EBOOK CODE: REAU5077

Ready-Ed Publications

Ages 11-12 years

PHOTOCOPY MASTERS

Natural Disasters

Worksheets based on extreme events

Earthquakes

Volcanoes

Cyclones

Tsunamis

CURRICULUM LINKED

Sample

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Contents

Sample

Teachers' Notes

Our world is a volatile and amazing place. The ground beneath our feet is constantly on the move even though we might not be aware of it. This movement can trigger natural disasters, such as earthquakes, volcanoes, tsunamis and cyclones. Understanding how our natural world works helps us to make better decisions when faced with life threatening events. This book will take your students on a journey to unlock the secrets of our planet and explain why nature is capable of creating such carnage.

Natural Disasters is written for students in Year 6, however the activities may also suit students in Years 5 and 7.

Suggested ways to use this resource:

- *You could work your way through the book chronologically.*
- *Dip in and out of the topic pages to suit your lesson plans.*
- *Use it as a reference book.*
- *Set activities for homework.*
- *Give activities to fast finishers.*

Sample

Australian Curriculum Links

Year 6 - Science

Earth and Space Sciences

Science Understanding

Sudden geological changes or extreme weather conditions can affect Earth's surface (ACSSU096)

Nature and Development of Science

Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena (ACSHE098)

Use and Influence of Science

Scientific understandings, discoveries and inventions are used to solve problems that directly affect people's lives (ACSHE100)

Scientific knowledge is used to inform personal and community decisions (ACSHE220)

Teaching Ideas

Below are some ideas to help you introduce the topic of natural disasters to your class.

Create a Word Wall
Using coloured paper, ask students to write words that they associate with natural disasters and display these words on a wall in the classroom. Towards the end of this topic, students can add definitions to the Word Wall.

Start a Curiosity Corner
Ask the class to bring in news articles, books, photographs, songs – anything that connects to the topic for the class to explore and share.

Paint a Word Picture
Ask students to close their eyes and describe the situation during or after a natural disaster – help them to imagine what the scene might be like.

KWL Chart
Each student can create their own KWL chart to map out what they know already, what they want to learn about and later they can detail what they have learned.

Headline Fun
Students can use the internet to find and print off headlines about natural disasters – they can cut them out to add to a groovy class collage.

Hear From an Expert
Contact your local SES service and ask an expert to visit your class. Hearing from someone in the natural disaster field is a great way to get everyone interested. If you can't find a kind volunteer, look for videos on the web or old BTN stories www.abc.net.au/btn/

Imaginary Interview
Ask your students to imagine that they are a reporter interviewing an expert on natural disasters – they can list what questions they would like to ask. Students could use the questions to ask parents, neighbours and family what they think about disasters. Students can write down important quotations and display them in the classroom.

The Top Three Game
Students should think of three things that they already know about disasters. They should pair up with another student and exchange their three points of information. Students should then choose another student to pair up with and exchange points.

Hands on HELP
Contact the CSIRO Scientists in Schools Program – they might be able to help run an investigation in your classroom www.csiro.au

Science BLOG
Instead of keeping a science journal for this topic, show your kids how to keep their own blog; an online journal. Give them time to update it weekly and keep a track of their learning. Check out these sites for blogging ideas: www.blogspot.com www.classblogmeister.com and www.edublogs.org

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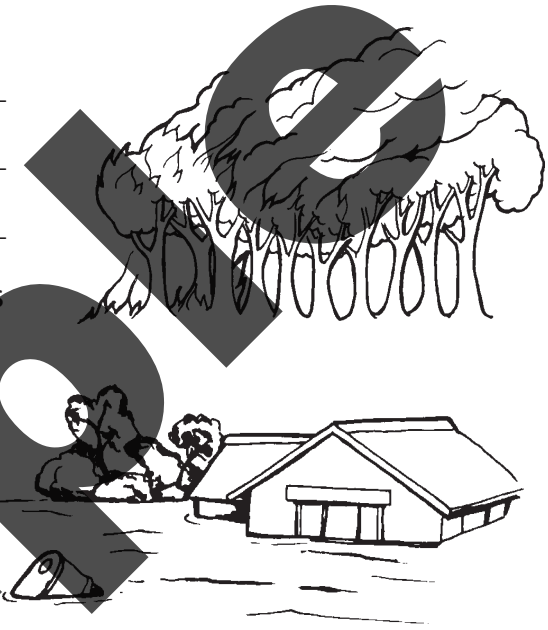
Finding Out About Disasters

