



RESOURCES LINK

LEVEL 2 UNIT 1

VERSION 1 JANUARY 2014

SCIENCE

Level 2 and Level 3

WELCOME

Resources Link is an e-resource, provided by OCR, for teachers of OCR qualifications. It provides descriptions of, and links to, a variety of independent teaching and learning resources that you may find helpful.

In Resources Link you will find details of independent resources, many of which are free: where this is the case this has been indicated.

If you know of other resources you would like to see included here, or discover broken links, please let us know. We would also like to hear from you if have any feedback about your use of these, or other, OCR resources. Please contact us at resourcesfeedback@ocr.org.uk.

We leave it to you, as a professional educator, to decide if any of these resources are right for you and your students, and how best to use them.

To give us feedback on, or ideas about the OCR resources you have used, email resourcesfeedback@ocr.org.uk

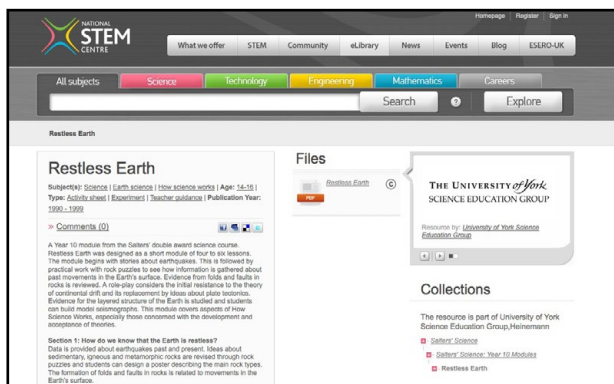
OCR Resources: *the small print*

OCR's resources are provided to support the teaching of OCR specifications, but in no way constitute an endorsed teaching method that is required by the Board and the decision to use them lies with the individual teacher. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources.

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Restless Earth



Restless Earth begins with stories about earthquakes, followed by practical work with rock puzzles to see how information is gathered about past movements in the Earth's surface.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

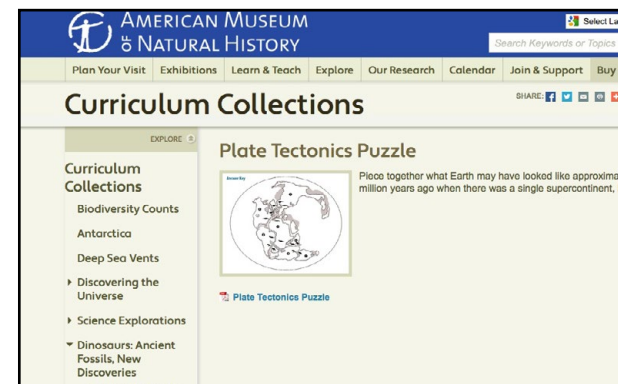
Format: Website

<http://www.nationalstemcentre.org.uk/elibrary/resource/3824/restless-earth>

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resourcesfeedback@ocr.org.uk

Plate Tectonics Puzzle



An activity centred around a plate tectonics puzzle.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

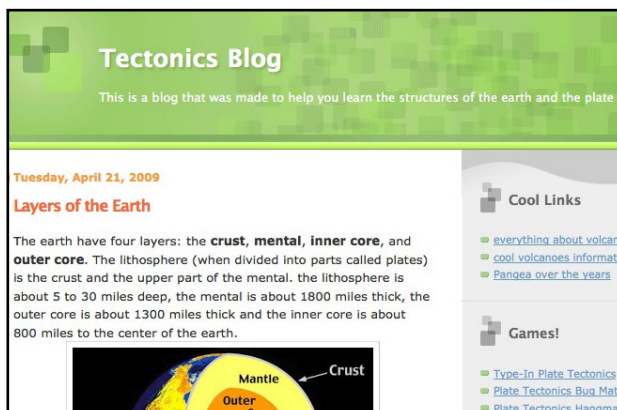
Format: Website

<http://www.amnh.org/explore/curriculum-collections/dinosaurs-ancient-fossils-new-discoveries/plate-tectonics-puzzle>

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Tectonics Blog



A Blog about structures of the earth and the plate tectonics.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

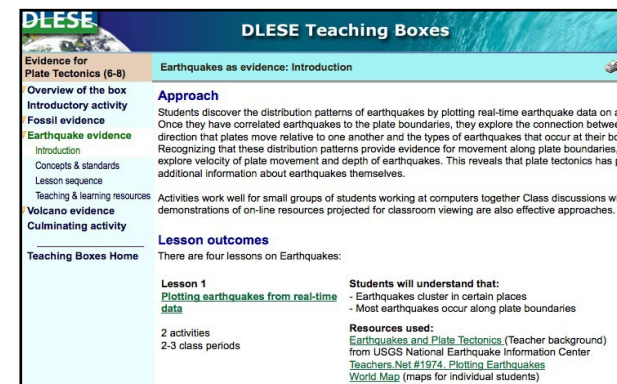
Format: Website

<http://tectonicsblogthesecond.blogspot.co.uk>

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Earthquakes as Evidence: Introduction



An online collection of interrelated learning concepts that focuses on finding the evidence for plate tectonics using digital resources, education standards, and comprehensive lesson plans.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

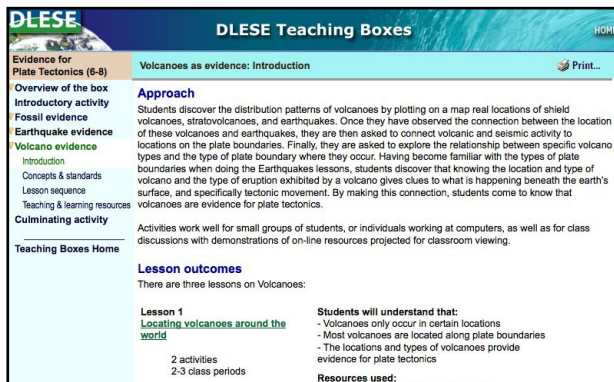
Format: Website

<http://www.teachingboxes.org/jsp/teachingboxes/plateTectonics/earthquakes/index.jsp>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at

