Global STEM Challenges Program
Edison HS

Wednesday, January 18, 2023

Introductions

Pamela Brumfield, Principal, Thomas A. Edison High School

Deborah Guillen, Director, Student Services

Monica Bentley, Administrator, Global STEM Challenges Program

Introductions

9th Grade Cohort

Chris Kniesly (Science and lead for GSCP)
Alex Jarama (Math)
Desa Elwell (Engineering)

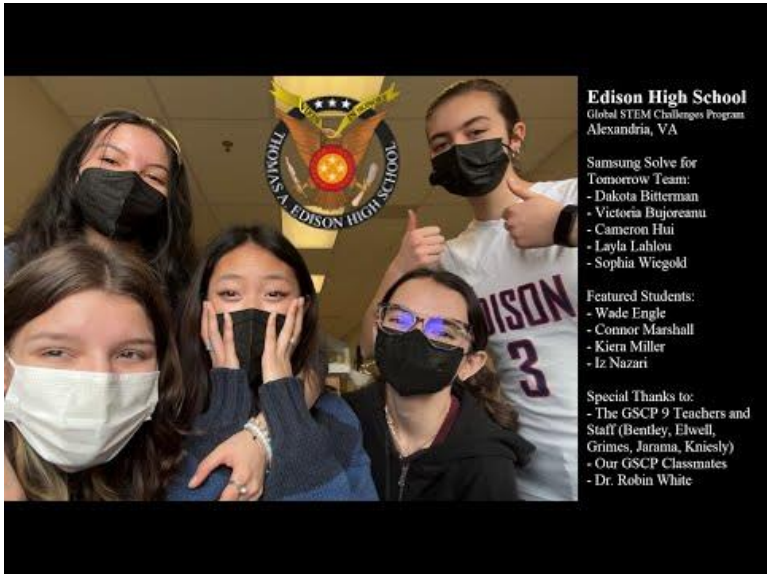
10th Grade Cohort

Cathryn Schoeppner (Science)
Kelly Dresen (Math)
Ivan Chirinos (Engineering)

11th Grade Cohort

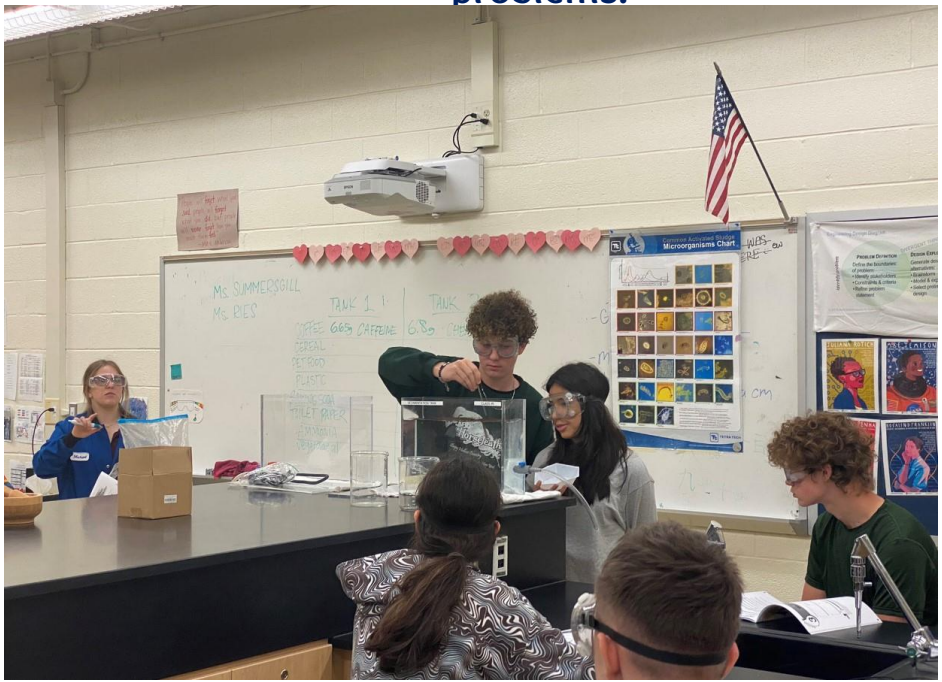
Emily Berman (Science)
Alex Jarama (Math)
Desa Elwell (Engineering)

What Is Global STEM?



