Name: _____ Period: _____ Date: _____

Unit 1 – Lab Skills Review Guide – Teacher Edition

I. Vocabulary

Write the term which matches each definition in the space provided.

Definition	Term
1. The curved upper surface of a liquid in a tube or measuring cylinder.	
2. Observations which are measured, consisting of a number and a unit.	
3. Information about objects or events collected using one or more of the senses.	
4. The variable which is measured or observed in an investigation to collect some data.	
5. A general statement which predicts the outcome of an experiment.	
6. Descriptions which rely on using the five senses.	
7. The variable which has a testable range and is changed on purpose in an investigation.	
8. A scientific test which is designed to test a hypothesis or question.	
9. An explanation of an observation.	
10. The general statement which summarizes the findings of a scientific investigation.	

II. Multiple Choice Questions

Select the best answer for each of the following questions:

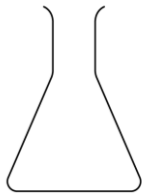
1. What is the purpose of the eye wash station?
   a) An additional water source
   b) Removes/washes chemicals from the eyes
   c) A drinking fountain
   d) A fire hose

2. Which of the following items can be used to extinguish a fire in the lab?
   a) Fire blanket
   b) Water from the tap
   c) Emergency shower
   d) Lab coat

Name: _____ Period: _____ Date: _____

Unit 1 – Lab Skills Review Guide – Teacher Edition

3. Name the piece of glassware shown to the right:



   a) Test tube
   b) Erlenmeyer flask
   c) Watch glass
   d) Measuring cylinder

4. What is the function of the collar on the Bunsen burner?

   a) To draw the air through the air hole
   b) Feeds the gas into the barrel
   c) Controls the temperature of the flame
   d) Ignites the gas.

5. Which of the following is an example of a quantitative observation?

   a) The soft drink contains 375ml.
   b) The ant has 6 legs.
   c) The magnet did not attract the nails.
   d) The water froze overnight.

6. What is the function of the Erlenmeyer flask?

   a) Measuring liquids
   b) Swirling liquids
   c) Heating small volumes of liquid.
   d) Storing small amounts of solids.

7. Where is the hottest part of the Bunsen flame?

   a) Near the top of the barrel.
   b) At the top of the flame.
   c) At the top of the blue cone
   d) Everywhere/there is no difference.

8. When lighting the Bunsen burner, you should…

   a) Light the match, then turn on the gas
   b) Light match, then connect the Bunsen
   c) Turn on the gas, then light the match
   d) Light the Bunsen then put on goggles.

9. How should a burn be treated in the lab?

   a) Run it under cold water for 15 minutes.
   b) Place it in a beaker of ice.
   c) Ignore it and carry-on working.
   d) Run it under the eye wash fountain.

10. Name this piece of equipment:
    a) Gauze mat
    b) Heat proof mat
    c) Evaporating basin
    d) Stirring rod

III. Safety in Science

Carefully read the lab scenarios below. Describe at least two lab rules that are being broken in each scenario and what the student should have done instead.

1. The teacher was not in the room yet. Jake began weighing chemicals and touching them with his hands. His nose itched so he rubbed it.

    a) _____
    _____
    _____

    b) _____
    _____
    _____

2. Heather and Jennifer were absent from class the day that the teacher discussed what they were doing in their investigation. They gathered the materials and watched their classmates to see what to do, not taking the time to read the directions so they wouldn't be behind everyone else.

    a) _____
    _____
    _____

    b) _____
    _____
    _____

3. Sam was heating a test tube. He decided not to put safety goggles on because he was wearing glasses. He slanted the tube away from his workstation like his teacher had instructed but toward students on the opposite side of his lab station.

   a) _____
   _____
   _____

   b) _____
   _____
   _____

IV. Converting measurements.

Convert the following measurements.

1. 82 cm = _____ mm	2. 14 cm = _____ m	3. 5.5 g = _____ mg
4. 5 L = _____ mL	5. 24 g = _____ mg	6. 0.7 km = _____ mm

V. Drawing Equipment

Draw a scientific diagram of the equipment you would need to boil water in a beaker.

Name: _____ Period: _____ Date: _____

Unit 1 – Lab Skills Review Guide – Teacher Edition

VI. Identifying Variables:

Five drops of water are added to two pieces of bread from the same loaf. They are then placed in separate Ziploc bags. One bag is placed in a dark cabinet and the other bag on the windowsill. The pieces of bread are examined each day at 3:30 and any changes are recorded. The bread will be left for 14 days in total.

