

RED4001

# Our Earth

Earth Science themes for  
9 – 12 year olds.



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# The Earth's Structure

Use a dictionary to find out what these key words mean:

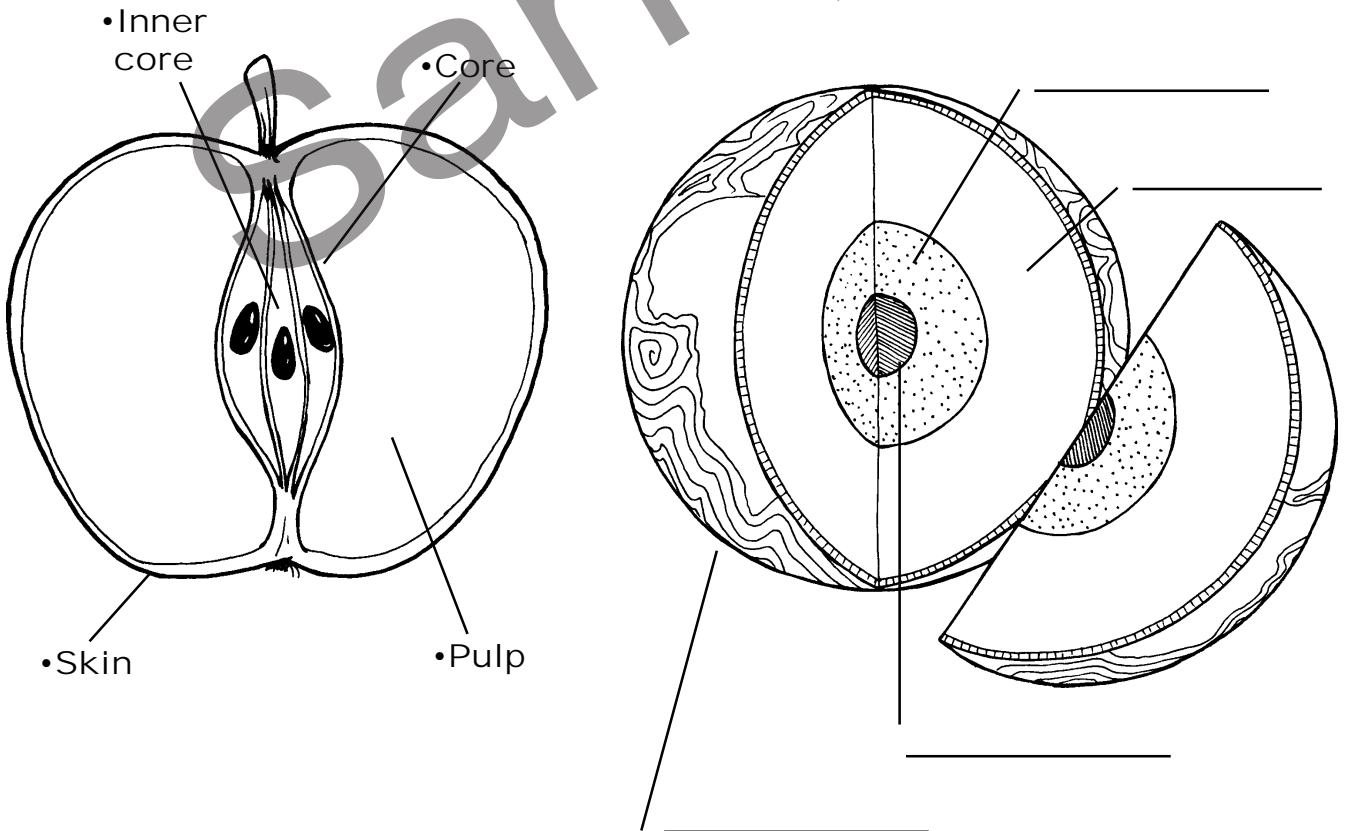
- landforms \_\_\_\_\_
- metallic \_\_\_\_\_
- core \_\_\_\_\_
- mantle \_\_\_\_\_

**Cut an apple in half and look at the inside structure. There are four layers of an apple - the skin, the pulp, the core and the apple's centre or inner core.**

The earth, like the apple, is made up of four layers.

