



# **K-12 PROGRAMMING**

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**2025**

A photograph of an industrial robotic arm is positioned diagonally across the right side of the page. The arm is black and metallic, with various joints and sensors visible. It is set against a dark, industrial background. The image is partially obscured by the red diagonal design element.

**WE PROMOTE  
REWARDING  
MANUFACTURING  
CAREERS.**



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# WHAT IS **AWT**?

The Alliance for Working Together (AWT) was started in 2002 as a small, informal group of manufacturers who would meet monthly to discuss topics of interest and best practices among local manufacturers. Finding skilled workers was quickly identified as one of the top challenges for our manufacturers. **Promoting rewarding careers in manufacturing became the core mission of the organization.** In 2012, the AWT Foundation became a 501-(c)3 non-profit. Since then, the AWT Foundation now has 500+ manufacturing company, community organization, and school members.

The AWT Foundation is hard at work to change the overall perception of manufacturing. The group realizes the need for educators, counselors, parents, and others to understand the importance of manufacturing as a viable career path. As manufacturing continues to grow in Northeast Ohio and the future looks promising, there is still a critical shortage of skilled workers to satisfy growing demand and replace baby boomers who are approaching retirement. This will create a tremendous opportunity for students in the manufacturing/machine trades industry.

With the help of strategic partners, the AWT Foundation has developed impactful Science, Technology, Engineering, Arts, and Mathematics (STEAM)-to-career programs. Through these initiatives, AWT has engaged 21,500 students across 54 schools in 12 counties and hosted 275 events in 2024 alone. Signature programs like RoboBots, JuniorBots, and the Think Manufacturing Career Expo have exposed students to manufacturing careers and connected them with local companies. AWT has also facilitated over 2,300 tours of manufacturing facilities for students, teachers, and parents, as well as professional development opportunities for educators.

We have been instrumental in access to transportation for students and manufacturing employees and provide Department of Labor and Ohio Department of Job & Family Services (ODJFS) recognized pre-apprenticeship and apprenticeship programs for manufacturing occupations.

## GET IN CONTACT



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# YOUTH IMPACT

BY THE NUMBERS IN 2024

**23,000**  
**STUDENTS  
REACHED**



## POWERED BY PARTNERSHIPS.

With over 100 dedicated collaborators, we partner with schools, organizations, and industry leaders to deliver engaging STEM and manufacturing-focused events that inspire the next generation of innovators.



## IMPACT STARTS HERE.

Over 50% of our outreach events were held at the AWT Training Center, giving students firsthand exposure to a real manufacturing environment and the opportunities it offers.

## KEY EVENTS

- AWT RoboBots
- AWT Summer Manufacturing Institute
- ThinkMFG Expo
- Cleveland Guardians STEM Day
- Lake County Captains STEM Night
- EmpowerHER Webinars
- A-Tech Career Days

**60** **12**  
**SCHOOLS** **COUNTIES**

**PROMOTING  
REWARDING  
CAREERS IN  
MANUFACTURING**

**290**  
**PROGRAMS &  
EVENTS**

**360**  
**HOURS**

**170**  
**MANUFACTURERS  
ENGAGED**



# AWT YOUTH PROGRAMMING CALENDAR

2025

## January

Lake County NAACP Collaboration	1/2
High School WorkAdvance	1/13-1/17
STEM Day	1/20
Mentor CARES Field Trip	1/30

## February

iSTEM Career Panel	2/4
STEM Day	2/17
iSTEM Career Presentation	2/21
WES Professional Development	2/24

## March

SMI Registration Opens	3/3
Edgewood HS Field Trip	3/3-4, 3/10-11
PSE STEAM-to-Career Event	3/12
EmpowerHer Webinar	3/13
WES State of the Schools	3/13
High School WorkAdvance	3/17-3/21
Harvey HS Career Fair	3/20
Lake County NAACP Collaboration	3/31

## April

Ashtabula After-School Discovery	4/1
Jefferson Elementary Collaboration	4/3-4
STEM Day	4/18
RoboBots Interview/Safety Check	4/25
RoboBots Competition Day	4/26
Lake Girl Scouts Collaboration	4/30