1. Identify the scientific question that being investigated in this experiment

_____

2. What is the independent variable for this investigation?

_____

3. What is the dependent variable for this investigation?

_____

4. What other factors need to be considered in this investigation?

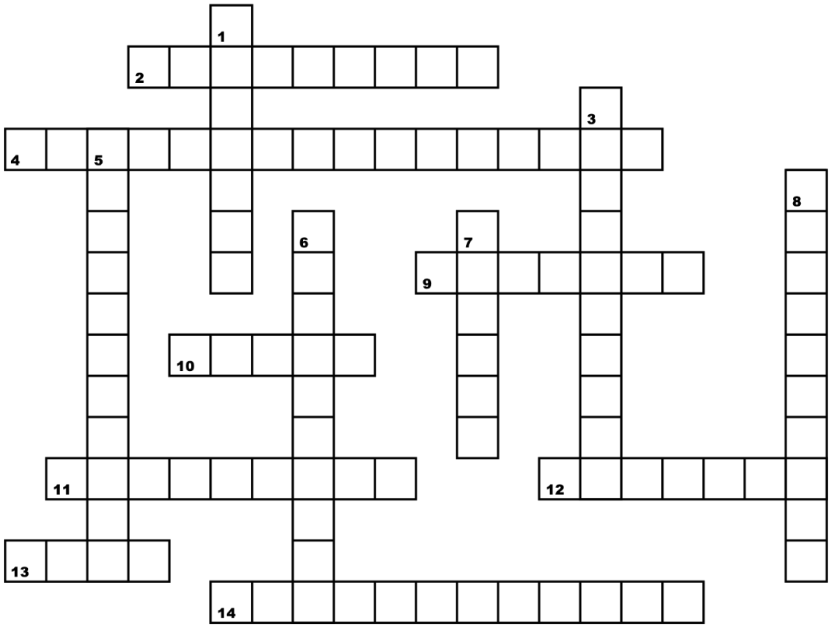
_____
_____
_____
_____
_____

Name: _____ Period: _____ Date: _____

Unit 1 – Lab Skills Review Guide – Teacher Edition

VII. Crossword

Examine the clues below and use them to complete the crossword.



Clues

1. The _?_ is the part of an experiment that is not being tested and is used for comparison.
2. The _?_ describe the steps you use during an experiment.
3. After an experiment, scientists write a _?_ which summarizes their experiment and results.
4. The _?_ _?_ is a process used by scientists to find answers to questions and solve a problem.
5. The _?_ variable is the part of the experiment that is being changed.
6. The _?_ is an educated guess.
7. Scientists use their data to make charts and _?_ to communicate the results of an experiment.
8. After the scientist makes a hypothesis, they perform an _?_ to collect data.
9. The first step of the scientific method is to define or identify the _?_.
10. Sometimes scientists make a mistake, or _?_, and need to do an experiment again.
11. The _?_ variable is the part of the experiment that is affected by the independent variable.
12. After the experiment, scientists organize and _?_ the data.
13. The information collected during an experiment is called _?_.
14. Scientists make _?_ to help them make a hypothesis or collect data during an experiment. It involves using your five senses.

Name: _____ Period: _____ Date: _____

Unit 1 – Lab Skills Review Guide – Teacher Edition

ANSWERS

I. Vocabulary

Write the term which matches each definition in the space provided.

Definition	Term
1. The curved upper surface of a liquid in a tube or measuring cylinder.	**Meniscus**
2. Observations which are measured, consisting of a number and a unit.	**Quantitative**
3. Information about objects or events collected using one or more of the senses.	**Observations**
4. The variable which is measured or observed in an investigation to collect some data.	**Dependent**
5. A general statement which predicts the outcome of an experiment.	**Hypothesis**
6. Descriptions which rely on using the five senses.	**Qualitative**
7. The variable which has a testable range and is changed on purpose in an investigation.	**Independent**
8. A scientific test which is designed to test a hypothesis or question.	**Investigation**
9. An explanation of an observation.	**Inference**
10. The general statement which summarizes the findings of a scientific investigation.	**Conclusion**

II. Multiple Choice Questions

Select the best answer for each of the following questions:

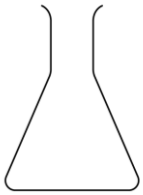
1. What is the purpose of the eye wash station?
   a) An additional water source
   b) Removes/washes chemicals from the eyes
   c) A drinking fountain
   d) A fire hose

2. Which of the following items can be used to extinguish a fire in the lab?
   a) Fire blanket
   b) Water from the tap
   c) Emergency shower
   d) Lab coat

Name: _____ Period: _____ Date: _____

Unit 1 – Lab Skills Review Guide – Teacher Edition

3. Name the piece of glassware shown to the right:



   a) Test tube
   b) Erlenmeyer flask
   c) Watch glass
   d) Measuring cylinder

4. What is the function of the collar on the Bunsen burner?

   a) To draw the air through the air hole
   b) Feeds the gas into the barrel
   c) Controls the temperature of the flame
   d) Ignites the gas.

