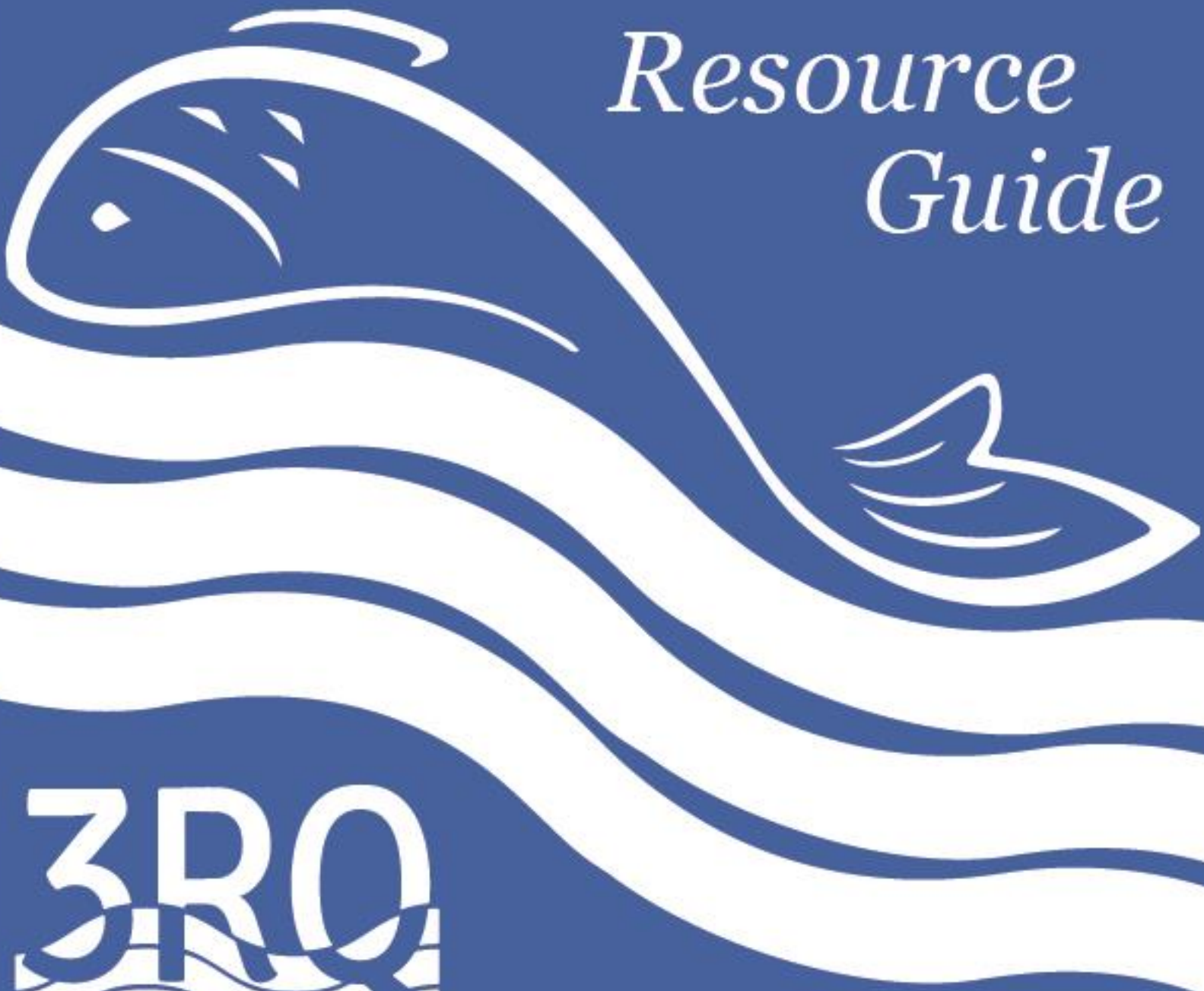


REACH4 Schools

*Resource
Guide*



3RQ
THREE RIVERS QUEST

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Table of Contents

Introduction.....	4
I. Lesson Plans/Curricula.....	5
NanoSense SRI.....	5
University Corporation for Atmospheric Research – Center for Science Education (UCAR)	5
The Water Project	6
Pennsylvania State University, Department of Ecosystem Science and Management.....	6
TeachEngineering	6
Freshwater Live – Scientists in Action	7
Florida Community College – Consortium for Pollution Prevention Education.....	7
EarthEcho International	7
II. Videos and documentaries	7
Flow: For Love of Water. 1 hour and 33 minutes long.....	7
After the Storm – A Citizen’s Guide to Understanding Stormwater. 21 minutes	7
Water Pollution Lab: 2 activities. ~10 minutes.	8
III. Government agencies.....	8
Environmental Protection Agency.....	8
Pennsylvania Department of Environmental Protection	8
PADEP Environmental Education Grants.....	8
IV. Non-Profit Organizations.....	9
Project WET	9
City Nature Challenge.....	9
Encyclopedia of Life (EOL)	9
EarthEcho International	10
Stroud Water Research Center.....	10
V. Funding sources.....	10
CORPORATE FUNDERS.....	10
EQT Foundation	10
KeenEffect	11
Massaro Corporation.....	11
NRG Energy, Inc.	11
Pennsylvania American Water Company	12
Peoples Gas Company	12
PPG Foundation.....	12
FOUNDATIONS.....	13
Colcom Foundation	13
Claude Worthington Benedum Foundation	13

