WORCESTER
SIXTH FORM COLLEGE

Progression – Environmental Science

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1. Thinking of studying A Level Environmental Science at Worcester Sixth Form College?

We teach the **AQA** specification.

Here is a brief summary of the topics we cover over the two-year course. If you want to find out more about each of these topics, you can find the full specification on the AQA website: https://www.aqa.org.uk/subjects/science/as-and-a-level/environmental-science-7447/specification-at-a-glance

Subject content

1. The living environment- this is the study of a range of animal and plant adaptations to Earth's specific conditions, along with consideration of how and why plants and animals should be protected and conserved.

2. The physical environment- This topic considers study of the atmosphere, the soil and the water cycle and how these different aspects of the Earth work together to allow life.

3. Energy resources- Here we consider the energy sources available for use including both fossil fuels and renewables. We will look at the science behind their formation and their impact on the planet.

4. Pollution- In this topic we will look at the different forms of pollution including air and water- their causes and solutions to the problems. Current issues such as Plastics in the ocean will be considered.

5. **Biological resources**- We will develop an understanding of the challenge posed by the need to provide food and forest resources for a growing human population without damaging the planet's life support systems.

6. Sustainability- This topic allows us to consider the options for developing more sustainable communities that will not harm the Planet's most important physical systems and the ecological systems within them.

7. Research methods- this is a hands on module where students will partake in a range of laboratory and field based practical experiments, putting their knowledge and understanding into practice.

2. Tasks to complete before September

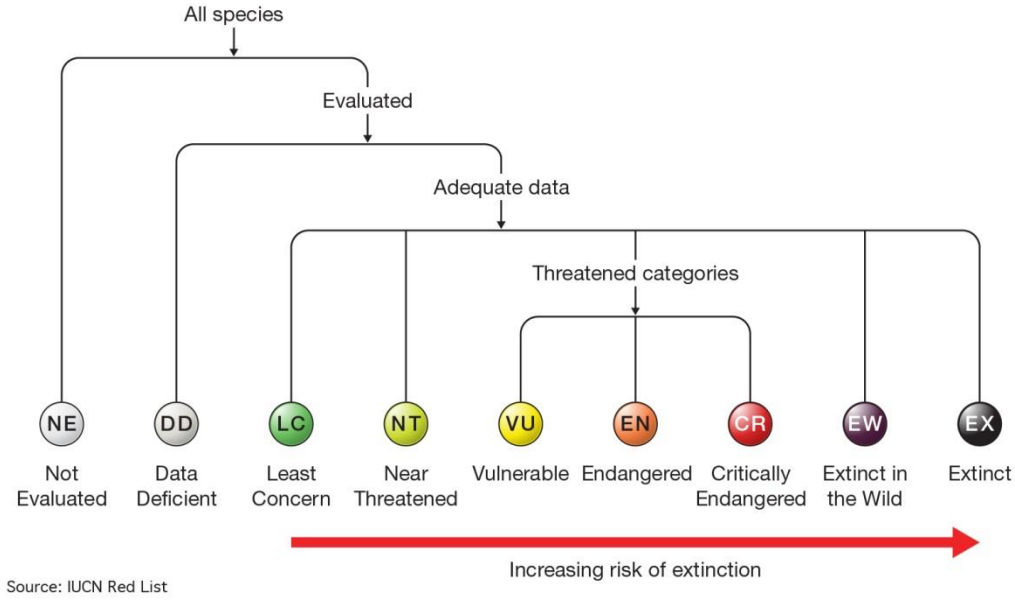
It is great that you are considering studying Environmental Science at A Level.
This pack contains a set of tasks and resources to prepare you to start an A Level in Environmental Science. The first 3 pages contain compulsory tasks that will be important in giving you some insight into the course and some understanding of the content that may be assessed in the exam. The last page contains some optional tasks to help broaden your understanding and may be of interest to you.

I. Conservation.

There are thousands of plants and animals around the world that are threatened with extinction. Assessed species are then put onto an internationally used 'Red List'. The list looks at the level of risk that the species will become extinct. Using the following website https://www.iucnredlist.org/ find a species of plant or animal from each of the categories from vulnerable to extinct (the diagram below will help you to interpret the red list codes. Create a mini fact file on the chosen species in each category.

