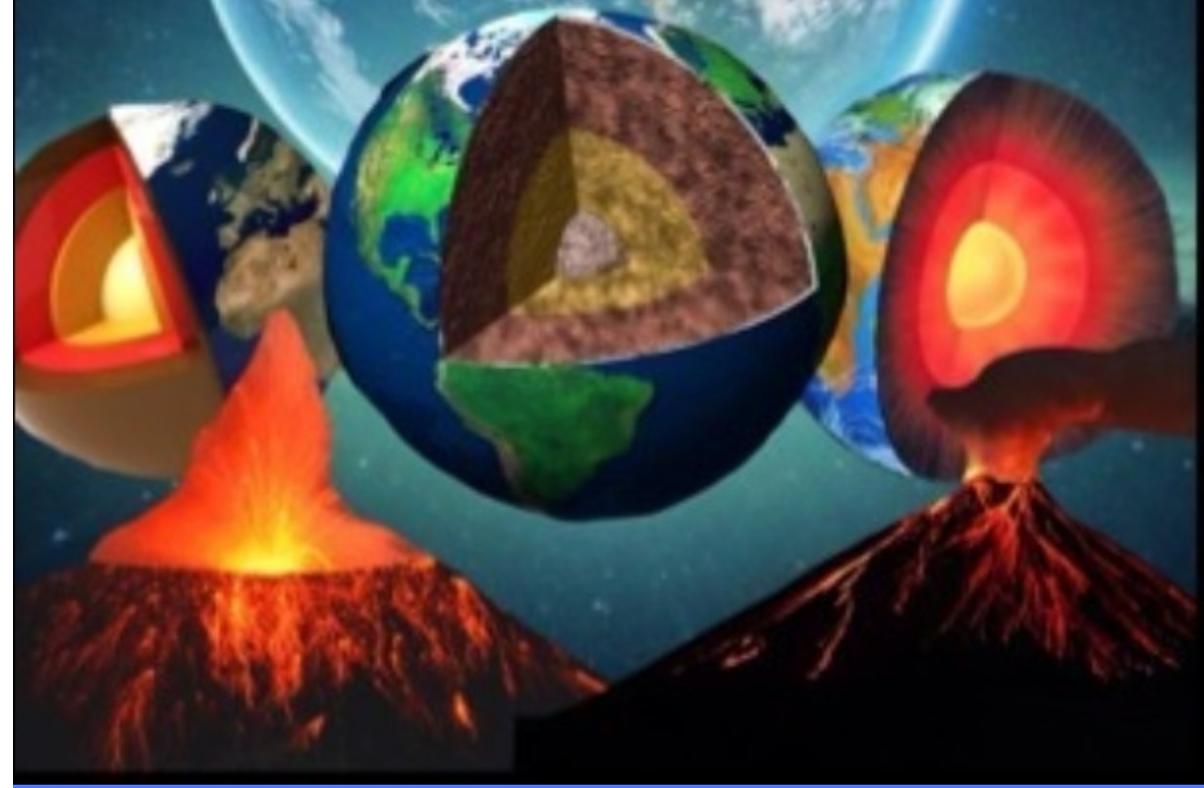


THE RESTLESS EARTH



Introduction

Hi there, my name is Ely! You may not have heard my name before but you definitely know me. I will give you a clue as to who I am, I am round, I am not a human and I am part of the solar system. Are you still confused? Well maybe all will become clear when I give you my full name, my full name is Ely the Earth. Yes, that is correct I am in fact the planet you call home. That's me!



As I know a lot about you I feel it is only fair that you learn more about me. It is also very important that you understand exactly how I work. Let me begin by saying I am definitely a restless planet and like nearly all moody teenagers, I can be quite unpredictable at times.

The powerful Lushun earthquake that killed two hundred people in 2013 in China is just one example of how unpredictable I can be.



The troublesome ash cloud that came from the Icelandic volcanic eruption in 2010 also showed my unpredictability. I really do try not to be so unpredictable and restless but there are reasons why I am like this. In this chapter I will explain just how restless I can be and my reasons for it.



However, beneath it all I really am a nice person and can create some truly beautiful things as I will also explain in this chapter.



The following topics will be the focus of this chapter; The Earth's (my) Structure, The Moving Plates, Fold Mountains, Earthquakes, and Volcanic Activity. This chapter is filled with fun activities that you can do to help you learn more about me.

Topic: The Structure of Earth

What exactly am I (Planet Earth) made up of? This is a question that must be answered before you can understand how I work and why I am so restless. Before discovering what exactly such things as volcanoes and earthquakes are and why they happen you must understand exactly what way I am made up. Therefore the first topic of this chapter focuses on my structure.

