

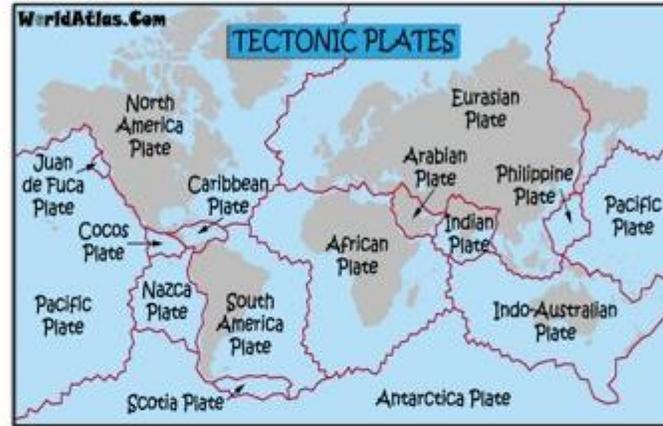
# Year 7 – Restless Earth – Knowledge Organiser



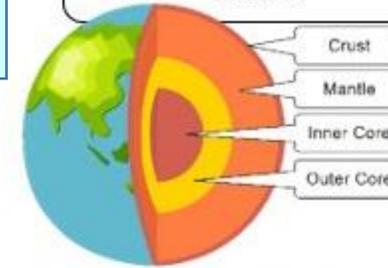
## KEYWORDS

| Keyword                            | Definition  |
|------------------------------------|---|
| <b>Plate Boundary</b>              | The point at which two plates meet  |
| <b>Destructive Plate Boundary</b>  | Plates moving together and the sinking of the oceanic plate.  |
| <b>Constructive Plate Boundary</b> | Two plates move apart and magma rises through the gap   |
| <b>Conservative Plate Boundary</b> | Plates slide past each other and create friction, causing earthquakes   |
| <b>Composite Volcano</b>           | A steep sided volcano which does not erupt often and has thick lava   |
| <b>Shield Volcano</b>              | A volcano with gentle slopes which erupts frequently with runny lava  |
| <b>Focus</b>                       | The point at which the earthquake begins  |
| <b>Epicentre</b>                   | The point on the Earth's surface where the damage is felt most.   |
| <b>Tsunami</b>                     | A long, high sea wave caused by an earthquake   |
| <b>Supervolcano</b>                | A supervolcano is any volcano capable of producing a volcanic eruption with a volume greater than 1,000 km <sup>3</sup> |
| <b>The Three P's</b>               | When responding to a natural disasters countries and governments predict, protect and prepare.                          |

## A Map showing the location of the Earth's Tectonic Plates



## The structure of the Earth



### Composite Volcano

Eruptions from this volcano are infrequent but often violent



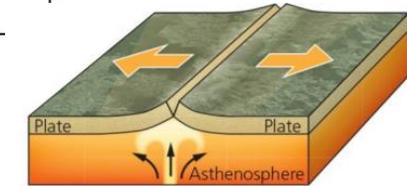
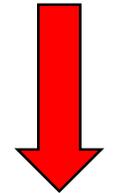
### Shield Volcano

Eruptions from this volcano are frequent and non-violent

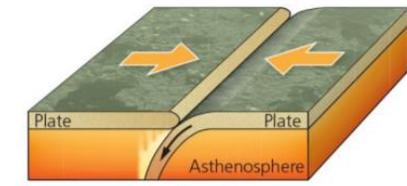


## Types of Volcano

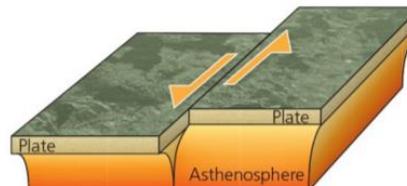
## Plate Boundaries



(a) Divergent plate boundary

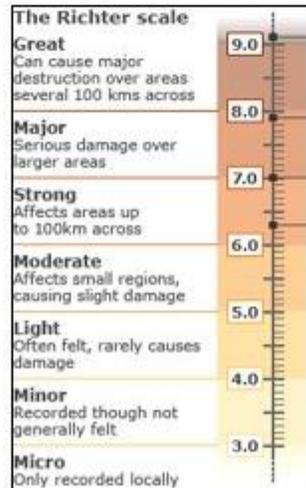


(b) Convergent plate boundary



(c) Transform plate boundary

## Earthquakes: The Richter Scale and Mercalli Scale



| Level of Earthquake | Detected only by seismographs   |
|---------------------|---|
| I                   | Detected only by seismographs   |
| II                  | Noticed only by sensitive people.   |
| III                 | Resembling vibrations caused by heavy traffic   |
| IV                  | Felt by people walking; rocking of free standing objects  |
| V                   | Sleepers awakened and bells ring  |
| VI                  | Trees sway, some damage from overturning and falling objects.   |
| VII                 | General alarm, cracking of walls  |
| VIII                | Chimneys fall and there is some damage to buildings   |
| IX                  | Ground begins to crack, houses begin to collapse and pipes leak.  |
| X                   | Ground badly cracked and many buildings are destroyed. There are some landslides                                    |
| XI                  | Few buildings remain standing; bridges and railways destroyed. water, gas, electricity and telephones out of action |
| XII                 | Total destruction; objects are thrown into the air, much heaving, shaking and distortion of the ground.             |

### Developing Country Volcanic Case Study – Montserrat 1995

- Before **1995**, the Soufriere Hills had been dormant for over 300 years.
- The Caribbean island of **Montserrat** is situated on a destructive **plate boundary**.
- Huge pyroclastic flows devastated the island (hot flows of ash, gas and lava).
- Whole island (11,000 people evacuated).
- Exclusion zone around the volcano, much of the island is now inhabitable.

### Developed Country Volcanic Case Study – Iceland 2010

- North American plate and Eurasian plate.
- Main eruption starting from April 14<sup>th</sup> 2010.
- This eruption caused the melting of large amounts of ice, leading to flooding in southern Iceland.
- Large disruption to air travel - Airlines lost a combined £130 million per day in lost revenues.
- Ash helped the farmlands fertility but contaminated water supplies.

### Tsunami Case Study – Indian Ocean Tsunami 2004

- About 228,000 people were killed as a result of the [9.1 magnitude](#) [quake](#) and the giant waves that slammed into coastlines on 26 December 2004.
- Damage cost was just under £6.4 billion.
- The tsunami's waves travelled across the Indian Ocean at 500 mph, the speed.
- Coastal areas were densely populated without adequate housing which was left in tatters.

### Developing Country Earthquake Case Study – Haiti 2010

- 12<sup>th</sup> January 2010 – Magnitude 7 earthquake.
- **Conservative plate boundary** between North American Plate and Caribbean Plate.
- Epicentre was 25km south-west of capital, Port-au-Prince.
- Aftershocks – 5.5 and 6.0 occurred in the days following the quake.

### Developed Country Earthquake Case Study – Japan 2011

- 8.9Mw earthquake shook north east Japan at 2:47pm 11<sup>th</sup> March 2011.
- The Pacific plate thrust under the Eurasian plate = This was the strongest earthquake recorded in Japan.
- Aftershocks were felt with a 6.0Mw or 7.0Mw.
- This triggered a tsunami. Waves up to 10 metres high travelled towards the east coast of Japan.