

Phase 1 – Defining tsunami

Learning outcome:	Resources:
<ul style="list-style-type: none"> ▪ Students will be learning to define tsunami, describe how they occur and identify warning signs, man-made and natural. 	<p>Quizzes</p> <ul style="list-style-type: none"> ▪ What a tsunami is and how one is caused. ▪ Tsunami warning signs (natural), official/unofficial warnings and tsunami signage. <p>Videos</p> <ul style="list-style-type: none"> ▪ Tsunami destruction video. ▪ Tsunami simulation animation. ▪ Tsunami wave height simulation ▪ Physical process of a tsunami simulation animation. ▪ Tsunami experiment demonstration ▪ 2009 Samoan tsunami survivor interview with the Wutzler family from NZ. <p>Worksheets/Templates</p> <ul style="list-style-type: none"> ▪ Tsunami experiment worksheet ▪ Situation report template ▪ Media release template ▪ Class Mode Extension Activity 1: Tsunami signage <p>Web resources</p> <ul style="list-style-type: none"> ▪ International Tsunami Information Centre ▪ Pacific Tsunami Warning Centre ▪ California state government tsunami signage ▪ Tsunami signage
<p>Total Learning Time Required = approx 7 hours Total Teaching Time Required = approx 5 hours</p>	

Lesson	Key Content/Teaching Activity	Time	Online Learning tasks		Alternative Learning Tasks
1	<ul style="list-style-type: none"> ▪ Introduction to the course. ▪ Overview of the content. <ul style="list-style-type: none"> ○ Defining tsunami ○ The waves have gone, what now? ○ Tsunami survivor ▪ Key concepts: (including video footage). <ul style="list-style-type: none"> ○ What is a tsunami? ▪ Facilitation of discussion. 	44mins	<ul style="list-style-type: none"> ▪ Quiz. 	44mins	<ul style="list-style-type: none"> ▪ Print quiz and answers.

Lesson	Key Content/Teaching Activity	Time	Online Learning tasks		Alternative Learning Tasks
2	<ul style="list-style-type: none"> ▪ Key concepts: <ul style="list-style-type: none"> ○ What causes a tsunami. ○ Wave energy and speed. ○ Tsunami height. ○ Height and run-up. ▪ Experiment demonstration and replication. ▪ Guided group/individual research and discussion. ▪ Guided individual preparation of a situation report. 	195mins (3hrs 15 mins)	<ul style="list-style-type: none"> ▪ Tsunami experiment and questions. ▪ Web research and discussion. ▪ Prepare a situation report. 	195mins (3hrs 15 mins)	<ul style="list-style-type: none"> ▪ Print and copy Tsunami experiment worksheet and questions. ▪ In class group discussion. ▪ Print and copy situation report template.
3	<ul style="list-style-type: none"> ▪ Key concepts: (including video footage). <ul style="list-style-type: none"> ○ Warning signs (natural). ○ Official warnings. ○ Unofficial/informal warnings. ▪ Key concepts: (including video footage). <ul style="list-style-type: none"> ○ Tsunami signage. ○ Contextualisation of tsunami risk in own residential area. ▪ Facilitation of learning tasks. <ul style="list-style-type: none"> ○ Guided discussion. 	132mins (1hr 32 mins)	<ul style="list-style-type: none"> ▪ Review survivor video. ▪ Prepare a media release. ▪ Quiz ▪ Identify, photograph and upload tsunami signage in own residential area. ▪ Design tsunami warning poster. ▪ Plot location of tsunami warning signage on map of own residential area (e.g google earth map). ▪ Wikispace discussion to determine numbers of signs required, materials to make them out of and colours used. 	132mins (1hr 32 mins)	<ul style="list-style-type: none"> ▪ Print and copy media release template. ▪ Print quiz and answers. ▪ Class Mode Extension Activity 1: Tsunami Signage. ▪ Identify and photograph tsunami signage in own residential area. ▪ Design tsunami warning poster. ▪ Plot location of tsunami warning signage on map of own residential area. ▪ In class group discussion to determine numbers of signs required, materials to make them out of and colours used.

Phase 2 – The waves have gone, what now?