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Volcanoes as Evidence: Introduction



An online collection of interrelated learning concepts that focuses on finding the evidence for plate tectonics using digital resources, education standards, and comprehensive lesson plans.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

Format: Website

<http://www.teachingboxes.org/jsp/teachingboxes/plateTectonics/volcanoes/index.jsp>

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Magnetic Stripes on The Ocean Floor: A Lab Simulation

Magnetic stripes on the ocean floor: a lab simulation

Learning objectives:

- the Earth's magnetic field has 'flipped' (the N pole becoming the S pole, and vice versa) many times over geological time
- as **tectonic plates** move apart, new rock is formed and locks in the direction of the magnetic field at the time

Timing: 10 minutes

Health and safety: pins are sharp

English National Curriculum links: [4.4.3n](#)

Introduction:

The discovery of stripes of alternately normal and reversed-magnetised rocks forming the ocean floor was a key piece of evidence convincing most geologists that the theory of **plate tectonics** was correct. This teacher demonstration shows how this works.

There are two closely related activities which teachers may wish to tackle at the same time.

A simulation to show learners the effect of the Earth's magnetic field.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

Format: Website

<http://www.rsc.org/Education/Teachers/Resources/jesei/magflip/home.htm>

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Magnetic Patterns: Ocean Floor Pattern Plotting

Magnetic patterns: ocean floor pattern plotting

Learning objectives:

- the Earth's magnetic field has 'flipped' (the N pole becoming the S pole, and vice versa) many times over geological time
- as **tectonic plates** move apart, new rock is formed and locks in the direction of the magnetic field at the time

Timing: about 20 minutes
English National Curriculum links: 4.4.3n

Introduction:
 Students use magnetic field data and a map of the ocean floor around Iceland to observe how the direction of magnetisation of the ocean floor varies. This links the magnetization of rocks with the theory of **tectonic plates**.
 Students tackle the worksheet *Magnetic patterns: ocean floor pattern plotting*
 There are two closely related activities which teachers might wish to tackle at the same time. These are:

An activity where students use magnetic field data and a map of the ocean floor around Iceland to observe how the direction of magnetisation of the ocean floor varies.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

Format: Website

<http://www.rsc.org/Education/Teachers/Resources/jesei/magpat/home.htm>

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In Defense of Wegener: Presenting the Evidence

DLESE Teaching Boxes

Evidence for Plate Tectonics (6-8)

Culminating activity

In Defense of Wegener: Presenting the Evidence

Overview/Background:
 Alfred Wegener's theory of Continental Drift (1912) was not readily accepted by the scientific community of his time because there was no explanation for a force that could move the continents over large distances nor how continents could move without breaking up. After completing each part of the Exploring Evidence for Plate Tectonics teaching box, students will have examined the evidence from fossils, earthquakes, and volcanism that supports the modern theory of plate tectonics. With this knowledge, students should be able to defend the basis of Wegener's original hypothesis that the continents had once been joined as a single landmass and had separated over geologic time. Students will be asked to present their findings to Alfred Wegener (aka the teacher).

Grade span: 6-8

Materials:

- Completed assignments from each segment of the teaching
- Chart paper or poster board to organize a presentation
- Markers or colored pencils
- Computers with internet access for further research (optional)

Advance preparation for students:
 Students should be given time to organize the information they have gathered for their group assignment and for any other research they would like to do.

Activity where learners work in small groups to take on expertise in a particular field of evidence. They prepare a display of their evidence and the tutor acts as Wegener and prepares questions for the learners to answer.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

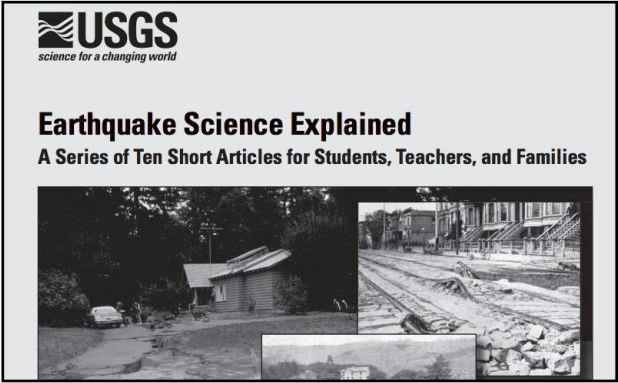
Format: Website

http://www.teachingboxes.org/jsp/teachingboxes/plateTectonics/culminating_activity.jsp

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Earthquake Science Explained



A series of ten short articles about earthquakes.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

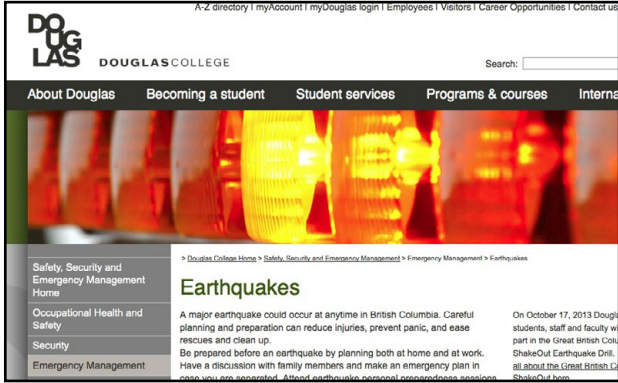
Format: Website

<http://pubs.usgs.gov/gip/2006/21/gip-21.pdf>

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Earthquakes



Advice on how to prepare for an earthquake, what to do during an earthquake and after.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