5. Which of the following is an example of a quantitative observation?

   a) The soft drink contains 375ml.
   b) The ant has 6 legs.
   c) The magnet did not attract the nails.
   d) The water froze overnight.

6. What is the function of the Erlenmeyer flask?

   a) Measuring liquids
   b) Swirling liquids
   c) Heating small volumes of liquid.
   d) Storing small amounts of solids.

7. Where is the hottest part of the Bunsen flame?

   a) Near the top of the barrel.
   b) At the top of the flame.
   c) At the top of the blue cone
   d) Everywhere/there is no difference.

8. When lighting the Bunsen burner, you should…

   a) Light the match, then turn on the gas
   b) Light match, then connect the Bunsen
   c) Turn on the gas, then light the match
   d) Light the Bunsen then put on goggles.

9. How should a burn be treated in the lab?

   a) Run it under cold water for 15 minutes.
   b) Place it in a beaker of ice.
   c) Ignore it and carry-on working.
   d) Run it under the eye wash fountain.

10. Name this piece of equipment:
    a) Gauze mat
    b) Heat proof mat
    c) Evaporating basin
    d) Stirring rod

III. Safety in Science

Carefully read the lab scenarios below. Describe at least two lab rules that are being broken in each scenario and what the student should have done instead.

1. The teacher was not in the room yet. Jake began weighing chemicals and touching them with his hands. His nose itched so he rubbed it.

   a) Do not touch chemicals without the proper personal protective equipment!

   b) Avoid touching your face when handling chemicals. If you need to, wash your hands first.

   c) Do not begin your lab without instructions from your teacher!

2. Heather and Jennifer were absent from class the day that the teacher discussed what they were doing in their investigation. They gathered the materials and watched their classmates to see what to do, not taking the time to read the directions so they wouldn't be behind everyone else.

   a) Read all lab instructions before proceeding to the do the lab!

   b) Do not proceed in your experiment if you do not understand the lab instructions!

3. Sam was heating a test tube. He decided not to put safety goggles on because he was wearing glasses. He slanted the tube away from his workstation like his teacher had instructed but toward students on the opposite side of his lab station.

   a) Always wear safety goggles.

   b) Never point a heating test tube towards others.

Name: _____ Period: _____ Date: _____

Unit 1 – Lab Skills Review Guide – Teacher Edition

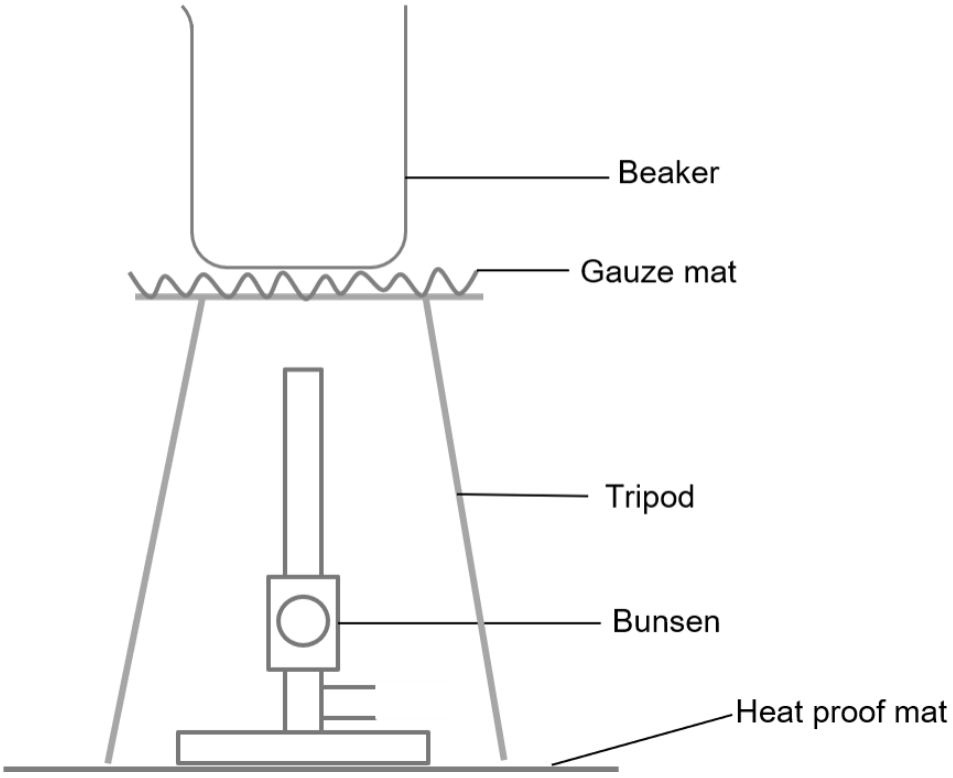
IV. Converting measurements.

Convert the following measurements.

