Lakewood Middle School Science Fair

Name: __________________________
Teacher: _______________ Hour: ___

2014-2015
Dear Sixth Grade Parents,

The 10th Annual Lakewood Middle School Science Fair will take place January 26-29th, 2015. All 6th grade students will participate! Your student will be working with other sixth grade students to complete a project using the scientific method. The majority of the project, including research, planning, report writing, and display boards, will be done during science class or guided study class. The experimenting will need to take place at home. Students will be graded individually on the project’s components.

In our science classes, we will teach each part of the scientific method and ask the students to apply them in their science fair project. As not to overwhelm your student, each part will have a specific due date. Some components have pre-determined due dates, and others will be filled in by your student on the following page.

You can support your student by helping to locate experiment supplies (keeping all costs low), allowing your student to meet with his/her group outside of school, and by checking out the Science Pioneers website www.sciencepioneers.org. Science Pioneers is the local group that sponsors the Greater Kansas City Science Fair. Their website will provide student/parent handbooks and helpful websites for research and project ideas. We will keep you updated on Science Fair information through the weekly 6th grade parent e-mail and the LKMS Website.

Every project will be scored by qualified judges. The highest scoring projects will be entered in the Greater Kansas City Science Fair which takes place March 11-14th, 2015.

We look forward to an outstanding fair. Thank you for your continued support of your student and the science department at Lakewood Middle.

Sincerely,

Jessica Wilhelm
jwilhelm@bluevalleyk12.org

Marissa Cowan
mcowan@bluevalleyk12.org
2015 LKMS SCIENCE FAIR DATES
(Some are subject to change.)

<table>
<thead>
<tr>
<th>PROJECT COMPONENT</th>
<th>DUE DATE</th>
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<tbody>
<tr>
<td>Topic Selection</td>
<td></td>
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<tr>
<td>Review of Literature/Topic Research</td>
<td></td>
</tr>
<tr>
<td>Statement of Problem and Hypothesis</td>
<td></td>
</tr>
<tr>
<td>Procedure and Materials list</td>
<td></td>
</tr>
<tr>
<td>Begin all experimentation NOW!</td>
<td></td>
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<tr>
<td>Data/Experimentation check-point</td>
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<tr>
<td>All Experimentation Completed by</td>
<td></td>
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<tr>
<td>Conclusion</td>
<td></td>
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<tr>
<td>Abstract and Report Paper Typed</td>
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<tr>
<td>Display Board with Report Paper</td>
<td>Monday, Jan 26</td>
</tr>
<tr>
<td>Judging of Projects</td>
<td>Tuesday, Jan 27-28</td>
</tr>
<tr>
<td>Science Fair Open House</td>
<td>Thursday, Jan 29</td>
</tr>
<tr>
<td>Greater Kansas City Science Fair at Union Station</td>
<td>March 11-14</td>
</tr>
</tbody>
</table>
LKMS SCIENCE FAIR
PROJECT PROPOSAL and
CONTRACT

Name: ________________________________
Your email: ________________________@bluevalleyk12.net
Science Teacher: Cowan/Wilhelm Hour: _____
G.S. Teacher: _______________ Hour: _____

Partner #1: ________________________________
G.S. Teacher: _______________ Hour: _____
Phone Number: ________________________________
Email: ________________________@bluevalleyk12.net

Partner #2: ________________________________
G.S. Teacher: _______________ Hour: _____
Phone Number: ________________________________
Email: ________________________@bluevalleyk12.net

GROUP NORMS (TEAMWORK)

What rules should you follow to make this a successful group project?

1. ________________________________
2. ________________________________
3. ________________________________

All team members should sign, agreeing to these teamwork rules.

Your signature: ________________________________
Partner #1: ________________________________
Partner #2: ________________________________
Science Fair Categories

Behavioral/Social Sciences
Projects that involve human behavior

Botany & Zoology
Projects that involve plants or animals

Molecular Biology
Projects that involve microorganisms

Chemistry
Projects that involve the properties or reactions of substances

Earth/Space Science
Projects that involve geology or space

Engineering
Projects in which building materials or designs are tested

Environmental/Renewable Energy
Projects that involve recycling, forms of energy, etc

Matter & Energy
Projects that test energy like light or sound

Force & Motion
Projects that involve physics or Newton’s Laws
"Meet the Mentor" Notes

Name of Mentor: __________________________________________

<table>
<thead>
<tr>
<th>Idea #1</th>
<th>Notes:</th>
<th>Sample Data Table:</th>
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<tbody>
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<tr>
<td>Approved? Yes or No</td>
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</table>

