Honors Chemistry Summer Assignment Checklist

Name: _____ Period: ____

Item	√	Grade
Memorized the Elements		
Memorized the polyatomic ions (short list)		
Scientific Notation Practice Worksheet		
Dimensional Analysis Practice Worksheet		
Metric Conversions Practice Worksheet		
Reading Measurements with Sig Figs Practice		
Significant Figures Practice		
Signed Lab Safety Contract		
*Homework #1		
*Homework #2		

- Please check off the items as you complete them for your records. Any questions, please email Dr. McCoy lomccoy@cliftonschools.net.
- Answer keys for practice pages can be found online through Google Classroom. (Code is a4xrkv)
- Homework #1 and 2 as well as the signed safety contract are due the **first day of school**. You will receive a grade for these items.
- We will have a quiz on items that were to be memorized on the first day of school.
- We will also a test on all of the concepts in the summer assignment packet within the first week. Use this time to ask questions on anything you had difficulty with!

In addition to this packet, you should take notes from the power point handouts that have been posted for chapters 1 and 2. Anything in those two chapters and this packet could be on the test.

*** You will need a scientific calculator. One will not be provided for you!*** Please be sure you have this with you every day! If you do not already have one, I recommend the Casio fx-300MS as it is the easiest to use. It looks like this:

Elements- you will need to know the chemical symbol and the name of the following elements. Many of these you are already familiar with!

Name	Symbol	Name	Symbol	Name	Symbol
Hydrogen	H	Calcium	Ca	Cadmium	Cd
Helium	He	Scandium	Sc	Tin	Sn
Lithium	Li	Titanium	Ti	Antimony	Sb
Beryllium	Be	Vanadium	V	Tellurium	Te
Boron	B	Chromium	Cr	Iodine	I
Carbon	C	Manganese	Mn	Xenon	Xe
Nitrogen	N	Iron	Fe	Cesium	Cs
Oxygen	O	Cobalt	Co	Barium	Ba
Fluorine	F	Nickel	Ni	Tungsten	W
Neon	Ne	Copper	Cu	Platinum	Pt
Sodium	Na	Zinc	Zn	Gold	Au
Magnesium	Mg	Germanium	Ge	Mercury	Hg
Aluminum	Al	Arsenic	As	Lead	Pb
Silicon	Si	Selenium	Se	Bismuth	Bi
Phosphorous	P	Bromine	Br	Radon	Rn
Sulfur	S	Krypton	Kr	Radium	Ra
Chlorine	Cl	Strontium	Sr	Uranium	U
Argon	Ar	Palladium	Pd		
Potassium	K	Silver	Ag		

Polyatomic ions are a group of atoms that together carry a charge. There will be an expanded list to memorize later in the year, but it will be helpful to you if you already have some of these memorized.

Polyatomic Anions Most of the work on memorization occurs with these ions, but there are a number of patterns that can greatly reduce the amount of memorizing that one must do.

1. "ate" anions have one more oxygen then the "ite" ion, but the same charge. If you memorize the "ate" ions, then you should be able to derive the formula for the "ite" ion and vice-versa.

a. sulfate is SO_4^{2-} , so sulfite has the same charge but one less oxygen (SO_3^{2-})

b. nitrate is NO_3^- , so nitrite has the same charge but one less oxygen (NO_2^-)

2. If you know that a sufate ion is SO_4^{2-} then to get the formula for hydrogen sulfate ion, you add a hydrogen ion to the front of the formula. Since a hydrogen ion has a 1+ charge, the net charge on the new ion is less negative by one.

a. Example: PO_4^{3-} , HPO_4^{2-}, $H_2PO_4^-$, phosphate, hydrogen phosphate, and dihydrogen phosphate

3. Learn the hypochlorite, chlorite, chlorate, perchlorate series, and you also know the series containing iodite/iodate as well as bromite/bromate.

a. The relationship between the "ite" and "ate" ion is predictable, as always. Learn one and you know the other.

b. The prefix "hypo" means "under" or "too little" (think "hypodermic", "hypothermic" or "hypoglycemia")

i. Hypochlorite is "under" chlorite, meaning it has one less oxygen

c. The prefix "hyper" means "above" or "too much" (think "hyperkinetic")

i. the prefix "per" is derived from "hyper" so perchlorate (hyperchlorate) has one more oxygen than chlorate.

