*Edison Global STEM Challenges Program Class of 2021!*

# Edison Global STEM Challenges Program

2017-2018
4th Quarter

# Happy Spring!

We've made it to the 4th quarter and our students are working hard to finish the year strong and make it to their summer vacations!

In **9th grade,** students are finishing their food design and delivery projects. They have focused on defining a specific location's food insecurity needs and explored traction as well as nutritional needs and energy conservation. Soon they will begin the final unit of the year, exploring the relationships between molecular shape and function of proteins.

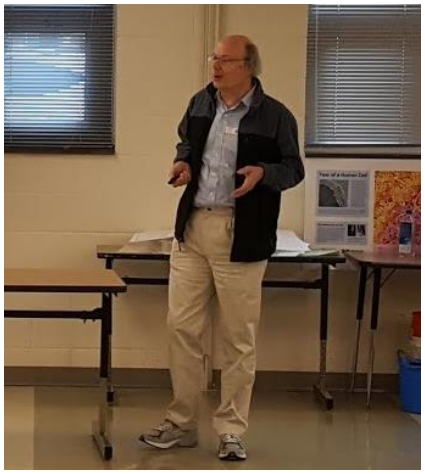
**9th-Grade STEM Alignment to Grand Challenges: Food Theme**

| 9th-Grade Unit | NAE *Grand Challenge(s)* |
|---|---|
| **Design a therapeutic food and delivery system for the hungry.** | Grand Challenges:<br>· Engineering better medicines<br>· Restore & improve the urban infrastructure<br><br>Grand Challenges organizing theme:<br>· Sustaining life on Earth |

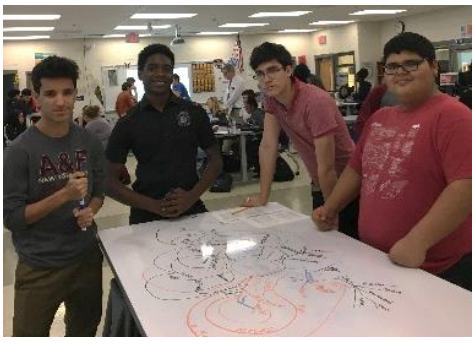
| Mathematics Content | Science Content | Engineering/Technology Content |
|---|---|---|
| · Linear and quadratic functions and predictions<br>· Optimization and solving systems of equations | · Energy<br>· Energy and matter in the human body<br>· Macromolecules | · Full Design Process<br>· Propulsion mechanisms<br>· Wheel and gear ratios<br>· 2-D LASER cutting<br>· 3-D modeling basics |

| 9th-Grade Unit | NAE *Grand Challenge(s)* |
|---|---|
| **Design a protein targeted at assisting individuals with lactose intolerance.** | Grand Challenges:<br>· Engineering better medicines<br>· Advance health informatics<br><br>Grand Challenges organizing theme:<br>· Sustaining life on Earth |

| Mathematics Content | Science Content | Engineering/Technology Content |
|---|---|---|
| · Analyzing data<br>· Analytic exponential models<br>· Solving triangles, similarity and congruency | · Cell functions<br>· Gene Expression<br>· Genetics | · Full design process<br>· 3-D printing<br>· Creating an infographic and product video |



*Students learned about computer programming from our esteemed visitor Dr. Bjarne Stroustrup, creator of the C++ Programming Language.*



*10th grade students learned participated in activities and lessons focused on resume building, goal setting, time management, and career exploration. Students were able to explore college and scholarship opportunities and explore summer internship options!*

In **10th grade,** students embarked on their final projects of the year: designing a chemical warming or cooling device and designing a desalination unit.

**10th-Grade STEM Alignment to Grand Challenges: Water Theme**

| 10th-Grade Unit | NAE *Grand Challenge(s)* |
|---|---|
| **Design a device containing water and a salt that can be activated anywhere with a specific heating or cooling application.** | Grand Challenge:<br>· Engineering better medicines<br><br>Grand Challenges organizing theme:<br>· Promoting healthy living |

| Mathematics Content | Science Content | Engineering/Technology Content |
|---|---|---|
| · Representations of energy changes<br>· Normal distributions<br>· Statistical significance analysis | · Dissolution reactions<br>· Exothermic/endothermic reactions<br>· Enthalpy & Hess's Law<br>· MSDS reading<br>· Thermochemistry | · Full design process<br>· Medical market research<br>· Select a unique client<br>· Emphasis on packaging and optimization |

| 10th-Grade Unit | NAE *Grand Challenge(s)* |
|---|---|
| **Design a desalination unit for water capture and purification.** | Grand Challenge:<br>· Provide access to clean water<br><br>Grand Challenges organizing theme:<br>· Sustaining life on Earth |

| Mathematics Content | Science Content | Engineering/Technology Content |
|---|---|---|
| · Regressions<br>· Rational functions<br>· Rates of change<br>· Derivatives | · Water cycle<br>· Phase changes<br>· Solar insolation<br>· Solubility and precipitation reactions | · Full design process<br>· Utilize component testing to optimize complete design |

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

*10th grade student Shea Irvin did an amazing job representing the Global STEM program participating in a panel discussion at the US News STEM Solutions Conference.*

## Important Dates:

- 5/23/18 - Algebra II SOL Testing
- 5/25/18 - Chemistry SOL Testing
- 5/30/18 at 6:30pm - Family STEM Night
- 6/7/18 at 3:00pm - End of Year Student Social
- 6/15/18 - Last Day of School
- 8/14/18-8/16/18 - Summer Orientation Program


## 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

Don't miss our Global STEM Family Night on Wednesday May 30, 2018 from 6:30pm-8:00pm. Current students will be leading STEM activities for our families and discussing the year in review!