

What you should know	What you should be able to do
<p><b>Plate Tectonic theory</b>  <b>Plate tectonic theory</b> is the theory of how the Earth's crust is broken up into several large pieces called plates  <b>Alfred Wegener</b> first proposed this theory in 1912 but his research was limited by the technology available at the time. He suggested the continents had all been joined together in one super-continent called Pangea. Wegener used map evidence, fossil record and geology to propose his theory.  <b>Marie Tharp</b> and <b>Bruce Heezen</b> used scans of the bottom of the Atlantic Ocean in 1953 to prove Wegener's theory as partially correct. The scans showed a ridge of mountains running north to south in the Atlantic Ocean. This mountain range became known as the <b>Mid-Atlantic Ridge</b>  The <b>global distribution</b> of earthquakes, volcanoes, ocean ridges and mountains form a pattern at the plate boundaries or edges of plates.</p>	<p><b>Describe</b> how modern technology has proved Alfred Wegener's theory to be nearly correct  <b>Describe</b> the distribution of earthquakes, volcanoes, mountain ranges and ocean ridges around the world</p>
<p><b>The structure of the Earth</b>  The Earth is made up of <b>several layers</b> that have different characteristics: the inner core, the outer core, the mantle, and the crust. However, scientists now believe there may be a fifth layer inside the inner core  The <b>geological time scale</b> tells how old different types of rock are</p>	<p><b>Describe</b> the characteristics of the different layers of the Earth</p>
<p><b>Plate boundaries or margins</b>  <b>Continental plates</b>—older, less dense plates  <b>Oceanic plates</b>—younger, denser plates  <b>Divergent</b>—where two oceanic plates are moving away from each other (constructive)  <b>Convergent</b>—where oceanic and continental plates are moving towards each other (destructive) resulting in the denser plate being <b>subducted</b> (forced below) beneath the less dense plate  <b>Conservative</b>—where two plates are sliding past each (transform)  <b>Collision</b>—where two continental plates are moving towards each other  <b>Slab pull</b> and <b>ridge push</b> are the major ways that tectonic plates move</p>	<p><b>Describe</b> the different characteristics of different plate boundaries  <b>Explain how slab pull and ridge push cause the Earth's plates to move</b></p>
<p><b>Tectonic features</b>  <b>Earthquakes</b> are caused by the movement of two plates at a plate boundary. Plates do not move smoothly, and <b>friction</b> builds up as the plates strain to move. The amount of energy released as the plates move is measured on the <b>Moment Magnitude Scale</b>.  The <b>focus</b> is the point beneath the Earth's crust where the earthquake occurs  The <b>epicentre</b> is the point on the Earth's crust where the earthquake occurs  The <b>shallower</b> or closer to the Earth's surface the focus is, the greater amount of damage  <b>Tsunami's</b> are the result of the displacement of water from undersea earthquakes</p>	<p><b>Explain</b> how earthquakes are caused  <b>Explain</b> why tsunami waves get bigger as they reach the coastline</p>
<p><b>Tectonic landforms</b>  <b>Volcanoes</b> can be either <b>shield volcanoes</b> (wide and low), formed of <b>non-viscous</b> or runny lava or <b>stratovolcanoes</b> (cone shaped), formed of <b>viscous</b> or sticky lava  Volcanoes are formed at <b>convergent plate boundaries, divergent plate boundaries</b> or <b>hot spots</b>, where a column of magma rises and breaks through the Earth's crust  Areas that are volcanic can often provide natural resources such as <b>geothermal energy, minerals, and fertile soil</b>  <b>Sustainable development</b> would mean using these natural resources now without risk to present or future generations</p>	<p><b>Explain</b> how volcanoes are formed</p>
<p><b>Prediction</b>—using technology to 'guess' when an earthquake may happen  <b>Plan</b>—know what to do when an earthquake happens  <b>Prepare</b>—emergency packs and evacuation routes  Some people and places are more <b>vulnerable</b> to the impacts of earthquakes, tsunamis and volcanoes and have a lower <b>capacity to cope</b>.</p>	<p><b>Explain</b> why some people continue to live in tectonic hazard areas</p>

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

What you should know	What you should be able to do
1) Describe how Marie Tharp was able to prove Alfred Wegener's theory 'nearly' correct	2) Describe the global distribution of earthquakes and volcanoes
3) Draw and annotate 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) Draw a series of diagrams to show what happens when an undersea earthquake causes a tsunami	6) Draw 2 diagrams to show the difference between shield volcanoes and stratovolcanoes. Add labels to show how they are formed and how different rock types create different types of eruption.