

Video question script: Exploring rock, soil, water, fossil:
Circus activity 3: The soil water shake test

Question/Activity	Likely response	Rationale
When teaching about the Earth we often use practical activities to explore Earth processes. This example looks at the composition of soils.		Preparation for bridging from the model to real Earth processes
What is this? How might we find out the different things which are in it?	A pile of soil at the bottom of a clear plastic jar. Very difficult to separate out the various components	Concrete preparation seeing the materials
So what is this?	A jug of water	Concrete preparation seeing the materials and equipment
Ask how we might use the water to separate out the different things in the soil	Tip the water in and screw on the lid. Some will say, "shake it up".	Construction – thinking of a method
Shake the jar and ask, "What can you see happening? Ask pupils to pause the video and explain what they saw happening.	The soil is settling out – some very quickly, and a lot taking longer. The bigger bits fell to the bottom because they are not suspended by the water. The finer bits remain in suspension in the water and made it cloudy.	Construction –building up a pattern of the settling process Metacognition – considering thinking of explanations
Continue for a few seconds, show the time on a watch and ask pupils to predict what changes they will see after half an hour.	The cloudy water will have cleared somewhat.	Construction –continuing to build up a pattern of the settling process
Resume filming after half an hour (show the time on the watch) and ask pupils to explain any differences since the last scene.	The water became clearer as the finer bits settled out. Bits of leaves etc float because they are less dense than the water. Layers might have formed.	Metacognition – considering thinking of explanations
Ask where pupils think the ingredients of the soil came from	From the rocks underneath, and from the plants growing in the soil	Bridging from previous knowledge
Ask if there is anything missing from our sample which they might expect to see in the soil, and if there is anything present that they can't see.	Worms and other small animals. Microbes and fungi. Some of the soil might have dissolved in the water and become invisible.	Bridging from previous knowledge