

EMPOWERING YOUTH THROUGH STEM CAREER EXPLORATION



Michele Ritchlin, Executive Director
Emily Morgan, Moonshot Ohio Coordinator



Increasing access to quality out-of-school time
STEAM learning and career exploration for Ohio youth



Moonshot Ohio Team

Partnerships



Emily Morgan

Developing a STEAM ecosystem that connects OST programs to business, industry, higher education, and community organizations.

Quality



Sheila James

Specializing in STEAM professional development, quality resources, and program evaluation.

Policy



Michele Ritchlin

Advocating for policy change and funding that supports STEAM learning in OST programs.

Goals for this Session

- Explore Moonshot Ohio Resources
- Gain Strategies for Engaging Youth in STEM Career Exploration
- Identify Possible STEM Partners in Your Local Community



MOONSHOT
OHIO  **RESOURCES**



JOIN THE 2025 FLIGHT CREW

✔ Share Your STEM Story

✔ Learn from Mentors

✔ Connect With Peers
Nationwide

✔ Develop STEM
Leadership Skills

Youth ages 13-18 are encouraged
to apply! Application closes
March 12, 2025



stemnext.org

Has an afterschool or summer STEM experience changed your life? Are you passionate about sharing your story to inspire others to explore STEM? The **@STEMNext Flight Crew** is looking for YOU! Amplify your voice and spark curiosity in STEM—apply now for the 2025 Flight Crew:

<https://stemnext.org/flight-crew/>

What's Included in the Application?

Your Career Interests

Which STEM careers and fields interest you most?

Your Afterschool & Summer Activities

The afterschool, summer, and other extracurricular activities outside of school that you participate in that involve STEM learning

Submit a 1-minute video

- Introduce yourself (first name + state only).
- Share how out-of-school STEM shaped you, a community challenge you want to solve, and your future impact through STEM.
- Film horizontally in a quiet, well-lit space.

Written Q&A

- Who or what has inspired you in STEM?
- How has out-of-school STEM learning impacted your life and future aspirations?
- Your mentors and role models.

Eligibility:

- Actively engaged in an out-of-school STEM program, like afterschool programs, programs on the weekends, or virtual experiences that meet more than once a year.
- Must be 13-18 years old
- Willing to share your story publicly
- Must be a U.S. Resident
- Parent/Guardian are required to agree to the Official Rules in application



Apply Today!

Deadline to
apply is
March 12, 2025





Join the Technovation Mini-Challenge

Your students will identify real-world problems, brainstorm solutions, design an app prototype, and pitch their ideas like future CEOs!

What's Included?

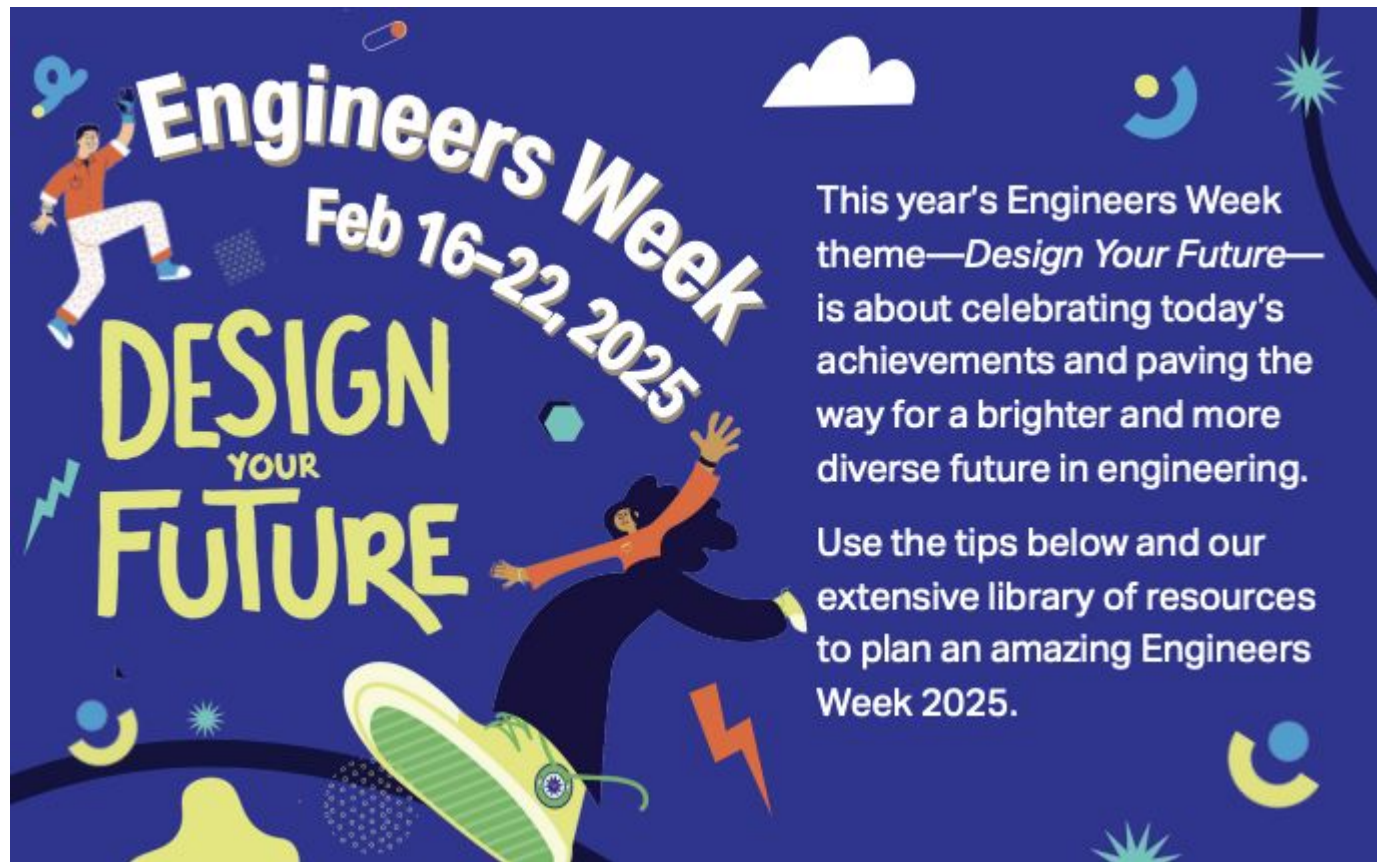
- 4 action-packed 1-hour sessions
- A final **Pitch Celebration**
- Everything you need—lesson plans, materials & slides!