Format: Website containing a video

www.douglas.bc.ca/safety-security/emergency-procedures/earthquakes.html

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Constructing Earthquake-proof Buildings



Activity where learners build a table-top earthquake generator and design and test different building designs.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

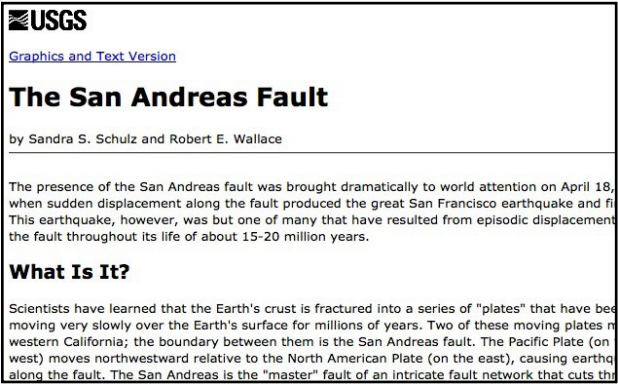
Format: Website

<http://school.discoveryeducation.com/lessonplans/programs/earthquakeproof/>

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The San Andreas Fault



Information about the San Andreas Fault.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

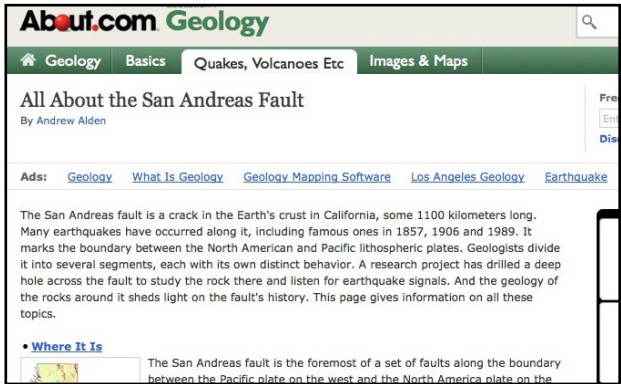
Format: Website

<http://pubs.usgs.gov/gip/earthq3/safaultgip.html>

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All About the San Andreas Fault



Information about the San Andreas Fault.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO1 'Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface.'

Cost: Free

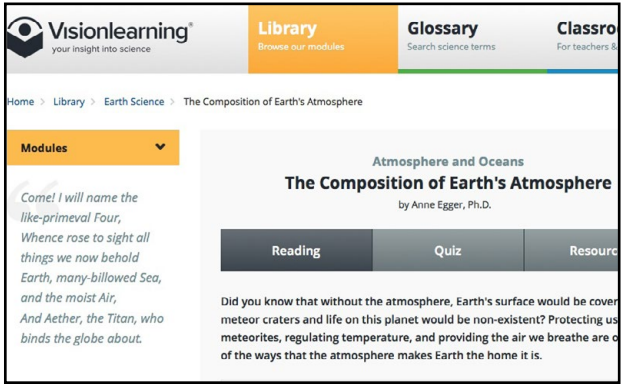
Format: Website

http://geology.about.com/od/geology_ca/tp/aboutsaf.htm

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Atmosphere and Oceans The Composition of Earth's Atmosphere



Information and data on the Earth's atmosphere.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

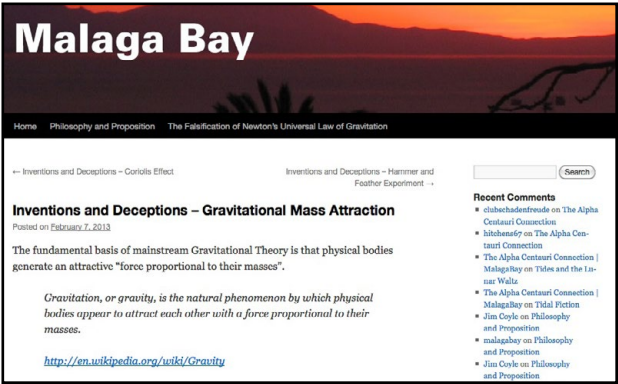
Format: Website

<http://www.visionlearning.com/en/library/Earth-Science/6/The-Composition-of-Earths-Atmosphere/107>

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Inventions and Deceptions – Gravitational Mass Attraction



Information and data on the Earth's atmosphere.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

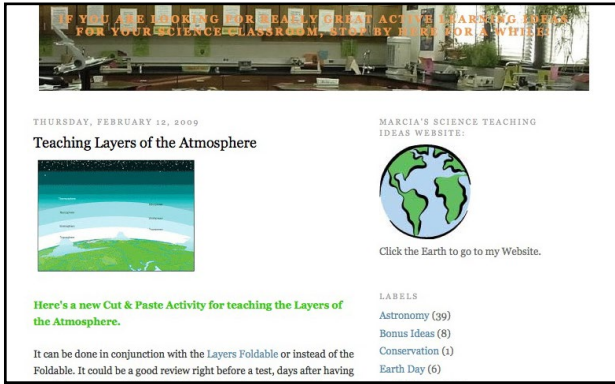
Format: Website

<http://malagabay.wordpress.com/2013/02/07/inventions-and-deceptions-gravitational-mass-attraction/>

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Teaching Layers of the Atmosphere



Consists of a video and a cut and stick activity for learners to build up knowledge of the layers of the atmosphere.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

