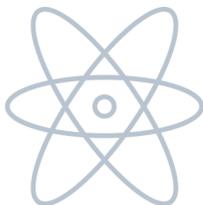




## STUDENT ACTIVATION



## Welder

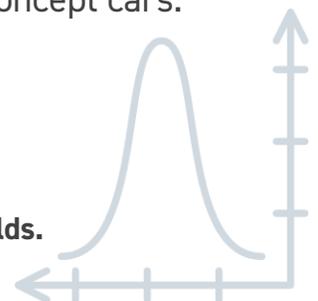


### OVERVIEW

Welders use hand-held or remotely controlled equipment to join or cut metal parts. They are the people who bring ideas, concepts, and plans to life. Welders have knowledge about all types of metals and what tools and techniques are needed to fuse those metals in a permanent bond. Welders tend to be artisans interested in mechanical things and troubleshooting. They must become experts in a range of things such as car racing and manufacturing. Welders could find themselves working anywhere in the world on some of the most significant projects ever conceived—underwater repairing the bottom of a bridge or building the fastest and coolest concept cars.

### EVALUATE YOUR INTEREST

- I like the idea of working in a variety of STEM fields.
- I enjoy working with my hands creating new things.
- I like rebuilding and fixing things to improve their functionality.
- I like the idea of being onsite and hands-on in projects and seeing my solutions work.
- I enjoy reading diagrams of projects and visualizing how they look in real life.





## CAREER CONNECTION

How does this career affect me?	What are some other similar careers?	How does this career affect the world?
<p>Welders build much of the world around us. For example, they:</p> <ul style="list-style-type: none"> <li>• Build the buildings in which we live and work.</li> <li>• Build bridges and support structures for our trains and roads.</li> <li>• Design innovative solutions to onsite problems.</li> <li>• Fabricate the cars and motorcycles of the future.</li> <li>• Build the systems that connect our water to our homes.</li> <li>• Construct the boilers that provide our heat in our buildings.</li> <li>• Connect the pipes that supply our natural gas and oil around the world.</li> <li>• Build the oil rigs that bring fuel to our cars and our homes.</li> </ul> <p>The work of a welder can be found in almost every city, every tool, everything that connects metal to metal.</p>	<p><b>Fabricators</b> operate a variety of machines and tools to produce precision parts and assemblies. They may also fabricate and modify parts to make or repair equipment. They are required to have experience in sheet metal layout, bend allowances, brake, and shear.</p> <p><b>Pipefitters</b> cut, thread, and hammer pipe to specifications, with tools such as saws, cutting torches, and pipe threaders and benders. They assemble and secure pipes, tubes, fittings, and related equipment, according to specifications, by welding, brazing, cementing, soldering, and threading joints.</p> <p><b>Visual weld inspectors</b> perform inspections of fabricated or welded parts. They respond to quality problems, determine the cause, and recommend corrective action.</p>	<p>Without welders, there would be no way to connect metal to metal. Large, long-lasting builds would be impossible. Cruise ships, roller coasters, pipelines, and bridges would not exist without fusing metal to metal. Welders are also cutters who tear down the old to make way for the new, cutting down old bridges and recycling the metal for future designs. Metal ore is a limited resource, which means welders must reuse it in new projects.</p> <p>Brazers are another type of welder that connects metals of very different types using lower temperatures. Brazing allows them to make our metal products last longer by adding coatings to protect the cast iron cores.</p> <p>Solderers also work with melting metal on lower temperatures to build the electronics that exist everywhere.</p> <p>Welders, cutters, brazers, and solderers are continuously building, tearing down, and rebuilding our world in bigger and better ways.</p>



## TAKE ACTION

- Investigate your school district's technical school offerings. Find out how to visit the technical school and gather information about the welding skills that are offered.
- Look for local organizations that offer apprenticeships in welding.
- Contact a local welding fabrication shop. Prepare a list of questions beforehand and investigate what this company is building.
- Put your design skills to the test. Learn to use a soldering iron and connect some wires to make a simple circuit. Follow the engineering design process as you identify the need for your circuit, research the soldering process, brainstorm ideas, develop a solution, prototype, test, and evaluate your design, and then improve upon it!