

Earthquake explorers unit overview

		SCIENCE OUTCOMES	LITERACY OUTCOMES	LESSON SUMMARY	ASSESSMENT OPPORTUNITIES
		Students will be able to	Students will be able to	Students	
ENGAGE	Lesson 1 Earthquake encounters	<p>represent their current understanding as they</p> <ul style="list-style-type: none"> use visual materials such as photographs, animation or video to observe and describe the effects of earthquakes represent what they think they know about the causes and effects of earthquakes. 	<ul style="list-style-type: none"> contribute to class discussions about the effects of earthquakes and the resulting changes to the Earth's surface use talk to share ideas about earthquakes contribute to the class TWLH chart and word wall understand the purpose and features of a storyboard understand the purpose and features of a glossary. 	<ul style="list-style-type: none"> use visual materials to observe the effects of earthquakes create a storyboard using observations from the visual materials discuss ideas and questions for a TWLH chart. 	<p>Diagnostic assessment</p> <p>Science journal entries</p> <p>Class discussions</p> <p>Word wall contributions</p> <p>Storyboards</p> <p>Glossary</p>
	EXPLORE	Lesson 2 Energetic earthquakes	<ul style="list-style-type: none"> describe the difference between earthquake magnitude and intensity describe and discuss the use of the Richter and Modified Mercalli scales analyse numerical and factual information. 	<ul style="list-style-type: none"> use talk to discuss their findings with other students read, discuss and analyse factual information understand the purpose and features of a factual recount use a 'Question placemat' to record factual information. 	<ul style="list-style-type: none"> read and analyse numerical and factual information about the measurement of earthquakes observe the effects of earthquakes and discuss and compare them.

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EXPLORE	<p>Lesson 3 Unearthing quakes</p> <p>Session 1 Modelling earthquakes</p> <p>Session 2 Interior insights <i>(optional)</i></p>	<ul style="list-style-type: none"> describe tectonic plate movement represent their understanding of tectonic plate movement using a plasticine model discuss and compare the layers of the egg model with the Earth. 	<ul style="list-style-type: none"> use talk to describe tectonic plate movement discuss and describe the layers of the egg model and the Earth contribute to a class discussion about tectonic plates. 	<p>Session 1 Modelling earthquakes</p> <ul style="list-style-type: none"> use models to explore the Earth's tectonic plates and the plate movement that results in earthquakes discuss the use of scientific models to represent a scientific idea use plasticine and an egg to represent their understanding of tectonic plate movement. <p>Session 2 Interior insights <i>(optional)</i></p> <ul style="list-style-type: none"> use an egg as a model of the internal structure of the Earth compare the layers of the egg with the layers of the Earth. 	<p>Formative assessment</p> <p>Science journal entries</p> <p>Class discussions</p> <p>Word wall contributions</p>

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EXPLAIN	Lesson 4 Explaining earthquakes	<ul style="list-style-type: none"> review their understanding of earthquakes and plate movement using factual texts make and use a plasticine model to explain tectonic plate movement. 	<ul style="list-style-type: none"> use written language and models to demonstrate their understanding of earthquakes and tectonic plate movement use scientific language to describe three types of plate movement understand the purpose and features of factual texts understand the purpose and features of a timeline. 	Session 1 Plates on the move <ul style="list-style-type: none"> read and discuss a factual text about earthquakes use plasticine and descriptions to represent their understanding of tectonic plate movement. Session 2 Changes over time <ul style="list-style-type: none"> discuss the movement of tectonic plates and suggest reasons for movement. 	Formative assessment Science journal entries Class discussions Word wall contributions Model of plate movement
	Session 1 Plates on the moves				
	Session 2 Changes over time				

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ELABORATE	Lesson 5 Earthquakes down under	<ul style="list-style-type: none"> interpret evidence of and describe earthquake activity for Australia represent results as a graph compare and suggest reasons for the difference in earthquake magnitude and frequency between Australia and neighbouring countries. 	<ul style="list-style-type: none"> read and analyse earthquake data collect and interpret earthquake information use a graph to record and represent findings contribute to a class discussion about the difference in earthquake activity between Australia and neighbouring countries. 	<ul style="list-style-type: none"> review what they have learned about earthquakes compare and discuss data about the occurrence of earthquakes in Australia and neighbouring countries suggest reasons for the higher rate of occurrence of earthquake activity in some of Australia's neighbouring countries. 	Formative assessment Science journal entries Class discussions Word wall contributions Graphs
	Lesson 6 So you want to be a seismologist?	<ul style="list-style-type: none"> review their understanding of the Richter and Modified Mercalli scales explain that seismologists use scientific instruments to observe, measure and record earthquake activity explain that a seismologist is a scientist who studies earthquakes. 	<ul style="list-style-type: none"> use talk to describe the Richter and Modified Mercalli scales contribute to a class discussion about how scientists study and record information about earthquakes discuss and describe what the seismogram tells us about earthquake magnitude. 	<ul style="list-style-type: none"> review their understanding of how earthquakes are measured make a simple seismometer. 	Sumative assessment Science journal entries Class discussions Word wall contributions

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EVALUATE	Lesson 7 On location	<ul style="list-style-type: none"> explain that the Earth's surface is made of tectonic plates that move describe three types of plate movement discuss the causes and effects of earthquakes describe the scales that are used to measure the intensity and magnitude of earthquakes describe how seismologists measure and record earthquake activity. 	<ul style="list-style-type: none"> use talk to present a 'seismologist' report to an audience use oral, written and visual forms to present their understanding of earthquakes reflect on their learning in a science journal entry. 	<ul style="list-style-type: none"> present a 'seismologist' report from a recent earthquake reflect on their learning during the unit. 	Summative assessment Science journal entries Class discussions Word wall contributions 'Seismologist' report 'Quality matrix and Radar chart' (Resource sheet 14)