

# Year 13 Spring 1 Lockdown Curriculum

## Art

### Topics

- Completing independent outcomes for Component 1 Personal Investigation
- Recording ideas and observations through relevant drawing and photography
- Analysing relevant artists work for practical responses
- Starting first draft for the written element (1000-3000 word essay).

### Recommended Resources

- Online artist workshops delivered by artists Jeanette Barnes and Paul Brandford were highly popular with many GCSE & A Level Art students during the Christmas holidays. Portrait and 'New York' Urban workshops are taking place at weekends during January and February and it is likely that additional workshops will run during February half term: <https://weexploredrawing.co.uk/workshops.html>. Work produced will support students' portfolios and help with the development of ideas. NB: when registering, either the student or parent personal e mail address is needed in order to receive the link to join the workshop (not the students school e mail).
- Without the usual access to Adobe Photoshop at school, students will be encouraged to edit their photos using similar, available online versions. The Best Photo Editing Apps for Android and iOS in 2021 (oberlo.com)
- To support students in considering their career options and in understanding the benefits of studying Art & Design based subjects at A Level and beyond, we highly recommend this Netflix series for the entire family to watch: Abstract: The Art of Design.
- The department regularly share ideas and resources with individuals through OneDrive as well as through Pinterest [https://www.pinterest.co.uk/Miss\\_McKeown/](https://www.pinterest.co.uk/Miss_McKeown/) and through our Art Wallington Girls YouTube channel <https://www.youtube.com/channel/UCngXknR-KZYjMo-aJVdKW6g>
- Check the Art Dept Instagram for various art challenges, celebrations of student work and more! [https://www.instagram.com/art\\_at\\_wallington\\_girls](https://www.instagram.com/art_at_wallington_girls)

## Biology

### Topic 8

- Structure of the nervous system
- The resting and action potential
- Synapses
- The structure of the brain
- Brain imaging
- Auxins
- Photoreceptors in animals and plants
- Visual development

### Recommended Resources

- SNAB Online
- Frog – a multitude of revision resources

- Physics and Math Tutor for Biology
- BioRach YouTube channel – structured around OCR spec but great biological explanations
- Seneca Learning – Biology Edexcel A A-Level

## Chemistry

### Topics

- Unit 14 - Organic synthesis
  - NMR Spectroscopy
  - IR Spectroscopy
  - Chromatography
- Unit 16 - Complex formation
  - Variable oxidation states
  - Catalysis
  - Ligand substitution reactions

### Recommended Resources

- **FROG:** A level Chemistry\Teacher Resources\MHN\Revision - there is a wealth of resources here and is the first place I would direct students looking for additional resources;
- **Kerboodle** – available via the A level chemistry FROG page. Gives students access to the virtual textbook;
- **Chemguide:** <https://www.chemguide.co.uk/> - an excellent website that covers all the points of the specification. Also includes links to the syllabus as well as textbooks;
- **Royal Society of Chemistry:** <https://edu.rsc.org/searchresults?cmd=AddPm&val=WVFCET2%7C115156> – a lot of the resources here are aimed at teachers, but there are many very useful resources for students, too. This website is particularly useful for anyone who is looking to study a chemistry-based course at university;
- **YouTube** – below are a list of some of my favourite channels:
  - ✓ Khan Academy
  - ✓ SnapRevise
  - ✓ Eliot Rintoul
  - ✓ Bozeman Science
  - ✓ Freesciencelessons

## Computing

### Topics:

#### Unit 9 – Regular languages

- Sets
- Regular expressions
- Turing machine
- Backus-Naur form
- Reverse Polish notation

#### Unit 11 – Databases and Software development

- SQL
- Defining and updating tables using SQL
- Systematic approach to problem solving

Student will also be working on the completion of their **NEA report** and code.

They will also be working on the **Skeleton code**

### Recommended Resources

<https://www.codecademy.com/learn/learn-python-3> this will help develop student's coding knowledge further

**Computerphile** - Short videos and frequently updated. These are useful in order to delve deeper into Computer Science

**BBC Click** – great programme on the BBC exploring the range of current and future technology

<https://podcasts.apple.com/podcast/chips-with-everything-the-guardian/id270424643?mt=2> Podcast from the Guardian which covers the application of Computer Science.