d. Notice how this sequence increases in oxygen while retaining the same charge: ClO^-, ClO_2^-, ClO_3^-, ClO_4^- hypochlorite, chlorite, chlorate, and perchlorate

Formula	**Name**		
NH_4^+	Ammonium	HPO_3^{2-}	hydrogen phosphite
SO_3^{2-}	sulfite	$H_2PO_3^-$	dihydrogen phosphite
SO_4^{2-}	sulfate	ClO^-	hypochlorite
PO_2^{3-}	hypophosphite	ClO_2^-	chlorite
PO_3^{3-}	phosphite	ClO_3^-	chlorate
PO_4^{3-}	phosphate	ClO_4^-	perchlorate
HPO_4^{2-}	hydrogen phosphate		
$H_2PO_4^-$	dihydrogen phosphate		

Name: _____

Chemistry: ***Scientific Notation***

***Part A*: Express each of the following in standard (decimal) form.**

1. 5.2×10^{3}
2. 9.65×10^{-4}
3. 8.5×10^{-2}
4. 2.71×10^{4}
5. 3.6×10^{1}
6. 6.452×10^{2}
7. 8.77×10^{-1}
8. 6.4×10^{-3}

***Part B*: Express each of the following in scientific notation.**

1. 78,000
2. 0.00053
3. 250
4. 2,687
5. 16
6. 0.0043
7. 0.875
8. 0.012654

***Part C*: Use the exponent function on your calculator (EE or EXP) to compute the following.**

1. $(6.02 \times 10^{23})(8.65 \times 10^{4})$
2. $(6.02 \times 10^{23})(9.63 \times 10^{-2})$
3. $\dfrac{5.6 \times 10^{-18}}{8.9 \times 10^{8}}$
4. $(-4.12 \times 10^{-4})(7.33 \times 10^{12})$
5. $\dfrac{1.0 \times 10^{-14}}{4.2 \times 10^{-6}}$
6. $\dfrac{7.85 \times 10^{26}}{6.02 \times 10^{23}}$
7. $(-3.2 \times 10^{-7})(-8.6 \times 10^{-9})$
8. $\dfrac{(5.4 \times 10^{4})(2.2 \times 10^{7})}{4.5 \times 10^{5}}$
9. $\dfrac{(6.02 \times 10^{23})(-1.42 \times 10^{-15})}{6.54 \times 10^{-6}}$
10. $\dfrac{(6.02 \times 10^{23})(-5.11 \times 10^{-27})}{-8.23 \times 10^{5}}$
11. $\dfrac{(3.1 \times 10^{14})(4.4 \times 10^{-12})}{-6.6 \times 10^{-14}}$
12. $\dfrac{(8.2 \times 10^{-3})(-7.9 \times 10^{7})}{7.3 \times 10^{-16}}$
13. $\dfrac{(-1.6 \times 10^{5})(-2.4 \times 10^{15})}{8.9 \times 10^{3}}$
14. $(7.0 \times 10^{28})(-3.2 \times 10^{-20})(-6.4 \times 10^{35})$

Dimensional Analysis

Watch this YouTube video as reference. http://www.youtube.com/watch?v=aZ3J60GYo6U. **Show your work! IF you solve these problems without using dimensional analysis, you are not doing the exercise correctly. The point is not the answer, but the process.**

Conversion Factors:

3 tsp = 1 Tbsp	16 Tbsp = 1 C	2 C = 1 pt	2 pt = 1 qt	
4 qt = 1 gal	1 gal = 3.79 L	1 mi = 1760 yards	1 yard = 3 ft	1000mL = 1L

1. How many ft/sec is a car traveling 25 mi/hr going?

2. How many liters are there in 1450 tsps?

3. How many tablespoons are in 3.5 quarts?

4. Acceleration due to gravity is 9.8 m/sec^2; convert this into mi/hr^2.

5. How many miles is 32000 ft?

6. The density of ethanol is 0.789 g/mL. If you have a volume of 1 C, what is the mass of ethanol?

7. Calculate the density of an object in **g/mL** with a mass of 12.5 mg that occupies a volume of 0.5 L.

8. Calculate the volume of an object with a density of 1.8 g/mL that has a mass of 2.4 pounds. (1 lb = 453.59 g)

Metric Conversions Worksheet:

Note- you will not be given this chart ever again!

