

Video question script: What happened when?: sorting out sequences using stratigraphic principles

| Question/Activity | Likely response | Rationale |
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| In teaching about the Earth we use outdoor activities to explore Earth principles. This example explores situations around the school buildings which can be used to demonstrate key stratigraphic principles through the Earthlearningidea: 'What happened when?: sorting out sequences using stratigraphic principles' | | |
| Demonstrate with your hands and discuss each of the stratigraphic principles used to determine the age-relationships of rocks in turn | | Preparation for the application of the principles to school materials |
| Superposition of data – demonstrate by putting one flat hand on top of the other and repeat. Is this a principle or a law? | It is a <u>principle</u> – there are instances such as overturning during folding or thrust faulting when the rock on top can be older | Cognitive conflict is involved in the law/principle discussions |
| Cross cutting relationships – demonstrate by holding one hand horizontal, and then cutting into a gap between your fingers with the other hand held vertical. Is this a principle or a law? | It is a <u>law</u> – something can only cut something else if there is something there beforehand to cut | |
| Included fragments – demonstrate this by including a vertically-held fingertip in the gap between two fingers of a hand held horizontally. Is this a principle or a law? | It is a <u>law</u> , if you make sure that something actually is included and didn't form later (like crystals in a geode) | |
| Now take the class to where a patched area of path or road can be viewed safely, and ask them to work out the age relationships of the patching | | Pupils construct an age-relationship pattern from the evidence; cognitive conflict is involved in disagreements, or when there is not enough evidence to decide |
| Go to the tennis courts to work out the line-painting sequence | Lowest line painted first (superposition) – but only after the court had first been laid | Pupils construct an age-relationship pattern from the evidence |
| Visit a piece of walling, preferably where there is a crack, and ask them to work out the sequence of events: | Lowest layer of bricks laid first – superposition; crack came last – cross-cutting; bricks (included in the wall) were made before wall – included fragments | Pupils construct an age-relationship pattern from the evidence |
| Discuss the class findings in a reporting back session. Point out that exactly the same evidence is used to interpret rocks in the field in such areas as cliffs, quarries and cuttings. | | This illustrates how the activities can be bridged to the 'real world' of natural exposures |