The Manufacturing Institute is the authority on the attraction, qualification, and development of world class manufacturing talent.
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MANUFACTURING MATTERS
INTRODUCING DREAM IT. DO IT.

Manufacturers across the United States are facing a workforce nearing retirement, but lack the younger workers to fill those roles. The Manufacturing Institute has developed a strategy to empower manufacturers to reach and inspire the next generation of manufacturing leaders and increase the talent pool of younger workers.

The Dream It. Do It. Ambassadors’ Kit provides you with everything you need to begin engaging students — the future workforce — in your region. The Ambassadors’ Kit includes:

- **Launch Support:** How to plan, launch and succeed with a company-wide Ambassadors’ Program.
- **How-To Guides:** Step-by-step processes for simple student engagement activities that can be led by company Ambassadors — such as classroom visits, facility tours and Manufacturing Day.
- **Marketing Materials:** Attractive and actionable brochures, posters and social media content that will attract students, parents and educators.
- **Communications:** Sample communications for building partnerships in your community in support of your engagement.
- **Glossary:** A glossary of information that ensures every manufacturer can communicate effectively with their audience.

Over the next decade nearly 3 1/2 million manufacturing jobs likely need to be filled.

The skills gap is expected to result in 2 million of those jobs being unfilled.

84% of manufacturers agree there is a talent shortage in U.S. manufacturing.

90% of Americans believe manufacturing is very important to economic prosperity.

Those familiar with manufacturing are 2x as likely to encourage a child to pursue manufacturing.

70% of Americans indicate targeted programs would increase interest in manufacturing careers.

Dream It. Do It. has engaged 8,600 manufacturers across the United States.

Dream It. Do It. reached 426,000 students and 76,000 influencers (parents and educators).
THE AMBASSADORS’ STORY

Brad Bartlett was your average Nebraskan high school student. He hung out with friends between classes, was a self-proclaimed couch potato on the weekends, and had no idea what he wanted to do after graduation.

Then, by a stroke of luck, he was placed into a program for students to explore careers at Tri-V Tool and Manufacturing Company. Every morning, he spent several hours at the plant, learning processes and working on machines. He was shocked that the building wasn’t what he’d seen in pictures from the 1950s; instead, it was bright, air-conditioned and filled with high-tech equipment. He was sold.

It took Brad less than two years at Southeast Community College before he earned an Associates Degree and became a tool maker at Tri-V.

Brad is almost in awe of how far he’s come in just a few short years as he explains, “By the time I was twenty, I was able to buy my own home. It wasn’t long before that I was a couch potato, and now I am making custom parts that help companies like 3M and CLAAS. Every day is something different and exciting.”

“IT WASN’T LONG BEFORE THAT I WAS A COUCH POTATO, AND NOW I AM MAKING CUSTOM PARTS THAT HELP COMPANIES LIKE 3M AND CLAAS.”

Brad was one of the first Dream It. Do It. ambassadors nationwide, a voice for manufacturing in Nebraska. He represents what can be accomplished with a career in manufacturing.

Ambassadors are young, well-spoken employees who play a front-facing role to their community representing the manufacturing industry. They bring forward a message of inspiration, passion, and drive to potential talent sources who are starting or changing their career. Whether it’s students, women, veterans, or minorities, ambassadors help any audience see a place for themselves in manufacturing.

And John has already seen a change across the state. “So many more high schools are involved in manufacturing. Programs are improving, more students are interested. We can basically hire straight out of high school because more students are passionate about going into the trade.”

And it’s a great retention strategy too. “It was really cool,” Brad admits. “Getting asked by the company to be an Ambassador... that was special just knowing that they wanted me to promote their company to high schools and on all the tours. Plus, I really enjoy talking to kids and trying to relate to them so they can understand.”

John and Brad may have been one of the first employer/ambassador teams, but they are not unique. Every manufacturer in the United States has ambassadors within their company who just need to be told their story is important to tell. The Dream It. Do It. Ambassadors’ Kit is a step-by-step guide for launching your company’s Ambassadors’ program. A low-cost, high-impact approach to inspiring your community, improving your talent supply chain and increasing your company’s exposure.
Benefits of the Ambassadors’ program include:

- A low-cost, high-impact community engagement strategy created by manufacturers for manufacturers with proven results to inspire your community, improve the talent supply and increase your company’s exposure.

- A retention strategy that acknowledges the diversity of employees and provides them with a professional development opportunity to be a voice for the company and industry.

- Opportunity to leverage national resources, including how-to guides, marketing materials, and presentation templates found within this kit, which were carefully vetted by the Dream It. Do It. network.

- Increased company awareness of potential talent sources like high schools, community colleges, and staffing agencies.

- A national collective group of manufacturers committed to closing the skills gap through community engagement with an approach endorsed by the National Association of Manufacturers.

- An approach for representing all functional areas of manufacturing and your staff. Ambassadors can be:
  - Early career
  - Women
  - Veterans
  - Specific occupations

- Engage with a state or regional Dream It. Do It. program to participate in larger community activities and scale your exposure and impact.
QUICK START GUIDE

Congratulations! You have taken the first step in gaining your future talent pipeline. The Dream It. Do It. Ambassadors’ Kit will provide you with all you need to begin engaging your future workforce and expose more students to careers in manufacturing. Before you dive into the Ambassadors’ Kit, read through this Quick Start Guide to understand the steps you need to take to organize impactful engagement with students in your region.

NUMBERS TALK

The Skills Gap is all too apparent to most manufacturers. But there are a number of resources that you can use to quantify the impact to your business, and to assist in explaining it to your education community. Here are a few places to start:

- Browse through “Boiling Point? The Skills Gap in U.S. Manufacturing.” It can help to further review the research that has demonstrated the skills gap.


- Graph the ages of your own employees and understand where the challenge falls within your own company. Is the majority of your own workforce nearing retirement like other manufacturers? Do you have a younger wave of employees who will fill their roles?

- Talk to student groups and teachers. What are their opinions about manufacturing? Does the answer accurately reflect 21st century manufacturing?

- Customize brochures and posters from the Marketing Materials chapter to feature opportunities that exist at your company. You will be able to use these branded materials to engage students and keep them thinking about manufacturing beyond the classroom.

- Utilize the Communications chapter to begin building relationships with local educators who will provide you with a student audience. They will be excited to hear from you and are always looking for opportunities for their students to learn from local employers.

ENGAGE AND INSPIRE

Once you select activities, it’s time to put the marketing materials to work. Providing parents, students, and educators with information about the wealth of opportunity available in manufacturing will help to engage and inspire your audience. Other engagement ideas include:

- Recruit other manufacturers in your community or in your supply chain to explore the Dream It. Do It. Ambassadors’ Kit and how it can impact their company.

- Consider providing more opportunities to local students like apprenticeships or internships.

ORGANIZE YOUR IMPACT

This Ambassadors’ Kit will help you to impact your skills gap by enabling you to engage with your future workforce. Taking this step requires reading the entire Ambassadors’ Kit. Here are a few ways your organization can be a leader in educating your community about manufacturing’s tremendous opportunities.