Jack Buncher Foundation	14
Cornell Douglas Foundation	14
Grable Foundation.....	14
The Heinz Endowments.....	14
Hillman Family Foundations	15
Laurel Foundation.....	15
George and Miriam Martin Foundation	16
McAuley Ministries.....	16
Pittsburgh Foundation.....	16
A Special Thanks To... ..	17

Introduction

This resource guide was created as part of an Environmental Educational grant received from Pennsylvania Department of Environmental Protection (PADEP). This guide provides middle to high school teachers with resources for water quality monitoring. The resources listed in this guide are by no means comprehensive, as there are too many to list here. However, we have made every attempt to provide pertinent resources, such as lesson plans and activities, along with connections to non-profit, NGO, and governmental agencies, to help support those teachers who participated in the REACH 4Schools program from 2017 through 2019 school years.

The West Virginia Water Research Institute (WVWRI), a program of the National Research Center for Coal and Energy at West Virginia University, has been actively researching water related issues since 1967. When municipal water authorities were puzzled by the sudden increase of total dissolved solids (TDS) in late 2008, it was in the interest of WVWRI to find out what might be causing the changes in the water chemistry of the Monongahela River. While numerous programs existed that monitored water quality, the data collected was either too sporadic or the studies did not include TDS. In response to the need for TDS data, routine monitoring on the mainstem of the Monongahela and mouths of major tributaries began in 2009 with funding through USGS and WVWRI. In 2011, thanks to funding by the Colcom Foundation, the Three Rivers QUEST (3RQ) program was initiated. 3RQ monitors rivers, tributaries and headwater streams that drain an area of over 25,000 square miles in five states. It brings together academic researchers, citizen scientists, and conservation groups to collect, analyze, and monitor important water quality data. This data is displayed on the 3RQ website to provide the public, other researchers, federal and state agencies, and industry with timely and accurate information as it pertains to the overall health of our local rivers and streams.

The data is displayed via maps that have been separated by member (Research Partners, Volunteers, and Schools), with specifics easily viewed by clicking on any of the sampling sites. Maps are updated regularly with new data and sampling locations. All data is held in the 3RQ database WATERS (Watershed Assessment Tools for Education and Research Studies), which serves as a platform for managing water quality data collected by organizations involved with 3RQ.

3RQ launched REACH 4Schools (R4S) as a full program in mid-2017 with a grant from the Pennsylvania Department of Environmental Protection Environmental Education Grants Program. R4S is the educational component of 3RQ *REACH--Research Enhancing Awareness through Community Hydrology*, a citizen science outreach program on river water quality monitoring. R4S is the educational framework that engages students from grades 6 through university level in monitoring water quality within the Allegheny, Monongahela, and upper Ohio River Basins. Middle and high school students who participate in the project become involved by collecting data, either continuous by deploying data loggers, and/or discrete by obtaining physical samples for chemical analysis.

Educators can use the data collected to teach their students in many ways and on many topics, such as general water quality, water chemistry, and chemistry as it relates to biology, aquatic biology, water sampling, environmental principles, ecology, data analysis, data entry, and database management.

I. Lesson Plans/Curricula

This Section contains links/URLs and information on various organizations that offer lesson plans or other educational support for middle to high school students and teachers.

NanoSense SRI

Main URL: <https://nanosense.sri.com/index.html>

This is a non-profit research institute that is supported by the National Science Foundation. There are 4 curriculum units that on nanoscience, and one of them deals with water specifically. *Fine Filters* has several lessons within the unit and the link listed below is the main page for the unit. The entire unit or individual lessons can be downloaded and these links include the lessons, PowerPoint presentations, and student and teacher materials. Additionally, alignments for high school classes (Chemistry, Physics, Biology, and Environmental Science) can also be found on the Activities page. A brief synopsis of each lesson are provided below.

