atlas


TAKING FLIGHT
dynamic earth LEARNING


The Arctic
Antarctica


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SCOTLAND'S TIME LORDS
Discover the Pioneers of Earth Science


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SCOTLAND'S TIME LORDS


Researching Alien Worlds
Have you ever wondered if alien life could exist?
dynamic earth
The Arctic


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dynamic earth LEARNING


Astrobiologists look for life in extreme environments from frozen polar ice to boiling hot springs, to try and understand how life has adapted to survive. These organisms face challenges such as extreme temperature, pressure, pH or saltiness. As more of these 'extremophiles' are discovered, the boundaries at which life can exist are pushed ever further and this helps us on our quest to discover life elsewhere in the universe!
Can you work out what is the same about the extreme environments below? As far as we know, these are vital for all life.
AIR - MAIL
AIR-MAIL
Researching Alien Worlds
Have you ever wondered if alien life could exist?
Astrobiologists are scientists who are trying to answer this question! They come from all areas of science including Biology, Physics, Chemistry and Geoscience. These are just some of the exciting topics they are looking into:
How and where did life begin?
What are the limits for life on Earth?
How did Earth become habitable?
Is there life elsewhere in the universe?
What is the future of life on Earth?
How do we explore and settle other planets?
What happens if we do find Alien life?
www.dynamicearth.co.uk
Where are all the Aliens?
Given that there is so much space in the Universe and that we are looking for life elsewhere, many people are wondering "Why haven't we found it yet?!" This problem has become known as the 'Fermi Paradox', named after the physicist Enrico Fermi. There are many different possible solutions. What do you think about the list below? Is there one that you agree with or do you think there is a different solution?
Aliens are already on Earth and they're not communicating with us.
They can't get to Earth to meet us – it's too far, too difficult or too expensive.
Advanced civilisations always destroy themselves before they get to the point where they can reach out.
They don't want to talk to us because they think people are terrifying (e.g. we fight too many wars).
We're not clever or sophisticated enough to be invited into a special 'Galactic Club'.
They can watch us without us knowing about it: we're a zoo or a biological experiment.
There is no other intelligent life in the Universe: we are alone.