Program Overview

Students in the Global STEM Challenges Program participate in a three-year cohort of integrated courses focusing on project-based instruction to solve real-world problems.



Program Overview

Interdisciplinary curriculum that links to the Grand Challenges of Engineering and:

- Meets the Virginia Standards of Learning
- Integrates mathematics, science, and engineering courses
- Provides authentic project/problem-based learning opportunities for all students
- Links to college and career readiness, global dimension, research, entrepreneurship, and service learning
- Integrates computer science throughout the program

NAE GRAND CHALLENGES FOR ENGINEERING


Make solar energy economical


Provide energy from fusion


Develop carbon sequestration methods


Manage the nitrogen cycle


Provide access to clean water


Restore and improve urban infrastructure


Advance health informatics


Engineer better medicines


Reverse-engineer the brain


Prevent nuclear terror

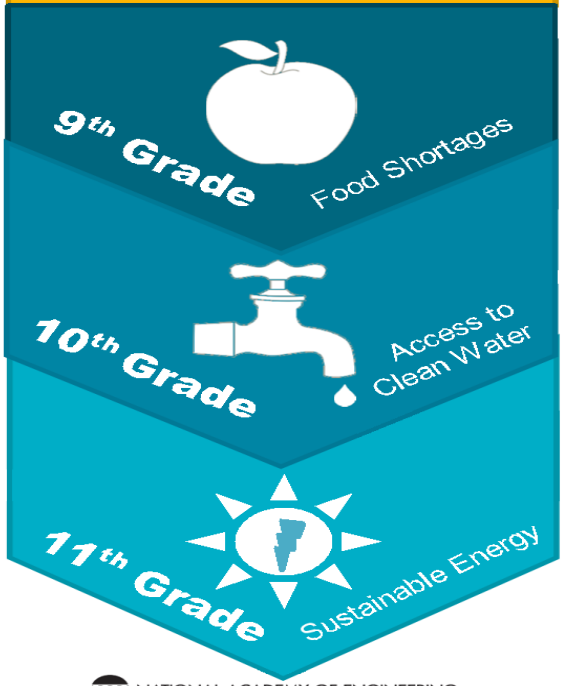

Secure cyberspace


Enhance virtual reality


Advance personalized learning


Engineer the tools of scientific discovery

Solve the U.S. National Academy of Engineering Grand Challenges



NATIONAL ACADEMY OF ENGINEERING

Year 1 (9th Grade): Food Shortages	Year 2 (10th Grade): Access to Clean Water	Year 3 (11th Grade): Sustainable Energy
POTENTIAL PROJECTS:		
Students design... • high nutrient foods for people with nutrient deficiencies • a food waste system that minimizes lost food and energy • and build a greenhouse	**Students design...** • a multistage water filtration device • a device to analyze ice cores • a desalination device for a coastal community	**Students design...** • a tidal turbine to generate energy • solutions for space trash. • a three-part, multifactorial password for increased cybersecurity.
INTEGRATED COURSES		
Computer Science integrated into courses all three years (*one credit*).		
Integrated Mathematics I Honors Applies content knowledge from traditional **Geometry**, Algebra 2, and Precalculus.	**Integrated Mathematics II Honors** Builds on the application of content knowledge from traditional Geometry, **Algebra 2**, and Precalculus.	**IB Math Analysis I**
Integrated Science I Honors Applies content knowledge from traditional **Biology**, Chemistry, and Physics.	**Integrated Science II Honors** Builds on the application of content knowledge from traditional Biology, **Chemistry**, and Physics.	**IB Physics**
STEM Integrated Engineering I	**STEM Integrated Engineering II**	**STEM Integrated Engineering III**
IB courses weighted 1.0, Honors courses weighted 0.5		

Sample Global STEM Student Schedule

Red Day	Blue Day
Global STEM Challenges Program	English 9
	Advisory/Return Period
	World Language or Elective
Health/PE 9	Social Studies

*This is a sample schedule only. Student course selections outside of Global STEM and student schedule will vary. All incoming students will work with their counselor to select their courses for the 2023-2024 school year.
**Student course selections are not permitted to change during the school year.

