Honors Biology Summer Work

Please read this cover letter before moving onto the packet so you know how to turn in your work as well as how to ask questions if you have any.

- Summer work for this honors biology class should be turned in electronically through the Google Classroom titled “Honors Biology Summer Work 2020-2021”. The code to join the class is g6n2l3d. Please do NOT email work. All work needs to be turned into google classroom.

- All work should be in your own words and turned in before the first day of school (August 20th 8AM). Any late work will not be accepted.

- Any questions about the summer assignment please email Ms. Mansour at ciaramansour@ccusd.org
Directions: Complete all sections in parts A-D. Below is a checklist that should be checked off once the item is completed. All work should be in your own words and any work that is plagiarized will receive a 0 and be removed from the class.

TO DO

- Cover Sheet
- Part A METRIC BACKGROUND REVIEW
- Part B “FLINN SCIENTIFIC STUDENT SAFETY CONTRACT”
  - Answer Questions 56-58 on the “Flinn Scientific Student Safety Contract”
  - Student/ Parent should read and sign the agreement box on the “Flinn Scientific Student Safety Contract”
  - Pick 4 rules/information that you think is the most important. State the rule and explain why is it important to follow?
- Part C SCIENTIFIC METHODOLOGY/ EXPERIMENTAL DESIGN
  - Experimental design vocabulary terms
  - Answer questions 2-3
  - Design a controlled experiment to determine the effect of acetaminophen (headache medicine) on pain.
- Part D GRAPHING/ DATA ANALYSIS
  - Read informational section
  - Answer questions for graph 1
  - Graph data and answer questions for graph 2
  - Graph data and answer questions for graph 3
- Part E : UNIT 1
  - Look up each characteristic and provide definitions/examples for each.
  - List the following levels of biological organization from smallest to largest. Define and provide an example for each word.

Characteristics that are Beneficial for Honors Students:

★ INDEPENDENT LEARNER / SELF-MOTIVATED- Jump-in and problem-solve.
★ BE PREPARED - supplies brought daily to class / organized (science notebook)
★ TAKE OWNERSHIP OF YOUR LEARNING - Apply knowledge...not just memorizing.
★ CRITICAL THINKING / COMPREHENSIVE LISTENING is essential for understanding.
★ MAINTAIN SOLID ATTENDANCE- student initiates the process for completing absent work.
★ TIME MANAGEMENT / ABLE TO SET PRIORITIES - ability to balance outside activities.
★ QUALITY OVER QUANTITY- Paying attention to detail matters in a rigorous course.
★ ACTIVE PARTICIPANT IN THE LEARNING PROCESS - attentive & engaged throughout class.
★ SELF ADVOCATE- student will seek help from the instructor for further clarification.
★ RESILIENCE- positive attitude when given challenging / difficult material.
★ BE PROACTIVE=DON’T PROCRASTINATE- Have a consistent study plan and donot delay.
Part A: METRIC BACKGROUND REVIEW

1. What does each unit represent compared to a meter?

a. mm = ______________ b. m = ______________ c. cm = ______________ d. km = ______________

2. Convert the following:

a. 1 m = _______ cm 
   b. 1 cm = _______ mm 
   c. 1 km = _______ m 
   d. 536 cm = _______ m

Remember... If you go from Bigger Smaller, move the decimal to the RIGHT. If you go from Smaller Bigger, move the decimal to the LEFT.

Kilo 🔷 Hecta 🔷 Deca 🔷 UNIT (meter, gram, liter) 🔷 Deci 🔷 Centi 🔷 Milli

Each of the units above counts as one decimal point. For example, if you are converting 3,000 mm to meters, you are going from smaller to bigger, so you will move the decimal to the left 3 spots. 3,000 mm = 3m.

3. Which measurement is larger? (Circle one)

   a. 14 mm OR 1 cm 
   b. 334 m OR 1 km 
   c. 1 m OR 990 cm 
   d. 145 m OR 145 km 
   e. 3.4 cm OR 30 mm 
   f. 10 km OR 1000 cm

4. Round and indicate the following values to the nearest hundredth.

   a. 4.3786 = _______ 
   b. 237.5 = _______ 
   c. 6.0 = _______ 
   d. 82.624 = _______ 
   e. 0.857 = _______ 
   f. 3.2964 = _______
a. Length of the Tardigrade in centimeters:

b. Length of the Tardigrade to the nearest cm:

c. Height of the Tardigrade to the nearest millimeter:

5. For the graduated cylinders above, which one measures exactly 12 mL? __________

6. What is the amount of water in graduated cylinder #4? ________________________

7. Find the length of an unsharpened new pencil (including eraser) in mm: ____________

8. Circle the BEST (most efficient) metric unit to measure each of the following:

   a. The length of an eyelash: mm cm m km
   b. The height of a flagpole: mm cm m km
   c. The length of a strand of spaghetti: mm cm m km
   d. The distance from Culver city to Disneyland: mm cm m km

9. How many cc (cubic centimeters) are in 38 mL of water?

10. Convert the following:
    a. 1 mL = _________ L  b. 1,500 mL = _________ L  c. 2.4 L = _________ mL
**Part B “FLINN SCIENTIFIC STUDENT SAFETY CONTRACT”**

**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, eye wash 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 waving 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.
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, __________________________, 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 __________________________
Refer back to the “Flinn Scientific Student Safety Contract”. Pick 4 rules/information that you think is the most important. State the number of the rule and explain why is it important to follow?

