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# 2018 GOLF OUTING SPONSORS



## Platinum Sponsor

20th Annual Charity Golf Outing



Environmental Construction & Site Remediation



## Major Event Sponsors



**Alluvial Earth**  
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[Home](#) » [Annual Golf Outing](#)

MARK YOUR CALENDAR!  
**July 9, 2019**



50395 W 10 Mile Road | Novi, MI 48374 | (248) 380-9595

**Your support  
at the 2018  
annual golf outing  
provided funding for  
the following  
environmental  
education  
programs.**

**JOIN NOW!**

*Stay Informed*



[www.maep.org](http://www.maep.org)





## Education Grant Committee Members

- Kelly Gallagher
- Jennifer Hardy
- Kathleen Klein
- Jennifer Lagerbohm
- Dave Lanzola



received **23 grant requests** in excess of **\$35,500**

MAEP selected **11** for a total of **\$12,500** in awards...

## Evaluations took into consideration:

1. Hands-on environmental experiential education
2. Quality/uniqueness of the educational experience (underserved populations)
3. Geography and populations in Michigan (4 corners NSEW & greatest impact #'s )
4. Effort is made to fully fund programs to ensure viability of the program





# The recipients of the 2018 MAEP grants are:

MAEOE	\$1,000.00
Detroit Cass Tech - Aquaponics/An NGSS Invest. Of Symbiotic Sust.	\$1,886.00
Huron River Watershed - Teaching Program	\$1,500.00
Linden High School - Effects of Land Use on Nutrient Load in the Shiawassee River	\$1,624.00
Kalamazoo Christian Middle School - Hands on Healthy Honey Bees	\$1,384.00
Edsel Ford High School - Thunderbird Greenhouse Restoration	\$1,600.00
Munger - Detroit Public School - Great Lakes Ed Program (GLEP)	\$1,200.00
New Branches Charter Academy - Grand Rapids - Plaster Creek Water Monitoring	\$1,506.00
Clippert Academy - Detroit Public School - Rainwater catchment system	\$300.00
Madison School - Wyandotte - Courtyard Greenhouse	\$300.00
Hamtramck Schools - Leaders of Environmental Awareness & Preservation	\$200.00

- 8 SE Michigan programs
- 2 west Michigan programs (KZ/GR)
- 1 educational non-profit (MAEOE)