## May

Lakeshore Primary Career Day	5/2
Rock Creek Elementary Career Day	5/8
Ridgeview Elementary Career Day	5/12
Guardians STEM Day	5/14
Perry Inspire Future Careers	5/21
Gateway Elementary Career Day	5/23
Kingsville Elementary Career Day	5/30
School Tours and Field Trips*	
High School WorkAdvance*	

## June

Mad Scientist SMI Camp	6/9-6/13
ToboTech SMI Camp	6/16-6/20
YMCA Collaboration Day Camp	6/24
Lake Catholic Summer Field Trip	6/25
Salvation Army Collaboration Camp	6/25
YMCA Collaboration Day Camp	6/26
STEM Day*	

## July

YMCA Collaboration Day Camp	7/15
YMCA Collaboration Day Camp	7/17
STEM Day*	

## August

Professional Development for Teachers*	
STEM Day*	
Team Build STEM Day*	

## September

School Tours and Field Trips*	
High School WorkAdvance*	
Career Fairs*	
STEM Day*	

## October

Think Manufacturing Expo	10/8
STEM Day	10/10
RoboBots Kick-off	10/27
JuniorBots Kick-off	10/28
High School WorkAdvance*	

## November

STEM Day	11/26
Ashtabula Career Days*	
School Tours and Field Trips*	
High School WorkAdvance*	
Career Fairs*	

## December

Ashtabula Career Days*	
School Tours and Field Trips*	
High School WorkAdvance*	
STEM Day*	
Team Build STEM Day*	

REGISTER TO ATTEND, SPONSOR, OR VOLUNTEER AT OUR AWT EVENTS BY VISITING  
[WWW.THINKMFG.COM/EVENTS](http://WWW.THINKMFG.COM/EVENTS)

\*INFORMATION WILL BE RELEASED ON OUR WEBSITE AND SOCIAL MEDIA.



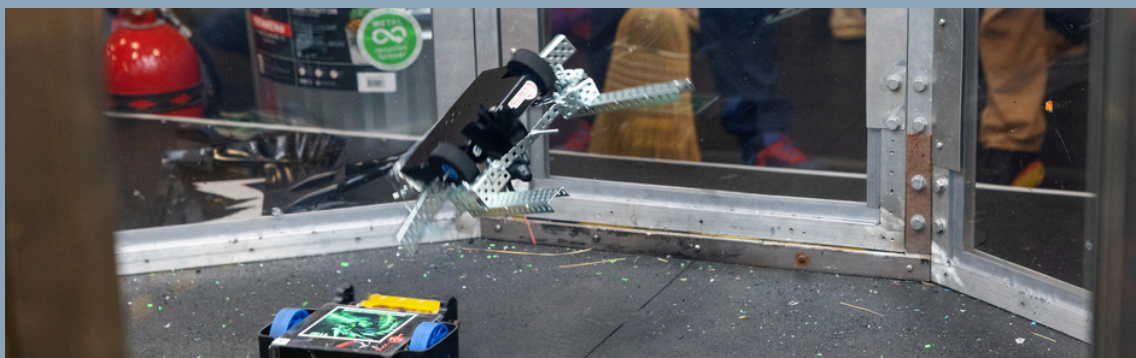
# PROGRAMS

# JUNIORBOTS

## COMBAT ROBOTICS FOR MIDDLE SCHOOL

JuniorBots is a middle school (6th-8th grade) combat robotics competition that allows middle schools to partner with industry mentors to build a 3 lb combat robot.

The industry partner provides financial assistance and mentorship to the students throughout the six to seven month build process. This program provides students with exposure to manufacturing in the context of building their robot. Most JuniorBot students continue on to RoboBots or other high school combat robotics competitions.

