TECHNOLOGY / HEALTH SCIENCE

Personal Safety

Standards: 8001-0203 Examine health care careers in diagnostic, therapeutic, information services and environmental service clusters.

Time: Two- 45-50 minute class periods

Objectives: Identify potential hazards that exist in health care and demonstrate the prevention of injury or illness through safe work practices.

Materials:

- Video: *"The Safety Factor"* and Learning Packet (Order from Circle Oak Production (845-878-9017), 622 N. Birch Hill Road, Patterson, NY 12563).
- Student Safety Fact Sheet. Attached.
- "Safety Factor Match Quiz" (from *Safety Factor* video resource guide). Attached. Can only be used if "The Safety Factor" video is purchased.
- Examples of protective work gear such as safety goggles, face shield, ear plugs, helmets, gloves, etc.
- Video: *"Don't Push Your Luck & Eye Safety"* (From the National Society to Prevent Blindness). One copy per school provided by the State Office of Education.
- Video worksheet, "Don't Push Your Luck & Eye Safety". Attached.
- Several different types of glasses: safety glasses, sunglasses, prescription glasses, etc.
- Student Record Books

Rationale:

Students will gain an awareness of factors that affect their personal safety. Day One will focus on the general work environment, and Day Two will specifically highlight eye safety.

What?

DAY ONE:
Students will view *The Safety Factor* video.
Students will complete the "Safety Factor Match Quiz" worksheet. (The Match Quiz can be coped and handed out to students provided the school has the Safety Factor video. This will not violate the copyright laws).

Students will participate in class discussion to include the following points:

a. List 30 factors that affect your safety.
b. List safety attitudes needed in the work place.
c. List various forms and types of safety devices.
d. List and discuss various health care careers.

Students will tour a laboratory and observe demonstrations of safety equipment use.

DAY TWO

Students will view the eye safety video and discuss the following:

a. In what ways can eye injuries be prevented?
b. What is considered proper or adequate eye protection?
c. What are the possible life long consequences of an eye injury?

Students will learn steps of ANSI standards test and conduct tests on various types of glasses.

Students will complete the "Don't Push Your Luck & Eye Safety" worksheet. Teacher should expand the worksheet and discussion to include information on various health care careers related to eye safety.

POSSIBLE EXTENSION ACTIVITY –
"Optician" TLC Health Careers Teachers Guide. Contact Kristen Wood at (801) 538-6854 to obtain the guide.

So What?

As a result of participating in these activities, students will gain an awareness of accident prevention and safe work practices, especially those in place to protect their eyesight. Students will have the opportunity to learn about therapeutic and diagnostic health care careers – related to worker safety.

Now What?

Have students write a brief paragraph in their "Star Data Log" (*Scientific* career field - Student Record Book) to reflect on the past two days' activities. Instruct students to:

Describe the specific activity of their choice.

Tell what they liked most about the activity.
Tell about the tools, equipment or materials needed to complete the activity.
Identify careers in which one might use these same types of tools, equipment or materials.
Describe their personal level of interest in such careers (i.e., did they discover a career that they would like to explore in greater detail?).

THE SAFETY FACTOR

Summary:

The Safety Factor, produced and distributed by Circle Oak Productions, Inc. is a half-hour video that offers and overview of safety facts, principles and procedures. It illustrates that there is a lot to learn about safety that must be taken into account before working with any tool. The video 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.

The Safety Factor, shot in documentary style, uses real students in actual school shop settings. There are scenes in the film where safety could definitely be improved. Some of these are pointed out in the narration, but there are more. These instances can be used to spark class discussions about safety. Many safety experts agree that it is next to impossible to know and anticipate every potential hazard. But it is possible to make safety always a consideration no matter what the task. 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 tools for the job - Extra protection is always possible - Chemical, burn, electrical welding, compressed air and machine hazards - 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 disastrous 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 judgement - Working with flammable materials - Keep tools sharp and in good working order - Keep the work place neat - Deal with spills immediately - Avoid back injury, lift properly - Ventilation and air-borne hazards - Limit your exposure to danger - Keep learning about safety - Act on what you know - Always remember the safety factor.