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<tr>
<th>Idea #2</th>
<th>Notes:</th>
<th>Sample Data Table:</th>
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<td>Approved? Yes or No</td>
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<tr>
<th>Idea #3</th>
<th>Notes:</th>
<th>Sample Data Table:</th>
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<tr>
<td>Approved? Yes or No</td>
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</tbody>
</table>
Meet the Mentor Day -
Project Planning Sheet

Group Members: ____________________________ Hour ________

Mentor Name/E-Mail: ____________________________

Topic Category: ____________________________

Brief Description of Project:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

IV: ________________________________________

DV: ________________________________________

Procedures:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

Materials:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
Sample Data Table:

Mentor Notes:
# Science Project Proposal Form

**Name:**

**The question I plan to investigate in my experiment (please phrase as a question):**

---

## Science Fair Project Question Checklist

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1.</td>
<td>Your teacher may put some restrictions on projects. Have you met your teacher's requirements?</td>
</tr>
<tr>
<td>2.</td>
<td>Is the topic interesting enough to read about, then work on for the next couple months?</td>
</tr>
<tr>
<td>3.</td>
<td>Can you find at least 3 sources of written information on the subject?</td>
</tr>
</tbody>
</table>
| 4. | Can you measure changes to the important factors (variables) using a number that represents a quantity such as a count, percentage, length, width, weight, voltage, velocity, energy, time, etc.? Or, just as good, are you measuring a factor (variable) that is simply present or not present? For example,  
    - Lights ON in one trial, then lights OFF in another trial  
    - USE fertilizer in one trial, then DON'T USE fertilizer in another trial | Yes / No |
| 5. | Can you design a "fair test" to answer your question? In other words, can you change only one factor (variable) at a time, and control other factors that might influence your experiment, so that they do not interfere? | Yes / No |
| 6. | Is your experiment safe to perform? | Yes / No |
| 7. | Do you have all the materials and equipment you need for your science fair project, or will you be able to obtain them quickly and at a very low cost? | Yes / No |
| 8. | Do you have enough time to do your experiment more than once before the science fair? | Yes / No |
| 9. | If you are planning to enter a science fair outside of your school:  
    - Does your project meet all the rules and requirements for the science fair? | Yes / No |
    - Have you checked to see if your science fair project will require approval from the fair before you begin experimentation? | Yes / No |

---

I have discussed the project idea and the checklist with my parent(s) and I am willing to commit to following through on this project.

---

**Student Signature**

**Date**

I have discussed the project idea and the checklist with my student and I believe he or she can follow through with this project.

---

**Parent Signature**

**Date**

---

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You may print and distribute up to 200 copies of this document annually, at no charge, for personal and classroom educational use. When printing this document, you may NOT modify it in any way. For any other use, please contact Science Buddies. 2007/10/16
STATEMENT OF PROBLEM
(QUESTION TO ANSWER)

(The problem under investigation or experimentation is stated clearly and completely. This statement should be concise and helpful if stated as a question.)

What is the effect of

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

?
## VARIABLES

<table>
<thead>
<tr>
<th>Independent Variable (What will you be changing in the experiment. ONLY one Change!)</th>
<th>Dependent Variable (What will you be measuring or observing?)</th>
<th>Constants (What will you be keeping the same during the experiment?)</th>
</tr>
</thead>
<tbody>
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</table>

Levels of IV:
HYPOTHESIS

“If-then” format: The “If” part identifies the independent variable you manipulated in your experiment. The “then” part identifies your dependent variable (the variable that you ended up measuring).

IF (I do this)

__________________________________________

__________________________________________

__________________________________________,

THEN (this)

__________________________________________

__________________________________________

__________________________________________ will happen.
Selecting Useful Information

*What is it?* When you research a topic, you need to determine which information is useful and which isn’t. Useful information is relevant, essential, and verifiable. Information is *relevant* if it is connected to your topic. Information is *essential* if you cannot answer your research question without it. Information is *verifiable* if you can find it in other reliable sources.

*How to do it.* Examine each piece of information in your reading. Does it help define, explain, or give details about your topic? Can you verify the information?

*Try it.* Suppose that you are researching this question: *How does memory work in the brain?* You have found firsthand information on websites giving you information about the brain. In a table, list information from the reading. Decide whether it is relevant, essential, and verifiable for your topic. An example has been done for you.
## SELECTING USEFUL INFORMATION

**Essential Question:**

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</table>
Research Steps

1. Read the article. Does it give you essential information? If not, find another article.

2. Write down the essential information in your OWN WORDS!! Use bullet points and phrases, not sentences!

3. Cite your source. Do this in a Word Document under the Reference Tab, Manage Sources. SAVE IT!!

4. Repeat Steps until you have used 3 sources of information.
**PARAGRAPH ONE**

**FOCUS:** note-taking/paraphrasing

<table>
<thead>
<tr>
<th>Bibliography Info!</th>
<th>Notes: Bulleted</th>
<th>Relevant</th>
<th>Own words</th>
<th>Words and phrases</th>
<th>No sentences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus Question #1(Underline key terms!):</td>
<td></td>
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</tbody>
</table>

**SOURCE**

**Highlight one:**

Book, GVL, WB online or website?

