

# Physical Science

## Design a Lab

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_ Group \_\_\_\_\_ Score \_\_\_\_\_  
Procedures \_\_\_\_\_ Data Collection & Graphing \_\_\_\_\_ Conclusion \_\_\_\_\_ Cooperation \_\_\_\_\_ Neatness \_\_\_\_\_

One of the most useful skills for any person, is the ability to come up with a solution to a question. Many times we are presented with a situation we haven't seen before, but we must still come up with a practical means to deal with it.

In this activity, you and your group will be presented with just such a task. The challenge will be to take the knowledge and skills you have, apply them to the question and come up with a plan for the solution to the question. Then you will test your ideas by actually implementing the plan you devised. By carefully recording what happens, you will be able to analyze your data and determine the answer to the question.

You will also be using the different steps of the scientific method to answer the question. The plan and its implementation are to be the work of you and your group, and not other students or adults.

**Neatness will count.** Print or write legibly on this page as well as any other pages you end up using. Each person in your group has to turn in their own "**Design a Lab Assignment**". Lastly, since you will be working with others, you must contribute to the group daily in some way.

**Question To Answer:** How does the **color and luster** of a material affect its ability to absorb heat energy? In what specific order will the materials absorb heat?

**Hypothesis:** To be written below as well as given to your teacher **prior** to testing the hypothesis.

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**Materials:** All groups have **thermometers, beakers, containers, light source, tape, and scissors** to use. There will also be a **clock** available. List below any additional items/materials assigned to your group including the specific materials given to your group. Do not trade items with other groups since this would cost your group points. Your teacher has a list indicating which group has which materials. You may choose to use some or all of the items in your procedures when testing the materials. Should you lose anything, it will cost points to get replacements.

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**Variables:** By the time you finish this experiment, you will need to identify the different types of variables present in this investigation. Consult your notes for definitions of the types of variables.

**Independent Variables:**

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**Dependent Variables:**

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**Controlled Variables:**

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**Procedures:** List in numerical order, the various steps your group plans to follow, on a separate sheet of lined paper that you will staple to the back of this page. Since you will not be collecting any class results, you need to include multiple trials in your procedures.

**Observations:** Record all data in a neatly organized chart. Include column and row headings, along with the correct measurement units you'll use.

