2FxYBJCoY5-pD\\_Z8](https://www.youtube.com/playlist?list=PLxHVbxhSvleR5tntP2FxYBJCoY5-pD_Z8)

**USEFUL LINKS:**

- Alex Bellos's Monday puzzle - Fortnightly maths puzzles from The Guardian:  
[www.theguardian.com/science/series/alex-bellos-monday-puzzle](http://www.theguardian.com/science/series/alex-bellos-monday-puzzle)
- The NRICH Project - Mathematical problem solving for all secondary age ranges, games and activities:  
<https://rich.maths.org>
- **FURTHER MATHS:** Königsberg Bridge Problem – a problem using an algorithm taught in Decision Maths  
<https://rich.maths.org/2484>

**KEY TOPICS – TERM ONE:**

- Electric Circuits
- Mechanics – Motion & Using Vectors to Describe Forces

The biggest challenge most Y12 physics students face is with maths. The maths you need is all GCSE level, but you will need to be proficient in the following skills:

- Memorising & rearranging equations
- Using ratios, fractions & percentages
- Graph plotting & interpreting graphs
- Making estimates
- Using decimals & standard form
- Making order of magnitude calculations
- Finding means
- Calculating gradients (lines of best fit)
- Simple trigonometry
- Unit conversion

Students are expected to complete the following linked workbook before starting in September:

<https://bit.ly/2Vu5CpG>

**RECOMMENDED READING & VIEWING:**

- *Head Start to A-level Physics (CGP A-Level Physics)* – CGP Books (2015)
- *What If?: Serious Scientific Answers to Absurd Hypothetical Questions* – Randall Munroe (2014)
- *A Short History of Nearly Everything* – Bill Bryson (2003)
- *Six Easy Pieces: Essentials of Physics Explained by Its Most Brilliant Teacher* – Richard P. Feynman (1994)
- *A Brief History of Time* – Stephen Hawking (1988)
- *The Universe and Space Stuff* – Playlist by Kurzgesagt – In a Nutshell:  
[www.youtube.com/playlist?list=PLFs4vir\\_WsTwEd-nJgVJCZPNL3HALHHpF](http://www.youtube.com/playlist?list=PLFs4vir_WsTwEd-nJgVJCZPNL3HALHHpF)  
[www.youtube.com/c/inanutshell](http://www.youtube.com/c/inanutshell)
- Veritasium - often slightly higher level than Kurzgesagt, but asks some really great questions:  
[www.youtube.com/c/veritasium](http://www.youtube.com/c/veritasium)
- Smarter Every Day – great content about space exploration and rockets:  
[www.youtube.com/c/smartereveryday](http://www.youtube.com/c/smartereveryday)
- Mark Rober – ex-NASA engineer who produces crowd-pleasing videos with some great science in them. He's good at showing how a physicist or engineer should approach a problem:  
[www.youtube.com/c/MarkRober](http://www.youtube.com/c/MarkRober)
- *Sixty Symbols* – University of Nottingham has a very strong physics department, and produces these videos, each focusing on one particular physical symbol or quantity:  
[www.youtube.com/user/sixtysymbols](http://www.youtube.com/user/sixtysymbols)
- Perimeter Institute for Theoretical Physics – a university in Canada which produces some amazing physics lectures perfect for Y11 or Y12 students:  
[www.youtube.com/user/PIOutreach](http://www.youtube.com/user/PIOutreach)

**USEFUL LINKS:**

- Isaac Physics – Used extensively during the course to practise problem solving and maths, and is full of resources which would be useful practice:  
<https://isaacphysics.org>
- *What If?* on xkcd.com - Free content available on Randall Munroe's blog:  
<https://what-if.xkcd.com>



## KEY TOPICS – TERM ONE:

Politics is about how people have their say in society. It is about those who have power: what they can do with it and what stops them from doing everything they want to. You will cover UK Politics and Government, US Politics and Government, as well as modules on the political ideas that have shaped the world we live in.

