***Volcanoes***

A volcano is an opening in the Earth’s crust through which \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ erupt.

***Volcanoes erupt many types of materials:***

* Magma
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Volcanic Gases (*Mixture of* *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and ashes*)
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – Mixture of gases and rock fragments that form a dense cloud.

***Magma and Lava***

*Magma* is molten rock \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the Earth’s surface. When magma erupts, it is called lava.

*Lava* is molten rock, or magma that reaches the Earth’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through a volcano.

***Magma Chambers***

* Magma collects in areas called “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”
* Volcanic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occur when a chamber is not large enough to hold additional magma that pushes in.
* Magma can remain in a chamber until it cools, forming \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or it can erupt in the form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

***Rock Fragments***

* *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* – These are tiny rock fragments ranging from the size of dust to about the size of rice grains.
* *Volcanic Cinders* – These are much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as compared to volcanic ash.
* *Volcanic Bombs and Blocks* – These are the largest fragments. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are molten when they are thrown out and often have streamlined shapes. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be the size of houses and erupt as solid pieces of rock.

***Volcanic Gases***

Volcanic gases look like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rising from the volcano. They are a mixture of ash and gases namely, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Some volcanic gases combine with water in the air to form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

***Pyroclastic Flows***

Sometimes volcanic gases can mix with rock fragments forming a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is a dense cloud of superhot gases and rock fragments that races downhill. It can be as hot as 800°C (1500°F) and can travel faster than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Pyroclastic flows are the most dangerous type of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

***Formation of Volcanoes***:

* Volcanoes are common along tectonic plate boundaries where \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ sink beneath other plates.
* Volcanoes are also common along tectonic boundaries where plates pull apart, allowing magma to rise from the mantle.
* Occasionally, volcanoes are formed over a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ far from a plate boundary.

***Types of Volcanoes:***

* + - 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Shield Volcano*** :

A shield volcano is built from many eruptions of lava that is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and flows \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It is a broad flat dome. Example - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_shield volcano

***Cinder Cone:***

A cinder cone is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hill. It is built of pieces of magma that harden \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and fall to form a small, steep-sided volcano.

***Composite Volcano:***

A composite volcano is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ volcano built of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The tall cone consists of layers of lava and layers of rock fragments.

***Volcanoes and their effects -***

* Volcanic eruptions can knock down forests and destroy homes by flowing into the homes or by starting fires.
* Volcanic eruptions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Some volcanic gases combine with water in the air to form acids.
* Many volcanic gases are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They can make breathing difficult and damage the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* In West Africa, a sudden release of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from a volcano at the bottom of a lake killed 1700 people in 1986.

*Immediate Effects of Volcanoes:*

* **Lava Flows**, **Volcanic Ash**, **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, **Pyroclastic flows**, **Landslides**

***Lava Flows -***

Most lava moves too slowly to hurt people. However it can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

***Volcanic Ash* -**

* The weight of fallen volcanic ash can cause the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* \_\_\_\_\_\_\_\_\_\_\_ makes roads slippery, and it clogs up machinery, including cars and airplanes.
* Large amounts of falling ash can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plants, animals, and people.

***Mudflows -***

* Mudflows are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that occur when loose rocks and soil are mixed with water.
* Mudflows also form as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mixes into rivers flowing from a volcano.
* Fast-moving mudflows can bury entire towns tens of kilometers from an eruption.

***Pyroclastic flows* -**

In 1902, a pyroclastic flow from an eruption in the West Indies completely destroyed the city of Saint Pierre. Almost ­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ people were killed within a few minutes.

***Landslides* -**

Part of a volcano can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and start a landslide. The collapse may be caused by an eruption, an earthquake, or even heavy rainfall. A landslide can cause a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if a large amount of material falls into the ocean.

***Steam Explosions* -**

Steam explosions occur when \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ comes into contact with water. The entire island of Krakatau exploded in 1883, causing a tsunami that destroyed hundreds of towns and killed more than 36,000 people. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be devastating.

*Long-Term Effects of Volcanoes:*

* Volcanoes build as well as destroy. Material erupted from volcanoes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Over time, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can form new, rich soil.
* Repeated volcanic eruptions can build a magnificent landscape of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* People live in a volcanic area for its natural beauty or there might be a flourishing tourist industry.

*Answer the following questions -*

* What are volcanoes?
* What are the three kinds of volcanoes?
* What is the difference between “magma” and “lava”?
* What are the effects of volcanoes on Earth’s land, water, and air?