# MAEOE – Early outdoor education has been documented to have an impact on student interest in STEM careers

## Science, Technology, Engineering & Math

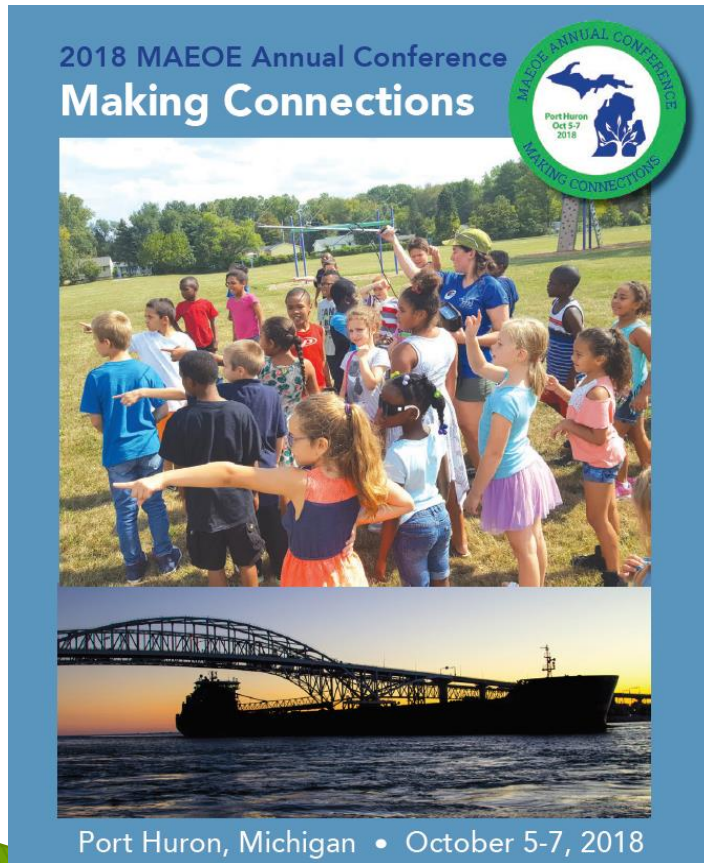
MAEP  
awarded  
**\$1,000**  
to MAEOE

The Conference  
was attended by  
**153** attendees

\$2,500 was  
presented in  
scholarships to

**5** students  
representing  
**5** different  
universities

and stipends  
were awarded to  
**12** teachers  
from throughout  
Michigan



# TEACHING STUDENTS RECEIVE STIPENDS TO ATTEND THE CONFERENCE



Stipends were provided to 12 educators who attended from all areas of Michigan. 10 of the 12 are pictured above.



Scholarships were provided to five (5) students, three are pictured below.

Students were from:

- Olivet
- Cornerstone
- MSU
- SVSU
- LSSU





**The MAEOE Conference teaches teachers how to effectively educate the next generation to be good stewards of the environment.**



# Cass Technical High School

*An International Baccalaureate World School*



Cass Tech AP Environmental Science/ IB Environmental Systems and Societies students will be responsible to build and maintain four (4) ECO-Cycle Aquaponics Garden Systems for study and analysis.



**AWARDED \$1,866**

## ECO-Cycle Aquaponics Kit

Grow fresh, organic food in your home all year long! With the beautifully redesigned ECO-Cycle, you turn your aquarium into a productive garden. This self-sufficient ecosystem uses fish waste to naturally fertilize the plants above. You feed the fish, the fish feed the plants, and the plants clean the water. Nature's balance – simplified. [Learn about the science inside the ECO-Cycle!](#)

**NEW! Shipping included!** Please note tank is not included.

**\$300**



## Grow for Good

Your purchase directly supports our [Aquaponics Education Program](#)! You can be a part of a project that provides ECO-Cycle Aquaponics Kits, curriculum, and educational support to students and classrooms.

## In Aquaponics –

Fish waste provides nutrients for the plants and the plants filter the water for the fish.

Plants can then be consumed for food creating a sustainable food system.

# Cass Technical High School

*An International Baccalaureate World School*

## STUDENTS WILL:

- Record weekly data on the dissolved oxygen content, pH, conductivity and temperature of the aquariums.
- Use Vernier probes, including an optical dissolved oxygen probe, to collect the data.
- Mathematically determine percent saturation from the data collected.
- Water quality will be monitored throughout the school year (except for vacations). This data will be graphed and analyzed for trends as well as impact on homeostasis.





# Cass Technical High School

*An International Baccalaureate World School*

- Senior students study feedback mechanisms involved in aquaculture and how this relates to the homeostasis of both systems.
- Symbiotic relationships are explored studying nitrogen-rich effluent in the aquarium system as integral to the plant growth.
- Chemistry students will use the aquaponic systems to investigate energy transformations (when one form of energy is converted to another form).
- Labs will focus on pH and temperature of the aquaponic systems and how these impact the energy and quality of the two environments.
- Data collected will be graphed and analyzed for trends.



# Knowledge Networks & Outreach

[Home](#) > [What We Do](#) > [Programs](#) > [Knowledge Networks & Outreach](#)



## HONEY CREEK

Septics and Scoop-the-Poop outreach



## MICROPLASTICS IN THE HURON RIVER

Learn about microplastic pollution in the Great Lakes and the Huron River and what you can do about it.



## K-12 PROGRAM

Fun-in-the-field education program for students

HRWC has also coordinated the [Michigan Aquatic Restoration Conference \(MARC\)](#) in partnership with several other organizations and agencies.

