



ENVIRONMENTAL SCIENCE *at Myton School* Moving into A Level Studies

Introduction

Environmental Science is a multi-disciplined subject that will allow you to investigate the cause and effects of 21st century challenges on the natural environment. The course will allow you to develop the skills and knowledge to understand how our environment works and how people are changing it, be it for better or for worse!

The course is structured as shown below:

Year 1	i. The Physical Environment	ii. The Living Environment
Year 2	iii. Energy resources iv. Pollution	v. Living Resources vi. Sustainability
Throughout the course	Research methods (including maths and science skills) will be incorporated throughout the course.	

To be successful at Environmental Science you will need to understand the language of an Environmental Scientist. This means learning specialist key *terminology*. You will need to *interpret* and *manipulate* data and sources of information. Reading around the subject and topics will help greatly with this (a comprehensive list of subject links and publications can be found in this booklet). Finally, you will need to write down your ideas in both short answers and essays.

To prepare you and give you a taste of what it is like to be an A Level Environmental Scientist, you have been set some tasks to complete before the start of the Autumn term.

Please use the crib sheet to tick them off as you work your way through them. The tasks are not meant to be difficult and certainly not a test, but ***you are expected to do them (those marked with an asterisk (*) are compulsory)***. This is especially important as you will have had such a long break from your studies.

The exam board is **AQA** and you can find a link to the course specification by following the link below:

<https://www.aqa.org.uk/subjects/science/as-and-a-level/environmental-science-7447>

You will need to buy a copy of the **AS/A Level Environmental Science textbook** for this course which you will be required to ***bring to every lesson***.

A link to it can be found here:

<https://www.aqabookshop.co.uk/product/environmental-science-a-level-aqa-endorsed/richard-genn/richard-genn/>





Below is a list of equipment that you must bring to **every lesson** for Environmental Science:

- 🌐 Pen (black or blue)
- 🌐 Variety of different coloured pens (e.g. green, purple, pink - NOT red)
- 🌐 A4 Lined note paper (hole punched and margin)
- 🌐 A4 folder (lever arch best) - named and labelled with subject/topic
- 🌐 Folder dividers
- 🌐 Clear 30cm ruler
- 🌐 Scientific calculator
- 🌐 Pencil & rubber
- 🌐 Coloured pencils/highlighters, fine line pens
- 🌐 Academic planner/diary
- 🌐 Environmental Science text book



Throughout the course you will get opportunities to carry out fieldwork, and laboratory practicals. It is also recommended that you have appropriate outdoor clothing and footwear as fieldwork will be undertaken during the colder months. You will be given more information in due course.

To be successful and achieve your full potential at A level, you will be expected to engage with a **minimum of 5 hours** of independent study *per subject, per week*. For Environmental Science, this could be in the form of set homework (e.g. research, finishing off tasks or preparing for the next lesson), watching a relevant documentary, reading a subject specific publication or news article, listening to a podcast, or reviewing, revising and preparing revision resources from your notes for example.

Homework and independent study (IS) tasks will be set via the Teams platform. You are required to check this **daily** for assignments and messages from your Lecturers. The *General Chat* function will be used for communicating course news and announcements, and for posting useful links related to the course content. Your teacher will post useful course resources in the *Files* area of the Team so check regularly for these too.

If you have any questions in the meantime, please do not hesitate to contact either of us on the email addresses below.

All the best and we look forward to seeing you in September!

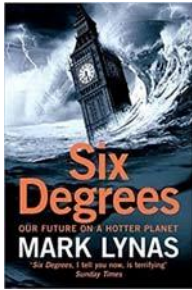
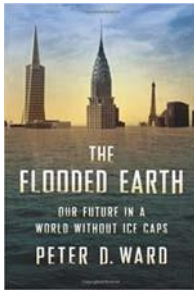
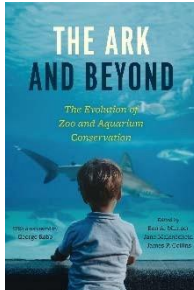
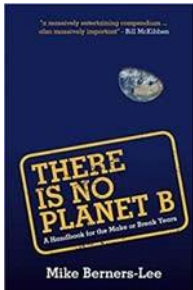

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Name: _____

Your Environmental Science Crib sheet - Please tick off these tasks once complete

