Section 13-1

Volcanoes and Plate Tectonics

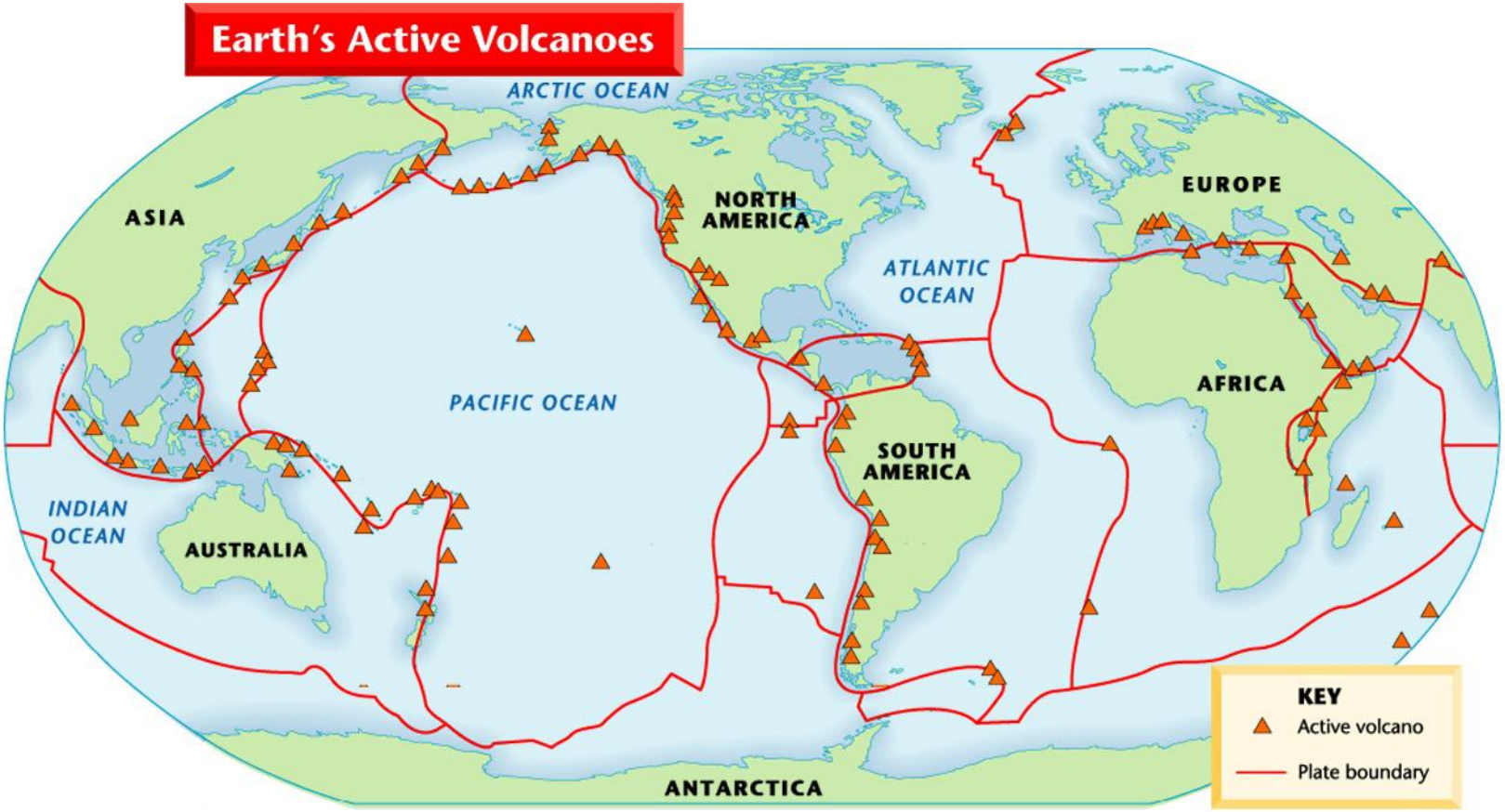
Geography of Volcanoes

SCIENCE EXPLORER

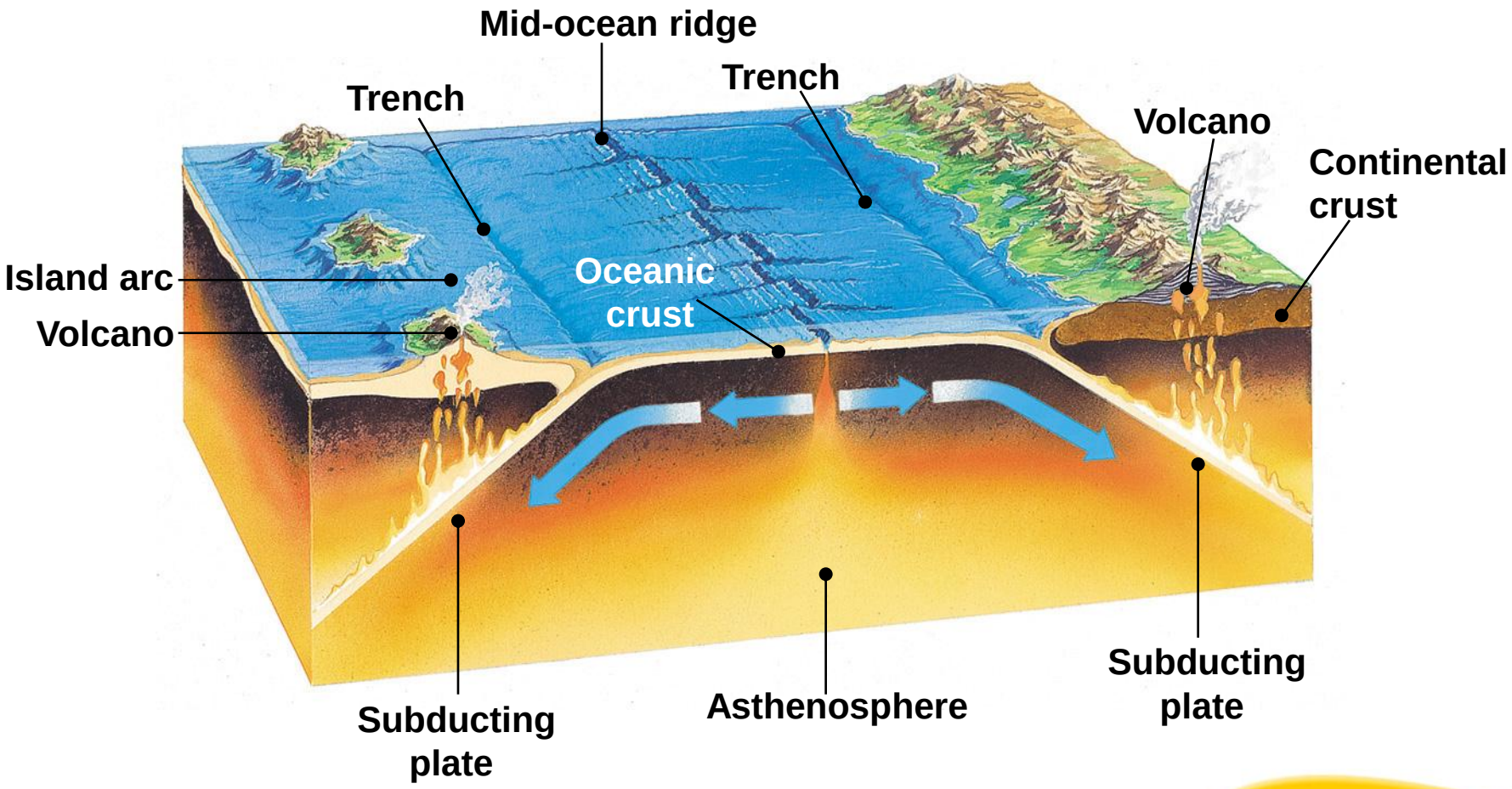
- **Most volcanoes occur along diverging plate boundaries.**
- **Ring of Fire:**
  - **Formed by the many volcanoes that rim the Pacific Ocean**
- **Volcanoes at Converging Boundaries:**
  - **formed as subducting crust melts and creates hot spots behind the subduction zone**
- **Hot Spot Volcanoes:**
  - **Where a hot spot in the mantle melts through the middle of a plate - Hawaii**

Geography of Volcanoes

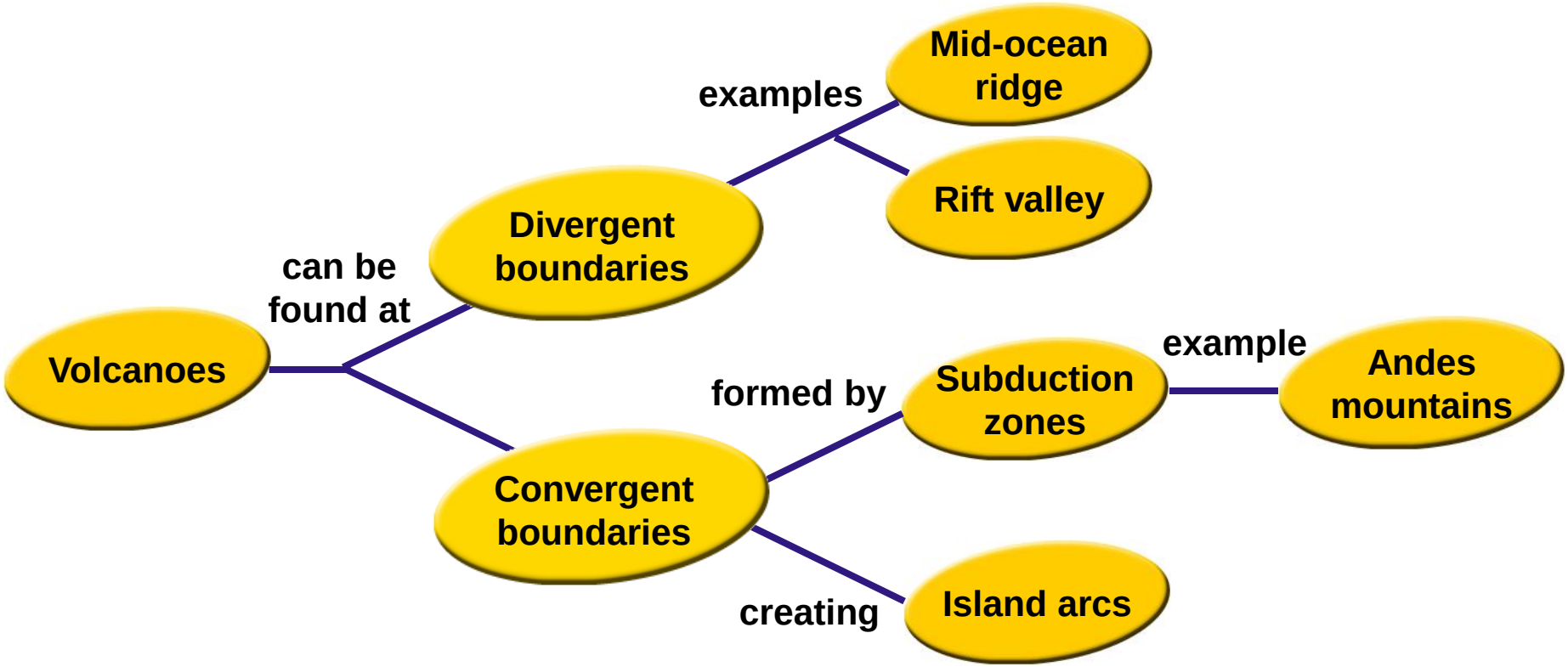
SCIENCE EXPLORER



Geography of Volcanoes



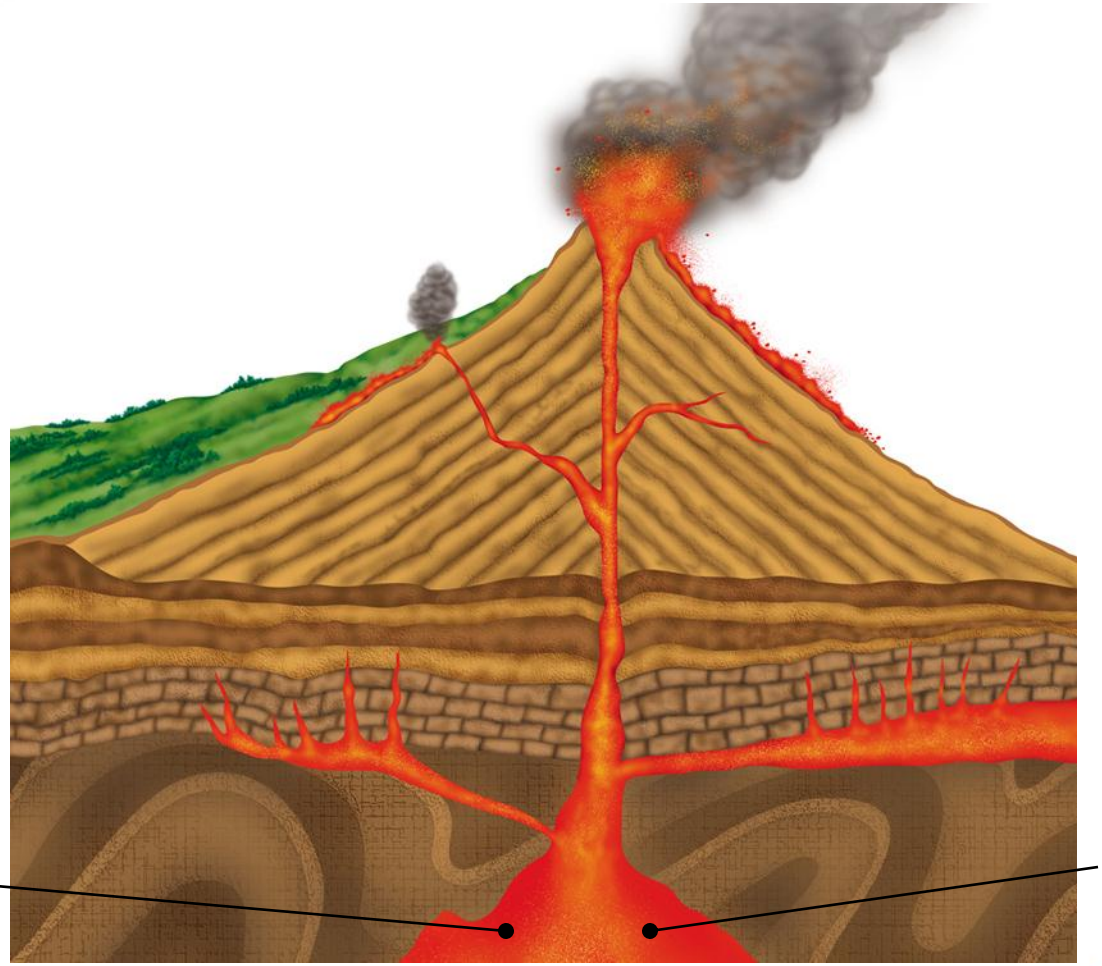
Geography of Volcanoes



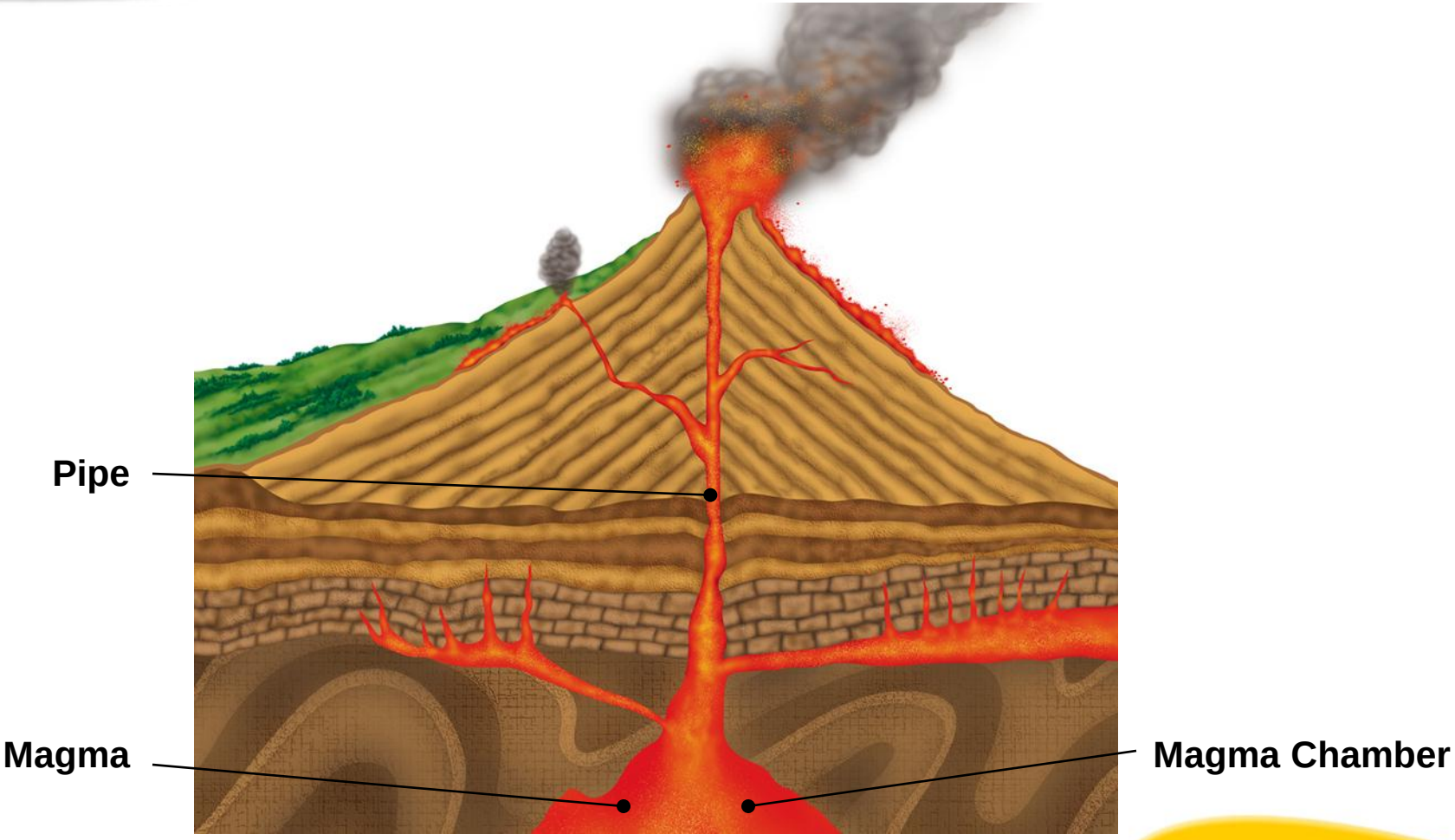
Section 13-2

Volcanic Activity

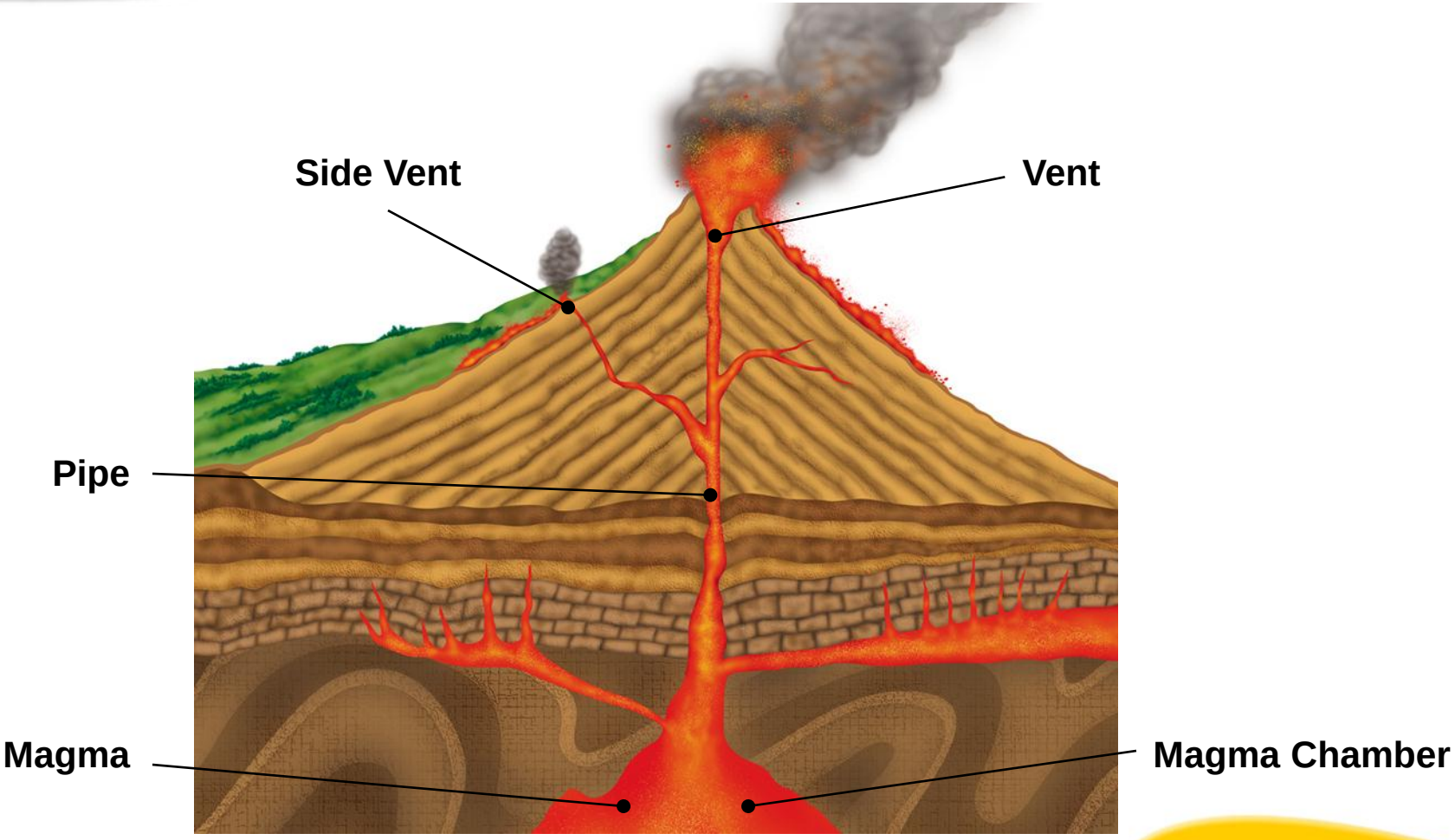
Volcanoes



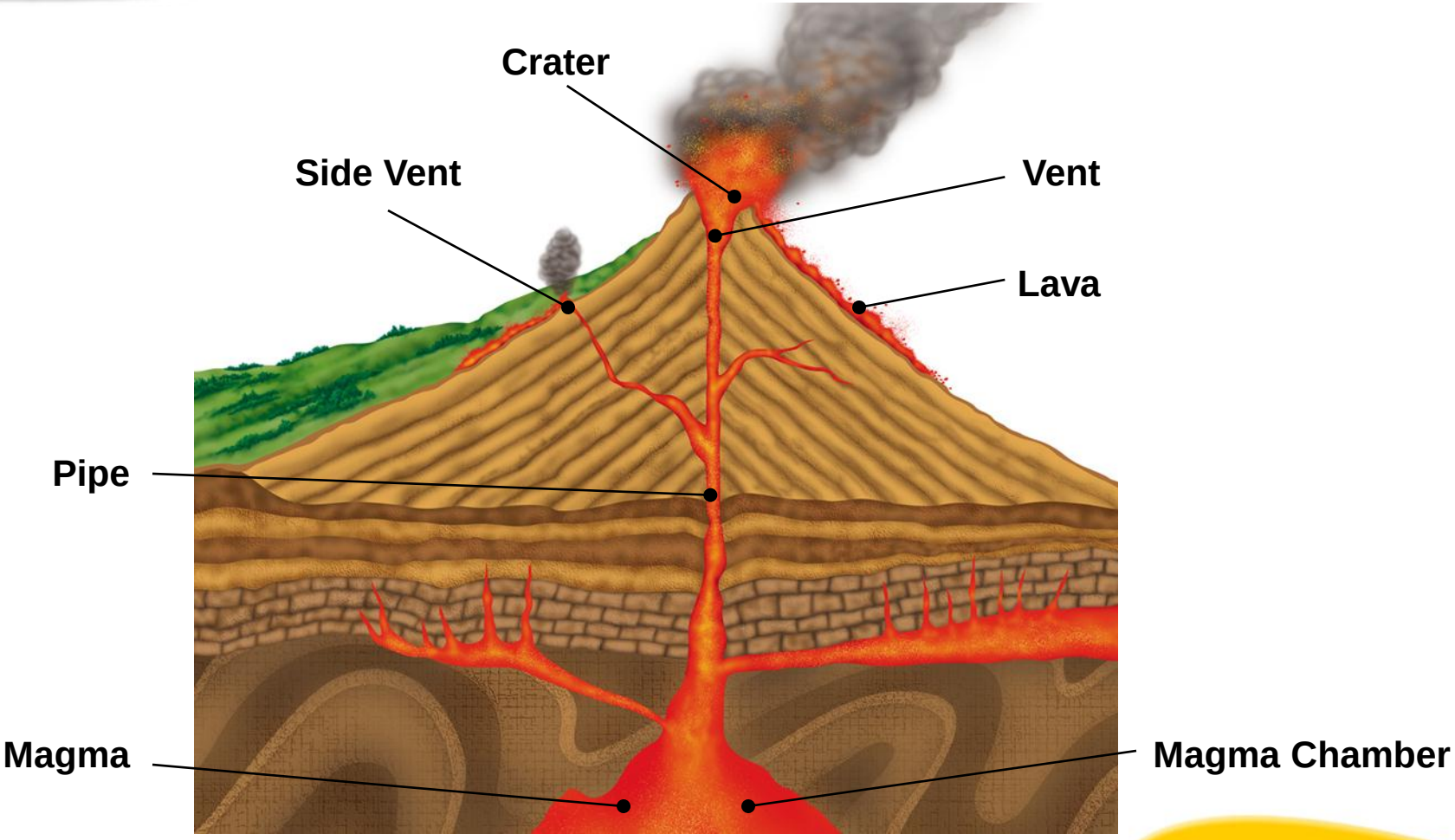
Volcanoes



Volcanoes



Volcanoes



Two Types of Eruptions:

- **Quiet Eruptions:**
  - When magma flow easily – the dissolved gases bubble out gently and thin runny lava oozes quietly from the vent.
  - Two types of lava: pahoehoe (fast moving) and aa (slow moving)
- **Explosive Eruptions:**
  - Thick, sticky magma explodes out of volcano like a cork out of bottle
  - Mount St. Helens

Section 13-3

Volcanic Landforms

Geography of Volcanoes

SCIENCE EXPLORER

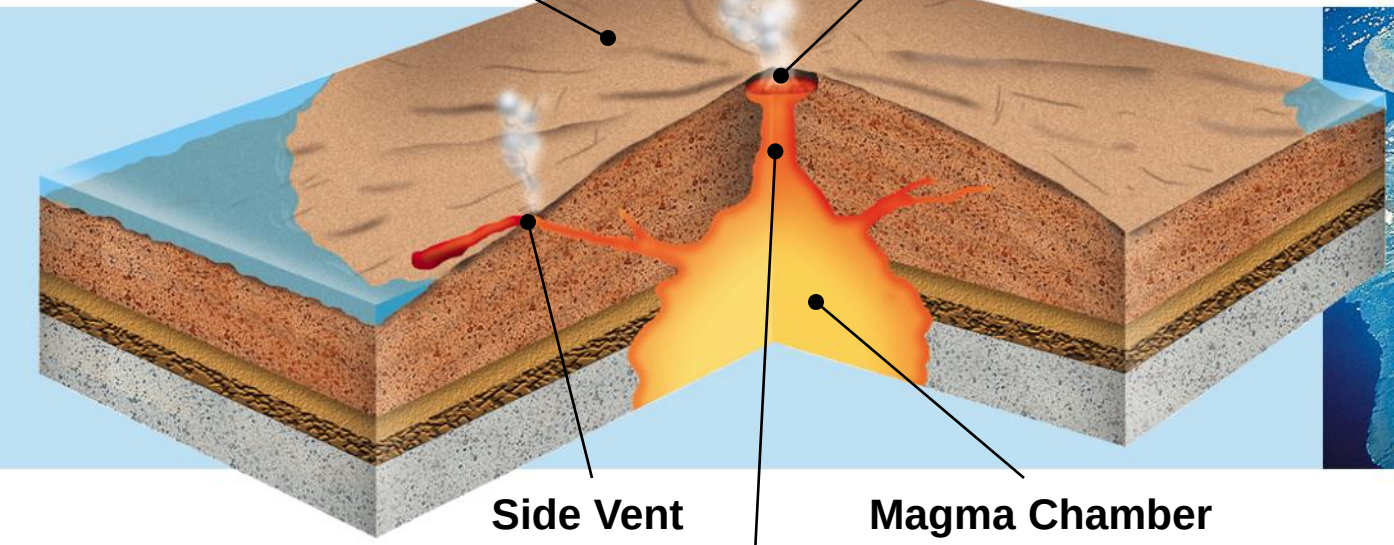
- **Shield Volcano:**
  - lava flow gradually to build a wide gently sloping mountain
- **Cinder Cone Volcano:**
  - ash and cinder build up around the vent to make steep, cone shaped mountain
- **Composite Volcano:**
  - mixture of shield and cinder cone

Geography of Volcanoes

SCIENCE EXPLORER

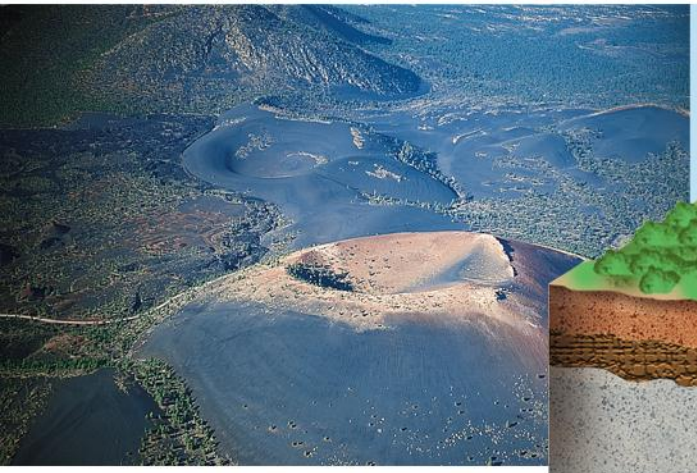
- **Lava Plateaus:**
  - thin runny lava flowing out of long cracks that builds up in many layers over time may form a plateau
- **Caldera:**
  - hole left by the collapse of a volcanic mountain

Volcanoes

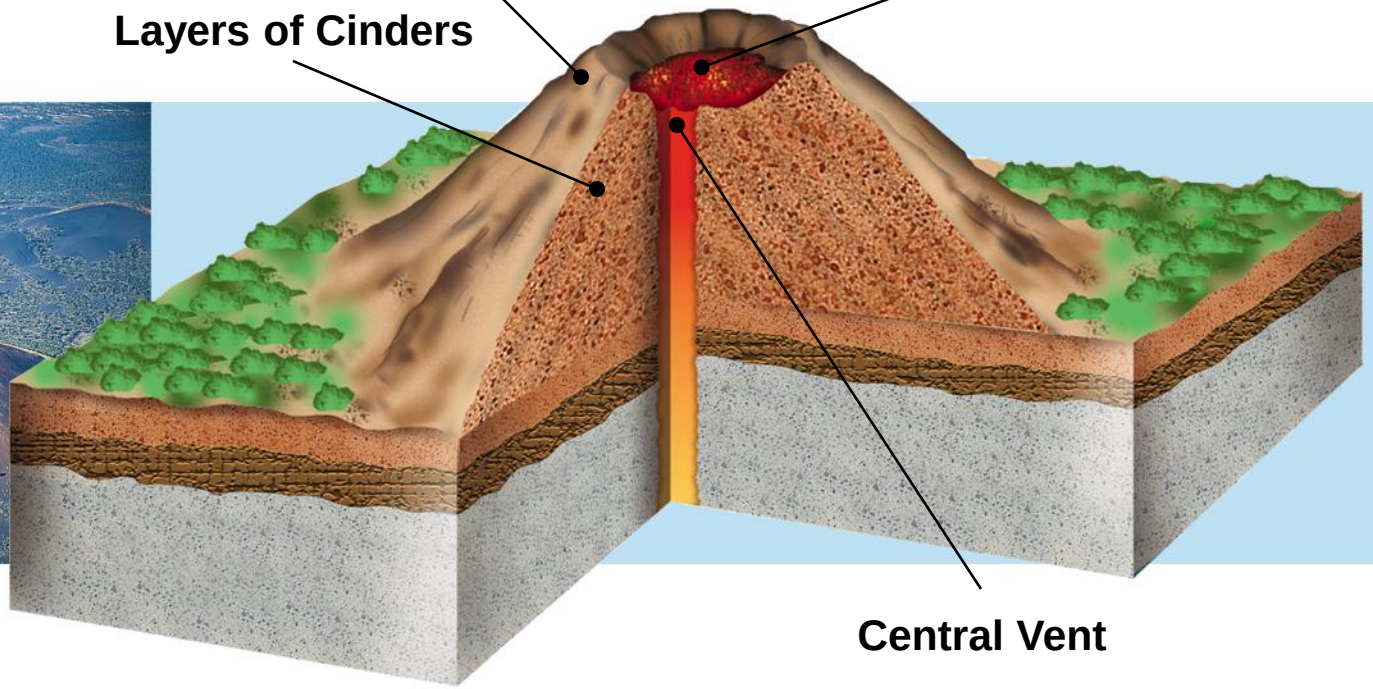


Mauna Loa

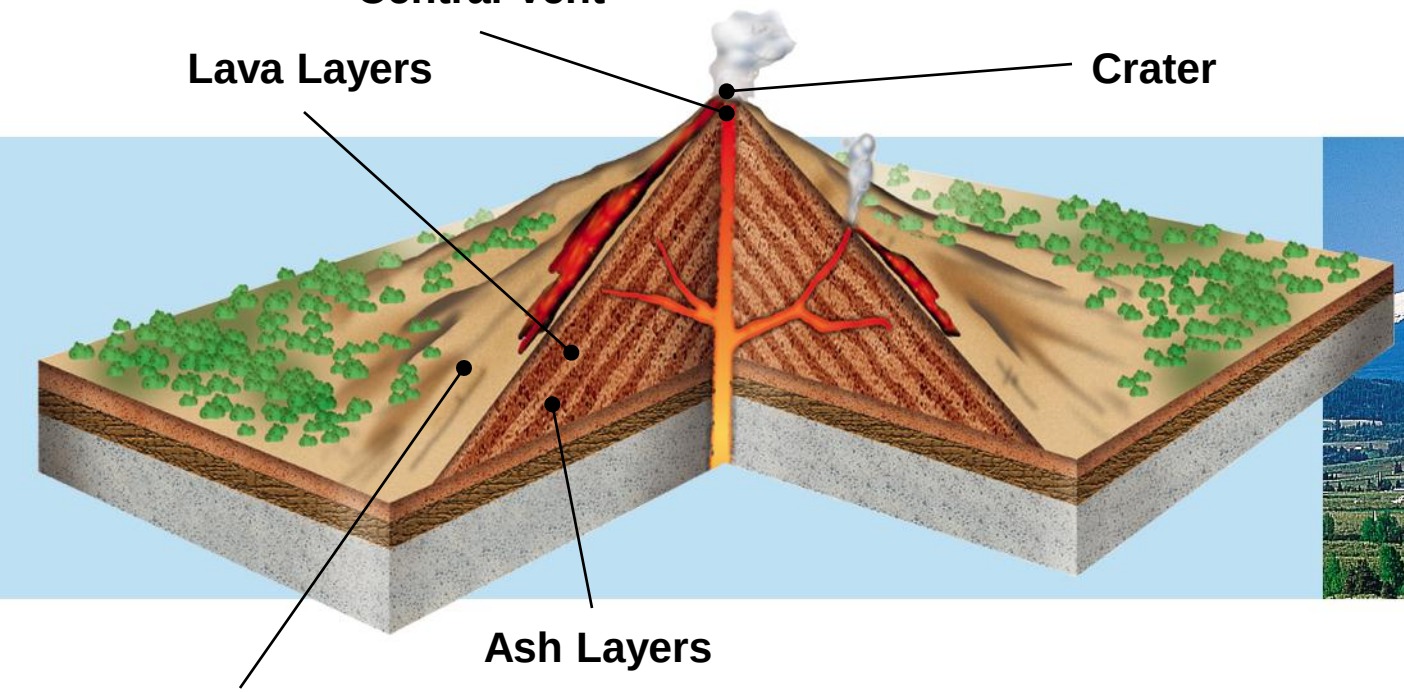
Volcanoes



Sunset Crater

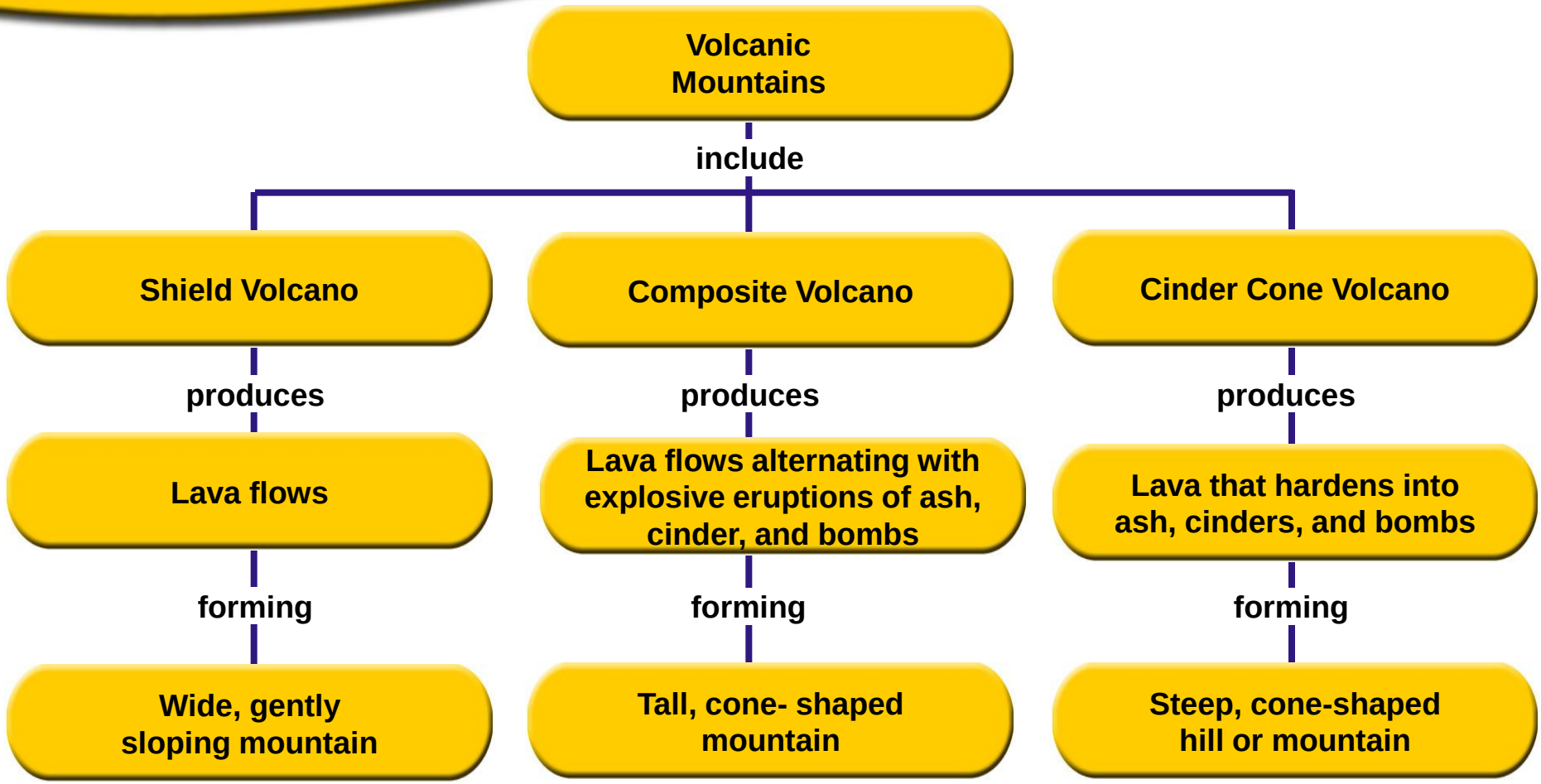


Volcanoes



Mt. Hood

Volcanoes



Geography of Volcanoes

SCIENCE EXPLORER

Landforms from Magma:

- A *Volcanic Neck* forms when magma hardens in a volcanoes pipe
- A *Dike* is magma that forces itself across rock layers and hardens
- A *Sill* forms when magma squeezes between layers of rock
- A *Batholith* is a mass of rock formed when a large body of magma cools inside the crust
- A *Dome Mountain* forms when rising magma is blocked by a horizontal layer of rock which gets bent upward into a dome shape by the pressure of the magma. Eventually the rock above is worn away exposing the dome.

Section 13-4

Volcanoes in the Solar System

Geography of Volcanoes

SCIENCE EXPLORER

- Venus has volcanic mountains and other features that appear to made of thin, runny lava
- Mars has large shield volcanoes as well as cone-shaped volcanoes and lava flows
- Io and Triton, moons of Jupiter and Neptune have volcanic features. Io's erupt sulfur and Tritons involve nitrogen.

Geography of Volcanoes

SCIENCE EXPLORER

The Mount St. Helens Story