<table>
<thead>
<tr>
<th>Rule #</th>
<th>Why is it important to follow?</th>
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</tbody>
</table>

Part C SCIENTIFIC METHODOLOGY/ EXPERIMENTAL DESIGN

1. Write a brief description of the following terms

<table>
<thead>
<tr>
<th>Key term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td></td>
</tr>
<tr>
<td>Experimental Group</td>
<td></td>
</tr>
<tr>
<td>Dependent (Responsive) Variable</td>
<td></td>
</tr>
<tr>
<td>Independent (Manipulated) Variable</td>
<td></td>
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<tr>
<td>Hypothesis</td>
<td></td>
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<tr>
<td>Observation</td>
<td></td>
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<tr>
<td>Inference</td>
<td></td>
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<tr>
<td>Conclusion</td>
<td></td>
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<tr>
<td>Data Analysis</td>
<td></td>
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<tr>
<td>Controlled Experiment</td>
<td></td>
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<tr>
<td>Data Collection</td>
<td></td>
</tr>
</tbody>
</table>
2. Explain the difference between qualitative and quantitative data.

3. Describe “ethical issues” involved in biological studies/experiments. Explain a specific example.

4. Design a controlled experiment to determine the effect of acetaminophen (headache medicine) on pain.

<table>
<thead>
<tr>
<th>Problem</th>
<th></th>
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<tbody>
<tr>
<td>Hypothesis</td>
<td></td>
</tr>
<tr>
<td>Independent (manipulated) Variables</td>
<td></td>
</tr>
<tr>
<td>Dependent (responsive) Variables</td>
<td></td>
</tr>
<tr>
<td>Control Variable</td>
<td></td>
</tr>
<tr>
<td>Procedure (can add another page for more space)</td>
<td></td>
</tr>
<tr>
<td>Expected results</td>
<td></td>
</tr>
<tr>
<td>Explanation of expected results</td>
<td></td>
</tr>
</tbody>
</table>
PART D GRAPHING/ DATA ANALYSIS

Graphing is an important procedure used by scientists to display data that is collected during a controlled experiment. Line graphs must be constructed correctly to accurately portray the data collected. Many times the wrong construction of a graph distracts from the acceptance of an individual hypothesis.

A graph contains five major parts:

- The title: depicts what the graph is about. By reading the title, the reader should get an idea about the graph. It should be a concise statement placed above the graph.

- The Independent Variable: this variable that can be controlled by the experimenter. It usually includes time (dates, minutes, hours), depth (feet, meters), temperature (Celsius). This variable is placed on the X axis (horizontal axis).

- The Dependent Variable: is the variable that is directly affected by the independent variable. It is the result of what happens because of the independent variable. Example: How many oxygen bubbles are produced by a plant located five meters below the surface of the water? The oxygen bubbles are dependent on the depth of the water. This variable is placed on the Y axis (vertical axis).

- The Scales for Each Variable: In constructing a graph one needs to know where to plot representing data, In order to do this a scale must be employed to include all the data points. This must also take up a conservative amount of space. It is not suggested to have a run-on scale making the graph too hard to manage. The scales should start with 0 and climb based on intervals such as: multiples of 2, 5, 10, 20, 25, 50 or 100. The scale of the numbers will be dictated by your data values.

- The Legend: is a short descriptive narrative concerning the graph’s data. It should be short and concise and placed under the graph.
Graph 1: Identify the graph that matches each of the following stories. Place the LETTER on the line below each graph that matches the story description.

- a) I had just left home when I realized I had forgotten my books so I went back to pick them up. Then I went back to school.
- b) Things went fine until I had a flat tire. I put on my spare tire and continued to school.
- c) I started out calmly, but sped up when I realized I was going to be late.

Graph 2
5. Using the following data to answer the questions and then construct a line graph.

<table>
<thead>
<tr>
<th>Depth in Meters</th>
<th>Numbers of Bubbles/minute Plant A</th>
<th>Numbers of Bubbles/minute Plant B</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>5</td>
<td>36</td>
<td>27</td>
</tr>
<tr>
<td>10</td>
<td>45</td>
<td>40</td>
</tr>
<tr>
<td>16</td>
<td>32</td>
<td>50</td>
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<tr>
<td>25</td>
<td>20</td>
<td>34</td>
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<tr>
<td>30</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>

Double click on the grid below, then in the next window use google drawing tools to construct your graph.
a. What is the dependent variable? Why?
b. What is the independent variable? Why?
c. What title would you give the graph?
d. What conclusions can be determined from the data in graph 2?

