Mr. Fleming Roosevelt Junior High www.mrflemingscience.com

Roosevelt Science Fair Project Worksheets

Name_____ **Class**_____

This worksheet will help you determine when each assignment should be due. When components are due in class, please fill out the appropriate area in your science fair assignment worksheets. Each component will be scored as a project grade.

Assignment	**Assignment Description**	**Suggested Time to Complete this Step**	**In Class Due Date & Total points**
Topic Selection & Question	Visit my webpage for helpful websites, such as **sciencebuddies.org** Look for a science project that interests you! Make sure its age appropriate and within your time/ budget limits. Write a specific question that the student will be investigating.	1 week	November 1st **20 points**
Research Plan & Bibliography	The Research Plan is a roadmap of the research questions that need to be answered. The Bibliography is a list of the sources that will be used to answer the research questions. Remember, you must be educated to have an educated guess! **Source Requirement: at least 1 offline sources including one encyclopedia. 3 resources minimum!**	1 week	November 12th **25 points**
Research Paper	The purpose of the Research Paper is to provide information to help understand why the experiment turns out the way it does. It should include: • The **history** of similar experiments or inventions. • **Definitions** of all important words and concepts that describe the experiment. • **Answers** to all the background research plan questions. **Mathematical formulas**, if any, that are needed to describe the results of the experiment.		December 11th **50 points**
Variables and Hypothesis	• An explanation of which factors will be changed while conducting the experiment and a hypothesis on the resulting impact of the change. • Hypothesis must be in "If _____ then _____" format.	1 week	November 15th **20 points**
Materials and Procedures	A detailed list of the materials that will be used to conduct the experiment and the detailed steps that will be followed while conduct the experiment *__Project boards handed out__*	1 week	November 15th **20 points**
Conducting the Experiment	**Minimum Trials: 3 runs of experiment.** Make sure you record observations (data) while conducting the experiment. Take photos of you conducting your experiment.	THIS STEP IS COMPLETED AT HOME. THERE IS NO DUE DATE FOR THIS STEP. YOU WILL SHOW COMPLETION WHEN YOU TURN IN YOUR DATA.	
Data Analysis and Graphs	The analysis of the experimental data. A summary of the findings of the experiment. Include pictures or create tables/graphs of your data.	3 weeks	December 2st **40 points**
Conclusions	An explanation of the results of the experiment. Do you accept or reject your hypothesis and why. How can you improve this experiment?	1 week	December 6th **25 points**
Display Board and oral presentation to class	1. Create and assemble display board. 2. Presentation - write note cards to guide you through explaining what you tested, your data and conclusion. Be ready for questions from your audience.	1 week	December 9th **100 points**
RJHS Science Fair			December 11th

Topic:

What category of science are you investigating? (Chemistry, physics, environmental,…)

_____

_____

Testable Question:

How

does_____affect_____

_____?

Background Research Plan Worksheet

What is the question you are trying to answer? _____

_____

List **keywords** from the topic in general. **Define these words.**

1. scientist- a person who is studying or has expert knowledge of one or more of the natural or physical sciences.
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

History of similar experiments or inventions or people who have also studied your topic

- Aristotle is considered by many to be the **first scientist**, although the term postdates him by more than two millennia.

_____

_____

_____

_____

_____

_____

_

Question Word	**Possible Questions** **Choose <u>one</u> to answer.** **Substitute your keywords into the blanks.**	**Answer your question. You may use a separate sheet of paper for this section.**
Why	Why does _____ happen? Why does _____ _____? Why _____ ?	
How	How does _____ happen? How does _____ work? How does _____ detect ____? How does one measure _____? How do we use _____? How _____?	
Who	Who needs _____? Who discovered _____? Who invented _____? Who _____?	
What	What causes _____ to increase/decrease? What is _____ made of? What is the relationship between _____ and ____? What do we use _____ for? What _____?	
When	When does _____ cause ____? When was _____ discovered? When _____?	
Where	Where does _____ occur? Where does ____ get used? Where _____?	

