



# STRUCTURAL GEOLOGY WITH DR CRAIG MAGEE

## TALKING POINTS

### KNOWLEDGE

1. What is a dyke-induced fault?

### COMPREHENSION

2. How do dykes and dyke-induced faults relate to volcanic eruptions?
3. How does seismic reflection produce images of the Earth's sub-surface? In what ways is the technique similar or different to LiDAR?

### APPLICATION

4. Which elements of Craig's research interest you the most and why?
5. Imagine you are a volcano researcher and you find that there is new fault activity around a volcano? Who would you inform about this, and what other information would you want to know to assess this risk?

### SYNTHESIS

6. Imagine you were planning a mission to land people on another planet. How would geological knowledge contribute to the mission? How would you choose a suitable landing site?

### EVALUATION

7. Ethiopia has been identified as an area of high volcanic risk. What factors go into assessing the risks from volcanic hazards and why do you think Ethiopia might be particularly at risk? What can be done to reduce these risks?
8. Part of Craig's research is studying geological processes on Earth in order to make conclusions about what has happened on other planets. How does knowledge on Earth translate to other planets and what might be some of the difficulties with this approach?

## ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

Produce a diagram showing a cross section through the Earth's crust and summarising Craig's research. Remember to include labels on your diagram to explain the features you have drawn.

You should address the following points:

- What is a dyke?
- How do dykes transport magma to volcanoes?
- What are dyke-induced faults?
- What do they look like at the surface and underground?
- How do seismic reflection and LiDAR work?

## MORE RESOURCES

Watch Craig talk about his work with The Royal Astronomical Society:

[www.youtube.com/watch?v=T2NpFVPMT60&list=PLqYL-ViMzeH6IXhDxV851x6FtvbB74QC18&index=4](https://www.youtube.com/watch?v=T2NpFVPMT60&list=PLqYL-ViMzeH6IXhDxV851x6FtvbB74QC18&index=4) Watch

As well as providing great careers information, The Geological Society has a wealth of educational resources on its website:

[www.geolsoc.org.uk/heresources](http://www.geolsoc.org.uk/heresources)

The European Geosciences Union also has a great range of educational resources: [www.egu.eu/education/resources/](http://www.egu.eu/education/resources/)

The University of Leeds runs outreach programmes for schools, showcasing different subjects, including geology: [www.stem.leeds.ac.uk/earthsciences/](http://www.stem.leeds.ac.uk/earthsciences/)