Video question script: What drives the plates?

Question/Activity	Likely response	Rationale
Using a human model to teach about how plates are moved in plate tectonics – using the Earthlearningidea: 'What drives the plates'		Review of the evidence of possible plate-driving processes
Review three of the processes which have been proposed as plate-driving mechanisms: • ridge push • mantle drag (convection currents) • slab pull		Concrete preparation: reminding them of the possible processes
Make a human model to demonstrate these processes, as shown in the photos. Either act as the 'driver' yourself or brief a responsible pupil beforehand and ask them to be the 'driver'		
A Lego™ model is being used for the videoing here, instead of a human model. Show: • mantle drag –'driver' moves behind plate people nudging them but not moving them – little effect • ridge push – 'driver' moves between the two plate-end figures, nudging them apart – some effect • slab pull – 'driver' pulls group at the subduction zone end – moving the whole plate along effectively		Construction: seeking a pattern
Ask: In this model, what represents: • the plates • the oceanic ridge (divergent margin) • the subduction zone?	• Plates – linked-together people • Oceanic ridge – junction between 'plates' • Subduction zone – end of plate pulled along and down	Bridging: from the model to reality
Summary: • the main plate-driver is slab pull • ridge push may have a small effect • there is no evidence that mantle drag is effective • to find out more about how slab pull works, consult the 'All models are wrong – but some are really wrong' Earthlearningidea		Consolidation

Note: Who to choose as the 'driver' will depend on the school's policy and your professional judgment about teachers touching pupils. The activity is safer if you control it, but to avoid teachers touching pupils, you will need to select a responsible pupil as the 'driver'.