Rural STEM Collaborative

A report on the implementation of AEOP Programs eCybermission and Junior Solar Sprint in rural northeast Ohio school districts.

Black River Local Schools • Mapleton Local Schools • Northwestern Local Schools

Building a STEM Pipeline with AEOP

- Promote and increase participation in the AEOP programs.

- Increase awareness of AEOP and able to answer questions and engage in AEOP communication efforts.

- Distribute AEOP materials and information on STEM events.

- Utilize existing networks to promote participation and support of AEOP programs.

A Battelle Memorial Institute grant funded project of HSTW Ohio Network, a not-for-profit organization supporting HSTW and MMGW sites in northeast Ohio.

BATTELLE

HSTW OHIO NETWORK

ACKNOWLEDGEMENTS

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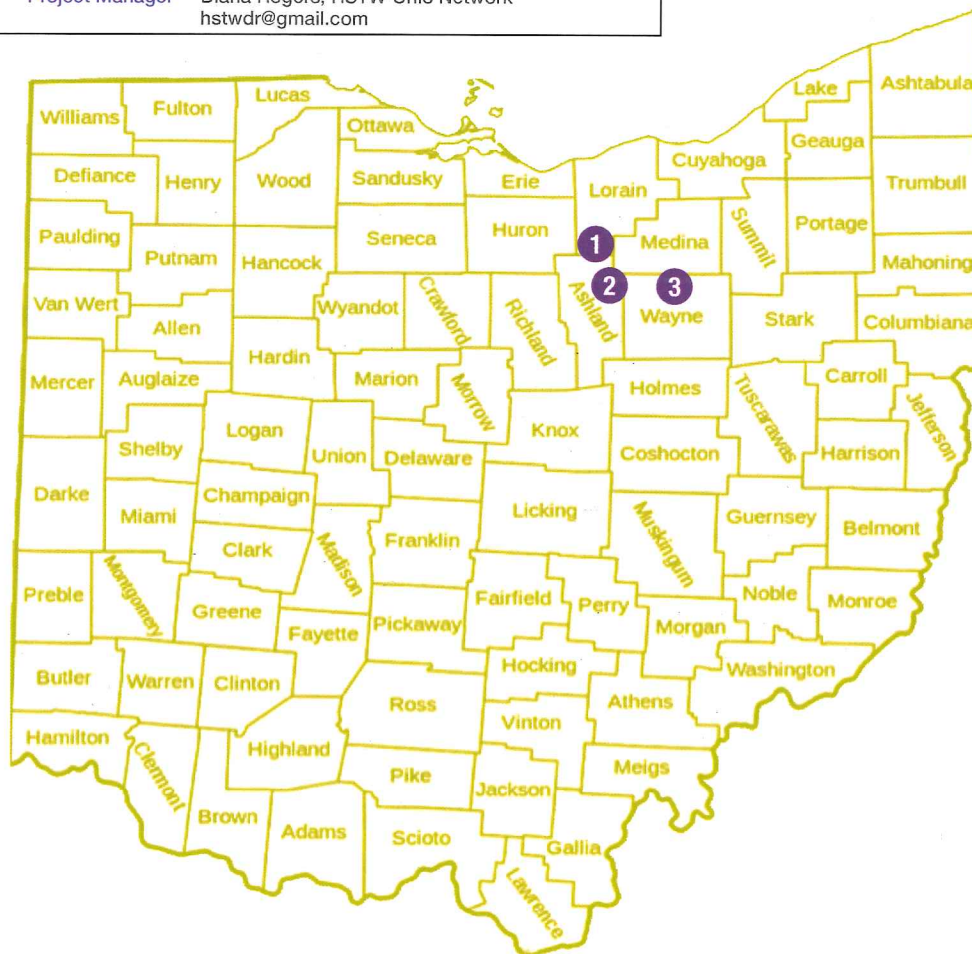
HSTW Ohio Network and the Rural STEM Collaborative

Before we share our challenges, lessons learned, and recommendations in implementing the AEOP eCybermission and Junior Solar Sprint programs, we would like you to learn about HSTW Ohio Network and the Rural STEM Collaborative in rural northeast Ohio.

