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Studies in the Geology of Iowa for Teachers
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University of Northern Iowa
Class Project

A: Description

My project is to develop two stations that the students can do to supplement their understanding of sand and soil particles in their Earth science unit. [Station A: Understanding the effects wind/weathering has on the sand particles; Station B: to explore what the sea during the Devonian time period looked like; Station C: to look at the porosity of different soils and construct a mini dam that will hold water. (I already do a version of station C, however) I plan on adding a porosity test to the soil samples before we actually do the dam building.]

B: Objectives/Goals:

Station A	Station B	Station C
Students will begin to understand how wind effects sand particles.	Students will begin to apply what they see in the fossils to real life ecosystems.	Students will become more aware of how and what kind of different soil types hold water the best.

C: Implementation:

Station A	Station B	Station C
<p>1) Three microscopes will be set up with 3 different samples of sand from the 3 Cedar Valley target areas (located in my rock box).</p> <p>2) A map of the Cedar Valley area, with sand samples marked, will be displayed of the areas</p> <p>3) Students will use a Venn diagram to list ways in which the 3 samples are the same or different.</p> <p>4) Students can make hypothesis about why the sand samples look different.</p>	<p>1) Students will look at the fossil samples (that I have collected) and create a 2 dimensional picture of what the sea, in Devonian time, looked like.</p> <p>2) Books will be provided with current diagrams and pictures of our seas today.</p> <p>3) When the picture is complete they should look at the interpretations in the books/pamphlets that are in the "if you're curious" packet. (the packet will consist of the hand outs on fossils from Coralville Reservoir, the book.) Three items in their picture should be labeled.</p>	<p>1) Students will check the porosity of soil types, using a funnel and decide which type of material to use when building a dam.</p> <p>(The porosity test will be done by putting 20 milliliters of soil in a funnel. Water will be added and measured until it begins to drip from the bottom of the funnel.)</p> <p>2) Students will build a make shift dam using the material that they believe holds water the best. (We use a paint tray with sandy soil as our base and then students add materials to make the dam.)</p>

D: Evaluation:

Station A	Station B	Station C
<p>Teacher Check Sheet:</p> <p>_____ Yes, the student identified 2 ways in which the sand types were different.</p> <p>_____ Yes, the student made a hypothesis as to the reason of the differences.</p>	<p>Student Self-Check Rubric:</p> <p>_____ 3 items were included in the sea picture</p> <p>_____ 3 items were labeled</p> <p>_____ care was taken when doing the project</p>	<p>Teacher check sheet:</p> <p>_____ the group recorded how many milliliters of water 20 milliliters of soil/sand/clay will hold before the water starts to drip</p> <p>_____ the group built a dam that held 40 milliliters of water with little seepage.</p>

Overall grade is based on how many of the items are checked off on each station (I have more than 3 stations).