

Disaster Education

Upper Primary/ Lower Secondary

Unit of Work

‘Emergencies, Disasters and the World Around Us’

The following Unit of Work is designed to follow the various stages of an inquiry process for learning. The Inquiry approach related here is in fact an amalgamation of a number of other models and specific elements of it are the copyright property and the trademarks of other authors. These copyright and trademarked elements have been included here with the written permission of the relevant owners. These instances of permission have been noted within the unit of work and it should be recognised that these specific elements remain the copyright and trademarked property of the authors noted. The work of Lane Clark is acknowledged as the backbone of the inquiry approach advocated here. A number of graphic organisers and organiser sequences have also been reproduced and used here with permission of those authors. Specifically, the PBE Thinkchart™, and the ‘Think it’™ organiser sequence are used here with the permission of the owner, Lane Clark.

The Series Line on the next page of this document provides an overview of the stages of learning for this particular Unit.

The activities suggested in this Unit make use of various ‘Thinking Curriculum’ skills and strategies:

- ✚ For further information regarding the Think InQ Inquiry framework and the strategies attributed to Lane Clark throughout the unit (PBE Thinkchart™, Think it™ process please visit the following web site: www.laneclark-ideasys.com
- ✚ Blooms Taxonomy of Cognitive Processes - <http://rite.ed.qut.edu.au/oz-teachernet/training/bloom.html>

✚ Multiple Intelligence Learning -

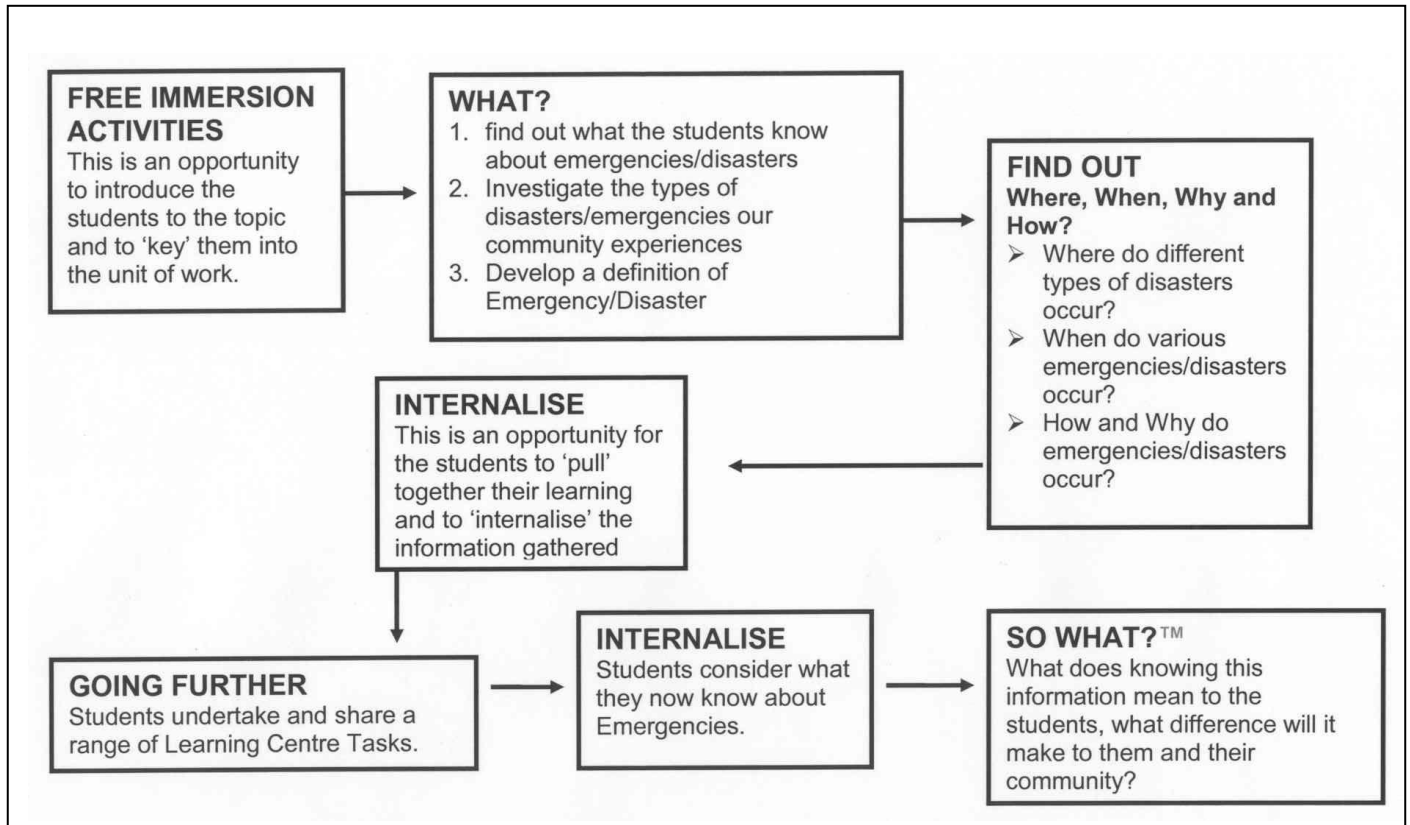
http://members.ozemail.com.au/~caveman/Creative/Brain/mult_intell.htm or

http://www.thomasarmstrong.com/multiple_intelligences.htm

The appendix at the end of the document contains detail of a number of Teaching and Learning tools suggested throughout this Unit of Work.

