

Mira Lloyd Dock

“Mira Lloyd Dock did more for forests than any woman in the United States”

— U.S. Chief Forester Enos Mills in 1909



Childhood Influences

Born Christmas Day, 1853, Mira’s early childhood was in rural central Pennsylvania, where her parents encouraged outdoor play and exploration. As a young child, she was home-schooled by her mother, then attended schools in Harrisburg, Lancaster and Media, PA.

Following the end of the Civil War, her parents moved the family to Harrisburg to enable the rest of the children to attend school. Here, Mira had daily exposure to the rapid and uncontrolled industrialization taking place in urban areas throughout the east, and the associated pollution and urban ugliness occurring at that time.



Unpaved street in the 8th Ward (Tanner’s Alley), Harrisburg, PA, circa 1900

Family Responsibilities

Mira received the basic education of a privileged young woman of the time, but was 23 years old when her mother died, requiring her to put further training on hold. She became the primary caretaker for her younger siblings, but that eventually took a heavy toll on Mira.

In 1878, her father sent her on a

trip to the Rocky Mountains with the hope of renewing her health and spirit. She was delighted by the many new plants she encountered in Colorado, which helped inspire her to continue her personal study of botany.

As her siblings grew up and left home for schooling, her time was still not her own due to her father taking ill in the 1890s, providing nursing care until his death in 1895.

Becoming a Scientist and Lecturer

Mira was 42 when her father died in 1895. Knowing of her two decades of personal sacrifice, her siblings encouraged and helped her to enroll in the University of Michigan where she studied botany for a year.

Though women in the late 1800s had limited scientific job opportunities, Mira realized that with her personal and university training she could offer public lectures and influence people through slideshows and her passion for nature.

She became a very popular lecturer throughout Pennsylvania and surrounding states, focusing on native flowers and other plants. As time went on, her topics broadened to include talks on forestry and village improvement.

European Influences

In 1899 Mira travelled to London to attend the International Congress of Women as the official representative of the *Federation of Pennsylvania Women* and the *Parks Association of Philadelphia*. There she learned more about the woman’s suffrage movement and advances in plant sciences of the day. She also travelled in Germany to learn about roads, sanitation, parks and forestry practices; and in England to learn about municipal improvements and recreation for the working class.

She returned to Pennsylvania with many new ideas on how to clean up

the water and land being polluted in American urban centers, setting her sights first on Harrisburg.

The City Beautiful Movement

The year before, in 1898, Mira had helped to found the Civic Club of Harrisburg. Upon her return, she immediately began giving talks to her club members about what she learned in Europe. At the same time, she teamed up with Horace McFarland to widen her audience and give talks to influential men of the city. She also wrote newspaper and journal articles about the need for city beautification and sanitation, and helped to formulate a plan for improvements.

A bond issue passed in Harrisburg soon thereafter with widespread support to raise money for a comprehensive improvement plan, which included building infrastructure for drinking water, sewage, and storm water. It also valued reconnecting the city with the riverfront. In addition to the creation of Riverfront Park, the plan laid out numerous playgrounds and a series of parks, parkways, and natural areas around Harrisburg – referred to by Mira as the city’s “Emerald Necklace.”

The City Beautiful Movement in Harrisburg, influenced greatly by Mira’s work and vision, not only helped to clean up and modernize Pennsylvania’s capital city, it served as a model for medium and small cities throughout the state and the country.

Early Forest Protection

In 1901, because of her expertise and connections, Mira became the first woman to be appointed to the state’s Forest Commission, and the first woman in the world to hold such a position.

Since the state did not have any foresters or rangers in the early

City Beautiful in Pennsylvania

Philadelphia

The core of the City Beautiful movement in Philadelphia was construction of the Benjamin Franklin Parkway and the associated museums, libraries and other imposing structures. This new diagonal connected City Hall to the new museum of art at Fairmount Park in the form of a wide tree lined boulevard.

In 1917, French architect Jacques-Henri-Auguste Gréber was hired as consultant to the Fairmount Park Commission to develop the plan for the parkway, Logan Square, and the landscape for the Philadelphia Museum of Art. He was also commissioned to design the grounds of the Rodin Museum. Gréber was a French architect specializing in landscape architecture and urban design and contributed to the City Beautiful movement in Philadelphia and Ottawa.



Original plans for Logan Square and the parkway designed by Jacques Gréber



Pittsburgh

“No city of equal size in America or perhaps the world, is compelled to adapt its growth to such difficult complications of high ridges, deep valleys and precipitous slopes as Pittsburgh.”

- Frederick Law Olmsted, Jr.

Although strong opposition to centralization hampered the City Beautiful movement in Pittsburgh, its impact can best be seen in Oakland. In 1905, Franklin Nicola put forth a development plan in the City Beautiful style, which included civic, social, residential and educational zones along Bigelow Boulevard, running through the heart of the neighborhood. Nicola’s plan produced landmarks such as the Soldiers and Sailors Memorial Hall, the Masonic Temple (now the University of Pittsburgh’s Alumni Hall), and the Pittsburgh Athletic Association. Other major landmark buildings came later, including the Cathedral of Learning and Heinz Memorial Chapel of the University of Pittsburgh and Mellon Institute. Schenley Park provided residents with recreational spaces, and Oakland became a civic and cultural center of Pittsburgh.



Rustic bridge in Schenley Park, 1908

Pennsylvania’s newly-acquired state forests. She helped to create the State Forest Academy, which later became the Penn State Mont Alto campus.