<https://www.physicsandmathstutor.com/computer-science-revision/>

NEA: [https://en.wikibooks.org/wiki/A-level\\_Computing/AQA/The\\_Computing\\_Practical\\_Project](https://en.wikibooks.org/wiki/A-level_Computing/AQA/The_Computing_Practical_Project)

## **Design and Technology**

**Year 13 PD topics:** Students will be wholly working on their A level NEA

- Complete prototype
- Working drawings, Isometric, Orthographic
- Exploded drawings
- Risk assessment
- Plan of production (For actual and prototype)

## **Drama**

### **Topics**

- Developing directorial concept for *Lysistrata*
- Consolidating understanding of original Greek performing conditions and Joan Littlewood
- Rehearsing for Practical Examination (scripted play) – “*Playhouse Creatures*” by April De Angelis

### **Recommended Resources**

- Log-in for the performance of “*Antigone*” for comparison, at the National Theatre online is:  
<https://www.dramaonlinelibrary.com>  
Username: 9Dk(4Ob+lx  
Password: 5HgZ1Dh(i/
- Essential Drama: Joan Littlewood  
<http://essentialdrama.com/practitioners/joan-littlewood/>
- Contextual information for a production of “*Playhouse Creatures*”
  - <https://www.newvictheatre.org.uk/productions/playhouse-creatures/>  
[https://www.youtube.com/watch?v=4\\_80zAV5H2A](https://www.youtube.com/watch?v=4_80zAV5H2A) (audiointerview with playwright)

## **Economics**

### **Topics**

- Labour market failure
- Solutions to labour market failure
- Trade policy and negotiations
- Money and interest rates
- The financial sector
- Financial regulation

Review and revise

## **Resources**

- Websites
  - Tutor2U
  - Economics Online
  - Economic Help
- The Economist Magazine
- BBC News website – Economy section
- The Financial Times – online student account

## English Literature

### Side 1:

Component 2: Drama – King Lear

In lessons:

- Close analysis of the text and discussion of themes, context, etc
- Working on analytical and essay skills

Independent learning:

Students should be working their way through their booklets: one a collection of past paper essays, the other a tracker of quotations

As this is a 'closed book' exam, students should be learning quotations by rote, using flashcards, and recalling and reorganising play knowledge into essay plans

NB: It is critical that each student has read their Arden edition of the play in its entirety and made thorough notes.

### Recommended additional resources:

- **emag articles** on Lear. Students must make use of this library of super useful articles which the department has subscribed.
- **MASSOLIT lectures** on Lear. A free series of online tutorials by university academics. As with emag, the department have subscribed - the students must be using them.
- Wide range of support materials on SSA, including critical essays
- J-stor for high level criticism
- Any online production. Amazon Prime currently has the BBC's Lear with Anthony Hopkins; Digital Theatre has three productions.

### Side 2:

Revision of Component 2: Drama - The Duchess of Malfi and A Streetcar Named Desire comparison

In lessons:

- Recapping analysis
- Creating and working on comparisons

### Recommended additional resources:

- Zigzag Activity Pack (which they have)
- emag articles (which they have)
- Plus independent study using Massolit & J-Stor

NB From Mon 25th January up half-term, the core focus of their independent study should be working on coursework for the final submission, by responding to their teacher's feedback and finessing every aspect of the essay.