Think about:

- Where they can be found
- How many are left
- What are the causes/reasons for their status on the red list.
- Any other interesting/relevant data or facts.
- An image of the chosen species.



II. The Atmosphere

The atmosphere that we exist in contains a rage of gasses and is broken down into a range of layers. Firstly, find out the structure of the atmosphere around Earth and draw a simple diagram to explain it and the layers that exist. Secondly, watch the video of the Ozone Hole on you tube- https://www.youtube.com/watch?v=OINKJNWtSiE once you have seen it, summarise what it has taught you in 100-200 words.

III. Research

As you will be studying a science subject, it is important to be able to interpret research. Much of the research will be your own, but sometimes you will need to interpret the findings of others. Read the following article on the captive breeding of mice https://www.abc.net.au/science/articles/2014/11/19/4131096.htm and interpret the research. To help you think about the following:

- What did the researchers do?
- What were they trying to find out?
- What was the outcome?
- What impact will this outcome have on conservation strategies?

IV. Planet Earth

Our Planet Earth has 'special conditions' that make life on Earth possible. Without this 'mix' of criteria life would not be possible.

Create a poster or information sheet on 'what makes Earth habitable?'

To help you, look up The Goldilocks Zone

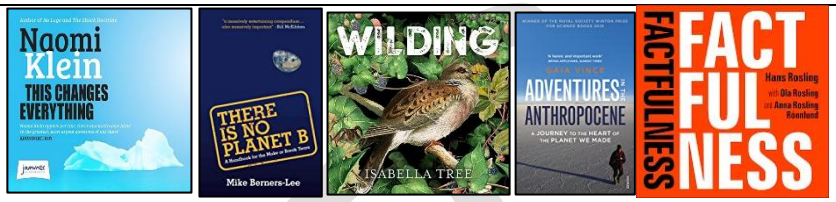
The following websites may also help you:

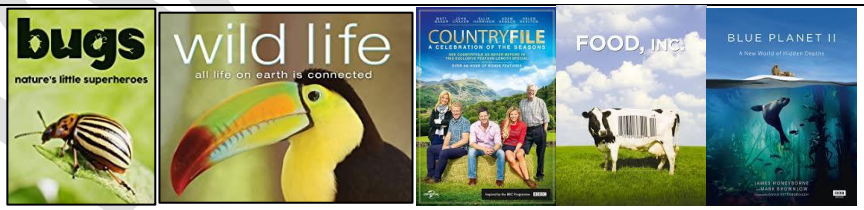
https://www.lpi.usra.edu/education/explore/our_place/hab_ref_table.pdf

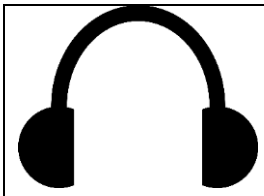
https://www.nationalgeographic.com/magazine/2018/03/one-strange-rock-interactive-earth-solar-system-milky-way-galaxy/

3. Optional Tasks

Below are some suggestions of books, websites, films, podcasts, TV shows and citizen science activities which will keep you up to date with environmental knowledge and development. Each of these links and suggestions may give you some extra insight into the world of Environmental Science.







[Overheard - National Geographic Podcast]

[Science weekly - The Guardian Podcast]

[BBC Costing the Earth]

[BBC the Documentary Podcast]

[The Living Planet Podcasts]

[BBC 30 animals that have made us smarter]

[BBC Science Hour]

[BBC Putting science to work - Air Pollution]

	BBC Climate forcing BBC Climate Change BBC Science and Nature playlist BBC Sustainable Thinking Colchester Zoo Live at 11am and 1pm	Chris Packham live at 9am for social distancing nature talks iPlayer Seven Worlds One Planet iPlayer dynasties iPlayer climate-change-the-facts

	Citizen Science penguin-watch Citizen Science rainfall-rescue The Big Butterfly Count	https://earthchallenge2020.earthday.org/ Transcribing old climate data