

Some of the samples used in Mineralogy Lab are museum specimens. Please do not destroy them. You can do just about anything you want to the grungy ones, but be nice to the pretty specimens as they are irreplaceable.

Name _____

Igneous Minerals in Thin Section

You have been provided with 6 hand specimens and the corresponding thin sections.

A. For each of these samples, you should:

- Identify the minerals in the specimen. To do this, look closely at the hand specimen and determine the number of different minerals present. Identify those that you can. Then turn your attention to the thin section. Go back and forth between the hand specimen and the thin section until you are confident you know what is present.
- Estimate the relative amounts of each mineral present (volume %) in the sample.
- Name the rock you standard names from the IUGS classification system. Copies of this system are available in several books in the laboratory. See the hints below for some useful information.

Hints:

- Identifying minerals in fine-grained igneous rocks (generally extrusive rocks) can be very difficult. For such rocks, it is sometimes easiest to figure out what kind of rock it is first, hypothesize the minerals that should be present, and then go look for them in the specimens. For example, if you think the rock is a basalt (fine grained, dark colored igneous rock) you should look closely for plagioclase and pyroxene. Perhaps olivine as well. For some samples, though, it may not be possible to identify the minerals present with confidence.
- The specimens you have been given include the following: granodiorite, tonalite, quartz syenite, gabbro, dacite, and andesite. So, all you have to do is match the names to the specimens.

B. The specimens you have looked at contain about 8 main phases. Most are minerals, but there may also be some volcanic glass. The samples also contain a number of minor minerals. Make a list of all the minerals you have identified. Then, for each, make a sketch of what the mineral looks like in thin section. And, write a description that makes clear the most important optical characteristics that you used for identification.