Fine Filters: Filtering Solutions for Clean Water: <https://nanosense.sri.com/activities/finefilters/index.html>

Lesson 1 – The Water Crisis. This lesson will introduce teachers and students to the need for clean drinking water and the global crises surrounding water access and quality.
https://nanosense.sri.com/activities/finefilters/watercrisis/FF_Lesson1Teacher.pdf

Lesson 2 – The Science of Water – This section deals with the specific science behind water – its chemical properties, molecular structure, bonding, etc. There are lab activities to give students hands-on experiences and an in-class assessment.
https://nanosense.sri.com/activities/finefilters/scienceofwater/FF_Lesson2Student.pdf

Lesson 3 – Nanofiltration – In this lesson, students will explore how nanofiltration works, membrane technology, and provides cross-disciplinary opportunities for students to incorporate chemistry, biology, and engineering with worksheets and a lab activity.
https://nanosense.sri.com/activities/finefilters/nanofiltration/FF_Lesson3Teacher.pdf

University Corporation for Atmospheric Research – Center for Science Education (UCAR)

Main URL: <https://scied.ucar.edu/>

UCAR SciEd works closely with the National Science Foundation’s National Center for Atmospheric Research (NCAR) and member universities to provide teachers and students with educational programs and activities. They provide workshops, programs, and resources for teachers, along with games, activities, and other learning opportunities for students and the general public. Their Learning Zone contains 8 different activities dealing with weather, climate, and simulations. Additionally, there are links to outside educational programs provided by members that provide lessons on various Earth science topics. One of these member sites are described below as an example. <https://scied.ucar.edu/education/programs>

One such member is the **GLOBE** program (<https://www.globe.gov>), a “worldwide, hands-on, primary and secondary school-based science and education program designed to engage students in the process of science.” Within this program are news articles, events, and workshop links on all 4 Earth systems, including the hydrosphere. In the Hydrosphere section, students can learn about the major chemical protocols in water quality, such as alkalinity, conductivity, DO and the like. The GLOBE program offers classroom activities, student research

from around the world and the opportunity for students to upload their research to share with others. <https://www.globe.gov/do-globe/classroom-ready-activities/learning-activities?sphereName=Hydrosphere>

The Water Project

Main URL: <https://thewaterproject.org>

The Water Project is a non-profit organization dedicated to bring clean, safe, water to communities in the sub-Saharan Africa. The main water page contains additional links from various outside organizations, such as the US Environmental Protection Agency (USEPA) and the Water Environment Federation for activities and lessons. Various posters from the USGS are linked. A few examples are shown below.

EPA's Interactive Water Cycle - https://www3.epa.gov/safewater/kids/flash/flash_watercycle.html

This interactive animation details the parts of the water cycle and allows for auto-play or manual exploration. While the animation may be too child-like for older students, the information is at an appropriate level.

Water Environment Federation: <https://www.wef.org/>

The Water Environment Federation is a non-profit association providing technical education and training for water quality professionals, but several of their resources are appropriate for upper level high school students. For example, a lesson on the biography of a river (<https://thewaterproject.org/resources/high-school-lesson-plans/biographyriver.pdf>) provides background information, vocabulary, and an in-class or homework assignment to learn about local rivers.

Pennsylvania State University, Department of Ecosystem Science and Management

Main URL: <https://ecosystems.psu.edu/youth/sftrc/lesson-plans/water/9-12>

The lesson plans and activities listed in here are for students in grades 9-12. These lessons discuss many water-related topics, such as the water cycle, pollution, wetlands, acid rain and the like. For example, the lesson on groundwater contains a lab activity on evapotranspiration and how soil filters water. <https://ecosystems.psu.edu/youth/sftrc/lesson-plans/water/9-12/groundwater>

Another lesson discusses how to identify the watershed in which students live. All lessons contain links to outside organizations, such as USGS, PA Fish and Boat Commission, and additional pages within PSU. <https://ecosystems.psu.edu/youth/sftrc/lesson-plans/water/9-12/pa-watersheds>

Additionally, there is an entire section within PSU that deals with all aspects of water management (stormwater, drinking water, irrigation, wastewater, and ponds). <https://extension.psu.edu/water>

TeachEngineering

Main URL: <https://www.teachengineering.org/>

TeachEngineering offers a searchable digital library full of engineering curricula that contains easily downloadable free materials to K-12 educators. The curriculum offered is vast and varied, containing both lessons, activities, and Makers challenges, to name just a few. The curricular units cover more than just water topics; teachers can browse the rock cycle, air quality, weather, space, etc. There is a Search page that allows users to browse by curricular unit, lesson, activity, etc and one example is shown below.

The Environmental Engineering unit contains 7 lessons on different aspects of water, from how to handle oil spills to water cleanliness to describing underground rivers. The units have a lesson and then 2 activities each to support the lessons. https://www.teachengineering.org/curricularunits/view/cub_enveng_curricularunit

Freshwater Live – Scientists in Action

Main URL: <https://freshwaterlive.org>

This website contains videos, lesson plans, and activities that discuss how forests are related to water quality. Not only are there lesson plans for all grade levels, but there is a section where you can “Ask A Scientist” any water-related question, in addition to exploring their FAQs. The Q&A covers the entire US so students can learn about water quality nationwide. The resources page contains the lesson plans, opportunities for student involvement in their communities and links for outside resources. The lesson plans incorporate hands-on activities and provide students with opportunities to use technology, such as ArcGIS, they might not otherwise use.

