

TE PANE O MATAOHO – MANGERE MOUNTAIN



Rock Identification



Igneous rocks are tough. This type of rock is made from the lava of a volcano. Deep inside the earth, rocks are melted and become magma. When magma comes out of the volcano, it is called lava. If the lava cools quickly, it will form a rock with tiny holes and gas bubbles in it.

Can you think of a place where this type of rock can be found?



Sedimentary rocks are hardened sediment with sandy or clay-like layers. May also consist of layers of shells, pebbles and other materials. Slowly, the sediment gathers up layers. Over time it turns into rock! Fossils are usually found in this type of rock.

Can you think of a place where this type of rock can be found?



Metamorphic rocks are tough, with straight or curved layers (foliation) of light and dark minerals; they come in various colours. They are often glittery with mica. This type of rock is made beneath the surface of the earth. It has ribbon-like layers, caused by heat.

Can you think of a place where this type of rock can be found?

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WORD SEARCH FOR OUR VOLCANO

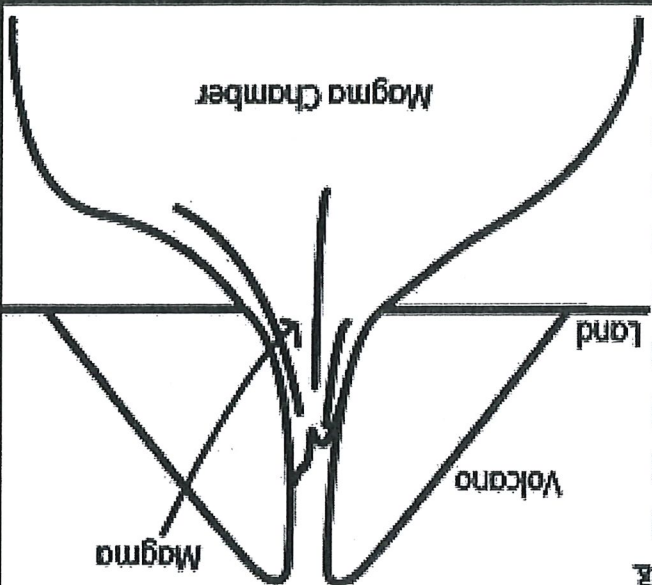


GASES	T F G D G D B R E A D C R U S T S F F	TUFF RING
FIREFOUNTAINING	U F J Q H D J L K D E R C H S G I S E	EXPLOSION
LAVA FLOW	F S U E A Q Z M A G M A H F W R H D X	ASH
MAGMA	F A K S S W O O F H J T K S H D H J T	RIM
ERUPTION	R H L F N L D D I G N E O U S G J L I	PAHOEHOE
CRATER	I B Q T T M G E R R T R S L J Q W E N	DUST
CONES	N Z M E S D F G E R U P T I O N E Y C	ACTIVE
VENTS	G X N L E T Y J F X G D W W H F S M T	RIBBON
THOLOID	H V N P G H N J O K P L B A S A L T M	LENSE
LIQUID ROCK	Y H N O Q O W E U R T L Y U I O P L K	BASALT
SUMMIT	J E J B B Z A S N D F C O N E S G H J	SCORIA
DORMANT	L S F B X C V B T N M L K S G A N E K	PRESSURE
FIELD	I P I F D L A V A F L O W I I L L A W	IGNEOUS
EXTINCT	Y R E C J I A T I V C I L L A O I C A	MOLTEN
BREACH	J E U H I Q E R N M T D O R M A N T I	BREAD CRUST
CHAMBER	L S O A P U H U I L E I L A N I W I M	SPINDLE
LAVABOMB	L S L M M I T D N M R I C H A R D V A	COWPAT
	A U K B L D J I G A S E S P B E N E R	
	V R P E H R L T E E P I P E S K P I I	
	A E A R D O P Z L I Q U I D R O C K E	
	B D H U S C O R I A E Y N Q W R O D G	
	O R H K F K Y T O M V I D U F Y W D V	
	M F E L D Y E J T T H O L O I D P R E	
	B G D A S H M A R I S A E O E L A G N	
	A F J T C D S I M O N F H Y L K T S T	
	A L K O K H G P A U L I N E D U J G S	
	P A H O E H O E C B O B B I J O M A R	



VOLCANO MINI BOOK

Decorate with Crayola® Colored Pencils. Cut out the book and fold along the dotted lines. Staple shut.