Series Line

The following 'Series Line' details a unit of work that might be followed. Each stage of this Series Line has suggested activities that could be undertaken as a part of this unit of work or used separately to fit with a unit of work developed locally.



Free Immersion Activities

(Lane Clark; 1992. used with permission)

Provide students with an opportunity to 'tune in' to the topic.

Activities might include one or more of the following examples that could be used as whole class activities, or provided as 'stations' that the students circulate through.

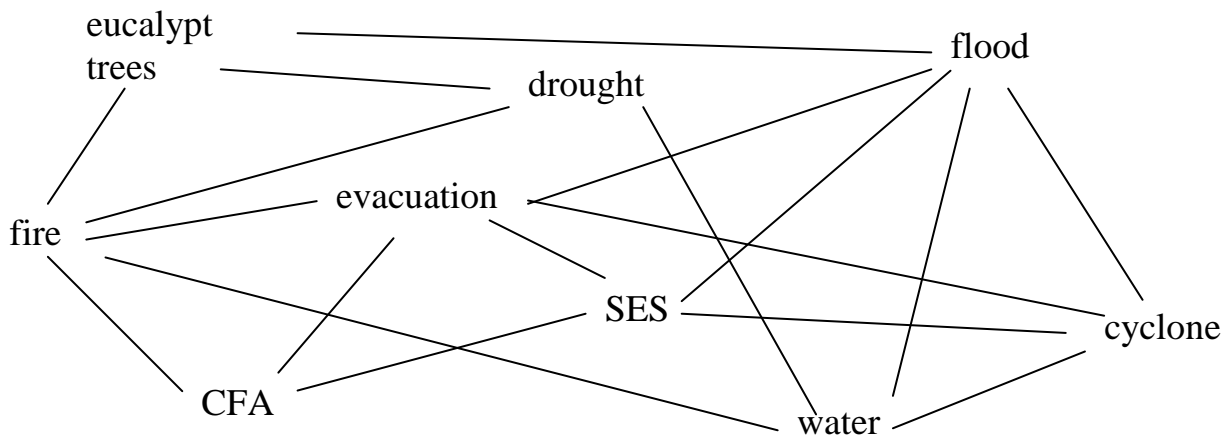
- Organise a talk/presentation by the local fire services, State Emergency Service, Red Cross Branch, Ambulance Service – see the Links or State/Territory page at www.ema.gov.au/schools
- Watch a suitable video, movie or cartoon about disasters/emergencies e.g. 'Hazards Disasters and Survival', 'Great Australian Disasters of the 20th Century', or 'Natures Fury – Natural Disasters' (*available for loan from the EMA Library - by post* – see Resources page at www.ema.gov.au/schools).
- Collect newspaper and magazine clippings, photographs, and internet images of emergencies and disasters and make a wall montage
- Listen to music from various disaster movies
- Read stories about disaster/emergencies - see the Resources page at www.ema.gov.au/schools

What?

1. What do they know?

Find out what the children know about emergencies/disasters using one or more of the following activities:-

- **Brainstorm** as a class (or in small groups and then as a class). **Remember** - all contributions are accepted in a brainstorm. **Consider** recording the information as pictures rather than words **or** in a simple web format



- In groups children create a simple song, poem, play, poster, or story about emergencies or particular emergencies
- Use the **wall montage**, created in the immersion stage, to attach brainstormed information to.

2. Investigate the types of disasters that might affect our community!

1. Each Jigsaw 'home' group (see below) finds out about different types of disasters/emergencies
2. Using the chart below students visit various 'Expert groups' to collect information
3. Individuals then return to their home group where the information is collated on a group chart.