I have read the introductory pages on this document		
1) *Definitions - it is all about the language - tick off each row once completed.		
🌐 Physical World definitions		
🌐 Living World definitions		
2) *Articles - because reading is important! - tick them off once you have read them.		
<i>Physical world</i>	Climate change impacts - Geographical magazine https://geographical.co.uk/	
<i>Physical world</i>	Climate change refugees - Brookings University	
<i>Living World</i>	Conservation benefits - Guardian	
<i>Living World</i>	Climate act reform impacts - Time Magazine	
3) *Writing - putting my ideas onto paper - write a paragraph to answer the question below - of approx. 500 words.		
<i>The Physical World</i>	Who will suffer most from climate change?	
<i>The Living World</i>	How will the conservation of species and ecosystems benefit people?	
4) Becoming an Environmental Scientist - tick these off once you have done them		
<i>*Completed Maths and Science skills (AQA GCSE to A-Level Progression Booklet)</i>		
<i>Completed a FutureLearn course: Some examples of short courses are below:</i>		
<ul style="list-style-type: none"> Ecology & Wildlife Conservation (choose the free option): https://www.futurelearn.com/courses/ecology-and-wildlife-conservation A Beginner's Guide to Environmental Science: Wicked Problems & Possible Solutions: https://www.futurelearn.com/courses/introduction-to-environmental-science 		
<i>Listened to a PODCAST</i>	<ul style="list-style-type: none"> http://www.sustainababble.fish/ https://www.geography.org.uk/GeogPod-The-GAs-Podcast 	
<i>Watched a TED Lecture on...</i>	<ul style="list-style-type: none"> https://www.ted.com/talks/michael_shellenberger_how_fear_of_nuclear_power_is_hurting_the_environment ...or find your own and summarise it here. 	
<i>Read a book about...</i>	<p>Find a book, buy it and read it... Search 'Environment Books' on Amazon for example. Or you can purchase and read one of these recommendations:</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;">      </div>	

Bring this sheet with you to your first Environmental Science Lesson



TOPIC 1 The Physical World -

In this topic you will learn how anthropogenic (human) activities are interconnected with *physical processes*, and how to formulate management strategies and plan sustainable activities for the future. You need to recognise that supplies of renewable and physical resources may be maintained by the control of activities that may cause over-exploitation and by protecting the processes that aid their production. However, supplies of non-renewable and physical resources may be extended by controlling exploitation and developing improved technologies to harness them.

TASK 1: Some key words you need to know: write out the word with a definition

Enhanced greenhouse effect	
El Nino and La Nina	
Cryosphere	
Albedo	
Persistence	
Sedimentation	
Aquifer	
Depletion	
Cut -off ore	
Contour ploughing	
Companion cropping	
Turbidity	
Ozone depletion	
Rowland-Molina hypothesis	
Lasky's principle	
USLE - soil erosion equation	

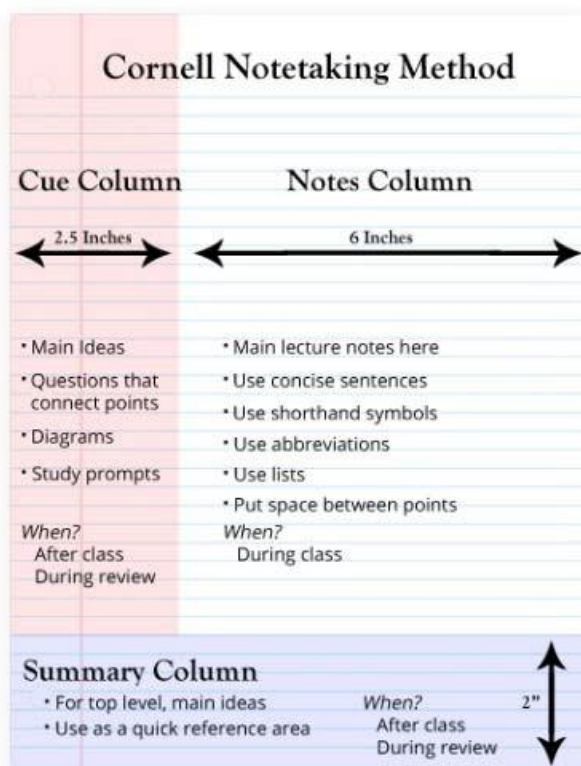


TASK 2 - Reading skills

Read these 2 articles found through the weblinks. For each one:

Summarise it using [Cornell note taking](#) or through a mind map or a series of bullet points. Always write down the source, date, title and author of the article.