1. 82 cm = **820** mm	2. 14 cm = **0.14** m	3. 5.5 g = **550** mg
4. 5 L = **5000** mL	5. 24 g = **2400** mg	6. 0.7 km = **700,000** mm

V. Drawing Equipment

Draw a scientific diagram of the equipment you would need to boil water in a beaker.



Name: _____ Period: _____ Date: _____

Unit 1 – Lab Skills Review Guide – Teacher Edition

VI. Identifying Variables:

Five drops of water are added to two pieces of bread from the same loaf. They are then placed in separate Ziploc bags. One bag is placed in a dark cabinet and the other bag on the windowsill. The pieces of bread are examined each day at 3:30 and any changes are recorded. The bread will be left for 14 days in total.

1. Identify the scientific question that being investigated in this experiment

What is the effect of sunlight on the growth rate of mold on bread?

2. What is the independent variable for this investigation?

The amount of sunlight the bread receives

3. What is the dependent variable for this investigation?

The dependent variable is the amount of mold that grows on the bread

4. What other factors need to be considered in this investigation?

Same size piece of bread

Same amount of water

Same time left to grow mold

Temperature of the environment

Surface that the bread was stored on.

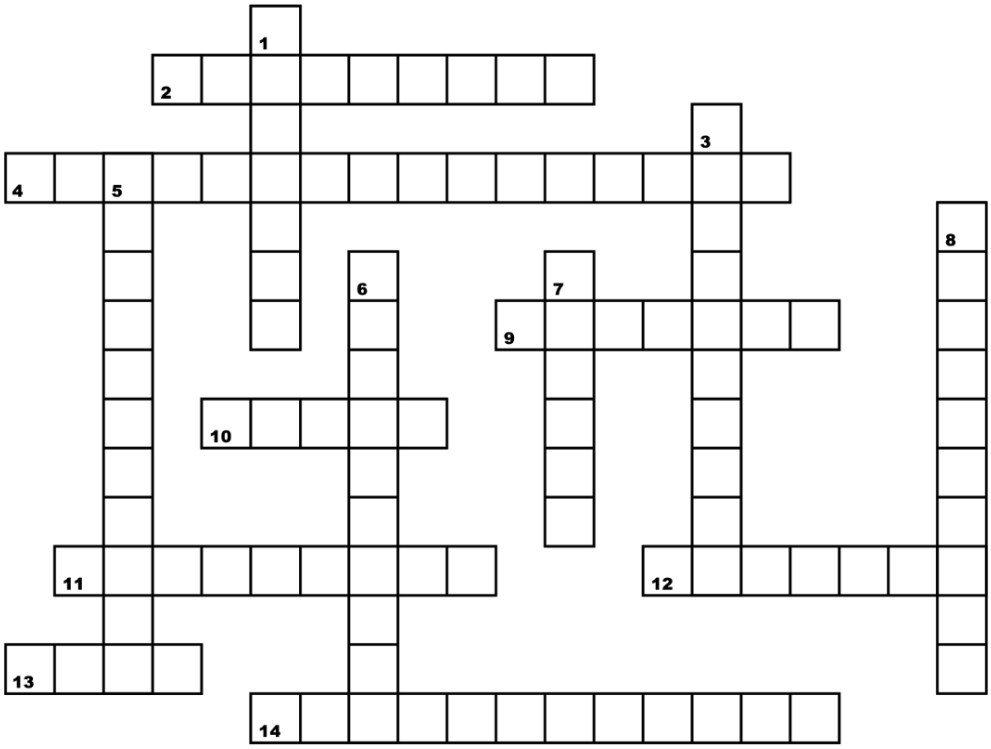
Type of bread

Name: _____ Period: _____ Date: _____

Unit 1 – Lab Skills Review Guide – Teacher Edition

VII. Crossword

Examine the clues below and use them to complete the crossword.



Clues

1. The **control** is the part of an experiment that is not being tested and is used for comparison.
2. The **procedures** describe the steps you use during an experiment.
3. After an experiment, scientists write a **conclusion** which summarizes their experiment and results.
4. The **Scientific Method** is a process used by scientists to find answers to questions and solve a problem.
5. The **independent** variable is the part of the experiment that is being changed.
6. The **hypothesis** is an educated guess.
7. Scientists use their data to make charts and **graphs** to communicate the results of an experiment.
8. After the scientist makes a hypothesis, they perform an **experiment** to collect data.
9. The first step of the scientific method is to define or identify the **problem**.
10. Sometimes scientists make a mistake, or **error**, and need to do an experiment again.

Unit 1 – Lab Skills Review Guide – Teacher Edition

11. The **dependent** variable is the part of the experiment that is affected by the independent variable.
12. After the experiment, scientists organize and **analyze** the data.
13. The information collected during an experiment is called **data**.
14. Scientists make **observations** to help them make a hypothesis or collect data during an experiment. It involves using your five senses.