



Guiding Concepts of Pathway Development

- Provide opportunities (where possible) for all students to build a knowledge of the pathways in order to make an informed pathway decision in high school and develop associated skills
 - Ex. All students attend PLTW Launch provides exposure to engineering principles as well as development of problem solving ability.
- Develop Pathway specific course work
- Build Higher Education Partnerships to offer opportunity for college credit prior to graduation
- Build Industry Partnerships to provide relevance through content advisory, tours, job shadows and internships
- Leverage grant opportunities to accelerate pathway development



Leverage Grant Opportunities to Support Pathway Development



Grants Awarded

Grant Name	Amount	Description
Ag In the Classroom	\$50,000	Provides ½ time teacher for Middle School Ag program & 140 sessions at elementary level
Ag in the Classroom National Conference Scholarship	\$1,100	Provides travel, lodging and registration costs for Ag In the Classroom Educators to attend the National Conference
Ag Literacy	\$1,200	Provides funding for agricultural projects that can be utilized across content areas



Grants Awarded

Grant Name	Amount	Description
Ag Incentive (Cornell)	\$6,750	Provides funding to support the Ag teacher, students, and the program in general
Grant for Growing (NYS Agriculture Dept)	\$1,629	Provides 3 Tower Gardens for the Special Education Department (collaboration with the agriculture program)
NYS Parks and Recreation Field Trip (4)	\$4,000	Provides funding for 4 field trips to state parks/fish hatcheries



Grants Awarded

Grant Name	Amount	Description
Eastern Southern Tier STEM Hub	\$9,600	Provides support to Middle School Coding & Maker Space Initiative
Land Bank	\$30,000	Provides support for creation of Land Lab
Lowe's Toolbox for Education (3)	\$15,000	Provides funding for 3 greenhouses
NY Forest Owners Association Grant	\$225	Provides funding to support student studies of forest lands



Grants Awarded

Grant Name	Amount	Description
Student Support and Academic Enrichment (SSAE)	\$331,234	Provides funding to support programming for 5 pathways: Trades, Health Sciences, Agriculture, Education, and Engineering



Project Director
Career Coach/Counselor
Pathways Business and Community Liaison
Agriculture Teacher



K-12 Pathway Course Development with Higher Education and Industry Partners

Windsor Central School District – Home of the Black Knights





Pathway Courses Added or Under Development for 2019-2020

Agriculture	Building Trades	Education	Business & Finance	Computer Science	Engineering	Health Science
Introduction to Agriculture (CASE)	Trades III	EDUC 111	No New Classes	Computer Science: code.org	No New Classes	PLTW: Human Body Systems
Veterinary Science	Welding	ECE 255		AP Computer Science (Edhesive)		
SUNY Cobleskill Environmental Science	Economics & Manufacturing w/ Buckingham					





Summer Pathway Curriculum Development

Pathway	Course
Trades/Engineering	3-5 Makerspace Applied Math Activities
Engineering	PLTW: IED (co-taught, under exploration)
Trades/Advanced Manufacturing (BTBOCES)	Applied Economics in Manufacturing
Health Sciences	PLTW: Human Body Systems



Trades Pathway	Industry/Higher Education Partners	Additional Recommended Course Work
<p>PLTW Launch K: Structure and Function, Exploring Design 1st: Pushes and Pulls 2nd: Material Science, Properties of Matter 3rd: Stability and Motion: Science of Flight 3rd: Stability and Motion: Forces and Interaction 4th: Energy: Collisions 4th: Energy: Conversions 5th: Robotics and Automation 5th: Robotics and Automation: Challenge</p> <p>3-5: Applied Math Activities in MakerSpace</p> <p>MS 6th: Intro to Trades I (10 weeks)</p> <p>HS (9-12) Trades III Welding Applied Economics in Manufacturing</p>	<p>Buckingham Manufacturing</p> 	<p>Middle School 8th Grade Trades II (10 Weeks) [Offered in competition with 8th grade Intro to Ag]</p> <p>High School Introduction Engineering Design</p> <p>BTBOCES Career and Technical Education</p>



Engineering Pathway	Industry/Higher Education Partners	Additional Recommended Course Work
<p>PLTW Launch K: Structure and Function, Exploring Design 1st: Pushes and Pulls 2nd: Material Science, Properties of Matter 3rd: Stability and Motion: Science of Flight 3rd: Stability and Motion: Forces and Interaction 4th: Energy: Collisions 4th: Energy: Conversions 5th: Robotics and Automation 5th: Robotics and Automation: Challenge</p> <p>PLTW Gateway 6th: Automation and Robotics 7th: Design and Modeling</p> <p>PLTW(9th-12th) Introduction to Engineering and Design Civil Engineering Principles of Engineering Digital Electronics Engineering Design and Development</p>	<p>Rochester Institute of Technology</p> 	<p>Middle School 8th Grade: Introduction to Trades II Integrated Algebra</p> <p>High School Trades III Welding AP Physics</p>




Biomedical Science Pathway	Industry Partners	Additional Recommended Course Work
<p>PLTW Principles of Biomedical Science</p>	<p>United Health Services</p> 	<p>Middle School Living Environment</p> <p>High School College Chemistry AP Biology AP Physics</p> <p>BTBOCES New Visions Health Careers Academy AP Health Science</p>



Principles of Biomedical Science *(1 year)*

In the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.




Education Pathway	Industry/Higher Education Partners	Additional Recommended Course Work
<p>High School EDU 111: Foundation of American Education SUNY Broome FAST Forward at Windsor CSDHS</p>	<p>Union Endicott School District Johnson City School District SUNY Broome</p> 	<p>Middle School Living Environment</p> <p>High School College Chemistry AP Biology AP Physics</p> <p>BTBOCES New Visions Health Careers Academy AP Health Science</p>



Education Pathway	Industry/Higher Education Partners	Additional Recommended Course Work/Co-Curricular
<p>High School EDU 111: Foundation of American Education (SUNY Broome FAST Forward at Windsor CSDHS) ECE</p>	<p>Johnson City School District SUNY Broome Union Endicott School District</p> 	<p>Middle School Palmer Pals Student Mentor Knight Lights Student Mentor Volunteer</p> <p>High School Palmer Pals Student Mentor Knight Lights Student Mentor Summer Employment</p>



Agriculture Pathway Courses	Industry/Higher Education Partners	Additional Recommended Course Work
<p>Agriculture in the Classroom w/ Cornell Cooperative Extension</p> <p>K: Pig Visit 1st: Healthy Bodies 2nd: Insects/Bees 3rd: Reindeer 4th: Colonial Times 5th: Natural Disasters</p> <p>Middle School</p> <p>8th: Introduction to Agriculture: Cornell Cooperative Extension</p> <p>High School 9-12</p> <ul style="list-style-type: none"> ● Introduction to Agriculture(CASE) ● Veterinary Science ● Environmental Science & Lab (SUNY Cobleskill) ● Welding 	<p>Cornell Cooperative Extension SUNY Cobleskill</p> 	<p>High School</p> <p>Entrepreneurship Living Environment College Chemistry AP Biology</p>