She lectured and taught botany there, and was an important influence in the lives of the young men who became Pennsylvania’s first cadre of professional foresters. In 1909, The U.S. Chief Forester Enos Mills wrote: “Mira Lloyd Dock did more for forests than any woman in the United States.”

Mira Lloyd Dock’s Legacy

Mira pushed hard for livable, healthy cities with access to parks and playgrounds by all of its residents. Her work resulted in dramatic changes in the way many smaller urban areas in America dealt with sewage, flooding, drinking water, parks, recreation, and general beautification.

At the same time, she increased awareness of the need to protect and nurture expansive tracts of forests for watershed protection and wild habitat, and helped Pennsylvania develop its national leadership in forestry and forestry education programs.

“She’s not wealthy. She’s not prominent. She’s not well-known and she’s a woman. And, yet she accomplishes quite a bit in one lifetime. And I think she’s a great example of the power of one voice.”
Susan Rimby

“... her legacy will be that every person will see that despite their cultural confines, which for her were formidable, they can have a voice, they can make a difference, they can follow their passion.”
Elle Morgan



1900s, Mira volunteered to travel throughout north-central Pennsylvania to inspect the large, cutover and remote forest lands that were coming up for sale.

During her first year on the Commission, more than 175,000 acres were added to the state forest reserves. By the time Mira retired

from the Commission in 1913, the state’s total forest reserves increased to nearly one million acres.

Creating the State Forest Academy

Mira’s influence within the Forestry Commission also extended to Dr. Joseph T. Rothrock, who was looking to improve the management of

Mira Lloyd Dock

FAST FACTS



BORN Christmas Day, 1853



AGE 23 | 1876 Mira's mother dies and for the next 19 years, she finishes raising her siblings, and then cares for her father when he gets sick.

AGE 25 | 1878 Mira's father sends her on a trip to the Rocky Mountains. She loves the many new plants she encounters, and the trip inspires her to continue her personal study of botany.

AGE 42 | 1895 Mira's father dies. Mira studies botany for a year at the University of Michigan.

AGE 45 | 1898 Mira helps found the Civic Club of Harrisburg.

AGE 46 | 1899 Mira represents the *Federation of Pennsylvania Women and Parks Association of Philadelphia* at the International Congress of Women in London and learns about women's suffrage movement. She travels through England and Germany to see:

- Germany's roads, sanitation, parks
- England's municipal improvements and recreation for the working class
- forestry practices in Germany

She returns with many new ideas on how to clean up polluted water and land in American urban centers

AGE 47 | 1900 Begins giving talks to Civic Club members about what she learned in Europe and writes newspaper and journal articles about the need for city beautification and sanitation. Helps formulate plan for improvements.

AGE 48 | 1901 Influenced greatly by Mira's work and vision, City Beautiful bond issue passes in Harrisburg to improve drinking water, sewage, and storm water systems. Plan also reconnects city with riverfront, creating Riverfront Park, numerous playgrounds and series of parks, parkways, and natural areas around Harrisburg – referred to by Mira as the city's "Emerald Necklace."



AGE 50 | 1903 Mira helps create the State Forest Academy in Mont Alto (now Penn State Mont Alto). She lectures and teaches botany and is an important influence on Pennsylvania's first cadre of professional foresters.

AGE 60 | 1913 Retires from the Forest Commission, with state forest reserves totaling nearly one million acres.

AGE 48 | 1901 Becomes first woman appointed to the state's Forest Commission, and the first woman in the world to hold such a position. Travels throughout northcentral Pennsylvania to inspect large, cutover and remote forest lands coming up for sale. During her first year, more than 175,000 acres are added to the state forest reserves.

AGE 91 | 1945 Mira dies of cancer. The *Harrisburg Evening News* notes that she was "generally credited with having been the inspiration for the beginning of the city's public improvement era in 1902."



Mira Lloyd Dock



GUIDING QUESTIONS

These questions and answers are designed to aid discussion of two of the main ideas presented in the film, *Mira Lloyd Dock: A Beautiful Crusade*.

- One person can make a difference
- City Beautiful Movement

Open ended questions to begin discussion:

What was the most surprising thing you learned from the video?
 How does your life compare to that of Mira Lloyd Dock?
 What similarities and what differences do you draw between Mira and yourself?
 If Mira Lloyd Dock were here today, what questions would you ask her about the obstacles she faced?

One person can make a difference (3 questions)

Never doubt that a small group of thoughtful committed citizens can change the world; indeed, it's the only thing that ever has.
 -Margaret Mead

How did Mira's upbringing, experiences and societal status influence her work and accomplishments?

Several factors contributed to Mira's direction in life:

- She grew up in a comfortable middle-class family that could afford to give her a good education
- She had a father who taught his daughters to be strong and to stay true to themselves
- Most of her childhood was spent in rural Dauphin County where she was immersed in nature and the outdoors and started developing a love of botany (study of plants).
- She was among a minority of women who attended college, although gave up on her original dream to work in a laboratory when she realized gender discrimination would keep it from happening.
- She decided instead to work as a public lecturer focusing on

Pennsylvania's native plants and how to protect them. She prepared carefully, using glass lantern slides from photographs she took. She became quite popular and expanded her talks to include forestry and village improvement.

- She traveled, both to the American west and in Europe, which gave her a different perspective and a chance to see how the new field of forestry was being practiced abroad.
- She became an expert in what she was passionate about and was well respected.

