

MANUFACTURING (40-50 LESSONS)



This course investigates how products are manufactured by processing materials. Students will explore the process of injection molding plastics, and design and produce a series of injection molded products. Exploration of the machine tools used to manufacture products is covered - including lathes, mills, and CNC technology.

Learning Objectives

- Explore careers in the manufacturing sector
- Investigate how plastic products are mass produced using injection molding technology
- Design and develop plastic products and produce them using an injection molding machine
- Recognize machine tool safety procedures
- Explore the manual use of machine tools
- Explore CNC technology and CNC programming
- Apply control theory to robotic systems
- Design control systems for industrial machines and robotic systems
- Investigate 3D printing technology, material, and application
- Recognize how 3D printing can be used to produce tooling in rapid manufacturing



Typical Careers

Production, Planning, and Expediting Clerk,
Production Engineer, Machinist, Machine Operator

Lessons

- Introduction: Careers - Manufacturing Technology
- Manufacturing Technology
- Industrial Robotics
- Machine Tools

Equipment

- Injection Molding Trainer (350-01)
- Engineering Construction Kit (220-01)
- Machine Tools Class Pack (506-50)
- 3D Printer - ABS

Design Projects

- Manufacturing Technology
- Rapid Prototyping and Manufacture
- An Industrial Robotic System
- Machine Tools