Variables and Hypothesis:

Independent Variable (what are you intentionally changing)

_____

Dependent Variable (what you will measure or observe to obtain your results)

_____

Control Group (standard for comparison)

_____

Experimental Group (the group that receives the independent variable)

_____

Constants (all other factors that will be kept the same for all trials)

_____

_____

Hypothesis Use this format**! If** (planned change in the independent variable) **then** (predicted change in the dependent variable) **because _____.**

If_____then_____

_____becuase_____

_____ .

Materials and Procedure:

Materials (List everything you will need to conduct your experiment)

_____

_____

_____

_____

Procedure (step by step process of your experiment)

1._____

2._____

3._____

4._____

5._____

6._____

7._____

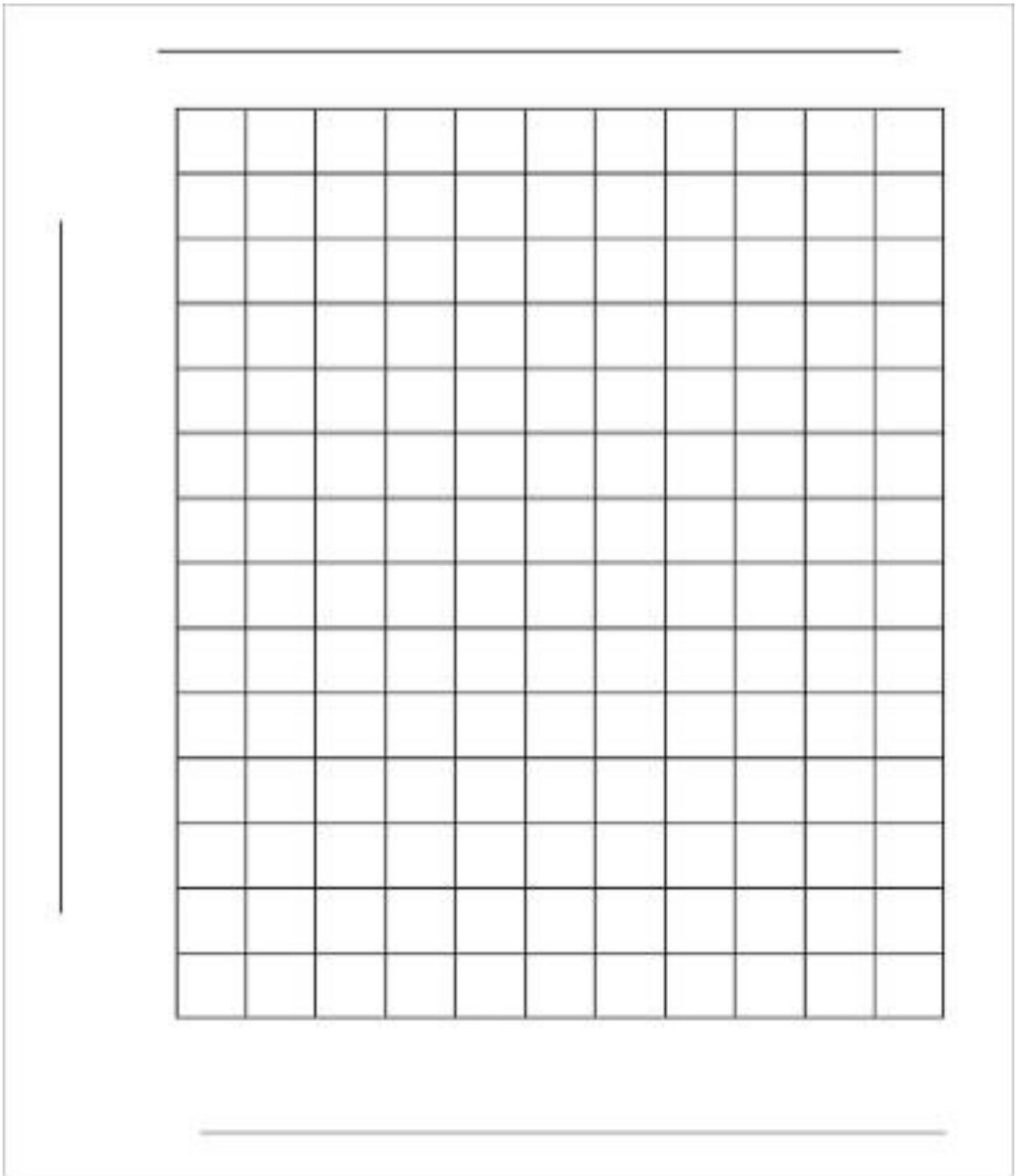
8._____

9._____

10._____

Data Analysis:

Use a graphic organize below to analyze your data. Graphs, charts, and pictures are necessary to explain your results of your experiment. Create a rough draft of your results below.



Conclusion:

I accept / reject my hypothesis because _____

_____

_____

To improve my experiment, I would _____

_____

_____

In a future experiment, I would _____

_____

_____