**Group A: Looking for Patterns in Data**

**Purpose**: To identify, describe, and analyze patterns in data collected on earthquakes.

**Procedure**:

1. Given this data:



2. Use a coloured pen to plot the earthquake data on the world map.

**Data Analysis**:

Observe the pattern of earthquakes over the surface of the Earth. Are they scattered at random or are they concentrated in certain areas? Describe your observations.

**Questions**

1. Use the reference map to draw the major crustal plates of the Earth on your world map. Label the names of the plates.

1. Draw arrows on your map showing the direction of plate movement. Is there a relationship between the direction of movement and pattern of earthquakes? volcanoes? Describe and explain.
2. Where is magma rising to the surface and forming ocean crust? Where is the oceanic crust sinking back into the mantle?
3. Some people have referred to the process in the above question as a cycle. Why would it be considered a cycle? What are the attributes of a cycle? Can you describe another cycle that could compare with the example described above.
4. Why is it that the Pacific Ocean floor is no older than about 200 million years and yet the continents are much older?

**Group B: Looking for Patterns in Data**

**Purpose**: To identify, describe, and analyze patterns in data collected on volcanoes.

**Procedure**:

1. Given this data:



2. Use a coloured pen to plot the volcano data on the world map.

**Data Analysis**:

Observe the pattern of volcanoes over the surface of the Earth. Are they scattered at random or are they concentrated in certain areas? Describe your observations.

**Questions**

1. Use the reference map to draw the major crustal plates of the Earth on your world map. Label the names of the plates.

1. Draw arrows on your map showing the direction of plate movement. Is there a relationship between the direction of movement and pattern of earthquakes? volcanoes? Describe and explain.
2. Where is magma rising to the surface and forming ocean crust? Where is the oceanic crust sinking back into the mantle?
3. Some people have referred to the process in the above question as a cycle. Why would it be considered a cycle? What are the attributes of a cycle? Can you describe another cycle that could compare with the example described above.
4. Why is it that the Pacific Ocean floor is no older than about 200 million years and yet the continents are much older?