- **Disasters happen around the world at any time of the day or night. Some disasters include: floods, cyclones, fires and earthquakes.**

1. Name as many other types of disasters as you can.



2. Discuss your list with your partner. In your own words define a disaster.

3. Explain the difference between a **natural disaster** and a **human-made disaster**.

4. Organise the types of disasters from your list under the headings.

Natural Disasters	Human Disasters

5. You, or someone you know, may have experienced a personal disaster. Provide a brief outline of it.

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The Four Layers Of The Earth

It is essential to know about the four layers of the Earth in order to understand how earthquakes happen. Read Get The Facts then complete the questions and label the diagram.

Get The Facts

- The **crust** is the rocky outer thin layer of the Earth. It varies in thickness from 5-60 kilometres. It is made up of hard rock which is mainly granite. Sometimes earthquakes happen when the rocks in the Earth's crust bend and break causing shockwaves to travel on the Earth's surface.
- The **mantle** is beneath the crust and is over 2,800 kilometres thick. It is made of a thick layer of hotter, heavier rocks. Parts of this layer are so hot that rocks have melted. This molten rock or lava, called magma, is what the Earth's crust floats on. Plates float on top of the magma. The plates rub together and collide and these movements cause cracks and slips in the Earth. These cracks and slips release huge amounts of energy in the Earth and this energy results in an earthquake.
- The Earth's core (centre) is made of two layers and is extremely hot, possibly over 2,000 degrees. The **outer core** is liquid and the **inner core** is solid iron and nickel.

