

GREEN SCHOOLS-BLUE WATERS

STEM Investigations for Sustainable Schools

Activities and resources for educators grades 3 – 12

SPRING 2016

Four 1-Credit Courses

Those wishing to obtain graduate credit from Lebanon Valley College can participate in the hybrid course which includes online coursework, and a Saturday field workshop. Educators and Community members are welcome to attend the Saturday field workshops for free or receive Act 48 hours for a small registration fee.

Module 1

***STEM Investigations for Green Schools:
Investigations in Energy Science
and Social Studies***

Hybrid course: January 18-February 5

In class meeting: January 23, 9:30 am - 3:00 pm

Location: Londonderry School, Harrisburg, PA

Module 3

***STEM Investigations for Green Schools:
Water Quality and Stormwater
Management for Schools***

Hybrid course: March 14-April 1

In class meeting: March 19, 9:30 am - 3:00 pm

Location: Lancaster, PA

Module 2

***STEM Investigations for Green Schools:
Investigations in Recycling, Waste
Reduction and Environmental Quality***

Hybrid course: February 15- March 4

In class meeting: February 20, 8:30 am - 4:00 pm

Location: Greater Lebanon Refuse Authority and LVC

Module 4

***STEM Investigations for Green Schools:
School Yard Habitat, Gardens, Health and
Nutrition***

Hybrid course: April 11-May 6

In class meeting: April 16, 9:30 am - 3:00 pm

Location: Carlisle, PA

FOR FULL COURSE DESCRIPTIONS VISIT www.lvc.edu/mse/

Support from DEP Environmental Education Grant

LEBANON VALLEY COLLEGE

Master of Science Education, STEM Programs

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Register at www.lvc.edu/mse/



Green Schools, Blue Waters

COURSE DESCRIPTIONS

Module 1

STEM Investigations for Green Schools: Investigations in Energy Science and Social Studies

Energy is a major part of our lives, our schools and our budgets. Our students are connected to energy in every part of their day including lighting, heating, cooling, transportation, and more. Energy is related to many environmental issues such as air quality, climate change, resource extraction and waste.

In these Investigations, teachers will:

- Participate in lessons and activities exploring the science and social studies of energy utilizing DEP's Keystone Energy Education Program, ECO Schools USA and other resources.
 - Learn how to help students investigate energy, analyze data and apply their investigations to real-world solutions.
 - Receive energy kits and resources from a variety of sources.
 - Explore the energy saving practices at Londonderry School and apply practices to their own school and lives.
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Module 2

STEM Investigations for Green Schools: Investigations in Recycling, Waste Reduction and Environmental Quality

Schools produce a waste stream of paper, food and chemicals every day. Investigating science and engineering of waste management, air quality and safe products in our schools creates awareness that leads to healthier choices. Resources, kits and materials for student investigations will help teachers apply information to implement best practices for STEM investigations. Funding resources and partnerships for recycling and air related health issues will be reviewed.

In these Investigations, teachers will:

- Participate in lessons and activities exploring the science and social studies of recycling, waste management, air quality, chemical management, building materials and transportation.
 - Learn how to help students investigate waste and air quality, analyze data and apply their investigations to solving real-world problems and school wide solutions.
 - Learn about school and community waste production and air quality.
 - Explore creative solutions that can be implemented and measured.
 - Utilize ECO Schools USA, PLT and other statewide programs.
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Module 3

STEM Investigations for Green Schools: Water Quality and Stormwater Management for Schools

Activities and resources will guide teachers to collect and manage data on water consumption and stormwater. Math and science resources for student driven research will be provided. Teachers will utilize ECO Schools USA, PLT, Penn State Cooperative Extension resources and materials.

In these Investigations, teachers will:

- Participate in the science and social studies of water supply and water conservation.
 - Explore activities and resources for connecting students to the impacts of the water cycle on the school, community and watershed.
 - Learn how to help students investigate water conservation and stormwater reduction, analyze data and apply their investigations to real-world solutions.
 - Explore STEM options for problem solving and social impacts of water management locally and globally
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Module 4

STEM Investigations for Green Schools: School Yard Habitat, Gardens, Health and Nutrition

Activities and discussions will focus on successful investigations for school sites that lead to improvements for a sustainable and healthier school environment. Through the activities students will map their school site, conduct inventories, explore diversity, enhance habitats and explore opportunities for food gardens and pollinator gardens. Strategies for improving health and nutrition will be discussed and explored. Grant opportunities and partnerships will be discussed.

In these Investigations, teachers will:

- Participate in science, math and health activities relating to school yard habitats, biodiversity, nutrition, and food-to-table gardens.
- Learn how to help students investigate biodiversity and food to health issues, analyze data and apply their investigations to real-world solutions. Pennsylvania Audubon Programs, ECO Schools USA, PA Game Commission, PLT and other supportive resources.
- Utilize National Audubon and Pennsylvania Audubon Programs, ECO Schools USA, PA Game Commission, PLT and other supportive resources.