Objectives:

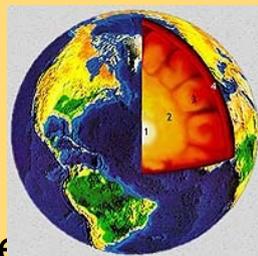
You will:

1. Name the different layers of the Earth by answering the questions at the end of the topic(2,)
2. Describe the different layers of the Earth by answering the revision questions (2,3,16)
3. Demonstrate the different layers of the Earth using an egg(22, 23,)

Key Skills:

You will draw upon the following skills;

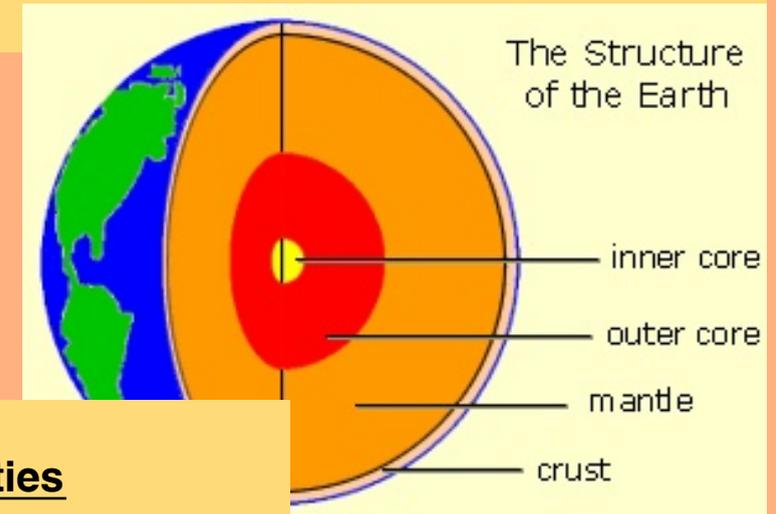
- managing myself (making considered decisions, Being able to reflect on my own work)
- staying well (being positive and learning)
- being creative (imagining, implementing ideas and taking action)



-managing information and thinking (being curious, gathering, recording, organising, and evaluating information and data, thinking creatively and critically, reflecting on and evaluating my learning)



Useful Apps: Flowboard



Activities

The following is a flowboard explaining my different layers. Please study the flowboard to get a better understanding of how I am made up. When you have looked at the flowboard please test yourself by answering the questions on the next page.

[Flowboard explaining the Earth's Structure](#)



Questions:

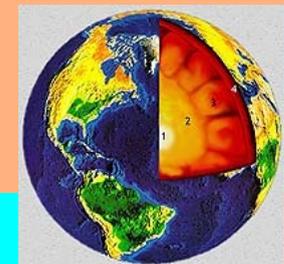
- 1) Name the three layers of the earth and a fact about each.
- 2) Explain these words
(a) Plate boundaries (b) Convection currents (c) Plate Tectonics
- 3) Which is hotter the mantle or the core? Give numerals in your answer.



The following is a flowboard which explains how to conduct an experiment with an egg to demonstrate my different layers. Please study this flowboard and then have a go yourself. You can use the skills that you have learnt in your science class in relation to conducting experiments to help you carry out this experiment effectively. Be sure to write up your experiment and take pictures of your egg.
Good Luck!



How to Demonstrate the Inside of the Earth Using an Egg



Geo Fact:

The deeper the mantle, the higher the temperature. It can hit 3000 degrees.

Topic: *Our Moving Plates*

Now that you understand my structure it is important that you take a closer look at my crust. Just incase you are wondering, my crust to me is similar to what your skin is to you as it is my outside layer. My crust is broken into a number of plates that are constantly moving. Their movement has a significant affect on me and my mood and they are a huge reason why I appear to be so restless. Therefore, the next topic that this chapter will focus on is my moving plates.