Why are certain people virtually forgotten while others are remembered?

"...in my whole life (53 years living and traveling all over PA, attending Mont Alto campus PSU) and teaching career...I never heard of Ms. Dock"
 -Anonymous survey respondent

The writing of history often reflects society in the past, and the roles of women and minorities have been ignored or simply devalued. Mira lived and worked in a time when women didn't have the right to vote. She was the first woman ever to serve in state government, and the first woman in the world to serve on a public forestry commission. She was sensitive to the fact that she was a woman in a male-dominated occupation. She worried that she would be perceived as the "weak element on the board" and initially insisted that her letterhead list her as M. L. Dock to disguise her gender. She taught dendrology (tree identification) at the State Forestry Academy, even though women weren't able to enroll there until 1964. In spite of her expertise, she insisted throughout her career that the "profession of forestry was a man's work."

Her story wasn't told until a small group of people began restoring the Capital Area Greenbelt in Harrisburg in 1990 and discovered Mira's

significant role in the creation of the original parkway. Women were starting to have a larger role in conservation work, and there was more interest in general in telling their stories.

Finally, 50 years after her death, a historical marker was dedicated in 1996 across the street from her Harrisburg family home on Front Street, and the first full-length book about her life was published in 2012.

How can you make a difference in your world?

Use Mira Lloyd Dock's story to inspire your own life. Making a difference can be as small as adding potted flowers to the entrance of your school, or a larger effort such as creating habitat for wildlife. Here are some ideas:

Tree planting: Get involved with community tree planting through TreeVitalize or your local shade tree commission. treevitalize.net

Host a volunteer project: Work with the Pennsylvania Parks and Forests Foundation to host a volunteer project in partnership with a friends group or in a state park or forest. paparksandforests.org

Research an issue that is impacting parks and forests, such as graffiti, littering, invasive plants or insects, erosion, visitor impacts, etc. Write a story, host a twitter conference, or produce a video.

Read more about Pennsylvania's conservation heroes on the Conservation Heritage website, paconservationheritage.org. Write an essay for a local person who has made a difference and submit to the website.

Research and propose an historic marker (bit.ly/22WFMXa) for your community that relates to conservation.

Share your projects and ideas!
 #LiveLikeMira
 #PAConservationHeroes

City Beautiful Movement

(3 questions)

What was the City Beautiful Movement?

The City Beautiful Movement was an urban reform movement that took hold in the 1890s to 1900s to promote urban beautification and moral and civic virtue among city residents. The focus was primarily on architecture, monuments, infrastructure (clean water and safe sewage systems), urban planning and park, parkway and playground development. The movement was associated mainly with Chicago, Cleveland, Detroit, and Washington, D.C., but Harrisburg was a frontrunner. Advocates believed that such beautification would promote a harmonious social order that would increase the quality of life, while critics complained that the movement was overly concerned with aesthetics at the expense of social reform.

How did City Beautiful unfold in Harrisburg?

The movement in Harrisburg was one of the earliest and most successful urban reform movements in the country. It began when local residents, influenced heavily by Mira Lloyd Dock's public programs, became convinced that their city was unattractive, unhealthy, and lacked the appearance and facilities appropriate to its status as a state capital. Industrialization had left the city poorly planned with unpaved streets and inadequate water management systems. Sewage dumped upstream in the Susquehanna River made its way into Harrisburg's drinking water, and disease and illness outbreaks were common. The state capitol building burned in 1897, leading to discussion on how the building should be rebuilt.

Mira Lloyd Dock's inspirational speech to the Harrisburg Board of Trade on December 20, 1900, titled *The City Beautiful or Improvement Work at Home and Abroad* sparked the campaign in Harrisburg. She publicly challenged the appalling

conditions in Harrisburg and set out to gain public support to change them. Her closest ally was J. Horace McFarland, a local publisher and president of the American Civic Association. McFarland and Dock worked together to gather public support and to convince community leaders to donate money. In April 1901 the *Harrisburg Telegraph* published a front-page article on the city's problems, which stressed Dock's message of beautification and recreation, paved streets, clean water, a city hall, land for parks, and a covered sewer interceptor along the river. The following February, 1902, a \$1.1 million bond issue successfully passed that funded the improvements. The projects and a new state capitol building in 1906 quickly transformed Harrisburg.

Some of the projects we still enjoy today include:

- Wildwood Park
- Riverfront Park with its walkway and concrete steps
- 11 public playgrounds
- City Island swimming facilities, athletic fields, and grandstand
- Cameron and Paxtang parkways, now known as part of the Capital Area Greenbelt
- Kipona Celebration (started in 1916)

What are some of the best known examples of the City Beautiful Movement?

You can look for the City Beautiful legacy in many other US cities. Here are a few examples:

Washington, DC: National Mall and monumental government buildings surrounding the United States Capitol; Union Station, Lincoln Memorial.