1. Convert the following to km:

1600.0 m = _____

2050 cm = _____

1.033 Mm = _____

245 565 mm = _____

20 099 m = _____

499 m = _____

2. Convert the following:

10.034 mJ = _____ cJ

36.45 cL = _____ µL

0.05 cm = _____ mm

1024 B = _____ KB

0.0325 kJ = _____ cJ

1202.5 mL = _____ L

0.42101 Gg = _____ Mg

25.5 km = _____ m

0.12907 cm = _____ mm

756 900 µs = _____ ms

5600.4 Ms = _____ Gs

268 000 cm = _____ Km

0.0075 Gm = _____ Km

0.00091 TL = _____ ML

0.00046 ks = _____ cs

244475.3 µs = _____ Hs

4096 MB = _____ GB

210 hm = _____ cm

0.0002 µg = _____ mg

448.5 cg = _____ g

0.00034 µL = _____ cL

2103.55 s = _____ Ks

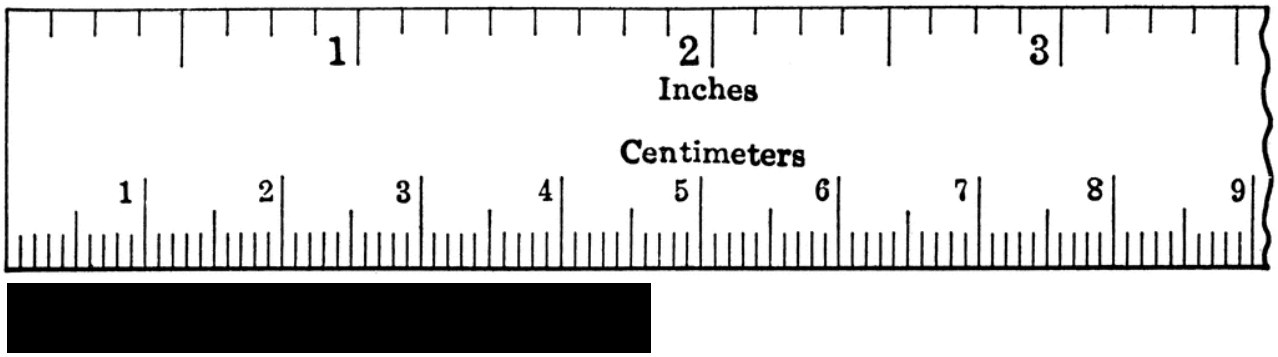
11120.33 ng = _____ cg

0.0000012 GL = _____ cL

Standard Form	Prefix	Abbreviation
10^{12}	Tera	T
10^{9}	Giga	G
10^{6}	Mega	M
10^{3}	Kilo	K
10^{2}	Hecta	H
10^{1}	Deca	D
10^{0}	Base Unit No Prefix	None
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	µ
10^{-9}	nano	n
10^{-12}	pico	p

Reading measurements with significant figures primer

Significant figures (aka sig figs) are the known digits in a number plus the first estimated digit. When you are taking measurements, the last digit you should have is the first one that you estimate. For example:



This black box measures somewhere between 4.6 and 4.7 cm. There should be an additional digit to describe the approximate length between the 0.6 and 0.7. You may tell me this is 4.61, 4.62, 4.63, etc. that last digit is what **you** estimate it to be. I'm looking for there to be 3 significant digits in your answer.

Significant digits in numbers you are given- **NOT MEASURED BY YOU!**

Any non-zero digit is significant (i.e. 1-9)

Zeros are significant if they fall between non-zero digits (sandwich rule ex. 101 is 3 sig figs), or if they are a trailing zero in a number with a decimal (150.00 is 5 sig figs).

Leading zeros are never significant! Ex. 0.00059 is only 2 sig figs, but 0.0120 is 3.

Rounding:

You should by now know to round up when the digit that follows is a 5 or higher and you truncate if it is 4 or lower.

