

PRACTICAL ACTIVITIES TO HELP GEOSCIENCE STUDENTS DEVELOP THE SKILLS THEY NEED TO SUCCEED DR LISA DONER

TO MAKE THE MOST OUT OF THIS SCRIPT, YOU COULD:

- Stick it in your book as a record of watching Lisa's animation
- Pause the animation and make notes as you go
- Add your own illustrations to the sheet
- Create your own animation to accompany it
- Add notes from classroom discussions
- Make notes of areas you will investigate further
- Make notes of key words and definitions
- Add questions you would like answered – you can message Lisa through the comments box at the bottom of their article:

www.futurumcareers.com/practical-activities-to-help-geoscience-students-develop-the-skills-they-need-to-succeed

SCRIPT:

Have you ever found yourself wondering, “Why would I need to know about the second law of thermodynamics?” or “How is Pythagoras’ theorem going to benefit me in the future?” Traditional teaching methods often focus on the memorisation and regurgitation of facts. As all high school students know, these methods can sometimes feel confusing, pointless and tedious.

However, there are other ways of teaching that can help students truly understand new concepts and apply them in a range of situations. For example, taking part in practical activities that require the use of scientific concepts is a great way for students to cement their learning. This is particularly true if the activity is related to topics that are relevant to their lives or local areas.

Led by Dr Lisa Doner at Plymouth State University in the US, the GeoPaths project uses practical teaching methods to help its students learn. The aim is to inspire students towards a career in geoscience whilst also building the critical thinking and technical skills that will help them along the way.

Students enrolled in GeoPaths take part in field experiments around watershed areas. These are areas in which surface water converges at a single point, like a river mouth, or flows into another body of water, like a lake. As part of the project, students are asked to analyse data from monitoring devices that they have designed and calibrated.

The students gather and analyse essential data, which help to generate new knowledge about the local watershed system, such as how rainfall interacts with the land and how sediments are deposited in lakes.

Another exciting field experiment, also developed by Lisa with her research colleagues at Plymouth State University, is MEERCAP. MEERCAP stands for Mirror Exploration, Experimentation, and Reflection in Climate Adaptation Planning.

Through this project, students investigate whether collections of mirrors can reflect enough sunlight to create a cooling effect in the surrounding environment, and potentially combat climate change.

Not only do students gain practical skills from these activities, but they can also use their experiences to bolster their resumes and connect with other scientists, be that through internships, postgraduate courses or professional careers. To this end, students are assigned mentors who help them make the most of these opportunities.

Nearly everything around you – from glaciers to the metals in your phone to the water you drink – is connected to geoscience. GeoPaths and MEERCAP are designed to cultivate the scientific knowledge and skills needed to start a successful geoscience career.

What could you do to develop your critical thinking and technical skills for a rewarding career in geoscience?