Philadelphia: the Benjamin Franklin Parkway museum district between Philadelphia City Hall and the Philadelphia Museum of Art

Pittsburgh: the Schenley Farms district in the Oakland neighborhood of parks, museums, and universities; 12 new playgrounds

San Antonio, Texas: San Antonio River development

Kansas City, Missouri and Dallas, Texas: parkways and parks

Chicago: small neighborhood parks and playgrounds



Promoting the City Beautiful campaign

Mira Lloyd Dock

ACTIVITIES



City Beautiful Today: Planning for Sustainable Communities



LAND CHOICES

palandchoices.org

No Park is an Island

This lesson provides background information on participating and protecting public lands. The title "No Park is An Island" speaks to the connections between communities, natural resources and public lands. There are no isolated lands or isolated communities. Each should enhance and benefit the other.

bit.ly/1WHaIAG

Living in Communities

Students learn about Pennsylvania communities, highlighting positive characteristics inherent in quality neighborhoods and ways to address challenges of a changing community. They analyze their own community, using tools such as questionnaires, completing worksheets and comparing visual preferences.

bit.ly/28oxPhr



AMERICAN SOCIETY OF
LANDSCAPE ARCHITECTS

asla.org

ASLA Activities

A series of activities and links by the American Society of Landscape Architects (ASLA) that can be adapted by teachers or involve a local landscape architect to allow students in grades K-12 explore landscape architecture and sustainable landscape design. Create a mini-green roof using a shoebox. Design and build a rain

garden or bioswale to manage stormwater. These are some of the projects offered by ASLA to teach kids and teens about sustainability, ecological issues, and the technical aspects of landscape architecture.

bit.ly/1U9wROx



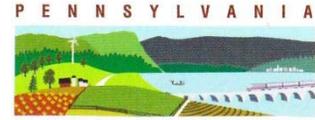
planitgreenlive.com/

Plan It Green: The Big Switch

created by the National Geographic Society, is an online, city-building simulation game that gives students the opportunity to make complex decisions about the role of green energy, energy conservation, and energy efficiency in a fictional city. The game provides a unique opportunity for students to make decisions related to energy efficiency and energy sources and to see how those choices affect life in their city.

[Educator guide \(bit.ly/1PMYPAX\)](http://bit.ly/1PMYPAX)

Make a Difference



LAND CHOICES

palandchoices.org

Ready, Set... Action!

This lesson focuses on the power and responsibility of each individual to become involved in improving his or her community through community action and leadership in conservation. (bit.ly/1RYIlun)

Suggested Activities

Beautify your school: Look at your school – what could you do to make it more attractive? Take before and after photos to show how you improved your school.

Create habitat for wildlife: Check out *Audubon at Home* for ideas pa.audubon.org/audubon-home

The National Wildlife Federation's *Schoolyard Habitats* is another great program: nwf.org/How-to-Help/Garden-for-Wildlife/Schoolyard-Habitats.aspx

Create an individual or class senior legacy project that permanently beautifies your school.

Create a public art project such as a mural or brightly-painted rain barrels

Create a timeline for another conservationist (or for yourself!) on what things in their lifetime influenced their conservation ethic or leadership.

The following sites require that you attend training to obtain their lesson plan materials:



[Project Wild](http://ProjectWild.org) offers hands-on K-12 activities designed to support state and national academic standards. projectwild.org

Key activities:

- [Ethi-Reasoning](#)
- [Changing the Land](#)
- [Everybody Needs a Home](#)
- [Can Do!](#)

Check the [DCNR Calendar of Events \(bit.ly/21eBRE9\)](#) for upcoming teacher workshops.



[Project Wild Aquatic](http://ProjectWild.org/aquatic/) uses the simple, successful format of Project WILD activities and professional training workshops but with an emphasis on aquatic wildlife and aquatic ecology. projectwild.org/aquatic/

Key activities:

- Facts and Falsehoods
- Urban Waterway Check-up
- Watered-Down History

Additional possible activities:

- Aqua Words
- Aquatic Times
- Blue Ribbon Niche
- Deadly Waters
- Living Research: Aquatic Heroes and Heroines
- Water Canaries
- Water Plant Art
- Watershed

Contact the [Aquatic Wild Coordinator \(bit.ly/1TbKS1k\)](#) at the PA Fish and Boat Commission for workshop information, or check the [PFBC Calendar of Events \(bit.ly/1XV5A2X\)](#) for upcoming teacher workshops.



[Project WET](http://ProjectWet.org) gives K-12 educators tools to integrate water education into every school subject, with field-tested activities and assessment strategies. projectwet.org

Key activities:

- Common Water
- Sum of the Parts

Contact the [Project WET Coordinator \(bit.ly/1PN1s5X\)](#) for workshop information, or check the [DCNR Calendar of Events \(bit.ly/21eBRE9\)](#) for upcoming teacher workshops.

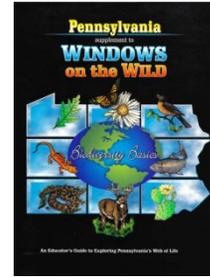


Pennsylvania Songbirds

Key activities:

- Changing the Land
- Everybody Needs a Home
- The Lorax

Check the [DCNR Calendar of Events \(bit.ly/21eBRE9\)](#) for upcoming teacher workshops.



Pennsylvania Supplement to Windows on the Wild (PA WOW) is an educator's guide to exploring Pennsylvania's biodiversity.