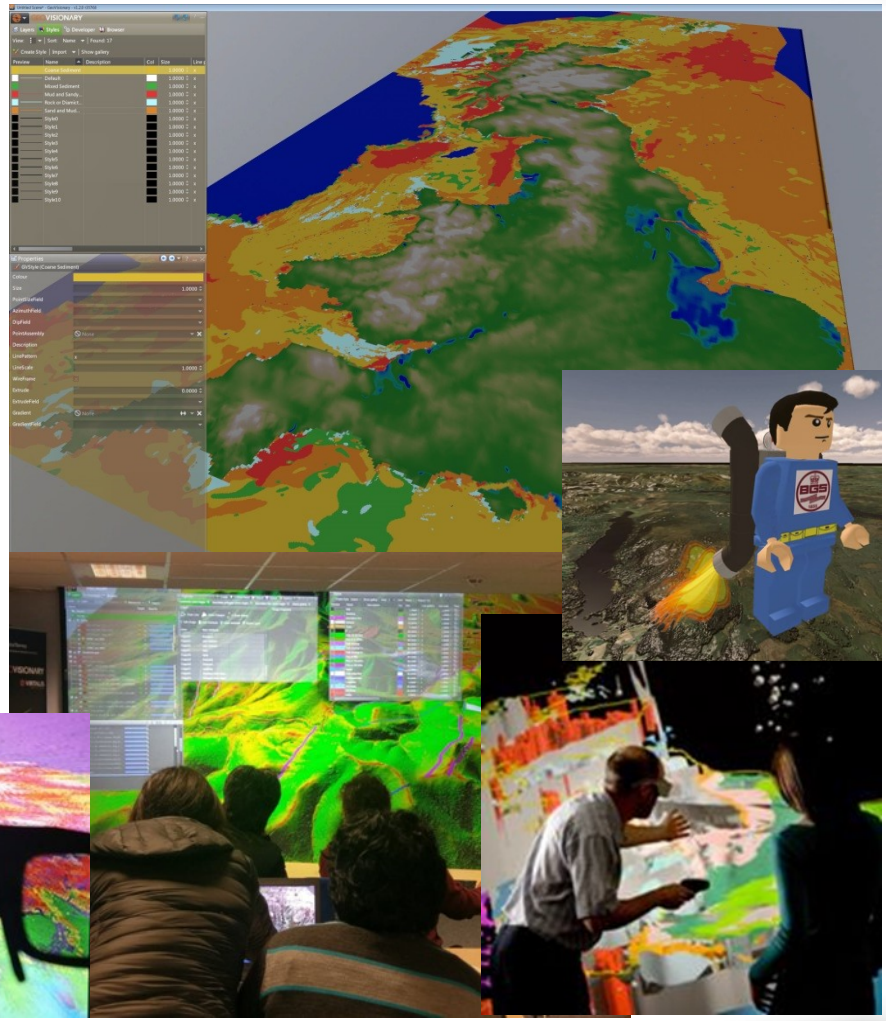

Exploring The Poles – Wait...what's that?!
Extreme Environments: Exploring Earth's Poles
Researching at Earth's Poles
dynamic earth


Universität Bremen
ORBITSOUND
ORBITSOUND
Neu!
Das STEIERMÄRKER
WIENER BROT
PFLAUME
TAKING FLIGHT
ROVsim2 BlueROV2
Challenge your flying skills
MORE VIDEOS
OBJECTIVES MET: 0
TIME REMAINING: 04:42

ROV simulator

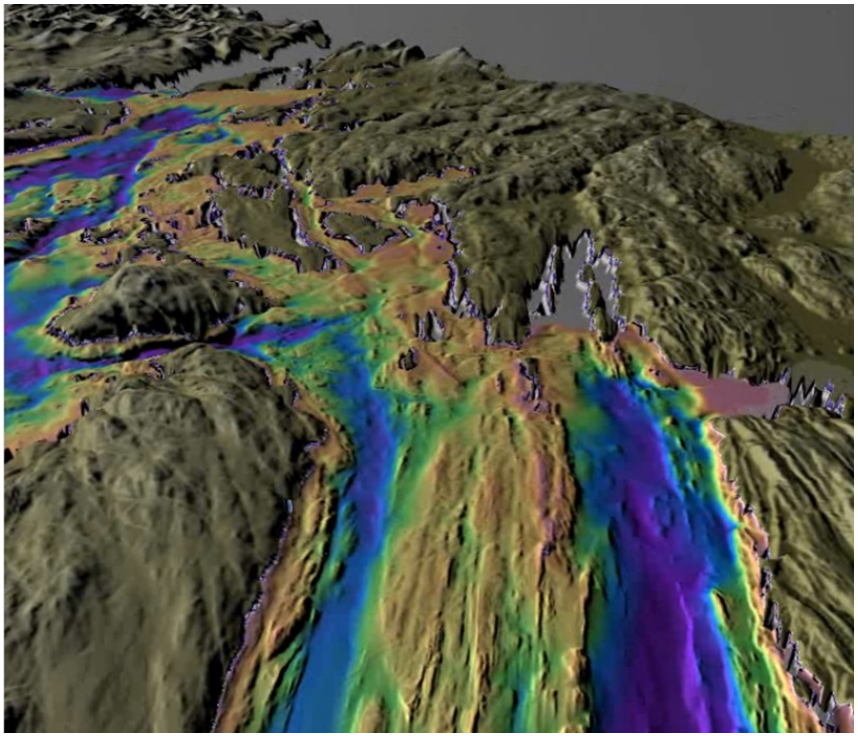
Geovisionary

- Software tool for visualisation of spatial data
- Developed by BGS with Virtalis Ltd.
- For viewing, interpreting, and communicating large volumes of high resolution data
- 3D stereoscopic environment – or office PC/laptop
- Georeferenced and non georeferenced image files, GeoTIFF, JPG, TGA, SRTM, most formats of GOCAD, GSI3D
- Add-in for ArcGIS which links GIS with Geovisionary