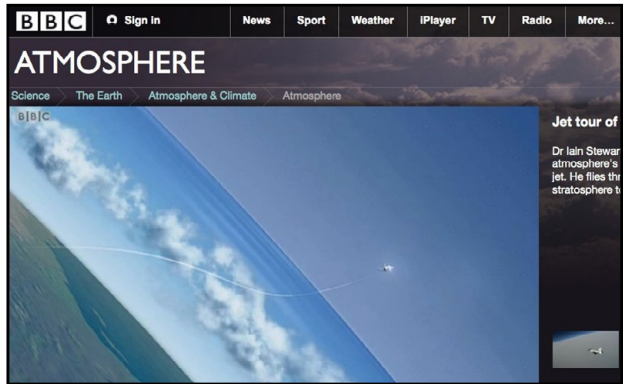
Format: Website

<http://scienceteachingideas.blogspot.co.uk/2009/02/teaching-layers-of-atmosphere.html>

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Atmosphere



BBC video clip about the atmosphere.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

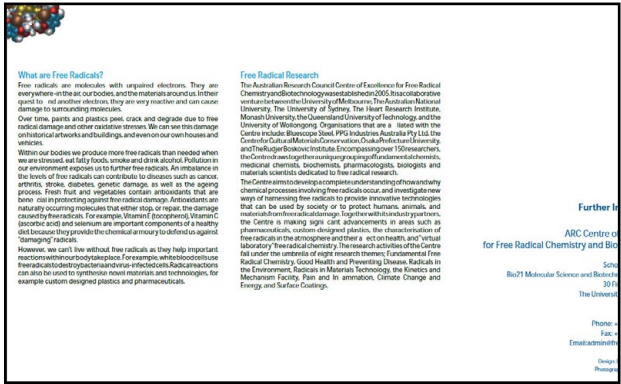
Format: Website

http://www.bbc.co.uk/science/earth/atmosphere_and_climate/atmosphere#p00gbf6k

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Explore Free Radicals – From Material Science to Biology



Leaflet about free radicals.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

Format: Website

http://www.freeradical.org.au/attachments/DL_2010.pdf

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BBC Weather



BBC weather report.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

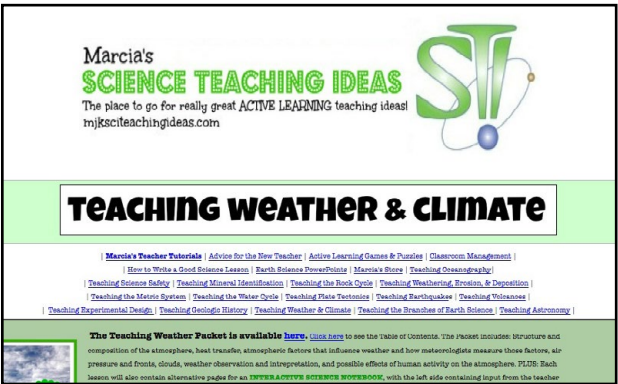
Format: Website

<http://www.bbc.co.uk/weather/>

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Teaching Weather and Climate



Series of activities related to weather and climate.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

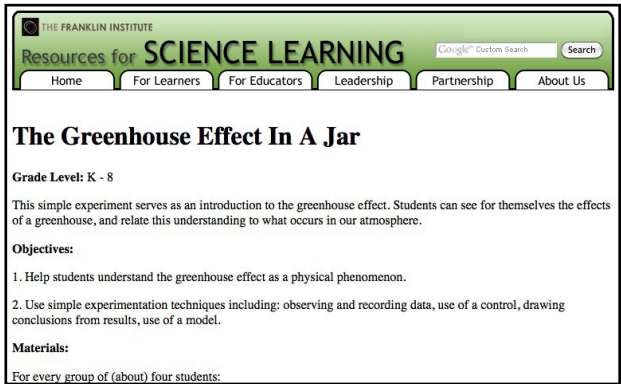
Format: Website

<http://mjksiteachingideas.com/climate.html>

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The Greenhouse Effect In A Jar



A simple experiment exemplifying the greenhouse effect.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

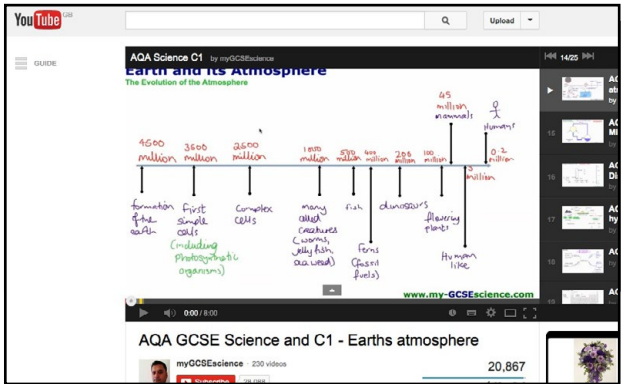
Format: Website

<http://sln.fi.edu/tfi/activity/earth/earth-5.html>

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Earth and its Atmosphere



A description of how the Earth's atmosphere developed over time.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

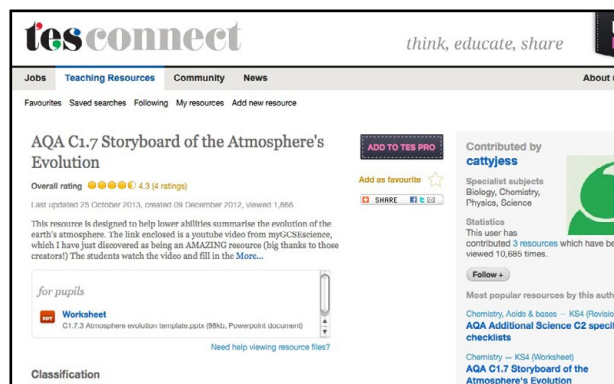
Format: Website

<http://www.youtube.com/watch?v=hx9CBrejFCA&list=PLA91D37E416C975B2&index=14>

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Storyboard of the Atmosphere's Evolution



