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Warm-Up | Laboratory Safety

Safety in the Biology Lab

Here are some things you will do in a biology lab:

- Use a _____
- Use _____
- Use _____, heat, and fire
- Work with _____ and animals

What kinds of _____ hazards might these activities cause?

What are ways you might avoid these _____ ?

Lesson Objectives

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

- Demonstrate _____ practices during a scientific investigation.
- Develop a _____ to address specific safety concerns in the lab.

Science Practice: Give examples of _____ problems in the lab and describe how to _____ those problems.

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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.

	to clean with a substance that will kill most, but not all, bacteria on a surface
	a pipette with a squeeze bulb on one end by which liquid can be drawn up
	a set of specific procedures performed with the goal of minimizing bacterial contamination
	a measurement device used to transfer liquids
	an unwanted product, such as medical, bacterial, or radioactive material, that may pose threats to health and to the environment
	a lab area containing two sprays that can be used for rinsing eyes after chemical splashes
	impact-resistant eyewear that protects eyes from dangers such as chemical splashes, blows, and flying objects

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Lesson Question

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Acting Professionally in the Lab

- Be _____ for the activity.
- Always follow _____.
- Show _____ for each other.
- Handle _____ with care.
- _____ before you act.
- Be _____ – never horse around!

Using Common-Sense Precautions

Keep the work area _____ and neat; keep items away from the _____ of the lab table.

- Don't bring _____ or _____ into the lab!
- Wash your _____ before and after lab activities.
- Keep your hands away from your _____ and _____.
- Immediately report _____ to the _____!

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Wearing Proper Attire

DO WEAR:

- A lab [ ] or lab [ ]
- [ ]
- Protective [ ], when appropriate

DON'T WEAR:

- Open-toed [ ]
- Contact [ ]
- Loose hair or [ ]
- Dangling [ ]

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Respecting Live Animals

- Treat **all** animals with [ ], whether they're earthworms, insects, fish, or rats.
- Always handle animals [ ] and with [ ].
- Make sure all animals in the lab have proper [ ], [ ], and [ ] and have all of their other [ ] met.

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Outdoor Lab (Field) Activities

- Wear outdoor _____ and _____.
- Follow all _____.
- Handle _____ with care and only when instructed to.
- Respect _____.
- Don't _____ anything unless instructed to by your instructor.

Lab Safety Equipment

- Fire _____: To use a fire extinguisher correctly, remember the acronym PASS – Pull, Aim, Squeeze, and Sweep
- _____ blanket
- _____: lab area containing two sprays that can be used for rinsing eyes after chemical splashes
- _____
- _____ kit

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Practicing Chemical Safety

When handling chemicals:

- always wear _____.
- never _____ chemicals unless instructed to do so.
- always know what _____ you are using, and always read safety _____.
- never _____ chemicals or _____ in fumes.

Handling Sharp Objects Safely

You may occasionally use sharp objects, including knives, probes, scissors, or scalpels.

- Always cut _____ and _____.
- Always cut _____ from your body.
- Do not point _____ tools at other _____ or get too close to them.

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Glassware Safety

- Handle _____ carefully.
- Never leave glassware near the _____ of a table or counter.
- Never expose _____ containers to excess heat or harsh chemicals.
- Always use a _____ or a pipette pump – never your mouth – to draw liquids into a _____.

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Microscope

PROFILE

A microscope is a delicate piece of equipment with _____ to magnify tiny objects.

- Always carry it with _____!
- Use proper _____ care.
- Keep it _____ when it's not in use.
- Start and end on _____ power. Change powers in order – from low to high.
- Get _____ first!

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Chemical Spills

If there is a chemical spill in the lab:

- notify the [ ] immediately.
- use the [ ] station or [ ] for splashes in eyes or on clothes. Rinse your eyes continually for at least 15 minutes to dilute and remove the chemical.
- wash [ ] with soap and water.
- clean up small spills with paper towels or a sponge, large ones with a [ ] (with instructor's help); wear gloves.
- place spilled chemicals in a [ ] disposal container.

Cleanup and Disposal

Use separate [ ] containers for disposal of different wastes, including:

- spilled [ ].
- broken [ ].
- [ ]: an unwanted product, such as medical, bacterial, or radioactive material that may pose [ ] to [ ] and to the [ ].

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Dealing with Breakage

- Notify _____ and _____ when glassware breaks.
- Wear _____ to handle broken glassware.
- _____ up broken glass as quickly as possible after notifying the instructor.
- Place broken glass in a _____ labeled “Broken Glass.”

Handling Microorganisms

- Use the _____, a set of specific procedures performed with the goal of minimizing contamination by bacteria, when growing or using bacteria in the lab.
- _____ lab surfaces with a substance that will kill most, but not all, bacteria on a surface. This will decrease the likelihood of contamination.
- Wash hands _____ and _____ an activity, and always wear protective _____ and _____.

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Heat and Fire

- Some potential _____ or _____ sources are water baths, hot plates, hot pots, and Bunsen burners.
- When heating chemicals in a test tube, _____ the tube _____ from you.
- Keep _____ and _____ away from flames, and don't touch heat sources.
- Keep _____ out of the way to avoid _____ on them.

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Summary | Laboratory Safety

Lesson Question

How is lab safety achieved during scientific investigations?

Answer

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Review: General Safety Rules

- Be _____.
- Use common _____.
- Wear _____ attire.
- Respect lab _____.
- Locate _____ equipment.

Plans for Lab Safety

- Use _____ safely.
- Use _____ safely.
- Use _____ and _____ safely.
- Use _____ objects safely.
- Handle _____ with care.

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Summary | Laboratory Safety

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Being Prepared for Emergencies

- Inform your _____ immediately if an accident occurs!
- Clean up _____ and broken _____ carefully.
- Place _____ in proper, labeled containers.
- Know how to put out a _____.
- Know how to treat _____.
- Follow instructions when handling _____.

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

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