



MCKEOWN ELEMENTARY SCHOOL STORMWATER SUMMER CAMP

**Sussex County Municipal Utilities Authority - Wallkill River Watershed Management Group
in Partnership with New Jersey Future's Mainstreaming Green Infrastructure Project
July 30, 2018 - August 3, 2018**

Monday – July 30, 2018: Watershed Pollution

- Sum of the Parts (Project WET Activity)
 - Students design their own piece of riverfront property, not knowing that their properties will be connected to one another, to demonstrate the collective impact that each will have on the health of the river.
- EnviroScape
 - An interactive watershed model used to show how pollution enters local waterways.
 - Students will learn about different types of non-point source pollution and how pollution enters streams following rainstorms.
- Away on the Bay (rhyming short story)
 - Will describe ways that people pollute water bodies, negatively impacting the natural environment
- Discussion about the differences among recycling, trash, and household hazardous waste with the SCMUA Recycling Coordinator.
- Storm Drain Game
 - Trash/recycling/hazardous waste sorting game to teach students that litter left on the street runs down into storm drains and eventually into rivers and streams.
- Macroinvertebrate identification and the effect of stormwater on their homes
 - Students will examine live and preserved aquatic insects and learn about how pollution negatively impacts aquatic species.
- Dragonfly Pond (Project Aquatic WILD Activity)
 - Students will assume the role of city planners and will be responsible for making decisions about the layout of a fictional town in order to best protect the water quality of Dragonfly Pond.
 - They will work in groups to determine the ideal layout for the location of houses, farms, highways, gas stations, restaurants/stores, and tree buffers in proximity to the pond.

Tuesday, July 31, 2018: Water Conservation

- Opening activity: Have students name different types of water conservation practices
- Calculate Water Footprint
 - Using the Water Footprint Calculator (<http://watercalculator.org>), students will see how much potable and virtual water they use each day.
- Storm Water (Project WET activity)
 - Students will use kitchen sponges to demonstrate how stormwater can be captured, stored, and released.
 - Students will learn how city planners can make decisions that will reduce the effects of polluted stormwater runoff.
- Campus Walk: students will walk around school to observe the McKeown rain garden and the newly installed rain garden sign
- Impervious Surfaces Lab
 - Students will learn about pervious and impervious surfaces and will determine the different infiltration rates depending upon the surface the water is flowing over.
 - Lab will test the different infiltration rates on grass, mulch, and asphalt surfaces.
- Magic Sidewalk Lab
 - Students will learn how the materials used to make traditional concrete and porous pavement differ.
 - Students will experiment with different ratios of materials to predict how infiltration rates will change as porous pavement is created.
 - Students will pour water over the porous pavement mixtures they created, testing whether the ratios used allow water to successfully pass through.

Wednesday, August 1, 2018: Stormwater Stewards

- Litter clean-up and trail walk along the Sussex Branch Trail
- Field tour of a current SCMUA-WRWMG riparian restoration project site upon which McKeown School students previously helped plant trees
- Conjunction Function
 - Warm-up activity using household items to help students remember all of the functions and benefits of rain garden installation
 - Example: coffee filter- traps and treats pollutants
- Getting the Word Out Activity
 - Students will develop outreach materials (brochures/flyers/door hangers) about the benefits of green infrastructure projects.
 - Each student group will make a presentation in front of their parents and peers about what their brochure is showing and how it will convince others to adopt stormwater BMPs for their own properties.
- Trout fishing along the Paulins Kill with NJ's Hooked on Fishing, Not on Drugs Program

Thursday, August 2, 2018: Crandon Lakes Field Trip

- Stormwater BMP online model

- Used to show students the effect of land cover and soil type on stormwater runoff amounts
- <https://runoff.app.wikiwatershed.org/>
 - Model created by Stroud Water Research Center to demonstrate different infiltration, evapotranspiration, and runoff volumes on selected land cover types.
- View a video showing stormwater runoff off of the clubhouse's parking lot during a recent thunderstorm
- Stormwater volume calculations
 - Students will work with the SCMUA-WRWMG staff to calculate the stormwater runoff from the nearby asphalt parking lot.
- Comparing the characteristics of clay, sand, and humus
- Experiment: Which soil type drains faster: sand, clay, or humus?
- Perc Test: testing the soil for the proposed rain garden to be installed at Crandon Lakes in fall 2018
 - Students will work with a Natural Resources Conservation Service soil scientist to learn how the properties of soil affect rain garden placement and design.

Friday, August 3, 2018: Stormwater BMP Tour with Rutgers Water Resources Program

- Students will board a bus and travel to Parsippany to participate in a BMP bus tour led by Pat Woods from Rutgers Cooperative Extension
- Students will have a chance to see multiple types of stormwater best management practices that have been installed by Rutgers Cooperative Extension.
- Some of the BMPs that the students will see include: community rain gardens, bioswales; tree boxes; Turfstone; cisterns
- Bus tour will end at Memory Park with a picnic table pizza lunch.
 - Students will have a chance to see the Memory Park rain garden that was installed in October 2017.