

Video question script, KS2: Circus activity 6. Flowing water – moving sand

Question/Activity	Likely response	Rationale
When teaching about the Earth we often use practical activities to explore Earth processes. Here, we are going to see what happens when water flows over a bed of sand, as in a river.		
What is this?	A 1m length of plastic gutter with washed dried sand in it, connected to a hosepipe, with a bucket for an overflow. A block to raise the top end of the gutter.	Concrete preparation
When I turn the tap on, what do you expect to see at first? What will happen a bit later?	The water will soak into the dry sand at first, but will flow over the surface of the sand once it has soaked in.	Using previous experience
Now the flow has settled down, can you see anywhere where <i>erosion</i> is taking place? That is where sand grains are removed?	Focus on areas where erosion is happening	Investigating sediment flow is a constructional activity.
How is the sand being moved at these spots?	The force of the moving water is washing them away and they are collapsing into the water.	
Can you see anywhere where the sand is being moved along the bed? This is known as " <i>transportation</i> " of the sediment. Exactly <i>how</i> is it being moved?	Focus on areas where transportation is happening. Sand grains are rolling or sliding away in the current.	
Can you see anywhere where <i>deposition</i> is taking place? Are the newly formed layers of sediment horizontal or inclined?	Focus on areas where transportation is happening. Some layers will be inclined, i.e. slope. <i>(Not sure if I should deal with evidence of flow direction for KS2)</i>	
How do the layers build out into the pool at the end of the gutter?	Usually with a large flat area with a sloping front to it	
What do you think will happen if I speed up the flow rate of the water?	Sand grains will be eroded and transported more quickly and may travel further. The shapes of the layers may change. Try it and see.	
What do you expect to see if I add some pieces of gravel?	They might not be moved so easily: sand might be washed away on one side but build up on the other. Once they do move, they might be washed further down. Try it.	Cognitive conflict arises when trying to predict how the gravel will move.
If we pretend that we have made a model river, can you spot: <ul style="list-style-type: none"> • a channel, like a real river channel • the bed of the channel • the bank of the channel, like a river bank; a plunge pool, as found under a waterfall; a micro-delta, like a tiny version of the Nile and Mississippi deltas?	Focus on each of these in turn	Applying the principles to a real river involves bridging.