<https://www.theguardian.com/environment/2020/may/05/one-billion-people-will-live-in-insufferable-heat-within-50-years-study> <https://www.brookings.edu/research/the-climate-crisis-migration-and-refugees/>





TOPIC 2 - THE LIVING WORLD

You will learn about the interaction of *living organisms* with each other and their surrounding environment, and how an understanding of this can inform decisions that lead to sustainable human activities such as conservation strategies. You will apply your understanding of these interactions in a wide range of contexts such as a British Woodland, Mangroves, Tropical Coral Reefs and Antarctica.

1) **TASK 1** Some key terms you will need to know: write out the word & definition + an example

Biomimetics	
Vavilov Centres	
Crop Wild relatives	
Flagship Species	
EDGE Species	
Keystone Species	
Gene Pool	
Introduced/invasive species	
IUCN Red list	
CITES	
Endangered / vulnerable species	
SSSI	
NNR	
Plagioclimax community	
Coppicing	
Biological corridor	



Useful Geography & Environmental Science Resources

Over the following pages, you will find some useful resources to help support and enhance your studies and to inspire to pursue a career in the field of Earth Science or Geography. When given independent learning and homework tasks, avoid the default of using the first result Google returns, focus your search using dedicated subject specific links. If you discover any others which could be beneficial to your studies, please share them in Teams with your teacher and your class.

1. FutureLearn:
 - a. <https://www.futurelearn.com/subjects/science-engineering-and-maths-courses/earth-science>
 - b. <https://www.futurelearn.com/subjects/nature-and-environment-courses>
 - c. <https://www.futurelearn.com/subjects/teaching-courses>
2. Open University: <https://www.open.ac.uk/courses/environment>
3. AimHi Climate Course - <https://www.aimhi.co/climate-course-for-teachers> September 2021
4. TED Talks: <https://www.ted.com/>
5. Royal Geographical Society (RGS)
 - a. <https://www.rgs.org/schools/teacher-cpd/>
 - b. <https://www.rgs.org/schools/school-student-events/>
 - c. <https://www.rgs.org/schools/geography-ambassadors/ambassadors/>
6. ESRI Education: <https://www.esri.com/en-us/industries/education/overview>
7. Geographical Association (GA): <https://www.geography.org.uk/home>
8. Geographical magazine: <https://geographical.co.uk/>
9. EDIE: <https://www.edie.net/>
10. ENDS Report (Up to date environmental news): <https://www.endsreport.com/>
11. Natural Environment Research Council: <https://nerc.ukri.org/>
12. Centre for Ecology and Hydrology: <https://www.ceh.ac.uk/>
13. Environment Agency: <https://www.gov.uk/government/organisations/environment-agency>
14. Environment Agency River Network:
<https://www.arcgis.com/apps/webappviewer/index.html?id=17cd53dfc524433980cc333726a56386>
15. Lightning Tracker:
<https://www.lightningmaps.org/#m=oss;t=3;s=0;o=0;b=;ts=0;z=6;y=49.0741;x=5.5721;d=2;dl=2;dc=0;>
16. Windy.com: <https://www.windy.com/?50.608,-2.459,5,i:pressure>
17. Barry and Ben the Geography Men:
https://www.youtube.com/watch?v=M1Tb7HsEtOM&list=PLyjVgCmONG4V1T26ZW33XiC5higQT4I_8
18. JBA Trust (Hydrology): https://www.youtube.com/channel/UC4eMC5ORafQ_5ukT_80KreQ/videos
19. National River Flow Archive: <https://nrfa.ceh.ac.uk/>
20. The Institution of Environmental Scientists: <https://www.the-ies.org/>
21. Royal Society of Chemistry: <https://edu.rsc.org/resources>
22. Royal Meteorological Society: <https://www.rmets.org/>
 - a. MetMatters: <https://www.rmets.org/metmatters>
 - b. Metlink: <https://www.metlink.org/>
23. Meteorological Office National Library: <https://www.metoffice.gov.uk/research/library-and-archive>
24. Chartered Institute of Water and Environmental Management: <https://www.ciwem.org/>
25. Chartered Institute of Ecology and Environmental Management: <https://cieem.net/>
26. Geological Society: <https://www.geolsoc.org.uk/>
27. British Geological Society: <https://www.bgs.ac.uk/>
28. Natural England: <https://www.gov.uk/government/organisations/natural-england>
29. Magic On the Map: <https://magic.defra.gov.uk/>