One example of a lesson plan is the **How Clean is Your Watershed**. The activity listed in this pdf uses ArcGIS to explore the index used to predict how clean a watershed is. Students can create a free ArcGIS account, open a map and explore the watershed where their school is located. The pdf gives extensive instructions on how to use ArcGIS, in addition to providing student worksheets for the assignment. https://freshwaterlive.org/uploads/rteditor/file/AGO_101_How_Clean_is_YOUR_Watershed.pdf

Florida Community College – Consortium for Pollution Prevention Education

Protecting Our Water Resources: Student Activities for the Classroom. This activity guide from the Florida Community College with funding from EPA was written for K-9 students but many of the activities are still valid for upper levels. For example, Create Your Own Water Cycle describes building a terrarium, writing a hypothesis about evapotranspiration, and observing how water is recycled in a closed system. All activities use readily available materials, making it a perfect guide for lower-income schools.

http://www.stormwater.ucf.edu/toolkit/vol3/Contents/pdfs/Student%20Activities/student_activities.pdf

EarthEcho International

Main URL: <https://earthecho.org>

Established by the children of Jacques Cousteau, EarthEcho develops programs, videos, lesson plans, and other resources for educators to help inspire students to care for the planet. <https://earthecho.org/educator-resources>

II. Videos and documentaries

This section contains links and titles for various educational documentaries and videos, most of which are found on YouTube.

Flow: For Love of Water. 1 hour and 33 minutes long.

Flow is an investigation into the World Water Crisis and is appropriate for late middle school through adult. The film discusses the growing privatization of the fresh water supply around the world, including solutions and new technologies. <https://www.youtube.com/watch?v=TvtnVQPxmzM&t=15s>

After the Storm – A Citizen’s Guide to Understanding Stormwater. 21 minutes

Produced by EPA and the Weather Channel, this short video, appropriate for high school through adult audiences, discusses 3 case studies on polluted watersheds in Santa Monica Bay, Mississippi River Basin, and New York City. <https://www.youtube.com/watch?v=WtZD173HfyE>

Water Pollution Lab: 2 activities. ~10 minutes.

This video describes 2 water pollution activities illustrating how pollution enters waterways through stormwater runoff and storm drains. Students create mini-waterways, such as a home and/or a farm, “pollute” them with dyes, then “rain” on the models to illustrate how runoff works. Everyday materials are used for the lab, which can easily be set-up and completed in one class session. <https://www.youtube.com/watch?v=hwRsJeQrJHo>

III. Government agencies

Environmental Protection Agency

Main URL: <https://www.epa.gov/>

This is the official government website for EPA and contains both information and activities for students, educators, and the general public. The main page lists all environmental topics and provides background information on a wide variety of water topics. The Ground Water and Drinking Water section discusses regulations, standards, reports and basic information, in addition to lesson plans and teacher guides for all grade levels. There is even a mock town meeting where students debate the pros and cons of an underground storage facility for industrial chemicals and fossil fuels. <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-activities-students-and-teachers>

Pennsylvania Department of Environmental Protection

Main URL: <https://www.dep.pa.gov/Pages/default.aspx>

The PADEP is charged with protecting the environment of Pennsylvania. While there are no lesson plans or educator resources listed on their website, it does offer much in the way of information with respect to water quality, and water-related issues, in addition to providing grant funding for various projects (REACH 4Schools being one of them). There is an e-library that contains reports on water quality for the entire state and a Water Department that handles water-related projects, in addition to acting as project advisors for said projects. Within the Water Department are listings for various water bureaus, the businesses within them, and links to various water quality information.

PADEP Environmental Education Grants

Main URL: <https://www.dep.pa.gov/Citizens/EnvironmentalEducation/Grants/Pages/default.aspx>

The PADEP Environmental Education Grant Program, established by the Environmental Education Act of 1993, mandates that 5% of all pollution fines and penalties collected annually by the Department of Environmental Protection be set aside for environmental education. Administered by PADEP, the funds are used to develop community projects ranging from creative, hands-on lessons for students, teacher training programs, and outdoor learning resources to conservation education for adults. Since the inception of the program, PADEP has awarded more than \$10 million in grants to support the environmental education efforts throughout Pennsylvania by organizations and communities.

Organizations may apply for mini-grants of up to \$3,000 or general grants up to \$25,000. Applications must be submitted online. To submit, please visit the e-grants application found at <https://www.esa.dced.state.pa.us/Login.aspx>.