- Water Quality Education
- Snorkling the Huron River

## What We Do

### Our Impact

### Programs

Biological and Habitat Monitoring  
Chemistry and Flow Monitoring  
Natural Area Assessments and Protection  
RiverUp!  
Climate Change  
Watershed Management Planning  
Green Infrastructure  
Clean up and Restoration  
[> Knowledge Networks & Outreach](#)  
    [Honey Creek](#)  
    [Microplastics](#)  
    [K-12 Education Program](#)  
[Advocacy and Policy](#)  
[Dams and Impoundments Program](#)  
[River and Lake Monitoring: MiCorps](#)

**AWARDED \$1,500**

## STUDY

We monitor chemistry and flow, assess habitat, and identify plants and river bugs that are sensitive to changes in the environment to gauge the health of land and water throughout the watershed.

## PROTECT

We use our data to make informed recommendations to decision makers and practitioners on policy and other ways they can support clean water.

## RESTORE

In the watershed we give nature a chance to recover. For example, we restore habitat, remove dams, and turn artificially straightened creek channels into curvy creeks to benefit aquatic life.

## CONNECT

We connect people to the river by providing information and volunteer opportunities. We also work with local governments and businesses to feature the scenic Huron River in their communities and promote recreation.

### 2b. Description of the project.

HRWC's Streamside Education program brings stream health and water quality testing to local schools via a team of trained volunteers. These volunteer educators lead students in learning through hands-on monitoring of benthic macroinvertebrates, conductivity, dissolved oxygen, erosion, streambank stability, pH, stream velocity, stream ecology, temperature, and turbidity.

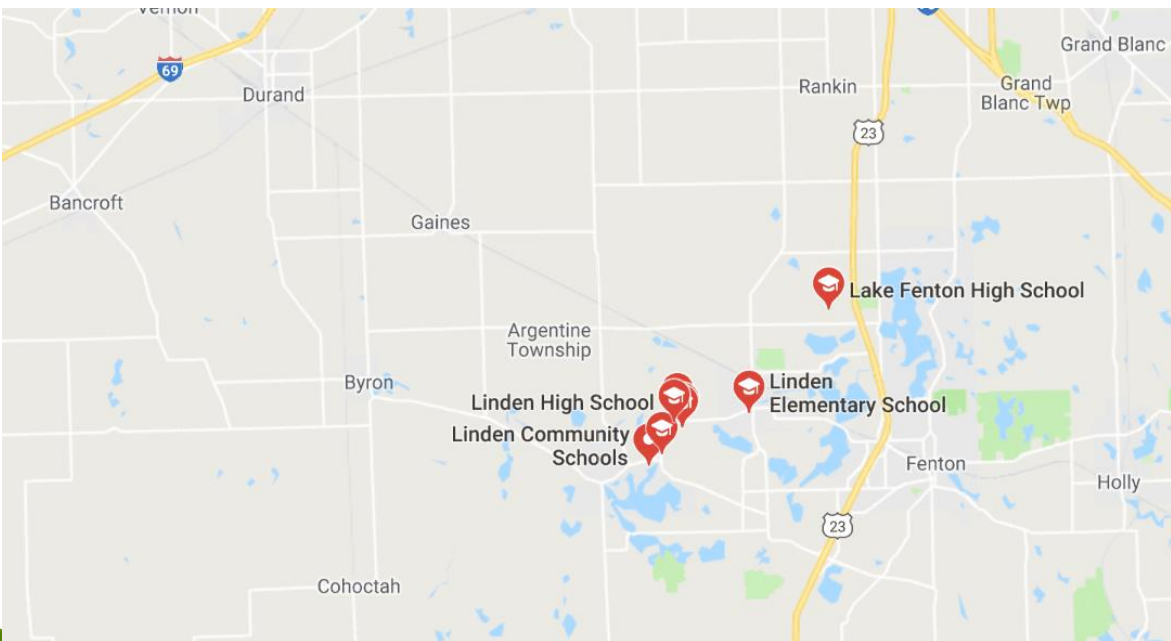
Over the past two years we have expanded this program to include a youth snorkeling series. HRWC offers a once-a-week summer program for middle and high school students that gets them out to the Huron River where they will snorkel to look for fish, underwater plants, and aquatic insects. Through a discussion based lesson, the students are taught about a watershed, how pollution enters a river, and how good land management can alleviate pollution to freshwater systems. College interns and professionals in the field offer youth the critical opportunity to learn that studying and interacting with aquatic systems is possible and leads to job opportunities.