## Future Maths

### Topics

Core

- Methods in Calculus (Core Pure2 - chpt3)
  - Revise integration from A-Level including a lot of recognition practice and trig integrals
  - Improper Integrals – looking at integrals with infinite limits or with undefined values within the limits.
  - Finding the mean value of a function by integration.
  - Differentiating Inverse Trig Functions
  - Integrating Inverse Trig Functions
  - Integrating using partial fractions
- Hyperbolic Functions (Core Pure2 – chpt6)
  - Definition of the Hyperbolic Functions and their graphs
  - Inverse hyperbolic functions, their logarithmic forms and their graphs
  - Hyperbolic identities and solving Hyperbolic equations including Osborn’s Rule
- Modelling with differential equations (Core Pure2 - chpt8)
  - Use first order differential equations model and solve problems in kinematics
  - Use first order differential equations model problems involving rates of change and be able suggest refinements the model
  - Use second order differential equations model particles moving with simple harmonic motion
  - Model damped and forced oscillations using differential equations
  - Solve coupled first-order simultaneous differential equations and interpret the results in context
- Roots of polynomials (Core Pure1 – chpt4)
  - Derive and use the relationship between the roots of a quadratic, a cubic and a quartic
  - Evaluate expressions relating the roots of polynomials
  - Find the equation of a polynomial whose roots are a linear transformation of a given polynomial

#### Mechanics

- Elastic collisions in 2-dimensions (Further Mechanics - chpt5)
  - Solve problems involving the oblique impact of a smooth sphere with fixed surface
  - Apply Newton’s law of restitution and the conservation of momentum solve problems
  - Solve problems involving successive oblique impacts of a sphere with smooth plane surfaces
  - Solve problems involving the impact of two smooth spheres

#### Statistics

- Quality of Tests (Further Statistics - chpt8)
  - Understand what type I and type II errors are when undertaking hypothesis testing
  - Find type I and type II errors using the normal distribution
  - Calculate the size and power of a test
  - Draw a graph of the power function for a test
  - Compare tests of comparable size using powers make a recommendation

#### Recommended Resources

- Your Maths textbooks available on Pearson Activelearn
- You should all have individual logins to Integral maths <https://integralmaths.org/> . This is a very useful website for further maths with notes, videos and revision material. We also have a student account with amsp which gives direct access to a set of FM videos. Further details from <https://amsp.org.uk/teachers/a-level-further/resources> Username: amst-Wallington1726 Password: EvenFactor713%
- On FROG you will find further maths practise papers and questions by topic
- DrFrostMaths – has excellent resources allowing you to practise key skills by topic. There are also some excellent videos on the Pure topics. You have all been provided with individual logins
- Desmos graphing tool – particularly useful to explore the graphs of functions

#### Recommended Resources for Revision

- <https://madasmaths.com/> has maths booklets of exam style questions and solutions by topic together with practise exam papers. The resources include further maths and even go up to undergraduate level so plenty of challenge here.
- There is also an extensive collection of questions and exam papers across all exam boards for both maths and further maths at <https://www.physicsandmathstutor.com>. Although these are from the old syllabus, they provide plenty of additional practise

### Recommended Resources for Extension and Enrichment

- If you want to extend your knowledge and thinking then both <https://nrich.maths.org/secondary> and [undergroundmathematics.org](http://undergroundmathematics.org) are good sites to explore
- Extra challenge and problem solving is available at <https://www.ukmt.org.uk/> . Look at the UKMT Senior Maths Challenge and Enrichment pages

### French

Year 13 students are studying:

- The importance and power of trade unions in francophone countries
- Talk about strikes and protests and consider different methods of protesting
- Discuss different attitudes towards strikes, protests and other political tensions
- Political solutions to immigration
- The different political parties' attitudes to immigration
- Political commitment of immigrants in francophone countries
- Future and conditional perfect tenses
- Language for describing change
- Understand and use subject and object pronouns
- Understand and use relative pronouns
- Understand and use demonstrative adjectives and pronouns

In addition, students are continuing with their study of the book *l'Etranger* and the film *La Haine* as well as working on their Independent Research Project. There will be a speaking assessment this half-term.

