

Earth science out of doors – online

Earth Science for science and geography – video workshop



Developed from
the Earth Science
Education Unit
'Earth science out
of doors' workshop,
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www.earthlearningidea.com

Earth Learning Idea

Innovative, Earth-related teaching ideas

Earthlearningidea online video workshops

Purpose – ESEU background

- Most Earthlearningidea online video workshops are based, with permission, on workshops originally developed by the Earth Science Education Unit (ESEU)
- These were designed as interactive workshops for teachers and trainees, involving interaction, discussion and presentations by participants to others
- Global research into professional development workshops shows that these aspects are critical to success
- ESEU research shows that this workshop approach is highly successful in changing teaching in schools; evaluation feedback has also been very strong

Earthlearningidea online video workshops

Purpose – Earthlearningidea development

- The Earthlearningidea Team has developed the ESEU workshops into online video workshops for those unable to take part in face to face interactive workshops
- Each workshop is led by a PowerPoint presentation and has an accompanying booklet that contains all the activity background details, resource lists, risk assessments, etc.
- The individual workshop activities have been published for open access online at the website:
<https://www.earthlearningidea.com/>
- Each workshop activity has a question script and a video keyed into CASE principles, that can be accessed through the PowerPoint hyperlinks
- The aim is to facilitate online Earth science learning

Earthlearningidea online video workshops

Teaching Earth science using the Cognitive Acceleration through Science (CASE) approach

- The activities in this workshop are keyed into the CASE approach – to develop thinking skills while teaching key Earth science material
- If you are unfamiliar with the case approach, you can access a video introduction at:
<https://www.earthlearningidea.com/Video/CASE.html>
- An exemplar Earth science teaching activity with a question script using the CASE approach is at:
https://www.earthlearningidea.com/Video/Atmosphere_ocean.html

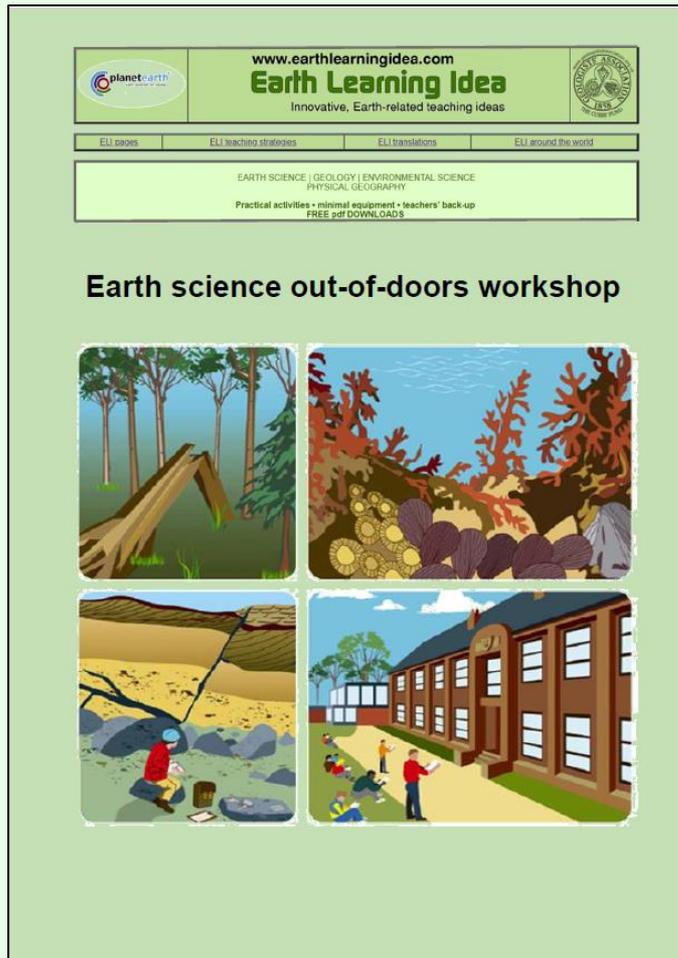
Earthlearningidea online video workshops

