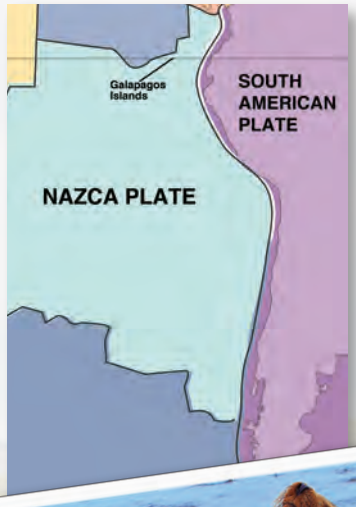
ISLANDS BORN OF FIRE ACTIVITY 1

As you saw in the film ***Galapagos: Nature's Wonderland***, the Galapagos Islands are like no place else in the world. They form a collection of unique habitats that can differ dramatically from island to island, as volcanoes add new islands to the chain and the shifting of the Earth's surface carries the older islands slowly toward the southeast.



Scientists have discovered that the surface of the Earth is made up of gigantic slabs of rock that fit together like the pieces of a puzzle. These are called *tectonic plates*, but unlike puzzle pieces, the tectonic plates slowly shift position by pushing into and pulling away from each other over millions of years. The Galapagos Islands sit at one edge of the Nazca Plate, which is moving slowly toward South America at a speed of about 2 inches per year. This slow pressure of the Nazca Plate pushing into the South American Plate is what formed the Andes Mountains.

The Galapagos Islands are located at a "hot spot" on the Nazca Plate where molten rock from the center of the Earth has broken through the surface to form volcanoes. This hot spot does not move, because it lies below the Earth's surface. As the Nazca Plate moves over it, the hot spot keeps breaking through in a different place, creating new volcanoes as the older ones keep moving away toward the southeast.

Use this map to identify the oldest and youngest of the Galapagos Islands. Then use the map scale to estimate how long ago the oldest island was formed. You will need to remember that the youngest island marks the position of the "hot spot" that has formed all these volcanoes, and that the Nazca Plate is moving at a speed of about 2 inches per year. (Hint: There are 63,360 inches in a mile.)

As you study this map, you will notice that the Galapagos Islands become smaller as they grow older. You may also notice that they become lower — the ones to the west have volcano cones that rise as high as 5,600 feet, while on the oldest island the highest point is only about 650 feet. Discuss in class what causes the Galapagos Islands to change shape in this way, and how this might contribute to the variety of habitats on the different islands.

Youngest Island: _____

Oldest Island: _____

The oldest island was formed approximately _____ million years ago.