

Video question script: Exploring rock, soil, water, fossil:

Circus activity 1: A rocky look, touch and tell

Question/Activity	Likely response	Rationale
<p>When teaching about the Earth we often use practical activities to explore Earth processes. This activity encourages rock identification based on rock appearance and texture. It is a shortened version of the activity "Spot that Rock", for which there is another series of videos.</p>		<p>Preparation for bridging from the model to real Earth processes</p>
<p>What is this? How might we investigate the differences between the two rock specimens</p>	<p>Two different rocks, one red and the other speckled white.</p>	<p>Concrete preparation seeing the materials</p>
<p>Look at one specimen and describe it as fully as you can. (This is easier if you have a similar real specimen in front of you). Then do the same with the other specimen.</p>	<p>Colour, "bits", roughness, shininess. We call the "bits" grains</p>	<p>A construction pattern-seeking exercise</p>
<p>How could we see the detail of the grains in each rock?</p>	<p>Use a magnifying glass. We can't film that but I can tell you that the grains in the red rock are rounded, and have spaces between them and appear to be stuck together. In the speckled white rock, I can see quite good crystal shapes, and they seem to fit together, or <i>interlock</i></p>	<p>A construction pattern-seeking exercise</p>
<p>Show the two rocks and a metal teaspoon. When I picked up the red rock a few grains fell off. How could we test to see if one rock is stronger than the other?</p>	<p>Try scraping each rock with the spoon. Grains fall off the red one but nothing comes off the white one. Why is this? What holds the grains together? "Rock glue" from chemicals in the water in the sand (cf. mineral water bottle), called "cement". Grains which interlock make a rock strong but cement is weak, particularly when grains are only glued at the corners. Warn against giving a hardness number. Point out the 3 minerals in the speckled white rock</p>	<p>Construct a picture of rock strength being caused by grain interrelationships</p>
<p>Rocks that are made of grains that are stuck together and can easily be scratched off are usually <u>sedimentary</u> rocks. Rocks that are made of interlocking grains that are very hard to scratch off are usually <u>crystalline</u> rocks (made entirely of crystals). Put each specimen on the correct card.</p>	<p>Pause video and then place rocks on appropriate cards – sedimentary and crystalline</p>	<p>A construction pattern-seeking exercise</p>
<p>Introduce a stripy rock and ask for a careful look and then ask which card it goes on.</p>	<p>Place the stripy rock on the crystalline card – crystalline, interlocking.</p>	<p>Concepts constructed previously are bridged to a new rock</p>

<p>Introduce igneous and metamorphic names and a metamorphic card. Which card does the stripy rock go on? Ask for a number of rocks to be grouped into sedimentary, igneous or metamorphic</p>	<p>Pause video and then demonstrate.</p>	<p>Concepts constructed previously are bridged to a new rock. Possibility of cognitive conflict in assigning the rocks, e.g. a different coloured granite</p>
<p>Name each rock, using flash cards</p>	<p>Demonstration only</p>	<p>Reinforcing bridging</p>