Graph 3
Diabetes is a disease affecting the insulin producing glands of the pancreas. If there is not enough insulin being produced by these cells, the amount of glucose in the blood will remain high. A blood glucose level above 140 for an extended period of time is not considered normal. This disease, if not brought under control, can lead to severe complications and even death.

<table>
<thead>
<tr>
<th>Time After Eating (hours)</th>
<th>Glucose mL/Liter of Blood Person A</th>
<th>Glucose mL/Liter of Blood Person B</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>170</td>
<td>180</td>
</tr>
<tr>
<td>1</td>
<td>155</td>
<td>195</td>
</tr>
<tr>
<td>1.5</td>
<td>140</td>
<td>230</td>
</tr>
<tr>
<td>2</td>
<td>135</td>
<td>245</td>
</tr>
<tr>
<td>2.5</td>
<td>140</td>
<td>235</td>
</tr>
<tr>
<td>3</td>
<td>135</td>
<td>225</td>
</tr>
<tr>
<td>4</td>
<td>130</td>
<td>200</td>
</tr>
</tbody>
</table>

Double click on the grid below, then in the next window use google drawing tools to construct your graph.

6. Answer the following questions concerning the data below and then graph is.
a. What is the dependent variable? Why?

b. What is the independent variable? Why?

c. What title would you give the graph?

d. Which, if any, of the above individuals has diabetes?

e. What data do you have to support your hypothesis?

f. If the time period was extended to six hours, what would be the expected blood glucose level for Person B?

g. What conclusions can be determined from the data in graph 3?
7. There are 8 characteristics of living things: look up each characteristic and provide definitions/examples for each.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Definition/Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellular organization: Made up of cells</td>
<td></td>
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<tr>
<td>Able to reproduce</td>
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<tr>
<td>Heredity (having a universal genetic code, DNA)</td>
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<tr>
<td>Grows and Develops</td>
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<tr>
<td>Metabolism</td>
<td></td>
</tr>
<tr>
<td>Responds to environment (stimuli)</td>
<td></td>
</tr>
<tr>
<td>Homeostasis</td>
<td></td>
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<tr>
<td>Evolution</td>
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</tbody>
</table>
8. List the following levels of biological organization from smallest to largest. Define and provide an example for each word.

<table>
<thead>
<tr>
<th>Level</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molecule</td>
<td></td>
<td></td>
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<tr>
<td>Organism</td>
<td></td>
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<tr>
<td>Organ</td>
<td></td>
<td></td>
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<tr>
<td>Tissue</td>
<td></td>
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<tr>
<td>Biome</td>
<td></td>
<td></td>
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<tr>
<td>Biosphere</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ecosystem</td>
<td></td>
<td></td>
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<tr>
<td>Population (species)</td>
<td></td>
<td></td>
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<tr>
<td>Atom</td>
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</tbody>
</table>
Helpful optional resources to complete the packet.

**METRIC SYSTEM**
1. Lecture on metric system (slow and basic, may be worth it if students are lost)
   [https://www.youtube.com/watch?v=UyDMwnkeAwQ](https://www.youtube.com/watch?v=UyDMwnkeAwQ)

   Quick review from Khan academy – 14 minutes
   [https://www.youtube.com/watch?v=EQMUHldy-0g](https://www.youtube.com/watch?v=EQMUHldy-0g)

**FLINN SCIENTIFIC STUDENT SAFETY CONTRACT**
Practice on line exam on Flinn safety contract

More on safety from Flinn website comprehensive on demo and further information on this topic
[https://www.flinnsci.com/safety/](https://www.flinnsci.com/safety/)

**SCIENTIFIC METHODOLOGY/ EXPERIMENTAL DESIGN**
Introduction to experimental design, Khan academy

Presentation in pdf

**PART D GRAPHING/ DATA ANALYSIS**
A beginner’s guide to graphing data (video clip 11 minutes)
[https://www.youtube.com/watch?v=9BkbYeTC6Mo](https://www.youtube.com/watch?v=9BkbYeTC6Mo)

Characteristics of life

How to chose the correct graph

Making graphs on Excel (video clip 10 minutes)
[https://www.youtube.com/watch?v=Gw3gdlLHlsM&feature=youtu.be](https://www.youtube.com/watch?v=Gw3gdlLHlsM&feature=youtu.be)

Graphing (website)
[https://flexbooks.ck12.org/cbook/ck-12-middle-school-physical-science-flexbook-2.0/section/1.31/primary/lesson/scientific-graphing-ms-ps](https://flexbooks.ck12.org/cbook/ck-12-middle-school-physical-science-flexbook-2.0/section/1.31/primary/lesson/scientific-graphing-ms-ps)

Khan academy on graphing

**LEVELS OF ORGANIZATION**
Website with practice questions
Video clip with lecture
https://www.youtube.com/watch?v=lwYWsrmN2fY

Video clip (3 minutes)
https://www.youtube.com/watch?v=mQ26klraKvU

Ecology: Levels of Organization (Organisms, Communities, Biomes, biosphere)
https://www.youtube.com/watch?v=srbuqpr6jUw