HSTW Ohio Network

Diana Rogers, Executive Director, hstwdr@gmail.com

HSTW Ohio Network, a nonprofit organization supporting school districts in northeast Ohio adopting the HSTW and MMGW school improvement frameworks, served as the *Lead Applicant* for the AEOP Grant. Diana Rogers, served as the AEOP Program Manager providing grant and fiscal oversight.

Northwestern Local Schools (NWLS)
13 Years STEM Experience

Jeffrey Layton, Superintendent, nrws_layton@tccsa.net

Teacher Population: 100 teachers
District and building administrators and teacher-leaders serve as local, state and national trainers of STEM, problem-based learning, including the Project Lead the Way Engineering, Biomedical Science, Computer Science, Gateway to Technology, and Launch and SREB Advanced Career Clean Energy program/career pathways.

Student Population K–12: 1,397 students

STEM Pipeline Programs K–12:
Elementary: *AEOP Junior Solar Sprint, Project Lead the Way Launch, 5th grade career exploration project, problem-based learning, robotics camp;* Middle School: AEOP eCybermission, AEOP Junior Solar Sprint, Project Lead the Way (PLTW) Gateway to Technology, robotics, summer camps, eighth grade job shadowing project; High School: AEOP eCybermission, PLTW Computer Science, Engineering, Biomedical Science; SREB/HSTW Clean Energy Technologies; Career-Technical Education pathways in Agricultural Business, Business and Administrative Services, Teaching Professions, Family and Consumer Sciences, robotics; Senior Career Capstone; internships, pre-apprenticeship, industry credentials

STEM Grants:
NWLS was a grant recipient of a HSTW Ohio Network AEOP Grant, and a Battelle for Kids-led collaborative of an Ohio Straight "A" Grant awarded for Middle School Problem-Based Learning/Blended Learning, and NWLS was the lead district for Rural Literacy Design Collaborative (LDC).

Ohio STEM Learning Network (OSLN)
School Designation:
NWLS is the first pK-12 STEM district in the state and has three of the current 46 state designated Ohio STEM Learning Network (OSLN) STEM Schools: Northwestern High School, Northwestern Middle School and Northwestern Elementary. NWLS is a member of the OSLN, Innovation Lab Network (ILN)

Black River Local Schools (BRLS)
5 Years STEM Experience

Chris Clark, Superintendent, cclark@blrv.org

Location:
Ashland, Medina, and Lorain Counties in northeast Ohio

Teacher Population: 92 teachers

Student Population K-12: 1,155 students

STEM Pipeline Programs K-12:
Elementary: AEOP Camp Invention; Middle School: AEOP eCybermission, AEOP Junior Solar Sprint, PLTW Automation and Robotics and Design and Modeling; High School: PLTW Introduction to Engineering and 56 hours of college courses available to high school students

STEM Grants: BRLS was an RSC grant recipient of a HSTW Ohio Network AEOP Grant, and a Battelle-led collaborative for Rural Literacy Design Collaborative (LDC).

Mapleton Local Schools (MLS)
5 Years STEM Experience

Rodney Hopton, Superintendent, mapl_rhopton@tccsa.net

Location:
Ashland County in northeast Ohio

Teacher Population: 61 teachers

Student Population K-12: 925 students

STEM Pipeline Programs K-12: Elementary: PLTW Middle School: AEOP eCybermission, AEOP Junior Solar Sprint, PLTW Launch, 3D Printing, robotics, Lego STEM High School: robotics

STEM Grants: MLS was an RSC grant recipient of the HSTW Ohio Network AEOP Grant, and a Battelle-led collaborative for Rural Literacy Design Collaborative (LDC).

STEM Community Support: MLS has organized a Community Connections Council (CCC) to support STEA2M education that includes art and agriculture. The CCC is comprised of 20 business partners committed to support the district's STEM education efforts.

