Learning Lab: Lab Equipment and Lab Safety
Student Data Pages

Objective: Students will use stations to enhance their understanding about safety in the lab and common scientific tools in the classroom setting.

Science skill: Criterion A – Knowing and Understanding - i. recall scientific knowledge – Know the lab safety procedures and expectations and tools in the lab.

TEKS: 1.A: demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards. 4A use appropriate tools to collect, record, and analyze information. 4B use preventative safety equipment.

Directions: Rotate to each station as instructed. Your goal is to complete each station by completing the action required and responding on this page.

Lab Equipment and Tools
Part I: The Thermometer

1. What are the temperatures shown by these thermometers (include units)?

   _________1   _________2   _________3
   _________4   _________5   _________6

2. Temperature of beaker A? ______________

3. Temperature of beaker B? ______________

4. Why must you read the temperature without removing the thermometer from the solution?

5. Why should the thermometer never be used to stir a liquid?

Part II: The Graduated Cylinder

1. How much liquid is contained in each of the following graduated cylinders? (Write units!)

   a) ____________  b) ____________  c) ____________

2. What is the amount of water in beaker A? ______________

   What is the amount of water in beaker B? ______________

   What is the amount of water in beaker C? ______________
3. What is the largest volume of liquid your graduated cylinder can accurately measure?
__________________________

4. What is the smallest volume of liquid your graduated cylinder can accurately measure?
__________________________

**Part III: The Triple-Beam Balance**

1. What are the masses of the objects indicated by these balances? (add units)
   a) ____________  b) ____________

2. Use the balance on your table to determine the mass of these objects:
   Object 1 ____________  Object 2 ____________  Object 3 ____________

3. What place value is represented by each of the three beams?

**Part IV: The Meter Stick**

1. How long is the meter stick in inches? ____________

2. How long is one centimeter in inches? ____________

3. What is the length of the note card in:
   meters _________  centimeters _________  millimeters _________

4. What is the width of the computer paper in:
   meters _________  centimeters _________  millimeters _________

5. What is the width of the lab table in:
   meters _________  centimeters _________  millimeters _________

**Part V: The Digital Scale**

1. What is the mass (in grams) of Object 1? _________________

2. What is the mass (in grams) of Object 2? _________________
3. What is the mass (in grams) of Object 3? ____________________

4. Why do you “zero out” the scale before use? ____________________

**Lab Safety**

**Part I: Lab Safety Vocabulary Words**

1. If you were working with **combustible** materials, what safety equipment would you want to have nearby?

2. If you are working with strong smelling chemicals, why might you want to waft it and use a fume hood?

3. Material Safety Data Sheets come with chemicals when you order them for your lab. Take a look at the one at this station, Acetone. Write down the following:

   Acetone is rated “Health: 1” what color is health?

   Why do you think it is important to know fire risks of a chemical you are working with?

   Where is the best place to store Acetone when you are not using it?

**Part II: Safety Gear and Personal Safety (NSTA information)**

1. Where is the Goggles cabinet located in the science classroom –

2. Explain when it is appropriate to wear goggles in the science lab (hint: look under the subtitle, “Personal Safety”).

3. Read #11 under the “Personal Safety” section. Summarize it here:

4. What numbered sentence mentions that proper procedures need to be followed? ________

5. Where should backpacks be in a lab classroom?

**Part III: Safety Symbols**

1. What do the symbols for personal protection have on them? List them all here:
2. What are the last 3 bullets listed under “Dress Code”?

3. What is the last thing you should do when cleaning up any lab?

**Part IV: Safety Scenarios**

For the scenarios listed at this station, choose 3 to respond to and fill in on this chart.

- In the “Scenario Description” box - Summarize the scenario you have chosen
- In the “Precautions” box – Explain how each scenario could have been prevented
- In the “Response” box – explain how we should respond to minimize the harm

Fill in the chart below:

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<th>Scenario Description</th>
<th>Precautions</th>
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