**Biology A**  Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Magic Spheres – An Activity to Explore the Scientific Method**

**Materials:**

3-4 Magic Spheres
water (warm, cold, or room temperature)
beakers or cups
stirrers or plastic spoons

Salt, sugar, or other substances that can be made available based on the questions that are developed

**Purpose:**

ask a question

develop a hypothesis

identifying variables and controls

test a hypothesis

collect data

analyze data

compose a lab report

**Background:** In the lab you will be given spheres that grow when placed in water. Consider some questions about the spheres and write those questions below.

**The Experiment:**

1. Choose one question and develop a hypothesis. Remember to state your hypothesis in a complete sentence and make sure that it is testable, do NOT use “I think” or “ I believe”.

 Reminder: If "relationship" then "prediction"

**Hypothesis:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Identify the control or comparison you will be using.

**Control:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Identify other factors that you will control or keep the same in each trial of your experiment.

**Confounding variables: \_\_\_\_\_\_**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Identify the independent variable and dependent variable.

**Independent variable:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Dependent variable:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Briefly describe how you will set up and test your hypothesis.

The above information (1-5) must be checked prior to starting the experiment.

Upon approval, gather the needed materials and test your hypothesis.

Construct a data table that shows your experiment and the data gathered. Make sure that the table is labeled correctly and is neat. You should be gathering both QUALITATIVE and QUANTITATIVE DATA!

You will be using this information to write a formal lab report.

**TITLE:**

**BACKGROUND INFORMATION and PURPOSE:**

**HYPOTHESIS:**

**INDEPENDENT VARIABLE:** **DEPENDENT VARIABLE:**

**CONTROL:**

**DIAGRAM OF LAB SET-UP and LIST of MATERIALS:**

**BASIC PROCEDURE:**

**DATA/CALCULATIONS:**

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**CONCLUSIONS:**