Objectives:

You will:

1. Name the Earth's seven major plates  creating a poem (1, 2, 3, 23, 22, 24)
2. Identify the location of these plates by creating a puzzle using the app puzzle maker (4, 22, 23, 24)

KeySkills:

In this topic you will draw upon the following key skills:

-managing myself (using digital technology to manage myself and my learning)

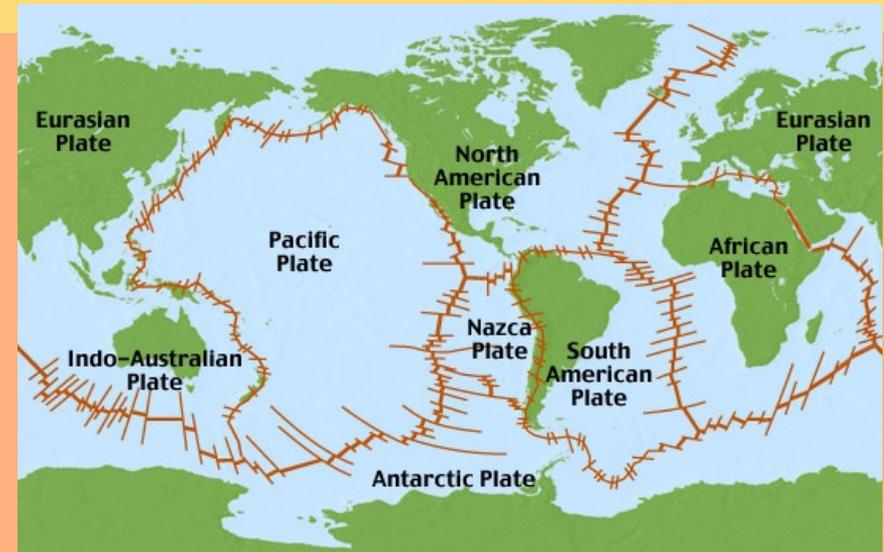
- Communicating (using language)

- being creative (implementing ideas and taking action, learning creatively, stimulating creativity using digital technology)



-managing information and thinking (using digital technology to access, manage and share content)

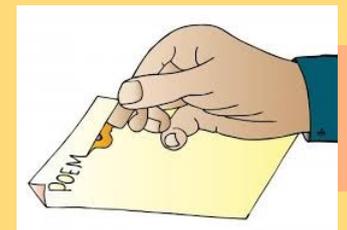
Useful Apps: Jigsaw Maker, Flowboard



Activities

The following is a poem that will help you to remember my seven major plates.

Poem to Remember the Plates

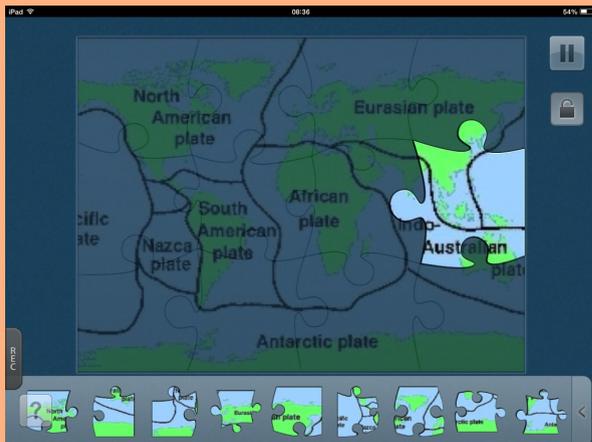
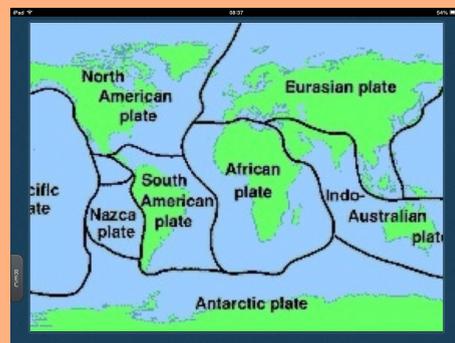
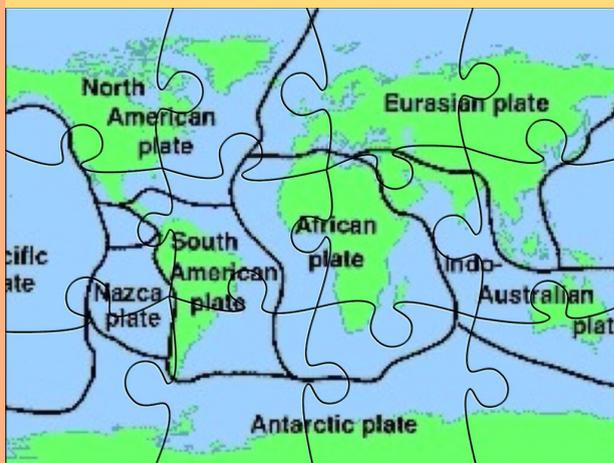


Let's get creative! Try to come up with your own rhyme to remember the names of these plates and present your rhyme to your class using flowboard.