Geovisionary for ATLAS

- Showcase Case study areas – Mingulay fly-through in development.
- Cruise summaries – MEDWAVES, Rockall Bank, Davis Strait & Condor Seamount?
- Fly-throughs for dissemination activities using geospatial data (MBES, mapped outputs, data points, images….)
- Accompanying Educational resources/packs
- Potentially incorporated into Dynamic Earth's Oceans Gallery as interactive screen.



Dynamic Earth Outreach

- 10 regional science festivals and events away from Dynamic Earth from Shetland to Dumfries & Galloway.
- 10,000 people engaged with outreach theme
- 240,000 visitors to Dynamic Earth p.a. including 80,000 school pupils.
- Meet-the-Scientist events combined with family-friendly activities during school holidays.


OPERATION
EARTH


OPERATION
EARTH


OPERATION
EARTH


Antarctica
Polar
POLAR EXTREMES
Extremes
The Arctic


Antarctica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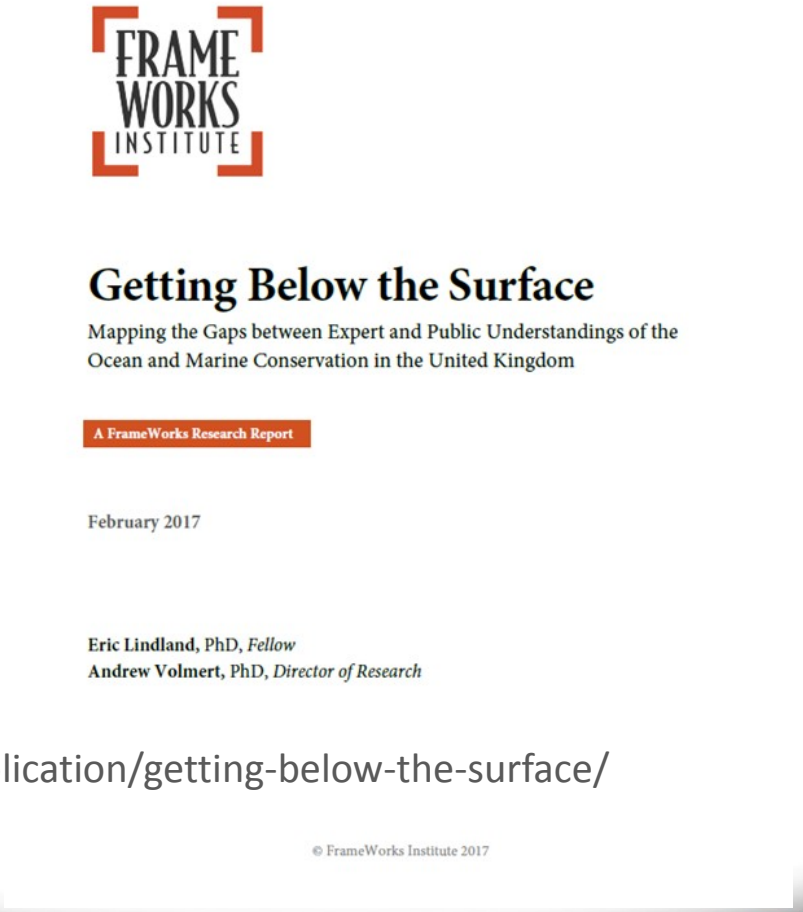
Engaging the public with Ocean Science

Advice on common pitfalls to avoid and new framing devices for ensuring understanding of ocean issues.

Frameworks developed in America include ‘Ocean as the Climate’s Heart’ and ‘Osteoporosis of the Sea’.


