

Chapter 2, lesson 5

Safety in the Science lab

DO NOW: Answer the following question in your notebook. Use examples and write at least 2 sentences.

Why prepare for a scientific investigation?

--Good preparation helps to keep you and your classmates safe when you perform a scientific investigation

How do you prepare for a scientific investigation?

--To prepare for the investigation, you should read all procedures carefully before starting and ask your teacher questions before you start. You should also make sure you know where all safety equipment is located

What should you do if an accident occurs?

-- ALWAYS alert your teacher first. Then quickly follow your teacher's directions and carry them out quickly

Academic Language:

Field- any area outside the laboratory where investigation takes place:
example: forest, park, beach

Safety in the Science lab

General Rules

- ✓ Be Responsible at ALL times. No horseplay, practical jokes, pranks, etc.
- ✓ Follow ALL instructions carefully.
- ✓ Do not touch or play with lab equipment until instructed to do so.
- ✓ Food, drink, and gum are not allowed while working on lab work.
- ✓ Keep the science room clean and organized.
- ✓ Notify the teacher immediately of any accidents or unsafe conditions in the science classroom!
- ✓ Wash your hands with soap and water after experiments.
- ✓ Failure to follow rules will lead to your loss of lab privileges
 - ✓ What this means...you will not be allowed to do labs

Safety Symbols

- 1.) Draw the safety symbol
- 2.) Write the rule(s) for the safety symbols
- 3.) Draw a picture illustrating some one following or not following the rule

Use page 89 and 690 as a reference

Safety in the Science lab

Safety Symbols



Eye safety- Wear safety goggles to protect your eyes in any activity involving chemicals, flames or heating, or glassware.



Clothing Protection- Wear a laboratory apron to protect your skin and clothing.



Broken Glass - Handle breakable materials such as glassware with care. Do not touch broken glassware.



Thermal burn- Use an oven mitt or other hand protection when handling hot materials such as hot plates or glassware.

Safety in the Science lab

Safety Symbols



Skin Protection- Wear disposable plastic gloves to protect yourself from chemicals or organisms that could be harmful. Keep your hands away from your face. Dispose of the gloves according to your teacher's instructions at the end of the activity.



Open Flame- You may be working with flames a Bunsen burner, candle, or matches. Tie back hair and clothing. Follow instructions from your teacher about lighting and extinguishing flames.



Flammable Substance- Flammable materials may be present. Make sure no flames, sparks, or exposed heat sources are present.

Safety in the Science lab

Safety Symbols



Corrosive Chemical- Avoid getting acids or other corrosive chemicals on your skin or clothing, or in your eyes. Do not inhale the vapors.



Poison- Don't chew gum, eat or drink in the laboratory. Do not ever taste a chemical



Fumes- Avoid inhaling substances that can irritate your respiratory system. Only test an odor when directed to do so by your teacher, and use a wafting motion.



Sharp Object- Always direct a sharp edge or point away from you

Safety in the Science lab

Safety Symbols



Animal Safety- Treat live or preserved animals or animal parts with care to avoid harming the animals or yourself.



Plant Safety- If you are allergic to certain plants, do not do an activity that involves them. Avoid touching harmful plants like poison ivy.



Electric Equipment- Never use electrical equipment around water or when your hands or equipment are wet. Make sure cords are not tangled. Unplug equipment when not in use.



Physical Safety- When an experiment involves physical activity, avoid injuring yourself or others. Alert your teacher if there is a reason that you should not participate.

Safety in the Science lab

Safety Symbols



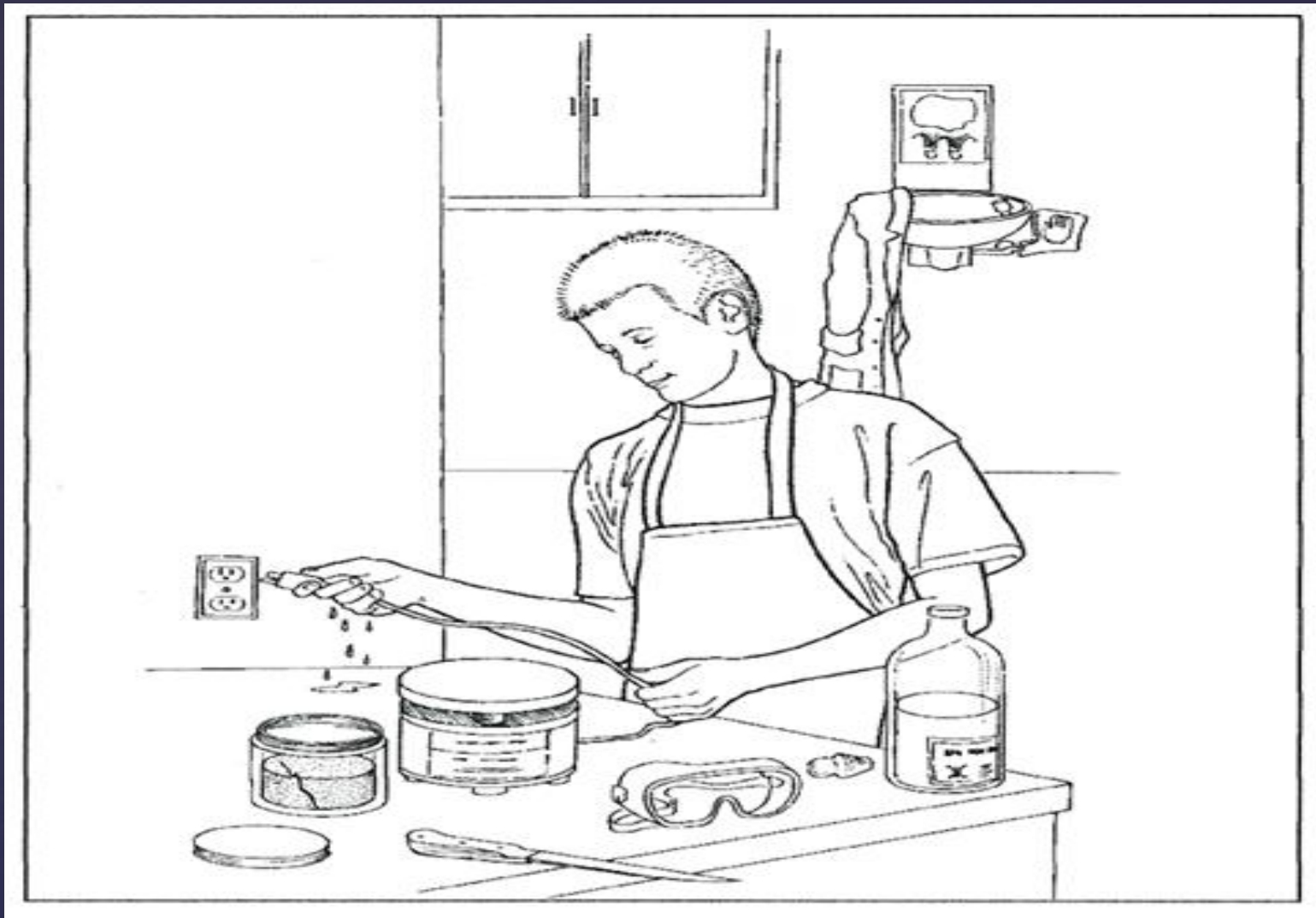
Disposal- Dispose of chemicals and other laboratory materials safely. Follow instructions from your teacher.



Hand Washing- Wash your hands thoroughly when finished with an activity. Use soap and warm water. Rinse well.

EVERYONE is responsible for lab safety!!

Lets look at some examples...



What is wrong with this picture?



What's wrong with this picture?

Answers to Group Activity:

1.) Since the teacher did not tell them to wear the safety goggles, they left them on the table

Rule: Always wear safety goggles whenever you are working with chemicals or other substances that might get into your eyes.

2.) SpongeBob lit the Bunsen burner and then reached across the flame to get a test tube from Gary.

Rule: Never reach across a flame.

3.) In the process, he knocked over a bottle of the mystery substance and a little bit splashed on Gary.

Rule: Immediately notify your teacher if any chemical gets on your skin or clothing to find out what to do to clean it off.

4 and 5.) When it started to bubble he looked into the test tube to see what was happening and pointed it towards Gary so he could see.

Rules: Never look directly into a test tube when mixing or heating chemicals.

Always point a test tube away from you and others when heating it over a flame or other heat source.

6.) Gary thought it smelled weird so he took a deep whiff of it.

Rule: Never smell a chemical directly from the container. Wave your hand over the opening of the container and "waft" the fumes towards your nose.

7.) He didn't think it smelled poisonous and tasted a little bit of the substance.

Rule: Never taste a chemical unless you are instructed by your teacher to do so.

8.) They were worried about running out of time, so they left the test tube and materials on the table and moved to a different station to try another experiment.

Rule: Always clean up your work area and equipment after an experiment is completed. Equipment must be returned to its proper place.

9.) Patrick didn't want to waste any time reading the directions so he put on some safety goggles and picked a couple different substances.

Rule: Read and follow all directions exactly as they are written. If in doubt, ask your teacher for help!

Answers to Group Activity:

10.) He tested them with vinegar (a weak acid) to see what would happen even though he didn't have permission to experiment on his own

Rule: Never mix chemicals (or perform tests) without your teacher's permission.

11.) He also mixed two substances together to see what would happen, but didn't notice anything.

Rule: Never mix chemicals without your teacher's permission.

12 and 13.) He ran over to that station and knocked over a couple bottles that SpongeBob had left open.

Rule: Never run (or push someone else) in the lab.

Keep lids on bottles and containers when not in use.

14.) The only test tube he could find had a small crack in it, but he decided to use it anyway.

Rule: Never use broken or chipped glassware.

15.) He forgot to move his notebook away from the flame and almost caught it on fire.

Rule: Keep your work area clean and keep all materials (clothing, hair, papers, etc.) away from a flame or heat source.

16.) Since they didn't have much time, Patrick didn't clean out his test tube before putting it in the cabinet.

Rule: Always clean up your work area and equipment after an experiment is completed Equipment must be returned to its proper place.

17.) SpongeBob noticed that he had a small cut on his finger, but decided he didn't have time to tell the teacher about it.

Rule: Immediately notify your teacher if you get cut or have another injury when performing an experiment.

18.) Since they were late, they skipped washing their hands and hurried to the next class.

Rule: Wash your hands before and after each experiment.