Title/Author of book, article or website:

<table>
<thead>
<tr>
<th>Notes</th>
<th>Supporting Details (at least 3):</th>
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</table>

**Concluding statement:**
Focus Question:

Review of Literature (Research Paragraphs)

Proofread by: ____________________________ Date: __________
<table>
<thead>
<tr>
<th>Planning Step</th>
<th>Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>What should be changed?</td>
<td></td>
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<tr>
<td>Independent Variable:</td>
<td></td>
</tr>
<tr>
<td>What should be kept the same?</td>
<td></td>
</tr>
<tr>
<td>Constants:</td>
<td></td>
</tr>
<tr>
<td>How will the differences be observed or measured?</td>
<td></td>
</tr>
<tr>
<td>Dependent Variable:</td>
<td></td>
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</tbody>
</table>
PROCEDURE

Carefully record each step in which to perform your experiment. There should be enough detail to allow the experiment to be repeated by others. Give special attention to include constants and a detailed description of materials, equipment, and measurements. Describe how your data was collected. Include, such things as: how often measurements or readings were made, the units of measurement used, the instruments used. Remember all measurements in METRIC units.

A. To set up the experiment:
   1. Gather the following materials:

2. Set up the materials:
B. To perform the experiment: (Give steps using the first independent variable)

C. Record the ___________________________ (dependent variable).

D. Complete three trials for ___________________________ (first independent variable) and repeat for the remaining independent variables.
**DATA TABLE AND GRAPH**  
(Use this data table OR STAPLE YOURS HERE!)  
Data Sheet

Test Number:

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Dependent Variable</th>
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<td>3</td>
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<tr>
<td>Average of Three Tests</td>
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Test Number:

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<th>Independent Variable</th>
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<td>3</td>
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</tr>
<tr>
<td>Average of Three Tests</td>
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</tbody>
</table>
RESULTS

(In this section you will review the data collected. Graphs and Tables should be used to display your data to the reader. Use this guide to write your results.)

The only variable intended to be in the study were the independent variable of ________________________________ and the dependent variable of ________________________________.

(The next few sentences should discuss the constants of your experiment. What did you keep the same?)

______________________________

______________________________

______________________________

______________________________

(Share the results of your experiment. Averages of the data are best.)

______________________________

______________________________

______________________________

______________________________
CONCLUSION

This is one of the most important sections of your paper. Here you should explain the meaning of your experimental results. Answer such questions as: What do the data show and what do they mean? Did the data support or not support the hypothesis? What is the effect of the independent variable on the dependent variable? All conclusions must be supported by the data you gathered in this experiment.

Hypothesis: ____________________________________________

It was found that _______________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

The data (supports or does not support) the hypothesis.

The researchers claim _______________________________________

_________________________________________________________________

because ________________________________________________________.
Abstract

The problem is

It is hypothesized that

A brief procedure of the experiment is as follows:

The results [do / do not] support the hypothesis.
Acknowledgements

(Please thank the people who helped you with this science fair project.)
Future Study

(What changes would you make to your science fair experiment? What would you like to study next based on your results?)
A Manual For Writing An Elementary Science Fair Paper

(Grades 4 - 6)

SP

SCIENCE PIONEERS

This paper includes all of the topics that need to be covered in a science fair paper. The style of the sample paper is just an example. You may use the preferred style of your school if one exists.
A Writing Guide for Elementary Science Fair Projects

The abundance of word processing software available has made writing reports and papers a much easier process for many students. This guide offers several suggestions for the technical aspects of producing an elementary science research paper.

- **Suggested Fonts:** Choose a font that is clear and easy to read – Times New Roman, Arial, or Courier are easy to read. This guide is typed in the Arial font. It is best not to use script or bold styles unless a word or phrase is being emphasized.

- **Size of Font:** Most software allows you to choose the size of type used in a document. For the normal body of a report, the most common size type is 12. In titles or headings, the size of type can be increased to add emphasis. When the size of type is increased, it is common to use the **Bold** style. Those sizes, styles and alignments are noted in the body of this manual as they are used.

- **Spacing and Form Pages:** This booklet contains **suggestion, not requirements** for the form that may be used in producing an elementary science paper. The size and style of font used is noted throughout this manual.

- **Margins:** A 1" inch margin on each side of the paper is suggested.

- **Language:** Proper usage of the English language and correct spelling must be observed at all times. You may receive additional help from your science or English teacher in regard to the proper rules of writing.

