AN NRL INDUSTRY ADVISOR'S GUIDE TO SUCCESS

WAY BEYOND BATTLE STRATEGIES

GUIDE YOUR GROUP TO VICTORY

HOW TO PROVIDE AN EFFECTIVE PROJECT-BASED LEARNING EXPERIENCE

Project-based learning is only possible in settings in which teachers and Industry Advisors partner together to give students sufficient guidance and feedback.

As an Industry Advisor, you must work with the teacher to thoroughly explain all tasks, provide detailed directions, answer questions and encourage student motivation. In this approach to instruction, teachers and Industry Advisors often find themselves in the role of student themselves!

NTMA

YOUR MISSION:

- **Be enthusiastic** and excited to be there!
- **Plan well, but be flexible**; be supportive, patient, enthusiastic, compassionate and available
- **Actively assist students** in their efforts to establish goals and objectives for the project
- **Provide training** to develop skills for immediate project tasks and for future opportunities; offer moral support as well as knowledge support
- **Reinforce the value** and relevance of academic skills
- **Serve as a role model**, both specific to the project and in general
- **Advise the students** in terms of job performance and coach on specific skills
- **Be inclusive** and involve all students; avoid idle hands by having some side projects in your back pocket
- **Find a balance** of helping when necessary, but stepping back when applicable to allow for student growth and independence
- **Treat all ideas as valid** and explore beyond conventional solutions
- **Avoid overburdening** students by identifying only one or two project issues/corrections at a time; always be positive and encouraging
- **Orient students** to all aspects of the manufacturing industry
- **Advocate on behalf** of the student to all company employees
- **Evaluate student performance** in a constructive manner and provide feedback to the teacher
- **Create a supportive, trusting relationship** and look out for the best interests of the student at all times; treat students with respect and listen patiently
- **Ensure and emphasize** the importance of safety during use of machines, robots, etc.
- **Participate in regular assessment**, reporting and summary/post-project activities
- **Learn something yourself!** Take advantage of this unique situation to bolster your own career development

LET'S BUILD SOME 'BOTS!

YOUR STEP-BY-STEP PROJECT OUTLINE

The 'bot-building process spans almost the entire school year (October to March), enabling Industry Advisors to build strong relationships with the teachers, students and school. On average, the time commitment is 40 to 60 hours total, which you can spread out among several of your employees. Please note that 'bot refinements will be made in April and May based on performance at regional competitions.

PROJECT STEPS:

1. **Identify the robot type**
2. **Research**
3. **Brainstorm**
4. **Select a design**
5. **Create engineering drawings or a solid model**
6. **Prototype and model**
7. **Evaluate model/design**
8. **Refine design**
9. **Build final design**
10. **Test**
11. **Compete**
12. **Evaluate end result**

For more information about these steps, please refer to the Resource Center at **www.gonrl.org**.

SAFETY FIRST

Safety is more important than ever in today's schools. Here are a few things to consider:

- Understand that every school is responsible for a safety and security plan
- Look for ways to help the administrative leadership fulfill the requirements of that plan
- Provide safety glasses and other safety equipment to the students
- Offer to share your safety and security plans with school officials as appropriate
- Explain to students the importance of safety in your workplace and help them to develop a safety plan of their own

YOU'VE GOT SKILLS

HERE'S HOW TO SHARE THEM

An effective Industry Advisor understands that it is critical for students to see the benefits of a career in manufacturing. This component separates the NRL from other STEM programs—and it's your opportunity to teach the skills that you'd like to have in your future workforce.

TYPES OF SKILL SETS

Skill learning gives students the experiences necessary to be ready for entry-level manufacturing jobs.

TECHNICAL SKILLS

These are the appropriate knowledge and abilities needed to perform a specific task or set of tasks. For manufacturing, these skills could include understanding how to read blueprints and diagrams, or knowing how to program a CNC machine.

COGNITIVE SKILLS

These involve the exercise of conscious intellectual effort, such as reasoning, thinking or remembering. These are often tested via mastery of reading and mathematics.

NON-COGNITIVE SKILLS

Also known as soft skills, these skills relate to motivation, integrity and interpersonal interaction.

THE FUTURE IS BRIGHT

HELPING STUDENTS WITH CAREER EXPLORATION—FOR THEIR BENEFIT, AND YOURS

Today's youth receive a majority of their career information through day-to-day interactions with adults, primarily their parents, family members, teachers, guidance counselors or media role models. Given the outdated assumptions about careers in manufacturing, students may not be naturally exposed to the benefits of a career in manufacturing. As an NRL Industry Advisor, you have the very special opportunity to prove to students that manufacturing is a viable—and desirable—career path.

TIPS FOR SUCCESSFUL CAREER DEVELOPMENT

- At project kickoff, open your facility for a student tour. This is your chance to talk about your company, demonstrate what you do and get the attention of tomorrow's workforce. We also encourage you to invite school administration, counselors and parents on the tour.
- Challenge all students to learn more about the manufacturing process and enhance their technical skills.
- Talk to the students about your personal career pathway. Where did you learn the skills needed to be productive in your job? Give them an idea of how and why you selected manufacturing as a career. Only you and your employees have the firsthand experience to tell students about the benefits of the job.
- Identify the students who are engaged, energetic and eager, and concentrate on building their interest in manufacturing; it's important to be inclusive of all students, but feel free to devote extra time/guidance to the students who actively seek it out.
- After the program, provide students with opportunities for job shadowing, Co-Op programs during the school year, summer internships or full-time employment upon graduation.

YOUR TIME AS AN NRL INDUSTRY ADVISOR IS WHAT YOU MAKE OF IT. BE PROACTIVE IN UTILIZING THIS PROJECT AS A MANUFACTURING WORKFORCE DEVELOPMENT PROGRAM BY ENCOURAGING STUDENTS TO SEEK FUTURE OPPORTUNITIES WITH YOUR COMPANY.