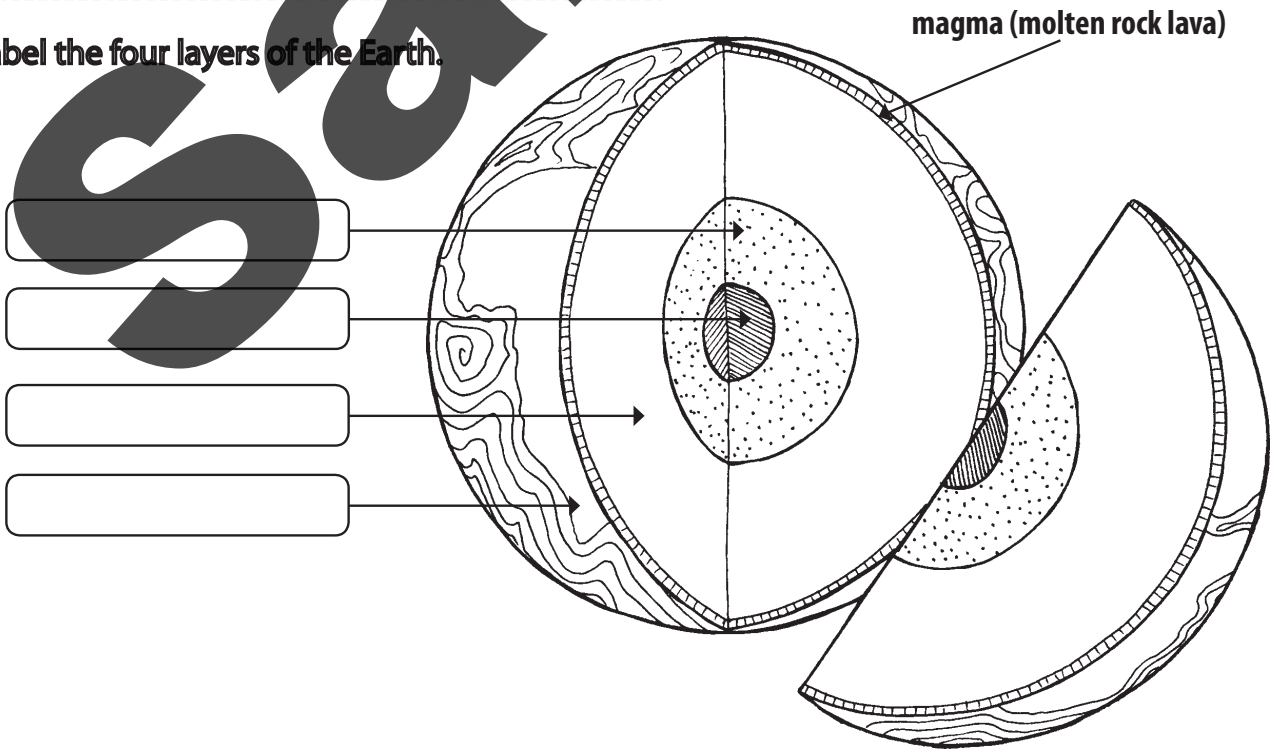
Questions

1. What can happen to the Earth's crust which causes earthquakes?

2. Where are plates found?

3. How do the plates cause earthquakes?

Label the four layers of the Earth.



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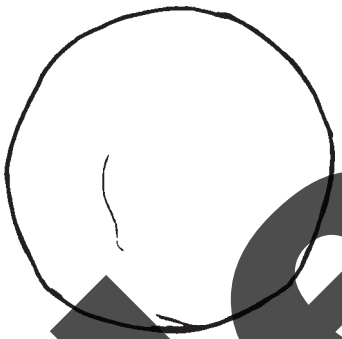
Make A Model Of The Earth

You will need four different colours of modelling clay or Plasticine for this activity. Each colour will represent a layer of the Earth.

Step 1: Inner core

Make the inner core (a ball) about two centimetres in diameter.

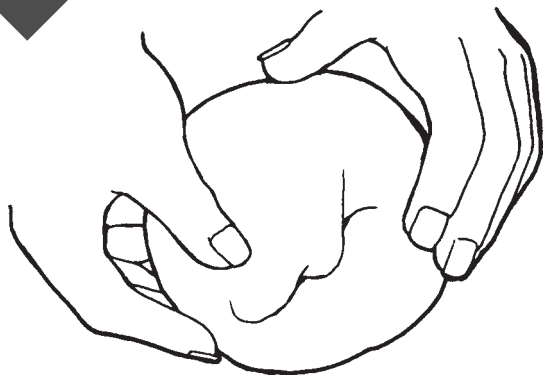


Step 2: Outer core

With a different coloured clay, roll out a thick layer. Place the inner core into the middle and pull the second layer around the inner core. Compare the thickness to that of the inner core.

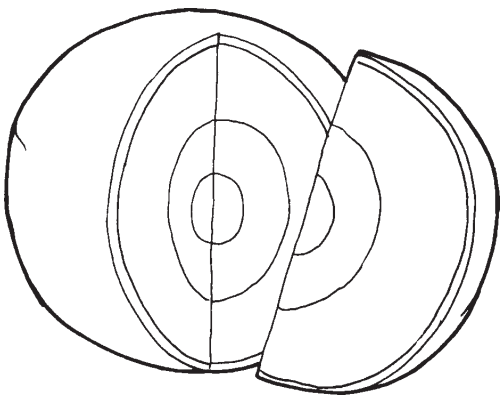
Step 3: Mantle

Repeat **Step 2** using a third colour.



Step 4: Crust

The outer layer must be rolled very thin to represent the crust. When complete, cut with a knife to see the cross-section.



