



George L. Catrambone Elementary School

Long Branch Public Schools

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"Together We Can, Juntos Nós Podemos, Juntos Podemos"

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To Whom It May Concern:

The George L Catrambone School students receive STEM instruction weekly during specials. The Project Lead the Way or PLTW Launch's 24 interdisciplinary modules bring learning to life. The program empowers students to adopt a design-thinking mindset through compelling activities, projects, and problems that build upon each other and relate to the world around them. And as students engage in hands-on activities in computer science, engineering, and biomedical science, they apply and reinforce the knowledge and skills they've acquired in core academic areas.

Our Students participate in a variety of learning modules or units of study during the year in all grade levels. Each module or unit is approximately 14-16 hours of instruction, exploration, activity, and projects.

Grade Level	Modules
First Grade	<ul style="list-style-type: none">• <u>Light: Observing the Sun, Moon, and Stars</u> - Students build upon their knowledge of light and design a playground structure that protects students from UV radiation.• <u>Animal Adaptations</u> - Students learn about animal adaptations and apply what they've learned to design a shoe made for desert exploration.• <u>Structure and Function: Exploring Design</u>- Students discover the design process, identify products around them designed by engineers, and use what they've learned to design their own paintbrushes.
Second Grade	<ul style="list-style-type: none">• <u>Materials Science: Properties of Matter</u> - Students explore materials science and devise a way to keep popsicles cold – without a cooler.• <u>The Changing Earth</u> - Students explore how the surface of the Earth is always changing and design solutions for a fictional community threatened by a landslide.• <u>Grids and Games</u>- Students learn about the sequence and structure required in computer programs and work in teams to build tablet games.

Third Grade	<ul style="list-style-type: none"> • <u>Stability and Motion: Science of Flight</u>- Students learn about the forces involved in flight and design a solution to deliver aid supplies via an aircraft. • <u>Stability and Motion: Forces and Interactions</u>- Students explore simple machines such as wheel and axles, levers, the inclined plane, and more and then use what they know to rescue a trapped zoo animal. • <u>Variation of Traits</u>- Students explore the results of the variation of inherited traits.
Fourth Grade	<ul style="list-style-type: none"> • <u>Energy: Collisions</u> - Students investigate how mechanisms change energy by transferring direction, speed, type of movement, and force and then use what they know to design a car safety belt. • <u>Energy: Conversion</u> - Students learn how energy can be converted to meet a human need or want and then develop solutions to move donated food from a truck to a food pantry. • <u>Input/Output: Computer Systems</u> -Students explore how computers work and create a reaction-time computer program to assess a baseline before a concussion occurs.
Fifth Grade	<ul style="list-style-type: none"> • <u>Robotics and Automation</u>- Students explore the ways robots are used in today's world and then design a mobile robot that can remove hazardous materials from a disaster site. • <u>Robotics and Automation: Challenge</u>- Students explore mechanical design and computer programming and design an automatic-guided vehicle to deliver supplies in a hospital. • <u>Infection: Detection</u>- Students explore the transmission of infection and run an experiment to help find ways to prevent the spread of illness.

The above modules will be covered during the 2021-2022 academic school year.

Lisa Roesch Lead PLTW Teacher

Kelly Stone PLTW Teacher

Jessica Cunneff Principal