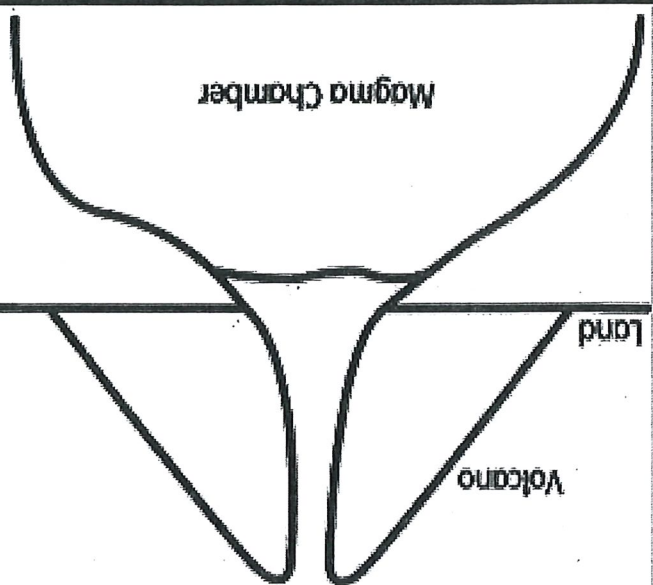


Magma Chamber

Land

Volcano

Magma



Magma Chamber

Land

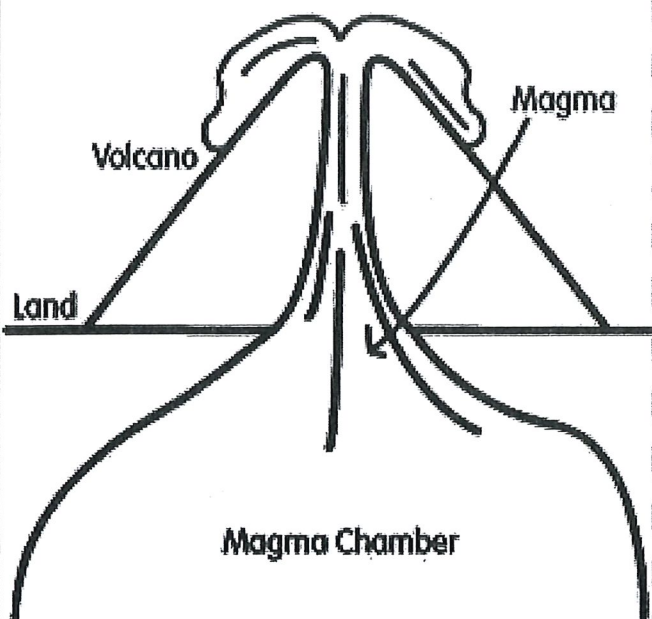
Volcano

Fold Second

A volcano is a large mountain with an opening at the top. Underneath the volcano the ground is a chamber where magma is held. Magma is hot liquid from the earth's center. When the magma is under a lot of pressure it rises up through the volcano.

Fold First

The volcano erupts when the magma spills out of the volcano. The magma then becomes lava and hardens, which builds the volcano.



Volcano

Land

Magma Chamber

Magma

HOW A VOLCANO ERUPTS

Mountains of ICE and FIRE

Get set to explore one of South America's most exciting sights – Ecuador's Avenue Of The Volcanoes...

Huge mountains dominate the landscape. As you approach on the rocky road, they loom ever larger. A sudden rumble stops you in your tracks. You look to the peaks and realise these aren't just ordinary mountains. You're travelling along a 400km valley flowing from the southern to the northern Andes mountain range – known as Ecuador's Avenue Of The Volcanoes!

Top of the peaks

Cotopaxi – the world's highest volcano at 5,897m tall – is just one of the many mega-high peaks in the Avenue Of The Volcanoes.

"Its name means smooth neck of the moon, perhaps because the icy glacier at the very top makes it look like it's holding up the moon!" says volcano expert, Thor Thordarson. Down the Avenue is the Chimborazo volcano, which in the Indian language of the local Quechua people means 'mountain of snow'. And a bit further down is Quilotoa, which at first may look like any volcano, but at the summit you'll find a huge, 250m-deep lake in its crater! "This emerald-green lake may look pretty, but you wouldn't want to swim in it, as the water is very c-c-cold!" says Thor.



Volcano ace, Thor!



Where in the world... Ecuador is a South American country that borders with Colombia, Peru and the Pacific Ocean.

Where there's smoke, there's Ecuador's Mama Tungurahua!



Cotopaxi looks like the moon!

Chimborazo is Ecuador's highest peak!

Quilotoa's crater is home to a huge lake



Fiery family

The Ecuadorians tell fantastic tales about their magnificent volcanoes, and one of the legends involves a family of volcanoes, complete with mum, dad, a child and a grandparent...

According to folklore, two mountains – El Altar, which means 'Lord Of All The Mountains', and Canhuizarzo, meaning 'Man Of Wind And Ice' – battled with Taita ('Father') Cotopaxi, who was protecting another volcano, Mama ('Mother') Tungurahua. Taita exploded – literally – with anger and destroyed El Altar and Canhuizarzo, both of which now haven't erupted for centuries! "Mama Tungurahua and Taita Cotopaxi's 'family' includes the two highest peaks on the Pichincha volcano – Guagua, meaning 'Child', and Rucu, 'Old Person', says Clive. "Like most families, they have had the odd eruption, but hopefully now, they'll live happily ever after!"



Who's rumbling now?

Mama Tungurahua is also known as 'Throat Of Fire' – and has certainly lived up to this name! In the past 12 years, Mama has had four major volcanic eruptions, starting in 1999 when 25,000 people had to be evacuated from the nearby town of Baños and the surrounding area.

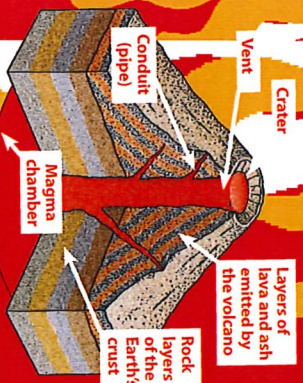
"Scientists are keeping a close eye on all the volcanoes in the Avenue, to make sure that if any of them do erupt, people are evacuated in plenty of time," says Thor. "In fact, they were put to the test as recently as December, when the volcano had a minor eruption. This Mama certainly has a habit of blowing her top!"



NG Kids travelled to Ecuador with Equator Trekking, which provides a wide range of adventure holidays across Ecuador. For more information, go to www.equator trekking.com. Our trip included a stay at the Hacienda La Algueta, which offers horse riding trips in the Andes. Find out more at haciendalaalgueta.com

WHAT IS A VOLCANO?

A volcano opens downward, below the Earth's crust, to a chamber of magma (molten rock). When pressure below builds up, the magma erupts through the crater, either as lava or a mixture of gas and pyroclasts (broken rock). Wow!



DID YOU KNOW...? The biggest volcano known to man is out of this world! Olympus Mons on the planet Mars is an incredible 24km high. Cosmic!

Inside a Volcano

