



Discover Engineering in the Classroom (and Beyond)!

May 7, 2025



Presenter:

Sarah Moore, B. Ed.
Marketing Manager
Middle & High School Teacher

DISCOVER
ENGINEERING



WE
Teachers!



Who are you?

How do you support students?

What ages of students do you support?



Vision

DiscoverE believes a STEM experience with an engineer or technician, educator, and student can transform the world.



Mission

DiscoverE is a coalition providing every student with a STEM experience and the resources, programs, and connections to improve the understanding of engineering.

STRATEGIC FRAMEWORK



Based On

- 30+ Years of Experience and Experimentation
- Research
- Collaborations





**YOUR KNOWLEDGE.
THEIR FUTURE.**

5.5 Million

Students and parents

300,000

Volunteers and Educators

DISCOVER 
ENGINEERING



DiscoverE's Reach & Impact

- 67% of teachers (public schools) work in **Title One Schools**.
- 43% of teachers have 75% of their students on **Free & Reduced Lunch**.
- 49% of students are White, 22% are Hispanic, 21% are Black/African-American, 15% are Asian American, 2% are American Indian or Native Hawaiian.
- 51% of students identify as girls and 45% as boys.

**Across Engineers Week and Girl Day.*



What is Future City?

Middle and High School students work in teams to create cities that exist 100 years in the future based on an annual sustainability challenge.

25/26 Future City Theme



Design a city that eliminates food waste from **farm to table** and keeps your citizens healthy and safe.



Program Resources

- Program Handbook (Aug 1)
 - Where to start
 - Rules & Rubrics
 - Engineering Design Process
 - Project Management Planning
 - Instructional Guide
- Theme Webinar (September)

Middle School Resources

- Monthly Educator Calls
- New Educator Info Session
- Mentor Support Call

High School Resources

- Monthly Coaches Calls
- Revit Tutorials
- Career Exploration
- Mentor Panel
 - Our Mentor Panelists are real STEM Professionals providing technical guidance and engineering career insights

Future City Middle School Deliverables & Competition Timeline

Competition Deliverables

Imagine, research, design and build!



54
Points

City Essay

Teams describe the unique attributes of their city and their solution to the annual challenge (1,500-word max.)

[View samples »](#)



65
Points

City Model

Teams build a physical model of their city (in one piece or multiple segments) using recycled materials and include one moving part.

[View Photo Gallery >>](#)



72
Points

Presentation / Q&A

Teams have seven minutes to present their city's futuristic innovations. Teams then answer questions for a panel of STEM professionals.



10
Points

Project Plan

Teams develop and use a project plan to help them stay organized and focused.

Regional Competitions: January 3 – 24, 2026

Finals Competition: February 14 – 18, 2026 in Washington, D.C.

Future City High School - Deliverables & Competition Timeline

Competition Deliverables

Qualification Round

A virtual round where your essay and model are scored by judges from all over the world!

Finals Round

An in-person round for qualifying finalists held in Washington, DC, where teams present their city and answer questions in front of a panel of STEM professionals.



50
Points

City Essay

Teams describe the unique attributes of their city and their solution to the annual challenge (2,000-word max.)



60
Points

City Model

Teams build a digital model of their city using Revit.



65
Points

Presentation / Q&A

Teams have seven minutes to present their city's futuristic innovations. Teams then answer questions for a panel of STEM professionals.

Virtual Qualification Round: January 7 – 14, 2026

Finals Round: February 14 – 18, 2026 in Washington, D.C. *(Invite Only)*

- Top 20 teams from Virtual Qualification Round

Future City Middle School

Competition Track

- \$25.00 per organization*
- Middle School teams have
 - 1 Educator
 - 1 Mentor (*optional*)
 - 3+ students in grades 6-8*
- Competition teams complete 4 deliverables
 - Maximum \$100.00 **budget** on model
 - Encouraged to use recycled parts

Resource Only Track

- Free!
- Resources teams can use deliverable criteria/rubrics to round out their curricular goals
- Available to grades K-12+!