30. Open Access Maps:

- http://www.openaccess.naturalengland.org.uk/wps/portal/oasys/maps/MapSearch!/ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gfdwMzDyNnA0v_kCBXA08DT38XHy9PQ38DE6B8pFm8AQ7gaEBAzjIPrN4M3cfC0MnfwNLg0A_CwNPC3MTI0cPbwMDY1OIPB7z_Tzyc1P1C3IjDLJMHBUBQs8ezw!!/dl3/d3/L2dBISeVZ0FBIS9nQSEh/
31. DEFRA: <https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs>
32. Ritchie Cunningham: <https://www.ritchiecunningham.com/>
33. The Rivers Trust: <https://www.theriverstrust.org/>
34. Field Studies Council: <https://www.field-studies-council.org/>
35. Time for Geography: <https://timeforgeography.co.uk/>
36. The International Growth Centre: <https://www.theigc.org/>
37. European Landowners Organization (SOILGUARD Project): <https://www.europeanlandowners.org/>
38. British Society of Soil Science: <https://soils.org.uk/education/>
39. NST Group Resources: <https://www.nstgroup.co.uk/downloadable-classroom-resources>
40. Halsbury Travel: <https://www.halsbury.com/school-travel-resources?page=Geography#categories>
41. Leeson House Field Studies Centre: <https://leesonhouse.com/a-level-fieldwork.html>
42. Cumulus Outdoors: <https://www.cumulusoutdoors.com/schools-youth/field-studies-trips/>
43. Geography Fieldwork Academy: <https://www.geographyfieldworkacademy.co.uk/classroom-resources/ks3>
44. Zoom Earth (Satellite data): <https://zoom.earth/>
45. Seneca Learning (Geography): <https://senecalearning.com/en-GB/>
46. Lichen App: <http://www.apis.ac.uk/nitrogen-lichen-field-manual>
47. Ordnance Survey Maps online (and app available): <https://osmaps.ordnancesurvey.co.uk/>
48. Cranfield University: <https://www.cranfield.ac.uk/themes/water>
49. UK Groundwater Forum: <http://www.groundwateruk.org/>
50. Geologize: <https://training.geologize.org/courses/geocomms>
51. Geographyeducationonline (<https://geographyeducationonline.org/>): Live events, lectures, tutorials
52. Financial Times, The Economist, Time Magazine, Guardian Environment, International Growth Centre
53. Dr Gilbz YouTube Channel (Climate Scientist at University of Reading: <https://www.youtube.com/c/drgilbz>)
54. Rewilding Britain: <https://www.rewildingbritain.org.uk/>
55. Countryside Jobs Service: <https://www.countryside-jobs.com>
56. Health and Executive (HSE): <https://www.hse.gov.uk/>
57. Wessex Rivers Trust: www.wessxrt.org
58. Andover Trees: <https://www.andovertrees.org.uk/>
59. Institute of Acoustics (IOA): <https://www.ioa.org.uk/>
60. British Occupational Health Society: <https://www.bohs.org/>
61. RSPB: <https://www.rspb.org.uk>
62. Brookings University: <https://www.brookings.edu/>
63. Instagram Influencer: <https://www.instagram.com/greengirlleah/?hl=en>
64. Instagram Climate Justice Activist: <https://www.instagram.com/xiyebeara/?hl=en>
65. Instagram Climate Policy: <https://www.instagram.com/earthbyhelena/?hl=en>
66. Instagram Environmentalist: <https://www.instagram.com/elieoutside/?hl=en>
67. Instagram Environmental Photographer: <https://www.instagram.com/mitty/?hl=en>
68. Instagram: #environment
69. LinkedIn: <https://www.linkedin.com/>
70. Revision Skills: <https://www.kingseducation.com/kings-life/a-level-revision>