Answer Key to Safety Factor Match Quiz
11, 5, 8, 12, 21, 18, 23, 13, 16, 2, 15, 10, 7, 24, 25, 20, 1, 3, 6, 4, 9, 14, 19, 22, 17

STUDENT SAFETY FACT SHEET

From *The Safety Factor* Video*

- 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.
- 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 various degrees of protection.
- Any electric source welding or cutting operation gives off harmful ultraviolet radiation that can cause painful and permanent eye damage or burn unprotected skin.
- To be effective, safety equipment must fit.
- 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 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 disastrous 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 stripers, illness, even a cold can affect your reaction time, balance and judgement and make working with tools very dangerous.
- Keep tools in good working order and carry them by the handle, sharp end down.
- A major cause of accidents is a disorderly workplace.
- 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 essential.

* Fact Sheet can be copied to be handed out to students, provided that the school has purchased "The Safety Factor" Video.

Name:_____ **Class Period:** _____

THE SAFETY FACTOR VIDEO* — MATCH QUIZ

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

1.	Over confidence	_____	Avoid moisture
2.	Carrying something long through a shop	_____	Can explode and easily blind you
3.	Electric cord inspection	_____	Crush fingers and toes
4.	“Mushroomed” tools	_____	Bend knees, flex stomach and lift with leg muscles
5.	Car batteries	_____	Should not be used
6.	ARC, MIG, TIG welding	_____	Will keep splashing chemicals out of eyes
7.	Jewelry, loose clothing, long hair	_____	Does not assure you of eye protection
8.	Pinch points	_____	Inspect it
9.	Illness, emotionally upset, fumes, alcohol, drugs	_____	Know what it is and what to do in case of an accident
10.	Spills	_____	Get help and plan your route
11.	Working with electricity	_____	Are not good eye protection
12.	To avoid back injury	_____	Require immediate action
13.	Every time you use a tool	_____	Can pull you into a running machine
14.	First time you use a tool	_____	Can be more dangerous than sharp ones
15.	Regular glasses or contact lenses	_____	Should be stored separately, away from heat, sparks, and flames
16.	Before using a chemical	_____	Should not be disconnected
17.	An unprotected bystander	_____	Lost respect for what a tool can do to you
18.	Goggles with splash proof vents	_____	Check for nicks, cuts, cracks, or burn marks
19.	Metal being cut, drilled or shaped in any way	_____	Give off dangerous ultraviolet radiation
20.	Machine guards, guides and other safety devices	_____	Will chip more easily when struck
21.	Tool that has had the ground plug cut off	_____	Can affect your reaction time, balance and judgement
22.	Carry tools	_____	Get instruction
23.	A face shield alone	_____	Can become hot enough to burn you
24.	Dull tools	_____	By the handle, sharp end down
25.	Flammable materials	_____	Don’t start work

* Match Quiz can be copied to be handed out to students provided the school has purchased “The Safety Factor” video.

Name:_____**Class Period:**_____

"Don't Push Your Luck" and "Eye Safety" Video Worksheet

Do not write on this worksheet. Use your own paper.

1. What percent of all eye injuries could be eliminated with sensible eye protection? _____
2. What percent of eye injuries are caused by co-workers? _____
3. What percent of eye injuries are caused from unsafe acts? _____
4. List five activities of every day life where you should use eye safety protection:

   _____
   _____
   _____
   _____
   _____

5. When do you need to wear more than just safety glasses?_____
_____
_____

6. In question number 5 you listed when you need to wear more than safety glasses. What more can you do to increase your eye safety?_____
_____
_____

7. When would safety goggles be required?_____
_____
_____

8. If you wear regular street glasses what must you do when working in the technology lab to meet the minimum eye safety requirements?_____
_____
_____

9. What is the minimum eye safety requirement for everyone in the technology lab?_____
_____
_____
_____

BONUS QUESTION - List three careers/occupations in health care related to the eye.

1._____
2._____
3._____