Assignment 4: Cycles and soils

What makes a “closed” system closed? Is the Earth’s surface a closed system with respect to energy? to materials? Can the Earth’s surface be considered an “isolated” system with respect to either energy or materials? Why or why not?

Various cycles can be described: for instance, the hydrologic (water) cycle, or the carbon cycle. These types of cycles can be illustrated as “box models” in which there are “boxes” which are the various reservoirs of the material, and “arrows” which are the processes that move the material from one reservoir to another. To illustrate the point, draw the carbon cycle as a box model below. You must include at least these boxes: atmosphere, organisms, soil, rocks, ocean, and enough arrows to show the processes that occur between each (labeled with the name of the process, of course).

What is the advantage in considering various processes that occur on Earth as part of a cycle or system, rather than an isolated occurrence?
What’s the **difference** between physical and chemical weathering?

Name at least two methods of **physical weathering**. Name at least two methods of **chemical weathering**.

List at least five **factors** that determine how and what kind of soil forms.

How are soils classified (hint: there is more than one correct answer to this question)? Give the name and characteristics of the soils in the North Seattle area, according to the **soil classification system** you have chosen.

What is **soil creep** and how can you tell it’s happening?