FRAME WORKS INSTITUTE

Getting Below the Surface

Mapping the Gaps between Expert and Public Understandings of the Ocean and Marine Conservation in the United Kingdom

A FrameWorks Research Report

February 2017

Eric Lindland, PhD, *Fellow*
Andrew Volmert, PhD, *Director of Research*

https://gulbenkian.pt/uk-branch/publication/getting-below-the-surface/

Engaging the public with Ocean Science

- Avoid 'crisis' language – emphasise urgency for change but highlight positive examples of what can be done.
- Focus on how ocean *sustains* human wellbeing & all life on Earth.
- Avoid talking about the ocean as an economic resource.
- Expand understanding of ocean systems, building on existing knowledge.
- Emphasise disruption to entire ecosystems, not just key species.
- Stress negative outcomes for all populations, *not* just coastal communities.
- Avoid a generic 'we' for responsibility of ocean conservation.
- Introduce wider pollution issues, not just plastics and oil spills.
- Highlight links between marine conservation and prosperity.
- Discuss how policy changes are important rather than just individuals taking action.
- Avoid romanticising the vastness/mystery of the ocean.

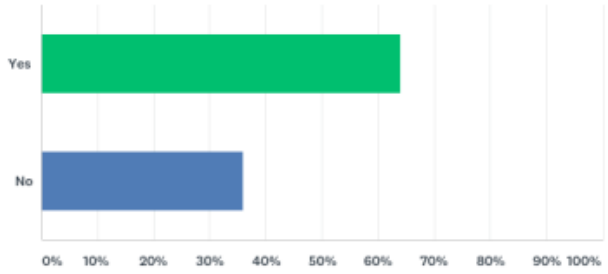
Linking to the Scottish Curriculum

- Primary & early Secondary level – biodiversity, food chains & ecosystems, environmental impacts of human activity and effects of climate change.
- Further qualifications: National 4 & 5, Highers & Advanced Highers
- Geography: ocean circulation and effects of climate change.
- Environmental Science: sustainability including conservation and overfishing. Effects of climate change.
- Biology: ecosystems & biodiversity, adaptions and effects of climate change.

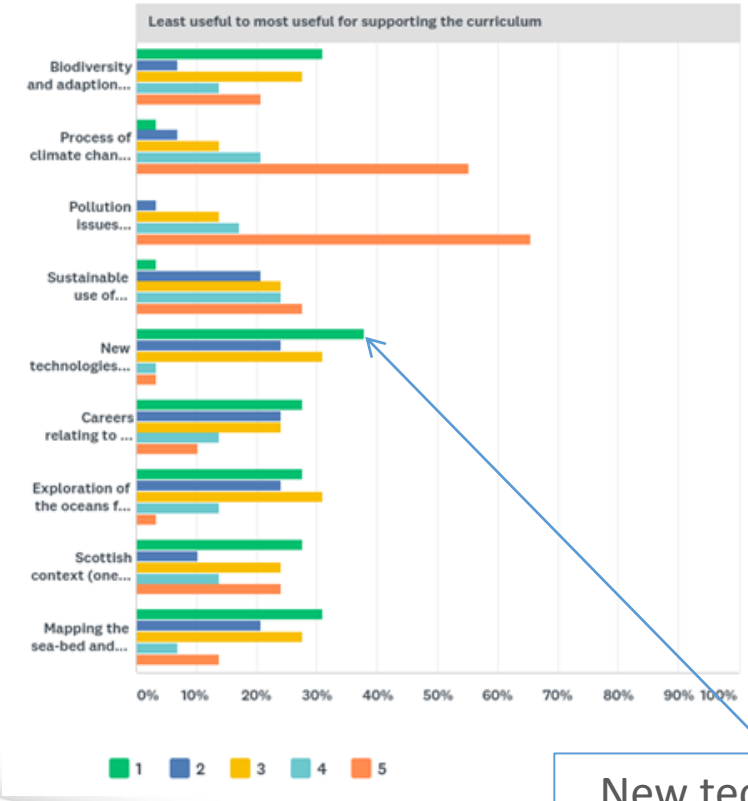
Best linkages with WP1-4. Also links with WP5-7, aim to increase knowledge of planning and policy.