Running Earthlearningidea online video workshops

- Each workshop is led by a PowerPoint presentation
- Launch the PowerPoint
- Some slides contain hyperlinks to MP4 video files
- Run the hyperlinked files and then return to the PowerPoint, flick through any slides you have already seen, and continue
- The workshop is presented in this way so that the workshop itself, or individual videos, can be used in classroom teaching

Earth science out of doors

Workshop video run times		m	s	m	s
Earth science out of doors				43	42
Applying 'the present is the key to the past'	Phase 1	3	17	21	57
	Phase 2	5	54		
	Phase 3	3	06		
	Phase 4	2	58		
	Phase 5a	3	12		
	Phase 5b	3	30		
Rock around your school				3	01
What happened when?: sorting out sequences using stratigraphic principles	Introduction and cracked wall	3	20	7	03
	Patched pathway or road	2	13		
	Lines on a court	1	30		
Urban fieldwork	Shapes and colours in car park aggregate	1	28	4	48
	Shapes in concrete aggregate	2	06		
	Colours in building stones	1	14		
The watery world of underground chemistry	Tap water	1	36	6	53
	Soil water	2	39		
	Groundwater	0	56		
	Spring water	1	17		
	Linking Earth's spheres	1	25		



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Earth science for geography and science

The workshop is based on this pdf booklet originally prepared by the Earth Science Education Unit and now available on the Earthlearningidea website. It contains a workshop summary, the outcomes, teacher guidance, risk assessments and resources lists – as in the following slides

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Summary

Use these Earthlearningideas (from <http://www.earthlearningidea.com/>) to see how Earth science principles can be illustrated out of doors, often without a rock in sight, and how pupils can be engaged in discussions about Earth processes and products.

These videos were filmed in the grounds of the Blue School in Wells, Somerset, UK, with kind permission.

One video was filmed through the gate of Wells Cathedral School, Wells, Somerset, UK.

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Workshop Outcomes

The workshop and its activities provide the following outcomes:

- use of outdoor opportunities within the school grounds for enhancing the teaching of Earth science, its principles and processes;
- an approach to Earth science through an inquiry context.

Earth science out of doors

Explore Earth processes using this range of activities:

- Applying 'the present is the key to the past'
- Rock around your school
- What happened when?: sorting out sequences using stratigraphic principles
- Urban fieldwork: the stories from materials, colours, lines and shapes
- The watery world of underground chemistry

Teaching Earthlearningideas

Earth science out of doors

- **Applying ‘the present is the key to the past’**

Go to: https://www.earthlearningidea.com/Video/V16_PKP1.html hyperlink

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Applying 'the present is the key to the past'

Examples of evidence which could be preserved after many millions of years and understood by using 'the present is the key to the past'