  Third person, past tense should be observed in writing the science paper. You should, whenever possible, avoid direct reference to yourself.

  Incorrect: “I then devised a new method ...” (First person, past tense.)
  Correct: “A new method was then devised ...” (Third person, past tense.)

  If you find it necessary to refer to yourself directly, you may do so as: “The writer then devised a new method.”

- **Format:** Each separate topic should appear on a separate page and only one side of each sheet of paper is used.

  Separate topics are as follows:

  **Title Page**
  The title should be brief, but accurate and comprehensive. Effective titles are often composed of three or four main words or groups of words.

  **Abstract**
  An abstract is to be submitted as part of your paper. It is perhaps the most important section of the paper and the most difficult to write. Although the abstract is usually read first, it should be written last to ensure that it accurately reflects the content of the paper. An abstract should be informative, summarizing the principal facts and conclusions of the paper.

  The abstract should indicate the subject dealt within your paper and should state the objectives. The methods you used in obtaining the results should be included. The findings should be summarized,
remembering that it is better to say, for example, “The heart rate was found to be 82 beats/minute,” than “The heart rate was measured.” Finally, keep the abstract to one paragraph and no longer than 250 words.

Table of Contents
The main headings of the Table of Contents are written in full capitals, with no terminal punctuation, and are consecutively numbered in capital Roman numerals. If a heading requires more than one line, the second and following lines are indented five spaces in from the first letter of the first line and are double-spaced.

Review of the Literature
You should present a brief review of the history and present status of the subject, citing truly pertinent information. Terms used here, or later in the paper, should be identified.

Statement of the Problem
The statement of the problem begins by relating the information gathered from observations and/or from the literature read that led you to your problem. The problem under investigation or experimentation is stated clearly and completely. This statement should be concise, brief, and very carefully composed. Often it is helpful to state it as a question.

Hypothesis(es)
You should use information gained from the review of the literature as a basis for stating a possible solution to the problem. This “tentative” answer to the problem is your hypothesis. Although hypotheses may be written in a variety of ways, it is recommended that you use the “If-then” format. This means that you express your hypothesis as an “If-then” statement. The “If” part of the statement describes the environmental conditions under which your experiment was set up and identifies the independent (experimental) variable you manipulated in your experiment. The “then” part describes what you predicted would happen at the end of your experiment and identifies your dependent variable (i.e., the variable that you ended up measuring).

Example: “If the temperature of the water surrounding fish is increased, then the fish will breathe faster.”

Procedure
Here, you very carefully record step by step the manner in which the experiment was performed. The key to writing this section is that upon completion, there will be enough detail to allow the experiment to be repeated by others. You should give special care to include critical details (controlled variables) which influence the reliability of the results along with identification of controls, safety measure, etc., where appropriate. A detailed description of materials and equipment used should be included.

You should describe how your data was collected. Include such things as: how often measurements or readings were made, the units of measurement used, the instruments used to make the measurements, etc. Remember, too, all measurements are to be made in metric units.

Results
In this section you objectively review the data collected. Graphs, tables, and figures may be used to aid in displaying the data to the reader. If included, however, they should be discussed in the written portion of this section.

Conclusion
This is one of the most important sections of your paper. Here you should explain the meaning or significance of your experimental results. Answers to such questions as the following should be presented. What do the data show and what do they mean? Did the data allow you, the researcher, to support or accept the hypothesis or do the data call for the hypothesis to be refuted or rejected? What is the relationship between the variable that was changed in the experiment and the variable that was observed or measured (i.e., what was the effect of the independent variable) or the dependent variable? An important
thing to remember is that any interpretation or conclusion you make must be supported by the data you gathered in this investigation.

Future
If appropriate at this point, you should include ideas for future investigation of this problem or for new problems posed as a result of this investigation. Remember, science is a continuing process that never comes to an end.

Acknowledgments
Contributions of persons, other than co-authors, who have helped you substantially with your investigation should be acknowledged in a separate section in your paper. Recognition of assistance should be stated as briefly as possible. It is customary to acknowledge any financial support that you received for your investigation as well as borrowed materials and equipment.

Bibliography
In your bibliographic list, the entries are listed alphabetically by author. The main parts of a complete entry for a book are (i) name(s) of author(s), (ii) year of publication, (iii) title of book, (iv) name and city of publisher, (v) number of pages in book (not necessarily in this order).


When citing Internet resources you need to include the date you viewed it, as some pages can change over time. For more details on citing web pages go to, www.sciencebuddies.org/science-fair-projects/project_biblio.shtml for latest instructions.
A Study Of Two Ramps
(Size 16 Font, Bold Style, Centered, First letter of each word in Capital Letters)

(Return 10 times, single space)

A Science Paper
(2 returns between each line)

Presented to
(Size 14 Font, Bold Style, Centered)
The Greater Kansas City Science and Engineering Fair

(12 returns)

April 1, 2008
(Size 14 Font, Bold Style)
Acknowledgment
(Size 14 font, Bold Style, Centered)
(2 returns)
I greatly appreciate the help supplied by my teacher during this study. I also wish to thank my P.E. teacher, Ms. Jones, for the use of her stopwatch.