Register Now!



Future City High School

High School teams have

- 1 Coach
- 3-5 students in grades 9-12
- 2 Access Tracks

Competition Access

- \$375
- Competition teams submit deliverables for feedback
 - Revit (digital city model planner) is *free!*

Program Access

- \$300
 - **Upgrade to Competition Access any time for an additional \$150*
- Program Access teams can use deliverable criteria/rubrics to round out their curricular goals



Register Now!

Student Learnings



of educators say Future City helped their students learn about the **engineering design process**.



86% of students say Future City helped them appreciate how many different types of engineering go into a city.



93% of educators say Future City strengthened their students' **teamwork skills**.

93% of educators say Future City led their students to **learn about STEM concepts** they are not regularly exposed to.



Future City is a program where anyone can feel welcome.

Everyone gets a role that suits their skills and interests, while still learning to work as a team.

8th Grade Student, New York Albany Region

I liked the fact that the kids were in charge instead of the adults. We were able to use our imagination and add it to real life situations."

6th Grader, Philadelphia PA Region

It gave me a better sense of teamwork, problem solving, and I made new friends."

7th Grader, Great Plains Region

DISCOVER
PRESENTS

future City COMPETITION MIDDLE SCHOOL

Ashley Wirtz

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FutureCity.org

INFORMATION SESSION

August 14th 6 PM ET



Register Now!



**Refer a Colleague
and win a \$75
Amazon Gift Card!**



fuTuRe CiTy

COMPETITION

HIGH SCHOOL



Register Now!

Maddy Faraco

Program Manager
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INFORMATION SESSIONS