- Read the How-To Guides chapter and select activities in which your company could participate or host. Select these activities based off of the time and resources you would like to allocate for your student engagement efforts.
LAUNCHING AN AMBASSADORS’ PROGRAM
LAUNCHING AN AMBASSADORS’ PROGRAM

Title: Ambassadors’ Program

Original Creator: Dream It. Do It. Nebraska

Target Audience: Students (Middle and High School)

Synopsis: The Ambassadors’ Program was created by Dream It. Do It. Nebraska to help students understand the global challenges and education paths to obtaining skills that lead to good paying careers in manufacturing. In the Ambassadors’ Program, a group of talented, young employees from manufacturing companies play the role of industry ambassadors to area youth. These young individuals, typically ages 26 and under, represent a group that is relatable to youth and can deliver a powerful message.

Ambassadors should have a degree or certification in a manufacturing field and be willing to share their educational journeys with students. These young faces represent the role models of our industry who can encourage other young minds to pursue manufacturing careers. This How-To Guide will provide the steps needed to lift up an ambassador from your organization to help lead your student engagement activities.

IMPLEMENTATION PROCESS

1. Selecting an Ambassador

   a. In a smaller organization, you may be able to select an ambassador based upon your knowledge of your staff. In a larger organization, you may want to utilize the Ambassadors’ Questionnaire in the Communications chapter to help select an appropriate ambassador.

   b. Consider the following criteria when selecting an ambassador

      • Age 26 and under
      • Holds a degree or certification in a manufacturing-related field
LAUNCHING AN AMBASSADORS’ PROGRAM

- Understands the core values of the company and represents the organization well to the general public
- Comfortable talking to middle and high school students
- Willing to describe his/her education path and job duties in front of an audience
- Willing to participate in classroom presentation, career fairs, industry tours and facility tours

C. If you are having trouble locating a willing ambassador, consider offering a nominal stipend for participation. You can do this on a monthly or by event basis, but it will be incentive for participation beyond their impact.

2. Preparing Your Ambassadors

A. Once you have identified an ambassador or group of ambassadors, you must prepare them to properly represent your organization within the community. Consider taking the following steps:

- Have an initial meeting with your ambassadors and provide them with a copy of this Ambassadors’ Kit. Help them understand your student engagement objectives and the role ambassadors will play.
- Have your ambassadors review the Communications chapter resources such as the In Classroom PowerPoint (page 28) and the Industry Talking Points (page 33). This will be a good starting point for building the message they will deliver.
- Have your ambassadors build a few personal slides into the In Classroom PowerPoint (page 28). These slides should represent their personal story and include information on their upbringing, their educational pathway, their job hunt, and their current job responsibilities.

B. Have them practice their message delivery and presentations for you to ensure they meet your expectations. The more personal the message, the greater impact it will have, but be sure their presentations are appropriate and will resonate with students who are committed to working hard in their careers.

C. When you are comfortable with your ambassadors’ message, begin looking for ways they can engage students.

3. How Ambassadors Can Engage Students

A. Consider some of these engagement opportunities for your ambassadors:

- In Classroom presentations or visits (see page 16)
- Tour guide on facility tours (see page 14)
- Representing your company at local career fairs or industry events
- Connecting with local youth organizations like Boy Scouts, Girl Scouts or Boys and Girls Club of America
- Interviews with local media
- Spotlight ambassadors in the brochures and posters in the Marketing Materials chapter

B. These ambassadors should become your student engagement leaders. Over time, you should feel comfortable leaving the engagement planning efforts in the hands of your ambassadors.
AMBASSADOR QUESTIONNAIRE

Name:
Age:
Job Title:
Division:
College:
Degree or Certification:
Email:
Cell Phone:
Office Phone:

What attracted you to our company?

Please list some of your duties:

What are the best/most interesting things about your job?

What is the most rewarding thing about your job?

What was your education path (schooling, internship, major, change of major, etc.)?

How did you decide on this career path?

What kind of school, classes, and training most prepared you with the necessary skills?

What kind of technology do you use and interact with?

What advice would you give to students who are undecided on a career choice?

What do you think makes you a good Ambassador?

Are you comfortable speaking with students?
AMBASSADOR TRAINING

One of the most valuable components of an Ambassador program is its ability to be managed by the ambassadors themselves. However, as a company would with any public facing employee, it is important to address a few topics with your ambassador(s) before they begin interacting with students and the community.

Take a moment to review the topic areas below, and review with your ambassador(s). There are no right answers. These questions are unique to every company and what they want to accomplish with their Ambassador program.

We advise a one-hour meeting to cover the topics below while providing your ambassador(s) with a personal copy of this toolkit.

TRAINING TOPICS

1. Ambassador Etiquette
   a. What is the role of ambassadors within our organization?
   b. What are appropriate topics to discuss, and what are not appropriate topics to discuss?

   Appropriate
   - Personal pathway, background, and education
   - Job responsibilities
   - Benefits of working at the company

   Not appropriate
   - Changes occurring within the organization
   - Intellectual property not for public knowledge
   - Negatives about working at the company

   c. What is proper attire when serving as an ambassador?
   d. How much time can an ambassador dedicate during working hours?

2. Ambassador Expectations
   a. Are ambassadors to set up events/activities or will that be done by another member of the organization?
   b. What is the target population of ambassadors? Students, parents, educators?
   c. How many events or activities should the ambassadors participate in?
   d. How long will an ambassador serve in their role?
   e. What type of message about the company should the ambassador bring forward?
   f. How will your ambassador measure success?

3. Ambassador Activity
   a. Who in the community should ambassadors partner with?
      - Schools
      - Non-profits
      - Student organizations
      - Dream It. Do It. programs
   b. What will your ambassador do on Manufacturing Day?
   c. What will be the personal story of the ambassador?
   d. How often should these activities occur?
The following How-To Guides equip ambassadors to support impactful engagement in the community, in your facility and in the classroom. Each How-To Guide provides in-depth instructions and resources that will support ambassadors in leading meaningful activities with students. Ambassadors should be shown the How-To Guides and encouraged to utilize the activities they feel will have the greatest impact on their audience.
Title: Building Relationships with Educators

Target Audience: Educators

Synopsis: As a manufacturer, you have a unique perspective to offer educators and their students. But figuring out how to build a relationship, and what you want to say, can be a major challenge.

It all starts with understanding teachers — their unique practices, attitudes, and needs. Just like building customer relationships, it takes time to build a relationship with an educator, but doing so can help make engagement all the more satisfying, and help your message resonate with young women who are the next generation of workers.

Required Planning Time: <1 Month

IMPLEMENTATION PROCESS:

1. Consider Your Goals
   a. What age cohort are you trying to reach? There are several factors to consider. Although reaching a younger audience may increase the opportunity to influence girls and boys about career options and taking technical education classes, high school partners can be a great source for interns and other more immediate connections with your company.

2. Understand What You Have to Offer
   a. Begin by making a list of what your company can add to a school program, classroom, or club. Some things to consider include:

   - Who in your company will be responsible for student engagement? How much time will they allocate for these activities? Will they be able to take time during the working day to participate in these activities?
   - Can your facility accommodate activities, tours, or events? If so, how many students? What age group are you comfortable bringing into your facilities?

(See page 14 for Facility Tours)
2. Build a Relationship
   a. Typically you will want to set up a meeting with the right person at the right education institution. That will start with an initial communication. (You can start with the samples in the Communications Chapter of this Ambassadors’ Kit.)
   b. Customize your communications to match what you can offer and what you know about your prospective education partner. It may be helpful to place the communication on company letterhead if sending via snail mail.
   c. If possible, have the communication come from an executive within your facility or organization. This will demonstrate the legitimacy of your requests and establish that student engagement is a priority of your organization.
   d. In many ways, sending these communications for the first time is like making a cold call. You have to be sure you are reaching out to the correct contact at the school if a relationship is to be established. Consider the following guidelines when attempting to make a connection.