TABLE OF CONTENTS
(Size 14 font, Bold Style, Centered)
(2 returns)

| I.  | Abstract                      | 7 |
| II. | Statement of Problem          | 8 |
| III.| Review of Literature          | 9 |
| IV. | Hypothesis                    | 10|
| V.  | Procedure                     | 11|
| VI. | Results                       | 12|
| VII.| Conclusion                    | 13|
| VIII.| Future Study                  | 14|
| IX. | List of Tables                | 15|
| X.  | List of Figures               | 16|
| XI. | Bibliography                  | 17|

Note: Set the tabs to align the different sections of the paper. The page numbers should be filled in after the paper is complete to ensure that they are accurate.
Abstract
(Size 14 font, Bold Style, Centered)
(2 returns)
Sometimes people need to increase the speed of an object rolling down a ramp. It is hypothesized that by raising the height of the ramp, an object can be made to move faster down the ramp. Two ramps of the same length (60 cm) were built. One ramp, however, was 30 cm high and the other was only 20 cm high. A marble was rolled down each ramp ten times and the speed measured with a stopwatch. This procedure was done for three trials. The data showed that the marble rolled down the higher ramp was faster (an average of 6.3 seconds for all three trials) than down the lower ramp (an average of 7.2 seconds for all three trials). The data tend to support the hypothesis.
Statement Of Problem
(Size 14 font, Bold Style, Centered)
(2 returns)
People sometimes have the problem of needing to roll an object down a ramp in the shortest period of time. Is it possible to move that object in a shorter period of time by changing the height of the ramp?
Review Of The Literature
(Size 14 font, Bold Style, Centered)
(2 returns)
All around us thousands of objects are pushing and pulling on each other. This pushing and pulling is called “force.” Force acts in many ways on all sorts of things.

By pushing on an object the motion and direction of that object can be changed. It can speed up when more force is used, or slowed down if the force is stopped. Objects like bowling balls and bicycle wheels will then eventually slow down.

The weight of an object causes it to fall. This is called the “force of gravity.” The force can be measured by the change of speed it produces on an object of a certain weight in a certain time. One way force is created is by people and animals pushing or pulling. Another way to create force is to use something to help, such as a ramp or stairs.

One way to increase the falling speed of an object is to use a ramp or inclined plane. If the ramp is made higher, it takes less force to move an object down the ramp. But to move an object up the ramp it takes more force. That means the greater the distance of the ramp, the more force is needed to raise the object to the height of the ramp.

Finally, gravity increases the force when the object is moving down the ramp.
Hypothesis
(Size 14 font, Bold Style, Centered)
(2 returns)
If the height of a ramp is raised, then an object will move faster down the ramp.
Procedure
(Size 14 font, Bold Style, Centered)
(2 returns)
Two ramps were made. Ramp A was made 30 centimeters tall and 60 centimeters long. Ramp B was made 20 centimeters tall and 60 centimeters long. Both ramps had a straight flat shape. A marble was rolled down Ramp A 10 times. The time needed for the marble to reach the end of Ramp A was timed with a stopwatch each time. A record was kept of these times and is shown in the line marked “A” in Table 1. The same procedure was followed for Ramp B. The data obtained for Ramp B is shown in the line marked “B” in Table 1.

These two procedures were repeated two more times. See Table 1.
Results
(Size 14 font, Bold Style, Centered)
(2 returns)
The only variables intended to be in the study were the independent variable of ramp height and the dependent variable of time required to roll down the ramp. The ramps were made from the same sheet of cardboard. Both were made 60 cm long. The same marble and stopwatch were used for each trail. The average time required for the marble to roll down ramp A was 6.3 seconds. The average time required for Ramp B was 7.2 seconds. (See Table 1)
Conclusion
(Size 14 font, Bold Style, Centered)
(2 returns)
It was found that the height of the ramp made a difference in how fast the marble moved down the ramp. The data therefore tends to support the hypothesis.
Future Study
(Size 14 font, Bold Style, Centered)
(2 returns)
The writer wonders if changing the surface shape of the ramp will affect the speed, and also what effect friction has. It would be interesting to study the difference height makes in pushing objects up the ramp and to learn about how the length of a ramp affects the speed of an object.
### Table I

(Size 14 font, Bold Style, Centered)

