Career Spotlight: Health and Safety Engineers

Safety Engineers

Designing Procedures and Systems That Keep People Safe

Safety engineers make lists of rules and/or procedures for workers to follow to keep them safe.

For example:

1. Wear safety glasses to cover your eyes
2. Wear thick clothes to keep sparks from burning your clothes
3. Before welding, throw a spark into the pipe to make sure no live gas is in the pipe

Safety engineers make lists of rules and/or procedures for workers to follow to keep them safe.

For example:

1. Wear gloves when handling dirty laundry at a hospital
2. Wear an apron so your clothes do not touch the dirty laundry
3. Remove the apron when leaving the workplace to avoid spreading bacteria and viruses that spread by touching dirty clothes

Your Turn to Be a Safety Engineer

As you can see from these examples, safety engineers often *take a close look at workplaces* and identify ways to make them safer.

Your engineering challenge:

- Imagine that **you are a safety engineer**
- Analyze the photos of a classroom lab in your packet
- **Circle anything that you think might be unsafe, dangerous or potentially lead to injuries**

Your Turn to Be a Safety Engineer

After you have analyzed the photos, write two rules for the students in your class to follow.

These two rules should keep the students safe in the lab.

Image source: Compliance and Safety

Example Workplace Safety Poster

Protect Yourself:

Cleaning Chemicals and Your Health

Working with cleaning chemicals can cause:

- Coughing
- Wheezing
- Red, Itchy Eyes
- Skin Rashes
- Skin and Eye Burns
- Shortness of Breath
- Sore Throat
- Headaches or Dizziness
- Nosebleeds
- Asthma

If you have health problems that you think are caused by using cleaning chemicals, tell your supervisor and ask to see a doctor.

What You Need to Know

Do not mix cleaning products that contain bleach and ammonia. Dangerous gases can be released and can cause severe lung damage.

Your employer is required to provide a safe workplace that includes:

- Sufficient ventilation (airflow) when using cleaning chemicals.
- Protective clothing, gloves, and safety goggles, when needed.
- Labels on containers of cleaning chemicals.
- Training on the hazards of cleaning chemicals you are using and safe work practices.

Your employer must train you to:

- Know the hazards of cleaning chemicals BEFORE using them.
- Know how to use and store cleaning chemicals safely.
- Know how and when to dilute cleaning chemicals you are using.
- Know what to do if there is a spill or other emergency.
- Know how to obtain and use hazard information on labels and material safety data sheets (MSDS).
- Know how and when to use protective clothing, gloves, and safety goggles.

Remember

- Wash your hands after using cleaning chemicals and before eating, drinking, or smoking.

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Green Cleaners

What are they?

- Cleaning products certified by independent organizations as safer to use and less harmful to your health and the environment.
- Cleaners with "green" in their name do not mean it has been certified.

Are Green Cleaners Effective at Cleaning?

- Many have met performance standards for its intended use.
- Also, many green cleaners are "fragrance-free" but still clean effectively. "Clean" does not have an odor!

Safety Reminder

- You may need to use protective clothing, gloves or safety goggles with some certified green cleaners. Ask your employer.

Create a workplace safety poster

Your safety engineering challenge:

- Create a workplace safety poster that demonstrates how workers might prevent a hazard or injury
- Include images and graphics
- Include rules, steps, procedures
- Make your poster easy to read
- Communicate important information in a concise way

Your safety poster will be evaluated using this rubric ➔

	Images	Concise Writing
Full Credit	The poster includes one or more images that relate to the assigned hazard. These images clearly illustrate the consequences of the hazard or how to prevent the hazard.	The poster includes at least two rules, steps or procedures that workers or their employers can follow in order to minimize the likelihood that they will be involved in the hazard. The poster is written in concise language so that workers can quickly read and understand it.
Partial Credit	The poster includes one image, but it may be hard to determine how this image relates to the assigned hazard.	The poster includes one rule, step or procedure that workers or their employers can follow in order to minimize the likelihood that they will be involved in the hazard. The poster may include difficult vocabulary, unclear or unnecessary language, or confusing sentences that make the poster difficult to understand when workers first look at it.
No Credit	The poster includes no images.	The poster include no rules, steps or procedures for minimizing the assigned hazard.