Key activity:

- Future Worlds

Mira Lloyd Dock

LINKS



Links	References	Video
<p>Statewide</p> <p>Pennsylvania Conservation Heritage Project paconservationheritage.org</p> <p>Pennsylvania Parks and Forests Foundation paparksandforests.org</p> <p>Department of Conservation and Natural Resources dcnr.state.pa.us</p> <p>TreeVitalize treevitalize.net/</p> <p>ExplorePAHistory.com explorepahistory.com</p> <p>Pennsylvania Historical and Museum Commission phmc.pa.gov</p> <p>WITF witf.org</p> <p>Harrisburg</p> <p>Capital Area Greenbelt caga.org</p> <p>Harrisburg City Beautiful 2.0 citybeautiful2.org</p> <p>Philadelphia</p> <p>Pennsylvania Horticultural Society phsonline.org/</p> <p>UC Green ucgreen.org</p> <p>Pittsburgh</p> <p>The Penn State Center: Engaging Pittsburgh pittsburgh.center.psu.edu</p> <p>Tree Pittsburgh treepittsburgh.org</p> <p>Western Pennsylvania Conservancy waterlandlife.org</p> <p>Other Pennsylvania Women of Note</p> <p>Rosalie Edge, Hawk Mountain Sanctuary hawkmountain.org</p>	<p>Brownlee, David Bruce. <i>Building the City Beautiful: The Benjamin Franklin Parkway and the Philadelphia Museum of Art</i>. Philadelphia, PA: Museum, 1989. Print.</p> <p>Lacasse, Norman L. <i>An Essay on the Professional Life of Mira Lloyd Dock</i>. Pennsylvania Forestry Association, 2008. Print.</p> <p>McShane, Bill. "With a Woman's Instinct: Mira Lloyd Dock, The Mother of Forestry in Pennsylvania." Pennsylvania Heritage XXXVI.1 (2010). Print.</p> <p>Rimby, Susan. <i>Mira Lloyd Dock and the Progressive Era Conservation Movement</i>. University Park, Pennsylvania State University Press, 2012. Print.</p> <p>Wilson, William H. <i>The City Beautiful Movement</i>. The Johns Hopkins University Press, 1989. Print.</p> <p><i>Mira Lloyd Dock</i>, from Digital Harrisburg: Exploring the History, Society, and Culture of Harrisburg, PA. Several pages of interesting commentary and historical notes by Caitlyn Coleman. digitalharrisburg.com/category/mira-lloyd-dock/ and digitalharrisburg.com/2015/10/26/the-city-beautiful-reformers/</p> <p><i>Mira Lloyd Dock Papers</i>, 1879-1947. Penn State University Archives. This collection includes personal and official correspondence documenting Mira Lloyd Dock's term as Commissioner of Forestry (1901-1913) and her continuing involvement with forestry throughout her life. There are also observations on a visit she made to Germany (1899), photographs of plants, and other letters she received. www.libraries.psu.edu/findingaids/1526.htm</p>	<p></p> <p>Mira Lloyd Dock: A Beautiful Crusade video.witf.org/video/2365606748/</p> <p>If you liked this video, others are available at Pennsylvania Conservation Heritage Project paconservationheritage.org</p>

Mira Lloyd Dock



ACADEMIC STANDARDS

Key Activities Matched to Pennsylvania State Education Standards

Activity/ Source	Grade	Major Content	Environment/ Ecology (SAS)	Environment/ Ecology State Board of Education	Civics and Government (draft)	Additional
Build A Rain Garden <i>American Society of Landscape Architects (ASLA)</i>	6-12	Sustainability Renewable/non-renewable Conservation Habitat Interdependence	4.1.4.A 4.1.7.A 4.1.4.F 4.1.7.F 4.1.10.F 4.1.12.F	4.2.7.A 4.3.10.D 4.6.4.A 4.6.7.A 4.6.10.A 4.8.4.C	5.4.8.C	Mathematics CC2.4.5.A.2
Can Do! <i>Project WILD</i>	9-12	Taking Action Decision-making Interdependence	4.1.12.B 4.6.10.A	4.6.10.A 4.8.7.C	5.2.7.A 5.3.8.G 5.4.8.C	
Changing the Land <i>Project WILD PA Songbirds</i>	6-10	Habitat needs limiting factors Interdependence	4.1.6.D 4.1.10.A 4.5.7.A	4.7.7.C 4.7.10.C 4.8.7.C 4.8.10.C	5.4.8.C	
Common Water <i>Project WET</i>	5-10	Water Quality Human Impact Conservation	4.1.5.F 4.1.10.F 4.2.5.C 4.2.6.C 4.5.5.C 4.5.7.C	4.1.7.B 4.1.10.B 4.3.7.B 4.3.10.B 4.8.7.B		
Create a Mini Green Roof <i>American Society of Landscape Architects (ASLA)</i>	K-6	Sustainability Renewable/non-renewable Habitat	4.1.4.A 4.1.5.A 4.1.6.A 4.1.4.F	4.2.4.A 4.2.7.A 4.6.4.A 4.6.7.A 4.8.7.B 4.8.4.C	5.4.8.C	Mathematics CC2.4.3.A.1
Ethi-Reasoning <i>Project WILD</i>	4-8	Decision-making/ Human Impact	4.5.4.C 4.5.7.C	4.8.7.D		
Everybody Needs A Home <i>Project WILD PA Songbirds</i>	K-4	Basic Needs; Habitats	4.1.4.A 4.1.3.D 4.1.4.D 4.1.4.F	4.6.4.A 4.8.4.D		Geography 7.2.3.A 7.2.4.A
Fact or Falsehood <i>Aquatic WILD</i>	7-12	Evaluating presentations				English/ Language Arts CC.1.5.7.B CC1.5.8.B CC1.5.910.B CC1.5.12.B
Future Worlds <i>PA Biodiversity</i>	5-10	Decision-making Human Impact	4.1.10.A	4.7.10.C 4.8.10.B	5.4.6.A 5.4.7.A 5.4.8.A 5.4.8.C	
Living in Communities <i>PA Land Choices</i>	6-12	Needs Natural Resources	4.3.7.B 4.3.10.B	4.2.10.B 4.7.7.C 4.8.7.B 4.8.10.B 4.8.7.D	5.1.6.A 5.1.7.A 5.3.7.C 5.3.8.C 5.3.7.G 5.3.8.G 5.4.8.C	Geography 7.2.U.A 7.2.10.A 7.2.12.A 7.3.C.A 7.3.8.A 7.3.12.A 7.4.6.A 7.4.7.A 7.4.8.A