<table>
<thead>
<tr>
<th>Run Number</th>
<th>Trial 1</th>
<th>Trial 2</th>
<th>Trial 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ramp A</td>
<td>Ramp B</td>
<td>Ramp A</td>
</tr>
<tr>
<td>1</td>
<td>8.0</td>
<td>8.5</td>
<td>8.1</td>
</tr>
<tr>
<td>2</td>
<td>7.3</td>
<td>7.7</td>
<td>7.2</td>
</tr>
<tr>
<td>3</td>
<td>6.5</td>
<td>7.4</td>
<td>6.3</td>
</tr>
<tr>
<td>4</td>
<td>5.4</td>
<td>7.3</td>
<td>5.2</td>
</tr>
<tr>
<td>5</td>
<td>5.6</td>
<td>7.0</td>
<td>5.5</td>
</tr>
<tr>
<td>6</td>
<td>6.0</td>
<td>7.2</td>
<td>5.9</td>
</tr>
<tr>
<td>7</td>
<td>7.0</td>
<td>6.9</td>
<td>6.1</td>
</tr>
<tr>
<td>8</td>
<td>7.5</td>
<td>7.1</td>
<td>6.0</td>
</tr>
<tr>
<td>9</td>
<td>7.5</td>
<td>6.9</td>
<td>6.3</td>
</tr>
<tr>
<td>10</td>
<td>6.5</td>
<td>7.2</td>
<td>6.6</td>
</tr>
<tr>
<td>Total</td>
<td>673</td>
<td>732</td>
<td>632</td>
</tr>
<tr>
<td>Average</td>
<td>6.7</td>
<td>7.3</td>
<td>6.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ramp A</th>
<th>Ramp B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Average for all three trials</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Note: Hand written tables can be used if neatly done.
Figure 1
(Size 14 font, Bold Style, Centered)
(1 return)

Trial 1
(3 returns)

Time in seconds

Run #

[Diagram showing a bar chart with two bars for Ramp A and Ramp B across 10 runs, with time in seconds on the y-axis and run numbers on the x-axis]
Bibliography
(Size 14 font, Bold Style, Centered)
(2 returns)


*Gravity: How it Affects Us.* EBEC film.


**Note:** A bibliography includes books, films, people, magazines, Internet sites, and any other sources consulted. The listings are alphabetical according to the author's last name, or the name of the source if an author is not listed. The entries are in "reverse indentation," i.e., the second line of the entry is indented, rather than the first as would occur in a paragraph.
Checklists
Display Board
Scoring Guide
Assessment
Science Fair
Check-In #1

Hour: _____  Grade: _____  Group#: _____

1. List the correctly spelled **first** and **last** names of each person in your group:

________________________________________________________________________
________________________________________________________________________

2. What is the **Category** of your selected topic:

☐ Behavioral/Social Science  ☐ Chemistry
☐ Botany/Zoology  ☐ Force & Motion
☐ Engineering  ☐ Molecular Biology
☐ Environmental Science  ☐ Matter & Energy
☐ Earth/Space Science

3. What is your **Statement of Problem**:  

________________________________________________________________________
________________________________________________________________________

4. What is your **IV**:  

________________________________________________________________________

5. What is your **DV**:  

________________________________________________________________________

Group Members Signatures:

________________________________________________________________________

Teacher Signature:

________________________________________________________________________
Science Fair
Check-In #2

Group#: __________

1. List the correctly spelled first and last names of each person in your group:

__________________________, _________________________
__________________________, _________________________

2. What is your Statement of Problem:

________________________________________________________________________
________________________________________________________________________

3. Complete this checklist:

<table>
<thead>
<tr>
<th>Student Signature</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statement of Problem: Proofread/Typed/Saved (1 copy)</td>
</tr>
<tr>
<td></td>
<td>Hypothesis: Proofread/Typed/Saved (1 copy)</td>
</tr>
<tr>
<td></td>
<td>Materials/Procedures: Proofread/Typed/Saved (1 copy)</td>
</tr>
<tr>
<td></td>
<td>Variables: Proofread/Typed/Saved (1 copy)</td>
</tr>
<tr>
<td></td>
<td>Research Paragraph/Bibliography Proofread/Typed/Saved (EACH PARTNER)</td>
</tr>
<tr>
<td></td>
<td>Research Paragraph/Bibliography Proofread/Typed/Saved (EACH PARTNER)</td>
</tr>
<tr>
<td></td>
<td>Research Paragraph/Bibliography Proofread/Typed/Saved (EACH PARTNER)</td>
</tr>
</tbody>
</table>
4. Draw a sample of your DATA TABLE below:

5. WHERE will you complete your experiment:

6. Does this project require adult supervision?____
   Why? __________________________________________
   (ex: welding, boiling anything, growing bacteria, using knives...)
   WHO WILL SUPERVISE? _____________________________

7. If you are using HUMAN SUBJECTS: Have you printed a copy of
   the Statement of Problem and Procedures and given them to your
   teacher? _________ How many subjects will you need? _____

8. HOW LONG will it take to set up your experiment? _____________
   (ex: growing plants?, building bridges?, gathering materials?)

