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Warm-Up | Safety in Science

Everyday Safety

Safe behaviors:

- Safety _____ in sports
- Safe behaviors around motor _____
- Online safety
- _____ and health care
- 911 and first aid

Safe laboratory behaviors can protect you in the lab in the same way that safe behavior protects you outside the lab.

Lesson Objectives

By the end of this lesson, you should be able to:

- Demonstrate safe practices while conducting _____.
- Outline the correct protocol for reporting safety violations and _____ in the lab.
- Use a safety data sheet (SDS) to learn about specific chemical hazards and proper _____ disposal.

Science Practice: Write a safety contract, revising as necessary.

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Words to Know

Fill in this table as you work through the lesson. You may also use the glossary to help you.

	a form that describes the properties of, safe handling of, and emergency procedures for a substance

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Slide 1

Lesson Question

Slide 2

The Importance of Preparation

Prepare for the lab:

- Read _____ completely.
- Clarify anything confusing.
- _____ all safety equipment.
- _____ equipment used.

Safe Practices

To promote general safety:

- Avoid _____ clothes/hair
- Wear long sleeves and close-toed _____
- Do not eat, drink, or chew gum
- Remove jewelry
- Avoid _____ lenses if possible
- Avoid clutter on the lab bench/table

To handle chemicals and lab equipment safely:

- Use tongs or mitts to hold or handle _____ objects
- Label all containers clearly
- Inspect all equipment before and after use
- _____ of all substances appropriately

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Slide 2

Safety Equipment

_____ equipment:

- Eyes/face: safety goggles or face shield
- Skin/clothing: lab _____ or lab apron
- Hands: _____

Wear goggles, an apron or lab coat, and gloves any time you perform a laboratory investigation.

Safety Equipment

_____ equipment:

- _____ extinguisher
- Eye wash
- Safety shower
- First-aid kit

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Slide 2

Safe Use of Glassware

Chemistry glassware:

- Beaker
- Flask
- Test tube
- Graduated [ ]

Hot glass looks like cold glass!

When handling glassware:

- Check for [ ] /chips
- Use tongs/ [ ]

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Safe Use of Heating Devices

Heat sources:

- Bunsen [ ] or alcohol burner
- Hot [ ]

When using heat sources:

- Check for damage.
- Do not [ ] heating surfaces.
- Keep [ ] substances away from the heat source.

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Slide 6

Safe Use of Chemicals

- Use clear, accurate _____.
- Do not taste, smell, or touch chemicals.
- Carry containers carefully.
- Use pipettes or droppers to transfer _____.
- Do not pour chemicals back into a storage _____.
- Refer to SDS for storage, disposal, and handling _____.

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Safety Contracts

Read the safety contract carefully before signing it.

- Explain safety _____ and procedures for the class.
- Include _____ for clothing, behavior, and preparation.

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Responding to Laboratory Accidents

In case of an accident:

- Stay [ ] and tell your teacher.
- Follow your teacher's instructions.
- Avoid danger; leave if necessary.
- Do not try to clean up a [ ].
- Help anyone who is [ ].
- Use emergency equipment if necessary.

Responding to Laboratory Injuries

Likely laboratory injuries:

- Cuts from broken [ ]
- Chemical burns or irritation
- Heat [ ]
- Inhalation of toxic chemicals
- Chemicals in the eyes

What to do:

- Apply [ ]
- Flush area
- Remove heat source and put out fire
- Get some fresh air
- Use eye [ ]

The first step in responding to *any* laboratory emergency should always be to tell your teacher.

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Safety Violations

If you see a safety violation, inform your teacher.

Your priority in the lab is to stay _____ and avoid endangering others.

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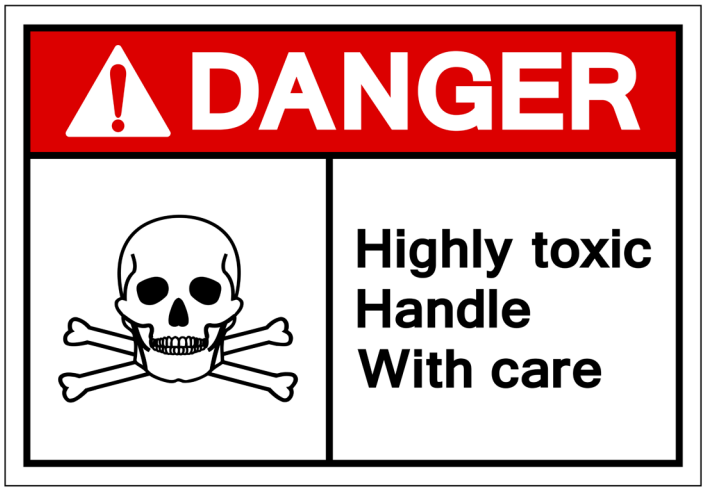
Safety Data Sheet (SDS)