Possible Expert groups:

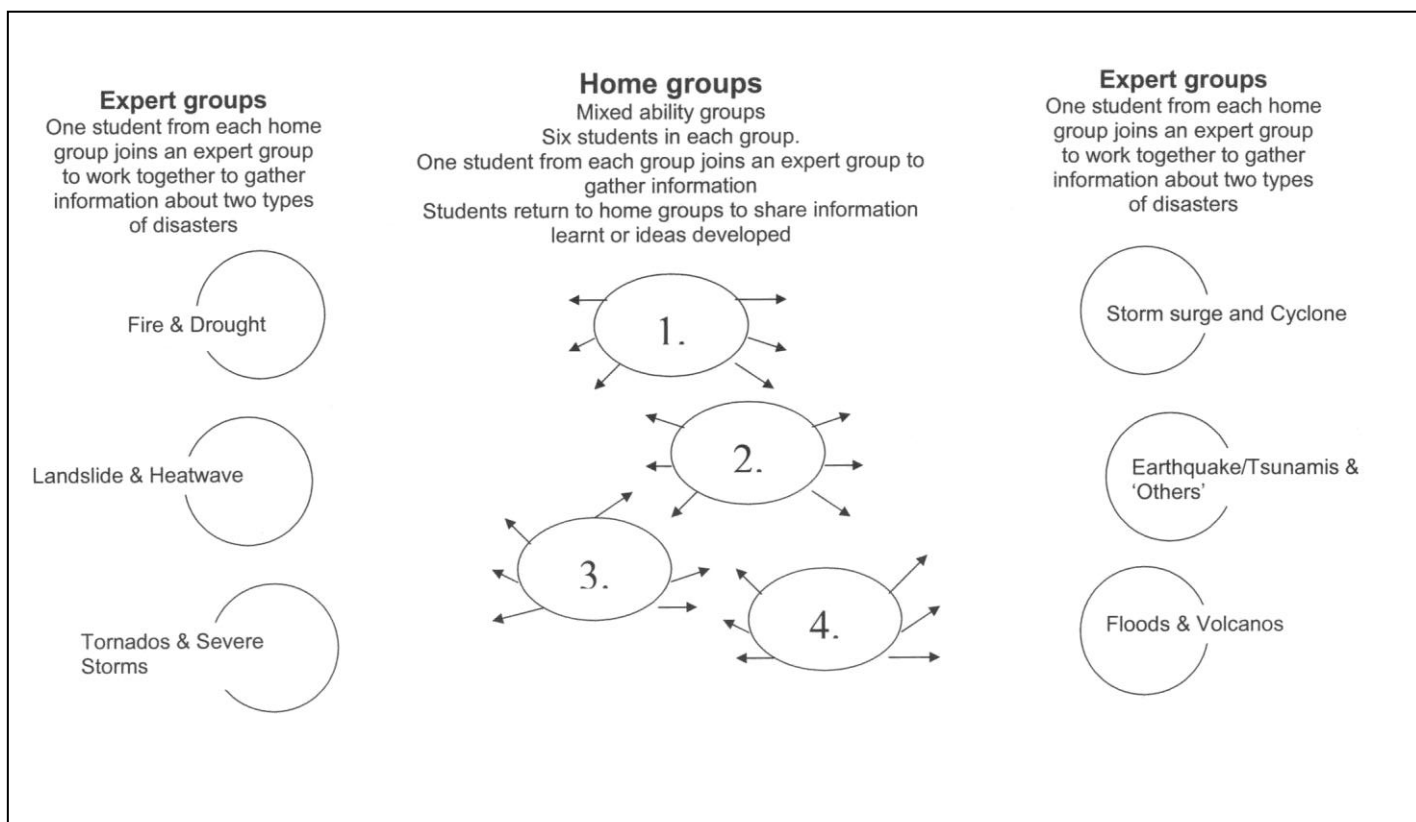
- Locate your region in Australia on the poster 'Australia's Natural Hazard Zones' or your State or Territory Natural Hazards Map and identify the potential hazards/risks for your community – see the Resources page at www.ema.gov.au/schools
- Non-fiction texts with information about a range of disasters - see the Resources page at www.ema.gov.au/schools
- Web or CD search
- Simple survey of students from older grades
- Fiction texts – see the Resources page at www.ema.gov.au/schools
- Video – 'Hazards, Disaster and Survival' - see the Resources page at www.ema.gov.au/schools

Student might use an Organiser, such as the example below, to record their findings:

Emergency / Disaster Type	What Happens?	Where can it happen?	Who might be involved?	Wonderings?
Volcano	Hot rock and gas escapes the earths crust	<ul style="list-style-type: none"> ➤ All around the world ➤ None on the Australian mainland 	<ul style="list-style-type: none"> ➤ Local people ➤ Fire fighters ➤ Medical people ➤ vulcanologists 	When was the last one on the Australian mainland? Do they happen under the sea?
Landslide	Rocks and soil slide down a hillside	Doesn't happen much in Australia	<ul style="list-style-type: none"> ➤ SES ➤ Ambulance ➤ Residents ➤ Police ➤ Fire brigade 	How can you stop them? Why do they happen?

Jigsaw Example (Types of Disasters)

This is a cooperative group strategy that can work in a variety of ways; the suggestion below can be modified to suit the activity being undertaken. In this example a class of 24 students are divided into four mixed ability groups (home groups). One person from each of the 'home' groups then joins one of the 'expert' groups. The 'expert' groups work together to find and share information on their 'topic'. Students then return to their 'home' group and share the information learnt.