   - Make sure the schools are within your organizations’ footprint. The closer the schools, the more likely they will be able to participate in your activities. You can do much of this research online.
   - Your initial outreach should probably not be with the principal, who is responsible for administrative activity occurring in the school. Your communication may become another item on a lengthy to-do list, so it is usually best to start elsewhere.
   - Teachers in STEM related fields or technical education classes are often your best first contact. They are teaching related fields and welcome industry support for their students. You can locate their contact information on the school website.
   - If you are reaching out to a community college, your best point of contact is usually the instructors themselves. They will either provide direct access to the classroom or point you in the direction of a dean or director who can help you from there.
   - If you don’t know who the best contact might be, consider reaching out to an individual in a school’s administrative offices and asked to be pointed in the right direction.

4. Initial Meeting
   a. Having an initial meeting to describe your interest and what you can offer can get your relationship off to the right start.
   b. Consider hosting an initial meeting at your facility. It will provide the individual with an opportunity to experience 21st manufacturing. It may be the first time for many in a manufacturing facility. You may also start by paying a visit to the school first and then inviting interested educators to your facility as a follow-up.
   c. At the initial meeting, plan to discuss your intentions and how your suggested activities align with the objectives of the educators. Understand what their challenges are in promoting careers and how you might be able to help. Remember, these individuals spend the majority of their time with students and can speak to what is impactful and what is not.
   d. If you feel that this meeting was successful, discuss opportunities to engage the students. Reference the plan you created in Step 1.

5. Other Methods of Connection
   a. There are other methods for engaging with local educators that you can explore. Consider the following methods for connecting with contacts at local schools.
      - Does your local school district have an advisory council? Do they need members of industry to sit on the council? You can find this information through the district’s website.
      - Is there an active PTO/PTA chapter for your local schools? This information can also be found through the district’s website or by speaking with parents in your community.
      - You can begin engagement through school clubs like SkillsUSA or FIRST Robotics. These students have already been exposed but their directors, who are often instructors or teachers, can be helpful in guiding the process to reach other students. Understanding how you can support career and technical student organizations can be best learned by having a conversation with the directors of these programs at your local school.
MANUFACTURING DAY FACILITY TOUR

**Title:** Facility Tour

**Target Audience:** Students (all ages), Parents, Educators

**Synopsis:** Facility tours are a simple avenue for manufacturers to open their doors and show what modern manufacturing is all about. There is no better place than an actual facility to dispel outdated myths and inspire the next generation of manufacturing talent.

Facility tours help provide community members, students, parents, and educators with an opportunity to view a modern manufacturing environment first hand. For many, it is the first time they have had an opportunity to visit a manufacturing facility. These tours allow all types of Americans to see for themselves that the industry is alive and well in our country, and in need of skilled employees.

**Required Planning Time:** 3 months

**IMPLEMENTATION PROCESS:**

1. **Organizing Your Facility Tour**
   a. Determine the format of your event, length of event, and audience for the event.
   b. Options include facility tours, classroom presentations (see page 16), and roundtable discussions.
   c. Register your event on [www.mfgday.com](http://www.mfgday.com). This will serve as a public facing profile for your event where you can keep invitees informed and excited.
   d. Draft and send invitations to your desired audience. (See Communications chapter for sample invitations and steps for reaching out.)
   e. Distribute memo to employees making them aware of the visitors. This memo should include a protocol you wish to be in place during the event.

   For a more detailed plan, please visit the [Manufacturing Day Host Toolkit](http://www.mfgday.com).

2. **Organizing a Facility Tour**

   *Note: If you have previously held facility tours, skip to step 3.*

   a. Put together an internal planning group to help aid with this process.
   b. Establish a welcome area within the facility and determine who will greet the attendees when they arrive. Make sure to have a welcome message crafted that represents your company.

   c. Determine a tour route through your facility. Be sure to note whether machinery will be operating and whether areas exist that are not for public view. Clearly articulate these facts at the beginning of the tour.
   d. Select employees to play the role of tour guides. If you are welcoming a student audience, younger employees will serve as more relatable hosts and will achieve a greater impact.
   e. Craft a tour script that highlights the different functions of your company and your manufacturing process.
   f. Decide whether photography will be allowed on the tour. Clearly articulate this decision at the beginning of the tour.
   g. Determine if you want to create a product display. Gather other company literature and display those materials in an appropriate location.
   h. Determine whether it is appropriate for there to be a media presence at your event. If so, draft a media advisory (see Communications chapter) and prepare a message from your company’s president. If there is media, the company should coordinate in advance with its education partner for photo permissions of students.
3. Event Day Check List

a. Make sure your facility is clean before attendees arrive. Assure there is no clutter, everything in its place, floors swept clean, and a clear tour path through the shop.
b. Make sure employees are appropriately dressed and all roles are defined during the day. If possible, make sure employees are wearing a name badge so they can be addressed by name when answering questions.
c. Place required safety equipment in a location near the entrance. Make sure tour guides welcoming attendees immediately speak to safety protocol for all visitors.
d. Consider putting up a welcome sign to demonstrate your enthusiasm for having visitors to your facility. You can download a customizable sign from www.mfgday.com.

4. Conducting a Facility Tour

a. Welcome guests upon arrival.
b. When speaking to guests assume your visitors have very little knowledge about manufacturing. You should make sure to explain:

   - How your company got started
   - What products your company manufactures
   - Who your customers are
   - What your products do

c. Rather than starting your story with dry historical information, “ABC Company opened in 1922 and has operated out of three different locations,” hook visitors right at the start with an interesting anecdote. Talk directly to them. For example, “If you’ve ever been young and in love, you’ll be interested in how this company got started. Joe and Angela Johnson opened the doors back in 1922. He was 23, she was 19. They’d been married for two weeks, and this was their American Dream …”

d. If you are hosting student visitors this is your opportunity to provide advice about the kinds of careers that your company offers and the type of training and educational coursework you seek when hiring employees.

e. Avoid jargon and know your audience. What language would you use? Avoid industry terms and business lingo that others don’t understand.

f. Let your visitors be active participants. If feasible, without shutting down production lines, offer your visitors the chance to address your entire workforce. Have guests do something “physical,” such as shake hands, run a machine, examine your product or look at a computer screen.
g. Utilize pre- and post-tour surveys to better understand the impact your event had on your participants.
h. If possible, send your visitors home with something tangible. Options include a widget, some raw materials, or a photograph. It will create a long-term reminder for those who attended your event.

5. Follow-Up from Your Event

a. Send thank you notes to your guests and staff.
c. Use social media to promote any press coverage, photographs and recap the event.
d. Solicit feedback from visitors and begin to prepare for an improved next event.
Title: Classroom Visit

Target Audience: Students (all ages), Educators

Synopsis: Schools reserve limited time for their students to spend outside the classroom, but teachers everywhere welcome the opportunity to have employers come in and speak to their classes. Classroom visits are fantastic opportunities for manufacturers to bring the industry to the student and bring manufacturing careers alive.