Practice Worksheet for Significant Figures

1. State the number of significant digits in each measurement.

1) 2804 m
2) 2.84 km
3) 5.029 m
4) 0.003068 m
5) 4.6×10^{5} m
6) 4.06×10^{-5} m
7) 750 m
8) 75 m
9) 75,000 dm
10) 75.00 m
11) 75,000.0 m
12) 10 cm
13) 101.50 cm
14) 0.015 g
15) 8010 L

2. Round the following numbers as indicated:

To four significant figures:

3.682417 21.860051 375.6523 112.511 45.4673 8079635

To two significant figures:

1.6578 10987.2 4.9967 30.86697 9.9990466 0.0097643

To one decimal place:

1.3511 2.473 5.687524 7.555 8.235 0.000086743

To two decimal places:

22.494 79.2588 0.03062 3.4125 41.86632 5589.46258

Homework #1 Name: _____ Period: 1 3 5 7

1. Convert the following to scientific notation:

a. 0.000 509 _____

b. 290 600 000 _____

c. 0.000 007 5 _____

2. Convert the following to decimal form:

a. 3.12×10^{5} _____

b. 1.77×10^{-7} _____

c. 4.3×10^{4} _____

Conversion Factors:

3 tsp = 1 Tbsp	16 Tbsp = 1 C	2 C = 1 pt	2 pt = 1 qt
4 qt = 1 gal	1 gal = 3.79 L	1 mi = 1760 yards	1 yard = 3 ft
1 ft = 12 in	2.54 cm = 1 in	1 lbs = 453.59 g	$1\ cm^3 = 1$ mL

3. How many mi/hr is a person moving with a speed of 575 cm/ sec moving?

4. Convert the density, 3.15 g/cm^3 to lbs/in^3.

5. Complete the following metric conversions, use scientific notation for numbers < .001 or > 1000:

a. 0.026 kJ = _____ J

b. 212 µL = _____ mL

c. 1.2 cm = _____ m

d. 1.024 TB = _____ B

e. 0.50 Gg = _____ g

f. 12 pm = _____ mm

6. Identify the number of significant digits:

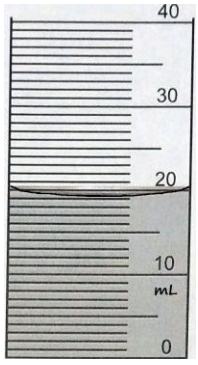
a. 60000 _____ b. 0.008091 _____ c. 10.0 _____ d. 0.2100 _____

7. Round each of the following to 3 sig figs.

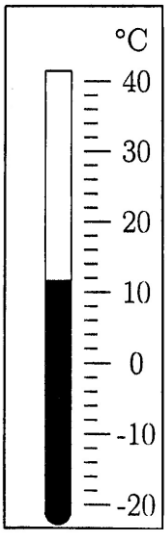
a. 138600 b. 0.009893 c. 12.65 d. 21000000.

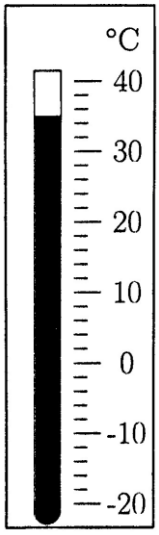
_____ _____ _____ _____

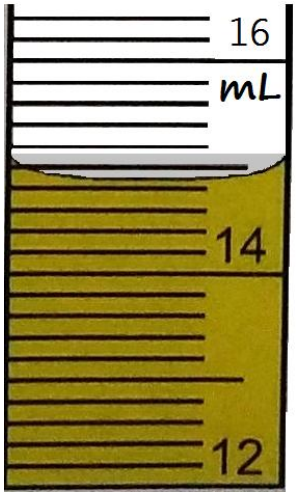
8. Read the following instruments with proper significant digits and units.



_____ _____ _____







_____ _____ _____

Homework #2 Name: _____ Period: 1 3 5 7

For multiple choice questions, circle the correct answer.

1. Which statement best describes an element?

   a. Any combination of 2 or more atoms of different types

   b. A pure substance made up of only 1 kind of atom

   c. A substance containing only carbon atoms

   d. Any crystal

2. For a pure substance, a plot of total mass (y axis) versus volume (x axis) is

   a. linear because the slope measures the density.

   b. curved upward because the slope measures the density

   c. curved upward because the mass increases faster than volume

   d. linear because the mass of the beaker stays the same.