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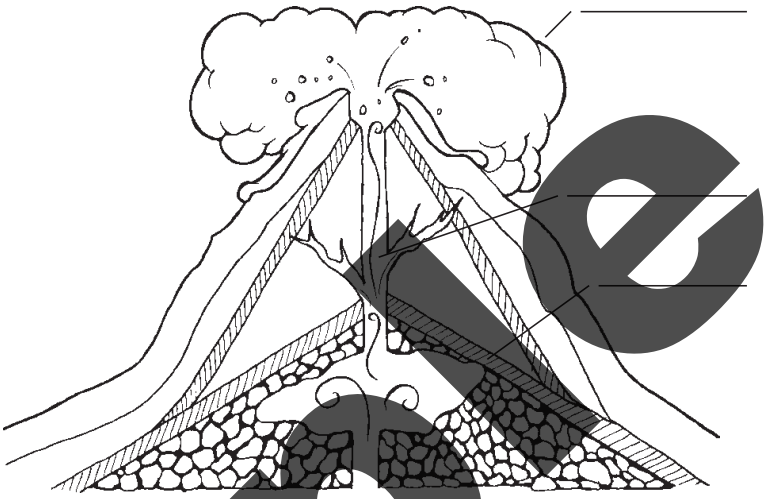
What Is A Volcano? 1

Read Get The Facts then label lava, magma and the Earth's crust on the diagram. Complete the experiment and questions.

Get The Facts

A volcano happens when hot magma from the inside of the Earth breaks through the surface (crust) of the Earth. Magma starts off as mantle. Mantle is the layer of Earth below the surface. When the mantle melts it forms hot magma. When hot magma bursts through the surface of the Earth it is known as lava.



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Experiment

Aim: To test how a volcano explodes.

Materials: bottle of soft drink, a balloon.

Process:

1. Don't shake the soft drink bottle.
2. Gently unscrew the top and put balloon over the bottle.
3. Hold the balloon on and shake the bottle.
4. Watch what happens.
5. The soft drink should explode into the balloon.

Questions:

i. What does the soft drink in the bottle represent? _____

ii. Which layer of the Earth is the balloon? _____

Amazing Fact

❑ Lava forms volcanic rock when it cools. Basalt is the most common, and over millions of years it can break down into soil, stained red by the iron content.

What Is A Volcano? 2

Read Get The Facts then label the diagrams below either convergent or divergent and explain in your own words what is happening in each diagram.

Get The Facts

The surface of the Earth is divided up into plates. When these plates pull apart (divergent plates) or push together (convergent plates) it causes the mantle to melt into magma and the magma will then break through the surface (crust) of the Earth causing a volcano.

When two plates collide or push together (convergent plates), one plate will slip under the other. This process is known as subduction. The plate that slips will plunge into the mantle and cause the mantle to melt into magma which bursts through the surface of the Earth.

If two plates collide but subduction does not take place, the Earth is instead pushed up and mountains are formed. This can develop later into a subduction zone.

When two plates pull apart (divergent plates), the surface (crust) of the Earth thins causing a weak spot. This causes the mantle to melt into magma and the magma will break through the weak spot. Some divergent plates happen at the bottom of the ocean so the volcano will happen underwater. This is called a submarine volcano.

When plates move against each other, a volcano does not usually occur. These plates are known as transform plates.

Sample

1

Plate: _____

Description: _____

_____

2

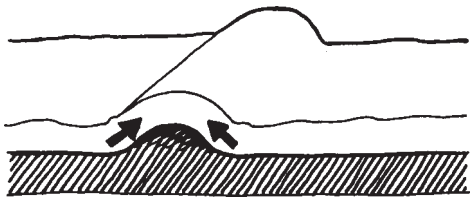

Plate: _____

Description: _____

_____

3

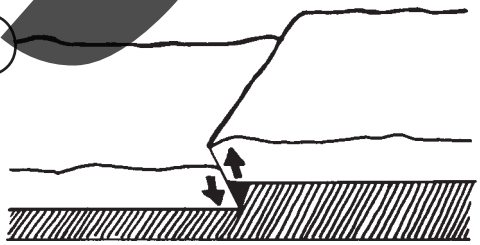

Plate: _____

Description: _____

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4

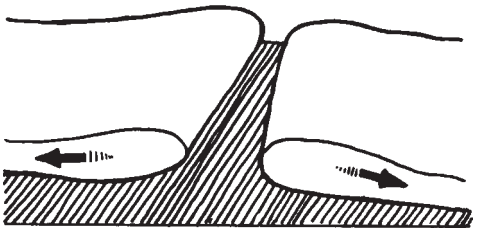

Plate: _____

Description: _____

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