

Service Learning Scenario #2 Water Investigation

Set-Up: A significant amount of each school site is covered by impermeable surfaces for playgrounds, athletic courts, parking lots, sidewalks, and the buildings themselves. Students notice that, when it rains, water runs off and pools in the same way during each precipitation event. Some of the storm drains around the school get clogged with leaves and trash. Unless there is a street sweeper, over time these bits and pieces breakdown and disappear down the drain. On the lawns and fields there are depressions in which water collects and, after a day or so, gets an offensive, muddy scum which attracts mosquitoes and other insects.

Question: What types of service learning projects can be designed using these findings?

Finding #1: The students decide to collect some of the run-off and pooled water for chemical and biotic testing. They can research what tests would be most advantageous for their purpose on computer sites such as the EPA, Department of Environmental Quality and the Blue Thumb program. The students will probably be testing for petroleum products and other automotive chemicals as well as bacteria in standing water. They will be able to prepare a report for a governing agency such as the principal or the school board regarding their findings. The students may decide to post signs on the storm drains prohibiting dumping.

Finding #2: The students decide to explore remedies for the problems generated by the run-off and pooling. They may investigate what happens to run-off from their community after a significant rain event (which may also include their homes): i.e. how do the storm sewers run through the neighborhood and into what body of water does the rain ultimately flow? They may consult professionals such as city planners and landscapers for ideas about how to decrease the problems associated with run-off and to eliminate pools of standing water. The students may research substances being developed to replace the impermeable surfaces with semi-permeable or better products. A young student in California conducted an experiment on the health effects of playing sports on turf as opposed to grass. This data may be consulted for this investigation.

Finding #3: The students decide to explore alternative uses for rainwater flowing from buildings or pooling in inconvenient areas after a significant rain event. They will want to know if it is possible to redirect flow into a container designed to act as a reservoir (rain barrel) for future use on the grounds. They will also need to know how best to distribute the water from this central location. Professional landscapers would be able to help the students construct diversions on the property into a pond with aeration and aquatic plants. A local zoologist would be able to advise the students as to attracting wildlife to their pond.