9. HOW LONG will you gather data? ___________________________
   (ex: measuring plants every other day for two weeks??, testing
   groups of students for 1 hour??)

10. What is your group’s Due Date? ___________________________
    (The LAST day it can be _________!! The ONLY thing you need
    to do on your due date is show us the rough copy of the
    COMPLETED data table.)

   Group Members Signatures:
   ___________________________________________________

   Teacher Signature: __________________________________
Human Subject Forms

- You may NOT be a test subject in your own experiment!!
- Forms must be completed BEFORE experimenting!!
- Answer the three questions on the back or on a separate paper.
- Get your science teacher’s approval and signature.
- Get Nurse Janet’s approval and signature.
- Get Mr. Currier or Mrs. Saucedá’s approval and signature (give to science teacher for this step!)
- Have all participants and their parents sign the form.
- Keep all the forms to put in your binder to display for the judges.
Human Participants Form 2 (4-8)
Grades 4-8

Required for all research or testing involving humans (including student researcher), including testing an invention project that might pose a health or safety risk.

NOTE: All signatures on this form (including participants) must be obtained before experiment begins.
**All completed consent forms must be included with the Fair application form that is sent to Science Pioneers.**

Name of Student Researcher(s) __________________________________________

Title of Project __________________________________________________________

Three questions to be completed by Student Researcher (on an attached page) and shared with the Institutional Review Board (IRB) before their review of the project (see next box):

1. Describe the purpose of this study and list all procedures (including duration) in which human participants will be involved. Attach any surveys or questionnaires to be used.

2. Describe and assess any potential risks or discomfort, and potential benefits (physical, psychological, social, legal, or other) that may be reasonably expected with participation in this research.

3. Describe procedures used to minimize risk, obtain informed consent, and maintain confidentiality.

These IRB Signatures Required Prior to Start of Research Project; signatures signify approval of project.

NOTE: If a Medical Professional (other than a parent) is not available to this student, contact the Science Pioneers office.

NOTE: Any individual that is an Adult Sponsor (teacher), Qualified Scientist (mentor), or is related (biologically or legally) to the student researcher cannot serve on the IRB for this project.

<table>
<thead>
<tr>
<th>Medical Professional's Printed Name</th>
<th>Signature</th>
<th>Date of Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Professional must be a psychologist, psychiatrist, medical or osteopathic doctor, licensed social worker, licensed clinical professional counselor, physician's assistant, or registered nurse – circle the appropriate description – and cannot be parent or guardian of the student.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educator's Printed Name</th>
<th>Signature</th>
<th>Date of Approval</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>School Administrator's Printed Name</th>
<th>Signature</th>
<th>Date of Approval</th>
</tr>
</thead>
</table>

STOP – Once the original form is completed this far, copy the completed form (with the three questions and answers copied on the back or attached) as the consent form for all potential participants (see below).

To be completed by each human participant (including the student researcher) prior to experimentation or testing of inventions (using copies of original signed, approved form):

- I am 18 years of age or older. (If not, the signature of a parent/guardian is also required below.)

- I have read and understand the conditions of this study, and I consent to participate in this research procedure. I realize I am free to withdraw my consent and to withdraw from this activity at any time.

- I consent to the use of visual images (photos, videos, etc.) involving my participation in this research.

<table>
<thead>
<tr>
<th>Participant's Printed Name</th>
<th>Signature</th>
<th>Date Signed</th>
</tr>
</thead>
</table>

If participant is under 16 years old, a parent/guardian signature is required.

- I have reviewed the conditions of this study (including any tests, surveys or questionnaires to be used) and allow participation in this project.

<table>
<thead>
<tr>
<th>Parent/Guardian's Printed Name</th>
<th>Signature</th>
<th>Date Signed</th>
</tr>
</thead>
</table>
Science Fair

Check-In #3

Hour: ______ Grade: ______

1. List the correctly spelled first and last names of each person in your group:
   __________________________________________
   __________________________________________

2. Write your statement of problem.
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________

3. When is your DUE DATE? _________________________

4. Our group has:

   [ ] gathered all supplies
   [ ] made a data table
   [ ] taken pictures of our experiment
   [ ] shared the work pretty evenly
   [ ] found a place to complete our experiment
   [ ] performed experiment
   [ ] turned in our completed data table
   [ ] solved problems effectively

Please list any questions or concerns:
Science Fair Paper Checklist

Group #_________

**Easy Stuff:** Basically these pages just need to be typed. You can use the examples to see how these should look. SAVE these documents.

