# Bridges Career Academy

# Manufacturing

*Pierz-Healy High School*

Understand the careers in manufacturing. Experience working with a variety of metals, while designing, welding and machining parts. Gain skills in blueprint reading, tool sharpening, thread cutting and shop safety. Project based, using real-life activities. Work on both required and personal projects. Gain entry-level employment or continue education.

## Academic Courses

- Industrial Technology 8
- Welding I
- Welding II/III
- Small Gas Engines

## Career Experiences

- Listen to industry speakers
- Tour local businesses
- Attend the Bridges Career Exploration Day or other regional career fairs
- Work with real-life industry projects

## Completion Standards

COMPLETE

**B** Industrial Tech
Welding I
Small Gas Engine

**A** Welding II/III

Earn a **certificate** and **green cord** at graduation

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## Job Skills

In addition to having technical skills, employers expect workers in this industry to have these skills:

- Listening skills
- Manage tools and equipment
- Use critical thinking skills
- Effectively communicate
- Time management

Bridges Career Academies & Workplace Connection

*Supported in part by Sourcewell (formerly NJPA)*
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**www.BridgesConnection.org/PierzHealy**

# Manufacturing Career Academy

Pierz-Healy High School

The Manufacturing Academy provides students with an understanding of the vast number of careers in the world of manufacturing today. Students will experience working with a variety of metals, while designing, welding, and machining parts. Skills in blueprint reading, tool sharpening, thread cutting, and shop safety are essential elements of the courses. The academy is project based, uses real life activities, and allows students to work on both required and personal projects. When completing this academy, students will have skills to enter the work force or transfer credits to higher education.

## ACADEMY COURSES

**Industrial Technology 8** — 1 High School Credit
Students will be learning about automation and robotics this year using VEX robotics and Robot–C programming. Students will trace the history, development and influence of automation and robotics. They learn about mechanical systems, energy transfer, machine automation and computer control systems. In this course, students acquire knowledge and skills in problem solving, teamwork collaboration, and innovation.

**Welding I** — 1 High School Credit
The principles of welding processes, safety practices, and industry trends will be demonstrated. Students will have the opportunity to learn fabrication and project building. This course covers safety related to welding, as well as the use of oxy-fuel welding, brazing and equipment.

**Welding II / III**— 1 High School Credit and/or 2 College Credits (with CLC)
This course is an extension of knowledge and skills learned in Welding I. Blueprint reading, TIG welding, and a more in-depth look at metallurgy. Students will fabricate and perform welding techniques related to the metals industry.

**Small Gas Engines** — 1 High School Credits and/or 1 College Credit (with CLC)
Students will have the chance to dissect electrical engines, work on personal engines or/system. Trade materials will be researched. Alternative energy systems will be explored and tested. Students are encouraged to have projects to work on. 2-4 cycle engines will be disassembled and assembled and theorized.

## COMPLETION STANDARD

Students wishing to receive a certification must complete all courses, earning a “B” in Industrial Technology, Welding I, and Small Gas Engine courses, and an “A” in Welding II/III course.

## CAREER EXPERIENCES

Students will explore and research careers with industry speakers, attend Bridges Career Exploration Day and other career fairs, tour the local businesses, and work with real life industry projects.

## JOB SKILLS

In addition to having technical skills, employers expect their workers to have other skills such as:

- Listening skills
- Manage tools and equipment
- Use critical thinking skills
- Effectively communicate
- Time management

**CAREER OPTIONS:** www.careerwise.minnstate.edu/careers
**JOB OUTLOOK:** www.careerwise.minnstate.edu/jobs
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