A lot of Politics can be very technical. Sometimes it is about your view on a particular political issue, however more often that not we go beyond the issues to look at the underlying assumptions and ideas that make them so difficult. We look at the political decisions taken in the past.

In the first half term of the Autumn term, you will study the following:

- UK Politics: How people get the vote, voting over time, pressure groups and lobbying.
- US Politics: The US Constitution, Federalism, and debates on the Constitution

The best preparation for any A Level – but for the Politics course in particular – is to **read often and widely**. On a basic level it improves your comprehension of texts and helps improve your writing skills. Before you arrive in September, you should be able to:

- Name the key figures in the UK government (Prime Minister, Foreign Secretary etc.)
- Know about some key debates (Brexit, UK-Chinese relations, COVID-19 response)

However, neither podcasts nor TV programmes are a substitute for reading, as they cannot go into the depth that a book can. If you find reading difficult, many of the titles below are available as audiobooks on Audible. Don't forget that reading is like any exercise – start with 10-minute sessions and work your way up. The more often you do it, the better and easier it will get.

## RECOMMENDED READING & VIEWING:

UK Politics:

- *Why We Get the Wrong Politicians* – Isabel Hardman (2018)
- *British Politics: A Very Short Introduction* – Anthony Wright (2013)
- *Who Governs Britain?* – Anthony King (2015)

US Politics:

- *The World As It Is: Inside the Obama White House* – Ben Rhodes (2018)
- *American Politics: A Very Short Introduction* – Richard M. Valelly (2013)
- *Primary Colors: A Novel of Politics* – Anonymous (Joe Klein) (1996)

➤ BBC Radio 4 programmes – Listen for free using the BBC Sounds app:

- *Westminster Hour*: [www.bbc.co.uk/programmes/m000k955](http://www.bbc.co.uk/programmes/m000k955)
- *Political Thinking with Nick Robinson*: [www.bbc.co.uk/programmes/m000kmvj](http://www.bbc.co.uk/programmes/m000kmvj)
- *Reflections with Peter Hennessey*: [www.bbc.co.uk/programmes/b04fd8md](http://www.bbc.co.uk/programmes/b04fd8md)

➤ *Andrew Marr's History of Modern Britain* (2007) – a useful documentary available on BBC iPlayer: [www.bbc.co.uk/iplayer/episodes/b007xcfc/andrew-marrs-history-of-modern-britain](http://www.bbc.co.uk/iplayer/episodes/b007xcfc/andrew-marrs-history-of-modern-britain)

➤ Newspapers:

- *The Guardian*,
- *The Times*,
- *The New European*

➤ News websites

- *BBC News*
- *Politico*
- *Al Jazeera*



**KEY TOPICS – TERM ONE:**

- What is Culture?
- What is Socialisation?
- What is Identity? (Social class identity, gender identity, disability identity, age identity, ethnic identity, sexual identity, national identity)

**RECOMMENDED READING & VIEWING:**

- *Sociology: A Very Short Introduction* – Steve Bruce (2000)
- *Outsiders: Studies in Sociology of Deviance* – Howard S. Becker (1997)
- *Gang Leader for a Day: A Rogue Sociologist Takes to the Streets* – Sudhir Venkatesh (2008)
- *Asylums* – Erving Goffman (1961)
- *A Glasgow Gang Observed* – James Patrick (2013)
- *Sociologists' Tales* – Katherine Twamley, Mark Doidge & Andrea Scott (2015)
- Without doubt the best Sociological resource by the BBC for Sociology is 'Thinking allowed' with Laurie Taylor. Endless episodes available with cutting edge, contemporary sociology:  
[www.bbc.co.uk/programmes/b006qy05](http://www.bbc.co.uk/programmes/b006qy05)
- 'The Moral Maze' is also a very good BBC Radio 4 programme in which a panel discuss a relevant weekly news topic and they interrogate witnesses about their opinions of these topics:  
[www.bbc.co.uk/programmes/b006qk11](http://www.bbc.co.uk/programmes/b006qk11)
- Documentaries: There are some excellent documentaries on BBC iPlayer. A lot of Louis Theroux's work is very good which taps into many sociological issues, but there are many available that are very relevant:  
[www.bbc.co.uk/iplayer](http://www.bbc.co.uk/iplayer)
- Below are a couple of short but interesting articles on topics covered in Sociology:
  - <https://freedomtoteach.collins.co.uk/rise-of-single-life-solo-living/>
  - <https://freedomtoteach.collins.co.uk/monogamy-rise-of-polyamory/>
  - <https://freedomtoteach.collins.co.uk/7972-2/>