The goal of a Classroom visit is as diverse as the audience you will address. For the youngest classrooms (K-5th grade), you should emphasize the value of making things. For middle school audiences (6th-8th grade), underscore the need for STEM education, and for high school audiences (9th-12th grade), offer compelling reasons for the pursuit of a manufacturing career. This How-To Guide will provide the steps needed to have a successful and impactful visit to your local classroom.

Required Planning Time: < 1 Month

IMPLEMENTATION PROCESS:

1. Getting Into the Classroom

a. Manufacturers are often invited to participate in classroom visits and discussions with students. Invitations are often received through school boards, employer committees and local chambers of commerce. Those are good starting points for locating receptive classrooms.

b. Another approach manufacturers can take is to do direct outreach to local educators. In the Communications chapter of this Ambassadors’ Kit, there is a sample outreach letter to educators. Find a contact at your local high school or middle school and reach out with your interest to visit a classroom.

2. Preparing for Your Classroom Visit

a. Have a plan for your visit. In all likelihood, your time in front of the class will be limited and will go by much quicker than you intended. Having a plan that is not only educational but also engaging will ensure a successful visit.

b. Create a presentation that provides relevant and interesting information to your audiences. Important information that should be a part of your presentation includes the origin of your company, what products you manufacture, who your customers are and how they use those products. You should assume that your audience has very little background knowledge of manufacturing and should consider addressing the question What is Manufacturing? at the beginning of your visit. A base presentation is available in the Communications chapter of this Ambassadors’ Kit. You can use this presentation and alter it to reflect your company and manufacturing in your region.

3. Sample Interactive Activities

a. Plan activities for your classroom visit.

b. The most memorable classroom visits will be the ones that are interactive for the student audience. Consider planning an interactive activity for your Classroom visit (see below). There are a number of suggestions for classroom activities that are simple to prepare but demonstrate what manufacturing is all about.

c. Consider a virtual facility tour for your student audience. This will bring the shop floor to the classroom! Visit www.manufatureyourfuture.com to review virtual facility tours that will grasp student’s attention and act as a great pivot point into discussion.

d. If appropriate, consider having an item that will your students can walk away with. This can be as simple as a bookmark or a widget from your facility. This is a way to provide a lasting impression and will ensure students continue to think about manufacturing when they leave the classroom.

4. Post-visit

a. Leave the students with your contact information and be open to discussing manufacturing careers after your visit. If applicable, communicate internship and work based learning opportunities that are available at your company or in your region.

b. Provide information about upcoming tours at your facility or Manufacturing Day events on the horizon. This is a great way to continue engagement and provide students with further opportunities to educate themselves. If possible, extend an invitation to tour your facility to the class in the future.

c. If you did not use an online virtual tour, leave the teacher of the class with the link to www.manufatureyourfuture.com and encourage them to further explore manufacturing online.

d. Be sure to thank whoever arranged your classroom visit.
INTERACTIVE CLASSROOM ACTIVITIES

FOR K-5

Shop Floor Safety True and False: With our youngest audience, consider using a virtual facility tour video and following it up with a basic safety true and false quiz. Simple questions help students understand safety protocol in the manufacturing facility. Walk through the questions as a group with younger students or do it as a quiz for older students, then talk through the answers. Give examples from your own facility about why safety is important and how it can affect day-to-day operations.

SHOP FLOOR SAFETY TEST

Circle true or false (T or F) in response to the following questions on safety:

1. Wear safety glasses only when operating machinery. T F
2. Report all injuries, no matter how minor, to your instructor. T F
3. Wear proper safety shoes whenever on the shop floor. T F
4. When operating a machine, it is sometimes necessary to sit in order to avoid getting tired. T F
5. Talking to others while operating a machine is not dangerous. T F
6. All shirt sleeves must be rolled up above the elbow. T F
7. Do not run or fool around in the shop area. T F
8. All jewelry must be removed before operating machines, including rings and bracelets. T F
9. When you start to operate a machine for which you haven’t received instruction, play with the controls first to see how it works. T F
10. It’s okay to wear loose, baggy clothing as long as it is tucked in a bit. T F
11. Do not operate a machine without instruction or permission. T F
12. Once instructed on how to use a machine safely, you may remove your safety glasses. T F

Manufacturing Mr. Potato Head: At times, familiarity can help bring a situation to life. When speaking to a young audience, the Manufacturing Mr. Potato Head can be a great activity to help simulate a manufacturing process with a fun final product. Depending on the class size, bring several Mr. Potato Heads to the classroom you are visiting and disassemble them so that body parts are placed in separate piles. Then provide students (individual or small groups depending on the class size) with the body of Mr. Potato Head and ask them to work together to finish manufacturing the rest of the toy. Use the activity as an opportunity for discussion and talk about other items that have been manufactured. If time permits, you can add twists to the activity such as requiring teams to trade parts to complete their toy.

FOR 6TH – 8TH GRADE

Tallest Tower: Students are asked to manufacture a tower using just the items available within a bag handed to them. Have students unpack their materials and give them some time to plan their tower. During this time, they may touch and examine their materials, but they may not start building. They should sketch plans and discuss strategies. Once building starts, if they destroy a material, it cannot be replaced.

Give students some time to build a tower. They may modify their plans at any time. Make a rule change as a plot twist. One possibility is to tell students they can now trade materials with other groups if both groups agree. Another is to give out more materials (the same or different) to the groups (sought-after ones include adhesives – tape and glue – and scissors). Yet another rule change is to say they must use all of their materials in their towers. Give time warnings so that students can plan accordingly. The materials should be as simple as items found around your office. Some examples of materials include:

Bag #1
- 2-3 feet of electrical tape (wound around a pen or craft stick)
- 3 manila file folders
- 5 paper clips
- 2 sheets of construction paper
**CLASSROOM VISIT**

**INTERACTIVE CLASSROOM ACTIVITIES** cont.

**Bag #2**
- 12” strip of masking tape (wound around a pen or craft stick)
- 5 paper cups
- 5 craft sticks
- 8 mailing envelopes
- 4 straws

**Bag #3**
- 2 small pieces of cardboard
- 10 craft sticks
- 4 sheets of aluminum foil
- 1 pad of sticky notes
- several feet of string
- 1 large plastic cup

This activity helps to demonstrate the different skills required to work in manufacturing including planning, strategizing, teamwork and execution. The team that can build the sturdiest tower, not just the highest, wins this activity. As a prize, consider giving a certificate for the activity (see Branding chapter).

**HIGH SCHOOL**

**Fact or Myth Quiz:** This activity works with students of all ages, but can be especially effective when talking to students who are more familiar with career paths. The Fact or Myth quiz takes common misconceptions or truths about manufacturing and asks students to determine their veracity. This activity can be especially poignant prior to a presentation about manufacturing careers. It can help spark interest and help students better understand why the information being provided to them is important. You can easily develop your own quiz, but the template below is a great place to start.

**Real World Simulator:** This activity takes a bit more preparation but can help students understand the value of their paycheck and why manufacturing can be so helpful to their future. Take a group of plain envelopes and write different careers on the front. The careers should be specific to manufacturing (e.g., machinist, welder, industrial maintenance technician). It is best to have these careers parallel opportunities available in your region. Then place the average monthly salary for each position in each of the envelopes in play currency. Before beginning the activity with the students, come up with four or five basic expenses people experience on a monthly basis (e.g., rent, car, food, electricity, cable) and write an amount associated with each expense on the board at the front of the class.