### Recommended Resources

**Kerboodle** (focus on interactive activities for each of the units covered and section Pulse 2020 for revision tips)

<https://kerboodle.com>

### AQA French

<https://www.aqa.org.uk/subjects/languages/as-and-a-level/french-7652>

### S-Cool French Revision

<https://s-cool.co.uk/a-level>

**BBC Bitesize** (select French /KS3; lots of games and fun activities to learn)

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

**Languages online** (go to français tab and complete any of the quick links topics including grammar, vocabulary, quizzes, etc)

[www.languagesonline.org.uk](http://www.languagesonline.org.uk)

### Geography

Students have just finished the Water Cycle topic and we have just begun the Carbon Cycle topic. So far we have covered the basics of what the carbon cycle is and the key stores and flows of Carbon. This half term we will be covering the following key questions...

- How do biological processes impact the carbon cycle?
- How do humans impact the carbon cycle?
- What forms of energy do we use?
- What factors affect energy security?
- How are energy pathways disrupted?
- What are the issues surrounding Fracking?
- What are the issues surrounding renewable energy sources?
- How does climate change threaten people and the environment?

Recommended resources and wider reading:

- Students should always be trying to tread around the subject, keeping an eye out for news such as on the BBC news website. Here are some resources they might find interesting:
- Before the flood, a film by Leonardo DiCaprio - <https://www.beforetheflood.com/>
- Our planet- documentary on Netflix about the impacts of climate change
- Costing the earth- Podcast series with lot of relevant episodes for the carbon topic <https://www.bbc.co.uk/programmes/b006r4wn/episodes/player>
- None is too small to make a difference- Greta Thunberg. A collection of eleven speeches which she has written and presented about global warming and the climate crisis.

Students are about to start the Synoptic part of the geography course. This involves making connections between all the different topics covered in the A level and applying this knowledge to a contemporary challenge facing the world. There are three key themes to the topic: Players; Attitudes and actions; Futures and uncertainties. The best way students can help prepare for the Synoptic is to be aware of what is going on in the world, following the news critically and evaluatively and engaging with the major global challenges facing the world today.

Recommended resources and wider reading

- Gapminder: [Gapminder | Unveiling the beauty of statistics for a fact based world view.](#)
- Book: Factfulness: Ten reasons we're wrong about the world – and why things are better than you think ([Factfulness by Hans Rosling, Ola Rosling | Waterstones](#)) - also [Factfulness | Gapminder](#)
- Book: Prisoners of Geography: Ten maps that tell you everything you need to know about global politics ([Prisoners of Geography by Tim Marshall | Waterstones](#))
- Today/PM on Radi4 for extra analysis and comment on current affairs: [BBC Radi4 - Today](#) and [BBC Radi4 - PM](#)
- RGS Podcasts: [Royal Geographical Society - 'Ask the geographer' podcasts \(rgs.org\)](#)

**German**

<p>What?</p>	<p>Discuss how the EU has evolved and Germany's role in it          Discuss the advantages and disadvantages of the EU for Germany          Understand the impact of EU expansion on Germany          Use the perfect, imperfect and pluperfect tenses          Da(r) + preposition          Use the future perfect tense</p> <p>“Die Verwandlung” essays: content and technique          General exam practice, including listening, reading, writing summaries and translation</p>
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	Reading for Individual Research Project
Recommend	Read any other works by Kafka <a href="#">Deutsche Welle</a> Huge variety of learning materials <a href="#">Fluter</a> Magazine for young people about politics and society

## History

### Topics

- Revision and exam technique
- Mao's China
  - The Cultural Revolution and its aftermath, 1966-76
  - Social and cultural changes, 1949-76

### Recommended Resources

- A helpful range of resources can be found on Frog
- Refer to extra reading lists in course handbooks

## Maths

### Topics:

- Vectors (Pure-chpt12)
  - Understand 3D cartesian co-ordinates and use vectors in three dimensions
  - Use vectors to solve geometrical problems and model 3D motion in mechanics
- Projectiles (Applied-chpt6)
  - Model motion under gravity for an object projected horizontally or at an angle
  - Resolve velocity into components and solve problems involving projected particles
  - Derive the formulae for flight, range and greatest height and the equation of the path of a projectile
- Differentiation (Pure-chpt9 (9.7-9.11))
  - Differentiate parametric functions and functions which are defined implicitly
  - Use the second derivative to define the behaviour of a function
  - Solve problems involving connected rates of change and construct simple differential equations
- Integration (Pure-chpt11 (11.1-11.6))
  - Integrate standard mathematical functions including trigonometric and exponential functions
  - Use trigonometric identities in integration
  - Use the reverse of the chain rule to integrate more complex functions
  - Integrate functions by making a substitution, using integration by parts, using partial fractions