An activity where learners summarise the development of the atmosphere.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

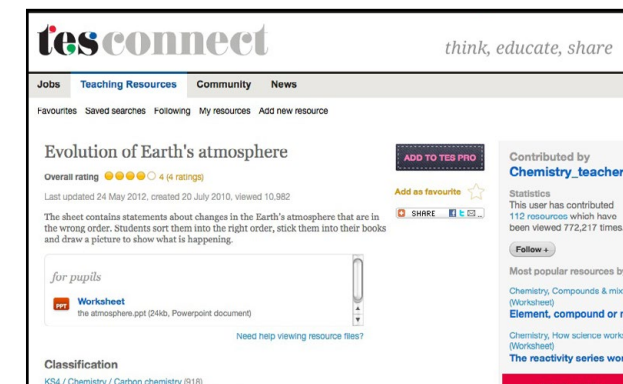
Format: Website

<http://www.tes.co.uk/teaching-resource/AQA-C1-7-Storyboard-of-the-Atmosphere-and-39-s-Evolution-6307562/>

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Evolution of Earth's Atmosphere



A worksheet which contains statements about changes in the Earth's atmosphere that are in the wrong order and learners have to sort them.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

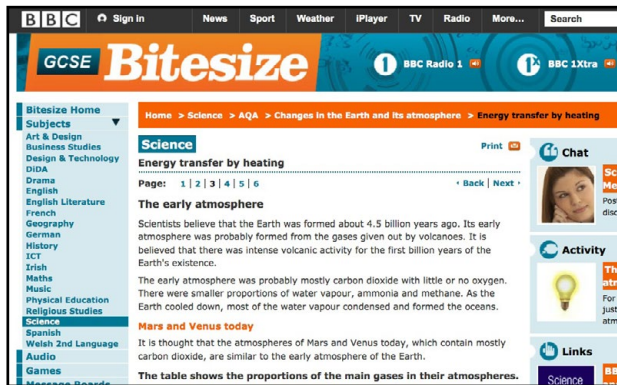
Format: Website

<http://education.practicalaction.org/urls/view/499>

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The Early Atmosphere



Information and data on the Earth's atmosphere.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

Format: Website

<http://www.bbc.co.uk/schools/gcsebitesize/science/aqa/earth/earthsatmosphererev3.shtml>

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Paleoclimatology: The Ice Core Record



Information about ice cores and the scientists who extract and analyse them.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

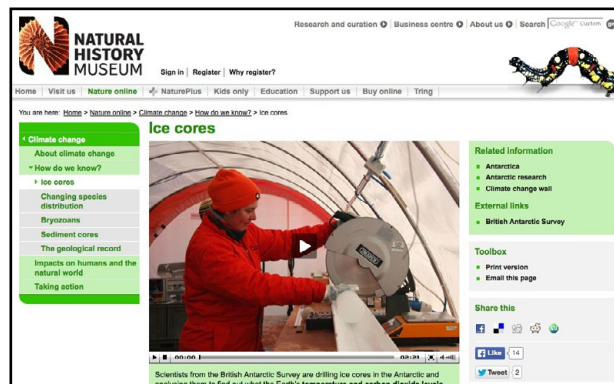
Format: Website

http://earthobservatory.nasa.gov/Features/Paleoclimatology_IceCores/

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Ice Cores



Information about ice cores and the scientists who extract and analyse them.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

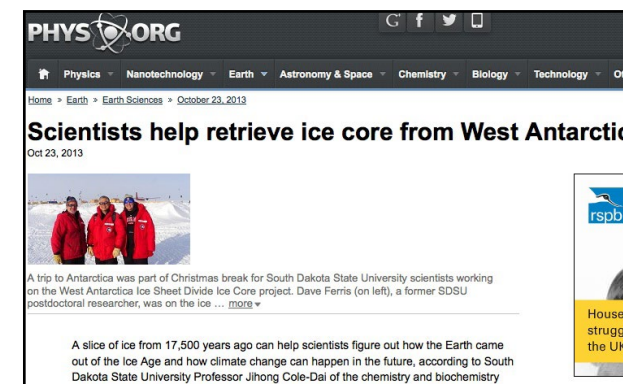
Format: Website

<http://www.nhm.ac.uk/nature-online/environmental-change/measuring-climate-change/ice-cores/index.html>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at

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Scientists Help Retrieve Ice Core from West Antarctica



News article about ice cores and the scientists who extract and analyse them.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO2 'Know how the Earth's atmosphere has evolved and how it supports life.'

Cost: Free

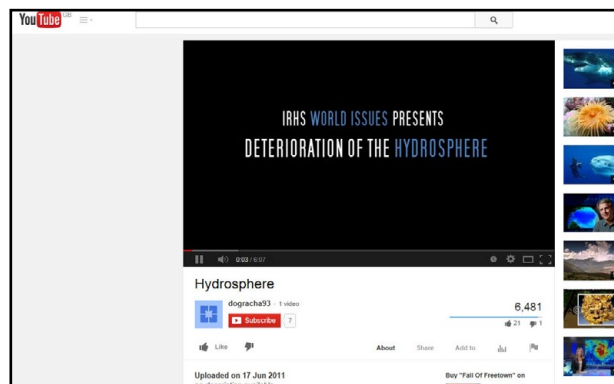
Format: Website

<http://phys.org/news/2013-10-scientists-ice-core-west-antarctica.html>

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Hydrosphere



Video which introduces the importance of the hydrosphere for supporting human life.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO3 'Understand the importance of the hydrosphere for supporting human life.'