Distribute the envelopes to the students and ask them to assume the career they have been given. Walk them through each expense and ask them to hand over the amount they owe. Once all expenses are accounted for ask them to count what they have remaining and then articulate that careers in manufacturing would leave them with disposable income. At this point, open the discussion to the class and ask what they would do with that type of additional income. If time permits, do the activity again but have the students receive a promotion because of their years on the job or because of additional education received. Complete the same practice going through expenses and end with discussion again.
Title: Squishy Circuits: A GLOBALFOUNDRIES TechTuesday Activity

Target Audience: Students, Educators

Synopsis: “Squishy Circuits” is a fun way to learn about how electricity flows from negative to positive. In this lesson, students will gain a general understanding of how a circuit works and the concepts of a diode. After the students learn about the properties of their materials, they will design a creative circuit that blends both science and the arts.

Required Planning Time: < 1 Week

IMPLEMENTATION PROCESS:

1. Required Materials (Per group)

   The required materials needed for the Squishy Circuits activity are as follows:
   a. 2 Cans modeling clay
   b. 1 9-Volt Battery
   c. 2 LEDs
   d. 1 9-Volt Battery Lead Attachment
   e. Modeling Clay

2. Materials Cost (Plan based on 20 Students per class, 4 Students in a group)

   a. $5.00 – 10 Cans of Play-Doh (Walmart / Target)
   b. $14.00 – Energizer Max 9V Battery 5 Pack (Walmart)
   c. $8.32– 20 9V Battery Wire Leads (Walmart)
   d. $8.18 Modeling Clay, 5LBs (Walmart)
   e. $10.00 – LEDs Radio Shack

3. Step-By-Step Instructions

   a. Roll Play-Doh into two reasonably thick strands
   b. Connect 1st strand to the lead of the 9-Volt battery
   c. Connect 2nd strand to the remaining lead on the battery (Do NOT let the Play-Doh Strands touch)

4. Lesson 1 – Diodes

   a. Using an LED, connect the two strands
   b. Q1. Did the LED Light Up? YES or NO
   c. If the LED did NOT light up, try reconnecting the LED backwards
   d. Q2. Did the LED light up this time? Yes or No
   e. Q3. Why? (Ask a volunteer)

5. Lesson 2 – Short Circuits

   a. Connect the two strands of Play-Doh together using more Play-Doh, in between the Battery and the LED
   b. Q4. Did the LED go out? Why? (Ask a volunteer)

6. Lesson 3 – Series vs. Parallel Circuits

   a. In your existing circuit, add another LED.
   b. Q5. Is the new LED as bright as the first LED in the circuit?
   c. Place a separate ball of Play-Doh just in front of the two original strands
   d. Remove the LEDs
   e. Pick one LED and connect one leg to the ball and the other leg to one of the strands
   f. Connect the other LED to the ball and the empty strand
   g. Reminder: Remember Lesson 1: Try turning the LEDs around if they do not light at first
   h. Q6. Are the LEDs as bright as your first circuit?
   i. Q7. Name a few properties of Series and Parallel Circuits? (Ask a volunteer)

7. Lesson 4 – Conductors & Insulators (Project)

   a. The modeling clay is an insulator (it does not conduct electricity well). Use this to separate the Play-Doh and design a creative Play-Doh / modeling clay piece that is also a circuit.
   b. Present your project to the group. The best project gets a prize!

8. Learning Takeaway

   a. Deeper understanding of electricity flow in a circuit
   b. Concept of a diode
   c. Conductors vs. insulators
   d. Short circuits vs. open circuits

9. How is this related to the semiconductor industry?

   a. Semiconductor manufacturing companies design complex circuits using chemical and physical processes that become the hardware for today’s most innovative consumer electronics products and software. This hands-on activity is a lesson in simple circuits. It’s an introduction to the world of electronic hardware that will jumpstart the student’s imaginations and further their understanding of how the day-to-day electronics they use actually work.
SQUISHY CIRCUITS CONTINUED

Set Up

Lesson 1: Diodes & Conductors

Lesson 2: Shorts

Lesson 3: Parallel

Lesson 4: Series

Lesson 5: Insulators
The Marketing Materials chapter provides ambassadors with great leave-behind materials that will compel student interest long after an ambassador’s visit. All Marketing Materials can be downloaded and printed as hand-outs for any audience your ambassador is trying to reach. A strong message can continue the conversation around the dinner table with the support of brochures, posters, bookmarks and infographics.
From nanotechnology to robotics, innovative ideas happen every single day. But who transforms those raw ideas into the must-have products that improve the lives of everyone around us?

With a career in manufacturing, YOU WILL.

We Are American Ingenuity.

Today's bright ideas become tomorrow's opportunities. Opportunities to live your passion, to earn the money your talent deserves. To join a team of dedicated professionals and make the innovative products that transform our lives.

At Dreamit-Doit.com, learn how you can make the things that make our world better.

what's your passion?
The Brand:
Social media graphics

Manufacturing workers earn $78,000 in average compensation.

Manufacturers Perform 65% of all private sector research.

The Brand:
Bookmark

YOU ARE THE FUTURE.
MANUFACTURING IS ABOUT CREATING PRODUCTS THAT AFFECT EVERYONE’S DAILY LIVES AND EVEN CHANGE THE WORLD.

dream it. DO IT.™
HIGH-TECH
BUILDING & CREATING
WELL PAID
LIMITLESS opportunity

the manufacturing institute.org
DISCOVER YOUR FUTURE WITH
DREAM IT. DO IT.

Manufacturing supports an estimated 17.6 million jobs in the U.S. For every $1.00 spent in manufacturing, another $1.27 is added to the economy. The average U.S. manufacturing worker earns $77,506. The average worker in all industries earns $62,440. 90% of manufacturing workers have medical benefits.

MANUFACTURING MAKES AMERICA STRONG

MANUFACTURING IS HIGH-TECH

20% of manufacturers are adopting 3-D Printing. More than 1/2 of manufacturers use robotics.

REACHED:
426,000 students
76,000 parents & educators
8,600 manufacturers

44 sites across the U.S. to work as a united voice to recruit the next generation of workers into manufacturing.

WAYS FOR MANUFACTURERS TO GET ENGAGED:
Sponsor a regional dream team
Host a Manufacturing Day event
Create an Ambassador program
The Brand: Counselor brochure

If this brochure doesn't leave you confident in manufacturing careers, have a conversation with a local manufacturer. Tell them the action steps suggested in this brochure and hear their opinions. They will validate the need for your students with those aspirations and skill sets and express how much more they will value your school as a result. Your students have an opportunity to thrive professionally and advanced quickly in manufacturing. It is your responsibility to educate your students of these opportunities and let them know that employment want their talent.

Counselors across the nation are one of the greatest influencers of student pathways. They have an intimate knowledge of their student’s abilities and must present options that will allow them to thrive.

However, not every student’s path is meant to have a four-year university or college as its end destination. For many, postsecondary and career preparation options can lead to a community college or technical college for a variety of reasons. Technical pathways meet great career opportunities that are abundantly available, and students deserve to know about those pathways.

Interested in receiving help your students to pursue great technical training? Check out the Manufacturing Institute to list of training partners near you.

MANUFACTURING CAREERS ARE IN HIGH DEMAND...

In 2012, the average manufacturing worker in the United States earned $77,505 annually including pay and benefits. The average worker in all industries earned $60,863.

The average entry level manufacturing worker earns $28,000 to $30,000 per year, with increased earnings available through pay increases.

