



# EDUCATIONAL RESOURCES FOR STUDENTS

Provided by Fairmount Water Works, Philadelphia Water Department & Partners

## CLASSROOM

### Integrated Classroom Curriculum

Fairmount Water Work's (FWW) new Understanding the Urban Watershed Curriculum and Online Teacher Toolbox is a creative and practical K-8 curriculum designed for classroom teachers and informal educators who want to engage students in the compelling and evolving story of cities and their water systems. All lessons are hands-on and aligned with Common Core State Standards for Math and Literacy. The curriculum is organized into thematic units:

- o Water in Our World
  - o Drinking Water and You
  - o Down the Drain, or Out of Sight Out of Mind
  - o Land And Water: A Delicate Balance
  - o Green Plan for the Future: Playing a Part
  - o Environmental Stewardship
- It is designed for classroom teachers from all disciplines or cross-disciplines and can be integrated into what is already being taught in the classroom and on each teachers' own schedule
  - Easy to access online resources include content background, embedded videos and links to web resources as well as a comment and feedback tool
  - Project-based learning for community/school based green stormwater infrastructure projects as last thematic unit
  - Professional support from PWD experts and their partners is available
  - Teacher is often matched with a college/university student for a semester to support classroom lesson planning and activities

For more information, call FWW at 215-685-0723 or email [ellen.schultz@phila.gov](mailto:ellen.schultz@phila.gov) // [www.resourcewater.org](http://www.resourcewater.org)

### Outside-in for the Classroom (1 visit per classroom)

FWW Environmental Educator in the Classroom – Hands-on 45-minute Lesson on Drinking Water and Watersheds; Enviroscape Lesson



## PROJECTS/CONTESTS FOR STUDENTS

### GreenSTEM Network Monitoring Project

The Philadelphia Water Department is connecting K-12 students to green infrastructure in schoolyards through a STEM project that involves building and monitoring a ROOT KIT installed at schools to maintain plant health and analyze data from sensors.

For more information, visit: [www.greenstemnetwork.org](http://www.greenstemnetwork.org)

### Green City, Clean Waters Art Calendar Contest

The Partnership for the Delaware Estuary sponsors a *Green City, Clean Waters* Art Contest on behalf of the Philadelphia Water Department. Philadelphia's students can participate in three different ways. They can create a drawing, short video or both. These should show others how to stop polluted water from entering local storm drains. Those who win will see their artwork exhibited in public when it becomes an innovative street sticker. We will feature them in a SEPTA advertising campaign and in a free calendar next spring.

For more information, visit: [Info@DelawareEstuary.org](mailto:Info@DelawareEstuary.org); (800) 445-4935; <http://www.delawareestuary.org/>





## FIELD TRIPS

### Field Trips to the Fairmount Water Works, Philadelphia's Urban Waters Education Center

School visits to FWW (pre k- college) – 2-hour hands-on activities addressing science and technology, Philadelphia history, math, social studies, global water environmental justice and language art; and tour of the landmark site. Themed lessons include:

- *Water in Our World* – An excellent overview lesson about water: past, present and future. This is a good introductory program that sets the foundation for further studies
- *Green City, Clean Waters: Nature's Lead* – Helps students understand the benefits of watershed management tools that transform the cityscape from gray to green
- *Land and Water: A Delicate Balance* – Helps students understand that what happens on land can affect the water ways.
- *From Streams to Sewers: Building a City Infrastructure* – Explores the history of the how sewers came into being
- *Building as Machine: Water for the City* – Students explore the different technologies used throughout history to help pump water from the Schuylkill River
- Lab-Based Program *Seeing is Believing: A Drop in the Bucket* – Students investigate the different organisms that live in the Schuylkill and how they can play a role in telling us about the quality of water by taking live water samples, making sample slides and projecting microscopes.
- Others: *Global Water Action: Engineering a 21st Century Solution*; *Environmental Justice: A Historical Perspective*

### Field Trips to Environmental Education Nature Centers and Recreation Centers in Fairmount Park

Philadelphia Parks & Recreation (PPR) educators offer a variety of experiences at the Wissahickon and Pennypack environmental nature centers. The educators will also come to your nearby recreation center with a variety of fun and engaging lessons for ages 6-14 on topics, such as turtles, trees, wildlife tracks, greener bubbles, water world and more.

To schedule a free visit, contact: [Wissahickon Environmental Center at WEC@phila.gov](mailto:WEC@phila.gov); 215-685-9285 and [Pennypack Environmental Center](mailto:Pennypack@phila.gov); 215-685-0470

### The Cobbs Creek Community Environmental Education Center

Offers a docent program for high school students to help them better connect to their natural habitat in West Philadelphia. Educational lessons can also be offered at the center.

For more information, contact: [wildwestphiladelphia@gmail.com](mailto:wildwestphiladelphia@gmail.com); 215-685-1990

### Field Trips to PWD Drinking Water and Wastewater Treatment Plant Tours

Students and teachers can visit the water and sewage treatment plants where they are able to see how water is processed and cleaned before it reaches their taps. Contact FWW to schedule a visit.



## TEACHER TRAINING

### Partnership for Delaware Estuary Watershed Teacher Workshop (Summer)

This workshop is divided into two parts; Estuary Explorer from July 10-12, 2014 and Urban Waters from July 16-28, 2014. Teachers are not required to attend both sessions.

- Gain professional instruction in environmental education
- Receive FREE educational and classroom materials
- Explore exciting field-trip locations in Delaware, New Jersey, and Pennsylvania
- Earn approximately 15 clock hours (a.k.a., continuing professional education hours or professional development hours) per session upon completion
- PDE partners with FWW on 2 days of this workshop.

For more information, contact:

[Info@DelawareEstuary.org](mailto:Info@DelawareEstuary.org); (800) 445-4935;

<http://www.delawareestuary.org/>

### FWW Teacher Fellowship (Academic Year)

By invitation to teachers who are Integrating Understanding the Urban Watershed in the classroom and attending monthly meetings (with stipend).

## RESOURCES FOR TEACHERS/SCHOOL FACILITY AND MAINTENANCE STAFF/COMMUNITY

### Soak It Up, Adoption!

The Soak it Up, Adoption! program awards civic organizations grants to help care for 1 or more green stormwater tool, helping to keep the tools litter-free and functioning properly.

More information can be found at:

<http://www.phillywatersheds.org/adoption>

### Partnership for the DE Delaware Estuary Water Education Resource Guide

Learn about the many exciting programs and resources for teaching water-related issues and concepts.

- o The guide contains a list of materials and programs that are available through non-profit organizations and governmental agencies on topics relating to water resources.

<http://www.delawareestuary.org/pdf/>

[ResourceGuides/2010\\_resource\\_guide.pdf](http://www.delawareestuary.org/pdf/ResourceGuides/2010_resource_guide.pdf)

### Guide to Stormwater Management on School Campuses

The Guide to Stormwater Management on School Campuses provides schools with steps and actions for improving stormwater management on campuses and in the surrounding community. Not only will the projects help protect drinking water sources, but they can provide a "green space," restore waterways, and improve quality of life for all residents. The guide can also provide your school with new opportunities for using your campus as an outdoor classroom.

<http://www.phillywatersheds.org>

### PDE Schoolyard Habitats

Schoolyard Habitats is a program offered by the Partnership for the Delaware Estuary (PDE) that helps schools transform their properties into outdoor classrooms where children can learn about native-plant landscapes and improve water quality.

For more information, visit: [Info@DelawareEstuary.org](mailto:Info@DelawareEstuary.org); (800) 445-4935; <http://www.delawareestuary.org/>