



Teacher  
Enrichment  
Program

*Excellence*  
Center for Excellence in Education



## OCTOBER 2022 NEWSLETTER

### Upcoming Events

#### TEP

##### Bite of Science

- October 6

[Click here to register!](#)

##### College and Career Panel

- October 18

[Click here to register!](#)

#### STEM Lyceums

##### Biomedical Engineering

- October 19

[Click here to register!](#)

### For Teachers & Students

#### [Teacher Enrichment Program](#)

Teachers can join us this year in our Virtual Bite of Science or in a College and Career Panels to learn about new cutting-edge research and technology.

#### [STEM Lyceums](#)

Students can join this virtual club to build STEM communities and engage in discussions and explorations of STEM concepts and STEM career pathways.

### STEM Spotlight

#### Eric Nielsen



Eric is a Principal Economist, who has served more than 8 years with the Board of Governors of the Federal Reserve System. In this role, Eric conducts cutting

edge research and produces numerous working papers that are among the leading contributors at professional meetings and in major journals.

Eric is a 2002 alumnus of The Center for Excellence in Education's Research Science Institute (RSI) and was later accepted into Harvard University where he received his undergraduate degree in Economics. In 2014, Eric obtained his PhD from the University of Chicago. Eric is an advocate for equal opportunity and equality in education for all student groups.

### A Lesson to Learn

#### [How Schools Are Improving STEM Education for Girls, Students of Color](#)

STEM occupations have a promising future as the field is expected to grow exceedingly through 2023. Yet, women are greatly underrepresented in STEM-related jobs.

When women begin college, more than 50% rule out a job in the field. Recent studies have shown that students' interest in STEM can dwindle when they are not exposed to role models with similar identities and backgrounds.

Read the full article [here](#).

### STEM NEWS

#### [Mathematics](#)

Pioneering mathematical formula paves way for exciting advances in health, energy, and food industry

#### [Biotechnology/Bioengineering](#)

Biomedical engineers at Duke University have demonstrated a microbial community phenomenon

that essentially equates to teaching neighbors how to complete necessary tasks by ripping out and sharing parts of the brain.

#### [Engineering](#)

Engineers at RMIT University have developed a method to use disposable personal protective equipment (PPE) to make concrete stronger, providing an innovative way to significantly reduce pandemic-generated waste.

## STEM Bellringers

*Click the links for the answers*

### Biology:

[Can humans directly see photons?](#)

### Chemistry

[How do I know if something is an acid so I can avoid eating it?](#)

### Earth/Environmental Science

[How does diffraction make a tree's shadow blurry?](#)

### Physical Science

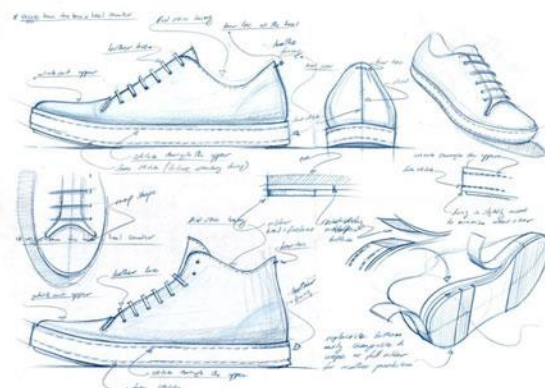
[Can electronic devices charge themselves without being plugged into an electricity source?](#)

## STEM Activities

## Cool STEM Careers

### Shoe Design

Did you ever wonder how shoes are designed with colors and patterns? Shoe designers use their art skills with their knowledge of different materials to create new shoes. Shoe ideas are drawn on paper and computer software. Those drawings are turned into patterns, prototypes, and eventually put into production. Each step of the shoe design process requires STEM combined with artistic skills.



What do you think are some important things to consider when designing shoes? To learn more about what it takes to be a shoe designer, check out these resources [Sneaker Factory](#) & [Shoe Designer](#) & see some designers on this playlist [here](#).

## STEM Challenge

Did you ever wonder why some objects fall faster than others? For instance, why does a hammer fall faster than a feather? Try finding two balls that are the same size and shape, but different weight. Drop them. What happened? Now find a few pieces of paper and try folding them to make one fall faster or slower. If you have some that fall close to the same speed, find a phone or tablet that has slo-mo camera and use it to find out which one falls fastest. Check out this video to learn more [here](#) and then watch to see what happened when a hammer and feather were dropped on the moon [here](#)



## STEM Activity Corner

### ***Can you solve these riddles?***

1. It is impossible for me to be created and I can never be destroyed. I can only change form. What am I?
2. I can be good for you, I can be bad. You can find me all over your body. What am I?

ANSWERS: 1) energy 2) bacteria

## STEM in the News

Did you ever ride in a car with a dirty windshield?

The driver probably pushed a button to spray fluid at the windshield to try and make it clean. Engineers at Jeep decided there was a better way. Instead of spraying fluid all over, it flows out of 12 laser drilled holes in the wiper blade. That puts more cleaning fluid right where the driver needs it. What other ways could windshield wipers be improved?

Learn more [here](#).