Characteristics of the Rural Stem Collaborative

Characteristics of Rural School Districts www.edc.org		Black River	Mapleton	Northwestern
A	Distance from Urban	17 miles from Ashland, 38 miles from Akron, 49 miles from Cleveland, and 100 miles from Columbus, Ohio	12 miles from Ashland and approximately 60 miles from Cleveland, and 90 miles from Columbus	15 miles from Wooster, 50 miles from Akron, 60 miles from Cleveland, and 90 miles from Columbus
B	Poverty (ED)	44% free and reduced lunch 2016-2017	48% free and reduced lunch 2016-2017	37% free and reduced lunch 2016-2017
C	Access to Internet	Limited at home. Access at school only.	Limited at home. Access at school only.	Limited at home. Access at school only.
D	Declining College Enrollment	56.9% graduates enrolled in college within 2 years (Sources: 2016-2017 report card)	49.3% graduates enrolled in college within 2 years (Sources: 2016-2017 report card)	56.3% graduates enrolled in college within 2 years (Source: 2016-2017 report card)
E	Teacher Retention Science, Math, Special Education (Combined 3 district percentages; salary competition from larger school district; invest in the human capital; stipend for teachers with accountability)	Ongoing turnover as science teachers leave to go to another district. In general, it is very challenging to find science and math teachers and intervention specialists. Larger districts tend to be more appealing in terms of salary and benefits as well as internal opportunities. Living in a rural community is not typically a choice new teachers make. The commute becomes a deterrent even if they like the idea of a small school. Over the next several years we anticipate openings in math and science due to retirements.	High incidence of turnover in science with 3 or 5 new science teacher hires last year at Mapleton.	Stable teacher retention in science, math and special education over the past thirteen years. Over the next ten years, there is only one projected retirement in science. Two of four science teachers and one of four math teachers receive an additional stipend for managing their STEM related career-technical education pathway.
F	Additional Barriers	Lack of resources, teacher recruitment, availability of teachers to attend the STEM professional development needed to be successful in teaching STEM curriculum, finding the time needed to fully support implementation at the teacher and administrative levels, making sure space and resources are available for implementation.	Lack of resources, teachers willing to participate in the professional development, the time and leadership needed to successfully support implementation.	Rigid teacher licensure requirements in high demand STEM related fields that cause a teacher shortage for small, rural schools; traditionally designed classroom spaces are not adequate or conducive for problem-based or project-based learning and other STEM related projects; STEM related professional development costs.
G	Factors to ensure successful implementation	At a small rural district, it may be easier than at larger districts to consult with teachers and various levels of administration for support, resources, and ideas to implement curriculum. Our students have real energy for STEM work if they are given time to do it. They seem committed to successfully completing tasks.	District has made a commitment to the STEAM pathways and will continue to contribute to any exposure that presents itself and can be funded. Costs for the replacement of STEM equipment has been part of the district budget for next year.	Aligning STEM initiatives and programming with career-technical education pathways to receive additional state funding; developing relationships and partnerships with businesses and post-secondary institutions; active and conscious pursuit of grants, donations, in-kind contributions and other resources to support STEM programming; shared leadership that includes board of education, superintendent, administration, teachers, students and the community.

AEOP Project Report
Executive Summary

HSTW Ohio Network, a 501(c)(3) organization, served as the *Lead Applicant* for the AEOP Grant providing grant and fiscal administration, and oversight of the Principal Partners in meeting the grant expectations. Diana Rogers, HSTW Ohio Network Program Manager provided oversight of the AEOP grant activities in collaboration with the Rural STEM Collaborative (RSC). Lead Partner: Northwestern Local Schools (NWLS), and Principal Partners: Black River Local Schools (BRLS), Mapleton Local Schools (MLS) and HSTW NE Ohio Region work together to meet the project goals.