Activity/ Source	Grade	Major Content	Environment/ Ecology (SAS)	Environment/ Ecology State Board of Education	Civics and Government (draft)	Additional
Mira Lloyd Dock Video/ Discussion	3-12	One individual can influence change Human Impact Conservation	4.5.6.C 4.5.7.C 4.5.4.E 4.5.7.E	4.8.4.A 4.8.7.A 4.8.10.A 4.8.4.C 4.8.7.C 4.8.10.C	5.3.5.C 5.3.7.G 5.3.8.G	English// Language Arts CC.1.5.7.A CC.1.5.8.A CC1.5.10.A CC1.5.12.A CC.1.5.6.C CC.1.5.7.A
No Park Is An Island <i>PA Land Choices</i>	6-12	Natural Resources Interdependence	4.3.7.B 4.3.10.B	4.2.7.B 4.10.B 4.2.7.D 4.8.7.C 4.8.10.C 4.9.7.A	5.1.6.A 5.1.7.A 5.2.6.A 5.2.7.A 5.3.6.C 5.3.8.C	Geography 7.1.7.A 7.1.C.A 7.1.12.A 7.1.7.B 7.1.8.B
Plan It Green: The Big Switch <i>National Geographic</i>	4-12 Based on detail of design	Planning Decision-making Sustainability Natural Resources Interdependence	4.3.7.A 4.3.4.B 4.3.10.B	4.2.4.A 4.2.7.A 4.2.10.A 4.2.7.D 4.2.10.D 4.8.7.B 4.8.10.B 4.8.12.B	5.2.4.A 5.2.6.A 5.2.7.A 5.3.5.C 5.3.6.C 5.3.7.C 5.3.8.C 5.4.8.C	Geography 7.3.6.A 7.3.7.A 7.3.8.A
Ready, Set, Go <i>PA Land Choices</i>	6-12	Taking Action Decision-making	4.1.12.B 4.6.10.A	4.6.10.A 4.8.7.C	5.2.6.A 5.2.7.A 5.4.8.C	
Sum of the Parts <i>Project WET</i>	4-9	Water Quality Human Impact Conservation	4.1.5.F 4.1.10.F 4.2.5.C 4.2.6.C 4.2.7.C 4.5.5.C 4.5.7.C 4.5.10.C	4.1.7.B 4.1.10.B 4.3.7.B 4.3.10.B		Geography 7.2.5.A 7.2.6.A 7.2.8.A
The Lorax <i>PA Songbirds</i>	4-10 Based on discussion	Habitat Basic needs Human Impact Natural Resources Conservation	4.3.10.B 4.1.4.A 4.1.10.A	4.6.4.A 4.6.7.A 4.6.10.A 4.7.7.C 4.2.7.B 4.2.10.B 4.6.10.B 4.8.7.B 4.8.10.B 4.8.7.C 4.8.10.C 4.8.7.D 4.8.10.B 4.9.7.A	5.2.5.A 5.2.6.A 6.2.7.A	English/ Language Arts CC.1.5.4.A CC.1.5.7.A CC.1.5.8.A CC1.5.10.A
Urban Waterway Check-up <i>Aquatic WILD</i>	5-10	Water Quality Human Impact	4.1.5.F 4.1.10.F 4.2.5.C 4.2.6.C 4.5.5.C 4.5.7.C	4.1.7.B 4.1.10.B 4.1.12.C 4.3.7.B 4.3.10.B 4.8.7.B 4.8.7.C 4.8.10.C		Geography 7.2.5.A 7.2.5.B 7.4.7.A 7.4.U.B 7.4.W.B
Water-Downed History <i>Aquatic WILD</i>	5-10	Water Quality Human Impact	4.1.5.F 4.1.10.F 4.2.5.C 4.2.6.C	4.1.7.B 4.1.10.B 4.2.12.B 4.8.7.C 4.8.10.C 4.1.12.C		Geography 7.1.7.A 7.1.8.A 7.2.6.A 7.2.7.A 7.2.8.A