A **Safety Data Sheet** is a form that describes the properties of, safe handling of, and emergency procedures for a substance.

- Section 1: _____ Identification
- Section 2: Hazard Identification



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Slide 16

Safety Data Sheet (SDS)

A **Safety Data Sheet** is a form that describes the properties of, safe handling of, and emergency procedures for a substance.

- Section 3: Composition/Information on _____
- Section 4: First-Aid Measures
- Section 5: _____ Measures
- Section 6: Accidental Release Measures
- Section 7: Handling and _____
- Section 8: Exposure Controls/Personal _____



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Slide 16

Safety Data Sheet (SDS)

A **Safety Data Sheet** is a form that describes the properties of, safe handling of, and emergency procedures for a substance.

- Section 9: Physical and Chemical Properties
- Section 10: _____ and Reactivity
- Section 11: Toxicological Information
- Section 12: _____ Information



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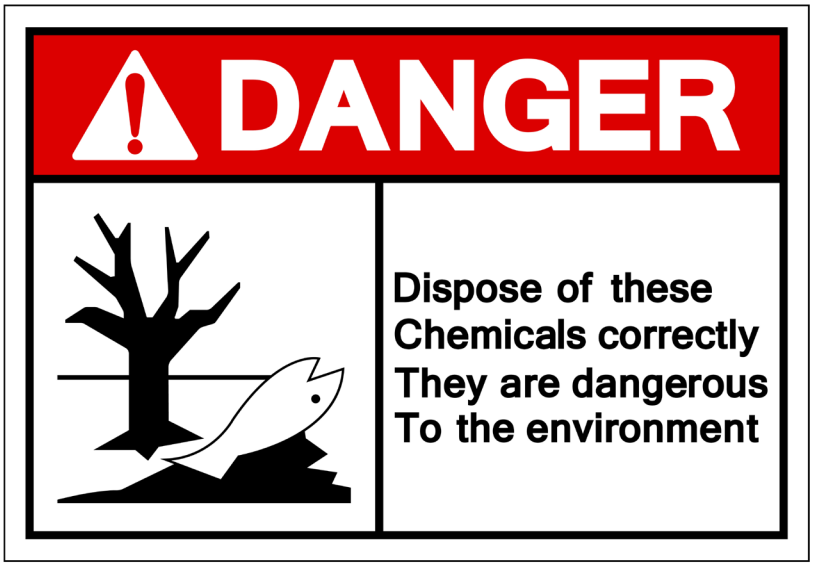
Slide 16

Safety Data Sheet (SDS)

A **Safety Data Sheet** is a form that describes the properties of, safe handling of, and emergency procedures for a substance.

- Section 13: _____ Considerations
- Section 14: _____ Information
- Section 15: Regulatory Information
- Section 16: Other Information (Such as Date of Preparation)



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Summary | Safety in Science

Lesson Question

How can you stay safe in the chemistry lab?

Answer

Slide 2

Preventing Accidents and Injury

Prepare for the lab.

- Read _____ before beginning.
- Clarify anything that is unclear.
- Locate safety equipment.

Make a choice to behave safely.

- _____ protective gear.
- Follow the safety _____.
- Know how to handle all lab equipment safely.

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Summary | Safety in Science

Slide 2

Responding to Accidents and Injuries

Sometimes accidents happen.

- Tell your teacher.
- Stay calm.
- _____ yourself.
- Help others if you can do so safely.
- Seek _____ attention if necessary.
- Call _____ if necessary.

Safety Data Sheet (SDS)

An SDS gives _____ information that will help keep you safe in the lab.

- Properties
- _____
- Handling
- Hazards
- _____ response

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Slide 2

Safety Data Sheet (SDS)



Use this space to write any questions or thoughts about this lesson.

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