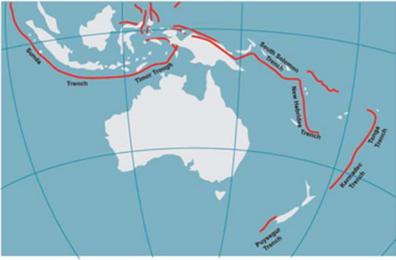


Vocabulary and Concepts	
<b>Learning Intention – We are learning that sudden geological changes can affect Earth's surface</b>	
Geology	The study of the physical structure of the earth.
Geographical Changes	Changes to the physical structure of the earth.
Geologist	A person who studies the earth's structure.
Earth's surface	The outermost level of the land or sea
Naturally occurring	Things that happen in nature
Landform	A natural feature of the earth's surface
Earth's Layers	4 separate sections of the earth
Crust	Layer of rock solids that forms the earth's skin. Includes ocean floors and land.
Mantle	Layer of hot rock that extends for 40km under the earth's surface.
Outer Core	Layer of molten metal that surrounds the inner core
Inner Core	Dense ball of solid metal
Continent	One of the earth's 7 major areas of land
Continental Drift	Theory suggesting that the continents moved from one giant landmass to their present position.
Seafloor spreading	Process where the seafloor moves apart and rocks from inside the earth come up to make a new seafloor.
Tectonic plates	The different sized 'puzzle' pieces that the earth's surface is made up of.
Earthquake	Shaking of the earth that happens when two tectonic plates move past each other.
Volcano	An opening in the earth's crust
Volcanologist	A scientist who studies volcanoes
Eruption	Occurs when steam and volcanic material (rocks, ash etc) escape to the surface of the earth.
Fault	The place where two plates rub causing an earthquake
Epicentre	Point of the earthquake directly above the fault
Seismologist	Scientist who studies earthquakes
Magma	Hot, liquid rock below the earth's surface
Lava	Magma that has erupted from a volcano.
Dormant volcano	A volcano that is not currently active but could become active in the future.
Extinct volcano	A volcano that has not had an eruption in the last 10 000 years and is not likely to erupt again.
Tsunami	A large wave caused by an earthquake
Key Facts	
1	Major geological events occur across the world
2	Tsunamis are caused by earthquakes.
3	The Earth is made up of 4 distinct layers. Each layer has a distinct composition.
4	Significant geological events can be measured in a variety of ways.

5	The earth's crust is broken up into sections called tectonic plates which move around the earth at a range of speeds.
6	Earthquakes are caused by tectonic plates rubbing/moving against each other. Volcanoes are caused by openings in the earth's crust that allow liquid rock from the mantle to reach the earth's surface.
7	The Ring of Fire is a region around the Pacific Ocean which is the site of many volcanic and seismic activity.
8	There are 3 main types of volcanoes – shield, cinder cone, composite
9	Volcanic activity can be destructive as well as beneficial to human beings.
Science as Human Endeavour	
Scientific knowledge is used to solve problems and inform personal and community decisions	
	- The Australian Tsunami warning system allows advance warning of possible tsunamis in our region
<ul style="list-style-type: none"> <li>- Seismologists provide information before, during and after an earthquake so that governments can make decisions about where to send resources.</li> <li>- Volcanologists collect data about volcanic activity to enable people to make decisions about where to live and when to evacuate if there is an eruption.</li> </ul>	
Science Enquiry Skills	
Represent and communicate observations, ideas and findings using formal and informal representations	
Aboriginal Perspectives	

## Australian Curriculum Achievement Standards

### Year 6 Achievement Standard

By the end of Year 6, students compare and classify different types of observable changes to materials. They analyse requirements for the transfer of electricity and describe how energy can be transformed from one form to another when generating electricity. **They explain how natural events cause rapid change to Earth's surface.** They describe and predict the effect of environmental changes on individual living things. Students explain how scientific knowledge helps us to solve problems and inform decisions and identify historical and cultural contributions. Students follow procedures to develop investigable questions and design investigations into simple cause-and-effect relationships. They identify variables to be changed and measured and describe potential safety risks when planning methods. They collect, organise and interpret their data, identifying where improvements to their methods or research could improve the data. They describe and analyse relationships in data using appropriate representations and **construct multimodal texts to communicate ideas, methods and findings.**