Overall Project Goal was to broaden and deepen the pipeline of STEM talent in grades K-12 in rural northeast Ohio by increasing participation and awareness of AEOP programs: eCybermission and Junior Solar Sprint to 210 underserved/ underrepresented students in grades 5 –9, and create a replicable implementation model for other rural school districts.

Project Objectives

A. Increase participation by 210 underserved/underrepresented students across all three RSC school districts in AEOP eCybermission and Junior Solar Sprint programs. *Completed* Goal: 210 students Actual: 410 participants (277 students participated in eCybermission or Junior Solar Sprint with 133 of these students participating in both programs).

	eCybermission	Junior Solar Sprint
Black River	29 students 6th – 8th grade	119 students 5th – 6th grade
Mapleton	Did not participate	87 students 5th – 8th grade
Northwestern	104 students 6th & 9th grade	71 students 6th – 8th grade

How many of the student participants met the AEOP definition of underserved/ underrepresented?

343 student responses from 410 program participants (277 actual students)

- 43% (119) Female
- 31% (86) Economically Disadvantaged – free or reduced lunch
- 10% (28) Student With Disabilities
- 26% (72) First Time College
- 14% (38) One or both parents serving in the Military

B. Expand existing STEM education opportunities in each of the RSC districts and increase citizenry knowledge and awareness by promoting and engaging students, parents, educators, business and community organizations in eCybermission and Junior Solar Sprint programs. *Completed* In addition to the 277 students, 54 adults participated including: 13 administrators, 12 teachers, 18 parents, 9 community/business partners, and 2 non-profits/foundations.

C. Sustain AEOP programs in the Rural STEM Collaborative by embedding eCybermission and Junior Solar Sprint are aligned with in the STEM curriculum, and by sharing the data and evidence collected during the implementation year with the districts and stakeholders. *Completed* eCybermission and Junior Solar Sprint are aligned with the STEM curriculum with model lesson available upon request. *A Literacy Design Collaborative (LDC) Module was created for Junior Solar Sprint. See Resources: Solar Sprint Cars Northwestern Middle School.* Data and evidence from the implementation year has been share with school board members, businesses and published in the local newspapers.

D. Promote the Rural STEM Collaborative experiences in implementing AEOP programs by sharing experiences in creating a sustainable replicable model for other rural school district and sharing these experiences at region, state and national HSTW/MMGW and STEM networks. *Completed* AEOP programs were presented at HSTW NE Ohio Region Reconnects September 2017 and May 2018 in Rootstown, OH to over 100 school leaders, Ohio School Improvement Institute, November 2017 to a breakout session of 20 and in the program for over 700 participants; proposal to present at the national HSTW Conference, June 2018 to a breakout session of 70 and in the program for over 7,000

Significant Results, Accomplishments, Partnerships

- Three district partnership – administrators problem-solved together; teachers collaborated across the three rural school districts with challenges and sharing resources
- eCybermission teachers testimony: *The national eCybermission coach I was assigned to, Alexandra Wakely, was amazing. She would respond within 24 hours when I had a question. And, almost always, she was available to speak to me directly by phone. Successes were when students finished and how interested they were. Some had really neat observations and learned something new."*
- Junior Solar Sprint teachers comments: *Students are now motivated to learn. JSS has also taught them how to work as a team and know how to take defeat, and problem-solve how to win the next time.*
- Administrators stated: *Students were motivated and excited to participate in another STEM-like experience in a class that they have not taken before. It was great watching kids working in teams, and working through the failures with their team. Not all students were partnered with someone who was their first choice. Team experiences was a challenge and yet a growth opportunity for students.*

Northwestern High School eCybermission State Award Winning Teams
eCybermission Teacher Advisor: Amanda Michalak, Physical Science and SREB Clean Energy Systems Teacher

eCM Team: MBJ
Students: (L to R) Nathan Stoltz, Brandon Casto, Jason Markley
Project: Car Collision Safety
Award: Ohio 1st Place

eCM Team: Nutty Buddy
Students: (L to R) Cole Wharton, Cole Cutter, Branden Colter, Craig Wellert
Project: Effects of Drinks on Young Bodies
Award: Ohio 2nd Place

eCM Team: Backrow Boys
Students: (L to R) Mason Barnhourse, Blake Riel, Caleb Thomas
Project: Making Recycling More Accessible
Award: Ohio Honorable Mention

