



Manufacturing

People in the Manufacturing cluster turn raw materials into products. They like to follow clear instructions. They might work with big machines, small tools or computers. They like working with their hands.

Manufacturing

*Welders, Cutters, Solderers & Brazers ■ Assemblers ■ Industrial Machinery Mechanics
Machinists ■ First-Line Supervisors of Mechanics, Installers & Repairers
First-Line Supervisors of Production & Operating Workers*

Welders, Cutters, Solderers & Brazers

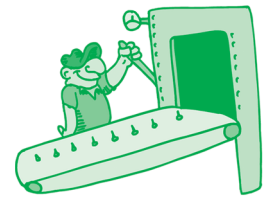


Welders heat metal pieces so they melt together. As the melted pieces cool, they form a very strong bond. Welding is used to build things like ships, airplanes and bridges. Solderers and brazers use heat to join metal together, too, but at lower temperatures. Many times they work on more detailed projects. Cutters use heat to cut metal. They take apart things like ships and vehicles.

List two things at your house, yard or school that have been welded.

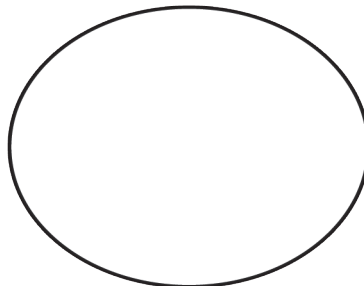
Assemblers

Assemblers put together products and the pieces that go into them. There are different tasks to do to put together each product. Tasks are usually done in a specific order. Assemblers need to know how to do each task.

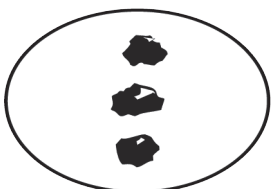


Assemble the snowman by numbering the steps in the order it should be put together (1 is the first step, 5 is the last step).









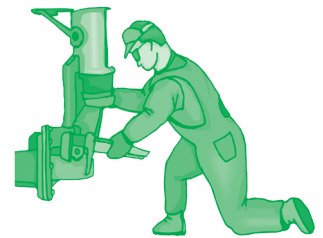


School Rules: (How much education do you need?)

Occupation	High School	Some Beyond High School	Associate Degree	Bachelor's Degree	Advanced Degree
Welders, Cutters, Solderers & Brazers		✓			
Assemblers	✓				
Industrial Machinery Mechanics		✓			
Machinists	✓				
First-Line Supervisors of Mechanics, Installers & Repairers		✓			
First-Line Supervisors of Production & Operating Workers		✓			

Industrial Machinery Mechanics

Industrial machinery mechanics set up and fix equipment and machines in factories. They make adjustments to machines. They know how to take apart machines and put them back together. They also know how to read diagrams and understand instruction guides.



Industrial machinery mechanics have to understand and follow instructions. Follow the instructions below.

1. Read everything carefully before you do anything.
2. Write your first name in this blank: _____
3. Draw three stars after your name.
4. What is $462 - 231$? Write your answer here: _____
5. Put boxes around two of the stars.
6. Circle the odd numbers in this list.
7. Multiply 6×8 . Write your answer here: _____
8. Add the answer of question 4 to the answer for question 7. Write answer next to the stars by your name.
9. Draw an animal in the space below:

10. Only do 1, 2 and 6. If you didn't follow directions, you did a lot of extra work!

Machinists

Machinists make or modify parts for equipment and machines. They make parts by cutting them out of metal. They may also make parts out of plastic, glass, wood and rubber. They look at blueprints or sketches to make sure the parts fit.



Machinists know how to take correct measurements. Look at the rulers above each line to find the length. Write the length to the right of the ruler.

inches



inches



First-Line Supervisors of Mechanics, Installers & Repairers



First-line supervisors of mechanics, installers and repairers supervise mechanics, installers and repair workers. They assign jobs to workers. They schedule workers. They may do the same work as those they oversee. They know how to read blueprints. They may order materials and supplies. They monitor work areas to make sure everything is safe.



The supervisors got new safety signs, but the words are jumbled! Help them unscramble the words on the signs.







First-Line Supervisors of Production & Operating Workers

First-line supervisors of production and operating workers supervise workers who run or set up machines. They also supervise workers who test and make products. They plan and assign tasks. They help settle worker problems. They write reports. They also teach and enforce safe work habits.

One thing a supervisor figures out is how many people need to work on a shift. At the Totally Toys factory, if one worker can make 72 yo-yos in one hour:

1. How many yo-yos can that person make in an 8-hour shift?

2. How many workers does it take to make 1,728 yo-yos in 8 hours?

How Much Does it Pay?

More than \$ 30.00					1	
\$ 25.00-\$ 30.00					1	1
\$ 20.00-\$ 25.00			1		1	1
\$ 15.00-\$ 20.00	1		1	1	1	1
Less than \$ 15.00	1	1	1	1	1	1
Average Hourly Wage in South Dakota (2018) Wage	Welders, Cutters, Solderers & Brazers	Assemblers	Industrial Machinery Mechanics	Machinists	First-Line Supervisors of Mechanics, Installers & Repairers	First-Line Supervisors of Production & Operating Workers

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