**PowerPoint Outline #3 for Subject Matter Experts: OMA, COMP K12 : Ohio’s Future Starts Here: Advanced Manufacturing Careers Shaping Our World”**

**For use with OACC COMP K–12 Presentation Slide Deck #3: “*Ohio’s Future Is Built Here: Advanced Manufacturing Careers Shaping Our World”***

**Designed for Industry Experts Presenting to K–12 Students in the Classroom**

**PURPOSE OF THIS CONTENT SET**

The Presentation Content Sets equip industry subject matter experts (SMEs) to confidently present advanced manufacturing career pathways to K–12 audiences.

The Content Sets are scaffolded to offer varying degrees of support for SMEs. The first layer of scaffolding is the Presentation Slide Decks which include brief notes of scripts, support and suggestions for delivery. See sections under individual slides for those details.The Presentation Outlines provide additional scripts and best practices in classroom delivery on a slide-by-slide basis. The Presentation Guides extend the content by providing alternative scripts, additional questions, pro tips and classroom insights and also are organized on a slide-by-slide basis.

Options are considered just that - optional. They are designed to provide variations for Ambassadors to better personalize the presentations. Feel free to eliminate all options and follow the presentation strictly as the slide deck suggests.



**Slide 1 – Title Slide: The Future Starts Here**

**Tagline:** *“***Advanced Manufacturing Careers Shaping Our World***”*

**🎙Speaker Notes:**

* Welcome students with enthusiasm — “If you like to build, create, or solve problems, there’s a place for you in advanced manufacturing.”

**Optional Icebreaker**: “Think about something you use every day — from your phone to your shoes. Someone made that! What would you like to invent or make better?”

**Slide 2 – Advanced Manufacturing in Ohio**

**Content:**

* Combines science, technology, and creativity to make products that shape modern life.
* Involves robotics, chemistry, precision materials, and automation.
* Builds everything from medical devices to jet engines to clean energy systems.
* Uses digital tools and sustainability to improve production and reduce waste.

**Share Video:** “Advanced Manufacturing in Ohio”. 2023. 00:02:03. Jobs Ohio. <https://www.youtube.com/watch?v=_5jW5903oeg&t=13s>

**Engagement Tip:** Ask: “If you could automate one task in your life, what would it be?” (auto clean for your room?)

💡**Pro Tips:** Ensure videos are all cued to the starting point. Eliminate any ads.

**Slide 3 – Demonstration Option**

**Demonstration space** slated to allow time for a demonstration option. Demonstrations should stay within 10 minutes and can vary based upon Ambassador’s expertise, what they can share from their industries, materials available, etc. Getting students involved in the demonstration is a plus but not an absolute. Ambassadors are responsible for materials used during presentations.

💡**Pro Tips:** Select a demonstration you feel students may not have witnessed before, something with a “Wow! Factor” if at all possible. Note: *If more time is needed, eliminate activity in slide 7.*

⚙️ **INDUSTRY SPOTLIGHTS:** Industrial Production • Chemicals & Materials • Advanced Mobility

Note: Wage data sourced from BLS, LMI, OMA when available. Also Indeed and similar sites designed for job seekers and employers. *See citations page*

**Slide 4 – Industrial Production**

**Goal:** Introduce students to careers that keep factories efficient, productive, and high-tech.  
**Tagline:** *“Where Innovation Meets Precision.”*  
**Content:**

* **Careers:** Production Technician, Industrial Maintenance Mechanic, Automation Specialist, Manufacturing Engineer, Robotics Integrator, Electrical & Electronic Equipment Assembler, EV Product Fabricator, Aircraft Assembler, Aircraft Fabricator, Precision Metal Fabricator
* **Salary Range:**

Entry: $42K–$60K

Experienced: $80K–$110K+

**Highlights:** Combines robotics, data analytics, and problem-solving to ensure everything from food to fuel is made efficiently and safely.  
**Engagement Tip:** “What products do you think are still made by hand? What might robots help improve?”  
**Activity Option:** Have students list five products in their home and guess how each might be made — by hand, by machine, or by both. Discuss patterns that emerge.  
**Video:** *“A Day in the Life of a Manufacturing Production Manager”* – Career OneStop (00:01:32) <https://www.careeronestop.org/Videos/careeronestop-videos.aspx?videocode=11305100>

**Slide 5 – Chemicals & Materials**

**Goal:** Showcase how chemistry and materials science are essential to innovation.  
**Tagline:** *“The Atomic Recipe!”*  
**Content:**

* **Careers:** Chemical Technician, Composite Fabrication Specialist, Process Engineer, Materials Scientist, Lab Quality Specialist, Environmental Technician
* **Salary Range:**

Entry: $45K–$65K

Experienced: $85K–$120K+

**Highlight:** Creates safer, lighter, and stronger materials used in airplanes, batteries, and medical devices.  
**Engagement Tip:** “What materials make your phone lightweight but strong?”

**Slide 6 – Advanced Mobility**

**Goal:** Explore careers that design and build systems to move people and products efficiently.  
**Tagline:** *“Engineering the movement of the future.”*  
**Content:**

* **Careers:** Systems Engineer, Battery Technician, Electric Vehicle Designer, Mechatronics Technician, Drone and UAS Specialist
* **Salary Range:**

Entry: $45K–$70K

Experienced: $90K–$130K+

**Highlight:** Advanced mobility combines transportation, energy, and data to create electric, connected, and autonomous systems including drones, smart vehicles, and charging infrastructure.  
**Engagement Tip:** Ask, “How will people travel 50 years from now? Cars, drones, or something new?”

