Names_____Period_____

Hawaiian-Emperor Seamount Chain

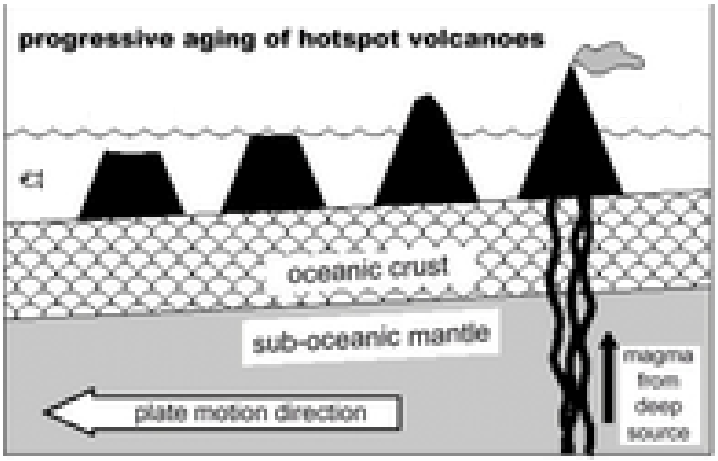
The purpose of this activity is to learn about hot spots (or mantle plumes) work and how they can be used to determine the speed of plate movement.

Review

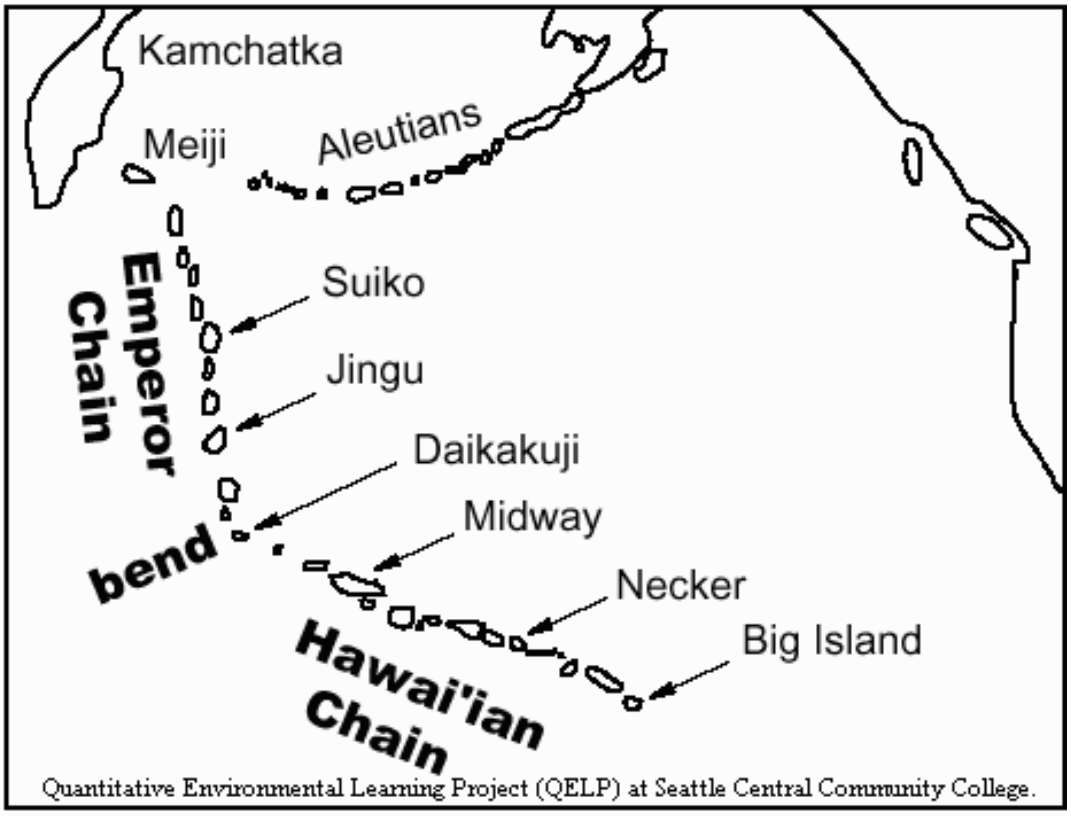
1. If a car travels 45 miles in 2 hours, what is its speed? Show your work. Use this equation: $Speed = Distance \div Time$.

Analysis Questions

2. On the diagram below label the youngest island and the oldest island.



3. On the map of Hawaii below, predict where the oldest islands are and where the youngest are. Label it on the map. (The big island of Hawaii still has some volcanic activity happening if that helps).
4. Hawaii is in the middle of the Pacific plate. Based on your prediction in #3, which way is the Pacific plate moving? Go ahead, draw arrows, it's ok.



Determining Plate Speed – Graphing exercise

5. Write the age of each island on the map provided.
6. On the graph paper attached, plot the information from the table below.
7. Calculate the speed of the pacific plate using the equation below. Show your work. Convert your final answer into centimeters per year. Remember that there are 100 cm in a meter and there are 1000 meters in a kilometer.

$$Speed = Distance \div Time$$

Island Or Seamount	Distance from Hawaii Island Along Chain (in kilometers)	Age (in millions of years)
Hawaii	0	0
Maui	200	0.84
Molokai	320	1.48
Oahu	400	2.55
Niihau	680	3.0
Nihoa	920	3.5
Necker	1200	9.5
Midway	2800	17.9
Kanmu	4000	37.5
Suiko	6000	41.8

Hawaii-Emperor Volcanic Islands