Do you know my plates yet? Please have a go at creating your own jigsaw using the app, jigsaw maker. This is a fun way to revise my plates!

Also check out the pictures of an example of a jigsaw that has already been made!

Good Luck



Geo Fact:

The Mariana Trench is the deepest part of the ocean. This is where the Pacific plate is being pushed under the Mariana plate.

Topic: Fold Mountains

Now that you understand that my crust is broken up into different moving plates you may now go on to explore what my moving plates can create. As I said in my introduction, I really am a nice person and do create truly beautiful things. Fold mountains are formed when my plates move towards each other and collide. They are found along plate boundaries and therefore the next topic that this chapter will focus on is fold mountains.

Objectives:

You will:

1. Work in twos to explain how fold mountains are formed using a spider diagram (1, 2, 23)
2. Identify key points of information about fold mountains by answering questions after watching an Animoto video on fold mountains (1,2,24)



KeySkills:

-managing myself (using digital technology to manage myself and my learning)



- staying well (being responsible, safe and ethical in using digital technology)

- being creative (exploring options and alternatives, learning creatively, stimulating creativity using technology)

- managing information and thinking (using technology to access, manage and share content)

Useful Apps:

Animoto, Flowboard



Activities

Please check out the flowboard on fold mountains by clicking the link below.

[Flowboard on Fold Mountains](#)

Have a look at the video below for more information and images on fold mountains.



[Video on Fold Mountains](#)



Think Pair Share! Work with the person beside you to draw a spider diagram and together include the key points of information about fold mountains.

The following is an Animoto video explaining what fold mountains are and how they are formed.

[Animoto Video on Fold Mountains](#)



Now please test yourself by answering the questions below. You should use the information that you have received from the Animoto video to answer the questions correctly.

Questions:



Q1: What is built up into layers?

Q2: What are they compressed into?

Q3: What way are they compressed?



Let's get creative! Now use the app, Animoto, to create your own video on fold mountains. Remember be as creative as you can!



Topic: Earthquakes

As I have also said in my introduction, I can be moody and unpredictable and earthquakes definitely show this. However, earthquakes are not my fault. An earthquake is a sudden movement in my crust and is again caused by my moving plates. Earthquakes happen where my plates collide. Earthquakes can have serious consequences and therefore you need to understand what they are and how they happen. This topic will be focused on earthquakes.



You will:

1. Identify what an earthquake is by studying the relevant flowboard on earthquakes (2,24)
2. Determine how they happen by studying the relevant flowboard (2, 9)
3. Discover the consequences of Earthquakes by studying the relevant comic strip(2, 24)
4. Create a comic strip identifying the procedure that you should follow in the event of an earthquake (1,2,24,20)
5. Summarise the key points relating to 'San Andreas Fault' by answering key questions (2,9)

Key Skills:

In this topic you will use the following skills:

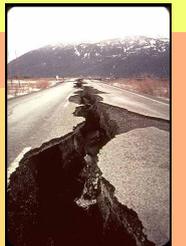
- managing myself (setting and achieving personal goals, being able to reflect on my own learning, using digital technology to manage myself and my learning)
- Staying Well (being responsible, safe and ethical in using digital technology)
- Communicating (using digital technology to communicate)
- Being Creative (learning creatively, stimulating creativity using digital technology)
- Working With Others (working with others through digital technology)
- Managing Information and Thinking (Reflecting on and evaluating my learning, Using digital technology to access, manage and share content)



Please click the link below and have a look at the flowboard explaining all about earthquakes.

Useful Apps:
Comic Maker

[Flowboard on Earthquakes](#)



How well do you know your earthquakes? Please answer the questions below and test yourself!



Test yourself. Give the questions below a go and if you get stuck have another look at the flowboard.

1. When do earthquakes happen?
2. What can earthquakes in the sea cause?
3. What is used to measure earthquakes?



Please take a look at the comic strip on the next page which shows you humans what to do in the case of an earthquake.



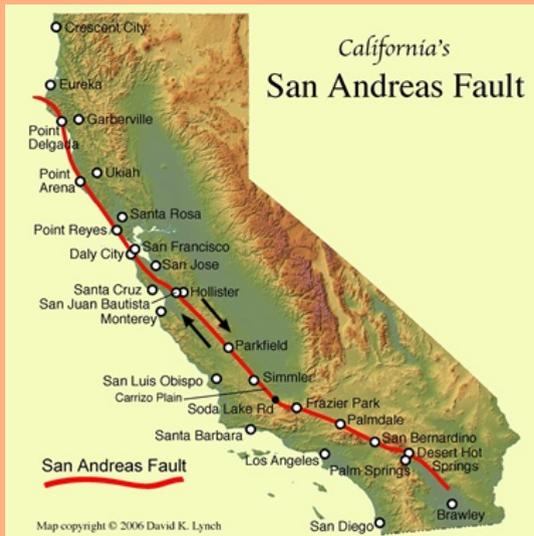
When you have checked out the above comic strip, using the Comic Maker app please try work with your friend to come up with your own comic strip.