Check various events, including each of the types of Emergencies/Disasters, to see if they fit the definition of a disaster/emergency

One definition: *An emergency is something that causes a lot of destruction, disruption and/or distress to a community.*

- Use the table below for 'home' groups to discuss what an Emergency/disaster is. A class discussion could then follow.
- Students could also use this information to construct flow charts e.g. 1. a flow chart for a fire related to destruction and/or disruption and/or distress; 2. a flow chart on responding to a fire; and 3. a flow chart related to what could be done to prevent or prepare for a similar event in the future.

What is an Emergency/Disaster?

Event	A lot of Destruction	A lot of Disruption	A lot of Distress
Car crash			
Bushfire			
Flood			
Drought			
Earthquake/Tsunami			
Storm Surge			
Heatwave			
Bike accident			
Cyclone			
Landslide			
Tornado			
Volcano			
Large toxic chemical spill			
Bridge collapse			
Major animal disease			
Severe Storm and Lightning			

FIND OUT

(Lane Clark; 1992, used with permission)



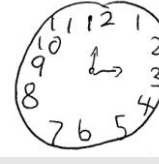



The Who? Where? When? Why? & How? of various emergencies.

1. Place students into mixed ability home groups – see Jigsaw Approach below.
2. Using the chart below students visit the various Research Stations to collect information on the emergency they are finding out about. Note that ‘wonderings’ from the previous activity could be added to the chart.
3. Individuals then return to their home group where the information is collated on a group chart.

Research Stations could include:-

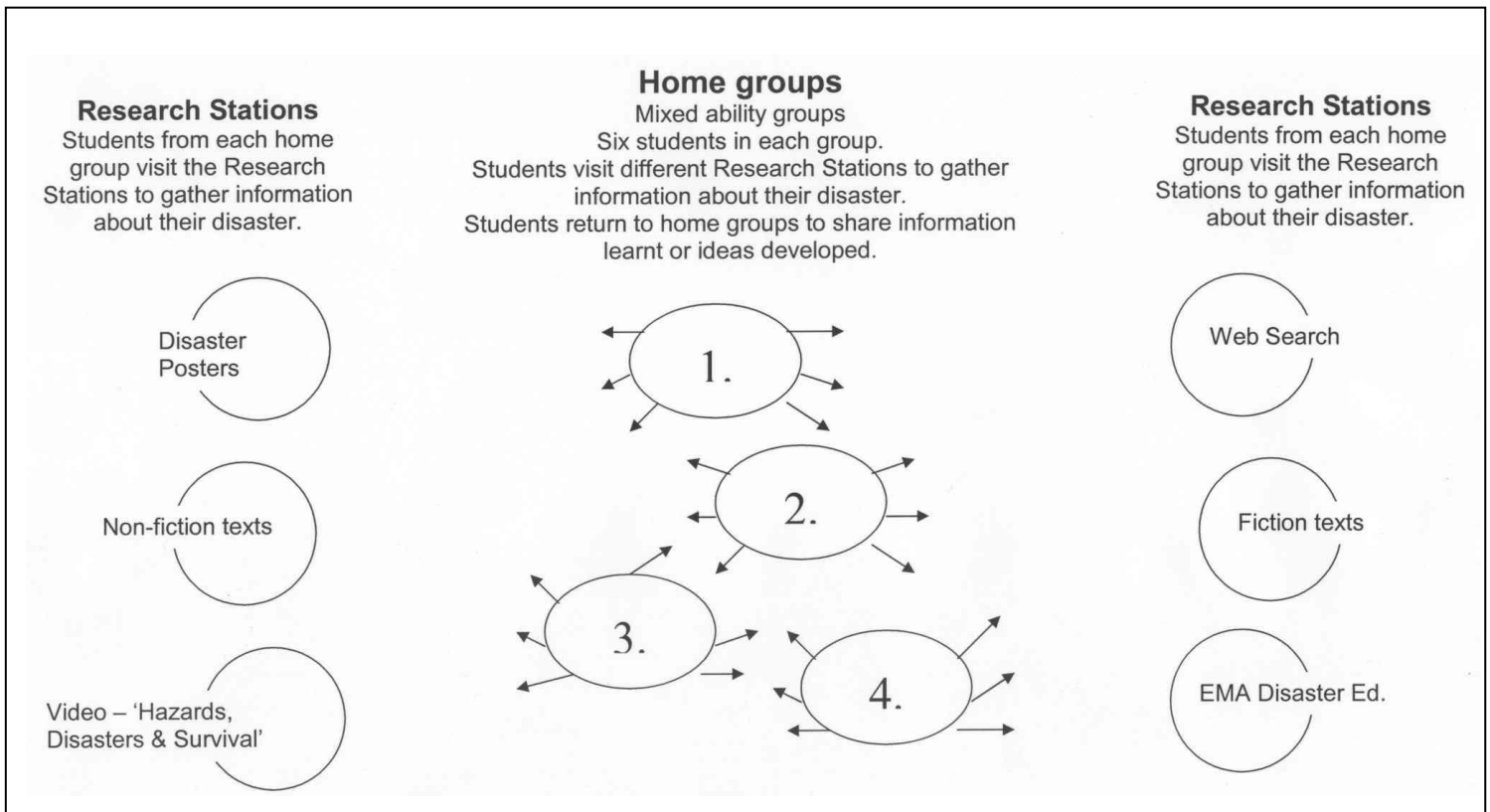
- The poster ‘Australia’s Natural Hazard Zones’ or your State or Territory Natural Hazards Map Poster - see the Resources page at www.ema.gov.au/schools
- Non-fiction texts with information about a range of disasters – see the Resources page at www.ema.gov.au/schools
- Web or CD search - see Links page at www.ema.gov.au/schools
- Simple survey of students from older grades
- Fiction texts – see the Resources page at www.ema.gov.au/schools