The average experienced manufacturing worker earns more than $100,000 a year with benefits and overtime available throughout the year.

EMPLOYERS ARE PAYING FOR QUALIFIED TALENT.

Manufacturing jobs are high paying.

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Median Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinist</td>
<td>$40,000</td>
</tr>
<tr>
<td>Maintenance Technician</td>
<td>$44,511</td>
</tr>
<tr>
<td>Maintenance Mechanic</td>
<td>$44,511</td>
</tr>
<tr>
<td>Assembler</td>
<td>$35,000</td>
</tr>
<tr>
<td>Machinist</td>
<td>$97,000</td>
</tr>
</tbody>
</table>

IT'S A WHOLE NEW PATHWAY...

Industry is no longer just manufacturing. It’s anything that needs to be made. Today’s manufacturers need more than just line workers. They need a variety of workers to produce their products in a cost-effective way. Today’s manufacturing is a complex web of industries that require trained individuals to operate equipment, design products, and oversee implementations.

TELL YOUR STUDENTS: THE BEST PAY COMES FROM MANUFACTURERS.

Manufacturing pays more. Manufacturing pay is the highest compensation to employees that any industry across the country. In an average of $56,000 to $57,000, which includes salary and benefits, the average manufacturing employee is made clear to employers. If you want to learn more about the manufacturing career pathways, the best pay comes from manufacturing.

GUIDING THEIR PATHWAYS

COUNSELOR (IN): A TRAINED ADVISER OR MENTOR ON ACADEMIC AND CAREER PATHWAYS.

Get more about providing career readiness in manufacturing fields.

Check out the Manufacturing Institute to list of training partners near you.

Dream it. Do it. Ambassadors' Kit 25
The Brand:
Parent Brochure

We need to let our doubts about manufacturing fall to the wayside. Our children are missing out on an opportunity that could put them on a pathway to success. There are hundreds of thousands of jobs available in manufacturing across the country and your child is in demand. Have a conversation with your son or daughter and introduce them to manufacturing.

Additional Resources:
- Visit www智能制造.com and learn about manufacturing-ents and plant tours in your state.
- Check out www.manufacturingpipeline.com to take the career assessment and find the right path for you.
- Speak to your child’s guidance counselor and ask to learn more about manufacturing or connect them with your local Dream It. Do It. program.
- Enroll your student in a local SkillsUSA or FIRST Robotics Competition.
- Check out the Manufacturing Institute’s M-List to find a school where you can obtain manufacturing certifications.

Parents across the United States share a common theme of concerns. Will my child be successful as an adult? Will they be able to provide for themselves? Will they ever achieve independence?

A successful child is the ultimate goal of parenthood. We strive to help them achieve independence and an identity of their own. What many parents don’t understand is that success, independence, and identity can all be attained through a career in manufacturing.

In terms of success, manufacturing careers truly provide the whole package. Manufacturers across the nation currently offer the highest salaries and benefits on average of any industry. There is incredible opportunity to grow within these organizations and climb the pay scale. As mutual is most exciting, the educator to acquire the necessary skills for manufacturing careers come at a fraction of the cost and the required in most traditional post-secondary education.

THERE IS AN 8.9% SALARY PREMIUM FOR WORKING IN MANUFACTURING COMPARED TO OTHER INDUSTRIES.

DOES YOUR CHILD CRY IN NON-CCLASSROOM SETTINGS? MANUFACTURING TRAINING IS OFTEN HANDS-ON AND CAN BE COMPLETED IN AS LITTLE AS FOUR MONTHS.

Not every individual is destined for a four-year academic institution after high school. These academic institutions offer great educational opportunities but often come at a steep cost premium and with a large debt. It’s even more concerning if that many students are not achieving graduation upon graduating.

The good news is there is a cost-effective alternative. Community Colleges and technical schools across the nation are delivering education programs that provide the technical skills needed to achieve a manufacturing career. These programs often cost less, can be completed in under a year, and often come with a salary.

Parents, it’s time to talk about manufacturing.

Parents, it’s time to talk about manufacturing.

MANNUFACTURING CAREERS ARE IN HIGH DEMAND...

In 2012, the average manufacturing worker in the United States earned $77,500 annually, including pay and benefits.

The average woman in all industries earned $20,069.

The average entry-level CNC operator earns from $28,000 to $30,000, plus benefits and overtime available through many employers.

The average experienced CNC programmer can earn more than $100,000 a year, with benefits and overtime available through many employers.

AND EMPLOYERS ARE PAYING FOR QUALIFIED TALENT.

Manufacturing jobs:
- Machinist: $47,000
- Maintenance technician: $50,000
- Advanced manufacturing technician: $30,000
- Advanced manufacturing technician: $35,000
- Advanced manufacturing technician: $30,000

Manufacturing Institute
The Brand:
Student Brochure

What's it All About
Manufacturing has always been the backbone of America. Over the past century, the industry has grown. And today, your grandparents, and maybe even your parents, would not recognize today's manufacturing. Today's manufacturing is about advanced technologies, state-of-the-art facilities, and fast-paced work environments. But most of all, manufacturing is about those people who like to see the product of a hard day's work.

Made In America
Aircraft, medicines, MP3 players, snowboards, guitars, and candy. All are very different items with a common trait. They are produced by an American manufacturer. You can develop medicine that saves someone's life, or construct a massive airliner to fly homes to your family, or create the instruments played at a concert by some of the world's greatest artists. Not many people can say that of their job.

Facts and Figures
Manufacturing is about skills. It doesn't require a four-year degree and a mountain of debt to begin a manufacturing career. It requires hard work, dedication, and an industry certification to get the job done. And most of these certifications can be earned in two years or less. After that you could have a career as a machinist, or metalworker and be making more than your friends. An average of 18% more than your friends. Manufacturers hire the highest combined salaries and benefits of any industry in the United States.

The highest salary and benefits of any industry in America belong to manufacturers.

Your Job Is Waiting
You owe it to yourself to learn more about the opportunities that manufacturing has to offer. Here’s what you do:
- Visit www.ManufacturingJobs.org and learn about manufacturing events and plant tours in your state.
- Check out www.ManufacturingCareers.com to take the career assessment and find the right path for you.
- Speak to your guidance counselor and ask to learn more about manufacturing or connect them with your local Dream it. Do it. program.
- Participate in your local SkillsUSA or FIRST robotics competition.
- Check out the Manufacturing Institute’s job List to find a school where you can obtain manufacturing certifications.

SAVING LIVES, BUILDING PLANES, AND PLAYING MUSIC. ALL IN A DAY’S WORK.
CUSTOMIZATION

Process

- Every Dream It. Do It. marketing materials can be customized online through The Manufacturing Institute’s Customization Request Form.

- Manufacturers can customize everything from the pictures to statistics to the language featured on your selected marketing materials. Please note, all customization requests, including company-specific information or other copy changes, must be provided to The Manufacturing Institute for the process to be completed.

- Once a customization request is received, you will be sent a confirmation from The Manufacturing Institute with follow-up questions or requests for materials. At this time, you will receive an expected time frame for completion of customization, usually around three weeks.

- When the customization is complete, you will receive a print file to review. You are welcome to request revisions to the marketing materials as you see fit. When you are satisfied with the marketing material, you can then move onto the printing stage.

