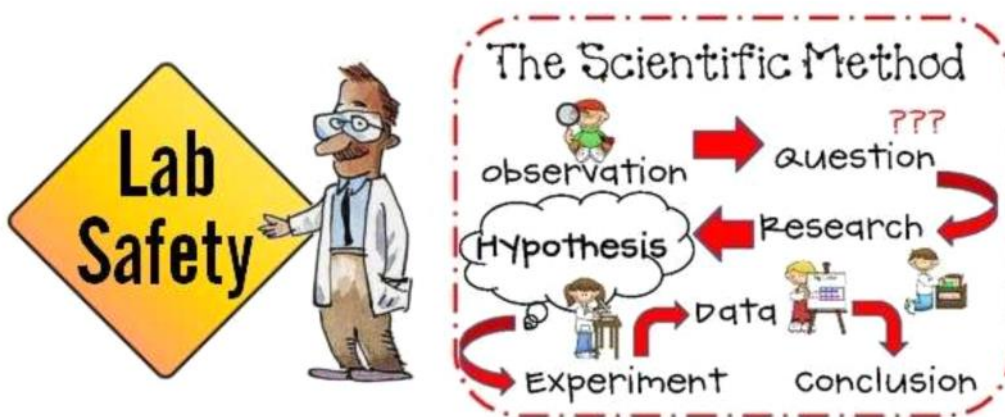


SCIENCE 9

FINAL EXAM REVIEW BOOK 1



SAFETY & THE SCIENTIFIC METHOD

NAME: Key

BLOCK: _____

Lab Safety

1. What safety device should be used if a student pours a chemical into a beaker and it splashes into their eyes?

- a. Fume Hood
- b. Fire Extinguisher
- c. Eye Wash Station
- d. Fire Blanket

2. What safety equipment should the student have used to avoid the accident mentioned in question #1?

- a. Eye Wash station
- b. Safety Goggles
- c. Safety Shower
- d. Fire Blanket

3. Your lab partner just (accidentally) lit your notebook on fire. What piece of safety equipment should be used?

- a. Fume Hood
- b. Fire Extinguisher
- c. Eye Wash Station
- d. First Aid Kit

4. While trying to extinguish your notebook, your sweater catches on fire. What item should your partner use to save you?

- a. Eye wash station
- b. Safety Goggles
- c. Safety Shower
- d. Fire Blanket

5. You are safe now that the fire is out, but still in a slight state of shock. You knock an entire beaker of chemicals onto your lab partner's pants. What item will be used to save the Levi's?

- a. Eye wash station
- b. Safety Goggles
- c. Safety Shower
- d. Fire Blanket

6. Certain things are never allowed in a lab. Select which item below is allowed.

- a. Food
- b. Goggles
- c. Beverages
- d. Horseplay
- e. Candy

7. You see on your table an unlabeled beaker filled with a clear liquid. The contents

- a. must be water, go ahead and drink it.
- b. are probably water, drink it anyway, what's the worst that could happen?
- c. are a really dangerous chemical. Pour it on your desk, and see if it burns through.
- d. are unknown. Leave it alone, and inform your instructor.

8. The most important tool(s) to have in a lab setting is

- a. Beakers
- b. Bunsen Burners
- c. Hammers
- d. Common sense and maturity

9. If a piece of electrical equipment has a damaged wire

- a. it is okay to use it if sparks are not shooting from the wire
- b. it is okay to use it if you don't touch the damaged part
- c. it should be fixed before use
- d. it should be given to your instructor right away

10. Your laboratory procedure instructs you to pour six different solutions into separate beakers for use in a lab. You should

- a. pour all of the solutions into beakers and then label the beakers
- b. pour one solution at a time and label each beaker after pouring the solution into it
- c. label all beakers first, and then pour the correct solution into each
- d. not worry about labeling the beakers

11. Which of the following is a common cause of laboratory accidents?

- a. following directions
- b. reading labels carefully
- c. horseplay in the laboratory
- d. following clean-up procedures

12. If the fire alarm sounds during a lab activity

- a. carefully put away all your materials and exit
- b. leave only if the fire is in the room where you are located
- c. turn off all heat sources and follow the evacuation procedures
- d. leave the room as quickly and quietly as possible without doing anything to your lab station

