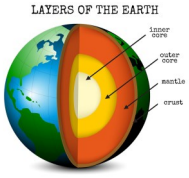
Kemnal Technology College

Kemnal Keys: Geography — Can we ever know enough about tectonics?

What you should know (core knowledge)	What you should be able to do
Plate Tectonic theory • Plate tectonic theory is the theory of how the Earth's crust is broken up into several large pieces called plates • Alfred Wegener first proposed this theory in 1912 nut his research was limited by the technology available at the time • Marie Tharp and Bruce Heezen used scans of the bottom of the Atlantic Ocean in 1953 to prove Wegener's theory as partially correct • The global distribution of earthquakes, volcanoes, ocean ridges and mountains form a pattern at the plate boundaries or edges	⇒ **Describe** what plate tectonic theory is ⇒ **Explain** the differences between theory, evidence, research and hypothesis ⇒ **Explain** how Wegener, Tharp and Heezen used maps and technology to find evidence for plate tectonic theory ⇒ **Describe** the global distribution of major earthquakes, volcanoes, ocean ridges and mountain ranges
The structure of the Earth • The Earth is made up of several layers that have different characteristics • The geological time scale tells how old different types of rock close to the Earth surface are 	⇒ Accurately **draw** and **label** a cross section through the Earth ⇒ **Describe** the properties and characteristics of the different layers of the Earth ⇒ **Describe** how the geological time scale works ⇒ **Explain** how we use fossil evidence to prove geological time scale
Plate boundaries • Continental plates—older, less dense plates • Oceanic plates—younger, denser plates • Divergent—where two oceanic plates are moving away from each other (constructive) • Convergent—where oceanic and continental plates are moving towards each other (destructive) • Conservative—where two plates are sliding past each (transform) • Collision—where two continental plates are moving towards each other • Earthquakes, volcanoes, fold mountains, ocean ridges, sea-floor spreading • Slab pull and ridge push are the major ways that tectonic plates move	⇒ Accurately **identify**, **draw** and **label** the different major plate boundaries ⇒ **Describe** the characteristics, direction of movement, major landforms and tectonic activity of the major plate boundaries ⇒ **Identify** the names of major plate boundaries ⇒ **Explain** the causes of plate movement ⇒ **Describe** the theory of slab pull and ridge push plate movement ⇒ **Describe** sea-floor spreading and how it is linked to plate tectonic theory
What is good to know	**What is good to be able to do**
Case Study of an earthquake: Nepal, 2015 • STEEP data of Nepal • Tectonic landscape of Nepal • USGS data of the earthquake • Causes of the earthquake • Primary and Secondary impacts of the earthquake • Global responses to the earthquake	⇒ **Describe** and **explain** the causes of an earthquake in a developing or emerging country ⇒ **Describe** and **explain** the primary and secondary impacts of an earthquake in a developing or emerging country ⇒ **Assess** in what ways a country's development level affects the impacts from an earthquake
How to predict, plan and prepare for an earthquake • Prediction—using technology to 'guess' when an earthquake may happen • Plan—know what to do when an earthquake happens • Prepare—emergency packs • Dregg's model and the Risk Equation	⇒ **Describe** how maps, past histories and technology can be used to predict earthquakes ⇒ **Describe** how people can plan and prepare for an earthquake ⇒ Use the Risk Equation to **explain** why some people are more vulnerable and have a lower capacity to cope with the impacts of an earthquake
Tsunami • Tsunami's are caused by undersea earthquakes or volcanic eruptions displacing the water above it, which is then driven by the energy released onto land in a series of waves	⇒ **Describe** the major causes of a tsunami and the primary and secondary impacts ⇒ **Explain** how to protect people and property from a tsunami

Kemnal Technology College

Kemnal Keys: Geography — Can we ever know enough about tectonics?

1. Describe how Marie Tharp was able to prove Alfred Wegener's theory 'nearly' correct	**2. Draw and accurately label a cross-section of the Earth**
3. Draw diagrams of the 4 major types of plate boundary. Include arrows and labels to show how and why they move.	**4. Write a short Instagram post about the experience of a geography student living in Nepal when the earthquake struck and what happened afterwards.**
5. Make a list of the things you would pack in an emergency kit for you and your family if you lived in an earthquake risk area.	**6. Draw a series of diagrams to show what happens when an undersea earthquake causes a tsunami.**