Geo Fact:

The most powerful earthquake ever recorded occurred in Valdivia, Chili, in 1996 and it had a magnitude of 9.5.

Please check out the flowboard below which talks about earthquakes in California and San Andreas Fault. Be sure to watch the video at the end of the flowboard!

[Flowboard on Earthquakes in California and San Andreas Fault](#)



Geo Fact:

Andrew Lawson named a lake 'Laguna De San Andreas'. Then they used this name to come up with San Andreas Fault.



How well do you know about San Andreas Fault? Please test yourself by answering the questions below

[Questions on San Andreas Fault](#)



Topic: Volcanic Activity



You now know that earthquakes are one way humans are able to see my unpredictable nature. Therefore I will now go on to speak about my fiery temper. Currents of molten rock beneath my crust can pull my restless plates together and apart which is how volcanic cones, the Mid-Atlantic ridge and islands are created. This topic will discuss these landforms further. This topic is dived into a number of subheadings in order to be as clear as possible.

Key Skills:

The following is a list of key skills that you will use in this topic:

- managing my own learning (getting personal goals, being able to reflect on my own learning, using digital technology to manage myself and my learning, learning how to direct my own learning)
- Staying Well (being responsible, safe and ethical in using digital technology)



Communicating (using digital technology to communicate, listening; expressing oneself)

- Being Creative (learning creatively, stimulating creativity using digital technology, implementing ideas and taking action)

- Working With Others (working with others through digital technology, co-operating)

- Managing Information and Thinking (reflecting on and evaluating my learning, using digital technology to access, manage and share content)



Volcanic Activity

After this topic you will:

1. determine what makes plates move apart by watching the relevant Animoto video (2,24,9)

2. summarise the different things that are created from volcanic activity by completing the quiz (2,24)

Geo Fact:
More than 80% of the Earth's surface is of volcanic origin.

The following is a flowboard that explains volcanic activity. Check it out!

Useful Apps: Flowboard, Animoto

Flowboard of Volcanic Activity

The following is a short video showing me at most explosive hour!



Volcanic Activity Video



Quiz Time!

1. Name the mid ocean ridge located between the American and Eurasian plates.

2. What is the hot liquid rock beneath the earth's crust called?

4. Explain briefly how a volcanic mountain is formed

3. What is this liquid called when it reaches the surface?

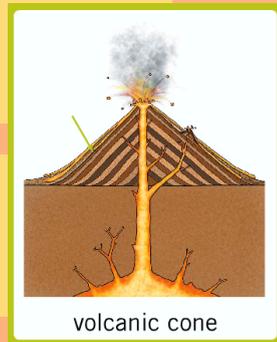
Formation of a Volcanic Cone

After this topic you will:

1. Determine how a volcanic cone is created by studying the relevant flowboard (2,9,24)
2. Label a volcanic cone by creating your own volcanic cone(1,2,4,9)



Please study the flowboard below and pay close attention to the different features of a volcanic cone!



[The Formation of a Volcanic Cone](#)

Let's get creative!! Use your artistic skills for this next activity. Please have a go at the activity below to test yourself on volcanic cones!

[Activity to Revise Volcanic Cones](#)



Mt. Vesuvius



After this topic you will:

1. identify an example of a volcano by studying the relevant flowboard (2,9,24)
2. explain key points of information on the volcano by completing the true or false section(2,24)



Please check out the flowboard below on the fascinating Mt. Vesuvius!

[Flowboard on Mt. Vesuvius](#)



How well do you know about Mt. Vesuvius? Please try answer the questions below and find out!

1. When did Mt. Vesuvius last erupt?
2. What plates separated to create Mt. Vesuvius?
3. How many people live near this volcano?

Now give the true or false activity below a go!

[True or False](#)

The Mid Atlantic Ridge

After this topic you will:

1. Discover what the Mid Atlantic Ridge is by studying a flowboard on this topic (2,24)

2. Determine between which plates the Mid Atlantic Ridge is located by observing a flowboard(2,24)



2. Demonstrate using a shoe box, how the mid Atlantic Ridge was created(2,9,21)

Have a look at the flowboard below and learn about the Mid Atlantic Ridge!