3. Which of the statements is false?

   a. solutions are always homogeneous

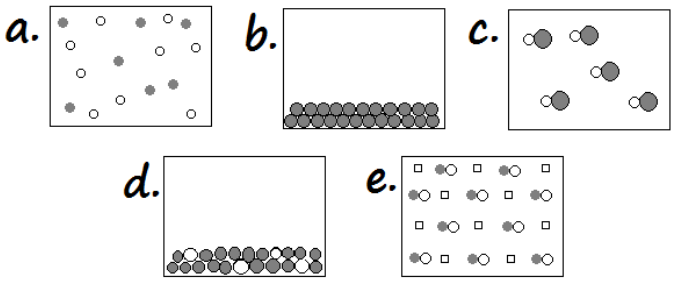
   b. the term *atom* and *element* can have different meanings

   c. elements can exist as atoms or molecules

   d. compounds can exist as atoms or molecules

   e. at least two of the above statements are false

Consider the following for 4-8



4. Which best represents a homogeneous mixture of an element and a compound?_____

5. Which best represents a compound that is a gas? _____

6. Which best represents a solid element? _____

7. Which best represents a heterogeneous mixture of 2 elements? _____

8. Which best represents a mixture of gases? _____

For 9-17, identify the property as **intensive** or **extensive**

9. Conductivity _____

10. Boiling point _____

11. Density _____

12. Mass _____

13. Melting point _____

14. State of matter _____

15. Volume _____

16. Odor _____

17. Weight _____

18. Which element is malleable and ductile?

a. F b. Ga c. C d. Kr

19. Which element is dull and brittle?

a. Na b. Zn c. S d. He

20. Which element is most likely to be dull and conduct electricity?

a. K b. O c. P d. Si

For 21-29, identify the property as **Physical** or **Chemical**

21. Conductivity _____

22. Boiling point _____

23. Density _____

24. Mass _____

25. Corrosive _____

26. State of matter _____

27. Volume _____

28. Acidity _____

29. Color _____

For the calculations that follow, please use 2 decimal places and proper units for your answers. Show your work- NO WORK, NO CREDIT!

30. Find the volume of an object with a density of 2.18 g/mL and a mass of 7.15 g.

31. Find the mass of an object that occupies 15 mL and has a density of 2.79 g/L.

32. Find the density of an object that occupies 58 mL and has a mass of 13.51 g.

33. Distilled water has a density of 1.00 g/mL. Which, if any of the objects in problems 30-32 would float in pure water?

34. In the lab, you experimentally determine the density of distilled water to be 0.94 g/mL. What is your percent error for this lab?

35. The group next to you says that their density is 2.52% below the accepted value. What is the experimental value for their data?

Student Safety Contract

School Name _____ **Teacher** _____

PURPOSE

Science is a hands-on laboratory class. You will be doing many laboratory activities which require the use of hazardous chemicals. Safety in the science classroom is the #1 priority for students, teachers, and parents. To ensure a safe science classroom, a list of rules has been developed and provided to you in this student safety contract. These rules must be followed at all times. Two copies of the contract are provided. One copy must be signed by both you and a parent or guardian before you can participate in the laboratory. The second copy is to be kept in your science notebook as a constant reminder of the safety rules.