May 14th 6PM ET



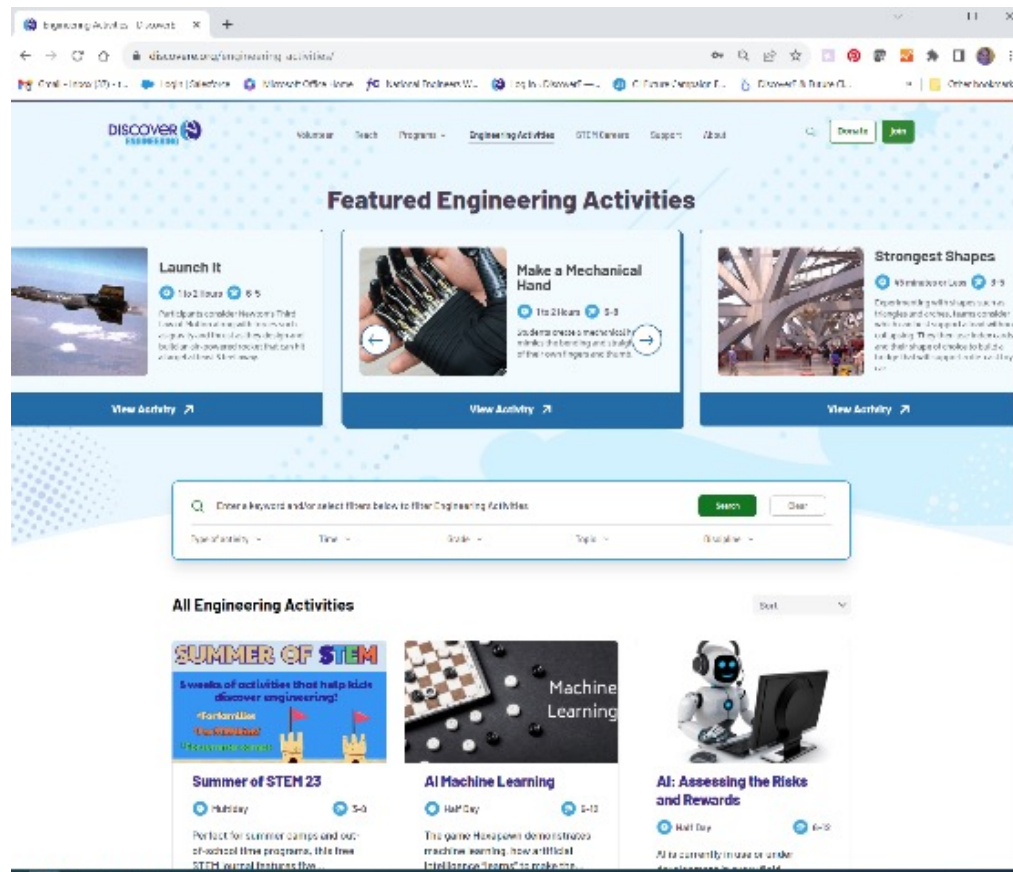
June 26th 6PM ET



August 13th 6PM ET



Hands-on Activities



170+ Engineering Activities

Filter:

- Time
- Grade
- Subject
- Discipline
- Type:
 - Leader Notes
 - Student Instructions
 - Videos

Engineering Design Process



Spotlight: Challenge Videos



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Puff Mobiles

Renewable energy sources are in focus as participants build a wind-powered car using straws, Lifesavers candies, paper, and tape, and get their car to the finish line using as few puffs of air as possible.

TIME
45 minutes or Less

CAREERS
Environmental

GRADE
5-5
6-8

TOPIC
Design Challenge
Dream Big
Forces, Motion & Energy

Leader Notes **Student Instruction** **Challenge Video**

Materials +

Introduce +

Instructions +

Relevant Terminology +

Print Downloads

Share this activity with your network!
Enjoy this activity? Please let your friends know!
Share Activity

← Back to STEM Activities

Puff Mobiles (Student Instruction)

How can you build a car that moves as far as possible on a single breath of air?