Cost: Free

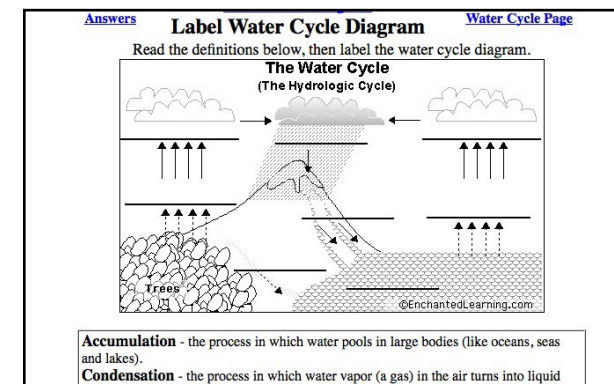
Format: Website

<http://www.youtube.com/watch?v=h6y18NaLO2g>

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Label Water Cycle Diagram



Water cycle diagram.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO3 'Understand the importance of the hydrosphere for supporting human life.'

Cost: Free

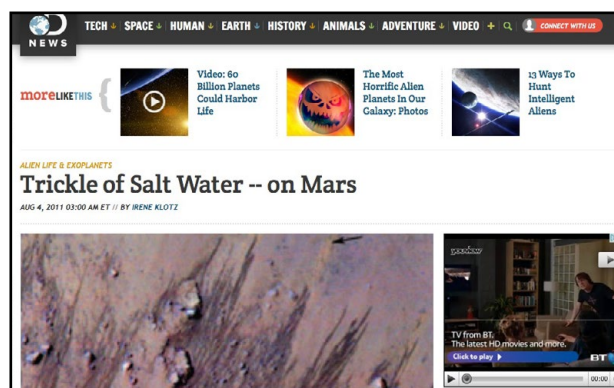
Format: Website

<http://www.enchantedlearning.com/geology/label/watercycle/>

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Trickle of Salt Water on Mars



Article about water on Mars.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO3 'Understand the importance of the hydrosphere for supporting human life.'

Cost: Free

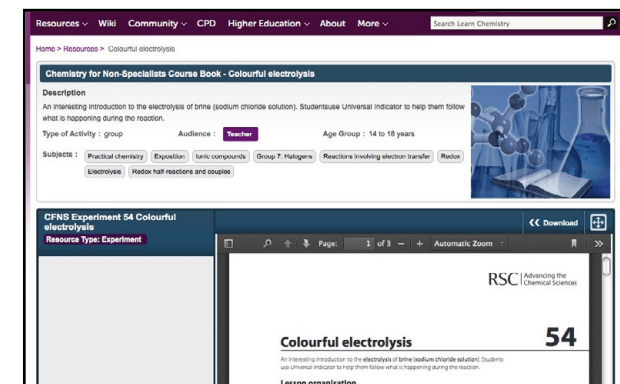
Format: Website with PDF document links

<http://news.discovery.com/space/alien-life-exoplanets/mars-salt-water-surface-110804.htm>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at

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Colourful Electrolysis



A practical introduction to the electrolysis of brine (sodium chloride solution).

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO3 'Understand the importance of the hydrosphere for supporting human life.'

Cost: Free

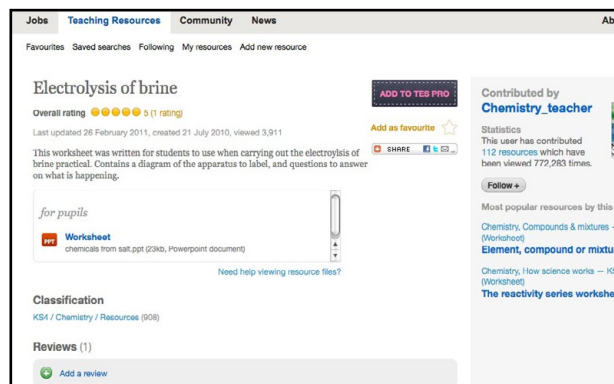
Format: Website

<http://www.rsc.org/learn-chemistry/resource/res00000735/colourful-electrolysis?cmpid=CMPO0000813>

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Electrolysis of Brine



Worksheet for learners to complete when carrying out the electrolysis of brine.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO3 'Understand the importance of the hydrosphere for supporting human life.'

Cost: Free

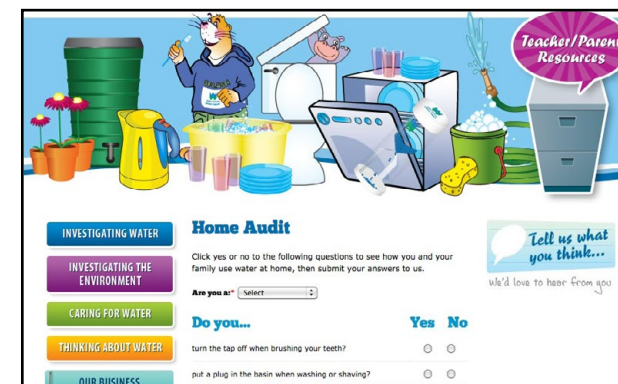
Format: Website

<http://www.tes.co.uk/ResourceDetail.aspx?storyCode=6050751>

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Home Audit



Home audit of water usage.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO3 'Understand the importance of the hydrosphere for supporting human life.'

Cost: Free

Format: Website

<http://www.livingandlearningwithwater.com/english/home-audit.html>

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Sewage Treatment



Information about the key processes involved in sewage treatment.

Supports:

Cambridge Technicals Science Level 2 Unit 1 ‘Science of the Earth’ – LO3 ‘Understand the importance of the hydrosphere for supporting human life.’