Type of Emergency/Disaster:

Who is involved? 	Where do they happen? 	When do they happen? 	Why do they happen? 	How do they happen? 	Wonderings? 

Jigsaw Approach (Learning about Particular Disasters)

This is a cooperative group strategy that can work in a variety of ways. The suggestion below can be modified to suit the activity being undertaken. In this example a class of 24 students are divided into four mixed ability groups (home groups). Students from each of the 'home' groups visit the various Research Stations to learn about one or two particular disasters/emergencies. Students then return to their 'home' group and share the information learnt.



Internalise the Information

1. The groups select a method to present their information to the class and prepare their presentation. Methods for presentation could include: an audio tape, a video, a play, a dance, a story, a picture, an advertisement, a chart, a book
2. Students present their information to the class.
3. As a class combine the information from the group charts on a class chart.

Going Further

1. Provide students with a range of Learning Centre tasks (see below) to choose from and a 'Topic Wheel' (see Appendix 1) organiser to assist with undertaking the task. Establish 'criteria' (see Appendix 1) about the Learning Centre tasks with the students.
2. Students self assess their tasks against the criteria developed.

Learning Centre Tasks

Blooms (Revised) Multiple Intelligences	Remembering	Understanding	Applying	Analysing	Evaluating	Creating
Word (Linguistic)	List disasters/emergencies that have affected your community in recent years	Write a short play based on a particular disaster.	Write a story about a volcano that erupts in Western Victoria		Create a new school evacuation plan	Write a newspaper article about a new (fictitious) flood rescue vehicle
Maths (Logical/Mathematical)	Make a timeline of Australian disasters	Create a spreadsheet detailing information from three different cyclones.		Get data from various Australian disasters and construct a graph that shows their potential impact on the Economy	Create a map of the local area and note the potential sources of risk/hazards to the school	Develop a flow chart of potential Preparation, Preparedness, Response and Recovery for a Tsunami
Picture (Spatial)		Make a cartoon strip showing people how to respond to a particular emergency.	Make a diorama or model of a particular emergency/disaster.			Create plans/diagrams of a new product that will assist in preventing disasters
Body (Bodily/Kinaesthetic)		Find out the 'speed' of a variety of disasters – see if you can outrun them – record your results.	Organise and supervise a school evacuation exercise.	Create and perform a play about how to prepare for a particular emergency.		
Musical		Construct a music film clip that explains the concept of PPRR.	Write a soundscape that represents a particular emergency/disaster.	Write a song or jingle to sell an emergency kit.		Write a song that describes how people might feel after a disaster
People (Interpersonal)	Tell your family or a younger grade about an Australian Hazard (design an evaluation form for your audience to complete)			Interview people about their disaster experiences, present the information in a class talk.	Organise and participate in a debate on the value of bushfires/flooding.	

Blooms (Revised)	Remembering	Understanding	Applying	Analysing	Evaluating	Creating
Multiple Intelligences						
Self (Intrapersonal)		Describe what you would do in a flood situation.		Describe how you would use technology to manage an emergency	Make a recording or brochure about what you think are the main 'rules' for surviving a cyclone	Describe what you would do if you were in charge of a local Emergency Service
Nature (Naturalist)	List ways in which humans contribute to Natural Disasters	Examine a number of Indigenous Australian dreamtime stories – what references do they make to disasters.	Make a game to teach people water conservation.		Organise a panel discussion about the effects of human made disasters on the environment.	Develop a plan to rescue an endangered animal from a flood or bushfire

These tasks are available as a set of cards on the website - www.ema.gov.au/schools

Other tasks could include:

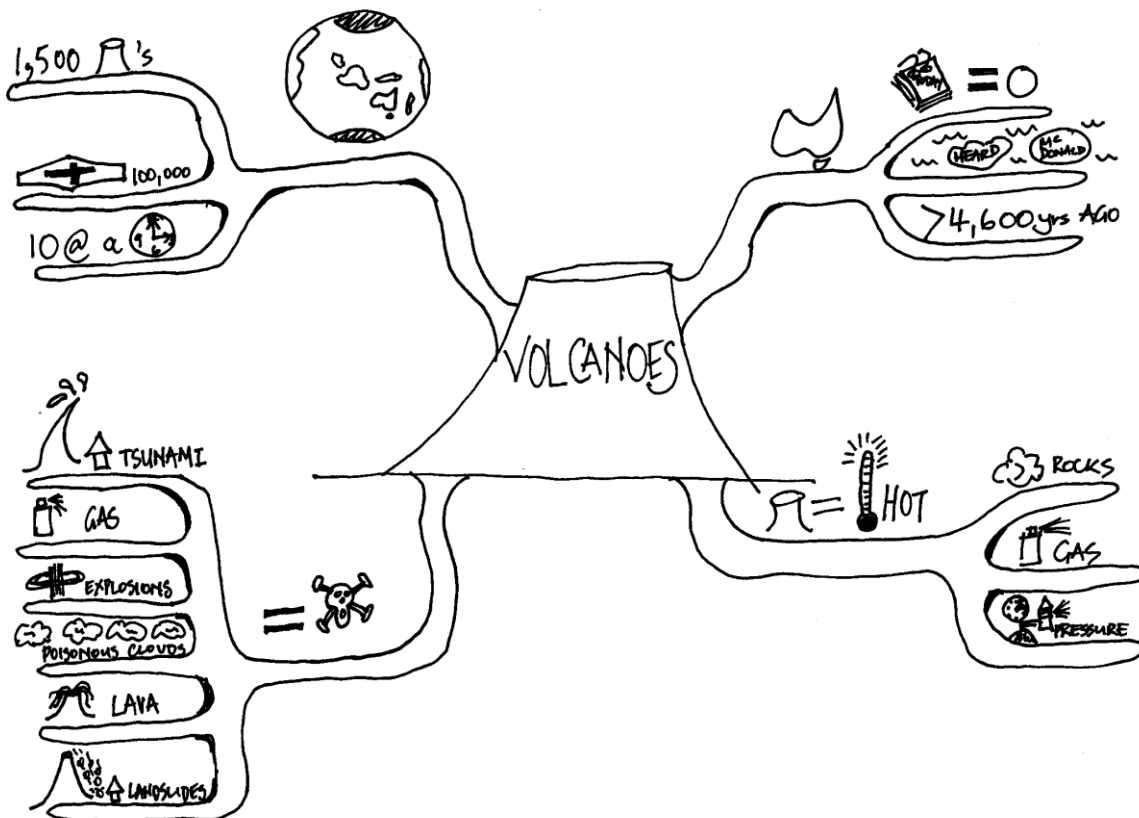
- Activities based on the 'wonderings'™ developed so far
- Historical events in local, Australian or World History
- Activities which develop a greater understanding of particular emergencies
- Communications used in Emergency Management (EM)
- Describe and then modify an EM product
- Data gathering, interpretation and presentation activities
- Disasters in the media – books, stories, film, magazines, music
- On the concept of Preparation, Preparedness, Response and Recovery
- Speculating on the future
- Literature and disasters
- Detail a particular event in history
- Detail on responders (Fire services, Ambulance, SES, Red Cross, Salvation army)
- Net resources evaluation
- Art works about disasters and emergencies

Internalise and reflect

In groups, or individually, students Mind Map® their knowledge of Emergencies

Mind Mapping®

Developed by Tony Buzan Mind Mapping, in its simplest form, is a tool that can be used to graphically record information and ideas. Further information about Mind Mapping can be found at <http://www.mind-map.com> An introduction to Mind Mapping can be found at <http://members.ozemail.com.au/~caveman/Creative/Mindmap>



So what?™/action

(Lane Clark; 1992 : used with permission)

Students develop a personal action plan using the new information they have learned.
Plans could include:-

- Developing a household evacuation plan
- Reviewing the school's Emergency Plans
- Sharing their Learning Centre tasks with other grades, or the school community – through the school newsletter, or the wider community – on the school web site
- Writing to the newspaper about the necessity for people to be prepared for emergencies
- Creating a household emergency kit
- Organising and/or undertaking a kids first-aid course
- Organise an Evacuation Drill at school or home, analyse how it went, suggest improvements and test again.

Appendix 1

Teaching and Learning Tools & Strategies

Detailed below are a number of teaching and learning tools & strategies suggested for use in this Unit Of Work.

Graphic Organisers.