Academic Standards

<p>Environment and Ecology (Dept of Ed.) on SAS</p> <p>4.1 Ecology</p> <p>4.1.4.A Explain how living things are dependent upon other living and non-living things.</p> <p>4.1.7.A Describe relationships between biotic and abiotic components of an ecosystem.</p> <p>4.1.10.A Evaluate factors affecting the use of natural resources.</p> <p>4.1.12.B Research solutions to problems caused by interrupting natural cycles.</p> <p>4.1.4.F Science as Inquiry</p> <p>4.1.5.F Science as Inquiry</p> <p>4.1.7.F Science as Inquiry</p> <p>4.1.10.F Science as Inquiry</p> <p>4.1.12.F Science as Inquiry</p> <p>4.1.6.D Identify reasons why organisms become threatened, endangered and extinct.</p> <p>4.2 Watersheds and Wetlands</p> <p>4.2.5.C Identify physical, chemical and biological factors that affect water quality.</p> <p>4.2.6.C Identify natural and human-made factors that affect water quality.</p> <p>4.2.7.C Use appropriate tools and techniques to analyze a freshwater environment.</p> <p>4.3 Natural Resources</p> <p>4.3.4.A Identify ways humans depend on natural resources for survival.</p> <p>4.3.7.A Explain how products are derived from natural resources.</p> <p>4.3.4.B Identify the geographic origins of various natural resources.</p> <p>4.3.7.B Explain the distribution and management of natural resources.</p> <p>4.3.10.B Analyze how humans manage and distribute natural resources.</p> <p>4.5 Humans and the Environment</p> <p>4.5.7.A Describe how the development of civilization affects the use of natural resources.</p> <p>4.5.5.C Explain the difference between point and non-point source pollution.</p> <p>4.5.6.C Identify key people and events that shaped the environmental history in the United States.</p> <p>4.5.7.C Explain how human actions affect the health of the environment.</p> <p>4.5.10.C Analyze real world data; explain how point and non-point source pollution can be detected.</p> <p>4.5.4.E Identify different ways human health can be affected by pollution.</p> <p>4.5.7.E Describe how length and degree of exposure to pollutants may affect human health.</p>	<p>Environment and Ecology (State Board of Education, aligned to STEE Anchors)</p> <p>4.1 Watersheds and Wetlands</p> <p>4.1.4.A Identify various types of water environments.</p> <p>4.1.7.B Understand the role of the watershed- explain factors that affect water quality.</p> <p>4.1.10.B Explain the relationship among landforms, vegetation and the amount and speed of water- define factors that affect the quality of water.</p> <p>4.1.12.C Analyze the parameters of a watershed- interpret physical, chemical and biological data as a means of assessing the environmental quality of a watershed.</p> <p>4.2 Renewable and Nonrenewable Resources</p> <p>4.2.4.A Identify the needs of people.</p> <p>4.2.7.A Know that raw materials come from natural resources.</p> <p>4.2.10.A Explain that renewable and nonrenewable resources supply energy and materials.</p> <p>4.2.7.B Examine the renewability of resources.</p> <p>4.2.10.B Evaluate factors affecting the availability of natural resources.</p> <p>4.2.12.B Analyze factors affecting the availability of renewable and nonrenewable resources.</p> <p>4.2.7.C Explain natural resource distribution.</p> <p>4.2.10.C Analyze how manmade systems have impacted the management and distribution of natural resources.</p> <p>4.2.7.D Describe the role of recycling and waste management – identify materials that can be recycled in the community.</p> <p>4.2.10.D Explain different management alternatives involved in recycling and solid waste management.</p> <p>4.3 Environmental Health</p> <p>4.3.7.B Describe how human actions affect the health of the environment.</p> <p>4.3.10.B Explain how multiple variables determine the effects of pollution on environmental health, natural processes and human practices.</p> <p>4.3.10.D Explain biological diversity as an indicator of a healthy environment.</p> <p>4.6 Ecosystems and their Interactions</p> <p>4.6.4.A Understand that living things are dependent on nonliving things in the environment for survival.</p> <p>4.6.7.A Explain the flows of energy and matter from organism to organism within an ecosystem- demonstrate the dependency of living components in the ecosystem on the nonliving</p>	<p>components.</p> <p>4.6.10.A Explain the biotic and abiotic components of an ecosystem and their interactions.</p> <p>4.7 Threatened, Endangered and Extinct Species</p> <p>4.7.7.C Explain natural or human actions in relation to the loss of species- explain how a habitat management practice affects a population</p> <p>4.7.10.C Identify and explain why adaptations can lead to specialization- explain how management practices may influence the success of a specific species.</p> <p>4.8 Humans and the Environment</p> <p>4.8.4.B Know that environmental conditions influence where and how people live.</p> <p>4.8.7.B Explain how people use natural resources.</p> <p>4.8.10.B Analyze the relationship between the use of natural resources and sustaining our society.</p> <p>4.8.12.B Analyze technology’s role on natural resource sustainability.</p> <p>4.8.4.C Explain how human activities may change the environment.</p> <p>4.8.7.C Explain how human activities may affect local, regional and national environments.</p> <p>4.8.10.C Analyze how human activities may cause changes in an ecosystem.</p> <p>4.8.4.D Know the importance of natural resources in daily life.</p> <p>4.8.7.D Explain the importance of maintaining the natural resources at the local, state and national levels.</p> <p>4.9 Environmental Laws and Regulations</p> <p>4.9.7.A Explain the role of environmental laws and regulations- explain the role of local and state agencies in enforcing environmental laws and regulations.</p> <p>Civics and Government -Draft (on SAS)</p> <p>5.1. Principles and Documents of Government</p> <p>5.1.6.A Explain the effect of the rule of law in protecting property rights, individual rights, and the common good.</p> <p>5.1.7.A Cite functional examples of how the rule of law protects property rights, individual rights and the common good.</p> <p>5.2. Rights and Responsibilities of Citizenship</p> <p>5.2.4.A Identify individual rights and needs and the rights and needs of others in the classroom, school and community.</p>
