



# Manufacturing

## **This career deals with:**

Preparing individuals to apply technical knowledge and skills in the production, maintenance, assembly, or repair of products.

## **Jobs in this area include:**

- \* Factory production worker
- \* Welder
- \* Electrical equipment installer
- \* Quality control technician
- \* Instrument maker
- \* Sheet metal worker



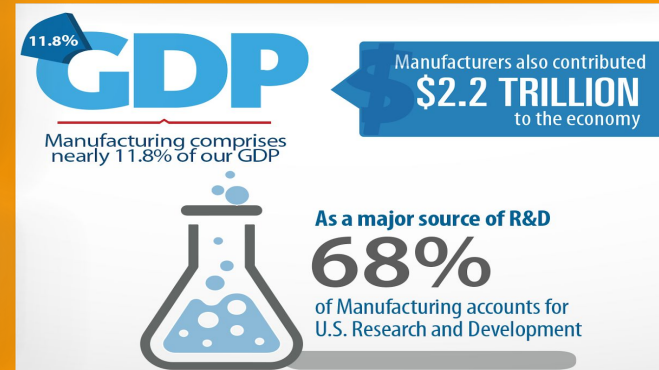
# FACTS ABOUT MANUFACTURING



**\$64,305**  
Average Annual Earning



Manufacturing is the 6th Largest Employer in the U.S.



MEP • MANUFACTURING  
EXTENSION PARTNERSHIP

[www.nist.gov/mep](http://www.nist.gov/mep)

1-800-MEP-4MFG

SOURCES: Federal Reserve Economic Data, Bureau of Economic Analysis, National Science Foundation, Bureau of Labor Statistics, U.S. Census Bureau, Export.gov, International Trade Administration

National Institute of  
Standards and Technology  
U.S. Department of Commerce

**NIST**

# Do you like to...

- Put things together
- Work with metal
- Repair small machines
- Work inside      year round
- Install/repair electronics and equipment
- Work with tools and controls
- Work with computers and data
- Work with chemicals
- Work with robotics
- Make furniture
- Make jewelry/pottery/ceramics
- Create new uses for materials

# **Common Skills in these careers...**

**-Operations Management: watching gauges, dials, or other indicators to make sure a machine is working properly**

**-Critical Thinking**

**-Operation & Control: controlling operations of equipment or systems**

**-Monitoring: assessing performance of yourself & others to make improvements or take corrective actions**

**-Coordination: adjusting actions in relations to other's actions**

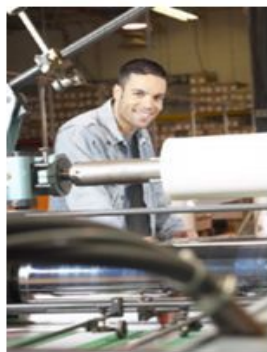
**Quality Control Analysis: conducting tests and inspections of products, to evaluate quality or performance**

# The Manufacturing Cluster Career Pathways



There are 6 Career Pathways in the **Manufacturing** cluster :

- **Production** – Assembler, Machine Operator, Machinist, Welder, Packager
- **Manufacturing Production Process Development** – Designer, Electronic Technician, Engineer, Production Supervisor
- **Maintenance, Installation & Repair** – Maintenance Mechanic, Plumber, Electrician





# The Manufacturing Cluster Career Pathways

- **Quality Assurance** – Calibration Technician, Lab Technician, Inspector, Quality Control Technician
- **Logistics & Inventory Control** – Dispatcher, Shipping Manager, Material Handler, Clerk
- **Health, Safety & Environmental Assurance** – Environmental Engineer, Safety Coordinator, Health & Safety Technician.



# **TRAINING REQUIRED FOR MANUFACTURING CAREERS**

**HIGH SCHOOL DIPLOMA**



**ON-THE-JOB TRAINING = 1 MONTH TO 2 YEARS**



**1-2 YEARS TECHNICAL/VOCATIONAL SCHOOL FOR CERTIFICATION**



**Cluster: Manufacturing****JG Career Pathway: Precision Machine Technology**

<b>9</b>	English 9	Algebra I (C level avail.)	ICP or Biology	Health/Dig Cit	Intro to Eng. Design (PLTW)	Physical Education	Prep for College & Careers/
<b>10</b>	English 10	Geometry/ Algebra II (C level avail.)	Biology or Chemistry	US History	Principles of Engineering	/Personal Financial Respons.	World Language
<b>11</b>	English 11	Algebra II/ Geometry (C level avail.)	3 <sup>rd</sup> Core 40 Science	World History & Civilization	Precision Machining I @ Plymouth		
<b>12</b>	English 12	Math or Quantitative Reasoning		US Government/ Economics (QR)	Precision Machining II @ Plymouth		

## Cluster: Manufacturing

## JG Career Pathway: Welding Technology

Grade	English/ Language Arts	Math	Science	Health/Dig Cit. Phys. Education Social Studies	CTE/Career Preparation Courses For this Pathway		
9	English 9	Algebra I (C level avail.)	ICP or Biology	Health/Dig Cit	Intro to Engineering Design		
10	English 10	Geometry/ Algebra II (C level avail.)	Biology or Chemistry	US History	Principles of Engineering		
11	English 11	Algebra II/ Geometry (C level avail.)	3 <sup>rd</sup> Core 40 Science	World History & Civilization	Welding Technology I @ Knox		
12	English 12	Math or Quantitative Reasoning		US Government/ Economics (QR)	Welding Technology II @ Knox		

**Cluster: Manufacturing****JG Career Pathway: Engineering/Engineering Technology**

<b>Grade</b>	<b>English/ Language Arts</b>	<b>Math</b>	<b>Science</b>	<b>Health/Dig Cit. Phys. Education Social Studies</b>	<b>CTE/Career Preparation Courses For this Pathway</b>	<b>Other or Elective For this Pathway</b>	<b>Elective For this Pathway</b>
<b>9</b>	English 9	Algebra I (C level avail.)	ICP or Biology	Health/Dig Cit	Intro to Engineering Design	Physical Education	Prep for College & Careers/
<b>10</b>	English 10	Geometry/ Algebra II (C level avail.)	Biology or Chemistry	US History	Principles of Engineering	/Personal Financial Respons.	World Language
<b>11</b>	English 11	Algebra II/ Geometry (C level avail.)	3 <sup>rd</sup> Core 40 Science	World History & Civilization	Computer Integrated Manufacturing Or Civil Engineering & Architecture		World Language
<b>12</b>	English 12	Math or Quantitative Reasoning		US Government/ Economics (QR)	Engineering Design & Development		World Language

your  
plan?



**Manufacturing**