Graphic organisers are charts that can be used to assist students to record, organise, evaluate and analyse, information. Examples include :-simple webs, concepts maps, Venn diagrams, Mindmaps, flow charts, matrices, ... A useful graphic organizer generator can be found at

http://www.teach-nology.com/web_tools/graphic_org/venn_diagrams/

Wonderings (Lane Clark; 1992)

As students gather information and research particular topics questions may arise regarding that topic or related ideas. Providing opportunities and encouraging students to record their 'wonderings' will assist framing future directions for their own, and potentially the group or class, inquiry learning.

Multiple Intelligences

Professor Howard Gardner of Harvard University suggests that there are at least eight different kinds of human intelligence, including - 1. The Linguistic (Word) Intelligence, 2. The Mathematical/Logical Intelligence, 3. The Spatial (Picture) Intelligence, 4. The Bodily/Kinaesthetic Intelligence, 5. The Musical Intelligence, 6. The Intrapersonal (Self) Intelligence, 7. The Interpersonal Intelligence, and 8. The Naturalist (Nature) Intelligence.

For further information visit some of the following web sites:

http://members.ozemail.com.au/~caveman/Creative/Brain/mult_intell.htm or

http://www.thomasarmstrong.com/multiple_intelligences.htm

Blooms Taxonomy (Anderson Revision)

In 1956 Benjamin Bloom categorised human thinking into six levels – Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation. In 1990 Lorin Anderson revised the terminology, creating the following revised terms: Remembering, Understanding, Applying, Analysing, Evaluating and Creating. For further information visit: <http://rite.ed.qut.edu.au/oz-teachernet/training/bloom.html>

**PBE Thinkchart™ . (Physical Behavioural and Environmental)
(Lane Clark; 1992, used with permission)**

A useful organiser for giving more detailed analysis of a topic or issue (in this case we have also included a column for students to record their wonderings) .

For example: -

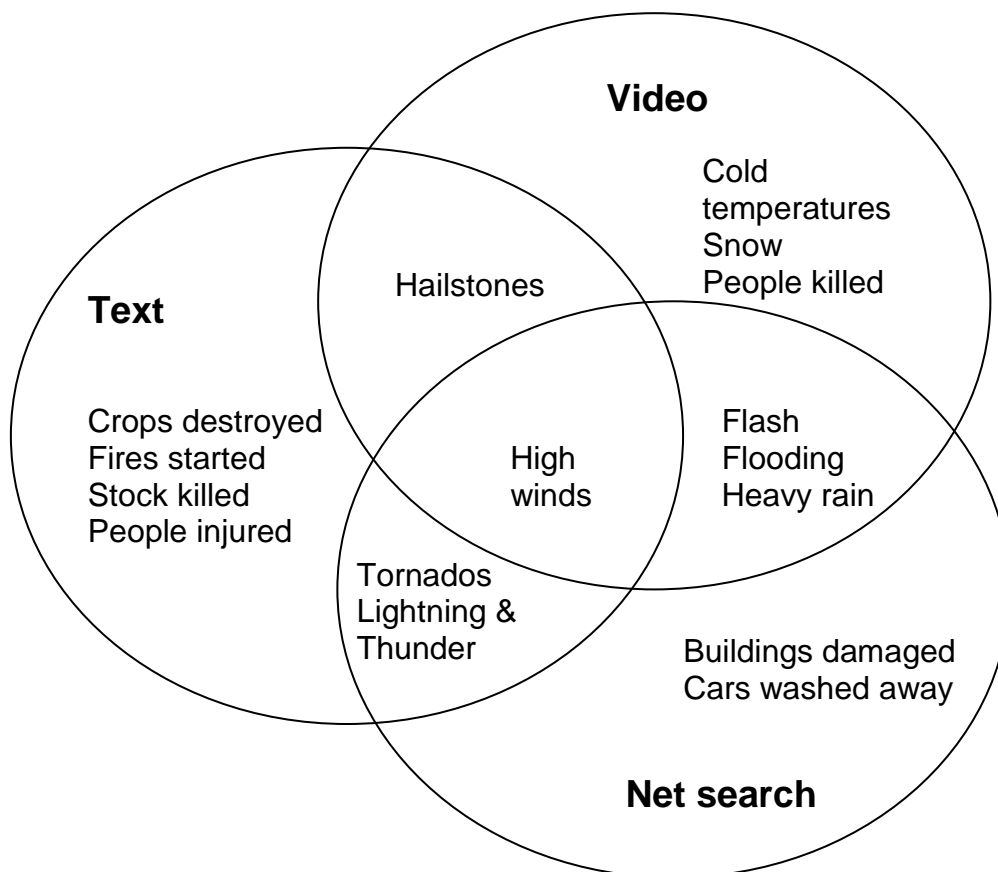
Disaster Type	Physical What does it look like? (sound, smell etc – it is the taking in of stimuli from the five senses).	Behavioural Cause How does it happen? Effect What does it do?	Environmental Where & when do you find it?	Wonderings?
Flood	<ul style="list-style-type: none"> ➤ Swollen rivers ➤ Lots of water ➤ Heavy rain ➤ Big lake ➤ Flash floods 	<ul style="list-style-type: none"> ➤ Land covered with water ➤ Houses flooded ➤ Crops destroyed ➤ Bridges washed away ➤ People can be killed or injured ➤ Heavy or prolonged rain ➤ Rivers break banks ➤ Flash floods 	<ul style="list-style-type: none"> ➤ Winter or summer in the tropics ➤ Sometimes with storms or from a Tsunami ➤ Rivers ➤ Lakes ➤ coast 	<ul style="list-style-type: none"> ➤ How often do they happen in Australia? ➤ What is the biggest one ever? ➤ Could it happen to my house? ➤ What do you do in an emergency like this?