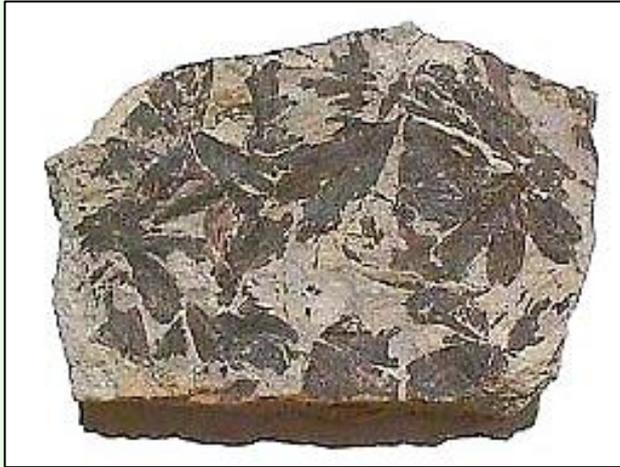


Fossil mud cracks, India



Fossil raindrop pits, Spain

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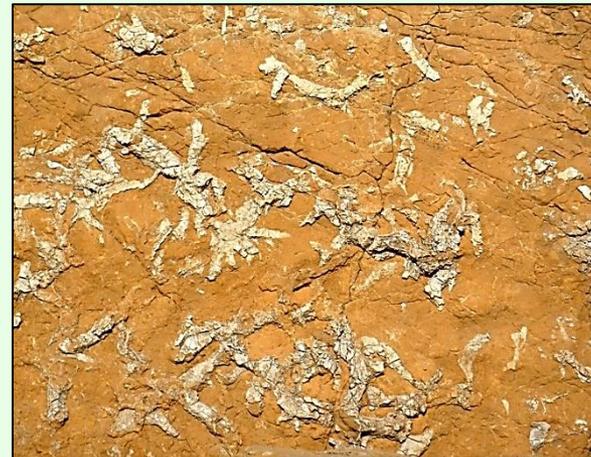
Fossil leaves around 180 million years old, England



Fossil footprints, Argentina

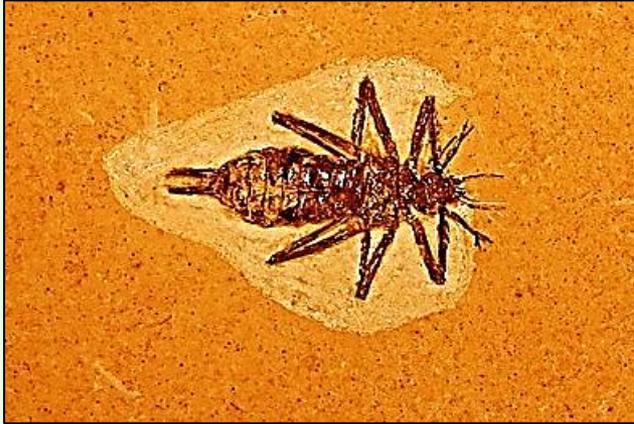


Fossil poo (coprolite) around 80 million years old, Canada



Fossil worm burrows

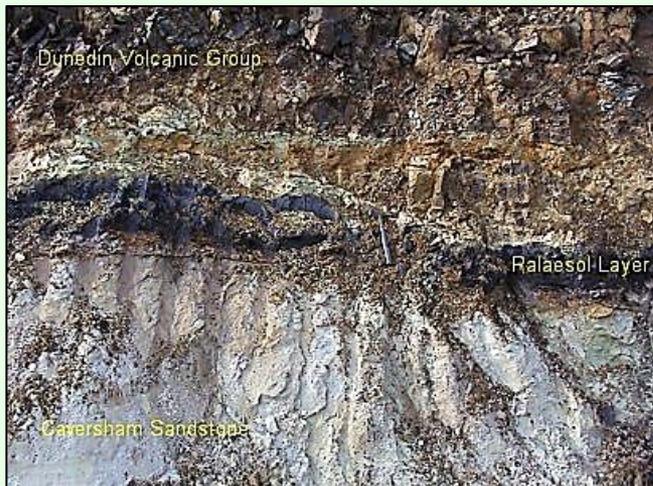
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Fossil insect



Fossil tree root around 300 million years old, Canada



Fossil soil, or paleosol, around 20 million years old, New Zealand



Fossil channel filled with sandstone, Scotland, UK

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'The present is the key to the past' photo credits

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- Fossil channel filled with sandstone, Scotland – released by Kmontgom and in the public domain

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- **Rock around
your school**

Go to: https://www.earthlearningidea.com/Video/V17_RAS1.html hyperlink

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- **What happened when?
sorting out sequences using
stratigraphic principles**

Go to: https://www.earthlearningidea.com/Video/V18_SP1.html hyperlink

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- **Urban fieldwork: the stories from materials, colours, lines and shapes**