# LINDEN COMMUNITY SCHOOLS

[Our District](#) | [Schools](#) | [Parents](#) | [Students](#) | [Staff](#) | [Athletics](#)



Effects of Nutrient Loading  
In the Shiawassee River...

**AWARDED \$1,624**



- Real world experience – local water quality research on the Linden & Fenton Mill Ponds
- Field sampling
- Laboratory experimentation
- Research & data analysis
- Presentation skills

## 2a. Name of the environmental project.

The Effects of Land Use on Nutrient Loading in the Shiawassee River

## 2b. Description of the project.

Students will collect samples from two similar locations on the Shiawassee River; the Linden mill pond and the Fenton mill pond. Both locations are characterized by slow moving water due to dams and are in the center of town. However, the Fenton mill pond has noticeably more algal growth than the Linden mill pond. The students are tasked with determining if the surrounding land use plays a role in this and to devise some strategies to mitigate that influence.

The students will examine watershed maps, an Insight Maker modeling system of the river, student collected field data as well as student derived experimental data. This will provide students with a variety of data to determine real-world ecological impacts. Furthermore, students will be designing experiments to test the growth of algae in response to different chemical compounds. The change in concentration of phosphorus, nitrogen, dissolved oxygen, total dissolved solids and pH will be measured in response to algal growth. In addition, the students will complete research to determine the best solutions to lessen land use impact on the river system to maintain or improve the health of the ecosystem.

The various components presented above provide the students with a wide range of real world experiences. These include data analysis, field sampling, laboratory experimentation, research and communication skills. The students will present their finding to interested stakeholders.





**KALAMAZOO  
CHRISTIAN SCHOOLS**  
Undeniably Christian. Academically excellent.

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## Academics

At Kalamazoo Christian Schools, our mission is to engage the hearts, minds, and bodies of our students through a rigorous and well-rounded curriculum. From elementary school through high school, each child is encouraged to explore, understand, and delight in God's kingdom, in an environment that is both academically challenging and developmentally appropriate.

### academics

#### Academics

- [+ Elementary School Curriculum](#)
- [+ Middle School Curriculum](#)

HEALTHY BEES · HEALTHY PEOPLE · HEALTHY PLANET™

**AWARDED \$1,384**





- Contextualize 8<sup>th</sup> grade science curriculum objectives
- Install & care for the bees and hives – ongoing
- Observe
- Research
- Critical thinking skills
- Grant writing skills – the students wrote the grant

## 2c. Educational objectives.

The main educational goal of the project is to learn about honeybees and observe them up close, learning about the many different functions and processes carried out by individual bees and the colony as a whole.

*This project is year-long. It does not replace our science objectives for the 8th grade science curriculum, but serves to contextualize them. The students have been engaging in authentic research as they learn about bees and their needs, as well as discovering the equipment needs and costs for starting hives. The students have the opportunity to develop their critical thinking skills as they evaluate the reliability of website information, discuss different resource options, and plan where to locate the hives on our campus. Cross-curricular goals also seek to improve reading and writing skills as students present their information to others. With the exception of this paragraph and some minor editing, the students wrote the rest of this grant.*



## AWARDED \$1,600

The Thunderbird Greenhouse Club at Edsel Ford High School (EFHS), in Dearborn, will use the funds to restore and maintain the school greenhouse.