Favorite Print

Overview

STEM careers
Environmental

Grade level
3-5
6-8

Topic
Forces, Motion & Energy
Design Challenge
Dream Big

Time
45 minutes or less

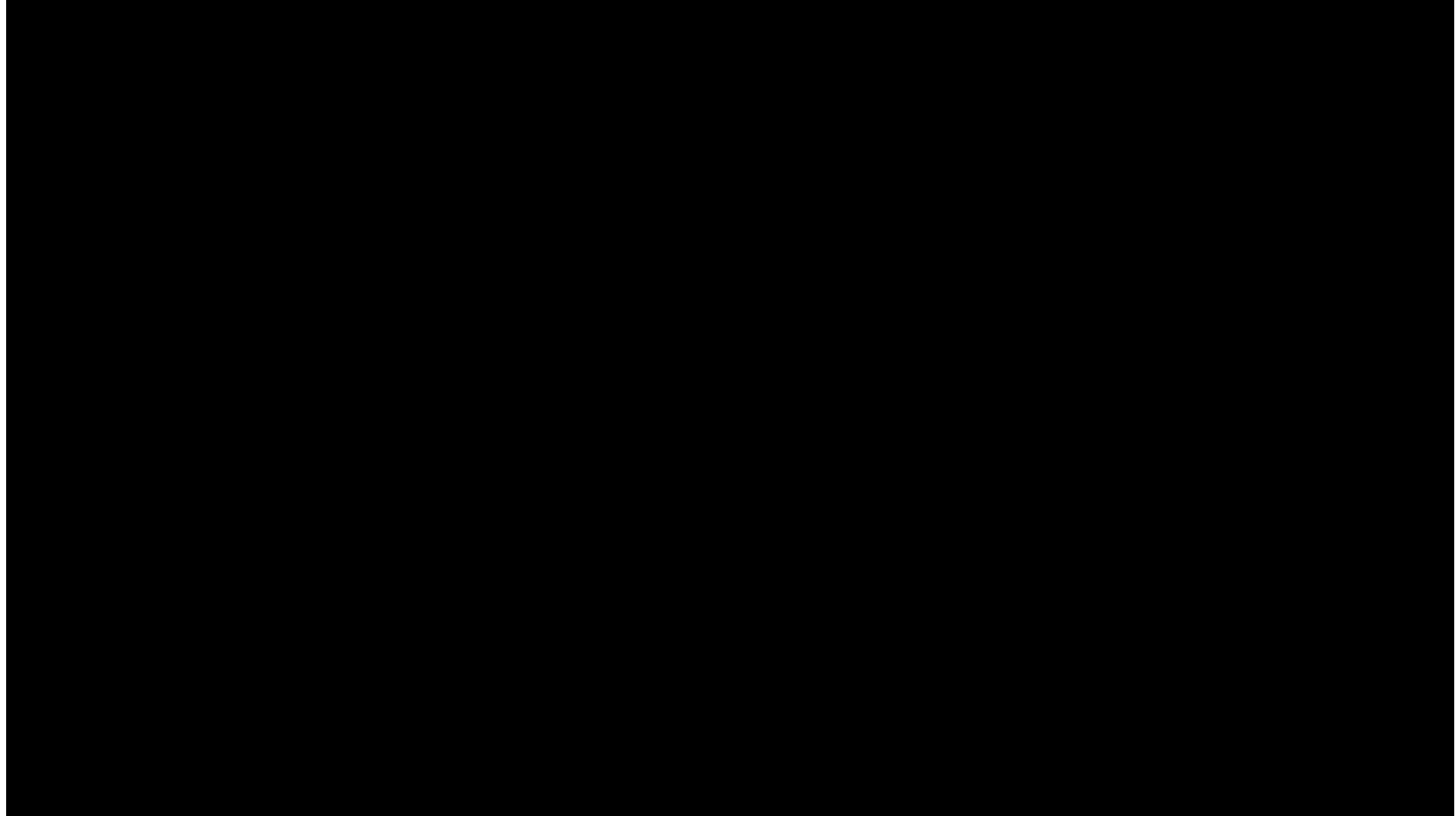
Related Assets
Instructor Guide

Materials +

Instructions +

Make a donation →

Action Contraption



Student hosts 30-minute chats with engineers and technicians

- 45 on-demand episodes
- 93.75% of respondents agree that their students are **more interested in engineering careers** after watching Chats with Change Makers!



> REGISTER NOW



DISCOVER CHATS WITH CHANGE MAKERS

MEET JAMES DOUGHERTY ELECTRONIC TEST TECHNICIAN

James operates robotics to help create lasers, antennas and high-power microwave circuits.

Official
Partner:



Thurs Jan 23
1PM US ET

All Chats

Sort



Dr. Terry Anderson

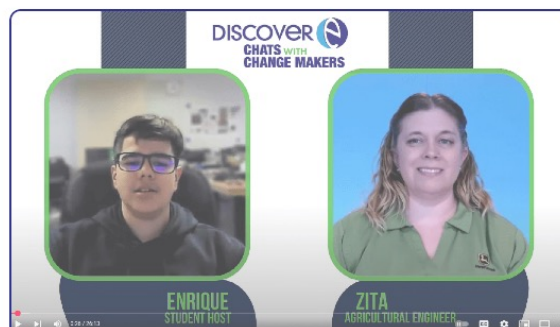
Air Date: April 17, 2025



Aerospace

Meet Dr. Terry Anderson, a systems engineer who writes specifications for computers used on aircraft...

[View Chat ↗](#)



Zita Holland

Air Date: March 20, 2025



Agriculture & Biosystems

Meet Zita Holland, an agricultural engineer who helps make sure that John Deere tractors follow the rules!

[View Chat ↗](#)



Miranda and Star

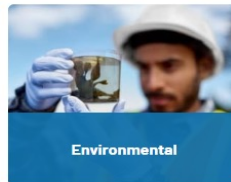
Air Date: February 20, 2025

Meet Miranda, a high school junior in Austin TX, and Star, an Applied Engineering major at Jacksonville...