Learning outcome:	Resources
<ul style="list-style-type: none"> ▪ You will be learning to describe the physical and social impacts that a tsunami can have. 	<p>Videos</p> <ul style="list-style-type: none"> ▪ Tsunami impacts ▪ Interviews with relatives and survivors of the 2009 Samoan tsunami. <p>Worksheets</p> <ul style="list-style-type: none"> ▪ Class Mode Extension Activity 2: Before and After images (physical destruction). ▪ Class Mode Extension Activity 3: Survivor Interview. <p>Web resources</p> <ul style="list-style-type: none"> ▪ Satellite images of landscapes before and after 2004 Indian Ocean tsunami. ▪ Dr Borrero’s diary of his visit to Banda Aceh after the 2004 Indian Ocean tsunami.
<p>Total Learning Time Required = approx 5 hours Total Teaching Time Required = approx 2 hours</p>	

Lesson	Key Content/Teaching Activity	Time	Online Learning Tasks	Time	Alternative Learning Tasks
1	<ul style="list-style-type: none"> ▪ Key concepts: (including video footage) <ul style="list-style-type: none"> ○ Effects tsunami can have (physical). ▪ Facilitation of learning tasks. ▪ Guided discussion. 	110mins (1hr 50mins)	<ul style="list-style-type: none"> ▪ Examine satellite photographs of before and after tsunami impact to determine differences in physical landscape. ▪ Presentation to classmates or family members (e.g using opensource presentation software) 	110mins (1hr 50mins)	<ul style="list-style-type: none"> ▪ Class Mode Extension Activity 2: Before and After.
2	<ul style="list-style-type: none"> ▪ Key concepts: (including video footage). <ul style="list-style-type: none"> ○ Effects tsunami can have (social). ▪ Guided discussion. 	205mins (3hrs 25 mins)	<ul style="list-style-type: none"> ▪ Video review and questions ▪ Write a short story or a few days in a diary. 	210mins (3hrs 30mins)	<ul style="list-style-type: none"> ▪ Class Mode Extension Activity 3: Survivor Interview.

Phase 3 – Tsunami survivor

Learning outcome:	Resources
<ul style="list-style-type: none"> Students will be designing and evaluating an emergency plan, planning escape routes, putting together a getaway kit and learning how to help their community to prepare for tsunami in their area. 	<p>Worksheets</p> <ul style="list-style-type: none"> Household emergency plan template. Household emergency checklist template. Copies of a map of local area. Class Mode Extension Activity 4: Group Getaway kit. Class Mode Extension Activity 5: Stop Disasters Game Mode. <p>Web resources</p> <ul style="list-style-type: none"> www.getthru.govt.nz Survival Kit cut outs Stop disasters game
<p>Total Learning Time Required = approx 10 hours Total Teaching Time Required = approx 3 hours</p>	

Lesson	Key Content/Teaching Activity		Online Learning Tasks		Alternative Learning Tasks
1	<ul style="list-style-type: none"> Facilitation of learning tasks. 	130mins (2hrs 10mins)	<ul style="list-style-type: none"> Complete a household emergency plan for own household. 	130mins (2hrs 10mins)	<ul style="list-style-type: none"> Print household emergency plan and complete.
2	<ul style="list-style-type: none"> Facilitation of learning tasks. Guided discussion. Facilitating access to school information. 	180mins (3hrs)	<ul style="list-style-type: none"> Using a map of own residential area, draw tsunami escape routes from home, school, mum and dad's workplace that can be followed on foot. Using same map, mark where tsunami will impact and where welfare centres and safe places are. Find out what own school's evacuation plan is and inform parents. Find out what arrangements are in place if a tsunami hits when you are at school. Practice evacuation routes. 	180mins (3hrs)	<ul style="list-style-type: none"> As per online learning tasks.
3	<ul style="list-style-type: none"> Facilitation of learning tasks. 	180mins (3hrs)	<ul style="list-style-type: none"> Complete household emergency checklist and assemble survival kit. Assemble getaway kit. Inform family members where kits are located. 	180mins (3hrs)	<ul style="list-style-type: none"> Class Mode Extension Activity 4: Group Getaway kit.

Lesson	Key Content/Teaching Activity		Online Learning Tasks		Alternative Learning Tasks
4	<ul style="list-style-type: none"> ▪ Facilitation of learning tasks. ▪ Guided discussion. 	90mins (1hr 30mins)	<ul style="list-style-type: none"> ▪ List key information about tsunami learned so far to help prepare the community. ▪ Online 'stop disasters' game. 	90mins (1hr 30mins)	<ul style="list-style-type: none"> ▪ Class Mode Extension Activity 5: Stop Disasters Class Mode.
