

Lesson – A Day in the Life of a Welding Engineer

FOCUS: K-W-L Activity

10 minutes

Purpose:

There are many different fields that welding engineers can work within. Some of these include automotive, nuclear, aerospace, defense, shipbuilding and many more. This lesson will help your students become more aware of what welding engineers deal with and the breadth/variety of skills and education they need to become one. Students may be unaware of the many opportunities that are available to them if they wish to follow this career path.

Materials:

- *Career Exploration K-W-L* handout

Facilitation Steps:

1. Begin by defining what a welding engineer is. Share this definition with the class:

A welding engineer is a person with the demonstrated education, experience, and knowledge in specialized fields of welding, brazing, cutting and materials joining. Welding engineering is a broad field that covers fields from automotive and shipbuilding to nuclear power, aerospace and mining. If there is joining of metals involved then there is probably a welding engineer involved in the process.

A welding engineer is qualified for directing those operations associated with weldments and other types of joints that are completed in compliance with the appropriate contract documents, codes, and other standards to produce a satisfactory product. The welding engineer's activities begins before production or construction welding and continues through the production process then ending when the production process is complete.

Most welding engineers need coursework in general engineering, including calculus-based foundation course work in mathematics, physical metallurgy, physics, chemistry, engineering mechanics, thermodynamics and fluids.

2. Divide the class into pairs to work together. Make a photocopy for each pair of the *Career Exploration K-W-L* handout. Explain the purpose of the activity, distribute the handout and give pairs five minutes to complete it.
3. After five minutes, call the class back together. Ask each pair to share one thing they already know about welding engineering and one thing they'd like to learn about this career. Write these on a master list on a white board or similar item. Continue calling upon each pair until everyone has had a chance to contribute to the K and W class chart.

Career Exploration K-W-L

Directions: With your partner, complete the “K” and “W” columns, saving the “L” column for later in the lesson. In the “K” column, identify what you already know about welding engineering. In the “W” column, write down what you would like to learn about a potential career as a welding engineer.

K	W	L