[View Chat ↗](#)

[Discover.org/programs/chats-with-change-makers/](https://discover.org/programs/chats-with-change-makers/)


Types of Engineering Careers



DiscoverE.org/Engineering-Careers


Engineering Careers

- Career Overview
- Meet Change Makers
- Salary Info
- Job descriptions for 4-year & 2-year degrees
- Related hands-on activities

[Volunteer](#) [Teach](#) [Programs](#) [Engineering Activities](#) [Engineering Careers](#) [Support Us](#) [Store](#) [Donate](#) [Join](#)

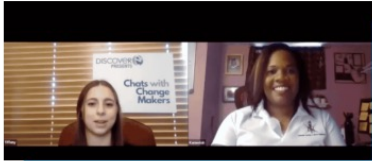
[← Back to STEM Careers](#) [Explore all disciplines +](#)

Biomedical Engineering







Where would modern medicine be without the contributions of biomedical engineering? Imagine hospitals operating without X-rays, ultrasound, EKGs, and the thousands of high-tech procedures and devices that diagnose conditions, sustain health, and fight disease. With a career in biomedical engineering, you'll make a real difference in the lives of others. You might develop artificial lenses that restore sight to the blind, radiation treatments that fight cancer, or incubators that keep premature babies alive.

Meet Kameelah, an engineer and project manager at Merck who uses large machines to make the best medicines in the world.



Biomedical Engineering Overview¹

 \$92,620 Median salary	 19,300 Number of jobs in 2020	 6% Expected job growth in next 10 years
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**Explore more**

- American Institute for Medical and Biological Engineering
- Biomedical Engineering Society (BMES)
- Institute of Biological Engineering
- Career Girls

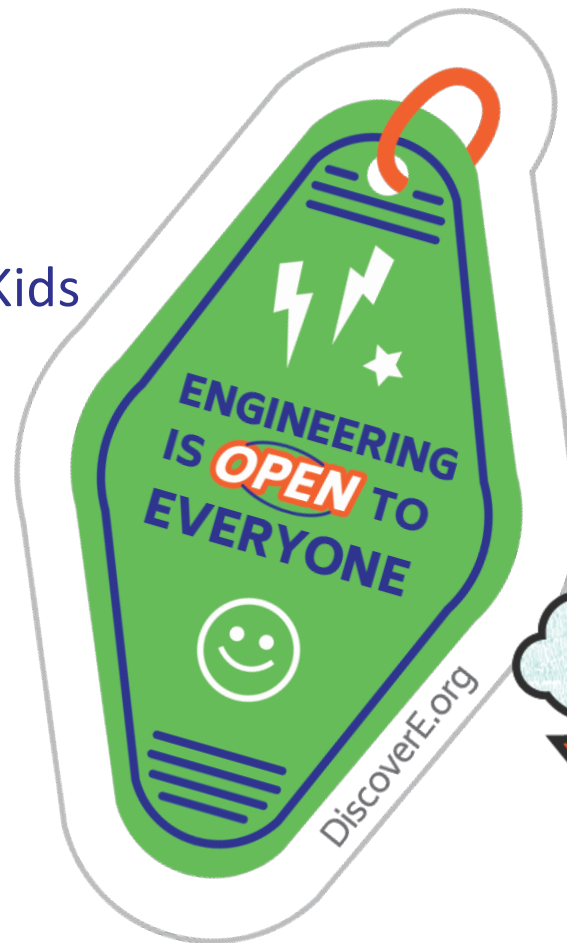
What resources do you need?

- Hands-on Activities
- Activity Video Demonstrations
- Cross-curricular Programs (Future City)
- Engineering Career Info for Students
- Physical Items (stickers, pencils, bookmarks)
- Professional Development (Webinars)
- Professional Development (Online at your own pace)

Stickers!

store.discovere.org

10% Off Coupon: StickersForKids



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