Anticipated and Unanticipated Challenges in Implementing AEOP in Rural School Districts

The Rural STEM Collaborative cited the following anticipated and unanticipated challenges and how they were addressed in the course of the project including suggested additional recommended support from Battelle

Disclaimer: *Although numerous challenges are cited, the RSC administrators, teachers and students enjoyed implementing the AEOP programs eCybermission and Junior Solar Sprint and look forward to implementing these programs again next year.*

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⟨ **CHALLENGE 1** ⟩

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Researching AEOP, TSA, and Ohio TSA and JSS districts/schools

> **Understanding the difference between TSA and JSS—** Once we received the grant, AEOP contacts were called or emailed for more information. Everyone was helpful, but trying to understand the two separate organizations (TSA, AEOP JSS) with different rules and expectations took a few calls and emails.

> **AEOP Website—** Navigating the AEOP website was a challenge at times. Once you clicked on JSS or eCybermission, you were directed to other links. Some links were helpful, but some required that you registered or became an official registered participant before information was provided. Another challenge was the requirement of registering as a volunteer or ambassador to get access to resources. Would not have known this unless Sue King, JSS National Director, informed us either by phone or email. **Benefits:** Teacher resources were outstanding. The posting of previous winners and their mission folders was invaluable.

> **Exploring Other JSS and eCybermission Districts/Schools in Ohio—** When we tried to find out if any Ohio school had currently or previously participated in JSS or eCybermission, the Google search showed a few Ohio schools with experience in implementing a JSS like program or competition, but every time we followed up with a call or email, we received no response. Lee Corder, Ohio TSA Director, was helpful once we were given his name and contact information. The Ohio TSA fee was waived because Lee Corder indicated that Ohio was not a JSS competition state.

> **Battelle Support—** It would have been helpful for district administrators and teachers leaders from each of the three rural school districts to participate in an introductory Skype meeting with Sue King, Suzy Orr, Lee Corder or other key AEOP contacts to ask our initial questions. The September 2017 meeting in Washington DC provided the face-to-face, but by September the initial groundwork was completed.
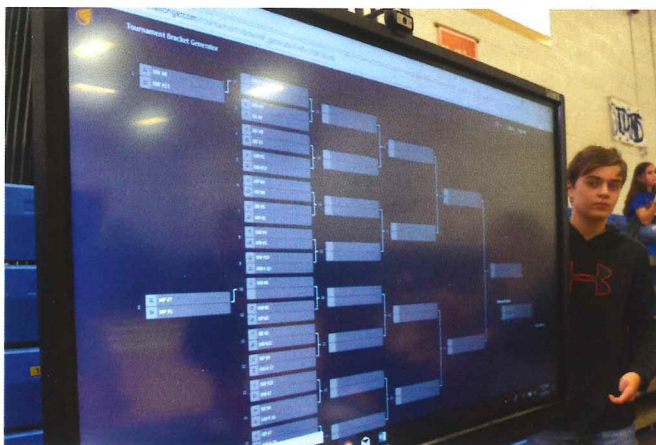
Teacher Advisor: Recruiting, Training, Quality Instruction and Time

> **Recruiting—** Each of the three school districts recruited teachers according to their local policies for offering additional projects with a stipend. Rural teachers, usually one content teacher per grade, are often asked to lead multiple initiatives at the same time (i.e. AEOP, LDC, new STEM courses) not including the district initiatives. The stress on the rural school district is not having a pool of teachers anxious to take on additional work. In one school district, teacher recruitment was delayed with no one willing to take on the project. Other adult volunteers were considered. Finally, the teachers were identified when JSS and eCybermission were included in a course during the school day instead of an afterschool initiative. All three districts had more success recruiting teachers when the AEOP programs were included in courses offered during the school day.