The greenhouse will serve as a home base to rejuvenate the school's other greenspaces.



The Thunderbird Greenhouse Club allows students to:

- explore environmental issues
- engage in problem solving
- take action to improve the environment
- use the greenspace environment to promote emotional well-being



The school has two large courtyards that feature an array of wildlife such as geese, ducks, peacocks, squirrels and rabbits.

One courtyard contains two small ponds and several large trees and bushes.

The greenhouse itself is connected to two of the science classes that face the courtyard.

These resources fell into disrepair - the students and staff rarely utilized the outdoor classroom opportunity they presented





The Schoolyard Habitat Project Guide, created by the U.S. Fish & Wildlife Service (Kolstad, Vollherbst, & Mullin, 2011), serves as a model and a planning guide for this schoolyard habitat and outdoor classroom project.



## **Schoolyard Habitat Project Guide**

*A planning guide for creating  
schoolyard habitat and  
outdoor classroom projects*

# Academic Objectives

Students will be able to:

- Understand horticulture basic terms
- Determine the Importance of the Horticulture Industry
- Understand Environmental Impacts of Horticulture
- Understand Root, Stem, Leaf, and Flower Anatomy and Morphology
- Understand Light, Temperature, Air, and Water Effects on Plant Growth
- Determine the Nature of Soil
- Understand Soil Texture and Structure
- Explain a Soil Profile
- Understand Plant Growth Regulators
- Understand Moisture Holding Capacity



**Schoolyard Habitat  
Project Guide**

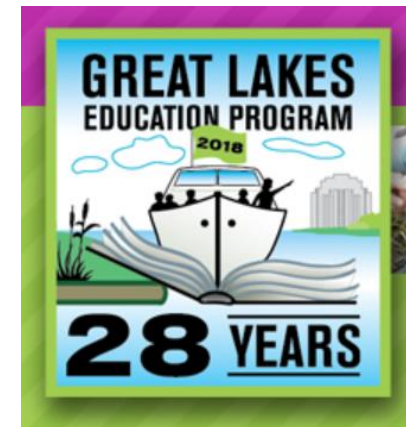
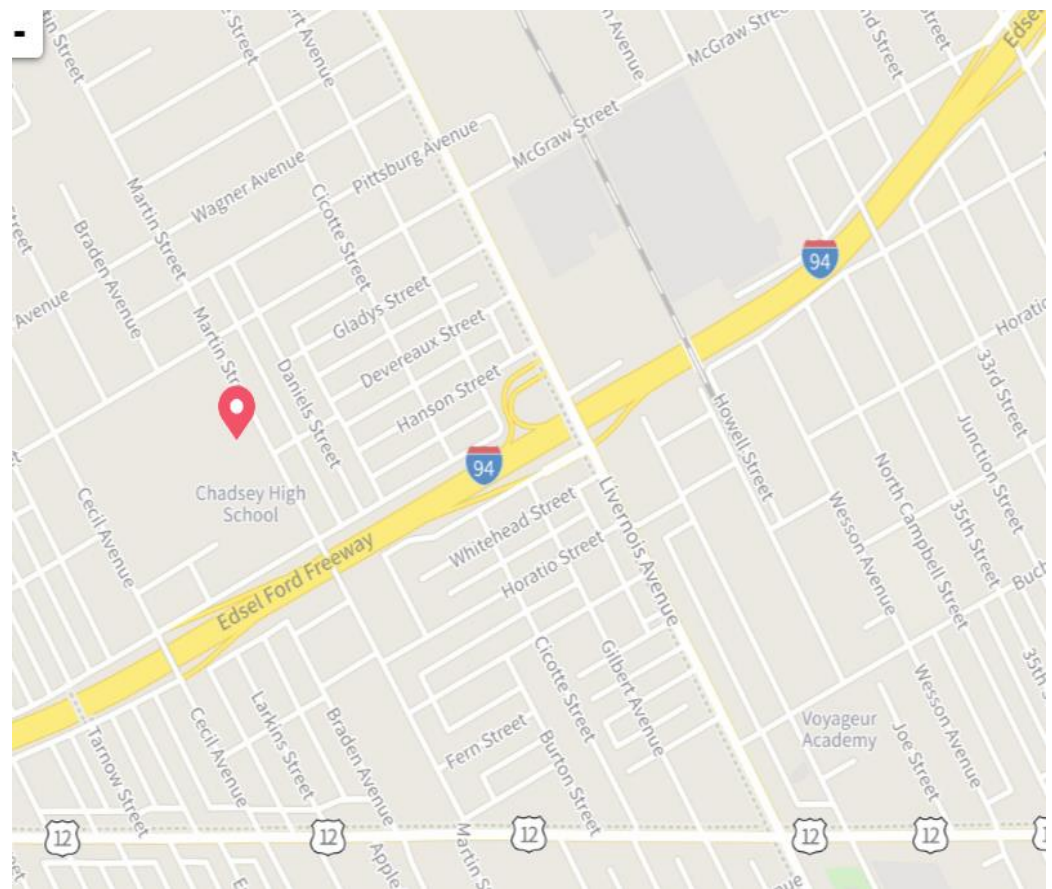
*A planning guide for creating  
schoolyard habitat and  
outdoor classroom projects*



