THE SAFETY FACTOR

A half-hour movie

LEARNING PACKET

OBJECTIVES:

- Students will think about safety factors whenever they do anything in a school shop.
- Students will learn general safety principles and procedures applicable to many different types of work.
- Students will use tools not just with the idea of getting work done, but of getting it done safely.
- Students will develop positive attitudes towards safety and the use of personal protective equipment.
- Students will see that there is a great amount to learn about safety and that in order to protect themselves they must practice what they know, and continue to learn as much as they can about safety from as many sources as possible.

SUMMARY:

THE SAFETY FACTOR, produced and distributed by Circle Oak Productions, inc. is a half-hour, color, sound motion picture that offers an overview of safety facts, principles and procedures. It illustrates that many safety factors must be taken into account before working with any tool.

The movie urges its viewers to develop and maintain an approach to work that always includes safety. The film does not attempt to give operating instructions for individual tools. Rather, it points out that there are specific procedures for each tool and area of work that must be learned and followed before starting work.

Produced in documentary style this movie was shot in actual shop settings using real students, not actors. There are instances in the movie, as there are in any real shop where safety can be improved. The narration points out some of these, but it is a good idea to challenge your students to find more. Ask them to look for places in the film where they think safety could be improved. This is an excellent way to spark classroom discusions and get students thinking about safety for themselves.

The following is a list of safety concerns found in *THE SAFETY FACTOR.*

Accidents can happen anytime - Tools can cause injury - Approach work with the idea of getting it done safely - Learn about the equipment and procedures - Avoid overconfidence - Get permission - Inspect tools before use - Wear proper eye protection and other personal protective equipment - Bystander injuries are common - Use the right tool for the job - Extra protection is always possible - Be aware of the specific hazards of chemicals, electricity, welding, compressed air and machines - Protect hands and feet, watch for pinch points - Protect ears, skin, eyes - Avoid excuses and short cuts - "Innocent" horseplay, running, fighting or throwing things can have disasterous results around tools - Personal protective gear can't always keep you from harm - Know safe operating procedures and safety principles - Know what to do and where to go in case of an emergency - *Use* the safety equipment available - Don't disconnect safety devices - Doors and ladders can cause harm - Alcohol, drugs, fatigue, emotional upset, toxic fumes, and chemicals all affect reaction time, balance and judgment - Use caution when working with flamable materials - Keep tools sharp and in good working order - Keep the work place neat - Deal with spills immediately - Avoid back injury, lift correctly - Get proper ventilation and be aware of air-borne hazards - Limit your exposure to danger - Keep learning about safety - Practice what you know - Whenever working in a shop or with tools *always* remember safety factors.

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TEACHER'S GUIDE

Plan the presentation	Read the summary, objectives and teacher's guide and preview the movie.
Prepare equipment	Reserve the necessary projector, screen/VCR, TV and location.
Prepare the materials	Feel free to reproduce copies of the match quiz and student safety fact sheet to have ready to hand out to your students.*
Orient the class	From the film summary give students some background information about the film. Consider reading the objectives, summary and list of safety concerns to the class.
Present the lesson	Set up the projector, screen/VCR, TV. Thread the film, insert the video cassette, turn on the sound, sit back and let the movie play. It runs thirty-two minutes.
Use student materials	Distribute the match quiz and student safety fact sheet. This can be done separately or together. The information on the student safety fact sheet will help the students answer some of the questions on the match quiz.
Evaluate knowledge	Have the students take the match quiz and collect the test for grading. Some teacher's like to give the quiz before and after the movie to compare results. An answer key is provided below. File a completed quiz for each student. Arrange individual viewings for students who do not pass the quiz, for those absent from the class showing and for new students who join the class. Review the student safety fact sheet with the class in order to stimulate class discussion.
Re-show the movie	Wait at least a few days to allow students to experience some of the situations brought out in the movie. Then re-show the film to spark more class discussion on safety. On this, or on subsequent showings you may want to ask the students to raise their hands if they would like to stop the movie and talk about specific sections in detail. This type of use will enable you to get much more benefit out of the film than from just one showing.
Contact other sources	Contact safety organizations and other companies for information, publications, posters and safety signs. Distribute and post these in your class.