[Flowboard on the Mid Atlantic Ridge](#)

Let's get creative! Please have a look at the activity on the next page and give it a go yourself.

Good Luck!



[A creative way to revise the Mid Atlantic Ridge](#)

When you have created your model of the Mid Atlantic Ridge please show it off by presenting it to your class mates and explaining how it works!



Geo Fact:

The Mid Atlantic Ridge was discovered during expedition of the HMS challenger in 1872.

Iceland - (the Land of Ice and Fire)

After this topic you will:

1. Identify how Iceland was created by observing a flowboard (2,24)
2. Explain the key points of information regarding Iceland by filling in the fill in the blanks section (2,16,24)



Geo Fact:

Iceland is home to more than 20 active volcanoes!

Do you think Iceland was just a normal island? Well, if so, you are far from the truth! Check out the flowboard below on Iceland and find out what I mean!



[Iceland- The Land of Ice and Fire](#)

Using the words below, please complete the fill in the blanks on the next page!
Missing Words List

- | | |
|-------------|--------------------------------------|
| 1. Fire. | 2. Reykjavik |
| 3. 118,000. | 4. króna |
| 5. 320,000. | 6. blue |
| 7. red. | 8. white (6,7,8 can go in any order) |
| 9. 2010. | 10. 100m |
| 11. 1,666m. | 12. February |
| 13. 1491m. | 14. 874AD |
| 15. gateway | |

Iceland Activity



Fill in the blanks!

Iceland can also be known as 'The Land Of Ice And _____'. Iceland's capital city is called _____ and has a population of just over _____. Iceland is well known for beautiful landscapes and breathe taking scenery. The currency of Iceland is Icelandic _____. The total population is just over _____. The three colours of it's flag are _____, _____ and _____.

The massive eruption of Eyjafjallajökull was in April _____. The volcano has an approximate area of _____ squared and an elevation of _____.

The last eruption of Hekla, another Icelandic volcano, was the 28th of _____ 2000, making it one of Iceland's most active volcanoes. It has a summit of _____. This volcano has had more than 20 eruptions since _____. The people during the Middle Ages called this volcano 'The _____ to Hell'.

The Pacific Ring of Fire



After this topic you will:

1. Determine what is meant by the 'Pacific Ring of Fire' by watching the Animoto video (2,24)
2. Highlight how many of the world's active volcanoes are located there by creating your own Animoto video (2,4,20,24)
3. Summarise the key points about the 'Pacific Ring of Fire' by completing the 'finish the sentences' section (2,24)
4. Recap on the topic by answering the questions at the end of this topic (2,24)



What exactly is the 'Pacific Ring of Fire'? Find out and watch the Animoto video below!



[Animoto Video on the Pacific Ring of Fire](#)



Now that you have learned about the 'Pacific Ring of Fire' please try and complete the activity below!



The Pacific Ring Of Fire - Activity

Finish the Sentences!

1. The Pacific Ring of Fire is an area with _____
2. The area of the Pacific Ring of Fire is about _____ kilometres squared.
3. The Pacific Ring of Fire is in the shape of a _____.



Do you think you know your stuff? Well try and answer the questions below. If you can't, go back and watch the video again!



Questions!



1. How many volcanoes are on the Pacific Ring of Fire?
2. What percent of the world's active volcanoes are on this list?
3. What percent of the world's largest earthquakes occur on The Ring?
4. What percent of the world's total number of earthquakes occur here?