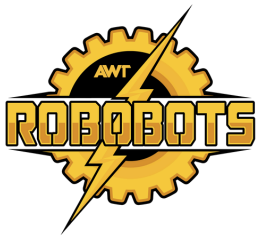


### **WHAT YOU NEED TO GET STARTED**

- COACH
- INDUSTRY ADVISOR
- PPE
- COMPANY SPONSOR
- SPACE
- COMMUNICATION

**REACH OUT TO AWT TODAY!**





# PROGRAMS

# ROBOBOTS

## COMBAT ROBOTICS FOR HIGH SCHOOL

RoboBots is a high school combat robotics competition that pairs high schools with industry mentors to build a 15 lb combat robot. This is primarily a 9th–12th grade program.

The industry partner provides financial assistance and mentorship to the high school students throughout the six to seven month design, build, and test process.

This program provides a way for manufacturers to mentor young talent. Many RoboBot participants go on to become innovators, pursue engineering degrees, and a few even begin working for their company sponsor upon graduation.



**“THIS IS A LEARNING EXPERIENCE LIKE NO OTHER.”**

*–GRETCHEN SANTO, BEAUMONT SCHOOL*



# OUT OF SCHOOL PROGRAMS **STEM DAYS**

**LEARN MORE AT [THINKMFG.COM/STEM-DAYS](https://thinkmfg.com/stem-days)**

AWT STEM Days are day camps that connect Science, Technology, Engineering, and Mathematics (STEM) concepts to local careers throughout Lake County. Campers will complete hands-on STEM projects to engage creativity and problem-solving.

In 2024, STEM days introduced students to circuit making, soldering, physics, sewing, and more. These programs are often open to either children ages nine to fourteen or students in fifth and sixth grade. Registration is typically \$25 per student.

Previous projects completed on STEM Days:

- stained glass
- light-up stuffies
- catapults
- EL wire light up signs





# OUT OF SCHOOL PROGRAMS **SMI CAMPS**

**LEARN MORE AT [THINKMFG.COM/SMI](http://THINKMFG.COM/SMI)**

The Summer Manufacturing Institute (SMI) is a collection of two, week-long day camps for rising fifth-eighth grade students. Each camp connects Science, Technology, Engineering, and Mathematics (STEM) concepts to local careers throughout Lake and Geauga Counties. Campers complete hands-on STEM projects to showcase to parents and local businesses. Registration is \$200 per camper.

**Mad Scientist, June 9th–13th, 2025:**

A co-ed day camp for rising 5th–8th grade focused on chemical manufacturing. Mad Scientist projects and tours will explore the world of manufacturing through a food-related lens.

**RoboTech, June 16th–20th, 2025:**

A co-ed day camp for rising 5th–8th grade focused on robotics and technology in manufacturing. RoboTech projects and tours will discover manufacturing through collaborative engineering challenges.





# HIGH SCHOOL WORK ADVANCE

## A TRAINING PROGRAM FOR HIGH SCHOOLERS

High School WorkAdvance is designed to be an immersive, hands-on program that introduces students to key skills necessary for success in the manufacturing industry. Modeled after AWT's well-established two-week WorkAdvance program for adults, this specialized high school version provides students with an engaging, real-world learning experience over the course of five days at the AWT Training Center.

Each session runs for three hours per day, during which students gain practical knowledge in essential manufacturing skills, including:

- Blueprint Reading – Understand technical drawings and specifications.
- Shop Math – Apply mathematical principles to real-world manufacturing tasks.
- Metrics & Measurement – Use precision measuring tools like calipers and micrometers.
- CNC and Manual Machining Basics – Explore how modern and traditional machining processes work.

High School WorkAdvance is offered in collaboration with local high schools and can be tailored to meet specific educational needs. Whether a school is interested in the full five-day experience or just one or two targeted topics, AWT can customize the program accordingly.

Like all AWT academic field trips, participating schools are responsible for:

- Student transportation to and from AWT Training Center.
- Providing food and beverages as needed.

This program is an excellent opportunity for high school students to:

- Gain hands-on experience in a high-demand industry.
- Develop practical skills that translate directly to job opportunities.
- Explore potential career pathways in manufacturing.

For more details or to customize a program for your school, contact AWT today!