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<p>5.2.6.A Compare and contrast rights and responsibilities of citizenship in the community, state, and nation.</p> <p>5.2.7.A Compare and contrast rights and responsibilities of citizenship in the community, state and nation.</p> <p>5.3. How Government Works</p> <p>5.3.4.C Identify the services performed by local and state governments.</p> <p>5.3.5.C Describe the role of local and state government officials.</p> <p>5.3.6.C Describe how local, state, and national governments provide services.</p> <p>5.3.7.C Describe how local, state, and national governments provide services.</p> <p>5.3.8.C Describe how local, state, and national governments provide services.</p> <p>5.3.7.G Explain the role of interest groups in local and Pennsylvania governments.</p> <p>5.3.8.G Explain the role of interest groups in federal government process.</p> <p>5.4. How International Relationships Function</p> <p>5.4.8.C Explain how common problems are addressed by organizations and governments.</p> <p>5.4.6.A Identify how countries have varying interests.</p> <p>5.4.7.A Identify how countries have varying interests.</p> <p>5.4.8.A Describe how national interests lead to agreements and conflicts between and among countries.</p> <p>Geography</p> <p>7.1. Basic Geographic Literacy</p> <p>7.1.7.A Explain how common geographic tools are used to organize and interpret information about people, places and environments.</p> <p>7.1.8.A Explain how common geographic tools are used to organize and interpret information about people, places and environments.</p> <p>7.1.C.A Use geographic tools to analyze information about the interactions between people, places and the environment.</p> <p>7.1.12.A Use geographic tools to analyze information about the interactions between people, places and the environment.</p> <p>7.1.7.B Explain and locate places and regions as defined by physical and human features.</p> <p>7.1.8.B Explain and locate places and regions as defined by physical and human features.</p> <p>7.2. Physical Characteristics of Places and Regions</p> <p>7.2.3.A Identify the physical characteristics of places and regions.</p> <p>7.2.4.A Identify the physical characteristics of places and regions.</p> <p>7.2.5.A Describe the physical charac-</p>	<p>7.2.6.A Describe the physical characteristics of places and regions.</p> <p>7.2.7.A Explain the characteristics of places and regions.</p> <p>7.2.8.A Explain the characteristics of places and regions.</p> <p>7.2.U.A Analyze the physical characteristics of places and regions, including the interrelationships among the components of Earth’s physical systems.</p> <p>7.2.W.A Analyze the physical characteristics of places and regions, including the interrelationships among the components of Earth’s physical systems.</p> <p>7.2.12.A Analyze the physical characteristics of places and regions.</p> <p>7.2.5.B Identify the basic physical processes that affect the physical characteristics of places and regions.</p> <p>7.3. Human Characteristics of Places and Regions</p> <p>7.3.6.A Describe the human characteristics of places and regions using the given criteria.</p> <p>7.3.7.A Describe the human characteristics of places and regions using the given criteria.</p> <p>7.3.8.A Describe the human characteristics of places and regions using the given criteria.</p> <p>7.3.C.A Analyze the human characteristics of places and regions using the given criteria.</p> <p>7.3.12.A Analyze the human characteristics of places and regions using the given criteria.</p> <p>7.4. Interactions Between People and the Environment</p> <p>7.4.6.A Describe and explain the effects of the physical systems on people within regions.</p> <p>7.4.7.A Describe and explain the effects of the physical systems on people within regions.</p> <p>7.4.8.A Illustrate the effects of the physical systems on people within regions.</p> <p>7.4.U.B Analyze the effects of human activity on the physical systems.</p> <p>7.4.W.B Analyze the effects of human activity on the physical systems.</p> <p>English- Language Arts</p> <p>1.5.Speaking and Listening</p> <p>CC.1.5.4.A Engage effectively in a range of collaborative discussions, on grade-level topics, texts and issues, building on others’ ideas and expressing their own clearly.</p> <p>CC.1.5.7.A Engage effectively in a range of collaborative discussions, on grade-level topics, texts and issues, building on others’</p>	<p>ideas and expressing their own clearly.</p> <p>CC.1.5.8.A Engage effectively in a range of collaborative discussions, on grade-level topics, texts and issues, building on others’ ideas and expressing their own clearly.</p> <p>CC.1.5.10.A Initiate and participate effectively in a range of collaborative discussions on grade level topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <p>CC.1.5.12.A Initiate and participate effectively in a range of collaborative discussions on grade level topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <p>CC.1.5.7.B Delineate a speaker’s argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.</p> <p>CC.1.5.8.B Delineate a speaker’s argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.</p> <p>CC.1.5.10.B Evaluate a speaker’s perspective, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.</p> <p>CC.1.5.12.B Evaluate how the speaker’s perspective, reasoning and use of evidence and rhetoric affect the credibility of an argument through the author’s stance, premises, links among ideas, word choice, points of emphasis and tone.</p> <p>CC.1.5.6.C Interpret information presented to diverse media and formats and explain how it contributes to a topic, text or issue under study.</p> <p>CC.1.5.7.C Analyze the main ideas and supporting details presented in diverse media formats and explain how the ideas clarify a topic, text or issue under study.</p> <p>Mathematics</p> <p>2.4 Measurement, Data and Probability</p> <p>CC.2.4.3.A.1 Solve problems involving measurement and estimation of temperature, liquid volume, mass and length.</p> <p>CC.2.4.5.A.2 Represent and interpret data using appropriate scale.</p>
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