**Virtual Lab:**

**Instructions: Copy the Observation chart below, complete the "Virtual Experiments" and record your observations on the chart. Answer the Analyze questions underneath the chart and write them into your lab notebook.**

**Question:** How do the properties of ionic and molecular substances compare?

**Procedure:**

    1. Copy or print the table above. Give your table a title.

                          Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Substance** | **Ionic (yes/no)** | **Solubility in Water** | **Conductivity test** | **Appearance / Texture** | **Relative Melting Point (time it melted)** |
| [Starch](http://resource2.rockyview.ab.ca/science9/D2L_content/Sci.9%20Units/Unit2Chemistry/images/starch.jpg) |  |  |  |  |  |
| [Graphite](http://resource2.rockyview.ab.ca/science9/D2L_content/Sci.9%20Units/Unit2Chemistry/images/graphite.jpg) |  |  |  |  |  |
| [Paraffin Wax](http://resource2.rockyview.ab.ca/science9/D2L_content/Sci.9%20Units/Unit2Chemistry/images/wax.jpg) |  |  |  |  |  |
| [Copper Nitrate](http://resource2.rockyview.ab.ca/science9/D2L_content/Sci.9%20Units/Unit2Chemistry/images/copper_nitrate.jpg) |  |  |  |  |  |
| [Iron oxide](http://resource2.rockyview.ab.ca/science9/D2L_content/Sci.9%20Units/Unit2Chemistry/images/iron_oxide.jpg) |  |  |  |  |  |
| [sucrose](http://resource2.rockyview.ab.ca/science9/D2L_content/Sci.9%20Units/Unit2Chemistry/images/sucrose.jpg) |  |  |  |  |  |
| [calcium carbonate](http://resource2.rockyview.ab.ca/science9/D2L_content/Sci.9%20Units/Unit2Chemistry/images/Calcium-Carbonate.gif) |  |  |  |  |  |

**2**. Predict or provide your hypothesis of which are ionic compounds under the column **"Ionic (yes/no)"**. Use your previous knowledge of the periodic table and what you already know.

**3.** **Solubility - Virtual Lab**  
              Conduct the virtual lab below by dissolving the above substances in water. Record your observations under the column "Solubility in Water".

**4. Conductivity - Virtual Lab**  
             Conduct the virtual lab below by testing each substance with the conductivity tester. Record your results under "Conductivity test" . Describe the relative strength of conductivity (brightness of lights) using the words 'strong', 'medium' , 'weak' or 'no conductivity'.

**5. Appearance and Texture**  
             Click on each substance on the table above and a picture of each will appear. Use the graphic to describe its appearance and texture. Do your best to describe the shape of the grains. Record your observations.  
  
     **6.** **Relative Melting Point - Virtual Lab**  
              Conduct the virtual lab by testing the relative melting point of each substance with the hotplate and thermometer. Record your results (in ºC) in the table.

**Virtual Lab: http://resource2.rockyview.ab.ca/science9/D2L\_content/Sci.9%20Units/Unit2Chemistry/science928.htm**

**Analyze:**

1. a) Which substances in this lab are ionic?  
    b) In which part of the periodic table do their elements occur?

2. a) Which substances are molecular?  
    b) IN which part of the periodic table do their elements occur?

3. a) In general, are ionic compounds soluble in water?  
    b) In general, are molecular compounds soluble in water?  
    c) Did you find any compounds that were exception to your answers for parts (a) and (b)?  
  
4. Which type of compound seems to have the higher melting point?

5. Summarize the main differences between Ionic Compounds and Molecular Compounds.