GENERAL RULES

1. Conduct yourself in a responsible manner at all times in the laboratory.
2. Follow all written and verbal instructions carefully. If you do not understand a direction or part of a procedure, ask the instructor before proceeding.
3. Never work alone. No student may work in the laboratory without an instructor present.
4. When first entering a science room, do not touch any equipment, chemicals, or other materials in the laboratory area until you are instructed to do so.
5. Do not eat food, drink beverages, or chew gum in the laboratory. Do not use laboratory glassware as containers for food or beverages.
6. Perform only those experiments authorized by the instructor. Never do anything in the laboratory that is not called for in the laboratory procedures or by your instructor. Carefully follow all instructions, both written and oral. Unauthorized experiments are prohibited.
7. Be prepared for your work in the laboratory. Read all procedures thoroughly before entering the laboratory.
8. Never fool around in the laboratory. Horseplay, practical jokes, and pranks are dangerous and prohibited.
9. Observe good housekeeping practices. Work areas should be kept clean and tidy at all times. Bring only your laboratory instructions, worksheets, and/or reports to the work area. Other materials (books, purses, backpacks, etc.) should be stored in the classroom area.
10. Keep aisles clear. Push your chair under the desk when not in use.
11. Know the locations and operating procedures, where appropriate, for all safety equipment including first aid kit, eyewash station, safety shower, fire extinguisher, and fire blanket. Know where the fire alarm and exits are located.
12. Always work in a well-ventilated area. Use the fume hood when working with volatile substances or poisonous vapors. Never place your head into the fume hood.
13. Be alert and proceed with caution at all times in the laboratory. Notify the instructor immediately of any unsafe conditions you observe.
14. Dispose of all chemical waste properly. Never mix chemicals in sink drains. Sinks are to be used only for water and those solutions designated by the instructor. Solid chemicals, metals, matches, filter paper, and all other insoluble materials are to be disposed of in the proper waste containers, not in the sink. Check the label of all waste containers twice before adding your chemical waste to the container.
15. Labels and equipment instructions must be read carefully before use. Set up and use the prescribed apparatus as directed in the laboratory instructions or by your instructor.
16. Keep hands away from face, eyes, mouth and body while using chemicals or preserved specimens. Wash your hands with soap and water after performing all experiments. Clean all work surfaces and apparatus at the end of the experiment. Return all equipment clean and in working order to the proper storage area.
17. Experiments must be personally monitored at all times. You will be assigned a laboratory station at which to work. Do not wander around the room, distract other students, or interfere with the laboratory experiments of others.
18. Students are never permitted in the science storage rooms or preparation areas unless given specific permission by their instructor.
19. Know what to do if there is a fire drill during a laboratory period; containers must be closed, gas valves turned off, fume hoods turned off, and any electrical equipment turned off.
20. Handle all living organisms used in a laboratory activity in a humane manner. Preserved biological materials are to be treated with respect and disposed of properly.
21. When using knives and other sharp instruments, always carry with tips and points pointing down and away. Always cut away from your body. Never try to catch falling sharp instruments. Grasp sharp instruments only by the handles.
22. If you have a medical condition (e.g., allergies, pregnancy, etc.), check with your physician prior to working in lab.

CLOTHING

23. Any time chemicals, heat, or glassware are used, students will wear laboratory goggles. There will be no exceptions to this rule!
24. Contact lenses may be worn provided adequate face and eye protection is provided by specially marked, non-vented safety goggles. The instructor should know which students are wearing contact lenses in the event of eye exposure to hazardous chemicals.
25. Dress properly for lab activities. Long hair, dangling jewelry, and loose or baggy clothing are hazardous. Long hair must be tied back and dangling jewelry and loose or baggy clothing must be secured. Shoes must completely cover the foot. No sandals allowed.
26. Lab aprons have been provided for your use and should be worn during laboratory activities.

ACCIDENTS AND INJURIES

27. Report any accident (spill, breakage, etc.) or injury (cut, burn, etc.) to the instructor immediately, no matter how trivial it may appear.
28. If you or your lab partner are hurt, immediately yell out “Code one, Code one” to get the instructor’s attention.
29. If a chemical splashes in your eye(s) or on your skin, immediately flush with running water from the eyewash station or safety shower for at least 20 minutes. Notify the instructor immediately.
30. When mercury thermometers are broken, mercury must not be touched. Notify the instructor immediately.

HANDLING CHEMICALS

31. All chemicals in the laboratory are to be considered dangerous. Do not touch, taste, or smell any chemicals unless specifically instructed to do so. The proper technique for wafting chemical vapors will be demonstrated to you.
32. Check the label on chemical bottles twice before removing any of the contents. Take only as much chemical as you need.

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Student Safety Contract
Continued

33. Never return unused chemicals to their original containers.
34. Never use mouth suction to fill a pipet. Use a rubber bulb or pipet pump.
35. When transferring reagents from one container to another, hold the containers away from your body.
36. Acids must be handled with extreme care. You will be shown the proper method for diluting strong acids. Always add acid to water, swirl or stir the solution and be careful of the heat produced, particularly with sulfuric acid.
37. Handle flammable hazardous liquids over a pan to contain spills. Never dispense flammable liquids anywhere near an open flame or source of heat.
38. Never remove chemicals or other materials from the laboratory area.
39. Take great care when transporting acids and other chemicals from one part of the laboratory to another. Hold them securely and walk carefully.

