Edison Global STEM Challenges Program

2017-2018
3rd Quarter

Hello, 2018!

The 9th and 10th grade students exceeded our expectations this fall, and now we're looking forward to a rewarding spring.

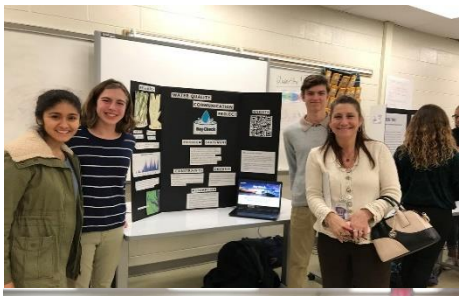
In **9th grade,** students have created microscopes and greenhouses. They worked towards growing their understanding of engineering design by focusing on how to adequately define a problem and deciding what kinds of data they will need to justify a solution. This quarter, students will work on designing and delivering a specialized food for a target community.

9th Grade Unit Challenge	Major Math Content	Major Science Content
Design a portable microscope for field identification of pathogens on plant life.	. Proportions . Magnification . Angles . Ray diagrams . Growth & decay functions	. Macroscopic & Microscopic observation . Classification of living things . Cell theory . Lenses & refraction
Design a greenhouse system to cultivate a specific food.	. Rates of change . Unit conversions & ratios . Balancing ratios . Solving systems of equations . Exponential growth and logarithms . Efficiency	. Processing & cycling matter . Cell cycle . Photosynthesis . Chemical nomenclature . Stoichiometry . Cell transport . pH
Design a therapeutic food and delivery system for the hungry.	. Linear & quadratic functions and predictions . Optimization and solving systems of equations	. Energy . Energy & matter in the human body . Macromolecules

Students work in teams during class on their greenhouse projects and discuss sustainable food for communities.

In **10th grade,** students finished their Chesapeake Bay communication app design and began an ice core analysis tool design. The ice core analysis tool will use Arduino programming to assist in analyzing solids and gases trapped in ice.

10th grade students present their communication tools developed to share information about the Chesapeake Bay

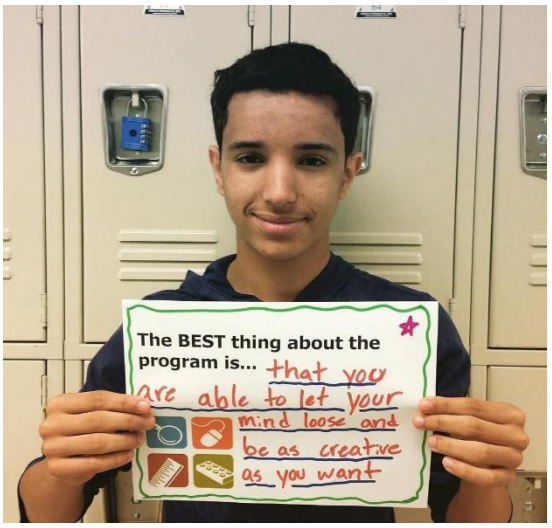


10th Grade Unit Challenge	Major Math Content Areas	Major Science Content Areas
Design a water quality communication tool to support a local stakeholder in the Chesapeake Bay.	. Functions . Logarithms . Inverse functions . Asymptotes . Statistical T-tests	. Chesapeake Bay data set analysis . Chemical cycling . Nitrogen cycle . Temperature, dissolved gases
Design a tool that can collect released gases from an ice core sample.	. Proportionality . Derive Planck's Law . Derive absorption equation . Exponential functions . Inverse functions . Derive gas law equations	. Atmospheric composition . Solubility . Absorption & emission spectral analysis . Beer's law . Properties of gases

Edison Global STEM Challenges Program Instructors:
Mr. Patel, Mr. Canales, Mr. Chirinos, Mrs. Drew, and Dr. Besterman

Important Dates:

- 2/8/18 – Global STEM Student Social (9th and 10th grade cohorts) @ 3:00pm
- 2/9/18 – 9th Grade Student Greenhouse Presentations @ 10:50am
- 2/21/18 – Computer Science Guest Speaker @ 8:30am
- 2/21/18 – Global STEM Challenges Program Open House for Prospective Students @ 6:30pm



Help Us Recruit New Global STEM Students!

Please share the word about GSC by referring interested students and parents to Mrs. Whitney Ketchledge (wsketchledge@fcps.edu) and by using #EdisonGlobalSTEM on social media.

Follow Us on Social Media

twitter **@EdisonSTEMprg**

Instagram **EdisonSTEMprg**

Thank you to all parents and students who joined us for our parent night event and for all of your feedback. A special shout out to all of our Global STEM Student Ambassadors for helping to organize our event and speaking to our parents!