

# WHAT'S GOING ON?



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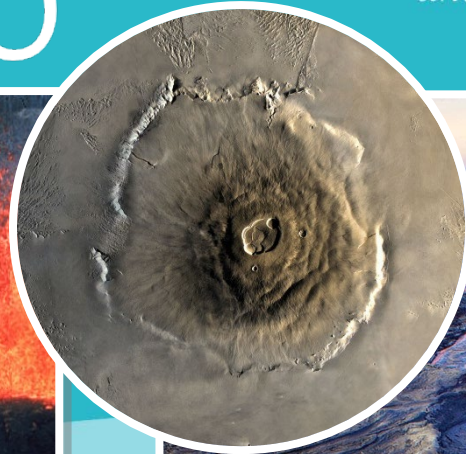


# VOLCANOES



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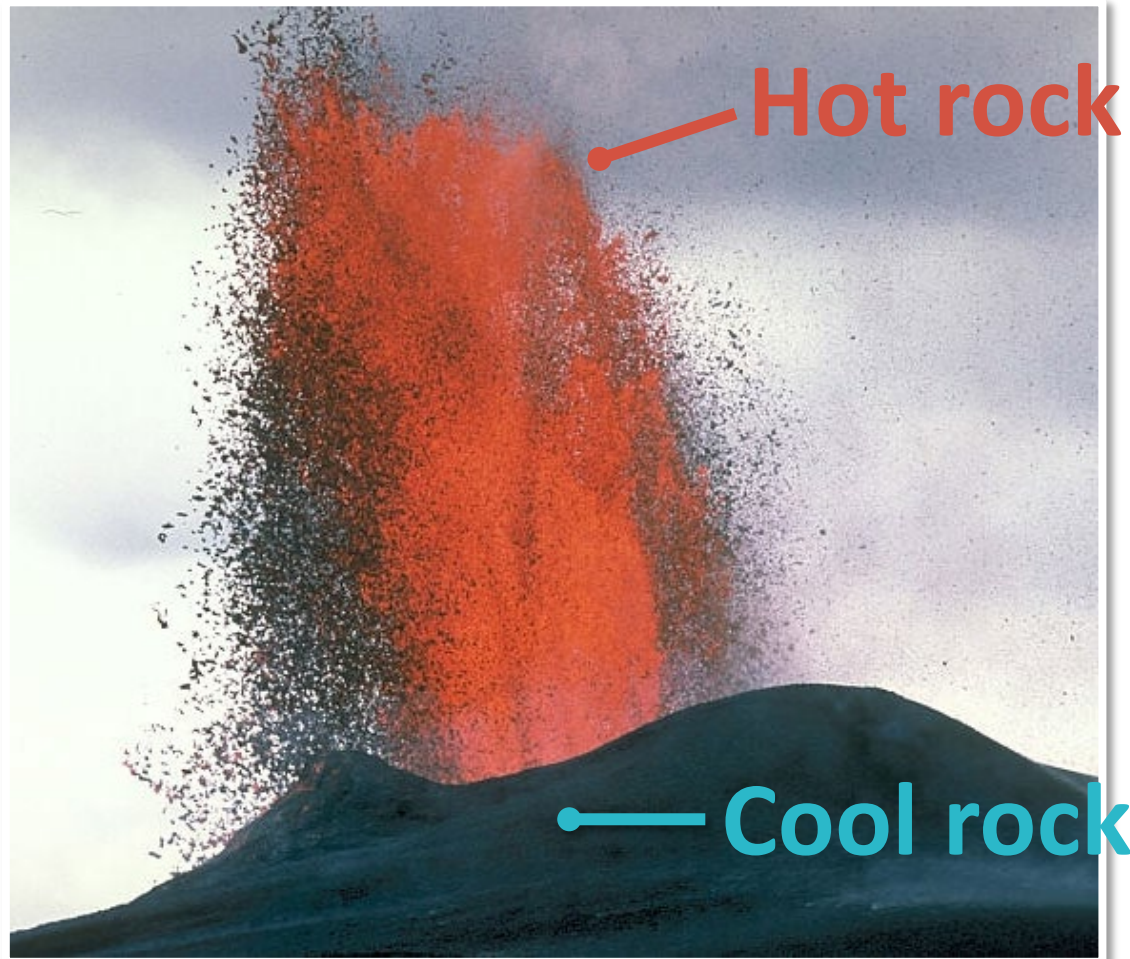


# WHAT IS A VOLCANO?



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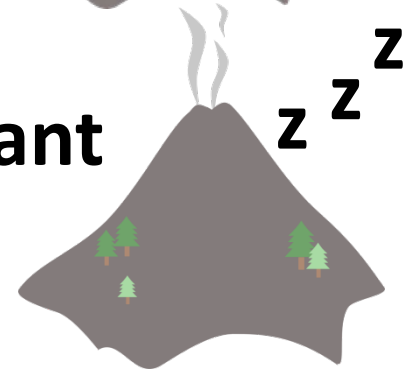
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**Active**



**Dormant**



**Extinct**

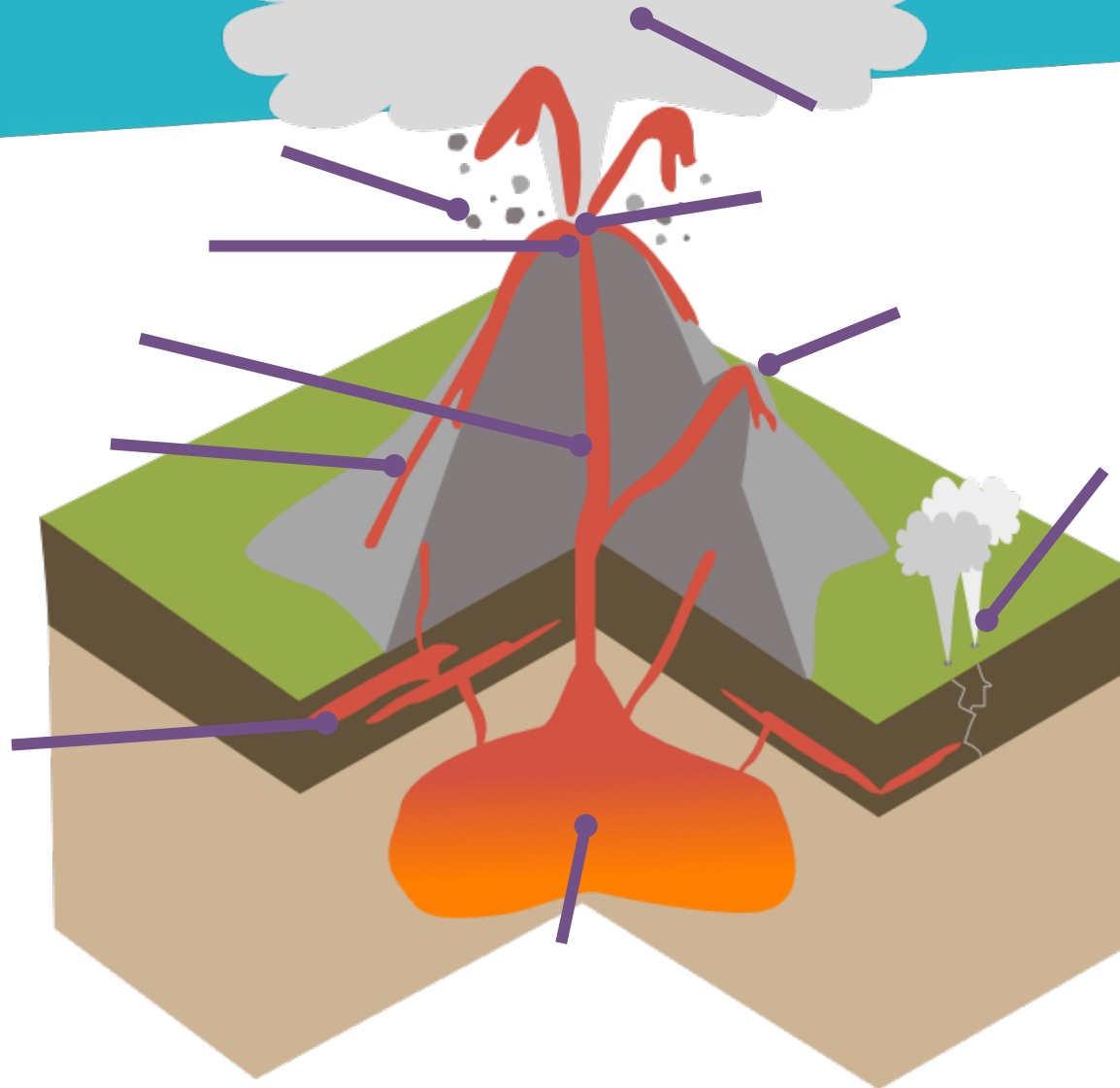


# VOLCANO STRUCTURE



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Ash, steam & gas

Lava

Magma chamber

Crater

Geysers

Secondary vent

Sills

Volcanic bombs

Conduit

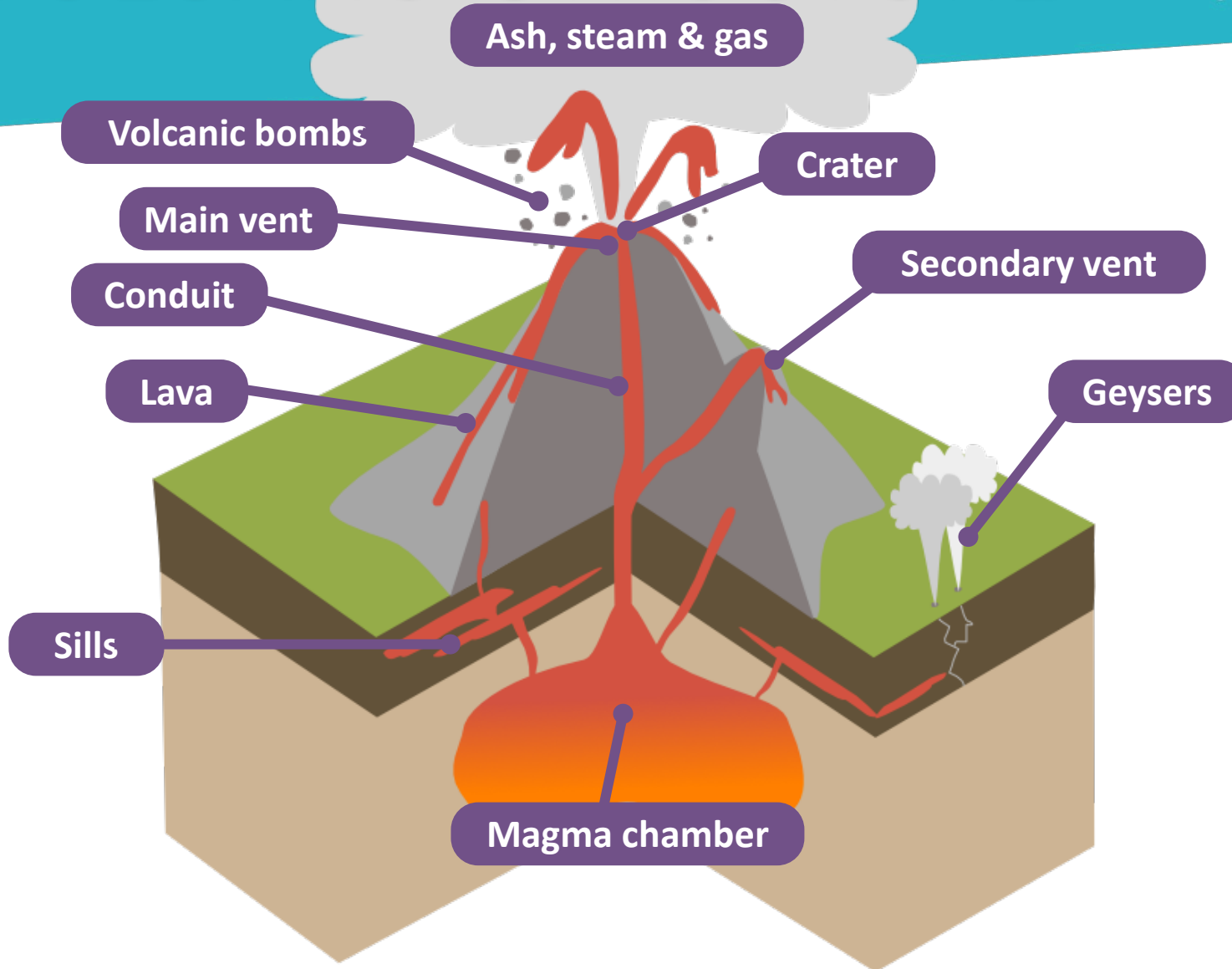
Main vent

# VOLCANO STRUCTURE



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# DIFFERENT TYPES OF ERUPTION



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**Effusive**



**Lava fountain,**



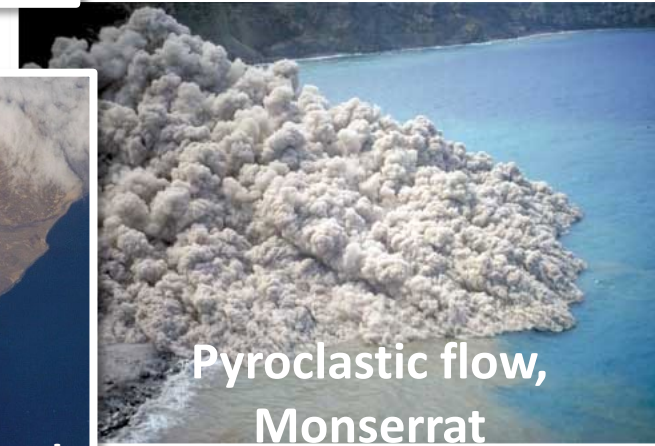
**Lava lake, Nyiragongo**



**Explosive**



**Ash cloud, Aleutian Islands**



**Pyroclastic flow,  
Montserrat**

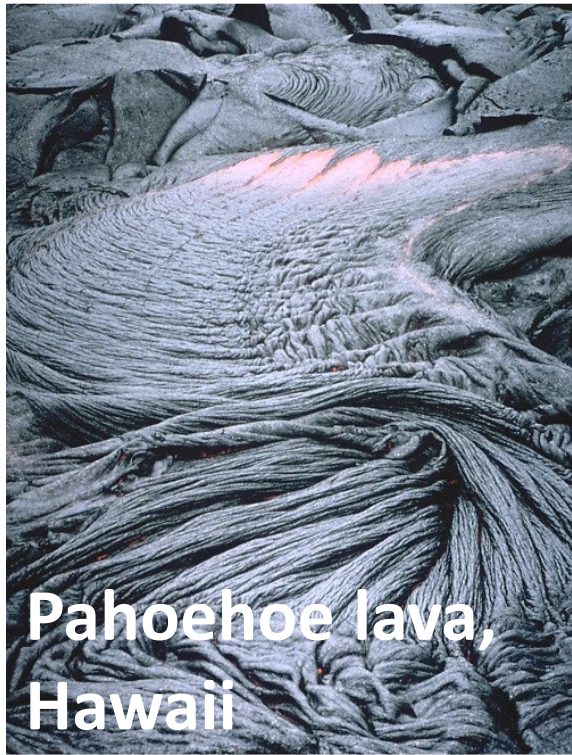


# TYPES OF LAVA



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**Pahoehoe lava,  
Hawaii**



**Pahoehoe  
lava, Hawaii**



**'A'a lava, Guatemala**

Photo: Librex/CC-BY-2.0



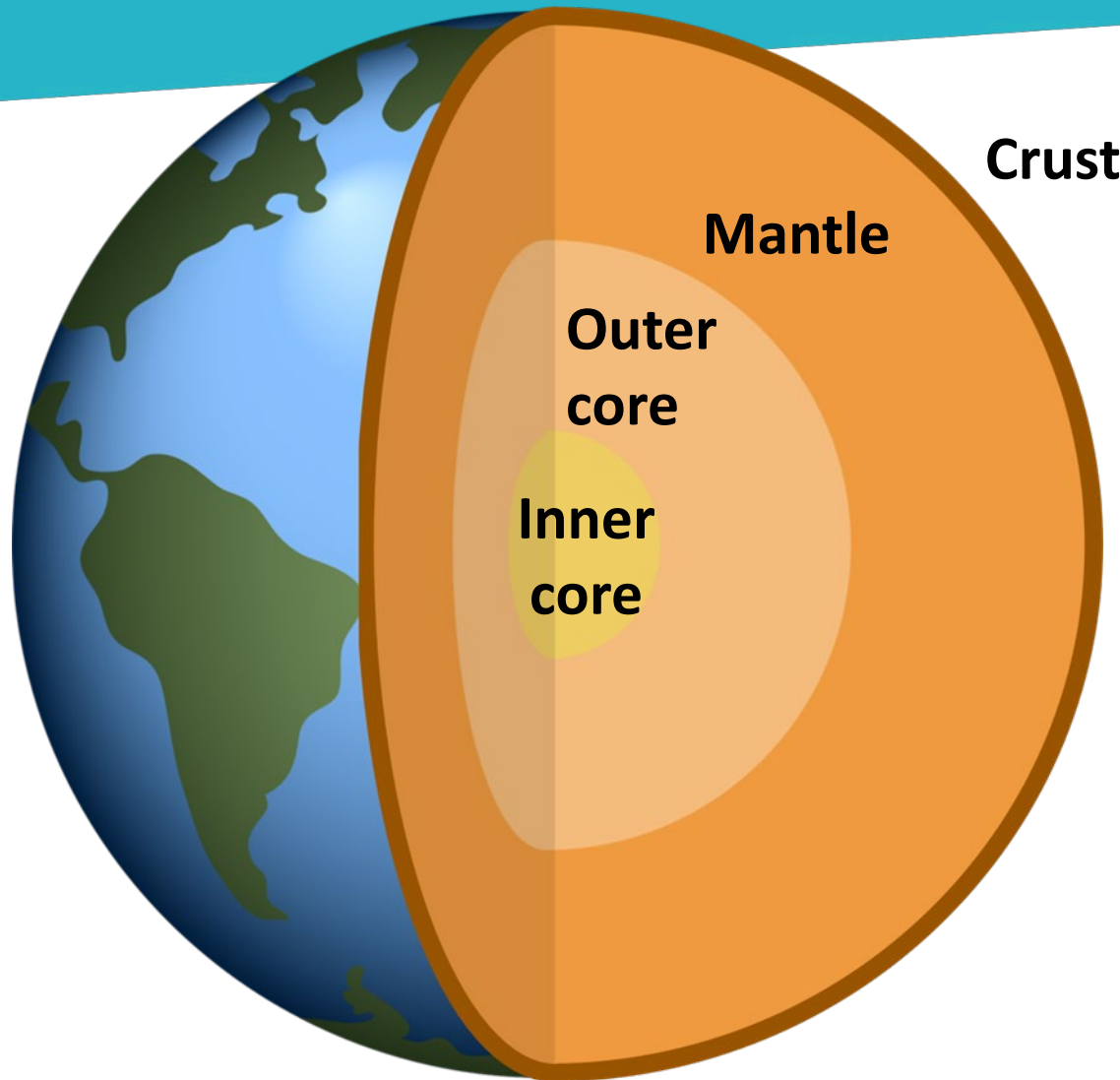
**'A'a lava, Hawaii**

# STRUCTURE OF THE EARTH



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# WHERE DO VOLCANOES FORM?



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Eurasian  
plate

Caribbean plate

Nazca plate

Antarctic plate

Indian plate

Pacific plate

North American  
plate

South American  
plate

African plate

Australian  
plate

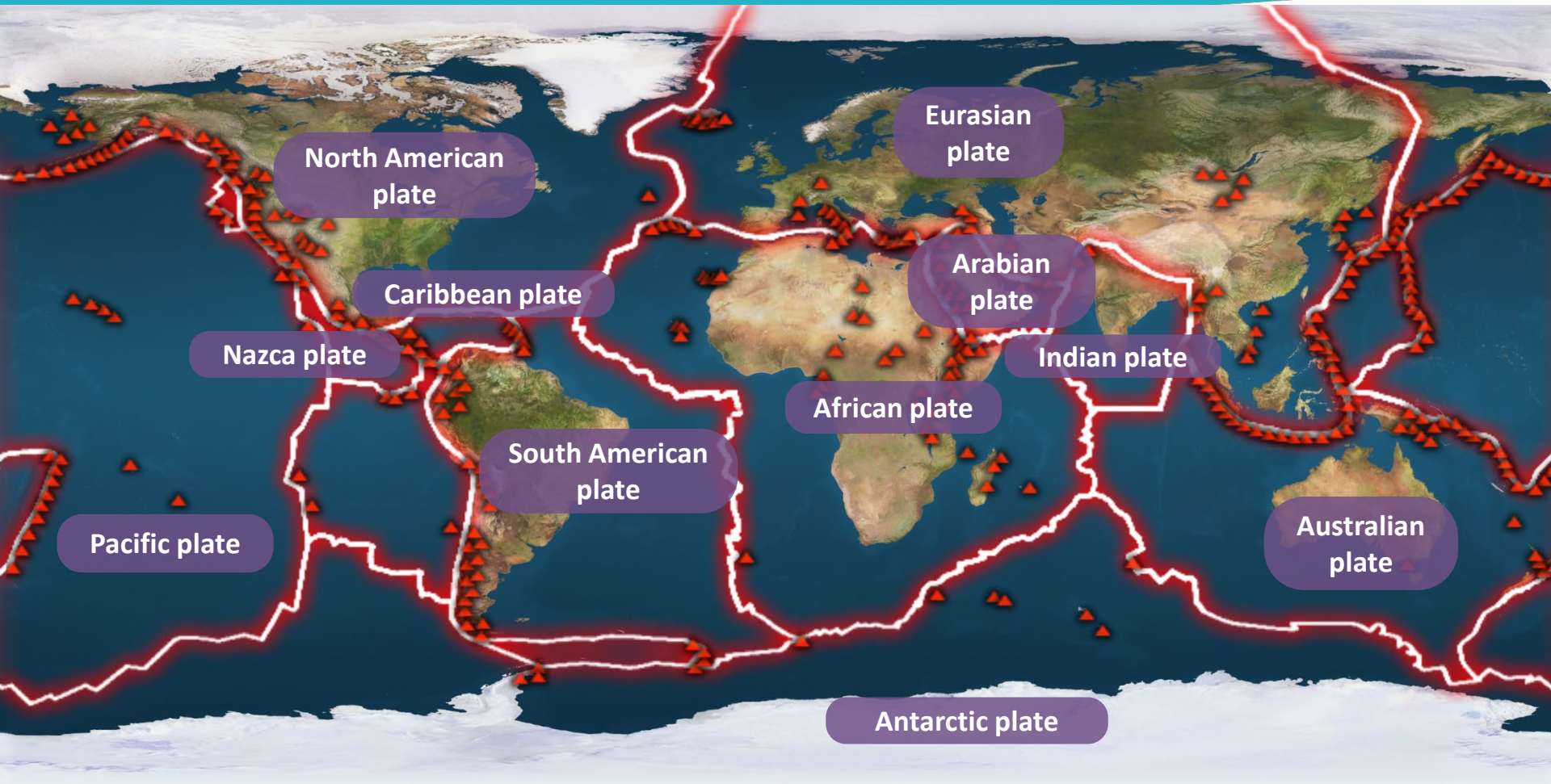
Arabian  
plate

# WHERE DO VOLCANOES FORM?



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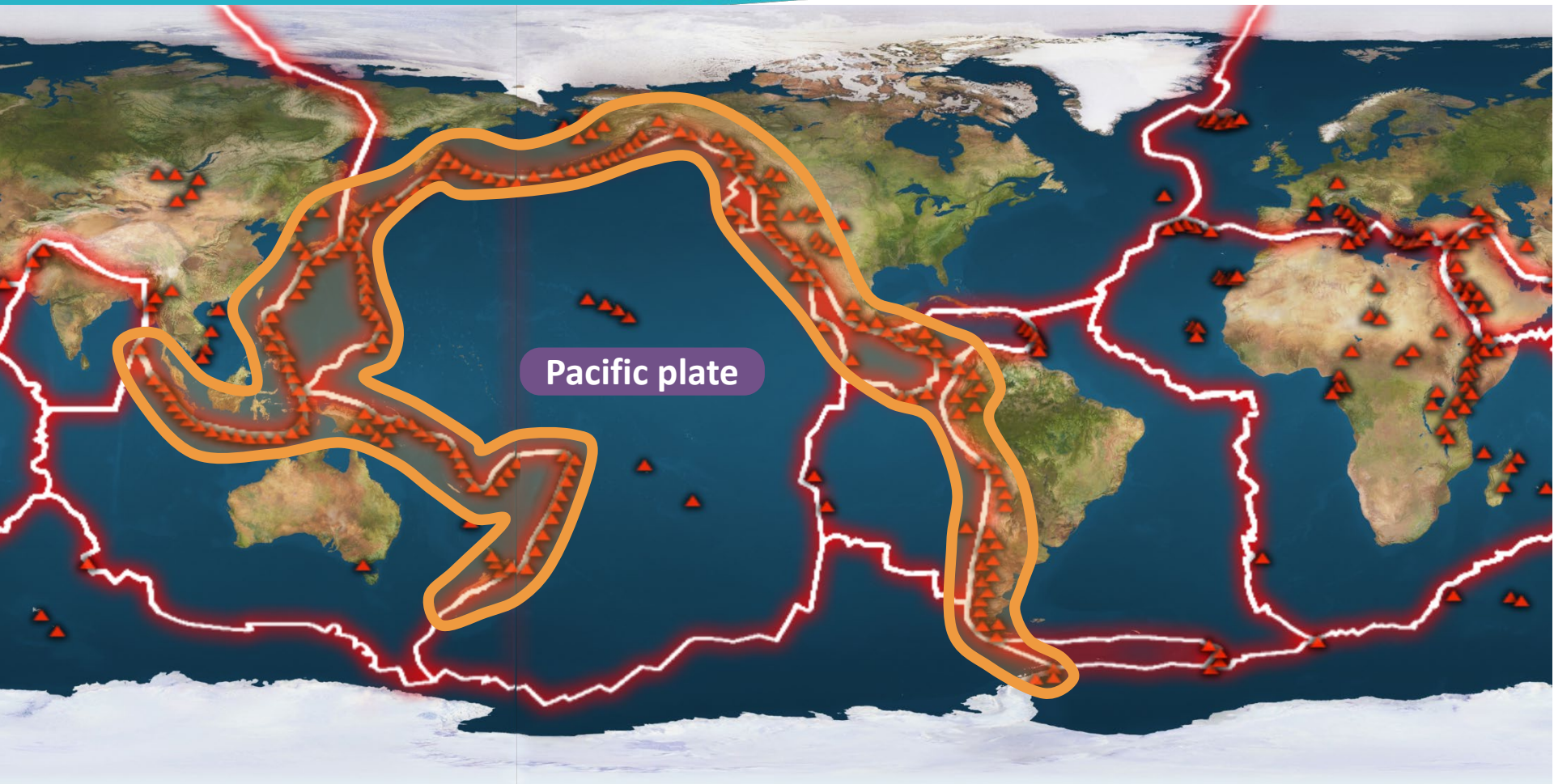


# PACIFIC RING OF FIRE



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# HOW DO VOLCANOES FORM? CONSTRUCTIVE BOUNDARY



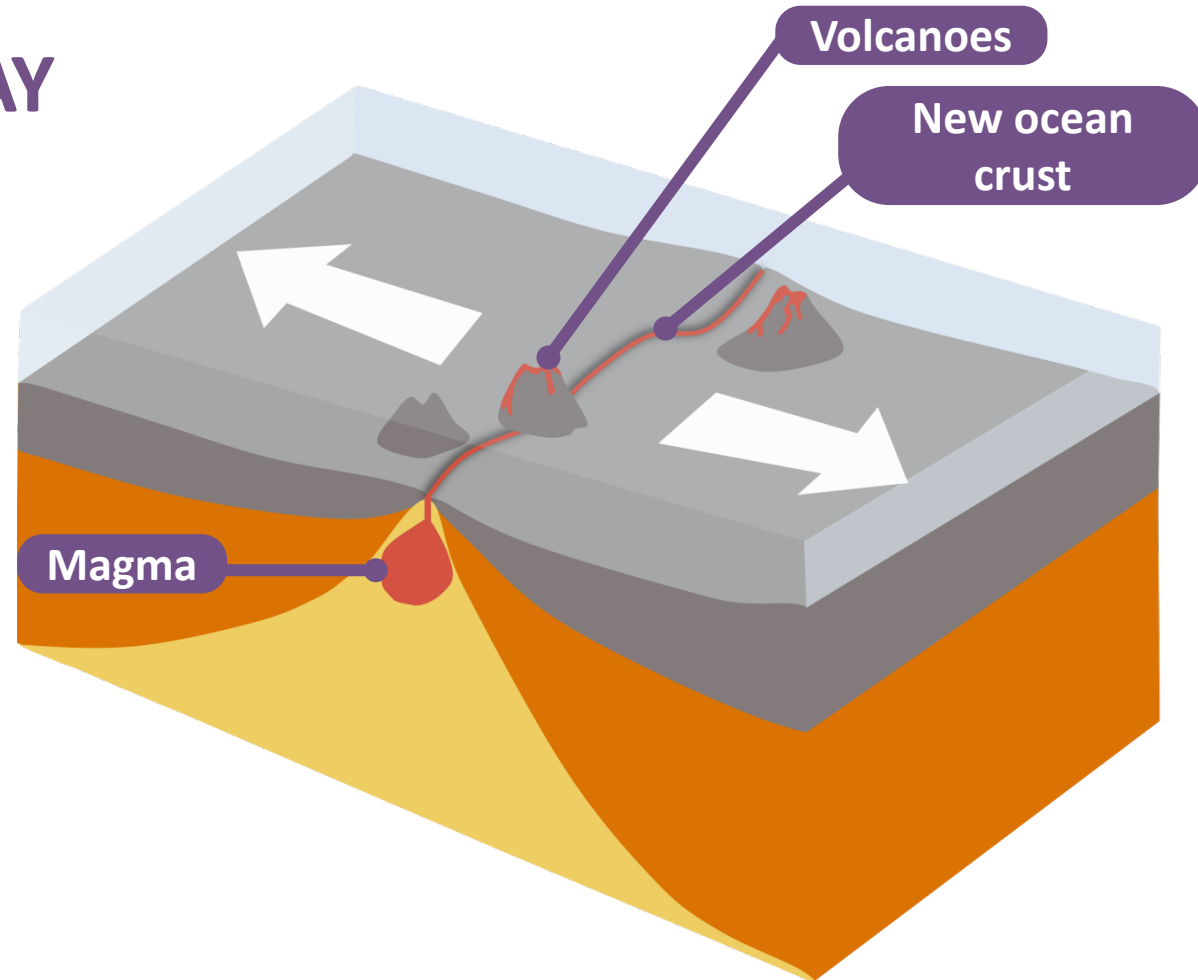
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**Plates moving AWAY  
from each other**



Iceland





# HOW DO VOLCANOES FORM?

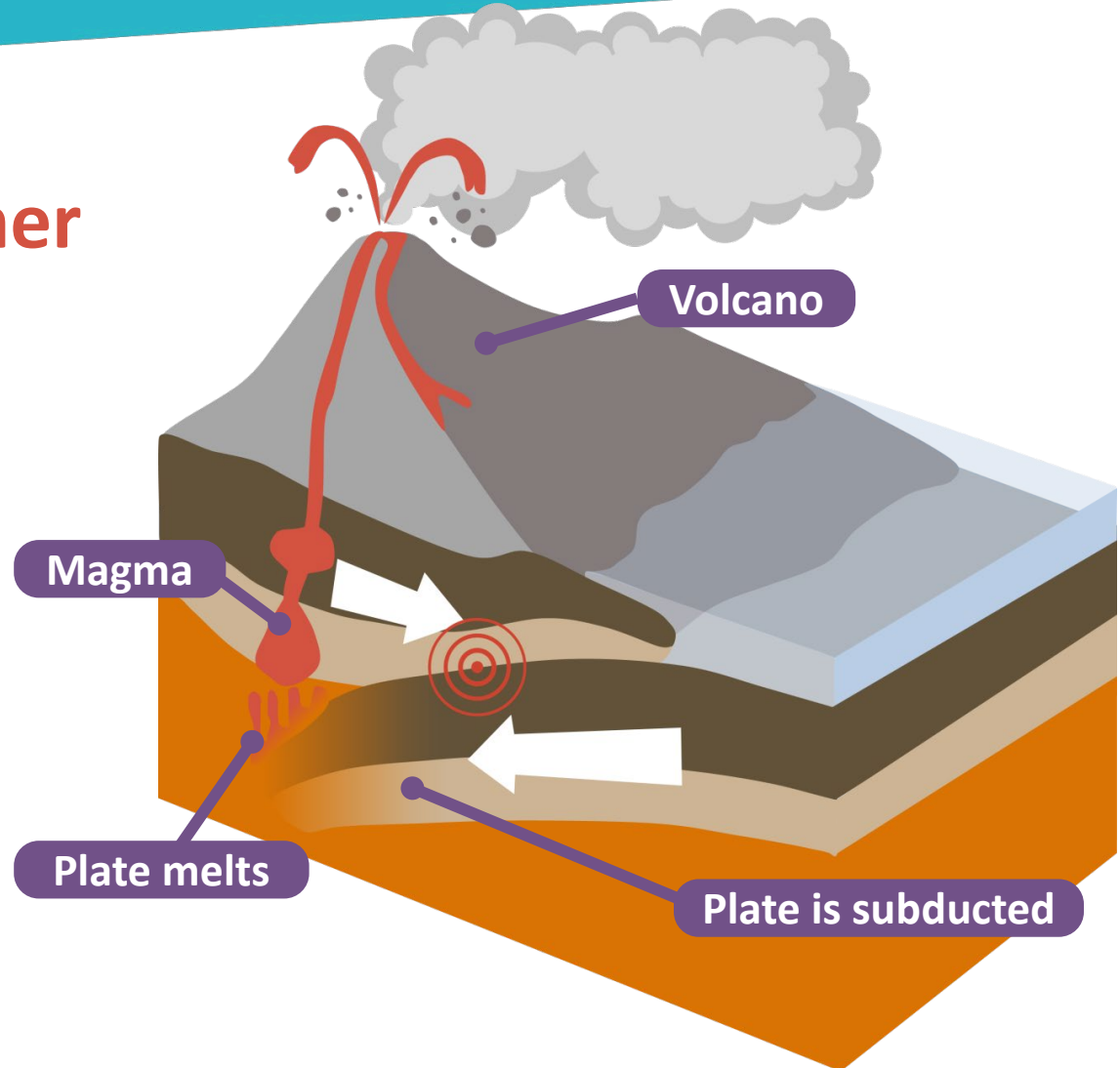
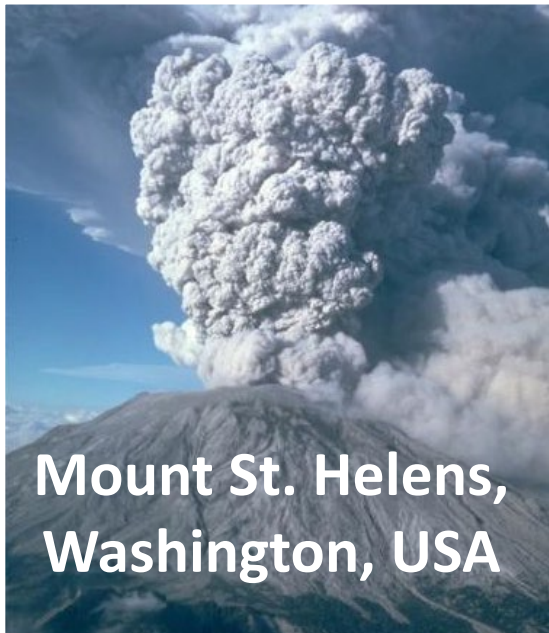
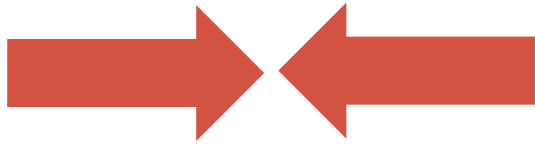
## DESTRUCTIVE BOUNDARY



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**Plates moving  
TOWARDS each other**



# HOW DO VOLCANOES FORM? HOT SPOTS



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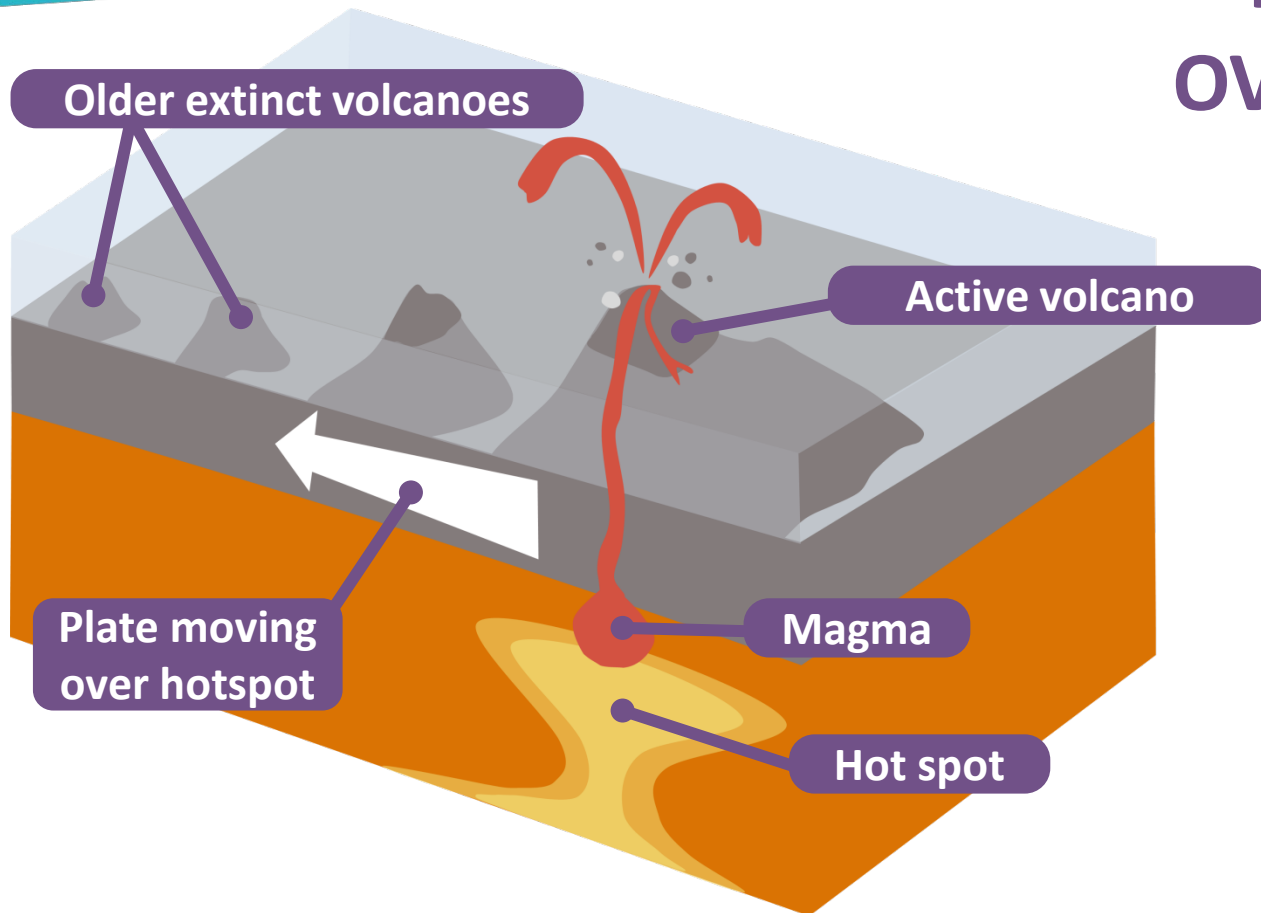
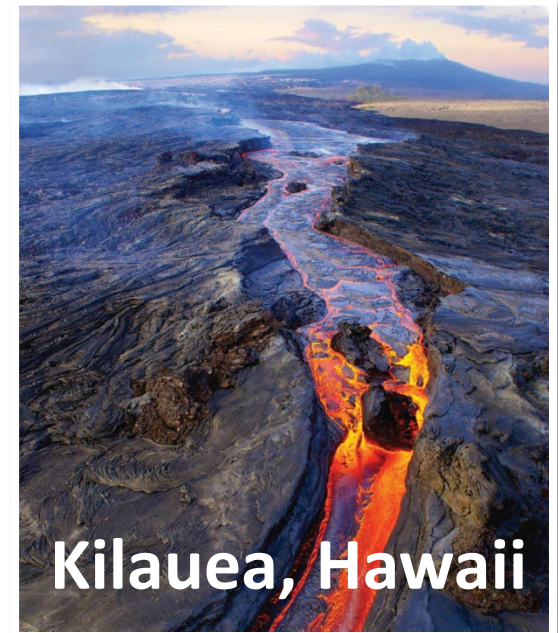


Plate moving  
**OVER a HOTSPOT**





# TYPES OF VOLCANOES: SHIELD VOLCANOES

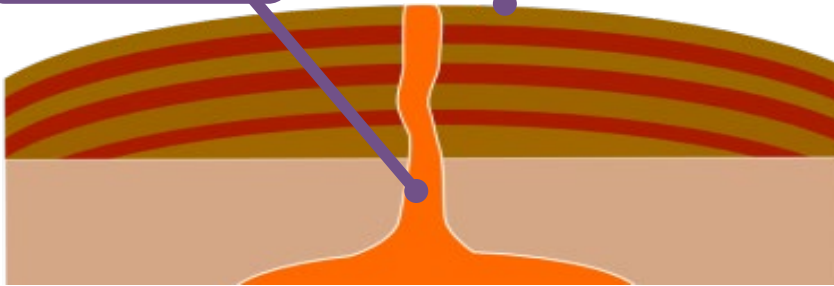


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Runny basalt  
magma

Shallow slopes  
made from lava



Kilauea lava lake,  
Hawaii

Wolf Volcano, Galapagos  
Islands



Erta Ale Volcano, Ethiopia

Photo: filippo\_jean/CC-BY-2.0



Olympus Mons on Mars



# TYPES OF VOLCANOES: COMPOSITE VOLCANOES

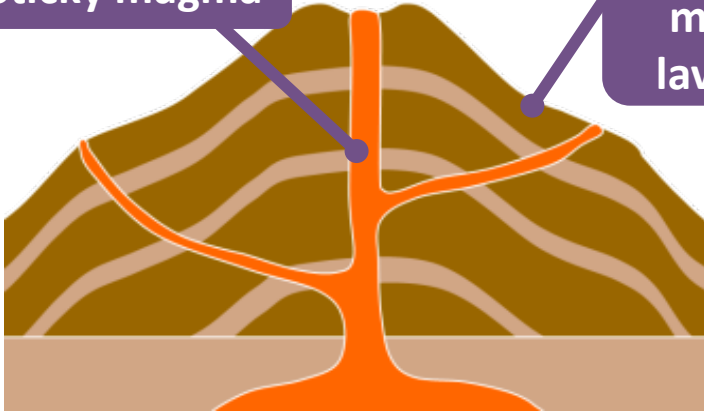


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Sticky magma

Steep slopes  
made from  
lava and ash



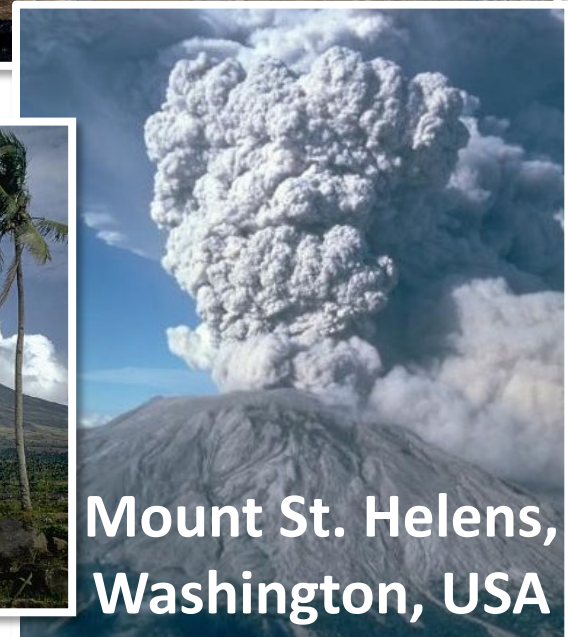
**Mount Fuji, Japan**



**Cotopaxi, Ecuador**



**Mayon Volcano,**



**Mount St. Helens,  
Washington, USA**



# NATURAL HAZARDS



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**NATURAL HAZARD:**  
a natural event that  
might harm people  
or the environment



Volcanic gas sampling,  
Mount Baker,  
Washington



Road destroyed by  
lava flow, Hawaii



Pyroclastic flows  
Mount Mayon,  
Philippines



Volcanic ash,  
Papua New Guinea



House damaged by a  
lahar, Mount St Helens





# WHY DO PEOPLE LIVE NEAR VOLCANOES?



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Photo: Scubabeer/CC-BY-SA 2.0





# VOLCANO MONITORING



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**Tiltmeter on Mauna  
Loa, Hawaii**

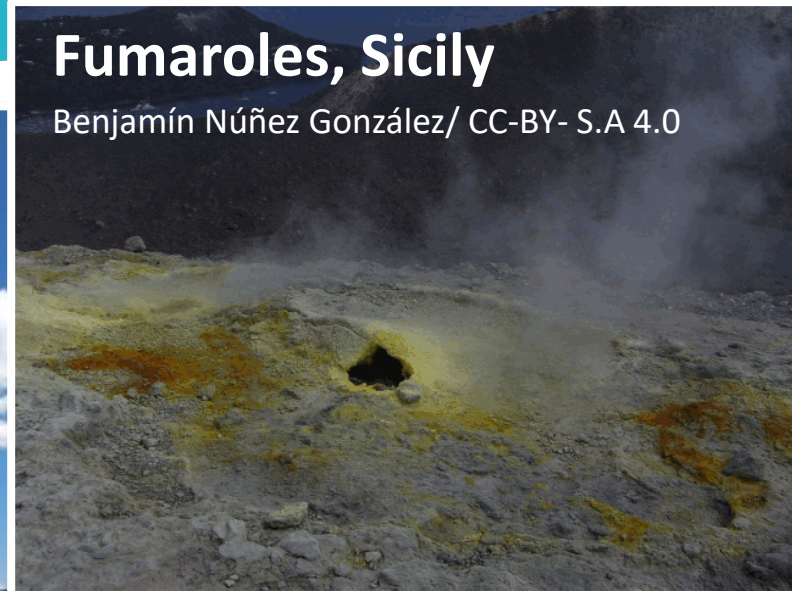


**GPS receiver at Newberry  
volcano, Oregon, USA**

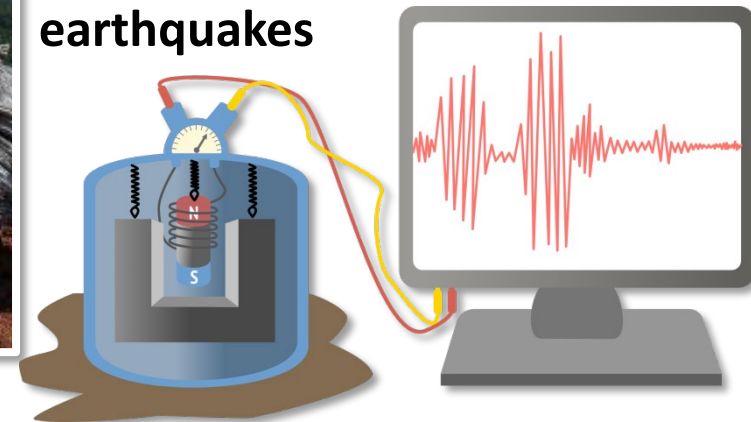
Photo: USGS

## **Fumaroles, Sicily**

Benjamín Núñez González/ CC-BY- S.A 4.0



## **Seismometer for detecting earthquakes**

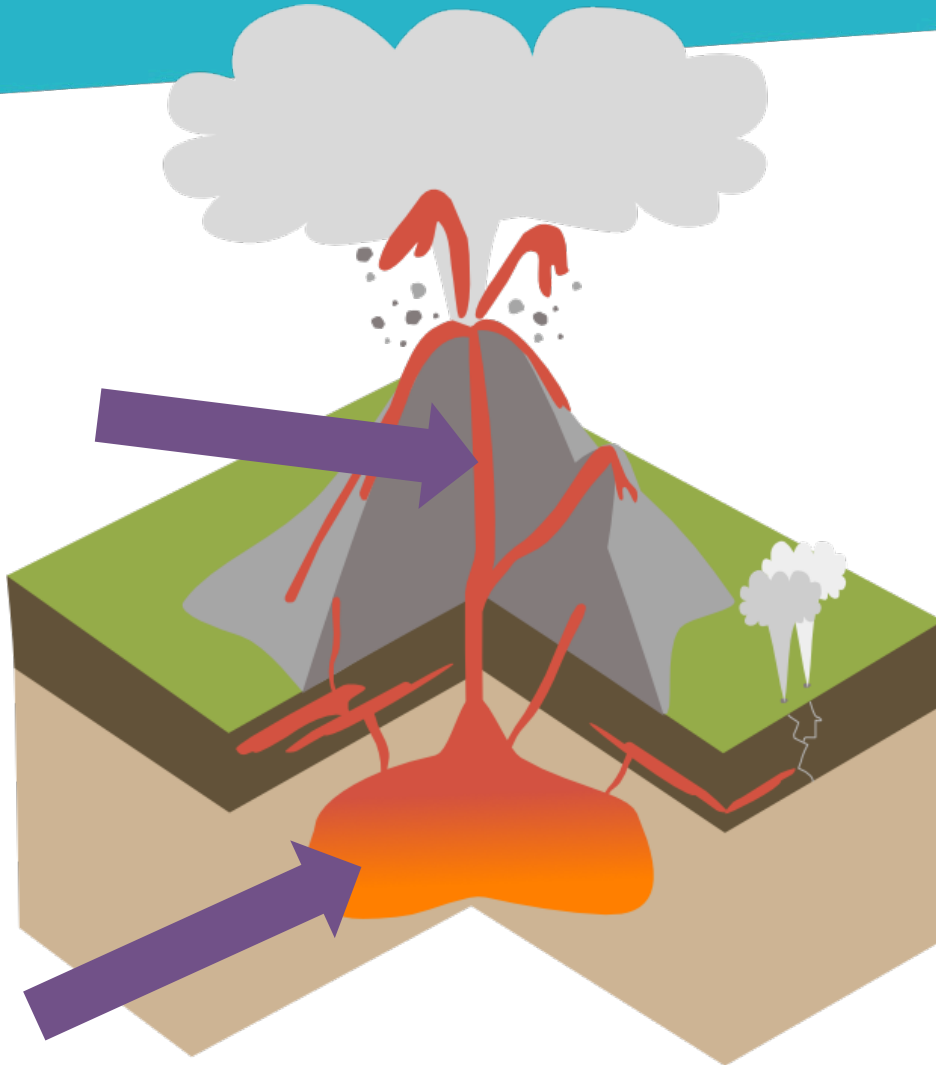


# VOLCANOES QUIZ



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**What are the arrows on the diagram pointing towards?**

**Magma chamber and geyser**

**Magma chamber and conduit**

**Ash cloud and conduit**



# VOLCANOES QUIZ

**What is a dormant volcano?**

One that is  
erupting lava

One that hasn't  
erupted recently (in  
the last 10,000 years)

One that is  
erupting ash



# VOLCANOES QUIZ



**Where can volcanoes occur? (2 answers)**

**Above hotspots in the mantle**

**At destructive plate boundaries**

**At conservative plate boundaries**



# VOLCANOES QUIZ



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**What type of eruption is happening here?**

**Effusive eruption**

**Explosive eruption**

**Shield eruption**

# VOLCANOES QUIZ



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**What is this  
geologist sampling?**

**Magma**

**'A'a lava**

**Pahoehoe  
lava**





# VOLCANOES QUIZ



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Which of these is a  
**composite** volcano?

Shallow slopes,  
shield shaped

Steep slopes,  
cone shaped

Crack in the  
ground



# VOLCANOES QUIZ



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**What sometimes  
forms inside a  
volcano crater?**

**Hotspot**

**Magma  
Chamber**

**Lava lake**





# VOLCANOES QUIZ



**Which of these are not natural hazards that can be caused by volcanoes?**

**Lahars**

**Pyroclastic flows**

**Hurricanes**

# VOLCANOES QUIZ



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**Which of these is NOT a positive reason for living near a volcano?**

**Volcanic ash can disrupt air travel**

**Volcanoes can attract tourists to areas, which creates jobs**

**Volcanic ash and lava break down over time to provide nutrients for the soil**



# VOLCANOES QUIZ



**What instrument is used to monitor ground surface changes?**

**Seismometer**

**Tiltmeter**

**Microscope**