

## Video question script: Laying out the rock cycle

| Question/Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Likely response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Rationale                                                                                                                                                                                                            |
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| <p>In teaching about the Earth we can use diagrams and sorting activities. This example uses several and is called: 'Laying out the rock cycle: product and process'.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>Preparation for the construction activity</p>                                                                                                                                                                     |
| <p>Point out that each group has photographs, small plastic bags, a selection of rocks and a diagram of the rock cycle.</p> <p>Then point out that you have laid out some cards around the room also showing the products of the rock cycle.</p> <p>Ask them to put the photographs, bags and rocks in the correct places on their diagram, and help them with the first one by putting the photo of 'Rocks at the Earth's surface' on the correct card of the classroom rock cycle</p>                                                                                                                                                                                                                                                             | <p>Most begin by trying to put the rocks in the right places. Many forget about the plastic bags and the photos, until they are reminded. They may need to be told that there are several rocks of each type</p> <p>After they have had a go for a few minutes (when some will not have finished), explain that the object of this exercise is not that they should get everything right, but to encourage debate within the group and to help them to become familiar with rock cycle products</p> | <p>Concrete preparation = this icebreaker exercise is to help them to become familiar with the products of the rock cycle</p> <p>Cognitive conflict = discussions about where each of the items should be placed</p> |
| <p>Go through the activity to help them to check that they have put everything in the correct places by putting your own samples in the correct places on your classroom version of the rock cycle. Try to do this without mentioning the names of the rocks, as some people can find this intimidating at this stage.</p> <p>Explain that you have not been able to provide any magma because:</p> <ul style="list-style-type: none"> <li>• you would need to get it from a volcano; the nearest one is probably many km away, and by the time you got it back it would have solidified, and so look just like the basalt specimen</li> <li>• liquid rock is only called magma when it is underground, at the surface it is called lava</li> </ul> | <p>Listen and move things to the correct positions</p>                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>Construction = through direct teaching, this helps them to begin to construct the rock cycle pattern</p>                                                                                                          |
| <p>Demonstrate 'mobile sediments' by tipping a bag of sand to show that the sand moves. Explain that this is one of the four ways in which sediment is moved naturally, by gravity; the other three are moving water, wind and moving ice</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>Listen and watch</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                      |
| <p>Demonstrate how a sedimentary sequence is formed, by adding scoops of dark and pale sand consecutively to a measuring cylinder nearly full of water</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>Listen and watch</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                      |

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| <p>Explain that, while it is not necessary to name rocks, it is very useful, since rock names are 'shorthand' for rock descriptions and help people studying rocks to communicate with one another easily. Then use the rock flash cards to name the rocks in your classroom rock cycle</p> | <p>Listen and watch</p> | <p>Concrete preparation = linking rock names to rock descriptions</p>                                                    |
| <p>Add the process cards to the classroom rock cycle – drawing their attention to the time spans involved</p>                                                                                                                                                                               | <p>Listen and watch</p> | <p>Construction = through direct teaching, this helps them to develop the rock cycle pattern and some of the details</p> |
| <p>Walk around the classroom rock cycle to remind them about the elements of the cycle and to show that there are short cuts (sedimentary rocks to rocks at the Earth's surface; metamorphic rocks to Earth's surface rocks, i.e. cycles within the overall rock cycle)</p>                 | <p>Listen and watch</p> | <p>Concrete preparation = to consolidate learning and prepare for the next phase of the lesson</p>                       |