1. The crust which is the thinnest and contains all the earth's landforms.
2. The mantle which is thicker and lies beneath the crust.
3. The earth's metallic core.
4. The inner core.

Using this information, label the diagram of the earth's structure.



**Explore Further!**

Visit this web site to learn more about the earth's structure:  
 ▶ [volcano.und.nodak.edu/vwdocs/vwlessons/lessons/Earths\\_layers/Earths\\_layers2.html](http://volcano.und.nodak.edu/vwdocs/vwlessons/lessons/Earths_layers/Earths_layers2.html)

# Ring of Fire

Most volcanoes are located on the ridges and boundaries of the earth's tectonic plates (see page 7). Look at the map below that shows the location of the volcanoes that form "The Ring of Fire".

Use an atlas to locate the oceans and the continents on the map.



Why do you think the volcanoes in this area are called "The Ring of Fire"?

Find out what country these volcanoes are in and when they last erupted. Place them on the map.

VOLCANO	COUNTRY / ISLAND	LAST ERUPTED
Antofalla	_____	_____
Cotopaxi	_____	_____
Sangay	_____	_____
Mauna Loa	_____	_____

**Question Time!**

Find out why people still continue to live near volcanoes even though they are so destructive when they erupt.

# Mountain Ranges

**Mountains** are portions of the continental crust that rise above the land surface to a height of at least 600 metres. Mountains usually occur in a group, or as a mountain range or chain. They usually occur at the boundaries of the world's tectonic plates.

Use an atlas to locate the following mountain ranges on the world map.

- |   |                                       |  |
|---|---------------------------------------|--|
| <input type="checkbox"/> Ural Mountains       | <input type="checkbox"/> Alps         | <input type="checkbox"/> Atlas Mountains |
| <input type="checkbox"/> Rocky Mountains      | <input type="checkbox"/> Appalachians | <input type="checkbox"/> Himalayas       |
| <input type="checkbox"/> Great Dividing Range | <input type="checkbox"/> Pennines     | <input type="checkbox"/> Southern Alps   |
| <input type="checkbox"/> Andes                |                                       |  |



These are the highest mountains from each of the continents and some island nations. Find out what mountain range they belong to, how high they are and locate them on the map above.

CONTINENT	MOUNTAIN	MOUNTAIN RANGE	HEIGHT
■ Africa	<i>Kilimanjaro</i>	_____	_____
■ Antarctica	<i>Vinson Massif</i>	_____	_____
■ Asia	<i>Everest</i>	_____	_____
■ Australia	<i>Kosciusko</i>	_____	_____
■ North America	<i>McKinley</i>	_____	_____
■ South America	<i>Aconcagua</i>	_____	_____
■ Europe	<i>Elbrus</i>	_____	_____
■ New Zealand	<i>Aoraki (Mt Cook)</i>	_____	_____

# Volcanic Activity

**Volcanoes** are classified as active, dormant, intermittent or extinct.

What do YOU think each of the terms mean?

• active \_\_\_\_\_

\_\_\_\_\_

• dormant \_\_\_\_\_

\_\_\_\_\_

• intermittent \_\_\_\_\_

\_\_\_\_\_

• extinct \_\_\_\_\_

\_\_\_\_\_

Using some resources from the school library, give a definition of each of the terms.

• active \_\_\_\_\_

\_\_\_\_\_

• dormant \_\_\_\_\_

\_\_\_\_\_

• intermittent \_\_\_\_\_

\_\_\_\_\_

• extinct \_\_\_\_\_

\_\_\_\_\_

## Make an Erupting Volcano

Equipment

- paper plate
- clay or modelling dough
- toilet roll
- baking soda or bi-carbonate of soda
- vinegar
- red food colouring

Procedure:

1. Build a mound of clay using the paper plate as a base.
2. Leave an opening in the centre of the mound to represent the central vent of the volcano.
3. Insert the toilet roll into the opening.
4. Push into the sides of the mound with a pencil to make openings that represent the side vents of the volcano. Make sure you pierce the toilet roll with the sharp end of the pencil.
5. Fill the tube with baking powder (or bi-carbonate soda).
6. Add some red food colouring to the baking soda.
7. Add vinegar to the baking soda and watch the eruption!