Volcanic Activity

M Q C O R B A J Q X H F R I M R M U L W O B N M H U V P A N
T G A V O L C A N O E B O W O I L W J K U P A B C Y U X D C
K J J N Y O V M I R U W C D U B D A S J H X C N D S V H X P
Q E L T N A M J T C V X K W N Y S A V S I J I P H P H Z V G
T T J B A B K I N G U B X C T H E R T A D C R O X B P V L Y
Q M H E Z A L H H J L L U P A P T M I L V V E G A U A V Y M
V U H B R E A L E W X K P W I Q A T N L A U M L O M U L V F
D C C A D D E H E P F P H U N F L V Y R J N A G A G D A H M
S S B T K O D Y U S T Y O J S H P C Z Q D X T X B N O Y X Z
F C Q P H A K Y S V E D S B R C N W V G O M G I S J D M G O
M S A K Y T W E P Y B K X M H Z M A J X J T M C D F Q Q K
O N L O F E U B Q Q L F F A E C E P X B C R J U B R Q A G M
M V L O J W J S I A F T Z D S N Q C C A T O S E F L I O Q L
H L A L C W D Y K A X H C H J U Y L M J X T E W T K E D J O
C S C D O Y S O R V T I Z V S F D N B J R V Z O E A L R G Y
V F E E X N M R T R L P Z Z J A N J E N D Y S I P K F K T E
N O I T P U R E A S Y I Q J Q A X J C T U F G J O V A H G M
E S Q R T U P F E T H G U D Y I X G Z C Z L T Q X H X B H I L
S U G M D M D X Q W O G A S O D X H K V H O E C I O E R V N
C T V Y S I A V U Y Z V A F O P Z E U T B P M W T T R H S V
F K N C M O O C H C U R J B P Y I B D Y N K K H E J Y Q O Q
R E W E I Y R U R R U N F N C R V S M V V X R Z I S V L G K
U M S H R V S N P E X T P A A S D G A R P E M T Z D C I K X
G R G K Y R I J B G W N J D R S E X I H E T L H G A T S B X
M E S L T V U G I Q V U M D M Q X G M X J G N A N S O L U P
Y W A T B D T C H Q H R J C B J O W U H W D V I Y A O A Z I
J J L R M R O J O D G E Q S O R H R G Y M C C A P V J N Q X
C R U S T V X M F R L I U X D I Q U I K U P H N S H G D R Z
H X W I V T F U D C R D E B S P O Y G U R S B B X A G S S Q
A Y W U X J K D H D A R U R Y F L E L I U I S M N V J J O U

Let's get creative! Use your artistic skills to try and draw the above map showing the Pacific Ring of Fire. Be sure not to forget to label your continents.

Good Luck

When you have done that please recap on the topic of volcanic activity by completing the wordsearch on the following page.