Two versions:

Tech Version (basic coding + devices needed)

Unplugged Version (no devices required)





This year's Engineers Week theme—*Design Your Future*—is about celebrating today's achievements and paving the way for a brighter and more diverse future in engineering.

Use the tips below and our extensive library of resources to plan an amazing Engineers Week 2025.

Three Easy Ways to Interest Kids in Engineering

1. Talk about engineering in a way that's appealing and aligns with their interests.

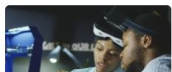
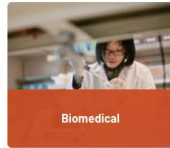
Key Messages:

- Engineering is open to everyone
 - Engineering is a well-paying profession
 - Engineering makes a difference in people's lives
2. Connect them with role models they can relate to.
 3. Lead students in engineering activities.

DISCOVER ENGINEERING



Types of Engineering Careers



Manufacturing Engineering



As a manufacturing engineer, you and your team will use technical expertise and skill to plan, design, set up, modify, optimize and then monitor the manufacturing process of such things as medicine, food, and oil. From raw materials to the finished product, you'll work to improve the production process, using the most cost-effective methods while reducing the impact of production on the environment. Manufacturing engineers are designers, who combine their analytical and creative problem-solving skills to work across many industries.

Manufacturing Engineering Overview¹



\$88,950

Median salary



292,000

Number of jobs in 2020



14%

Expected job growth over next 10 years



- Ohio is the top producer of glass, plastic, and rubber in the United States.
- Ohio is also a leader in the production of paper, primary metal, machinery, and electrical equipment.
- Ohio is investing in semiconductor, EV battery, and solar panel production.
- Intel is building a new manufacturing site in Ohio, which could become one of the world's largest semiconductor manufacturing sites.



Build The Future
YOU'VE BEEN DREAMING ABOUT

Start a good-paying, exciting career in
manufacturing today

[VIEW CAREERS](#)



Professional Development Opportunities



SAVE THE DATE

A national alliance of statewide afterschool networks is partnering to host a **two-day virtual conference**, shining a spotlight on resources, strategies, and inspiration to boost out-of-school-time (OST) and summer STEM programming!

Registration
Information
Coming Soon!

May 7 & 8, 2025

READY,

STEM,

GO!

2025



The **no-cost** virtual conference will provide opportunities for OST professionals to...

