

Video question script, KS2: Circus activity 5: The great soil race

Question/Activity	Likely response	Rationale
When teaching about the Earth we often use practical activities to explore Earth processes. This example investigates the permeability of soils.		Preparation for bridging from the model to real Earth processes
What is this?	3 soil samples; 3 cut-down plastic bottles, numbered 1 to 3; some muslin; 3 beakers of water; a felt-tipped pen; plastic gloves for handling soil.	Concrete preparation = asking them to describe the items
How could we set up these things to investigate how quickly water can pass through different soils?	Set up the three bottles with the muslin at the base to act as a filter, and put each soil in them.	Construction - working out a method Metacognition – debating how to do it
How could we make this a fair test, so that we treat each soil the same?	Add the same amount of soil to each bottle; mark the same water level with the pen; pour in the water at the same time; Examine the amount of water that has dripped through at the same time.	Construction - working out a method Metacognition – debating how to do it
What will happen when we pour in the water?	It will drip through at different rates.	Metacognition – debating the outcome
Pour in the water and watch the results. Leave it for a few minutes. Explain what is happening.	It drips through at different rates. One soil is very free-draining; one is very slow-draining; and the other is in-between. The free-draining soil can be referred to as <u>permeable</u> , meaning that it lets the water through quickly: the slow-draining soil is nearly <u>impermeable</u> , in that it does not let the water through.	Possible cognitive conflict with expectations
Now let's see how this might affect crops grown in such soils. Photo of wilted Bouganvillea; waterlogged sprout plant on allotment. Can you explain why the pot plant and the sprout plant look so sad?	Pot plant – very free-draining soil, water soaked through quickly and I forgot to water it; Sprout plant – very badly drained soil and water can't soak away so plant has too much water.	Metacognition – debating the possibilities. Bridging from the activity to the world of horticulture
What have I done to ensure that these newly planted raspberry canes will grow properly?	Added sand and compost: ridged up the rows. <i>(All photos: P. Kennett)</i>	Bridging from the activity to the world of horticulture