Instructor's Notes

The soils we work with in this exercise are brought in by the students. To encourage students to actually bring in a soil sample, I offer five bonus points on the next quiz for a usable soil sample.

At the beginning of the activity, I ask each student with a soil sample to briefly describe the location from which they obtained the soil and the general conditions when the sample was collected. Most students are commuters so the soils often represent a wide geographic area. This allows students to hear about the variety of soils represented by the class samples (and also to find out who else lives in their town!).

I usually give the class about 30 minutes to analyze the soils. (This is not a lab course, so I keep it short to fit within our scheduled class periods.) Most students bring in enough soil to share with their classmates so multiple people analyze each soil. A common data table is on the front blackboard for everyone to fill in with their results. After the 30 minutes is up, I bring everyone's attention to the class data table and ask what, if any, trends are present in the results. Students often focus on the differences/similarities within a particular town and assume that differences are due to human error. This leads us to discuss the geography of each location in more detail and gain the understanding that soils within a town may not be identical to each other, but may have more in common with a different town due to landscape position, human modification, etc.

The students are also given the Supplemental information for additional information and for the homework assignment contained within. The assignment gives the students practice using the soil textural triangle and also to consider the practical purposes for knowing the soil texture.

An extension of this activity this past semester was to also determine the porosity and permeability of each soil. This resulted in a lot of classroom discussion about urban planning, engineering properties of soils, and possible errors in their previous textural classifications.