The annual grant application and award timeline is as follows.

- Early November: Grant round opens. Grants Program Manual is available.
- Mid-December: PADEP typically holds a webinar on applying for grants.
- Early January: Applications are due.
- April 22: Awards are announced on or about this day in conjunction with Earth Day.
- July 1: Awarded projects may begin.

Eligible topic areas include climate change, water, and environmental justice. In the water area, grants are made for programs that educate developers, site designers, municipalities, local officials, businesses, and homeowners about reducing non-point source pollution, along with other water-related educational programs. This includes educational programs on agricultural nutrient management, abandoned mine drainage/reclamation; water conservation; private water wells, groundwater, road salt, citizen's science and water quality monitoring, stormwater management; cold water habitats and fisheries; habitat restoration and other related topics.

IV. Non-Profit Organizations

Project WET

Project WET is based in Montana but provides educational resources and teacher workshops around the globe. Many of their materials must be purchased but the costs are minimal and there are a few free downloadable guides. <https://store.projectwet.org/educators-guides.html>

For example, the Project WET Curriculum and Activity Guide 2.0 is full of activities and extensions that are correlated to the Common Core Standards. This guide is only available after educators complete a Project WET workshop and/or training but they offer a sampler of 7 water-related activities for a small fee. <https://store.projectwet.org/educators-guides/water-activities-water-lesson-plans-educators-curriculum-guide-2-0.html> and <https://store.projectwet.org/educators-guides/water-activities-water-lesson-plans-sampler-2.html>.

However, the Clean and Conserve Education Program contains several educator guides, student activity booklets, and links to online water quality training. The Water Science Project Guide is a free download that contains two group projects on water conservation and disease prevention. <https://www.projectwet.org/cleanandconserve>

City Nature Challenge

Main URL: <http://citynaturechallenge.org/participate/>

The City Nature Challenge (CNC) is organized by the Natural History Museum, of Los Angeles County and the California Academy of Sciences. Communities can sign up to join the Challenge, which is an international challenge to document plants and wildlife across the globe. It focuses on cities and is a competition to see which community is the most engaged, finds the most species, and make the most nature observations. The CNC includes using iNaturalist (iNaturalist.org), an app that allows participants to record their observations in real time and upload to the challenge. There is a downloadable Education Toolkit that walks educators through the process and the iNaturalist website. <http://citynaturechallenge.org/education-toolkit/>

Encyclopedia of Life (EOL)

Main URL: <https://education.eol.org/>

This organization's website offers a way for students to make and use Biodiversity Cards. Students can make them using the EOL Biodiversity Card Maker (https://education.eol.org/card_maker) and upload them to the site for

others to use. It's a great way for students to learn about their ecosystems and food webs but also a great way to show students they are part of a global effort to document and care for species.

EarthEcho International

This is a duplicate listing but this URL features their international challenges where students can compete in a global competition. One such is the EarthEcho Water Challenge, where students not only monitor their water, but can also view WQ results from around the world. <http://www.monitorwater.org/>

Stroud Water Research Center

Main URL: <https://stroudcenter.org/>

Stroud Water Research focuses on clean water education, research, and restoration throughout the world. They have developed a toolkit that includes links to visualize watershed data, such as modeling their watershed. A mobile app can be accessed on their website in addition to a database for macroinvertebrates. <https://wikiwatershed.org/>

V. Funding sources

This section provides information on potential sources of funding for water quality monitoring and educational programs in Southwestern Pennsylvania. The funding sources contained within, listed in alphabetical order, focuses on foundation and corporate sources that have interests in education projects, water quality, ecological subjects, and broad environmental themes. Both corporate and foundation funders vary in terms the types of projects they will consider; the geographic scope of their grant making, which in some cases is very limited; and what costs precisely they will cover. In the latter instance, often funders will limit how much of a grant may be spent on personnel, or on equipment. Additionally, some funders will require matching support, often a designated minimum of the total project budget. In these cases it is common for non-cash in-kind support to be considered as match. This can include the dollar value of donated time, facilities, and equipment.

Funders likewise vary widely in application requirements, format, and process. Some accept applications only at specified times of the year, others have no deadlines and accept applications at any time. Some encourage prospective applicants to contact a program officer to discuss an idea, while others discourage this approach. Some require no more than a letter of inquiry describing the proposed project, its budget, and the applicant organization. Others call for a full proposal at the outset, while still others use a two-step process of an initial inquiry letter possibly followed by an invitation to submit a full proposal. Certain funders make clear that applications may be submitted only via their online application system, yet others will accept applications only by regular mail. As such, *not every listing in this section has an associated URL.*

3RQ will continue to provide support for those teachers who participated in the REACH 4Schools program by helping schools with their grant applications if they request our help.

