**Science Fair Project**

***Phase I:***

***Asking A Question/Developing an Idea***

In this phase of the project, you will brainstorm and develop an idea for your project.

For this part of the project, you and your partners will do the following:

1. Brainstorm 4 general possible project ideas
2. For each idea, you will pose two scientific/investigative questions
	* Ex: If the general idea is “sound,” you could pose two scientific questions like:
		+ How fast does sound travel through different substances (liquids, solids, gases)?
		+ What materials can best withstand extreme frequencies of sound?

*This means you and your partners will need to come up with 8 questions in total (2 for each of the 4 topics)*

1. As a group, you will also indicate which idea and question your group will choose to investigate for your project.
	* \**This will be your initial idea, but, if later on, you decide you would like to change your topic, you may. However, all project topic changes MUST BE DONE BEFORE WE BEGIN PHASE III.*

Your project idea could be:

* an experimental question where you test something out, or
* an engineering idea, where you synthesize your knowledge about certain scientific principles to create something that solves a problem or answers a question.
	+ If you do an engineering idea, you must test out the effectiveness of your invention/creation
	+ Ex: If you decide to research oil spills and solutions to clean up oil spills, you could create a mechanism to clean up oil spills based on what you know about oil’s density and how oil and water behave with each other.

When deciding upon your project idea, consider the feasibility (materials, equipment, time, money) of the idea before you commit to it. ALSO YOU MUST CONSIDER SAFETY PRECAUTIONS.

Your project idea, will REQUIRE APPROVAL FROM MS. THARAYIL.

**Science Fair Project**

**Phase I (Cont).**

For Phase I, you will need to submit a **proposal**. Your **proposal** must be TYPED, Single-Spaced and must contain the following:

* The names of all group members **( /1 point)**
* 4 general project ideas **( /4 points)**
* 2 scientific/investigative/engineering questions for each idea **( /8 points)**
* Indicate the project idea and question your group has decided to study for the project  **( /1 point)**
* Any preliminary ideas as to how your group will test your question or create the mechanism to solve a problem. These ideas can and should include **( /5 points)**:
	+ Preliminary experimental design (how you will design/do your experiment)
	+ What your mechanism will do, how it would look, what it would be made of
	+ What materials will be required
	+ How much time do you anticipate needing

*\*This will and should change as you progress through your project. However, I want you to start thinking about this before you even begin to work on the meat of your project.\**

* Cover sheets attached **( /1 point)**

YOU MUST ALSO PRINT THIS COVER SHEET AND THE ASSIGNMENT CONTRACT PAGE AND ATTACH THEM TO YOUR PROPOSAL.

You only need to submit one proposal per group.

**Total points for proposal: /20**

**Due Wednesday November 28th, 2012**

**Science Fair**

**Phase I (Cont.)**

**Some Possible Ideas:**

* What packing materials are better for food preservation?
* Is there a correlation between music and memory?
* Is the amount of light a factor for food spoilage?
* Creating your own synthetic skin
* What are the different types of bridge designs and which design is strongest?
* Creating a cost-efficient, water purifying system that could be used in developing nations
* Alternative fuels---powering engines
* Algae biofuel
* Measure the calories of different foods using a homemade calorimeter
* What is the effect of ozone on plant growth?
* Measure the slope angle at which different rocks slid one over another (landslide)
* Shrinking ice caps in the Arctic and how they might affect the world

**Some Websites For Project Ideas**

* <http://www.hq.nasa.gov/office/hqlibrary/pathfinders/fairs.htm>
* <http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml#browsealprojects>
* <http://www.juliantrubin.com/science_fair_project/middle_school_projects.html>
* <http://www.sciencepioneers.org/science-fair/project-ideas/7-8>
* <http://www.cool-science-projects.com/Middle-School-Science-Projects.html>

You may use external resources and other websites to help you generate project ideas, BUT YOU CANNOT SIMPLY COPY THE PROJECT EXACTLY for two reasons: 1) it will be considered academic dishonesty 2) you cannot trust everything you read, especially on the internet, as being accurate and valid.