**USEFUL LINKS:**

- Films: Below is a very good link to 12 films that are very relevant to Sociology. I strongly recommend watching many of these films and think about the issues that are raised in the text in this list.  
<https://freedomtoteach.collins.co.uk/influential-inspirational-films-sociology-students/>
- A personal favourite is a blog called Farnham Street which essentially tries to help you master the best of what has already been thought and said in life. Not necessarily always relevant to Sociology but a good general website to have a look at. The Podcasts are also really good:  
<https://fs.blog/>

**KEY TOPICS – TERM ONE:**

- Modern Spanish family models (traditional and modern family, marriage and cohabitation, gay rights, role of grandparents).
- Tourism in Spain (popular tourist resorts in Spain, economic advantages of tourism, the impact of Brexit and COVID-19 on tourism in Spain recently).
- Spanish Summer Learning Log (on next page)

**RECOMMENDED READING & VIEWING:**

- *Homage to Catalonia* – George Orwell (1938)
- *Viva South America!: A Journey Through a Surging Continent* – Oliver Balch (2014)
- Sin Censura News with Vicente Serrano (uncensored news coverage from across the Americas in Spanish): [www.youtube.com/c/sincensuraMedia](http://www.youtube.com/c/sincensuraMedia)
- Films:
  - Films by Pedro Almodóvar
  - *Voces Inocentes* (2004)
  - *Pan's Labyrinth* (2006)
  - *Amores Perros* (2000)
- Spanish TV series and films available on Amazon Prime:
  - *Diablo Guardián*
  - *Capadocia: Un Lugar Sin Perdón*
  - *Un extraño enemigo*
  - *Pequeñas coincidencias*
  - *Caronte*
  - *Las Aventuras del Capitán Alatríste*
  - *Six dreams*
  - *Lo Que Escondían sus Ojos*
  - *Corazón Contento*
  - *El Corazón de Sergio Ramos*
  - *La usurpadora*
  - *Hermanos*
- Spanish TV series and films available on Netflix:
  - *La Casa de Papel (Money Heist)*
  - *La Casa de las Flores (The House of Flowers)*
  - *Vis a Vis (Locked Up)*
  - *Luis Miguel: La serie*
  - *Ingobernable*
  - *Tiempos de Guerra*
  - *Elite*
  - *La Reina del Flow*
  - *Valeria*
  - *Fugitiva*
  - *Enemigo Íntimo*
  - *El Chapo*
  - *La catedral del Mar (Cathedral of the Sea)*
  - *Gran Hotel*
  - *Cocaine Coast ...and more!*

**USEFUL LINKS:**

- Spanish News videos and articles:
  - [www.rtve.es](http://www.rtve.es)
  - [www.elpais.es](http://www.elpais.es)
  - [www.elmundo.es](http://www.elmundo.es)

## - SPANISH SUMMER LEARNING LOG -

Refer to bridging materials and some extra ideas include: Reading a Spanish website, looking up new items of vocabulary, listening to Spanish songs, reading about an item which interests you on Wikipedia in Spanish, finding a Spanish magazine, listening to Spanish radio, revising verb tables, having a conversation with someone you know in Spanish, reading a Spanish newspaper, writing an e-mail or letter in Spanish, revising on BBC Bitesize, ....

<b>Week</b>	<b>What did you do? (Write a short description)</b>	<b>Skill area tested (Reading, Writing, Speaking or Listening)</b>	<b>How did it help?</b>
1			
2			
3			
4			
5			
6			



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**Year 11-12 Bridging Materials**  
**(A Level)**  
**2020**

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