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Mr. Kodel – 8<sup>th</sup> Grade Science

Unit 1 – Project Outline: Density and Buoyancy

	Name				
l	Period				

Due by: Friday, August 29,2014

### Common Core:

SCIG-8.INV1.QUSTN I can develop a general hypothesis or research thesis. I can think of a possible answer to my ques if my answer is supported by data.

Parent Signature:

SCI6-8.PERS3.QUSTN I can form new questions based on my research results, and the answers to these questions will extend understanding of the issue. SCI6-8.PERS2.DATA I can draw conclusions related to my hypothesis. This means that I can describe conclusions about my hypothesis or thesis.

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SCI11-12.COMM1 | can describe experimental error and/or research procedures.

SCI11-12.COMM2 I can present data with visual representations that enhance understanding of the issue.

SCI6-8.ACT2.IMPCT I can identify available technology for my plan. This means that I can locate what needs to be available in order to accomplish my plan.

ELD Standards: Writing - Edit for grammatical structures and conventions of writing; Writing - Use strategies of note taking, outlining, and summarizing.

GLPO – Investigates the World: Designs an experiment that offers a detailed method for investigating and testing the hypothesis/research thesis. Recognizes Perspectives: Identifies and interprets experimental error, outliers, and/or inconsistencies in the data, and conclusion evaluates the hypothesis or research thesis based on evidence from the data; Poses and discusses new, relevant questions in response to implications of experimental or research findings. Communicates Ideas: Presents data with visual representations that enhance understanding of the issue and findings for diverse audiences; experimental or research presentation applies conventions of scientific communication to express ideas and learning. Take Action: Articulates in a reflection how the project influenced his/her thinking, choices, actions, and awareness of alternative thoughts and ideas.

Enduring Understanding: Density affects buoyancy.

Driving Question: How do I as an engineer design and build a boat that holds the most pennies without sinking?

## Project Objectives:

Each student will design and build two boats to test his/her hypothesis. The second boat will be a revision of the first boat, and will be based on feedback and collaboration from peers. Based on the data collected, a conclusion will be formed by reflection on the investigation and experimentation. The student will communicate his/her scientific findings in a well written lab report.

Title:			Due by:		
Subtitle: The effect of density on the buoyancy of an object					
Hypothesis: <b>If</b> the density of the boat is decreased, <b>then</b> the boat will hold pennies.					
Introduction Outline:	Topic: How Density Affects Buoyancy				
What do you know about density and buoyancy?  - Buoyancy:	What do I expect to happen and why? (Explain the hypothesis)  7. A second boat was built using the fee	How am I going to test my hypothesis? (Explain the procedure) edback and collaboration from peers.			

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Introduction:	Due by:
	Poor: 20/30 infrequently uses proper writing conventions. Does not include most of the info from the outline
	Satisfactory: 25/30 Frequently uses proper writing conventions. Includes most of the info from the
	Outstanding: 30/30 Well written using proper writing conventions.
A second boat was built using the feedback and collaboration from peers.	30

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## Procedure: Due by: Boat specifications: The material used to build the boat must be tin/aluminum foil, unless you get 10 approval for using another material by your science teacher. The boat must not be no bigger than a half-sheet of notebook paper (8.5"x5.5"), and no taller than 5". 10 Notes Proper lab format Write in complete sentences using 3rd person, past tense. 1. A boat was built according to the specifications set by the teacher. Build a boat according to the specifications. Measure the mass of the The mass of the boat was measured by using an \_ boat. Measure the volume of the 3. The volume of the boat was calculated by \_ object Calculate the density of the 4. The density of the boat was calculated using the formula: boat. Place the boat in the water and place pennies in the boat one at 5. The boat was a time until it sinks. Record the number of pennies The number of pennies the boat could hold before sinking. Collaborate with team to revise 7. A second boat was built using the feedback and collaboration from peers. your boat, and rebuild a second

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