> **Training—** Because teacher recruitment was not complete until May 2017, face-to-face teacher training was delayed until August 2017. Between May and August, teachers were provided AEOP information from district administrators participating in the monthly collaborator meetings, sent through emails or learned through exploring the AEOP website. In June 2017, the program manager from HSTW Ohio Network, and a teacher and administrator from Northwestern Local Schools were able to attend the AEOP JSS Orlando Competition. This was extremely helpful. Nothing is better than actual participation in the annual JSS national competition event. These individuals provided insight and training to other administrators and teachers throughout the grant year. In September 2017, the teachers built their own JSS solar cars, and the three districts conducted a teacher competition. By seeing the racing track and conditions, watching their cars perform (or not), the teachers began to trouble-shoot, work together and build a collaborative network which became invaluable as teachers mentored other teachers across all three school districts.

> **Quality Instruction—** A high school teacher stated, "In the science course, all students were required to develop an eCybermission Mission Folder. Although it was difficult to have the students actually develop a high-level research project and monitor their progress, students were extremely interested in their research, observations and learning something new. For their first attempt, some of the projects were fairly elementary."

> **Time—** Teachers were overwhelmed by the amount of time needed to understand the project expectations, plan to teach, order supplies, procure additional materials, teach students during and after school; collaborate with other teachers; plan for classroom, school and district competitions; and communicate with project and district leadership. Now that the teachers have experienced their first year "learning curve" they have a clearer understanding of the time needed. Another issue was related to difficulties in implementing eCybermission during a scheduled intervention/enrichment time. Teachers frequently pulled students from the course for other work.

> **Battelle Support—** It would have been helpful to have brochures, timelines, testimonies and contacts with teachers and schools who had previously implemented the AEOP JSS and eCybermission programs. This could have helped with recruitment, training and understanding the time needed.

Recruiting Students and Informing Parents

> **Recruiting Students—** Each school district used different approaches to recruiting JSS students. Some districts provided information at their August back-to-school open houses. Others offered a special time after school and was surprised that over 100 students were interested. In another district, all students in grades 5 to 6 were required to participate as part of the curriculum. This was a challenge because the schools had limited JSS kits, and additional kits were purchased using district funding. The money for additional kits placed a burden in the grant line item for sponsoring winning teams to the national conference. No interested student was turned away. eCybermission students were recruited as part of an in-school STEM course.

> **Informing Parents—** Getting parents to complete and return permission forms for their students is always a struggle, and not just for AEOP. For most teachers, collecting signed permission forms took many weeks. The process often required contacting a parent more than once, which was time consuming. The plan for next year is to require all parents to complete AEOP program permission during a fall open house or other face-to-face meetings. Students were participating in JSS or eCybermission during the school day, and many parents had no idea that their students were engaged in the AEOP programs. Next year, the districts and schools plan to offer an initial informational meeting before the school year begins.

> **Battelle Support—** Possibly including parents in the highlights on AEOP and sharing both the student and parent highlights at the beginning of a grant project.

Purchasing JSS Kits, Vinyl Race Track and Reusable Materials for All Interested Students

> **Purchasing JSS Kits—** Unanticipated additional cost for JSS solar car kits due to adding JSS to the curriculum for all students in grades 5 through 6 at one district, and in another district opening JSS to all students in grades 5 through 8. Additional cost was covered through the district budget and a community partner willing to support this endeavor so that all students could participate. Understanding all the cost for the JSS program would have been helpful before beginning the project.

> **Vinyl Race Track—** The vinyl track used at the national JSS competition was purchased by a community partner and contributed to each district to provide students with an "authentic" racing track and conditions. Each district was responsible to complete the racing tracks with fishing wire, weighs and timers. The set up, tear down and storing of the track was unanticipated. Recommendations for next year are for each school district to have multiple track so student are not waiting, wasting time and not able to complete testing "runs" during their class periods.