Cost:

Free

Format:

Website

http://www.euwfd.com/html/sewage_treatment.html

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Gaia Theory – Model and Metaphor for the 21st Century



Introduction to the Gaia Theory.

Supports:

Cambridge Technicals Science Level 2 Unit 1 ‘Science of the Earth’ – LO4 ‘Understand how we extract and use resources in the lithosphere, hydrosphere, atmosphere and biosphere, and the long-term effects on the Earth.’

Cost:

Free

Format:

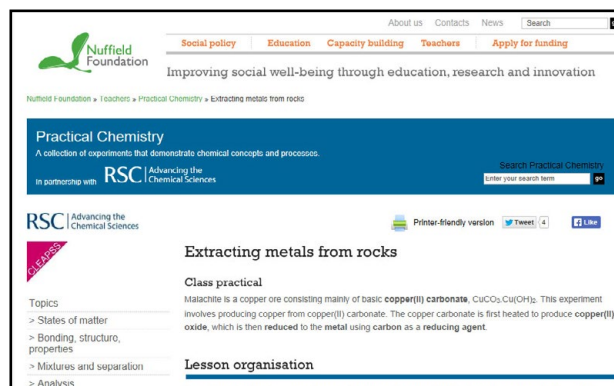
Website

<http://www.gaiatheory.org/overview/>

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Extracting Metals from Rocks



Details of an experiment to produce copper from copper(II) carbonate.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO4 'Understand how we extract and use resources in the lithosphere, hydrosphere, atmosphere and biosphere, and the long-term effects on the Earth.'

Cost: Free

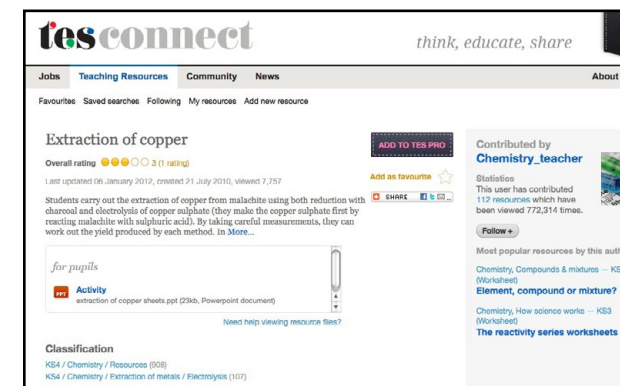
Format: Website

<http://www.nuffieldfoundation.org/practical-chemistry/extracting-metals-rocks>

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Extraction of Copper



A worksheet calculating the percentage yield of copper from both the reduction and electrolysis experiment and using sample costs to enable learners to calculate the cost of producing copper and comparing it to the length of time and purity of copper obtained.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO4 'Understand how we extract and use resources in the lithosphere, hydrosphere, atmosphere and biosphere, and the long-term effects on the Earth.'

Cost: Free

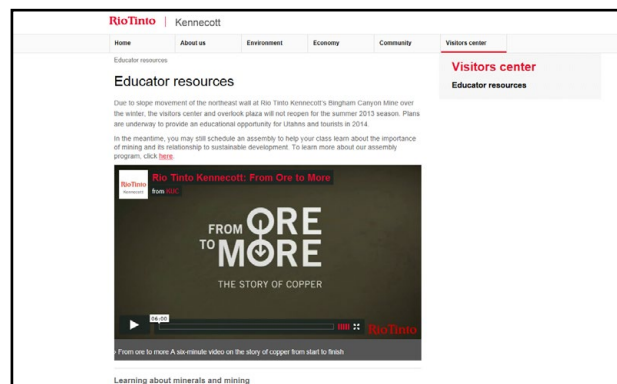
Format: Website

<http://www.tes.co.uk/ResourceDetail.aspx?storyCode=6050769>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at

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‘From Ore to More’



A video which summarises how copper is extracted commercially.

Supports: Cambridge Technicals Science Level 2 Unit 1 ‘Science of the Earth’ – LO4 ‘Understand how we extract and use resources in the lithosphere, hydrosphere, atmosphere and biosphere, and the long-term effects on the Earth.’

Cost: Free

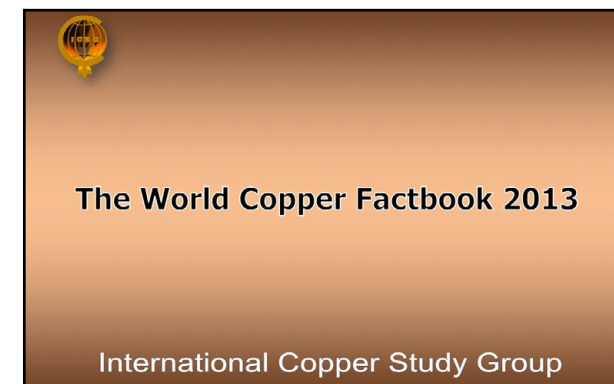
Format: Website

<http://www.kennecott.com/content/educator-resources#prettyPhoto/0/>

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The World Copper Factbook 2013



Data on copper production.

Supports: Cambridge Technicals Science Level 2 Unit 1 ‘Science of the Earth’ – LO4 ‘Understand how we extract and use resources in the lithosphere, hydrosphere, atmosphere and biosphere, and the long-term effects on the Earth.’