Year 6 Rubric

A	B	C	D	E
Reasoned explanation of how natural events cause rapid change to Earth's surface	informed explanation of how natural events cause rapid change to Earth's surface	explanation of how natural events cause rapid change to Earth's surface	description of natural events causing rapid change to the Earth's Surface	statements about natural events causing change to the Earth's surface
Use of accurate diagrams, other representations and relevant science terminology to coherently communicate ideas	Use of diagrams, other representations and relevant science terminology to communicate ideas	Use of diagrams and other representations to communicate ideas	Communication of ideas using everyday language	Fragmented communication of ideas
reasoned explanation of how scientific knowledge helps to solve problems and inform decisions	informed explanation of how scientific knowledge helps to solve problems and	inform decisions explanation of how scientific knowledge helps to solve problems and inform decisions	description of where scientific knowledge helps to solve problems and inform decisions	statements about the use of scientific knowledge
identification and thorough description of historical and cultural contributions to scientific knowledge	identification and description of historical and cultural contributions to scientific knowledge	identification of historical and cultural contributions to scientific knowledge	identification of contributions to scientific knowledge	statements about contributions to scientific knowledge

NB – the following terminology will be helpful in making grading choices.

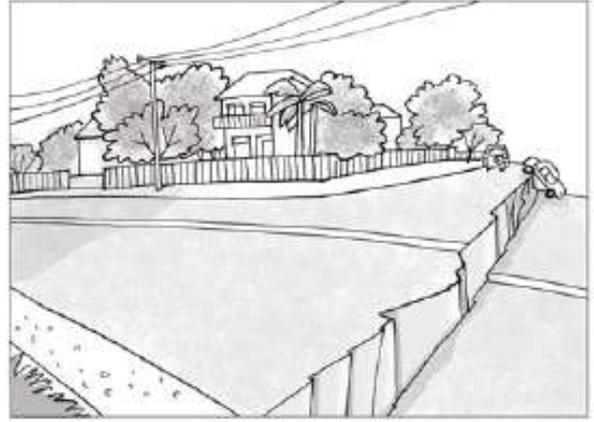
- Knowledge/information refers to facts, concepts, principles, laws, theories and models that have been established by scientists over time;
- Understanding - the concepts underpinning and connecting knowledge in a learning area, *related to a student's ability to appropriately select and apply knowledge* to solve problems in that learning area
- Fragmented - disjointed, incomplete or isolated
- Informed - Having relevant knowledge; being conversant with the topic; in the context of Science, informed means referring to scientific background knowledge and/or empirical observations
- Reasoned - logical and sound; presented with justification; in the context of Science, reasoned also means that the evidence is provided through reference to scientific background knowledge and/or empirical observations as part of the justification

Further information is available at [https://www.qcaa.qld.edu.au/downloads/p\\_10/ac\\_sci\\_yr6\\_se.pdf](https://www.qcaa.qld.edu.au/downloads/p_10/ac_sci_yr6_se.pdf)

Possible Assessment Task 1

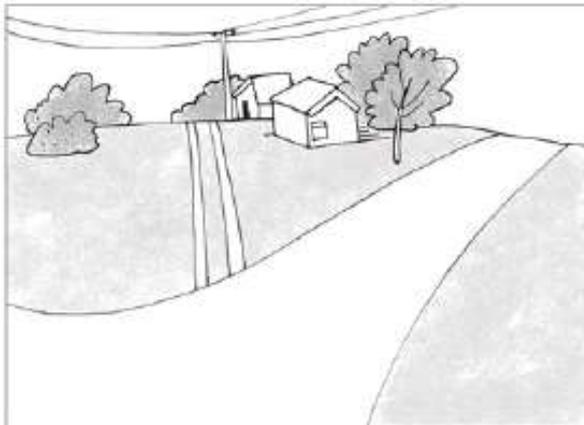
- f. The three sets of images below show different locations before and after an earthquake. Explain what changes have occurred to the Earth's surface because of the earthquake. Remember to include your science knowledge and scientific language in your explanation.

a.