Consider some of these suggested customizations:

- Your company logo on each marketing material
- Photographs of your employees
- Spotting career opportunities at your organization
- Salary figures that represent your local manufacturing industry
- Activities students can engage in within your region
- For other suggestions, contact The Manufacturing Institute to help brainstorm ideas.

PRINTING

The Institute will provide a full pdf and a print pdf version of the marketing materials.

The full pdf is to be used for in-house printing. Most materials can be printed on any standard size paper.

The print pdf is to be used for professional printing, and will include marks and bleeds.

If you need any specific printing marks, please contact The Manufacturing Institute.
THE COMMUNICATIONS

The Communications chapter simplifies all ambassador outreach and engagement planning. Whether that includes letters to educators, presentations for in-classroom visits, or talking points for a facility tour, these samples will help any ambassador maximize his or her impact and minimize preparation time.
POWERPOINT TO STUDENTS

Manufacturing Careers In Washington D.C.

AGENDA
- Ice Breaker Activity
- What Do You Know?
- What’s Up With the Manufacturing Institute
- What Can You Do With Manufacturing?
- Get Up and Get Engaged
- How Can You Get Involved

WHO AM I?
- Name: NAME
- From: STATE
- Position: Program Manager, MI Ambassador
- What I Do: Manage Programs
- What I Love: XXX

What Can You Do With Manufacturing

Build What You Are Passionate About

Click here to download template.
Dear NAME,

As a [COUNSELOR, INSTRUCTOR, ADMINISTRATOR] in our community, [YOUR COMPANY] greatly appreciates the work that you do preparing students for their futures. As a manufacturer employing [NUMBER OF EMPLOYEES] in [REGION], we are equally dedicated to supporting the future of our local youth. We have recently become a part of The Manufacturing Institute’s Dream It. Do It. program that strives to excite local youth about careers in manufacturing, and we would like to better introduce ourselves to your students.

Option 1: We are requesting an opportunity to meet with you and discuss ways that we can support your students and provide them with valuable information about manufacturing careers. Manufacturing is the backbone of our nation and contributes nearly $2.08 trillion to the economy annually. As a result, we provide long-lasting careers to our employees, and your students deserve to learn more about these opportunities.

Option 2: We are [DESCRIPTION OF ACTIVITY] and would value having your students participate so they can better understand what 21st century manufacturing is all about. Manufacturing is the backbone of our nation and contributes nearly $2.08 trillion to the economy annually. As a result, we provide long lasting careers to our employees, and your students deserve to learn more about these opportunities.

We are going to change the image of manufacturing in [COMMUNITY/STATE] and provide a platform that allows students to experience manufacturing as they begin to consider their future career path. If possible, I would like to schedule a phone call to discuss how your students can benefit from our efforts with Dream It. Do It. To learn more in the meantime, please visit [http://www.themanufacturinginstitute.org/image/Dream-It-Do-It/Dream-It-Do-It.aspx].

I look forward to hearing from you and working together to positively impact our region’s students.

Sincerely,

NAME
INITIAL EDUCATOR/INDUSTRY MEETING AGENDA

SAMPLE MEETING AGENDA

[Click to select date]
[Time]
Type of Meeting: [YOUR COMPANY] Student Engagement with Dream It. Do It.

Invitees: [NAME OF INVITEES]

Greetings and Introductions

9:00 am: Understanding [YOUR COMPANY]

1. Who we are
2. What we do
3. Our student engagement objectives

9:40 am: Understanding [PARTNER SCHOOL]

1. Student objectives
2. Career and technical education opportunities for students
3. Opportunities for industry engagement

10:00 am: Dream It. Do It.

1. Objectives of the Dream It. Do It. program
2. Introducing the Ambassadors' Kit
3. Activities for student participation

10:30 am: Next Steps

1. Appropriate steps to build the relationship
2. Opportunity for educator facility tour
EMPLOYEE MEMO

TO: ALL EMPLOYEES
FROM: [YOUR NAME]
SUBJECT: [YOUR COMPANY] LAUNCHES DREAM IT. DO IT.
DATE: [CLICK TO SELECT DATE]
CC: [NAME]

[EMPLOYEE GREETING],

[YOUR COMPANY] is so fortunate to have a dedicated and passionate team that we strive to grow each and every day. As an organization, we represent the finest of 21st century manufacturing, and we should be proud to display that to the community. In an effort to do this and better engage our local students and educators, [YOUR COMPANY] has become a member of The Manufacturing Institute’s Dream It. Do It. program. Dream It. Do It. provides manufacturers with a platform to excite local youth about careers in manufacturing and recruit talented youth into our field.

As a result of joining the Dream It. Do It. program, we have received an Ambassadors’ Kit that helps us begin to engage with students across our community. If you would be interested in taking a look at the Ambassadors’ Kit, please email [CONTACT] and [/THEY] would be happy to share it with you. Dream It. Do It. is about sharing the story of manufacturing, and we want all employees who are interested in getting involved to let [CONTACT] know. This is a great opportunity to positively impact our community and our organization.

If you have any questions, please let me know.

Sincerely,

[CONTACT]
Dear NAME,

As a [Manufacturer, Industry Organization, Supplier] you know that manufacturers need to attract the next generation of talent that has the skills and temperament for innovation and success. Manufacturing careers offer good salaries and exciting opportunities to be on the cutting edge of new technologies and products. However, our industry is often misunderstood in the eyes of young people — and the parents and teachers who influence their career choices.

To help change the image of manufacturing in [COMMUNITY/STATE], [YOUR COMPANY] has become a part of The Manufacturing Institute’s youth recruitment initiative, Dream It. Do It. The Dream It. Do It. program puts a platform in place that allows manufacturers to excite local youth about manufacturing and begin attracting and recruiting the next generation of our workforce. Dream It. Do It. can improve the image of manufacturing, but only if it is led by partners with the passion, drive, and commitment to create its success.

Your expertise and experience could contribute to the success of Dream It. Do It. in our region, and we want you to learn more about the program and how you can get involved. We would like to schedule a phone call to discuss how your organization can support our objective of improving the image of manufacturing in our community. To learn more in the meantime, visit http://www.themanufacturinginstitute.org/Image/Dream-It-Do-It/Dream-It-Do-It.aspx.

Sincerely,

NAME
INDUSTRY TALKING POINTS

When speaking with any partner you want to engage in the Dream It. Do It. program, it helps to have a firm handle on the national manufacturing landscape. Below are a set of talking points that help to provide strong facts that support the importance of manufacturing and the challenges of our nation’s skills gap. If you would like to find additional facts to include in your talking points, please visit http://www.themanufacturinginstitute.org/Research/Facts-About-Manufacturing/Facts.aspx. State-specific data is available at http://www.nam.org/Data-And-Reports/State-Manufacturing-Data/.

- The people who produce goods are the best equipped to innovate, to make those products better.

- Manufacturers contribute $2.08 trillion to the economy and for every dollar invested in manufacturing another $1.40 in additional value is created in supporting sectors of the economy. Manufacturing has the highest multiplier effect of any economic sector.

- Manufacturing supports an estimated 17.4 million jobs in the United States and about one in six private-sector jobs.

- Manufacturers in the United States perform two-thirds of private sector research and development in the nation, driving more innovation than any other sector.

- Taken alone, manufacturing in the United States would be the 8th largest economy in the world.

- If asked how best to provide 1,000 jobs in their community, Americans overwhelmingly choose manufacturing; yet only 1 out of 3 parents would encourage their children to pursue a career in manufacturing.