<table>
<thead>
<tr>
<th>Page</th>
<th>Group Member Responsible</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title Page</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table of Contents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesis see pg ____</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statement of Problem pg ____</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variables pg ____</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Not Too Hard:** These pages will require a little bit of revision before they can be typed. The group member responsible must attend the information session before working on the page. SAVE these documents.

<table>
<thead>
<tr>
<th>Page</th>
<th>Group Member Responsible</th>
<th>Info Session</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review of Literature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure/Materials pg ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bibliography</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Table pg ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graph</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**More Challenging:** These pages will require that your group work together to complete the rough draft, then one group member will need to type the page. One group member will need to be in charge of attending the lesson session about the page, working with the group to complete the rough draft, then typing the final copy. SAVE these documents.

<table>
<thead>
<tr>
<th>Page</th>
<th>Group Member Responsible</th>
<th>Info Session</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgement pg ___</td>
<td>________________</td>
<td>____</td>
<td>[ ]</td>
</tr>
<tr>
<td>Results pg ___</td>
<td>________________</td>
<td>____</td>
<td>[ ]</td>
</tr>
<tr>
<td>Future Study pg ___</td>
<td>________________</td>
<td>____</td>
<td>[ ]</td>
</tr>
<tr>
<td>Conclusion pg ___</td>
<td>________________</td>
<td>____</td>
<td>[ ]</td>
</tr>
<tr>
<td>Abstract pg ___</td>
<td>________________</td>
<td>____</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**MORE STUFF TO DO:**
Get a Report Binder/Folder ______________________

Have the paper Proofread by an adult ______________________

Attach the calendar of Information Sessions Here.
The left side panel of the display could be used to present your **Problem**, **Hypothesis**, and **Procedure** while the right side could show your **Results** in the form of graphs and charts and your **Conclusion**. The center panel is reserved for the **Title** of the project and diagrams, photos or drawings.

Your **Paper** should be placed on the table in front of the display panel. Even if most of the information within the paper is displayed on the backboard display, your report should still include all the procedures and data from your experiment. In addition, you can place equipment that you used in your experiment. Do not include expensive **instruments**, **live animals**, **microorganisms** or **hazardous materials**.

Thus, the backboard, research paper and equipment comprise your exhibit.
<table>
<thead>
<tr>
<th>Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis</td>
</tr>
<tr>
<td>Procedure</td>
</tr>
<tr>
<td>Data Table</td>
</tr>
<tr>
<td>Graph</td>
</tr>
<tr>
<td>Results</td>
</tr>
<tr>
<td>Conclusion</td>
</tr>
<tr>
<td><strong>Intermediate</strong></td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td><strong>Introduction</strong></td>
</tr>
<tr>
<td><strong>Are the variables identified?</strong></td>
</tr>
<tr>
<td><strong>Is the hypothesis testable and relevant to the problem or question?</strong></td>
</tr>
<tr>
<td><strong>Procedure</strong></td>
</tr>
<tr>
<td><strong>Are sample sizes large enough to create confidence?</strong></td>
</tr>
<tr>
<td><strong>Is the investigation designed so that it tests the hypothesis?</strong></td>
</tr>
<tr>
<td><strong>Results</strong></td>
</tr>
<tr>
<td><strong>Are the data presented correctly in graphs and/or tables?</strong></td>
</tr>
<tr>
<td><strong>Are the results summarized accurately?</strong></td>
</tr>
<tr>
<td><strong>Conclusion/Discussion</strong></td>
</tr>
<tr>
<td><strong>Display</strong></td>
</tr>
<tr>
<td><strong>Does the accompanying paper include a review of the literature and bibliography?</strong></td>
</tr>
</tbody>
</table>
Science Fair Project Reflection and Evaluation

Name: ________________________________  Hour: ______

Partners: ____________________________________________________

1. What question were you trying to answer with your experiment? 10 pts

2. What was your hypothesis? Write it in the correct form. 10 pts

3. Independent Variable: (include Levels of IV) 5 pts

4. Dependent Variable (unit of measure): 5 pts

5. What were the results from your experiment? 10 pts

6. Was your hypothesis supported by your data? Yes or No 5 pts
   What did you learn by doing this experiment?

7. What did you like about your project? 5 pts

8. Would you do a science fair project in 7th grade? Explain.
9. How did you and your partners divide the work? Give a percentage to each person. List the work done and be specific!

_________________________ ___% List work done:

_________________________ ___% List work done:

_________________________ ___% List work done:

_________________________ ___% List work done:

Score:

Knowledge/Understanding of Scientific Method _____/50

Project completion (Experiment/Paper/Display) _____/25

Time on Task/Dedication to Project/Problem Solving _____/25

Project Grade: _______/100

Letter Grade: _______

Comments: