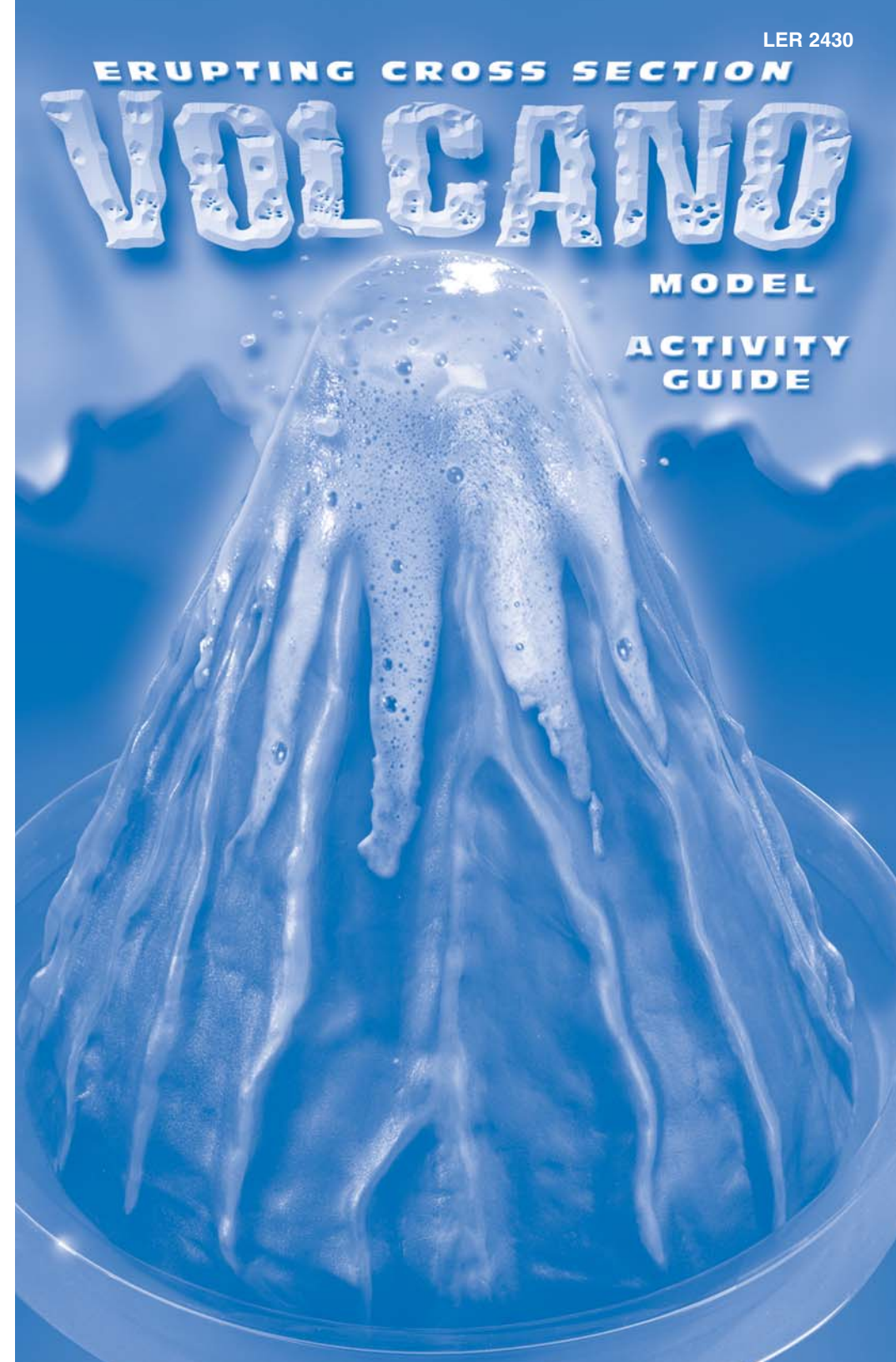


## Glossary

- Active Volcano** – An erupting volcano or a volcano that has erupted before and will likely erupt in the future.
- Ash** – Fragments of volcanic rock that are exploded from the vent of a volcano in solid or molten form.
- Basalt** – A type of volcanic rock.
- Cinder Cone** – A type of volcano that is built entirely of loose fragmented material.
- Cinders** – Fragments of lava, commonly erupted in cinder cone volcanoes.
- Composite Volcano** – A type of volcano in which the cone is very steep and built by both loose fragmented material and lava flows.
- Conduit** – The passage that the magma follows through a volcano.
- Crater** – The hollow summit of a volcano above the vent; usually bowl-shaped and has steep sides.
- Dike** – Sheet-like bodies of magma that cut through layers of adjacent rock.
- Domes** – Mounds of cooled magma with steep sides created by thick magma.
- Dormant Volcano** – A volcano that is currently inactive, but may erupt again. This type of volcano is oftentimes considered to be "sleeping."
- Eruption** – The process that ejects solid, liquid, and gaseous materials onto Earth's surface and into the atmosphere by volcanic activity. These eruptions can range from violent explosions to quiet overflow of magma.
- Fumarole** – A vent or opening that gives off steam or gas. Fumarole occurs both in active and inactive volcanoes.
- Lava** – Magma that is exposed to air or water on Earth's surface.
- Magma** – Hot, molten rock that forms beneath Earth's surface.
- Magma Chamber** – The chamber where the rising magma is collected before a volcano erupts.
- Mantle** – The area between Earth's crust and core.
- Pumice** – A type of volcanic rock that forms during an eruption.
- Pyroclastic Flow** – Avalanche of material that comes down the side of a volcano during some eruptions. Contains hot ash, pumice, rock fragments, and volcanic ash.
- Seismograph** – An instrument that records the vibrations of Earth, also known as seismic waves.
- Seismologist** – A scientist who studies earthquake waves and what they tell us about the inside of our planet.
- Shield Volcano** – A type of volcano that is shaped like a flattened dome, resembling the look of a shield. This type of volcano has gentle sloping sides and is made from lava flows.
- Vent** – An opening from which volcanic material is released.
- Volcanic Gas** – Gases that are released from the magma during an eruption. These gases include H<sub>2</sub>O (steam), CO<sub>2</sub> (carbon-dioxide), SO<sub>2</sub> (sulfur dioxide), and HCl (hydrogen chloride).
- Volcano** – A vent in the Earth's surface in which magma, gases, and ash erupt and form a structure that is usually cone-shaped.



Fascinate your audience with this large Erupting Volcano Model. This unique volcano erupts lava-like solution and shows a cross-section view of a volcano looks. One side of the volcano cross-section is labeled with the names of each internal part of a volcano. The other side of the cross-section has letters labeling each part, so it can be used as a quiz.

This volcano model is a representation of a composite volcano or strato volcano. It is perfect for class demonstration or a science fair presentation. Different ways to use the volcano, volcano facts, a recipe to make a lava solution, and a diagram worksheet are the guide.

### **Make your Volcano Erupt!**

This can get messy, so be sure to wear goggles and old clothes when making the solution!

#### Ingredients

- 1/2 tablespoon baking soda
- 1/4 cup vinegar
- 4 - 5 drops red food coloring
- 1/2 tablespoon clear, yellow or orange dish soap  
(If green, blue or purple soap is used it will be a little harder to make the solution red to look like lava).

#### Directions:

1. Make sure the volcano is in the clear tray before performing the eruption.
2. Add the baking soda to the lava tube.
3. Mix the vinegar, food coloring and dish soap together thoroughly.
4. Add the liquid solution to the lava tube.
5. Stand back and watch the lava erupt!

**Note:** There maybe leftover baking soda in the lava tube. Mix together another liquid solution or simply add more vinegar to the lava tube and watch it erupt again. Experiment to see how the lava solution erupts if you use more vinegar and less baking soda or vice versa.

#### Clean Up:

Rinse the volcano and tray with warm water. Do not use hard abrasives or scrub the volcano when washing. The lava tube is removable for easy clean up. For best results, use the recipe

provided and rinse the volcano and tray shortly after use. Do not allow lava solution to dry on the volcano or tray.

### **Volcano Formation**

There are many different layers inside Earth. The Mantle is between the molten iron core and crust. The mantle is made up of solid rock. However, sometimes high temperatures and pressure cause the mantle to melt and become magma. When a large quantity of magma forms, it moves to the surface through the crust, and then releases pent-up gas and pressure that makes the volcano erupt. Once the magma escapes to Earth's surface, air or water turns the magma into lava.

#### Lava Types

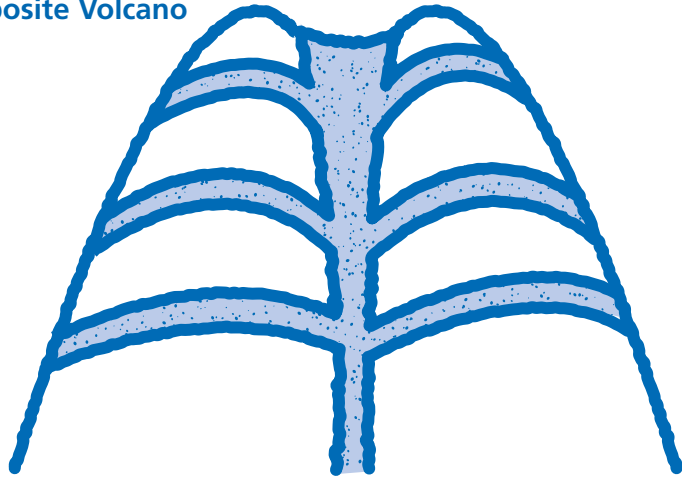
There are many different types of magma. These different types will produce different types of lava ranging from fluid, fast moving basalt to slower and much thicker lava. Since rocks are made of different minerals that melt at different temperatures, the type of rock that is melted in the mantle will affect the magma that results.

### **Types of Volcanoes**

There are 3 main types of volcanoes; Composite Cone, Cinder Cones, and Shield Cones. Each type is different because of the way they erupt or the types of materials they erupt.

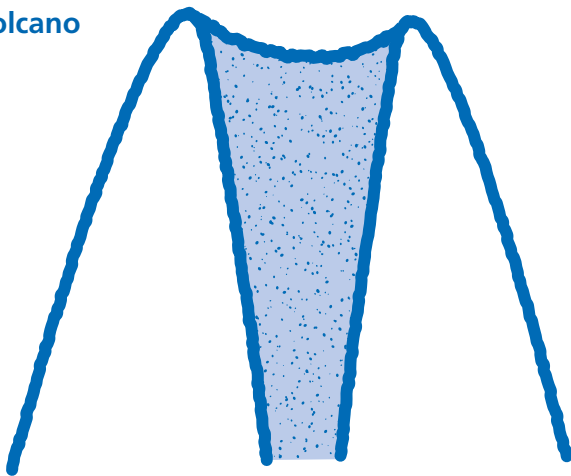
1. **Composite Cone Volcanoes** (*Strato volcanoes*) have some of the most explosive eruptions. The volcano is built of lava, cinders and ash, and the overall size of the volcano tends to increase after an eruption. Strato volcanoes have very steep sides and are a sort of transportation system for magma to rise to the surface from deep within Earth's crust. Sometimes, as in the case of Mount St. Helens in Washington, the eruption can be so powerful that part of the volcano can be blown away, causing the mountain to be reshaped.

### Composite Volcano



2. **Cinder Cone volcanoes** are so named because they were formed; by lava fragments called cinders. This type of volcano only has one vent in which the magma can flow, unlike the composite and shield volcanoes. Since there is only one vent from which the magma can escape, the lava fragments burst into the air and then fall around the vent of the volcano. Cinder cone volcanoes also have steep sides, but they are not as large as composite or shield volcanoes.

### Cinder Volcano



3. **Shield Cone volcanoes** got their name because they look like shields due to their gentle sloping sides. These gentle slopes are caused by the volcanoes' eruptions. Shield volcanoes' eruptions usually have fluid lava flows, causing the lava to spread slowly over great distances. The lava flows not only from the top of the volcano but also through cracks on the ground. However, since the lava travels so slowly when these volcanoes erupt, there is usually enough time for animals and people to move to safety. Because of the way Shield volcanoes erupt, they are some of the largest volcanoes in the world.

### Shield volcano



### Fun Volcano Facts

- The ash from a volcano eruption that covers the ground is rich in minerals and makes the soil very fertile for farming.
- Volcanoes make money by attracting tourists thereby helping the surrounding communities economically.
- When Mount St. Helens erupted in the state of Washington on May 18, 1980 it produced the largest landslide in recorded history.
- Mount Kilauea, located in the state of Hawaii, is the most active volcano in the world. It releases about 500,000 cubic yards (over 100 million gallons) of lava a day.
- Mount Mauna Loa, also located in Hawaii, is the largest volcano on Earth. It measures 4170 meters (13681 ft.) in height.
- Shield volcanoes are named because their dome resembles the shape of a warrior's shield. The Icelandic people gave the name to these types of volcanoes.



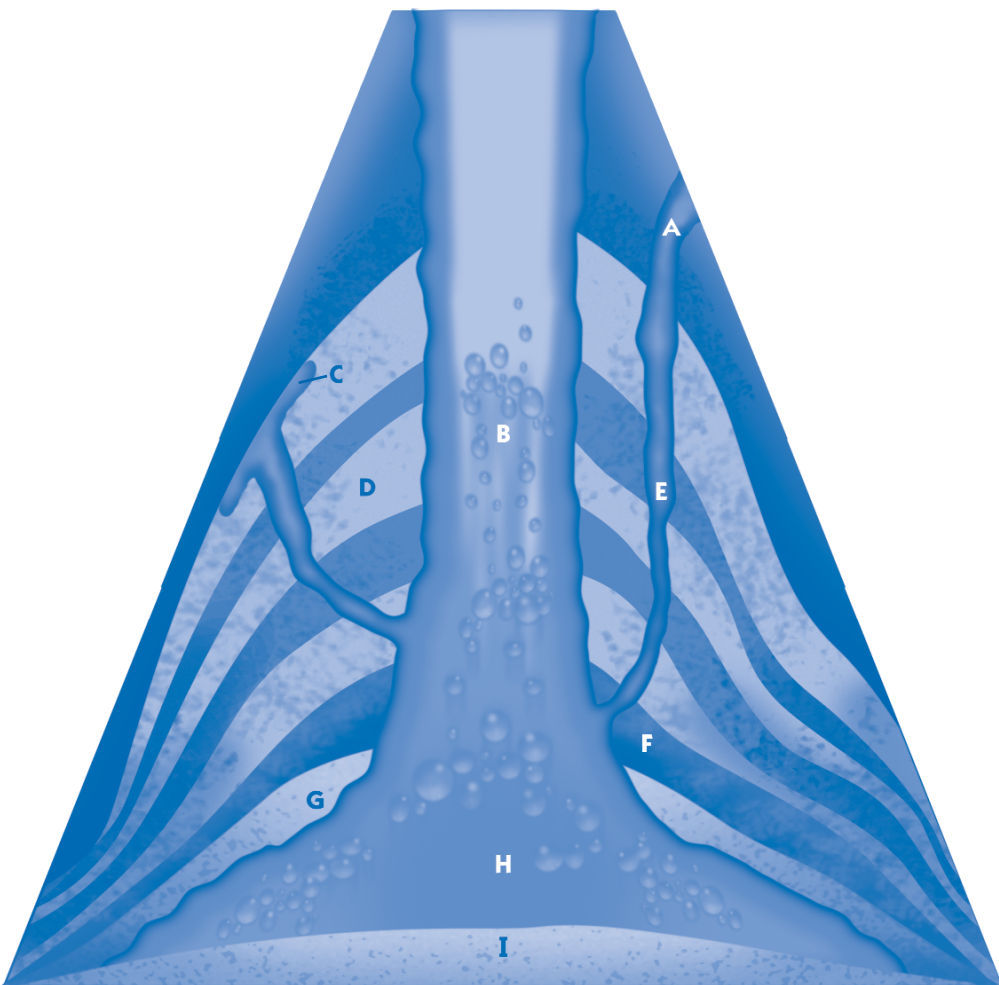
- A. Vent
- B. Conduit
- C. Sill
- D. Strata (Layers)
- E. Dike

- F. Crust
- G. Upper Mantle
- H. Magma Chamber
- I. Lower Mantle

Directions: Label all the different parts of a volcano.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_
- E. \_\_\_\_\_
- F. \_\_\_\_\_
- G. \_\_\_\_\_
- H. \_\_\_\_\_
- I. \_\_\_\_\_



Answer Key for Worksheet