Answer Key to MATCH QUIZ: To get the Answer Key please e-mail Melvin Robinson at mrobinso@uoselk12.ut.us

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STUDENT SAFETY FACT SHEET

Approach work not just with the idea of getting it done but of getting it done safely.

After getting instruction and permission to use a tool, inspect it each time before use.

Each machine has specific procedures for start up, operation and shut down, learn and follow them.

Don't crowd or interrupt someone who is using a power tool, stay clear.

Bystander injuries are common. Wear eye protection whenever you are around potentially dangerous activities.

Each type of torch operation such as welding, cutting, brazing, and soldering requires different protection.

Any electric source welding or cutting operation gives off harmful ultraviolet radiation that can cause painful and permanent eye damage and can burn unprotected skin.

To be effective safety equipment must fit correctly.

Never hit two hammers (or other hardened steel objects) together, they can easily chip.

The folded over edge of a "mushroomed" tool can easily chip when hit even though the tool is made of softer steel.

Car batteries give off hydrogen gas that can explode when ignited by a spark, such as from a cigarette or from jumper cables being attached to a battery. The batteries contain acid that can easily blind a person.

Safety glasses under a face shield protect the eyes from particles that a can fly up under the shield. A face shield alone does not assure you of eye protection.

Rings, watches, jewelry, loose clothing, long hair all can get snagged in machinery and cause you to be dragged into the running parts of a machine.

Accidents can happen to anyone. Knowing safety is not enough. You must practice what you know and always be open to learning more about safety.

Work tools away from your body, not toward it. Stay out of the line of fire.

Be aware of how your actions might affect others. Safety is a team effort.

Memorize the location of exits and emergency equipment.

"Innocent" fooling around, running, fighting or throwing things can have disasterous results in a shop or anywhere around tools.

Use the safety equipment available. Don't ignore or disconnect a guard, kick-back device or other safety feature.

Doors and ladders can cause injury.

Drugs, alcohol, medicine, fatigue, emotional upset, paints, markers, thinners, cleaners, glues, resins, epoxies, preservatives, paint strippers, illness, even a cold can affect your reaction time, balance and judgement and make working with tools very dangerous.

Keep tools sharp and in good working order and carry them by the handle, sharp end down.

A major cause of accidents is a disorderly or messy work place.

Moisture around electricity increases the danger of electrocution.

Often safety can be increased by changing the way you do a job, or where you do it.

Always limit your exposure to danger as much as possible.

Personal protective equipment can't always keep you from harm. Following safe operating procedures and knowing safety principles are also essential.

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MATCH QUIZ

Directions: Put each number from the left column beside the best response on the right.

1. Over confidence
2. When carrying something long through a shop
3. Electric cord inspection
4. A "mushroomed" tool
5. Car batteries
6. ARC, MIG, TIG welding
7. Jewelry, loose clothing, long hair
8. Pinch points
9. Alcohol and other drugs, fumes, emotional upset, illness
10. Spills
11. When working with electricity
12. To avoid back injury
13. Every time you use a tool
14. First time you use a tool
15. Regular glasses, sun glasses or contact lenses
16. Before using a chemical
17. When an unprotected bystander is present
18. Goggles with splash proof vents
19. Metal being cut, drilled or shaped in any way
20. Machine guards, guides and other safety devices
21. A tool that has had the ground plug cut off
22. Carry tools
23. A face shield alone
24. Dull tools
25. Flammable materials

___ Beware of and avoid moisture

___ Can explode and easily blind you

___ Can crush fingers and toes

___ Bend knees, flex stomach and lift with leg muscles

___ Could give you an electric shock and should not be used

___ Will keep splashing chemicals out of eyes

___ Does not assure you of eye protection when worn without safety glasses underneath

___ Inspect it

___ Read the label, know what it is & what to do in case of an accident

___ Get help and plan your route

___ Are not good eye protection

___ Should be cleaned up or dealt with immediately

___ Can get caught and pull you into a running machine

___ Can be more dangerous than sharp ones

___ Should be stored separately, away from heat, sparks & flames

___ Should not be ignored or disconnected

___ Can cause a person to lose respect for a tool and what it can do to you

___ Check for nicks, cuts, cracks or burn marks

___ Give off dangerous ultraviolet radiation

___ Will chip more easily when struck

___ Can affect your reaction time, balance and judgment

___ Get instruction

___ Can become hot enough to burn you

___ By the handle, sharp end down

___ Don't start work

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