- **Network** with peers from across the country
- **Engage** with speakers committed to providing enriching STEM activities
- **Ignite excitement** to explore STEM



Ohio
AFTERSCHOOL
NETWORK

NETWORKING
workshops
KEYNOTE
growth
LEARNING

FEB
20-21
2025

IGNITE INSPIRE INNOVATE

Transforming Futures Through
OUT-OF-SCHOOL TIME



STATEWIDE
conference

OHIO



Visit OANOHI0.ORG



Ohio
AFTERSCHOOL
NETWORK



Join
MOONSHOT
OHIO

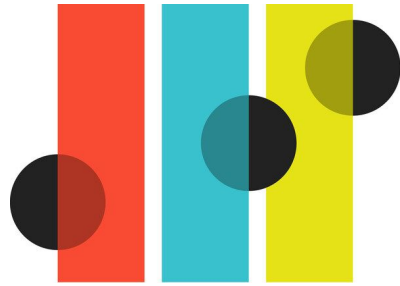


<https://www.oanohio.org/moonshot-ohio>



Career Exploration Activities





**Jobs for
the Future**

**Possible
Futures—Career
Exploration
Curriculum**

Sample Lesson: [Connecting Careers to Self](#)

career connections

Career Connections is a joint initiative among the Governor's Office of Workforce Transformation, Ohio Department of Higher Education, OhioMeansJobs and Ohio Department of Education and Workforce. Career Connections began in 2012 by providing a framework by which students develop a vision and realistic plan for their futures – during K-12 and beyond. Learning strategies are embedded into Ohio's New Learning Standards for English language arts, math, science and social studies. Career Connections aligns the many efforts around college and career readiness to support students in becoming productive and engaged citizens.



Career Awareness

Elementary Grades (K-5)

Students become familiar with careers through learning that connects classroom instruction to future work. Career awareness strategies show students various types of careers and stimulate interest in future work.

Career Exploration

Middle Grades (6-8)

Students explore their career interests through embedded activities. Career exploration strategies are opportunities for students to discover work environments and understand the various aspects of the workplace. Strategies include tools and instruments that help students understand and appreciate their strengths and interests. Students start plans for their future with career information and postsecondary education data. Plans include course selection and planning as well as career aspirations and goals.

Career Planning

High School (9-12)

Students continue career exploration while focusing on career planning. Activities provide advanced experiences that offer hands-on opportunities in a workplace. Career planning strategies focus on making clear links between career options and educational decisions. Students develop the skills to revisit previous exploration and planning strategies as they face career changes throughout life.



Department of Education & Workforce

National Career Clusters

Here we see the 16 national career clusters as maintained by The United States Department of Labor.

- » Agriculture, food and natural resources
- » Architecture and construction
- » Arts, A/V Technology and communications
- » Business management and administration
- » Education and training
- » Finance
- » Government and public administration
- » Health science
- » Hospitality and tourism
- » Human services
- » Information technology
- » Law, public safety, corrections and security
- » Manufacturing
- » Marketing
- » Science, technology, engineering and mathematics
- » Transportation, distribution and logistics

OhioMeansJobs K-12

Career Clusters



Agriculture, Food, and Natural Resources: Agriculture, food, and natural resources workers produce agricultural goods. This includes food, plants, animals, fabrics, wood, and crops. You might work on a farm, ranch, dairy, orchard, greenhouse, or plant nursery. You could also work in a clinic or laboratory as a scientist or engineer. Some agriculture, food, and natural resources workers market, sell, or finance agricultural goods. For example, you might market products made from plants and animals. Or, you might sell services that farmers and ranchers use to improve products. You could also work to conserve natural resources or protect the environment.

Architecture and Construction: Architecture and construction workers work on buildings and other structures. This includes highways, bridges, houses, and buildings. You might create the designs or plans for new structures. Or, you might use the plans to build it or manage the workers on the project. Some architecture and construction workers do skilled trades, like carpentry, painting, or plumbing. For example, you might do all the electrical work for a renovated office space. Or, you might work as a landscaper and take care of flowers and trees on large properties.








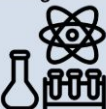
Arts, Audio/Video Technology, and Communications: Arts, audio/video technology, and communications workers use creativity and their talents on the job. You might work for an audience as a performer or artist. This includes painters, dancers, sculptors, actors, and singers. Or, you might work behind the scenes to make a performance successful. This includes set designers, editors, broadcast technicians, and camera operators. Some audio/video technology and communications workers have high-profile jobs. For example, you might work as a news reporter or fashion designer. Or, you might use your creative talents with technology and work as an animator, graphic designer, or film editor.

Business, Management, and Administration: Business, management, and administrative workers give the support needed to make a business run. You might check employee time records or train new employees. Or, you might work as a top executive and provide the overall direction for a company or department.

Education and Training: Education and training workers guide and train people. As a teacher, you could influence young lives. You could also support the work of a classroom teacher as a counselor, librarian, or principal. You could coach sports activities or lead community classes. You could also work with adults. For example, you could lead training to employees in a business. Or, you could work as a university or college professor for undergraduate or graduate students.