CORPORATE FUNDERS

EQT Foundation

Main URL: <https://www.eqt.com/our-communities/eqt-foundation>

The EQT Foundation supports programs and organizations that reflect the values of EQT Corporation. Its mission is to help communities prosper through focused giving. Its vision is to make communities better places to live, work and prosper by creating access to opportunities for growth and enrichment. It is committed to supporting the education, the development of diverse and livable communities, and preserving environmental resources.

The Foundation focuses its resources on areas that have a direct effect on the stability of communities and in turn, contribute to the success of its business operations in those areas.

KeenEffect

Main URL: <http://www.keenfootwear.com/grants.html>

KeenEffect, the philanthropic arm of Keen Footwear, makes grants for outdoor projects in the \$2,000 - \$10,000 range. For KeenEffect funding, 6 areas must be addressed, and **each of these areas must be addressed** by your proposed project. Following are the 6 areas, each with a short descriptor.

- *Inspires youth outdoor participation:* Funded projects will inspire youth experiences in the outdoors through nature-based play, scientific education, or stewardship programs.
- *Diverse audiences & geography:* Funded projects will engage diverse audiences in various geographies throughout the world.
- *Innovative & creative:* Funded projects will identify unique needs and challenges related to childhood engagement with the natural world and provide creative, effective solutions.
- *Keen collaboration:* Funded projects will work collaboratively with KEEN to socially share project stories, provide updates, and complete a grant report.
- *The basics:* Only 501(c) 3 (or globally equivalent), non-religious organizations will be funded. They do not fund research projects, conferences, or events.
- *Socially savvy:* Funded projects will have great photos and engaging stories to share, and be willing to engage with @keeneffect. State in detail in your proposal how you will document your project: visually, with photos and perhaps even videos; with stories—especially if they are written or told by young people who took part. Tell how these will be gathered, and how they will be shared with KeenEffect, your community, and beyond.

Massaro Corporation

Main URL: <http://www.massarocorporation.com/work-here/we-serve-our-communities/>

120 Delta Drive
Pittsburgh, Pennsylvania 15238
412.963.2800

The Massaro Corporation makes grants for projects in the Pittsburgh area that connect youth to careers in construction and environmental sustainability. There is no formal, online process for grants, thus it is suggested that the process starts with a phone call to the above number or fill out the online contact form <https://www.massarocorporation.com/get-in-touch/>

NRG Energy, Inc.

Main URL: <https://www.nrg.com/about/community/grant-requests.html>

NRG Energy's *positiveNRG* program makes grants in the company's service areas in 3 focus areas: education, environment, and human welfare.

- *Education* grants support international understanding, cultural exchange, environmental education, entrepreneurial education, and/or local knowledge of the independent power generation business.
- *Environment* grants fund initiatives to preserve natural resources or meet the environmental needs of communities where the firm operates.

Potential Grantees can create an account and submit grant requests online: <https://nrg.versaic.com/login>

Pennsylvania American Water Company

Main URL: <https://www.amwater.com/>

The *Environmental Grant Program* of Pennsylvania American Water Company provides grants of up to \$10,000 for projects located within an American Water service area. Projects may be new or innovative community initiatives or serve as significant expansion to an existing program.

There is an application deadline in March of each year, with funded projects announced in April of that year. Project are to be completed between May and November of the grant funding year, with a report on project results due to American Water in December of the grant year.

Grant applications are to be submitted online at <https://amwater.com/paaw/news-community/environmental-grant-program>

Peoples Gas Company

Main URL: <https://www.peoples-gas.com//>

Peoples Gas makes contributions to organizations and causes in the Peoples Gas service territories that support direct human services, economic development, and environmental causes. A minimum 60-day lead time is requested for consideration and approval. Requests must be submitted via a *Contributions Request Form* and must also be accompanied by a current, completed *W-9 form*. To apply, see <https://www.peoples-gas.com/contributionsrequest/>.

PPG Foundation

Main URL: <http://www.ppgcommunities.com/Home.aspx>

PPG Foundation funds organizations located in PPG or wholly-owned subsidiary locations. It has two priority giving areas—education and community sustainability.

Education is directed toward science, technology, engineering and math (STEM) education programs that lead to academic and career achievement to meet the need for a skilled workforce in research and development, manufacturing, information technology. <http://www.ppgcommunities.com/Our-Story/Education.aspx>

Grants are directed to two areas.

- Hands-on education to both learn and apply STEM skills, content related to real-world context and application, and enhanced ability for teachers/educators to deliver effective and engaging STEM programs;
- Work readiness skills with particular emphasis on skill development in STEM fields.

Special attention is paid to programs for educational opportunities beyond high school or secondary school, and where possible, they seek to engage women and other underrepresented populations.

Community Sustainability grants aim to strengthen organizations and programs that meet essential needs, promote environmental sustainability, foster economic development and support disaster relief efforts. Priority funding within this area varies by location, based on the specific needs of PPG communities.

Applications are accepted and reviewed throughout the year. All applications must be made through an online application system.

<https://communities.ppg.com/getmedia/9cd9d16c-0c37-48d8-b424-278ccfebbb5c/PPG-Funding-Guidelines-2020.pdf>

FOUNDATIONS

Colcom Foundation

Main URL: <http://colcomfdn.org/>

The Colcom Foundation’s environmental funding is aimed at “ensuring quality of life and environmental sustainability in southwestern Pennsylvania and funds programs that “aggressively address watershed remediation, natural resource preservation, air and water quality, and farmland and wildlife habitat conservation.”

Colcom uses an online application process for proposal submission. In that process, new applicants and new programs are directed to a “Letter of Inquiry” process that calls for a short and efficient request that will be considered at a Foundation meeting. If the inquiry is approved, a full grant application for funding will be considered at the next quarterly meeting. See <http://colcomfdn.org/apply/>. Applicants who have questions or issues with the online application form are encouraged to contact the foundation.

Colcom Foundation
Two Gateway Center
603 Stanwix Street, Suite 1800
Pittsburgh, Pa. 15222
E-mail: colcomcontact@colcomfdn.org
412-765-2400

Claude Worthington Benedum Foundation

Main URL: info@benedum.org

While the Benedum Foundation does fund some projects in southwestern Pennsylvania, its principal focus of its grant making is on projects in West Virginia. Some projects in Pennsylvania that address issues related to the Monongahela River have been funded. The Foundation’s stated areas of interest are education and community economic development, and it does not have a program funding area specifically for environmental or natural resources concerns. Environmentally-oriented applications will be considered only if their primary focus is educational or the connection to economic development can be shown.

1400 Benedum-Trees Building
223 Fourth Avenue
Pittsburgh, Pennsylvania 15222
412-288-0360

Jack Buncher Foundation

The Jack Buncher Foundation makes modest-sized grants primarily to encourage the pursuit of ideas and innovations that unlock the potential of individuals and communities, and that enrich people's lives. Letters of inquiry describing the proposed project, the budget, and the applicant organization may be sent to:

Ms. Benita Buncher
The Jack Buncher Foundation
1300 Penn Avenue, Suite 300
Pittsburgh, Pa. 15222

Cornell Douglas Foundation

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

The Cornell Douglas Foundation makes grants in a wide geographic area of the northeast for projects in the areas of environmental health and justice, land conservation, sustainability of resources, mountaintop removal mining, and watershed protection. Grant size is \$10,000-\$15,000, with the average grant amount \$10,000.

Applications are accepted at all times during the year. See <http://www.cornelldouglas.org/apply>. Applications and supporting documents can be submitted at: <https://cornelldouglas.org/apply-form/>

Applications must include an introductory letter providing information about the organization, a 1 -2 page summary of the project for which funding is requested, an IRS determination letter of 501(c)(3) status, recent 990 form, project and organizational line item budget, and a list of other sources of support secured and requested.

Grable Foundation

Main URL: <https://grable.org>

The Grable Foundation aims to improve the lives of children and youth in the greater Pittsburgh region, with attention to children whose opportunities are limited due to economic circumstances. It supports “early learning and development, enhanced learning in public school classrooms, out-of-school time learning, family and caregiver learning and support, and vibrant places that contribute positively to kids’ learning and well-being.”

Grable makes grants only to organizations in southwestern Pennsylvania. <https://grable.org/apply-for-a-grant/> Applications begin with an inquiry, not a full proposal, submitted with a password on its website. The Grable Foundation will accept inquiries 3 times a year: January 1; May 1; September 1, with decisions to be reached in March, July, and November respectively.

The Heinz Endowments

The Heinz Endowments comprises a number of foundations with varying funding interests that concentrates their efforts and resources in southwestern Pennsylvania, with a focus on Pittsburgh’s environmental systems and public health. Its strategies to pursue this goal are to:

- Protect all populations from disproportionate harm and reduce environmental health burdens;
- Encourage socially and environmentally responsible use of western Pennsylvania’s natural resources;
- Deepen community engagement and leadership via transdisciplinary education, outreach and advocacy;
- Advance independent, comprehensive studies to foster healthy environments.

Mr. Philip Johnson is the Heinz Endowments’ Program Officer for Environmental grants.

Applications are accepted online by February 15 for the Spring board meeting and August 1 for the Fall board meeting. <http://www.heinz.org/grants/apply-for-a-grant>.