# CAREER EXPLORATION **THINKMFG CAREER EXPO**

Every October, AWT partners with the Lake County Chambers of Commerce to host the Lake County Think Manufacturing Expo for high school students. This event fosters relationships between schools and manufacturers, focusing on strategies to support students interested in manufacturing careers.

Recognizing the need for qualified employees and the economic impact of manufacturing in Lake County, the career expo connects students and educators with high-tech career opportunities that offer competitive pay, and benefits in the industry. We're excited to continue offering this valuable event for years to come.

The 2025 Think Manufacturing Career Expo will be held on October 8th, 2025.



**LEARN MORE AT [THINKMFGEXPO.COM](https://thinkmfgexpo.com)**

## PROGRAMS BY GRADE: PRE-K TO 2ND

### PRE-K

#### ACTIVITIES FOR PRE-SCHOOLERS:

##### A BASIC INTRODUCTION

- **Manufacturing Conversations:** Delve into the world of manufacturing with picture books and a fun introductory conversation.
- **Engineering Challenges:** Create a blueprint of a tower and then build your tower as close to the blueprint as possible.



### KINDERGARTEN TO SECOND

#### ACTIVITIES FOR KINDERGARTEN TO SECOND:

##### AN INTRODUCTION TO MANUFACTURING

- **Interactive Conversations:** Introduction to Manufacturing through age-appropriate collaborative conversations
- **Engineering Challenges:**
  - Design a blueprint of a tower and then build a tower as close to the blueprint as possible.
  - Create marshmallow catapults.
  - Explore with Sphero Minis.
  - Cabbage pH experiments.
  - Build with Chomp Shop cardboard tools.
- **Classroom Visits:** AWT can come visit your school to work with your class once for a lesson or multiple times.
- **Field Trips:** You can bring your students out to AWT for a tour and activity.



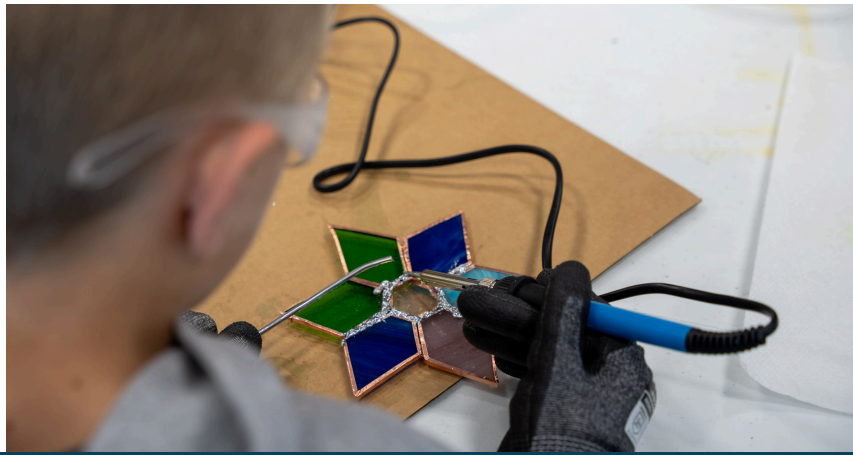


## THIRD & FOURTH

### ACTIVITIES FOR 3RD AND 4TH GRADE: A DEEPER DIVE INTO MANUFACTURING

- **Manufacturing Conversations:** Discuss careers in manufacturing, how manufacturing prospers in Ohio, and what manufacturing means. Consider the process of manufacturing an item as a group.
- **Engineering Challenges:**
  - Design a blueprint of a tower as a team and then build a tower as close to the blueprint as possible.
  - Create bottle rockets and test them, make adjustments, and test again.
  - Explore with Sphero Minis:
    - Design and build chariots then race them through a maze.
    - See if your chariot can hold the most weight.
    - Learn to block code and navigate a path.
  - Build with Chomp Shop cardboard tools.
  - Explore Circuits with copper tape and LED lights. Make nametags, holiday cards, and more.
- **Classroom Visits:** AWT can visit your school to work with your class once or multiple times.
- **Field Trips:** You can bring your students out to AWT for a tour and activity.