Munger Middle School

**AWARDED \$1,600**

For a Great Lakes Education Program







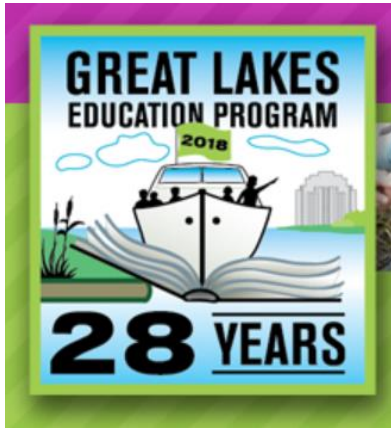
## INTRODUCING STUDENTS TO THE GREAT LAKES THROUGH CLASSROOM LEARNING AND SCHOOLSHIP EDUCATION

Search





Like other watershed education programs, students study water quality indicators but rather than gather their data in the stream, the GLEP gives science students an on board opportunity – aboard a hands-on educational vessel - the “Clinton” on the Detroit River watershed.



It involves experimental activities at eight (8) teaching stations, each taught by a volunteer leader.

### **Approximately 100 Students will learn about:**

- navigation
- plankton
- benthic life
- dissolved oxygen
- calcium hardness
- maritime knot-tying
- water sample collections
- and test the water's pH





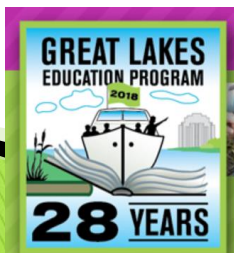
Great Lakes Education Program from ANR Communications MSU on Vimeo.



Great Lakes Education Program from ANR Communications MSU on Vimeo.



Great Lakes Education Program from ANR Communications MSU on Vimeo.



