GG 103 Field Trip to Wai‘anae, Fall Semester 2005
(turn in this handout at the end of the field trip or in class next week)

At Kea‘au:
1. With the pono guidance of Eric Enos, gather two stones. Be sure to stop and think about what you’re doing, be thankful to the place, and be thankful to the spirits of the place. Also, be careful.

2. You will need to gather one pōhaku ‘alā to use as a hammer stone, and one pōhaku ‘elekū that will become something (or another pōhaku ‘alā - it depends on what you want to make). Eric Enos will talk about some of the potential things that you can make. They range from ‘ulumaika, poho pōhaku (stone bowls), koʻi (adzes), koʻi pāhoa (chisels), pōhaku lūheʻe (octopus lure sinkers), ‘alā o ka maʻa (slingstones), and pōhaku kuʻi poi (poi pounders). See the last pages of this handout for some photos of these.

3. Describe your two stones, with respect to color, vesicularity, texture (crystal size), mineralogy (if you can see them), etc.

4. Why did you pick these particular pōhaku?
At Kāneana:
5. Remembering that dikes are shaped kind of like knife blades, imagine the orientation of the dikes exposed above, within, and around Kāneana. Locate Kāneana on your map on the last page, and draw the direction into the mountain that you think the dikes extend.

6. Kāneana is an old sea cave, carved by waves at a time when sea level was higher. Can you find any geologic evidence that supports this interpretation?

Mauna Kūwale:
7. Part way up the hill where we stop, examine the base of the rhyodacite lava flow. How would you describe it’s texture (mineral size)?

8. Based on the answer to question 7, what use might Hawaiian people have made of this particular type of pōhaku?
9. After climbing to the top of the main ridge, look around and see what the inside of an old Hawaiian volcano looks like. You are standing in what was once the caldera, which corresponds roughly to the combined Wai‘anae and Lualualei valleys. Orient yourself with respect to the map on the last page. Pu‘u o Hulu Kai and Pu‘u o Hulu Uka are both just outside the old caldera (their flows are sloping away from you). Pu‘u Ma‘ili‘ili, Pu‘u Pāhe‘ehe‘e, and Mauna Kūwale are inside the caldera (their flows are roughly horizontal). Pu‘u Ka‘ilio is talus (the rubble at the base of an old cliff) piled against the old caldera wall. Ka‘ala is part of the old volcano surface just outside the caldera. Does the orientation of the dikes you drew for question make sense now that you know where the old caldera is? Explain.

10. Walk to the base of the last hill to climb and examine the lava flow there that is full of phenocrysts (the big minerals in porphyritic texture). What mineral do you think this is, and how do you know?

Lualualei access Rd:
11. What rock type makes up the floor of Lualualei valley here?

12. How did it get here?
koʻi and koʻi pāhoa

pōhaku kuʻi poi
Figure 21.3. Geologic map of the island of Oahu. (Modified after Stearns, 1946.)