- There are hundreds of thousands of open manufacturing in the United States.

- By 2025:
  - 2.7 million Baby Boomers will retire
  - 700,000 jobs will open up due to economic expansion
  - Over the next decade, nearly 3.5 million manufacturing jobs will be needed to be filled
  - 2 million U.S. manufacturing jobs are expected to go unfilled
LIABILITY WAIVER

Tour Date | Time a.m. - Time p.m.

By completing and signing this form, both student and parent/guardian are aware of the following:

- Parents /guardians are welcome to attend, but it is not mandatory.
- Parent/guardian’s signature is required for student participation.
- Dress Code: NO open-toed, high-heel or sling-back shoes, skirts or shorts are allowed.
- Jeans and sneakers or comfortable shoes are recommended.

In consideration of being permitted to participate in a tour of [YOUR COMPANY], the undersigned releases, waives, discharges and covenants not to sue [YOUR COMPANY], its agents, managers, directors, officers and employees, all of whom for the purpose of this release are referred to as “releasees,” from all liability to the undersigned and the undersigned’s parents/guardians, for any and all loss or damage on account of injury to the person or property of the undersigned, whether caused by the negligence of the releasees or otherwise, while the undersigned is in or on the [YOUR COMPANY] premises.

The undersigned agrees to indemnify and hold the releasees harmless from any loss, liability, damage or cost they may incur due to the presence of the undersigned in or on the [YOUR COMPANY] premises and whether caused by the negligence of the releasees or otherwise.

The undersigned further agree that the foregoing release, waiver and indemnity agreement is intended to be as broad and inclusive as is permitted by the laws of the State of [YOUR STATE], and that if any portion of it is held invalid, it is agreed that the balance shall, notwithstanding, continue in full legal force and effect.

The undersigned assumes full responsibility for and risk of injury or damages while participating in the plant tour.

Student Name: ___________________________________________________________ Age: __________________
School: _______________________________________________________________ Grade: __________________
Phone Number: __________________________________________________________ Email: __________________
Parent/Guardian Name: ____________________________________________________ Email: __________________
Phone Number: __________________________________________________________ Email: __________________
Parent/Guardian Attending? (yes or no) __________________________________________
Parent/Guardian Signature: __________________________________________________

Please fill out and return this form by [DATE] to [SCHOOL CONTACT] by email to [SCHOOL CONTACT EMAIL] or via mail to:
PERCEPTION SURVEY

When implementing the activities found within the Dream It. Do It. Ambassadors’ Kit, it can help to receive real-time feedback from participating students. This brief Perception Survey will gauge the impact your activities are having on the students. You are welcome to add or remove aspects of this survey, but remember that if you want students to provide information it must be brief and simple to complete.

To utilize the Perception Survey successfully, ask students to complete the survey before the activity and after. The change in responses will be the measure of your activity’s success.

Directions: Please fill in a number on a 1 to 6 scale that reflects your personal beliefs; 1 indicating you Strongly Disagree and 6 indicating you Strongly Agree. If you do not know the answer, please fill in a 0.

Q1: I believe I can have a good career in manufacturing. ______
Q2: I believe a job in manufacturing can be safe. ______
Q3: I believe that a career in manufacturing will lead to advancement opportunities for me. ______
Q4: I believe manufacturers train their employees. ______
Q5: I believe I can earn a good wage in a manufacturing career. ______
Q6: I believe there are openings in manufacturing today in [INSERT REGION]. ______
Q7: I believe that I will be prepared to work in manufacturing when I graduate high school. ______
Q8: I believe I have a future in manufacturing. ______
## Metrics Tracking

### Ambassador Program Metrics Tracking

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Location</th>
<th>Date</th>
<th>Audience</th>
<th>Number of individuals impacted</th>
<th>Pre/Post Survey Used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: For Manufacturing Day, Ambassadors presentation completed for high school students at West High School. Students also completed the true/false activity and had a discussion around what they knew about manufacturing.</td>
<td>West High School, Weston, USA</td>
<td>2-Oct-15</td>
<td>Students (high school)</td>
<td>60 students, 3 educators</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Glossary of Career and Technical Education Terms

**Advisory Committee**: A committee whose members should represent business and industry, education, labor organizations, special populations, community, government, students, parents, and teachers. A majority of these members shall share a working knowledge of the job tasks and competencies required for related occupations, related labor market needs, and courses necessary to meet these needs. The committee provides advice in the design, development, delivery, evaluation, and continuous improvement of Career and Technical Education programs.

**Apprenticeship**: A combination of on-the-job training and related instruction in which workers learn the practical and theoretical aspects of a highly skilled occupation. Apprenticeship programs can be sponsored by individual employers, joint employer and labor groups, and/or employer associations.

**Career and Technical Education (CTE)**: A planned program of courses and learning experiences that begins with exploration of career options; supports basic academic and life skills; and enables achievement of high academic standards, leadership options for high skill, high wage employment preparation, and advanced and continuing education.

**Career and Technical Student Organization (CTSO)**: Department of Education recognized organizations for individuals enrolled in a Career and Technical Education programs that engage in CTE leadership skill development activities as an integral part of the instructional program.

**Career Cluster**: A grouping of occupations and industries based on common aspects that provide students with a context for planning and studying academic and technical courses related to a career.

**Career Pathway**: A coherent, articulated sequence of rigorous academic and career-related courses within a career cluster, commencing in ninth grade and leading to an industry-recognized certificate or licensure, an associate degree, and/or a baccalaureate and beyond.

**CTE Concentrator**: A secondary student who has enrolled in multiple CTE courses above the exploratory levels in a single cluster.

**Exploratory Course**: A CTE course in which students demonstrate the application of academic learning standards in the context of preparing for living, learning, and working; demonstrate foundational and occupational specific skills required to meet current industry standards; explore and demonstrate knowledge of career options within the related career cluster; and demonstrate leadership and employability skills.

**Industry**: When referencing “industry standards” or working “with business and industry” and the like, include registered apprenticeship programs, private and public businesses, and industry recognized professional organizations and governing bodies.

**Leadership Skills**: The ability to preside, guide or manage self, others, activities or events with responsibility for the final outcome.

**Manufacturing Competency Model**: A multi-level model that includes each of the skill sets required for employees in manufacturing beginning with personal effectiveness, academic, and workplace competencies that build to occupationally specific skill sets.

**Postsecondary Education**: Includes pre-apprenticeship, apprenticeship, workforce training programs, community and technical colleges, and baccalaureate and post-baccalaureate opportunities.

**Preparatory Course**: A technically intensive and rigorous CTE course or sequence of courses in which students demonstrate mastery of occupational-specific skills, including the application of academic learning standards as required to meet industry-defined standards needed for a specific career; leads to a certificate or credential necessary for employment or offers dual credit; and leads to workforce entry, approved apprenticeships, or postsecondary education in a related field.

**Program of Study**: A coordinated, non-duplicative progression of courses within a career pathway that aligns academic, career and technical education in secondary education with postsecondary education to prepare students for an occupation or group of occupations within a career cluster.
**Soft Skills:** Workforce readiness skills defined by the Department of Labor that focuses on six key skill areas: communication, enthusiasm and attitude, teamwork, networking, problem solving and critical thinking, and professionalism.

**STEM:** An acronym for Science, Technology, Engineering and Math education.

**STEAM:** An adaptation of STEM education that additionally includes Art.