**Slide 7 – Tennis Ball Transfer Activity**

**Note:** *If demonstration requires more than 10 minutes, eliminate this activity.*

* **Purpose:** Students will work as a team to find the quickest way to transfer a tennis ball so each student touches it in each of their hands at least once. Through iteration and supervisor feedback, students will learn the importance of communication, teamwork, and process efficiency in a group setting.
* **Time:** 15 minutes
* **Materials Needed:** 1 tennis ball; stopwatch or timer (optional, but recommended)
* **Directions:**

1. Split students into groups of 5–10 (adjust as needed for class size).

2. Give each group a tennis ball and explain the rules: The ball must be touched by each hand of every group member before the task is complete.

3. Allow groups 2 minutes to discuss strategy, then have them set up and time their first attempt.

4. Announce that you are the “floor supervisor” and more efficiency is needed. Give them 1–2 minutes to revise their process, then time them again.

5. Repeat the cycle for approximately 10 minutes, encouraging them to improve and compete against their own best time or other groups.

6. Continue to act as a “floor supervisor” or “operations manager” throughout—challenging them to be faster, more precise and better coordinated.

* **Discuss:** How did communication improve your team’s performance? What changes made the biggest difference in your time? How did you identify inefficiencies and decide on improvements? Did you notice that small adjustments added up to significant time savings? How does this activity relate to real-world manufacturing, where processes are refined to improve output and quality?

Special thank you to Stark County Manufacturing Workforce Development Partnership for providing MakingOhio with this activity.

Debrief by asking open ended questions such as:

* “What kind of jobs might people have when designing vehicles like these?”
* “Why do you think new technology like electric cars and drones are important?”

**Slide 8 – Today’s Manufacturing Careers**

**Content:**

* Data, robotics, and sensors make workplaces safer and cleaner.
* Teamwork + technology = the heart of innovation.
* Manufacturing careers use creativity and critical thinking every day.

**Engagement Tip:** “Would you rather work with robots, computers, or both?”

**Discussion:** OMA “Similar Occupations Across Many Industries” visual

A diagram of various types of industrial equipment

AI-generated content may be incorrect.

**Slide 9 – Careers that Lead to a Better Life**

**Goal:** Help studentsmake connections between Advanced Manufacturing careers and building a better life for themselves and their families.

**Content:**

* High wages, stability, and growth opportunities.
* Clean, high-tech, and sustainable environments.
* Real-world impact — creating products that make life better.

**Engagement Tip:** “What kind of world do you want to help build? Many of the things you are describing will come from Advanced Manufacturing.”

Emphasize that not all careers in advanced manufacturing require a four year degree. It is very possible to enter the field and stack your credentials as you progress in the field.

**Slide 10 – Where Will a Career in Today’s Advanced Manufacturing Take You?**

**Goal:** Leave students inspired and informed.Provide wrap-Up and Questions and & Answer (Q&A)

**Content:**

* Allow students to ask questions about specific fields, working conditions, environments, wages, resources, etc. Leave them with hope for their strong futures in advanced manufacturing related careers.
* Average manufacturing salary: **~$76,000/year** (U.S. BLS)
* Key Points:
  + Advanced manufacturing shapes our world.
  + You can be part of it — through creativity, curiosity, and teamwork.
  + Explore local programs, internships, and pathways.

**Speaker Notes:**

“It’s been fun being here with you! I hope you’ve learned how advanced manufacturing shapes our world — and how you can be part of it. Ohio needs your ideas and talents.”

**Q&A Prompts:**

“What questions do you have about careers in advanced manufacturing?”

**Option:** If there is time and you feel students will benefit from a final review of pathways discussion, revisit the following:

Review Pathway Options (discussed in Presentations #1 and #2)

•STEAM and STEM classes currently available in schools

•Entry through multiple higher education routes: short and longer term badging and certificate. programs, apprenticeships, intern and externships, and degree programs at community colleges and universities, and through Ohio Technical Training Centers.

•Remind students that tuition assistance is an option for many and numerous companies offer tuition reimbursement and paid training and on the job training options.

**Slide 11: Ohio’s Future is Built Here, with You!**

**Goal:** Leave students excited about the many possibilities.

**🎙 Speaker Notes:**

Say, “It’s been fun for me to spend time with you and share all of the cool things that are happening in the world of Advanced Manufacturing. Thank you for having me.”

Leave handouts or other resources with teacher and school counselor

**🔧 Presentation Tips for Ambassadors** (listed here and notes section of slide deck as reminders and incorporate into training)

* Use Presenter’s Guide for additional support
* Help build relevancy by building connections to their real lives. Refer and connect ideas back to family needs, dinner tables, neighborhoods, friends, sports, and pets.
* Keep it visual, interactive, and use analogies (“Robots are like helpers that never get tired”)
* Use wow-factor via live or video demonstrations
* Use hands-on activities, incorporate movement as often as appropriate for content,
* Include real examples, actual career salaries and case studies detailing success stories,
* Provide opportunity for projects completed in teams
* Use props: Bring small robots, 3D-printed items, parts, giveaways,
* Use Career OneStop “A Day in the Life” videos: Share short occupation videos to help demonstrate what it looks like to be an electrical design engineer, modern auto technician, clean room technician, software and technology designers, etc.