Contour lines and gradients

Video summary	Before watching the video	During the video
Joe Crowley demonstrates how contour lines on a map connect points of equal height, and how each is marked with a number indicating height above sea level in metres. The clip shows that if you cross contour lines you are going up or down a gradient, and the closer the lines, the steeper the gradient. Joe explains how to relate contour lines to actual physical geographical features like valleys and hills. Contour lines can be used for navigational purposes, which Joe demonstrates using a distinctive landscape feature.	Show students an Ordnance Survey map and point out the contour lines. Ask students to guess what the lines show. You could look at the area around your school and the contour lines to apply this to a context that students are familiar with. **Introduce key terms such as:** **Contour lines:** Lines on a map which show areas of equal height. **Valley:** An elongated, low-lying area typically found between hills or mountains. **Gradient:** A measure of how steep a slope is.	You may wish to stop at relevant points during this short film to pose questions and check understanding or wait until the end. Useful questions might include: • Why do you need to be able to see height on a map? • What do contour lines indicate? • If the lines are closer together, what does this mean? • How do contour lines help you to read the landscape?

After watching

Use OS maps with your class asking them to pick out steep locations on the map.

Can they calculate the changes in elevation by counting the contour lines?

You could also ask students how long they think it would take to walk a route that passes over those contour lines.

Students could be given a range of images and the OS map for that location. Ask students to match the images with the maps.

For example, the images could be a V-shaped valley, U-shaped valley and a flat plain. Students could also draw diagrams to show the different landforms.

Curriculum notes	Where next?	Links
This geography topic appears in OCR, Edexcel, AQA, WJEC KS4/GCSE in England and Wales, CCEA GCSE in Northern Ireland and SQA National 4/5 in Scotland. *Map skills are also relevant across KS3 geography in England.*	Use GIS to take map skills further. OS overlays can be used in many GIS programmes and can elevate students' map reading abilities. 3D mapping can also be used with the contour overlay to provide a clear visual representation to students of how contour lines represent height.	Map symbols, direction and contour lines: https://www.bbc.co.uk/bitesize/articles/ztpgbqt OS map skills: https://www.bbc.co.uk/bitesize/guides/zmb6jsg/revision/7