> **Reusable Materials—** Recyclable materials were collected and used by students to design their first JSS car construction, and to cut down on consuming the kit components. The biggest cost was purchasing the solar panels that will be collected and used again next year.

> **Battelle Support—** Possibly including parents in the marketing promotion "Highlights on AEOP" and sharing both the student and parent highlights at the beginning of a grant project.

Funding District JSS Teams to National Competition

Some districts limited the number of teams that could participate in the national competition. The AEOP grant covered most of the travel and competition cost for one or two teams from each of the three rural school districts to complete in the national TSA JSS Competition in Atlanta. This was limiting for some districts that opened the opportunity to more teams. Additional teams required additional fund raising from parent organizations, businesses, foundations and individual contributions. The time to raise these funds as well as planning the travel for an unfamiliar event was a challenge for project coordinators.

Sunshine in Ohio!!!

Lessons Learned in the Implementing AEOP in Rural School Districts

The Rural STEM Collaborative learned many lessons during the implementation of this project.

Lesson #1

Take time to communicate the program expectations to all stakeholders including parents at the beginning of the school year and make sure they are included as an AEOP program partner, and welcomed as part of the team.

Lesson #2

Be realistic in the time for teachers to learn and implement the programs.

Lesson #3

Estimate the cost of kits before adding JSS to the curriculum for all students. Anticipate the cost for the track and other supplies before the project to eliminate the stress to complete all parts of the projects successfully.

Lesson #4

Improve the success of all stakeholders (teachers, students and parents) buying into the AEOP programs by implementing in a STEM environment.

Stakeholders' buy-in will be improved when:

- Implemented where a STEM culture and Problem Based Learning (PBL) is in place.

- Embedded in a STEM curriculum with other proven evidence-based strategies, such as the Literacy Design Collaborative in Science, Project Lead the Way, SREB Advance Careers.

- Designed with real-world problems that includes working and networking with scientists and businesses is the norm.

- Required in lesson plans designed by cross-curricular teacher teams in science, English language arts, social studies, math and career technical working together to meet learning targets while implementing the AEOP programs.

Sustain and Scale-Up AEOP Programs in Rural School Districts

Sustainability

The Principal Partners will be able to sustain the AEOP/STEM initiatives by taking the following actions:

- **Personnel Cost—** teacher-leaders stipends, especially if competing in national competition **Funding Source:** district funding using Ohio Department of Education weighted funding for middle and high school career technical courses; Embedded in course no additional cost

- **Travel Cost–** District/building administrators, teacher leaders, and student competitors to attend region, national AEOP/STEM conference to present and/or compete – **Funding Sources:** district funding, grants, business partners and outside resources/fundraising - sponsorships for stipends and national competitions; PTOs are willing to pay for students to attend the national competition

- **Materials/Supply Cost–** JSS kits, materials and supplies for AEOP JSS and eCybermission - **Funding Sources:** parents, grants, business partners, sponsorships for car kits; foundations will support students on free and reduced lunches

- **Contractual Services–** TSA Memberships **Funding Sources:** district budget, parents/parent group, grants, business partners

- **Professional Development Cost–** Teacher training, networking, best practice showcases **Funding Sources:** presentation grants sponsored by HSTW NE Ohio Region awarded to district/building administrators and teacher-leaders to present and attend state and national meetings and conferences. **Potential Outreach:** regional network: 31 *HSTW* sites and 16 *MMGW* sites; state network: 134 *HSTW* and 102 *MMGW* sites; and national network – 1,200 HSTW sites in 30 states and 350 *MMGW* sites in 19 states

- **Increase STEM Course Offering—** STEM/CT Courses with curriculum mapping and alignment to Ohio content standards and meeting the expectations of multiple STEM Initiatives **Funding Sources:** Ohio CTE programs and weighted funds for students in grades 7 though 12 grade

Scalability

The Principal Partners have taken the following actions to scale-up the AEOP program implementation:

- Offering AEOP-like programs for student in grades 3 and 4 to prepare for participation in eCybermission and JSS

- Engage 9th graders with university solar car competitions already in place

- Invite Career Technical Centers to partner in implementing JSS using CT students as mentors

- Offering eCybermission as an elective course

- Already feel like the project was scaled up from the original grant proposal with 410 students engaged

Literacy Design Collaborative –
Solar Sprint Cars
Northwestern Middle School

Solar Sprint Cars - Northwestern Middle School

LDC Literacy Design Collaborative

Solar Sprint Cars - Northwestern Middle School
by Kasja Rabor

Adapted from *"Battelle Design Module Template 2.0 (Aligned to Grades 6-8 standards)"* by Kelly M. Gaier Evans, and Peter Berblin

This Solar Sprint Car module (which addresses kinetic and potential energy and types of energy) is for middle school students who are new to the design process. The cars will move with the use of solar power (battery if no sun). The fastest car will move to the next level of the competition.

Junior Solar Sprint. Participants (one [1] team of two to four [2-4] per chapter, one [1] entry per team) apply STEM concepts, creativity, teamwork, and problem-solving skills as they design, construct, and race a solar-powered model car. This is a real-life competition between local students for a chance to compete at a national level. The goals of this module are as follows:

- A clear understanding of the design process basics
- Working as a team to develop a model
- Considering the limitations to determine the best model
- Doing research to inform a design concept
- Testing a model to determine success
- Writing a full report of design with multiple design components
- LEAP (Leadership, Education, Achievement, Personal Growth)

Purposeful production is the definition of design. The Design Process requires that students already have the ability to test solutions in a controlled manner (i.e., carry out a controlled experiment). It is advisable, therefore, that your students be relatively fluent in experimentation prior to completing this module. If your students do not yet have a sound foundation in experimentation, please see the Battelle Controlled Experiment Module Template. These modules are part of a three-part Battelle LDC Science Collection: Data Analysis, Controlled Experimentation, and Design. The series represents a continuum of skills that build upon each other.

GRADES	DISCIPLINE	COURSE	PACING
5 - 8	⚗ Science	≡ Physical and Earth Science	⏱ 14hr

Literacy Design Collaborative   1 of 30   https://s.ldc.org/u2k8onerSvceri5yuaNbolhrh5B

Resources

Education Week, January 2018

http://blogs.edweek.org/edweek/District_Dossier/2018/01/rural_schools_often_overlooked.html?cmp=soc-edit-tw

Rural Schools Often Ignored in Research and Policy Discussions

By Corey Mitchell on January 18, 2018

The poverty, inequity, and isolation that students in rural schools must cope with are often overlooked in education research and policy discussions, according to a new report from the National School Board Association's Center for Public Education.

The report argues that despite the fact that rural schools struggle with high and lows more commonly associated with urban schools—high rates of poverty, low literacy rates, and low college attendance rates among them—the needs of millions of students are often neglected. More than 9 million students attend rural K-12 schools in the United States, according to *"Why Rural Matters," a 2017 report by the Rural School and Community Trust.*

The deep dive from the Center for Public Education also highlights the fact that rural schools struggle to **hire and train teachers** and **often have limited access to advanced coursework**. A 2015 report by University of New Hampshire researchers found enrollment in Advanced Placement courses in rural districts lags behind the rates in suburban and urban school districts and, that even when those courses are available to rural students, they often have lower scores than their non-rural peers.

"The national conversation around education often neglects the perspectives, needs, and circumstances of rural America, despite high needs and widespread challenges," the report concludes. "Our continued failure to include the voices of this critical portion of the country undercuts our commitment to provide every student with the high-quality public education they deserve."

The report offers recommendations to school board members and superintendents looking to address the challenges that cash- and resource-strapped rural schools face. To find solutions, the paper advises that rural schools find new ways to pool resources with neighboring districts, cultivate local and state policy makers as advocates, and start research partnerships with universities to identify the needs specific to their students and staff.