## PROGRAMS BY GRADE: 3RD & 4TH



## PROGRAMS BY GRADE: 5TH & 6TH

# FIFTH & SIXTH

### ACTIVITIES FOR 5TH AND 6TH GRADE: A DEEPER DIVE INTO MANUFACTURING

- **Manufacturing Conversations:** Discuss careers in manufacturing, how manufacturing prospers in Ohio, and what manufacturing means. Learn more about the definition of manufacturing, manufacturing companies in Ohio such as MUM Industries, and begin to experience these companies in person. Consider the process of manufacturing an item as a group.
- **Engineering Challenges:**
  - Design a blueprint of a tower as a team and then build a tower as close to the blueprint as possible.
  - Create bottle rockets and test them, make adjustments and test again!
  - Explore with Sphero Minis and Bolts:
    - Design and build chariots then race them through a maze.
    - See if your chariot can hold the most weight!
    - Learn to block code and navigate a path.
    - Sphero Jousting- create a contraption to sit on top of a Sphero Mini and then joust with other team's! Last Mini standing wins.
  - Create with 3D Flow or Create Pens.
  - Explore circuits with copper tape and LED lights. Make nametags, holiday cards, and more!
  - Learn to solder with projects like DIY Boats, Stained Glass, and Light-Up Paper Lanterns.
- **Classroom Visits:** AWT can visit your school to work with your class once for a lesson or multiple times.
- **Field Trips:** You can bring your students out to AWT for a tour and activity.
- **Summer Manufacturing Institute:** Our SMIs are geared toward this age group, enroll your children in our summer camps for a week of manufacturing fun and field trips.
- **STEM Days:** These are special event STEM activity days held when schools are not in session, such as NEOEA days and federal holidays.



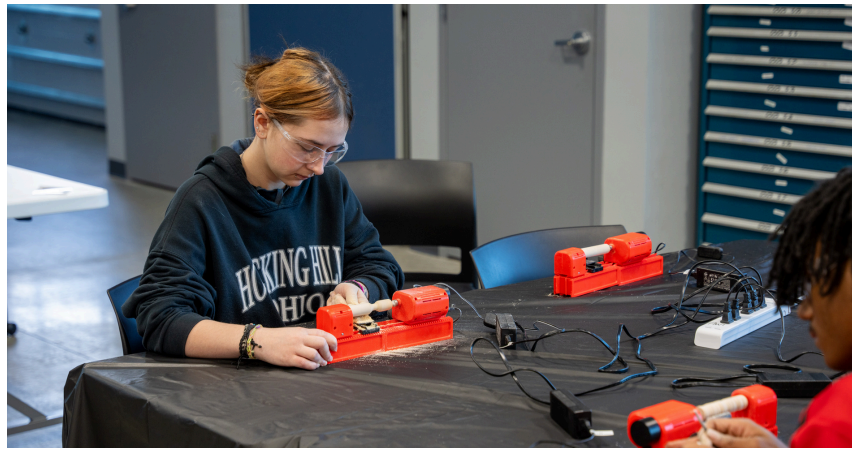
## PROGRAMS BY GRADE: 7TH & 8TH

# SEVENTH AND EIGHTH

## ACTIVITIES FOR 7TH AND 8TH GRADE: A DEEPER DIVE INTO MANUFACTURING

- **Manufacturing Conversations:** Learn more about the definition of manufacturing and interact with manufacturing personnel to discuss exciting career options. Students learn about manufacturing companies in Ohio including Swagelok, Fredon Corporation, and Component Repair Technologies and begin to experience these companies in person.
- **Engineering Challenges:**
  - Design a blueprint of a tower as a team and then build a tower as close to the blueprint as possible.
  - Create bottle rockets and test them, make adjustments and test again.
  - Explore with Sphero Minis and Bolts:
    - Design and build chariots then race them through a maze.
    - See if your chariot can hold the most weight.
    - Learn to block code and navigate a path.
    - Sphero Jousting- create a contraption to sit on top of a Sphero Mini and then joust as teams. Last Mini standing wins.
  - Create with 3D Flow or Create Pens.
  - Explore circuits with copper tape and LED lights. Make nametags, holiday cards, and more.
  - Learn to solder with projects like DIY Boats, Stained Glass, and Light-Up Paper Lanterns.
- **Classroom Visits:** AWT can come visit your school to work with your class once for a lesson or multiple times.
- **Field Trips:** You can bring your students out to AWT for a tour and activity.
- **Summer Manufacturing Institute:** Our SMIs are geared toward this age group, enroll your children in our summer camps for a week of manufacturing fun and field trips. L
- **STEM Days:** These programs are days off from school that are also geared toward this age group.
- **JuniorBots:** This combat robotics program is designed for students in 6th-8th grade.