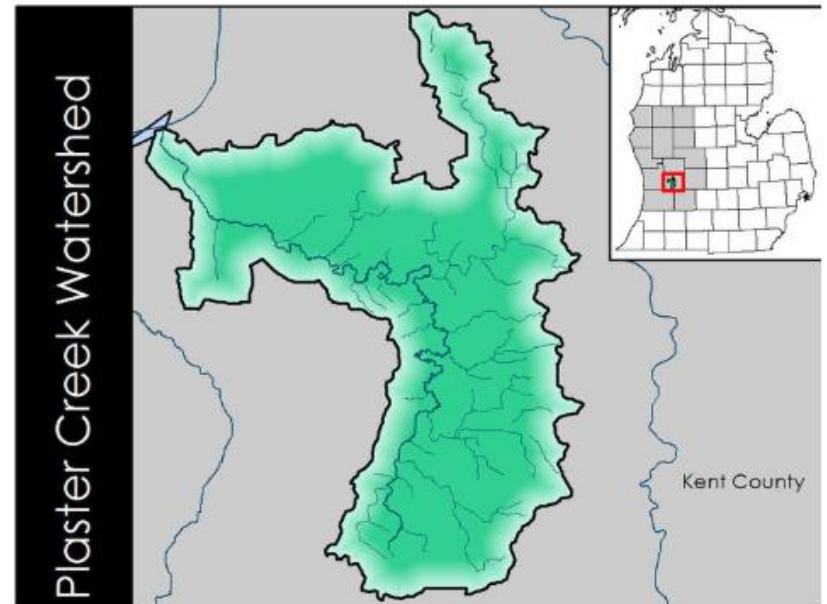
Great Lakes Education Program from ANR Communications MSU on Vimeo.





Grand Rapids, Kent County, MI

**AWARDED \$1,506**



- The Plaster Creek Watershed has a drainage area of 58 square miles
- located entirely in Kent County on the south and east sides of the Grand Rapids Metropolitan Area.
- Plaster Creek's headwaters begin in Gaines Township and flow north and then west to its confluence with the Grand River.
- A major tributary, Little Plaster Creek, flows from the north, joining Plaster Creek in the City of Kentwood.
- The Watershed occupies portions of the cities of East Grand Rapids, Grand Rapids, Kentwood, and Wyoming, and Gaines Charter Township, Cascade Township, Grand Rapids Charter Township, Caledonia Township, and Ada Township.
- Land use throughout the watershed is 38% agriculture, 38% urban, 15% forest, 5% open space, 2% wetland and 1% water.



**77 students from 6<sup>th</sup>, 7<sup>th</sup> & 8<sup>th</sup> grades will learn about local watersheds, the Grand River and Plaster Creek.**

They will learn about watershed ecology, issues such as stormwater runoff and various priority pollutants that can negatively affect stream quality, and the importance and potential solutions for restoring Plaster Creek.

They will be part of the solution by working on service learning restoration projects with Plaster Creek Stewards and WMEAC Teach for the Watershed program.

Students will learn the value and benefits of working with and giving back to the community.





**HAMTRAMCK  
PUBLIC SCHOOLS**  
YOU FIT IN HERE

# Leaders of Environmental Awareness and Preservation

30 Hamtramck High School LEAP members and 21,985 Hamtramck residents

**AWARDED \$200.00**



# HAMTRAMCK PUBLIC SCHOOLS

YOU FIT IN HERE



- The core mission of LEAP is to spread the idea environmental awareness throughout the school and community.
- Students administer events, such as weekly recycling pickups and clean sweeps around Hamtramck High School.
- Students and community members volunteer to promote the importance of maintaining a clean, healthy environment.



## PARTIALLY FUNDED GRANT REQUESTS FROM PREVIOUS RECIPIENTS

Clippert Academy – rain catchment – Detroit	\$300.00
Madison School – greenhouse – Wyandotte	\$300.00



# Clippert Academy

1981 McKinstry

Detroit, MI 48209



## Clippert Academy

**AWARDED \$300.00**

**Rain Catchment System**

**for raised bed gardens**

\$950.000 grant request – previous recipient



WYANDOTTE PUBLIC SCHOOLS  
*Educate - Inspire - Empower*

OUR DISTRICT

PARENTS AND COMMUNITY

ATHLETICS

F



MADISON CENTER

**AWARDED \$300.00**

**Courtyard Greenhouse**

\$999.98 grant request – previous recipient

**CONGRATULATIONS**  
**MAEP 2018 GRANT RECIPIENTS!!!**



Thank you for educating the next generation to be  
good stewards of the planet...