Senior Year Course Options

Science	Tech & Eng.	Math
IB Physics 2 HL	STEM Advanced Drawing	IB Math Analysis II SL/HL
IB Chemistry II SL/HL	Architectural Drawing	Probability & Statistics
IB Bio 2 HL	STEM Advanced Engineering	Trigonometry & Discrete Math
IB Environmental Systems and Society SL		
Non-IB Science courses		

*Students may also be offered opportunities for work-based learning, continuation of portfolio preparation, and participation in a peer tutoring program.

How To Register

Zoned for Edison

- Talk to your counselor at course selection
- Tell them you want to be in the Global STEM program and sign up for the following courses
  - Integrated Math
  - Integrated Science
  - Integrated Engineering

Transfer Student

The online transfer process for GSCP will be the same as all other FCPS student transfer options.

Registration opens on February 1

Applications will be accepted on a first come first served basis until the program is full.

https://www.fcps.edu/registration/student-transfer-information

There is a $100 application non-refundable fee to apply.

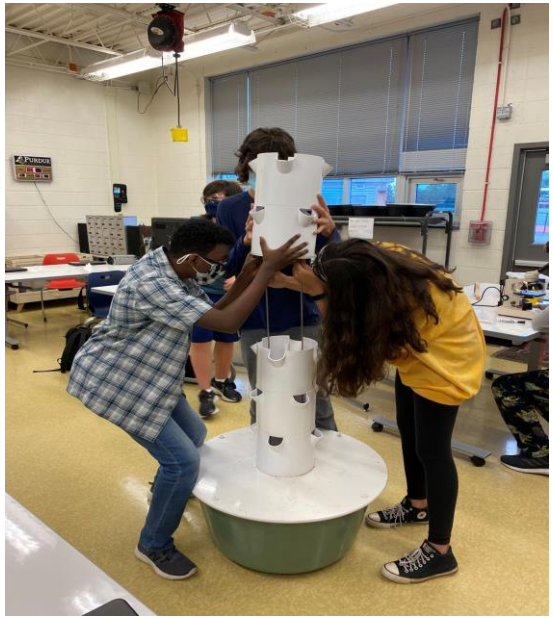
The fee is waived for students receiving Free or Reduced Price Meals. If your family does not qualify for Free or Reduced Price Meals, but the fee presents a hardship, please talk to your current school's principal for assistance.

Students in the Global STEM Challenges Program

Wants to learn in an alternative way which emphasizes inquiry, teamwork, and making the world a better place.

Are willing to ask questions to develop knowledge and understanding.

Recognize that what some see as “failure” is part of the process of learning and growing.



Enjoy working in groups and working on problems that do not have a definite answer..

Completed Algebra I in 8th grade and are committed to remain in the program for three

Are capable of using unstructured time wisely and have strong organization and time management skills.

Students in Global STEM are also…

~~Student Leaders~~
Student Athletes
Involved in other student organizations
Pursuing various diploma types
Interested in various career fields
All different types of learners

GSCP Panel

Students

Jalani M., 9th grade

Victoria B., 10th grade

Eva O., 11th grade

Erol G., 12th grade

Alex O., 11th grade

Nameerah A., 11th grade

GSCP 1st Graduating Class

Ehite Anteneh, Junior at Virginia Tech

Questions?

Contact Us

Visit our website:
https://edisonhs.fcps.edu/academics/stem

Follow us on social media:

@EdisonSTEMprg

Contact our STEM Administrator:

Monica Bentley
mebentley@fcps.edu

Optional Classroom Tour

Group A

H112, H129, H137

Group B

H137, H112, H129

Group C

H129, H137, H112