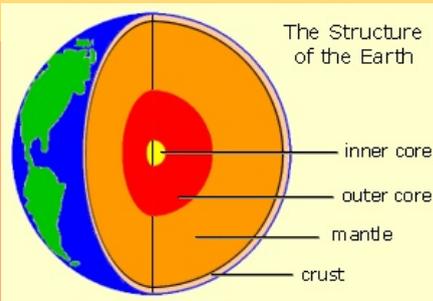
AMERICAN
ASH
CRUST
CURRENTS
EARTH
ERUPTION
EURASIAN
FERTILE
ICELAND
ISLANDS

LAVA
MANTLE
MIDATLANTICRIDGE
MOLTEN
MOUNTAINS
PLATES
PULL
PUSH
ROCK
VOLCANIC
VOLCANO

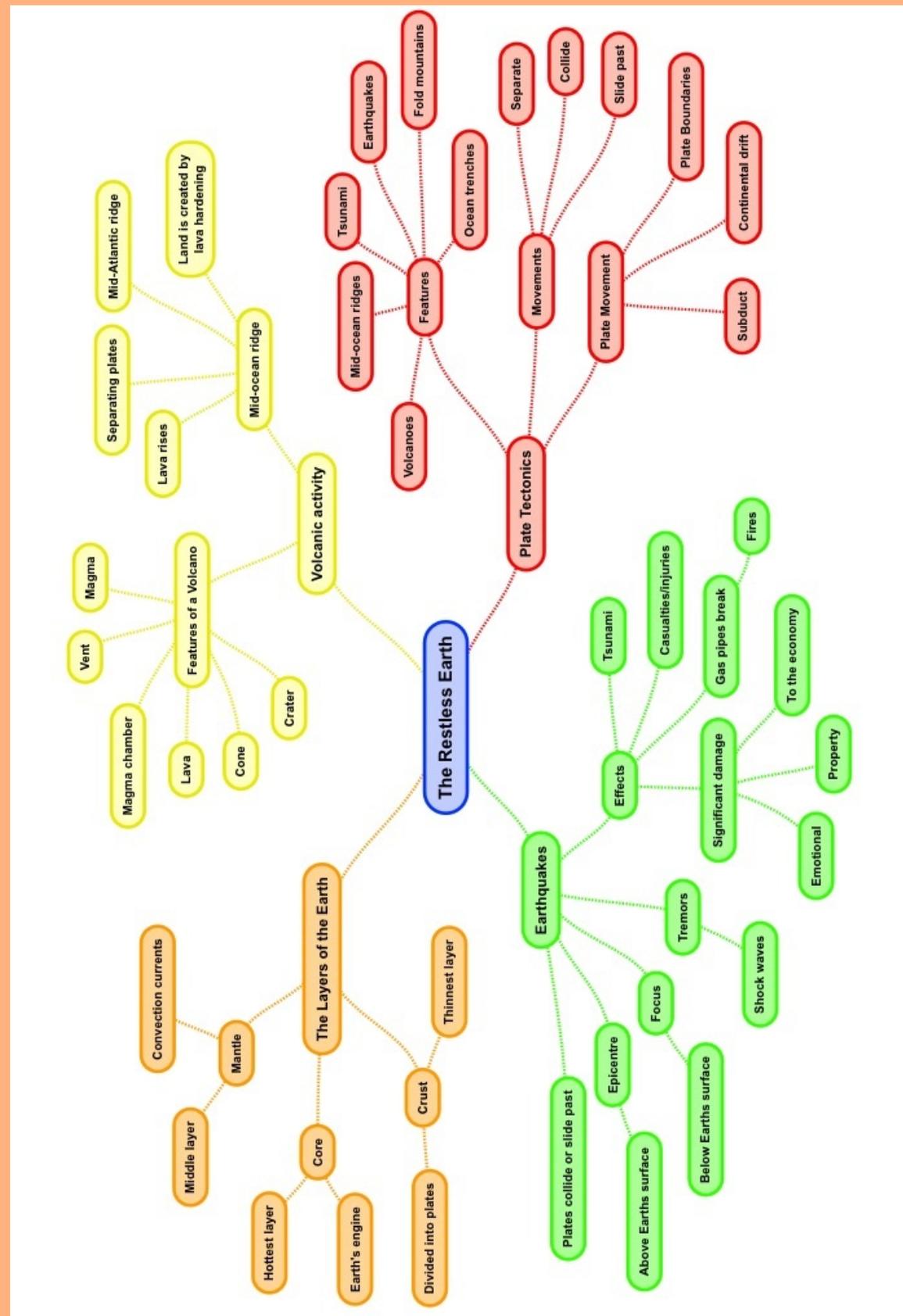
Conclusion

I hope you have learned a lot and had a lot of fun getting to know me more throughout this chapter!

Please check out the pictures below and try to write a few sentences on each explaining what you now know about the things in these pictures!



Check out the mind map on the next page! This is a mind map which shows all of the key words from this chapter. Now try to come up with your own mind map using the app, mind map maker! Please include any new words that you have come across throughout this chapter!



Below is a wordsearch with key words from this entire chapter! Try and find the words!



The Restless Earth

C D C V W G X I T V A N B S X N E H H S
 W G T O Q K M P U S K V C V E O P Q L F
 X K G P L A I S U Y U I R T U C I G H Y
 C I D B N L B Y B E N R O F E H C N Y G
 E W Z U S N I P L O U I C G M W E I R S
 R A S E B H J D T O U B Q J V N N D Q L
 O T R M I D O C E A N R I D G E T L N I
 V N Y T T R E M O R S C O R E L R O R D
 D E A L H T E T A R A P E S A F E F C I
 D R N C E Q F K W Z X N U Y E O G T W N
 H R V T L S U R B F F C E R W O Z Y N G
 U I A F Y O X A X C O R E L T N A M S M
 T L A X G O V J K F S S V H Y E A W W U
 P T T K W W L H P E T B G U R C M M K S
 S R A L G K C S A H S A O U A O G B X O
 F E Q H S X V V A K I R P M D N A W U B
 V X X K A T C B T Z Q T Z N C E M B K J
 M N S Q H I U H E U I N D Q G N X D P H
 W C N E D J R I H O T N A T B U Y A D Y
 L U H E X J Y G N Q J N C W T M D Y X Y



COLLIDE
 CRUST
 ERUPTION
 LAYERS
 MIDOCEANRIDGE
 SLIDING
 VENT

CONE
 EARTHQUAKES
 FOCUS
 MAGMA
 PLATETECTONICS
 TREMORS
 VOLCANO

CORE
 EPICENTRE
 FOLDING
 MANTLE
 SEPARATE
 TSUNAMI

Well, I really could talk about myself forever but I will leave it at that! I hope that this chapter has helped you to get to know me better and understand the kind of guy I really am. Throughout this chapter I have showed you that I can be quite moody and unpredictable at times. However, more importantly, I have shown you that I do not mean to be this way. I hope this chapter has proved to you that my unpredictability and restless nature can be blamed on my ever moving plates.



Hopefully, this chapter has also shown you my kind, creative side and has proved the fact that I truly am a nice person beneath it all. I am so proud of who I am and all I have created.

Let me finish by saying thank you for giving me the opportunity to explain myself and I hope you have had fun!

See you soon

When you have done that, try to write one sentence explaining each of the key words!