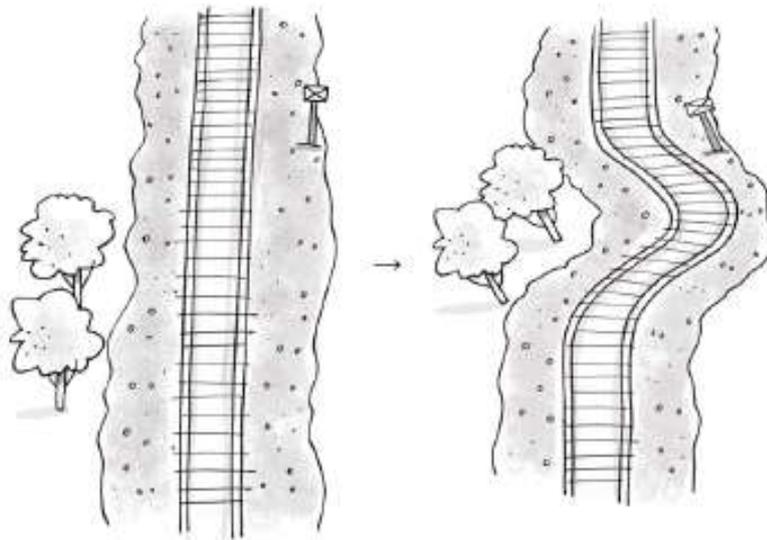
Blank space for student response.

b.



Blank space for student response.

c.



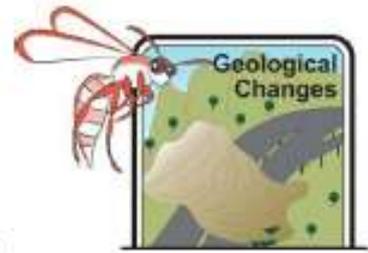
Blank space for student response.

d. In addition to the previous images, what other sources of evidence would suggest that the changes to the Earth's surface were caused by earthquake?

Blank space for student response.

e. Refer to image C (the one with the train tracks). If a fence was placed parallel to the train tracks predict what the fence would look like after the earthquake. Explain your prediction.

Blank space for student response.



## Draw a Volcano – Student Activity

### Your Task

Using information from your textbook or the internet draw a cross section of a volcano below and label the following structures:

Ash

Crater

Lava flow

Magma reservoir

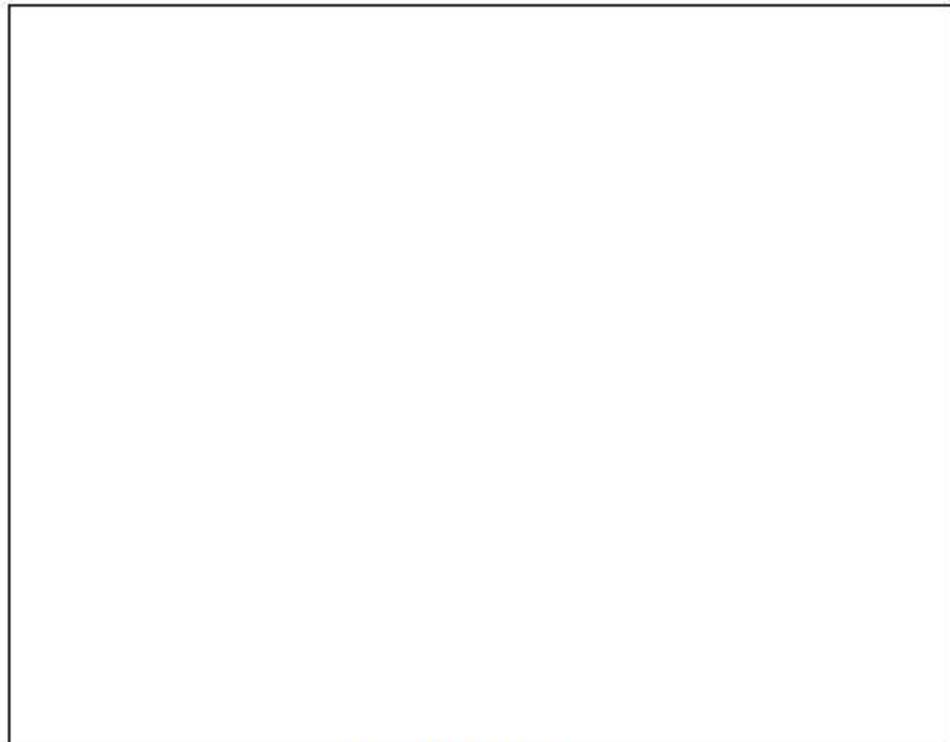


Diagram of a volcano

Match the word above to the definition

\_\_\_\_\_

A chamber of molten rock which underlies volcanoes

\_\_\_\_\_

A vent at the summit of the volcano

\_\_\_\_\_

A fluid flow from the vent of a volcano

\_\_\_\_\_

Small pieces of violently ejected lava, also called cinders

The only active volcano in Australian territory is Beg Ben on Heard Island. It last erupted in 2001.