### Recommended Resources

- Your Maths textbooks available on Pearson Activelearn
- On FROG you will find practise exam questions and revision questions by topic
- DrFrostMaths – has excellent resources allowing you to practise key skills by topic. There are also some excellent videos on the Pure topics. You have all been provided with individual logins

### Recommended Resources for Revision

- All the following sites have access to exam papers and mark schemes. In addition you can find revision notes, and worksheets at <https://crashmaths.com/a-level-learn/> ; more topic revision, including videos at



<https://www.mathsgenie.co.uk/newalevel.html> and topic booklets of exam style questions and solutions, some of them quite hard at <https://madasmaths.com/>.

- There is also an extensive collection of questions and exam papers across all exam boards at <https://www.physicsandmathstutor.com>. Although these are from the old syllabus they provide plenty of additional practise

### **Recommended Resources for Extension and Enrichment**

- If you want to extend your knowledge and thinking then both <https://nrich.maths.org/secondary> and [undergroundmathematics.org](http://undergroundmathematics.org) are good sites to explore

### **Philosophy**

#### **Mind and Epistemology**

This term year 13 will continue their study of the *metaphysics of mind* by examining the following topics:

- Substance Dualism Issues
- Mind Brain Id Theory
- Mind Brain ID Issues
- Eliminative Materialism
- Eliminative Materialism
- Students will also consolidate key areas of *epistemology* in preparation for their mock examination.

#### **Recommend Resources**

Listen to the mind section of <https://thepanpsycast.com>

Read <https://www.amazon.co.uk/This-Philosophy-Mind-Pete-Mandik/dp/0470674504>

Watch the consciousness section of <https://www.closetotruth.com>

#### **The Metaphysics of God**

- The Cosmological Argument
- The Problem of Evil

#### **Recommend Resources**

Philosophy for ALevel Metaphysics of God and Metaphysics of Mind by Michael Lacewing

Philosophy for ALevel Year 2 Cardinal Jones and Hayward

Philosophy Bites – Short but fascinating podcasts by contemporary philosophers

Philosophy – The Basics – Great little book introducing key topics and ideas in philosophy

### **Physics**

#### **Topics – Miss Bean/Miss Choi**

- Nuclear & Particle Physics (topic 7), including:
  - The Standard Model
  - Particle accelerators & detectors
- Nuclear Radiation (topic 10), including:
  - Radioactivity & nuclear decay
  - Fission & Fusion

#### **Topics – Miss Lowe**

- Capacitors (topic 7b), including:

- Energy storage
- Capacitor discharge
- Thermodynamics (topic 9), including:
  - Heat & temperature
  - SHC & SLH
  - Ideal gas laws & kinetic theory

## Recommended Resources

- A huge array of helpful resources & links can be found on the A-level Physics FROG page:
  - The 'home' tab has links to Isaac Physics, the IOP, Physics & Maths tutor and many other good websites, plus access to general paperwork and all shared resources.
  - The 'Y12' and 'Y13' tabs include video links for each specification point of each topic, plus our usual in-school lesson resources and topic question packs.
  - The 'school closure' tab is where all remote lessons can be found, including links to pre-recorded videos of these if a student is absent.
  - The 'guided learning' tab contains advice on what can be done for independent study.
  - The 'explore' tab includes suggestions for further reading and recommended podcasts and documentaries.
- Seneca learning is an excellent resource to revise the basics for each topic. Search for 'Edexcel Physics A-level' to find content specific to our specification.
- It is also worth keeping an eye on BBC iPlayer, as many excellent documentaries are available there.