Hillman Family Foundations

310 Grant Street Suite
2000 Pittsburgh, Pa. 15219
412-338-3466

Main URL: <https://hillmanfamilyfoundations.org/>

Similar to the Heinz Endowments, the Hillman Family Foundations umbrella is comprised of 18 separate foundations with different funding interests. The Hillman Family Foundations restrict their grant making to projects that take place in Western Pennsylvania and grantees to those located in Pennsylvania. Listed below are some of the sub-foundations and grant sizes. Of the sub-foundations that make up the overall Hillman Family Foundations, two in particular (the Hillman Foundation and the Henry A. Hillman Foundation) have express interest in environmental and nature conservation themes.

There are no fixed deadlines for the submission of applications. Only one application is needed to cover all 18 foundations. **Requests are accepted only through the online application process**, which starts with an eligibility questionnaire. Questions regarding the application process should be directed to Ms. Carol Long at 412-338-3466. Specific project-related questions should be directed to program officers.
https://hillman.fluxx.io/user_sessions/new

Henry L. Hillman Foundation

Awards range from \$1,000 to \$2,500,000.

Hillman Foundation

Awards range from \$25,000 to \$1,250,000.

Audrey Hillman Fisher Foundation

Awards range from \$1,000 to \$50,000.

Dylan Todd Simonds Foundation

Awards range from \$1,000 to \$2,500. Grants are made in the “Environment/Conservation” area, with a focus on sustainable development.

Mary Hillman Jennings Foundation

Awards range from \$2,500 to \$20,000.

Katherine Mabis McKenna Foundation

The Katherine Mabis McKenna Foundation makes modest-sized grant to support educational and environmental projects in Westmoreland County, Pennsylvania. Letters of request may be sent to:

Ms. Linda McKenna Boxx, Chair
Katherine Mabis McKenna Foundation
P.O. Box 186
Latrobe, Pa. 15650

Laurel Foundation

Main URL: <http://laurelfdn.org/>

The Laurel Foundation concentrates its grant making in Pittsburgh and southwestern Pennsylvania. Its focus is on environmental initiatives in the eastern part of Westmoreland County, Pennsylvania, specifically in the Loyalhanna Creek Watershed. The Foundation has a specific funding area for environmental programs. **Prior to submitting a proposal, applicants are advised to carefully review the Foundation’s website** to gauge interest. For clarification, a brief, one-page letter of inquiry summarizing the project and related costs may be sent to the President. Proposals are considered twice a year: submitted by April 1 for consideration in June and by October 1 for consideration in December. <http://laurelfdn.org/apply/>

George and Miriam Martin Foundation

Main URL: <http://themartinfoundation.org/default.htm>

The George and Miriam Martin Foundation makes grants in a wide geographic area of the mid-Atlantic region for projects aimed to preserve streams and wetlands. There are no deadlines and no formal grant guidelines. Grants range from \$1,000 to \$200,000. Applicants are instructed to send a brief letter describing how a grant will enable the recipient to serve the goals of the foundation to:

George and Miriam Martin Foundation
1818 Market Street, 35th Floor
Philadelphia, Pa. 19103

McAuley Ministries

Main URL: <http://mcauleyministries.org/>

McAuley Ministries, established with funds received by the sale of Mercy Hospital of Pittsburgh, makes grants in three neighborhoods of the city historically served by the hospital: the Hill District, Uptown, and West Oakland. Activities of particular interest include after-school programs with high-quality tutoring and enrichment activities, initiatives to improve college readiness and the number of residents who graduate from college or other post-secondary education, and initiatives that address the social obstacles to academic achievement and college completion.

Inquiries are to be directed to:

Ms. Michele Rone Cooper, Executive Director
McAuley Ministries
3333 Fifth Avenue
Pittsburgh, Pa. 15213
412-578-6223
MRCooper@mcauleyministries.org

Pittsburgh Foundation

<https://pittsburghfoundation.org/healthy-communities>

The *Healthy Communities* program of the Pittsburgh Foundation supports organizations and projects that address the following focus areas.

- *Enhanced Ecological Awareness and Activism* that encourages communities to assess and decrease their carbon footprint
- *Safe Communities* made possible by community-based efforts that increase the capacity of communities to work together to eliminate violence; and develop comprehensive and integrated re-entry and diversion programs that include case management, job development, human services and criminal justice linkages

The Foundation uses a 3-stage application process in which applicants will create an organizational profile; submit a LOI (letter of inquiry) and, if invited, will submit a full application. The process is described here <https://pittsburghfoundation.org/how-to-apply>

A Special Thanks To...

The staff at 3RQ would like to thank the teachers and students involved with the REACH 4Schools program. It was through the effort of the teachers and students that so many samples were collected and analyzed with so many hypotheses generated. The success of the program was directly related to those teachers and students who spent so much of their time at their sites and who provided invaluable information to the overall 3RQ project.

Participating Schools

Charleroi Area High School

Trinity Area High School

West Mifflin High School

Greeneville Middle School

Trinity Area Middle School

Winchester Thurston