## PROGRAMS BY GRADE: 9TH-12TH

# NINTH TO TWELFTH GRADE

## ACTIVITIES FOR 9TH – 12TH GRADE:

### A DEEPER DIVE INTO MANUFACTURING

- **Manufacturing Conversations:** Tour manufacturing companies, hear from machinists and other manufacturing employees, discuss careers in manufacturing, and have collaborative conversations about manufacturing as an industry and career field.
- **Engineering Challenges:**
  - Design a blueprint of a tower as a team and then build a tower as close to the blueprint as possible.
  - Explore with Sphero Minis and Bolts:
    - Design and build chariots then race them through a maze.
    - See if your chariot can hold the most weight.
    - Learn to block code and navigate a path.
    - Sphero Jousting- create a contraption to sit on top of a Sphero Mini and then joust another team's! Last Mini standing wins.
  - Create with 3D Flow or Create Pens.
  - Explore circuits with copper tape and LED lights. Make nametags, holiday cards, and more!
  - Learn to solder with projects like DIY Boats, Stained Glass, and Light-Up Paper Lanterns.
- **Classroom Visits:** AWT can come visit your school to work with your class once for a lesson or multiple times!
- **Field Trips:** You can bring your students out to AWT for a tour and activity!
- **High School WorkAdvance:** This program is designed to give students entry-level skills in manufacturing over the course of a week. It is best for Juniors and Seniors or students over sixteen.
- **ThinkMFG Career Expo:** AWT's annual Manufacturing Career Expo is an incredible opportunity for high school students to interact with manufacturers from all over Lake, Geauga, and Ashtabula counties.



# AMERICA MAKES 3D PRINTING EDUCATION

**A COLLABORATION FOR ADDITIVE MANUFACTURING**

AWT works with the National Center for Defense Manufacturing and Machining, America Makes, and the Advanced Manufacturing and Applied Research Institute to provide a 3D printing curriculum for grades 6 to 12. 3D printing, or additive manufacturing, is a growing field and this program introduces it to students in a fun and approachable way. America Make's microlearning modules teach students to 3D print, design their own prints, and learn how to be safe online as well.





# COMMUNITY PARTNERSHIPS

At AWT, we're passionate about bringing STEM education to life by **working together** with our community partners. Recently, we've partnered with the YMCA and Salvation Army to host engaging STEM days for their students, fostering a love for learning in a hands-on environment. Other organizations connecting with us include Girl Scouts, Lake County NAACP, Painesville United Methodist Church and local after-school programs.

No matter your group's size or focus, AWT can create a tailored STEM day that meets your needs. From interactive experiments to exciting engineering challenges, we provide a fun and educational experience for all ages.



**"THIS WAS AN AMAZING OPPORTUNITY FOR  
OUR CAMPERS."**

*-ELISA "E" HENNIES, LAKE COUNTY YMCA*





# AWT TRANSFORMATION TRAINING CENTER

## A HUB FOR WORKFORCE DEVELOPMENT

The AWT Northeast Ohio Transformation Training Center is a world-class hub for workforce development, industry, and manufacturing training. Since opening in October of 2022, this facility serves the region as a center for education and industry sector collaboration. The AWT Training Center addresses the gaps in K-12 and adult new and incumbent worker training. This center provides the technically trained workforce that area manufacturers need.





# LET'S PARTNER!



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