<p>13. You are finished with the lab activity when: a. the bell rings b. you have followed proper clean-up procedures c. you have collected your data d. the group next to you is done</p> <p>14. Most accidents a. can be prevented if you make safety a habit b. cannot be prevented c. are caused by your lab partner d. are caused by people who follow safety rules</p> <p>15. Material Safety Data Sheets (MSDS) provide a. lab procedures, physical properties, and health considerations b. storage information, chemical properties, and cost of the chemical c. health considerations, disposal information, physical properties d. cost of the chemical, lab procedures, chemical formula</p> <p>16. The label CORROSIVE on a chemical container indicates a. that the material can break down rapidly upon exposure to air b. that contact destroys living tissue as well as equipment c. that the material will catch fire upon exposure to air</p>	<p>17. FLAMMABLE means a. easily catch fire and capable of burning rapidly b. the opposite of "inflammable" c. highly toxic</p> <p>18. Which of the following is not an example of personal protective equipment? a. goggles and long pants ✓ b. long-sleeve shirts ✓ c. contact lenses X d. lab coats ✓ e. all of the above</p> <p>19. The four routes by which toxic chemicals can enter the body include: a. inhalation, indigestion, transmission of bodily fluids, and interjection b. inhalation, constipation, instigation, and investigation c. inhalation, ingestion, absorption, and injection d. inhalation, congestion, inscription, and injection</p> <p>20. You should stir solutions with a. a pencil or a pen b. a thermometer c. a stirring rod d. b or c</p>
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← never! it will break.

Identify the WHMIS symbols by choosing the letter of the symbol which corresponds with the description of the classification.

B 9. Compressed Gas

C 10. Biohazardous Waste

Bad question (sorry) } **C** 11. Toxic "other toxic effects" c.
D 12. Poisonous + infectious serious d.



C 13. Flammable

B 14. Oxidizing

D 15. Corrosive

A 16. Dangerously Reactive

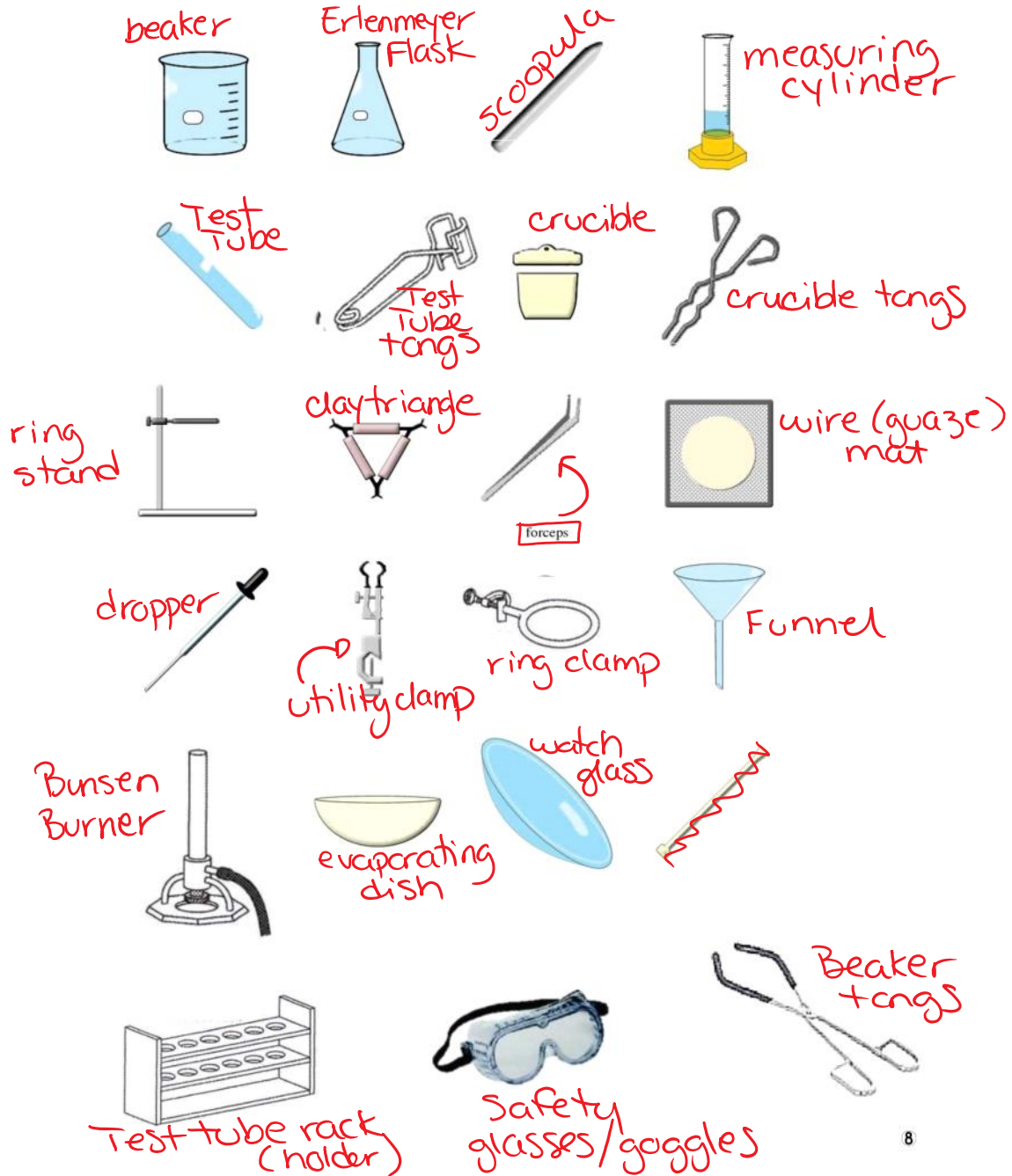


True/False Questions

1.	Safety glasses must be worn whenever chemicals are used in an experiment.	T
2.	At the end of an experiment, all remaining chemicals are to be poured down the sink. <i>= what if they are toxic?</i>	F
3.	Never handle chemicals with your bare hands.	T
4.	In order to determine the odour of a chemical, always put your head/face directly over the container opening and inhale deeply to get the best sample.	F
5.	Chemical spills should be left until the end of class before they are cleaned up.	F
6.	Always return excess chemicals to the original container. <i>Never!</i>	F
7.	Tasting chemicals is an excellent way to determine a material's physical properties.	F
8.	When heating chemicals in a test tube, always direct the tube to the centre of the classroom so as not to splash walls and windows. <i>or your lab partners</i>	T
9.	If clothing ignites, smother with a fire blanket or roll on the floor to smother flames.	T
10.	For our purposes, safety symbols can be divided into two categories: hazardous household product symbols and WHMIS symbols.	T

In the following picture, identify as many pieces of laboratory equipment as you can:

LABEL THE COMMON LABORATORY EQUIPMENT



Lab Equipment

Name each piece of equipment that would be useful for each of the following tasks:
(use the scrambled word in (brackets) to guide you!

1. Holding 100mL of water (ebkare) beaker
2. Measuring 27 mL of liquid (daudgtear ldnreiyc) graduated (measuring) cylinder
- ~~3. Measuring exactly 43mL of an acid (rtube) buret~~
4. Massing out 120 g of sodium chloride (acbnela) balance (scale)
5. Suspending glassware over the Bunsen burner (rwei zeagu) wire gauze mat
6. Used to pour liquids into containers with small openings or to hold filter paper (unfen) funnel
7. Mixing a small amount of chemicals together (~~lew letpa~~) spot plate
8. Heating contents in a test tube (estt ubet smalcp) test tube clamp/tongs
9. Holding many test tubes filled with chemicals (estt ubet karc) test tube rack
10. Used to clean the inside of test tubes or graduated cylinders (iwer srbuh) wire brush
11. Keeping liquid contents in a beaker from splattering (tahcw sgasl) watch glass
12. A narrow-mouthed container used to transport, heat or store substances, often used when a stopper is required (ymerereel kslaf) ermenmeyer flask
13. Heating contents in the lab (nuesnb bneurr) bunsen burner
14. Transport a hot beaker (gntos) beaker tongs
15. Protects the eyes from flying objects or chemical splashes (ggloges) goggles
- ~~16. Used to grind chemicals to powder (tmraor nda stlepe) mortar and pestle~~

*extension

Science Skills Review

Suppose your friends went to the mall after dinner on a cool night. They saw some families with children there. Which of the following statements are observations and which are inferences? Indicate your answer with either the letter **O** for observation or **I** for inference.

1. I It is wintertime.
2. O It is night time.
3. O They saw people.
4. I They saw a movie.
5. I They played with the kids.
6. I One friend wore a sweater.
7. O It was a cool night
8. O There were families there.
9. I They ate dessert.
10. O They were at the mall.

Determine whether the following statements are quantitative (**QN**) and which are qualitative (**QL**).

11. The paper clip has a mass of 3 g. QN
12. The temperature outside is 32 °C. QN
13. It is cold outside. QL
14. The house is 20 m high. QN
15. The ladder has 12 steps. QN
16. The ladder is shorter than the tree. QL
17. The movie is long. QL
18. The movie is 2 hours long. QN
19. The test was over quickly. QL
20. The test was 20 minutes long. QN

21. A factor that can change in a controlled experiment is called a variable.

22. When you make a guess on the basis of an earlier observation, experience or reasoning it is called making a hypothesis. It involves writing an *if, then,* because statement that can be tested.

23. The variable being measured in an experiment is called the dependent variable. It always changes in response to the independent variable.

24. Taking notice of the properties of an object or event through the use of your senses and/or measurements is called making an observation.

25. The variable that is changed in an experiment to determine if it affects something else is called the independent variable.

26. The variable(s) that remain the same through the experiment are called constants.

27. What type of candy contains the most sugar? Write out the independent and dependent variables for this potential experiment and determine what you would need to keep constant.

independent variable: type of candy / choc. bar

student answers will vary

dependent variable: % sugar, grams of sugar
(constant) control: amount of candy
(eg. can't compare 1 gummy bear to a whole choc. bar.)

28. What type of fertilizer works best for plants? Write out the independent and dependent variables for this potential experiment and determine what you would need to keep constant.

indep. variable: brand / type of fertilizer
dep. variable: plant height, or number of flowers, how long lives, etc.

control : amount of fertilizer used, when / how it was given, type of plant measured, garden location, soil type, amount sunlight, etc.