HANDLING GLASSWARE AND EQUIPMENT

40. Carry glass tubing, especially long pieces, in a vertical position to minimize the likelihood of breakage and injury.
41. Never handle broken glass with your bare hands. Use a brush and dustpan to clean up broken glass. Place broken or waste glassware in the designated glass disposal container.
42. Inserting and removing glass tubing from rubber stoppers can be dangerous. Always lubricate glassware (tubing, thistle tubes, thermometers, etc.) before attempting to insert it in a stopper. Always protect your hands with towels or cotton gloves when inserting glass tubing into, or removing it from, a rubber stopper. If a piece of glassware becomes "frozen" in a stopper, take it to your instructor for removal.
43. Fill wash bottles only with distilled water and use only as intended, e.g., rinsing glassware and equipment, or adding water to a container.
44. When removing an electrical plug from its socket, grasp the plug, not the electrical cord. Hands must be completely dry before touching an electrical switch, plug, or outlet.
45. Examine glassware before each use. Never use chipped or cracked glassware. Never use dirty glassware.
46. Report damaged electrical equipment immediately. Look for things such as frayed cords, exposed wires, and loose connections. Do not use damaged electrical equipment.
47. If you do not understand how to use a piece of equipment, ask the instructor for help.
48. Do not immerse hot glassware in cold water; it may shatter.

HEATING SUBSTANCES

49. Exercise extreme caution when using a gas burner. Take care that hair, clothing and hands are a safe distance from the flame at all times. Do not put any substance into the flame unless specifically instructed to do so. Never reach over an exposed flame. Light gas (or alcohol) burners only as instructed by the teacher.
50. Never leave a lit burner unattended. Never leave anything that is being heated or is visibly reacting unattended. Always turn the burner or hot plate off when not in use.
51. You will be instructed in the proper method of heating and boiling liquids in test tubes. Do not point the open end of a test tube being heated at yourself or anyone else.
52. Heated metals and glass remain very hot for a long time. They should be set aside to cool and picked up with caution. Use tongs or heat-protective gloves if necessary.
53. Never look into a container that is being heated.
54. Do not place hot apparatus directly on the laboratory desk. Always use an insulating pad. Allow plenty of time for hot apparatus to cool before touching it.
55. When bending glass, allow time for the glass to cool before further handling. Hot and cold glass have the same visual appearance. Determine if an object is hot by bringing the back of your hand close to it prior to grasping it.

QUESTIONS

56. Do you wear contact lenses?
    ☐ YES ☐ NO
57. Are you color blind?
    ☐ YES ☐ NO
58. Do you have allergies?
    ☐ YES ☐ NO

    If so, list specific allergies _____

_____

AGREEMENT

I, _____
_____(student's name) have read and agree to follow all of the safety rules set forth in this contract. I realize that I must obey these rules to ensure my own safety, and that of my fellow students and instructors. I will cooperate to the fullest extent with my instructor and fellow students to maintain a safe lab environment. I will also closely follow the oral and written instructions provided by the instructor. I am aware that any violation of this safety contract that results in unsafe conduct in the laboratory or misbehavior on my part, may result in being removed from the laboratory, detention, receiving a failing grade, and/or dismissal from the course.

_____
Student Signature

_____
Date

Dear Parent or Guardian:

We feel that you should be informed regarding the school's effort to create and maintain a safe science classroom/laboratory environment.

With the cooperation of the instructors, parents, and students, a safety instruction program can eliminate, prevent, and correct possible hazards.

You should be aware of the safety instructions your son/daughter will receive before engaging in any laboratory work. Please read the list of safety rules above. No student will be permitted to perform laboratory activities unless this contract is signed by both the student and parent/guardian and is on file with the teacher.

Your signature on this contract indicates that you have read this Student Safety Contract, are aware of the measures taken to ensure the safety of your son/daughter in the science laboratory, and will instruct your son/daughter to uphold his/her agreement to follow these rules and procedures in the laboratory.

_____
Parent/Guardian Signature

_____
Date

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