Name _____ Date _____ Activity Sheet 3, Part A

WARNING — This set contains chemicals that may be harmful if misused. Read cautions on individual containers carefully. Not to be used by children except under adult supervision.

(The chemical used in this activity is vinegar.)

Earth's Weathered Crust

Chemical Weathering

1. To demonstrate chemical weathering, place a piece of marble rock on a paper towel. Position it so that the flattest surface is facing up. Bring your pipette to the distribution station and fill it with a small amount of vinegar. Back at your workstation, place several drops of the vinegar, a weak acid, onto the flat surface of the rock. Allow it to sit undisturbed for several minutes. Observe the rock and vinegar closely. Describe what you see.

_____

_____

Allow the vinegar to sit for several more minutes. Then rub your finger over the affected area. Describe what you feel.

_____

_____

What do you think caused this?

_____

_____

How does this demonstrate chemical weathering?

_____

_____

_____

Mechanical Weathering

2. Bring one plastic tube to the distribution station and fill it to a height of 8 cm with gravel. Then add water until the tube is three-quarters full. Bring the tube back to your workstation.

3. Your teacher will assign your team a number. This number represents the number of minutes you are to shake your team's tube. When the teacher gives the signal, begin shaking the tube. Watch the clock and stop shaking when your team's time is up.

4. After you have stopped shaking the tube, swirl the water in your tube several times, then pour it off into the second tube. Using masking tape, label the second tube with your team name and the number of minutes the tube was shaken. Allow the sediment to settle out overnight.

Name _____ Date _____ Activity Sheet 3, Part B

Earth's Weathered Crust

Separating Soil

5. Use masking tape to label one tube Sandy Soil and the other Clay Soil. Bring the tubes to the distribution station and place 4 rounded teaspoonfuls of each type of soil into the appropriate tube. Fill the tubes with water to within 3 cm of the top. Place the caps securely on the tubes. Return with the tubes to your workstation. Shake each tube thoroughly. Tip each tube upside-down for a few seconds and then place it upright on your table. Leave the tubes undisturbed overnight. What do you predict will happen?

6. The next day, observe the soil in the two tubes. Record your observations below.

Sandy Soil:

Clay Soil:

What makes up soil?

Where do the particles in soil come from?

Are all soils the same? If not, how do they differ?