Finance: Finance workers keep track of money. You might work in financial planning, banking, or insurance.

Career Cluster Sort

 <p>Architecture and Construction</p>	<p>Arts, AV Technology, and Communications</p> 
<p>Business Management and Administration</p> 	<p>Education and Training</p> 
<p>Finance</p> 	<p>Health Science</p> 
<p>Information Technology</p> 	<p>Science, Technology, Engineering and Mathematics</p> 

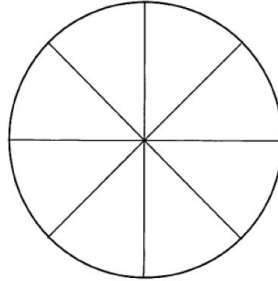
Career Cards Examples

<p>Architect</p> <p><i>Works in the construction industry designing new buildings, restoring and conserving old buildings, and developing new ways of using existing buildings. Architects are involved in construction projects from the earliest stages right through to completion.</i></p> <p>Educational Requirements: Bachelor's or master's degree in architecture from a program that has been accredited by the National Architectural Accrediting Board, and a state license.</p>	<p>Surgical Technician</p> <p><i>Assists surgeons and other medical professionals in hospital operating rooms and similar environments. Chiefly, they prepare patients, rooms, and equipment for pending surgical procedures. They also assist during those procedures as part of a team of operating room professionals.</i></p> <p>Educational Requirements: High school diploma, postsecondary certification (Surgical Technician Certificate Program or Surgical Technician Associate's Degree Program).</p>
<p>Accountant</p> <p><i>Prepares asset, liability, and capital account entries by compiling and analyzing account information. Documents financial transactions by entering account information. Recommends financial actions by analyzing accounting options.</i></p> <p>Educational Requirements: Bachelor's or master's degree in accounting; some positions require a CPA credential.</p>	<p>Teacher</p> <p><i>Responsible for instructing students in an elementary school from grades K-5. Creates lesson plans; administers praise and constructive criticism; instructs students on subjects such as science, literature, and math; and creates a well-rounded, comprehensive instructional program.</i></p> <p>Educational Requirements: Bachelor's degree; some schools require master's degrees and state teaching licenses.</p>
<p>IT Support Specialist</p> <p><i>Generally responsible for companywide computer and technical support. Provides help and advice to people and organizations using computer software or equipment.</i></p> <p>Educational Requirements: A bachelor's degree is required for some computer support specialist positions, but an associate's degree or postsecondary classes may be enough for others.</p>	<p>Mechanical Engineer</p> <p><i>Designs power-producing machines such as electric generators, internal combustion engines, and steam and gas turbines as well as power-using machines, such as refrigeration and air-conditioning systems. Designs other machines inside buildings, such as elevators and escalators.</i></p> <p>Educational Requirements: Bachelor's degree in mechanical engineering.</p>

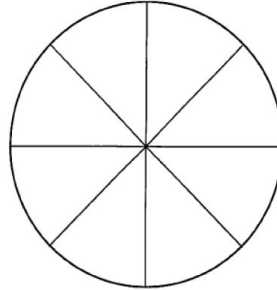
Wheels of Fortune: Spin and Explore

Directions: In Wheel 1, write one hobby or interest in each blank space. In Wheel 2, fill each blank space with the name of a career cluster your teacher shows you.

Wheel 1



Wheel 2



Spin Wheel 1: _____

Spin Wheel 2: _____

Brainstorm/research three jobs that connect the hobby or interest and the career cluster.

Select one to research:

Job title:

Description:

Skills needed:

Education required:

Salary:

Personal Rating (1-4 stars):

Spin Wheel 1: _____

Spin Wheel 2: _____

Brainstorm/research three jobs that connect the hobby or interest and the career cluster.

Select one to research:

Job title:

Description:

Skills needed:

Education required:

Salary:

Personal Rating (1-4 stars)



Connecting with Local Business & Industry





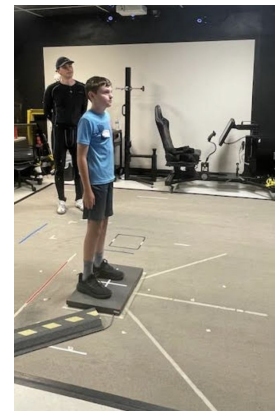
- All Ohio school districts and ESCs are required to be part of a Business Advisory Council (BAC)
- There are over 110 BACs throughout the state
- BACs are composed of educators, local businesses, and community organizations
- Purpose is to create more relevant learning experiences for youth that include work-based opportunities and enduring partnerships between schools and local industries

[Find your BAC](#)





Greene County BAC Summer Career Camp





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Access this presentation here:

