

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

Date: \_\_\_\_\_ Period: \_\_\_\_\_

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## Packet: Volcanoes and Hazards

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### CLASS NOTES

- Volcanoes - \_\_\_\_\_  
\_\_\_\_\_
- Caldera - \_\_\_\_\_  
\_\_\_\_\_
- Volcanoes are generally found at hotspots or where tectonic plates are diverging or converging
  - Hotspots - \_\_\_\_\_  
\_\_\_\_\_
  - Example: Hawaiian Islands
  - Converging and diverging tectonic plates

Convergent	Divergent

- Types of Volcanoes:
  - Composite Volcano [stratovolcano] - \_\_\_\_\_  
\_\_\_\_\_  
    - Most deadly with violent eruptions
    - Pyroclastic Flow - \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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- Types of Volcanoes [continued]:

- Shield Volcano - \_\_\_\_\_  
\_\_\_\_\_

- Usually occur around hotspots with non-explosive eruptions

- Cinder Cones - \_\_\_\_\_  
\_\_\_\_\_

- Usually smaller with short lived eruptions

- Extinct Volcano - \_\_\_\_\_  
\_\_\_\_\_

- Predicting eruptions have been sought after by volcanologists, but is still not precise

- In 1991, USGS was asked to monitor Mount Pinatubo and used the many signs volcanoes give off prior to an eruption in the hope of minimizing damage to lives and personal property

- Tools used in monitoring:

- \_\_\_\_\_ measurements of earthquakes
- \_\_\_\_\_ of past eruptions
- \_\_\_\_\_ readings of sulfur dioxide
- \_\_\_\_\_ and \_\_\_\_\_ to show inflating

- Emergency Preparedness:

- What do you do if there is an impending volcanic eruption?

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## PART I: MULTIPLE CHOICE

Base your answers to questions 1 through 5 on the passage and data tables below, on the map on the next page, and on your knowledge of Earth science. The data tables show trends [patterns] of two lines of Hawaiian island volcanoes, the Loa trend and the Kea trend. For these trends, ages and distances of the Hawaiian island volcanoes are shown. The map shows the locations of volcanoes, labeled with Xs, that make up each trend line.

### Hawaiian Volcano Trends

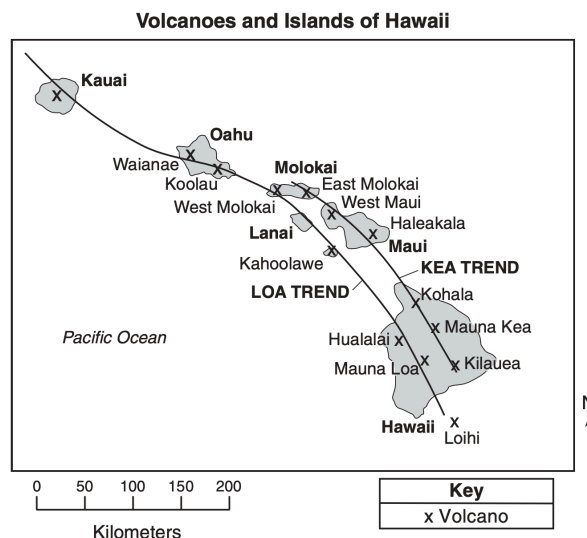
The Hawaiian volcanic island chain, located on the Pacific Plate, stretches over 600 kilometers. This chain of large volcanoes has grown from the seafloor to heights of over 4000 meters. Geologists have noted that there appear to be two lines, or “trends,” of volcanoes—one that includes Mauna Loa and one that includes Mauna Kea. Loihi and Kilauea are the most recent active volcanoes on the two trends shown on the map.

**Loa Trend**

Loa Trend Volcanoes	Volcano Age (million years)	Distance from Loihi (km)
Kauai	4.6	575
Waianae	3.7	465
Koolau	2.2	375
West Molokai	1.7	350
Lanai	1.2	300
Kahoolawe	1.1	250
Hualalai	0.3	130
Mauna Loa	0.2	70
Loihi	0	0

**Kea Trend**

Kea Trend Volcanoes	Volcano Age (million years)	Distance from Kilauea (km)
East Molokai	1.7	256
West Maui	1.5	221
Haleakala	0.9	182
Kohala	0.5	100
Mauna Kea	0.4	54
Kilauea	0.1	0



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1. Identify the two volcanoes, one from each trend, that have the same age.
  - a. Loihi and Haleakala
  - b. West Molokai and East Molokai
  - c. Kauai and West Maui
  - d. Lanai and Kohala
2. State the general relationship between the age of the volcanoes and the distance from Loihi.
  - a. inverse relationship
  - b. direct relationship
  - c. cyclic relationship
  - d. there is no relationship
3. Identify the compass direction in which the Pacific Plate has moved during the last 4.6 million years
  - a. southeast
  - b. northwest
  - c. southwest
  - d. Northeast
4. Identify the tectonic feature beneath the Pacific Plate that caused volcanoes to form in both trends.
  - a. converging plate boundary
  - b. diverging plate boundary
  - c. transform plate boundary
  - d. hot spot
5. The average distance between the volcanoes along the Kea trend is 51.2 kilometers. Place an X on the map in your answer booklet to identify the location on the seafloor where the next volcano will most likely form as a part of the Kea trend.

