Video question script: Slinky simulation

Question/Activity	Likely response	Rationale
We're using slinky springs here to find out how shock waves travel using the 'Slinky seismic wave demo' Earthlearningidea		Introduction to seismic waves
Explain that when faults break suddenly, they cause earthquakes which are shock waves or seismic waves radiating from the earthquake site. Explain that we are going to simulate this using a slinky spring		Concrete preparation: initial explanations
Ask someone to hold the slinky vertically, then show how sudden movement of a fault produces shock waves which radiate outwards and can reach the surface – pull the bottom of the spring out to the side and also downwards and then release it suddenly to do this		
Explain that you actually generated two different sorts of shock waves: • by pulling it downwards and releasing, compressional or P-waves were produced • by pulling it out to the side and releasing, transverse shake or S-waves were produced So the same earthquake produced both sorts of waves		Concrete preparation: further understanding of seismic waves
Demonstrate P-wave movement – pulling downwards and releasing		
Demonstrate S-wave movement – pulling out to the side and releasing		
Then hook the vertical slinky onto the centre of another slinky held horizontally between two other people and ask what they will expect will happen when you generate a shock wave in the vertical slinky	• when it reaches the 'surface slinky', that will move up and down	Cognitive conflict: what will happen?
Pull the bottom of the vertical slinky down and out again and release to demonstrate how P- and S-waves cause surface waves		
Note that it is the surface waves which are most damaging		Bridging: relating the slinky movement to the effects of real seismic waves