## Politics

### Topics

- The nation state and of national sovereignty.
- The impact of globalisation on the nation state.
- The advantages and disadvantages of globalization.
- Global environmental governance.
- The role and significance of the UNFCCC and IPCC.
- Factors impacting upon the effectiveness of global environmental governance
- Different types of regionalism
- Reasons for and the significance of regionalism
- The significance of the EU as an international body/global actor.
- Review and revision

### Resources

- Global Politics - Andrew Heywood
- Global Politics for A Level – R. Murphy et al
- The Economist Magazine
- The websites of institutions involved in global governance, such as the UN
- Financial Times – online student account

## Psychology

### Topics

- **Schizophrenia** with Ms Clayton  
Key features:
  - **Schizophrenia:** Psychological explanations (including a cognitive explanation) and treatment of schizophrenia; Interactionist approach to explaining schizophrenia; Interactionist approach to treating schizophrenia
- **Issues and Debates** with Dr Dunne  
Key features:
  - **Issues and Debates:** Nature-nurture debate (including the interactionist approach); holism and reductionism (including biological and environmental reductionism), idiographic and nomothetic approaches to psychological investigation and ethical implications of research studies and theory (including socially sensitive research)
- **Revision** with both Ms Clayton and Dr Dunne
  - **Revision:** Variety of techniques will be used including revision of previously taught material, exam practice etc.

### Recommended Resources

- [Tutor2u](#) Some good videos for exam technique.
- [Simply Psychology](#) Some good pages for the basics e.g. approaches, research methods etc.
- [Psychology Wizard](#) Mainly for a different exam board but has some cross-over.
- [Digital Illuminate E-Book](#) online access to the text-books used in class: can still use GCSE book for practice questions – all passwords on the Frog page.
- [CrashCourse Youtube](#) has some relevant videos.
- Psychology A-Level and GCSE Frog site has a lot of revision resources – can still use relevant GCSE revision resources as more practice, the better!

### Sociology

#### Topics

- **Beliefs in Society**  
Key features:
  - The relationship between difficult social groups and religious/spiritual organisations and movements, beliefs and practices.
  - The significance of religion and religiosity in the contemporary world, including the nature and extent of secularisation in a global context, and globalisation and the spread of religions.
- **Crime and Deviance**  
Key features
  - Crime, deviance, social order and social control
  - The social distribution of crime and deviance by ethnicity, gender and social class, including recent patterns in crime
  - Globalisation and crime in contemporary society; the media and crime; green crime; human rights and state crimes
  - Crime control, surveillance, prevention and punishment, victims, and the role of the criminal justice system and other agencies.
  - Crime, deviance, social order and social control

### Recommended Resources

- [Tutor2u](#) Some good tools.
- [Napier Press](#) Work booklets.
- [Hodder Education Extra](#) has some free resources for revision materials as well as relevant articles.

- Watch and read as much of the news as you can!

## Spanish

Year 13 students are studying:

- The importance of politics in young people's lives. Understand why their attitudes to politics is changing.
- The unemployment situation among young people nowadays and how it is affecting them
- Discussion of the type of society young people in the Hispanic world want to live in.
- The impact of the Spanish civil war and Franco dictatorship
- The changes from monarchy to republic to dictatorship. Transition from dictatorship to monarchy.
- Dictatorships in Latin America, particularly in Panama, Chile and Argentina
- Some of the grammar covered includes: the present subjunctive, imperatives, perfect subjunctive, preterite, imperfect subjunctive and general revision of tenses and grammar structures

In addition, students are continuing with their study of the book *La Casa de Bernarda Alba* and revising and completing essays on Pan's Labyrinth as well as working on their Independent Research Project

## Recommended Resources

**Kerboodle** (focus on interactive activities for each of the units covered and section Pulse 2020 for revision tips)

<https://kerboodle.com>

**El Laberinto del Fauno Revision Guide** (Hodder education)

**La Casa de Bernarda Alba Revision Guides** (there are two, Oxford and Hodder Education)

## Conjuguemos

<https://conjuguemos.com>

**BBC Bitesize** (select Higher Spanish)

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

## AQA Spanish

<https://www.aqa.org.uk/subjects/languages/as-and-a-level>