Think it™ - Venn Diagrams

Taking the information from a series of Thinkcharts™ and comparing and contrasting that information within a venn or tri-venn diagram is known as the Think it™ process and is an organiser sequence developed by Lane Clark in 1992. It is a powerful process that when used correctly allows learners to discover the characteristics of anything being examined. (Used with permission from Lane Clark). Venn diagrams are a useful tool for grouping and comparing information. A useful Venn diagram generator can be found at http://teachers.technology.com/web_tools/graphic_org/venn_diagrams/

In this example three different sources provide the following information about severe storms. Using the diagram helps us to see that severe storms have:

- ✚ High winds
- but can also include:
- ✚ Heavy rain
- ✚ Flash flooding
- ✚ Tornadoes
- ✚ Thunder & Lightning
- ✚ Hailstones



Developing Criteria

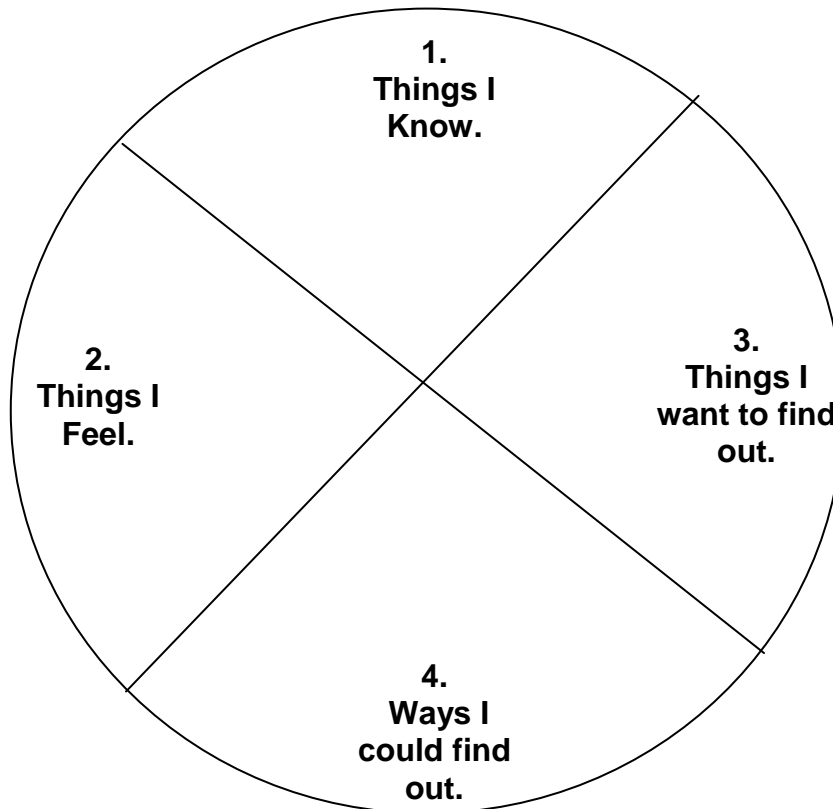
Developing criteria regarding the expectations of an activity assists students to clarify what they are working towards, and provides students with opportunities to self or peer assess. Criteria should preferably be developed or negotiated with the students.

An example of Criteria that might have been developed for the Upper Primary/Lower Secondary Learning Centre tasks might look thus:

Below Expected	At Expected	Above Expected
4 disaster ideas on your topic included	7 disaster ideas on your topic included	9 disaster ideas on your topic included
2 ideas for action described	4 ideas for action described	6 ideas for action described
3 sources of information used	4 sources of information used	5 sources of information used
Information about local, or national or international issues included	Information about local, and/or national and/or international issues included	Information about local, and national and international issues included
1 communication vehicle used	2 communication vehicles used	3 communication vehicles used

Topic Wheels

Students complete the following table to assist them with clarifying the direction and form of their study/research:



Some ideas for finding out:

- Write a letter
- Survey people
- Phone someone
- Visit somewhere
- Read a book or books
- Go to the school or local library
- Think about it and record your ideas
- Talk to others
- Test it
- Do it
- Photograph it
- Film it
- Search the net
- Send an email
- Watch a video