Cost: Free

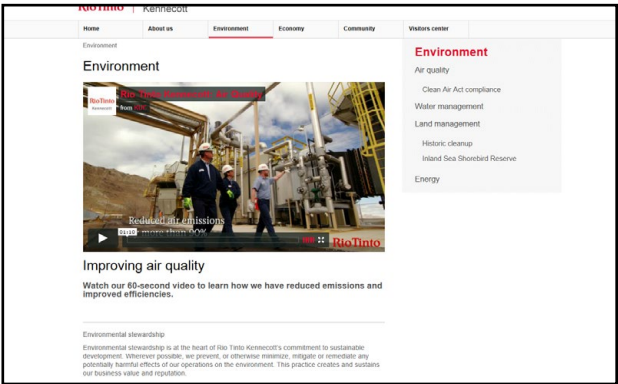
Format: Website

<http://www.icsg.org/index.php/component/jdownloads/finish/170/1188>

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Kennecott Copper Mine – Environment



Provides details of the impact of copper mining on the environment.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO4 'Understand how we extract and use resources in the lithosphere, hydrosphere, atmosphere and biosphere, and the long-term effects on the Earth.'

Cost: Free

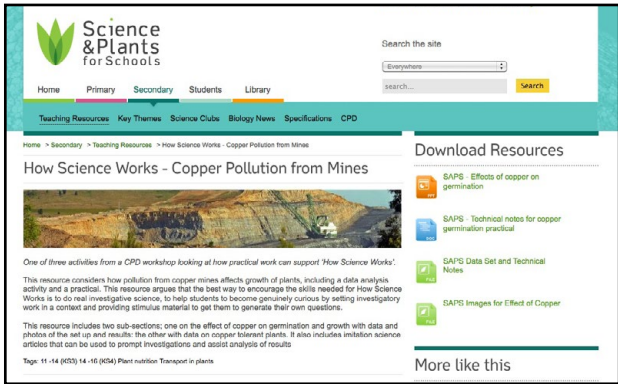
Format: Website

<http://www.kennecott.com/environment>

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How Science Works - Copper Pollution from Mines



This resource considers how pollution from copper mines affects growth of plants, including a data analysis activity and a practical.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO4 'Understand how we extract and use resources in the lithosphere, hydrosphere, atmosphere and biosphere, and the long-term effects on the Earth.'

Cost: Free

Format: Website

<http://www.saps.org.uk/secondary/teaching-resources/135-how-science-works-copper-pollution-from-mines>

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The World Without...Copper.



A documentary that explains what life would have been like without copper.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO4 'Understand how we extract and use resources in the lithosphere, hydrosphere, atmosphere and biosphere, and the long-term effects on the Earth.'

Cost: Free

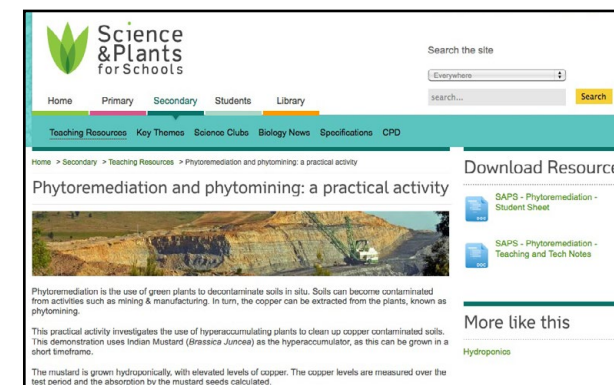
Format: Website

http://www.bbc.co.uk/worldservice/documentaries/2008/11/081112_world_without_copper.shtml

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Phytoremediation and Phytomining: A Practical Activity



This practical activity investigates the use of hyperaccumulating plants to clean up copper contaminated soils.

Supports: Cambridge Technicals Science Level 2 Unit 1 'Science of the Earth' – LO4 'Understand how we extract and use resources in the lithosphere, hydrosphere, atmosphere and biosphere, and the long-term effects on the Earth.'

Cost: Free

Format: Website

<http://www.saps.org.uk/secondary/teaching-resources/822-phytoremediation-and-phytomining-a-practical-activity>

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Resources Index

click on a resource to go to the appropriate page.

LO1 – Understand the structure of the Earth and the development of ideas and theories about the processes that change the Earth's surface

- Restless Earth
- Plate Tectonics Puzzle
- Tectonics Blog
- Earthquakes as Evidence: Introduction
- Volcanoes as Evidence: Introduction
- Magnetic Stripes on The Ocean Floor: A Lab Simulation
- Magnetic Patterns: Ocean Floor Pattern Plotting
- In Defense of Wegener: Presenting the Evidence
- Earthquake Science Explained
- Earthquakes
- Constructing Earthquake-proof Buildings

- The San Andreas Fault
- All About the San Andreas Fault

LO2 – Know how the Earth's atmosphere has evolved and how it supports life

- Atmosphere and Oceans The Composition of Earth's Atmosphere
- Inventions and Deceptions – Gravitational Mass Attraction
- Teaching Layers of the Atmosphere
- Atmosphere
- Explore Free Radicals – From Material Science to Biology
- BBC Weather
- Teaching Weather and Climate
- The Greenhouse Effect In A Jar
- Earth and its Atmosphere
- Storyboard of the Atmosphere's Evolution

Resources Index

click on a resource to go to the appropriate page.

- Evolution of Earth's Atmosphere
- The Early Atmosphere
- Paleoclimatology: The Ice Core Record
- Ice Cores
- Scientists Help Retrieve Ice Core from West Antarctica

LO3 – Understand the importance of the hydrosphere for supporting human life

- Hydrosphere
- Label Water Cycle Diagram
- Trickle of Salt Water on Mars
- Colourful Electrolysis
- Electrolysis of Brine
- Home Audit
- Sewage Treatment

LO4 – Understand how we extract and use resources in the lithosphere, hydrosphere, atmosphere and biosphere, and the long-term effects on the Earth

- Gaia Theory – Model and Metaphor for the 21st Century
- Extracting Metals from Rocks
- Extraction of Copper
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SCIENCE

Level 2 and Level 3