Go to: https://www.earthlearningidea.com/Video/V19_UF1.html hyperlink

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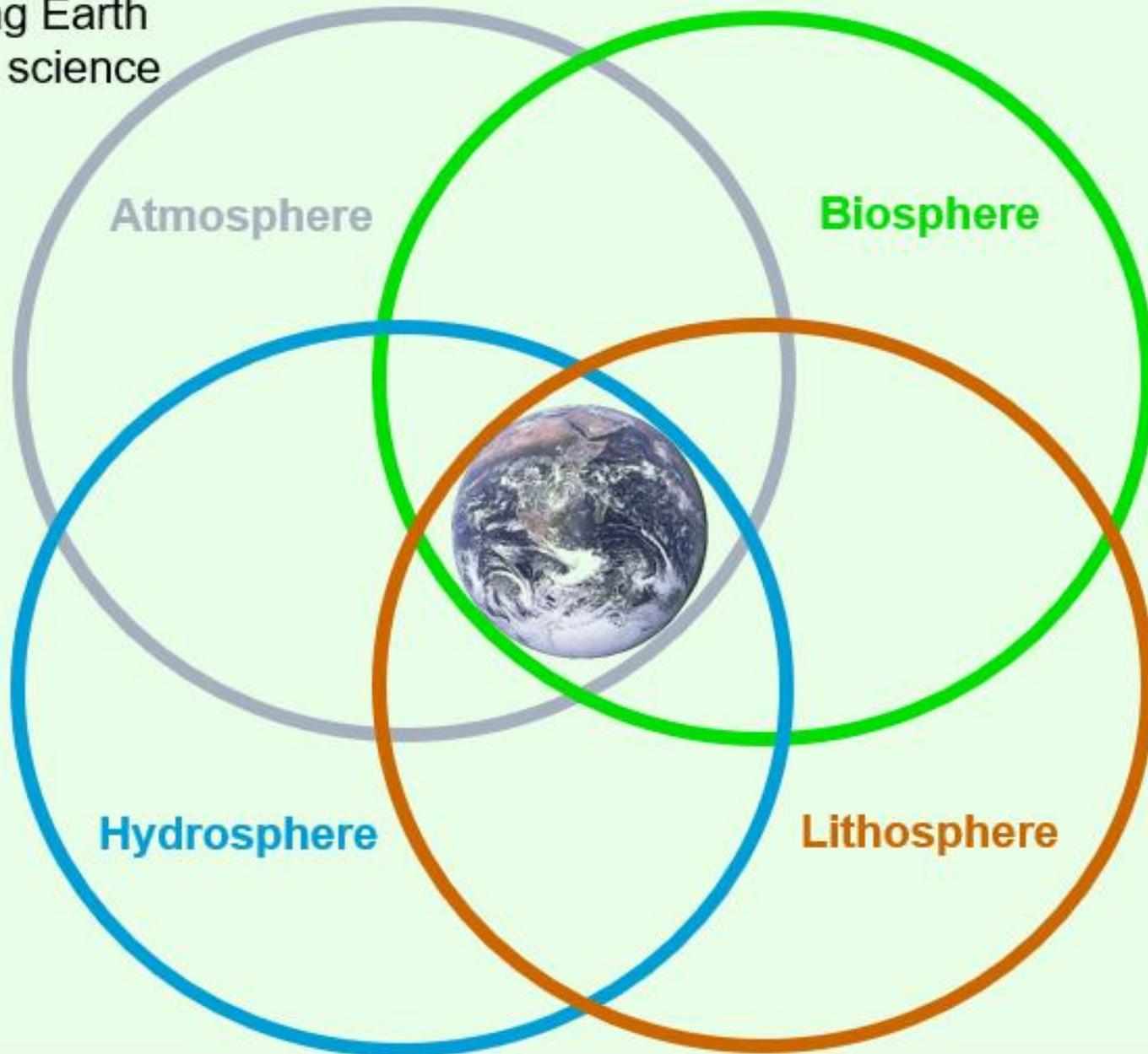
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- **The watery world of
underground chemistry**

Go to: https://www.earthlearningidea.com/Video/V38_WW1.html hyperlink

Earth science out of doors

Studying Earth
system science



Earth image,
NASA, public
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