

# Free STEM teaching resources from the University of Edinburgh

The School of GeoSciences, in collaboration with the Open Educational Resources (OER) Service, at the University of Edinburgh have released a series of free STEM teaching resources for school teachers and educators. The resources, which can be downloaded free of charge from TES Resources, are accompanied by Curriculum for Excellence learning objectives and outcomes, and are designed to be easily re-used and adapted for different classroom scenarios and curriculum levels.

These innovative and engaging resources have been created by senior honours students as part of the University's GeoScience Outreach Course, which gives students the opportunity to develop their own science communication projects with schools, museums, outdoor centres and community groups, creating a wide range of reusable educational resources for science engagement and community outreach. The course enables students to gain experience of science outreach, public engagement, problem solving, teaching and learning, and knowledge transfer while developing valuable transferable skills that enhance their employability.

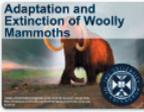
Students have responded positively to the GeoSciences Outreach course and the opportunities it provides, while school teachers' comments on the resources they have created are equally enthusiastic.

*"It has been good to take my learning out into the community and give something back."*  
Student testimony

The resources cover a wide range of interdisciplinary STEM subjects in fun and creative ways. Topics include biodiversity, sustainability and conservation, climate change, food production, marine pollution, volcanoes, continents and oceans, graph theory, and statistics for environmental sciences.

## Earth's Materials: Volcanic Eruptions

This resource, developed by student Isla Simmons, provides a series of four interdisciplinary lessons about volcanoes for SCQF Levels 2 and 3, covering several aspects of the curriculum, including SCN 2-17a, SCN 2-19a, SOC 2-07b, TCH 2-02a, LIT 2-02a and EXA 2-14a. In the first lesson, pupils conduct experiments to model the processes that occur within volcanoes during eruptions. In the second lesson, pupils study the 1973 eruption of Heimaey, Iceland, through role-play, as they plan what action to take as lava flows threaten their town. The third lesson asks >>>

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|  <p><b>Climate Change Game</b><br/>Climate Change Game<br/>OpenEd<br/>★★★★★ (1)<br/>FREE</p>                  |  <p><b>Adaptation and Extinction of Woolly Mammoths</b><br/>Adaptation and extinction of woolly mammoths<br/>OpenEd<br/>★★★★☆ (1)<br/>FREE</p>               |
|  <p><b>Bees and Biodiversity</b><br/>Bees and Biodiversity<br/>OpenEd<br/>☆☆☆☆☆ (0)<br/>FREE</p>              |  <p><b>Sow it, Grow it, Taste it</b><br/>Sow it, Grow it, Taste it<br/>OpenEd<br/>☆☆☆☆☆ (0)<br/>FREE</p>   |
|  <p><b>Plastic in the Ocean</b><br/>Plastic in the Ocean<br/>OpenEd<br/>☆☆☆☆☆ (0)<br/>FREE</p>                |  <p><b>Fertilisers in food production</b><br/>Fertilisers in Food Production<br/>OpenEd<br/>☆☆☆☆☆ (0)<br/>FREE</p>   |
|  <p><b>Volcanic Eruptions</b><br/>Earth's materials: volcanic eruptions<br/>OpenEd<br/>★★★★★ (2)<br/>FREE</p> |  <p><b>Plants: what they need to grow and why we need them</b><br/>Plants: what they need to grow and why we need them<br/>OpenEd<br/>☆☆☆☆☆ (0)<br/>FREE</p> |

*"Incredibly useful, especially the fact that you provided editable versions."*

*Teacher feedback*

pupils to carry out their own research to investigate historic volcanic eruptions, and design a poster to present what they have learned to their classmates. And in the final lesson, pupils visit Arthur's Seat, an extinct volcano in Edinburgh, to learn geological field skills such as field sketching and rock observation, allowing them to consolidate all they have learned about volcanoes and apply it to a real-life, local example.

This resource has a five-star review on TES Resources - "This is totally amazing!! A brilliantly inspiring resource."



Lava fountains of the fissure eruption in Holuhran on Iceland (CC-BY SA 4.0, Joschenbacher, on Wikimedia Commons).

#### Further information

- You can download these free resources from the University of Edinburgh on TES Resources: <https://www.tes.com/teaching-resources/shop/OpenEd>.
- Find out more about the GeoScience Outreach Course here: <https://www.ed.ac.uk/geosciences/undergraduate/geoscience-outreach>.
- Creating open educational resources is part of the University of Edinburgh's commitment to discover and share knowledge and make the world a better place. To find out about our vision for open education, and to access more free teaching and learning resources, visit Open.Ed <https://open.ed.ac.uk/>.