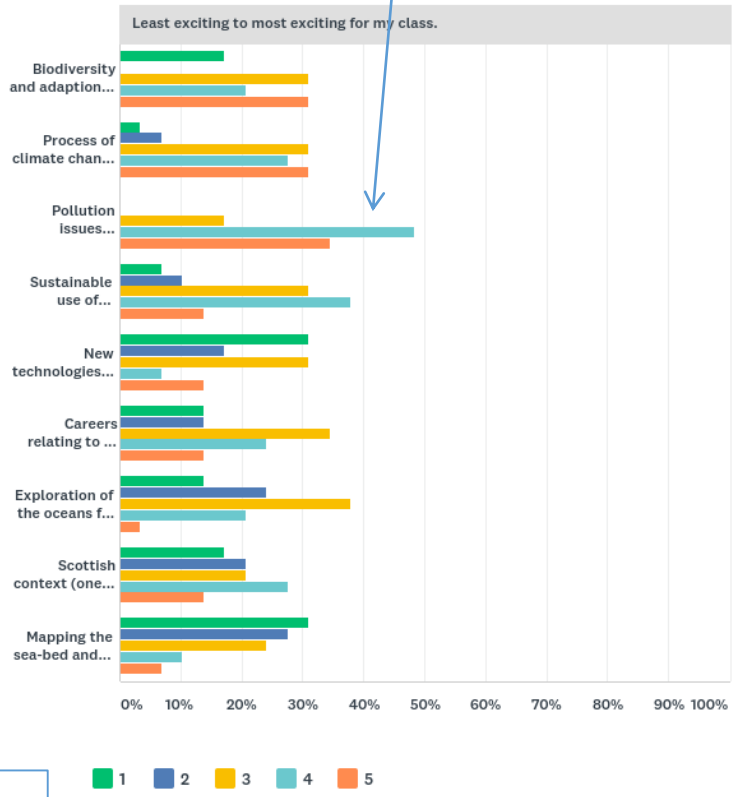
Teacher Survey

- Aspects already covered by teachers. Top two are oceanic circulation & plastic pollution.
- Climate change & coral reefs secondary topics followed by food chains and ocean acidification.



Teacher Survey



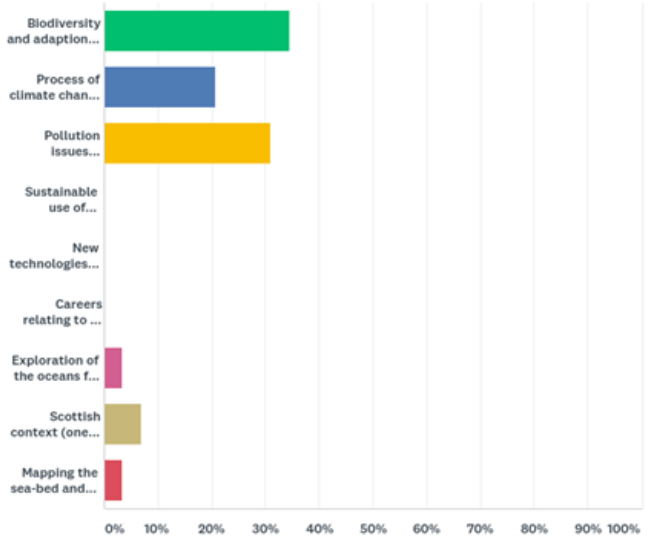


Pollution issues (including plastics)

New technologies including ROVs

Teacher Survey

Q8 And now please pick a favourite topic from these which you think would be most inspiring and could excite curiosity in your class/classes to find out more about the research.



Additional topics suggested included Marianas Trench, Oceanic Circulation and North Atlantic Drift/Gulf Stream, Biofuels and newly discovered animals w.r.t Blue Planet 2.

We need you!

https://www.surveymonkey.co.uk/r/ATLASLearningAboutOceansInternational

Image credit: JM Roberts