St. John Brebeuf School

My Science Fair Project

PLANNING SHEETS

Student Name:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Partner (optional):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Phase 1: Picking the Topic**

What should be included in your logbook at this point:

**Topic**

1) The topic for my science fair project is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (this may change as you dive deeper into your project, but that’s ok!)

2) Why are you choosing this topic for research?

**Background**

3) Create a word web of what information you already know about your subject. Use the method from class (Generate a list of 5 words, sort them on your page as subpoints, placing them depending on how central they are connected to your topic, draw lines of connection with a sentence that explains how the two words are linked, and elaborate on your subpoints with the same method)

4) Use the question matrix to generate at least 10 questions that are puzzles or challenges about your topic you can learn more about through research.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | IS | DID | CAN | WOULD | WILL | MIGHT |
| WHO |  |  |  |  |  |  |
| WHERE |  |  |  |  |  |  |
| WHY |  |  |  |  |  |  |
| WHEN |  |  |  |  |  |  |
| HOW |  |  |  |  |  |  |

**Level 2: Adjusting Variables**

5) a) Make a list of the independent variables you could change or control.

b) Make a list of the dependent variables that you are interested in.

6) Write the list of variables in a web with lines connecting any variables that you think affect one another. Choose one or several to explore and highlight those.

7) State 3 scientific questions that either:

* Extends a known experiment by asking how one variable would affect another, with modest improvements to the procedures, data gathering and possible applications.
* Improves or demonstrates new applications for existing technology or equipment.

**Bonus: Level 3 and 4: Extending Questions**

Bonus) If you could extend your topic by either:

* Using your level 2 questions in a new way/new environment to perform original scientific research
* Design and build innovative technology; or provide adaptations to existing technology.
* Integrate several technologies, inventions, or designs and construct an innovative application

What would be 3 ways you could do this?

**Science Fair Question**

9) Choose **one** of your questions from 7) or 8) as your science fair topic.

10) Are you doing an experiment or an innovative project?

Experiments: involve scientific testing…hypothesis, collection of data, analysis and conclusions. An example from previous years might be “Which Golf Ball ‘Hits’ the Farthest” with five different kinds of golf balls tested for bounce.

Innovation: goes a step further and leads to new discoveries and even new products. An example from previous years might be “A Prosthetic Hand That ‘Feels’ Hot and Cold”

**Phase 2: Research**

It is important to gather information that relates to your topic by reading and referring to a variety of sources, print and online.

1) What field of science is related to your project?

Biotechnology and pharmaceutical science

Computer and information technology

Earth and environmental science

Engineering

Health science

Life science

Physical science

Environmental Innovation (must be one of the following: renewable energy, sustainable development, environmental influences on health, culture, society, and culture, the greening of products and services, or biodiversity)

**https://cwsf.youthscience.ca/judging-%E2%80%93-divisions**

2) Do you know anyone who works in the field of science you are researching that you could contact? If so, contact them and find out if they are interested in helping you.

3) Begin doing your research. Choose credible websites and books. (What does credible mean?)

-Record what you learned (details/notes, not just a summary!) in your logbook from every site you visit.

-Record the new puzzles/questions/challenges you thought of while or after reading this source

-Record the website/book details (as much as you can find) anytime you use or take information, and put the details in your bibliography (a separate page where you rewrite a list of all your sources without any research added)

|  |  |
| --- | --- |
| Webpage | Book |
| URL | Title of Book |
| Name of the page you visited (e.x. Jesus, not Wikipedia.org) | Author of Book |
| Author of page | Publisher details: where/when it was published (on the inside of the cover or book jacket, or before the title page) |
| Date website was created/edited last (usually at the top/bottom of the page) |

4) Begin a vocabulary page where you list and define the key words in the space below related to your project that you would use in Internet searches. *Add to the list as you learn more.*

5) Have a word web page where you draw a web mapping the relationships between the various words, with central themes or words at the center of your web.

6) Once you have finished your research, write a hypothesis (If…then…because) that responds to your scientific question. *Remember, it should be an educated guess based on your research.* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- |
| ::Downloads:menu_top.gifScience Fair Experiment #1 (Phase 1 and phase 2)  Question & Hypothesis – Pick Your Topic |

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade: \_\_\_\_\_\_\_ Due: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Follow the categories below as you begin working on your Science Fair Project. Assemble all your research in your logbook duotang and submit this on or before the deadline!

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Category | | 4 | 3 | 2 | 1 | 0 |
| Idea/ Question | | Identified a question which was interesting and which could be investigated. Topic is at or above grade level. | Identified a question which was interesting and which could be investigated. Topic is at grade level. | Identified a question that could be investigated. Topic is below grade level. | Identified a question that could not be tested/investigated or one that was not worthy of investigation. Topic is well below grade level. | No question was identified |
| Background | | Discussion about why you picked your topic and what you already knew is detailed | Discussion about why you picked your topic and what you already knew is present | Discussion about why you picked your topic OR what you already knew is present | Discussion about your background knowledge/interest in the topic lacks detail | Missing a background. |
| Graphic Organizer (Word Web) | | Graphic organizer or outline shows clear, logical relationships between all topics and subtopics | Graphic organizer shows many topics/key words and subtopics or related terms | Graphic organizer or outline has been started and includes several topics and subtopics | Graphic organizer or outline has been started and includes few topics and subtopics | No graphic organizer was created |
| Printed Sources | | Detailed background research was collected from four or more (4+) print (book) sources | Background research was collected from 3-4 print (book) sources | Background research was collected from 2 print (book) sources | Background research was collected from 1 print (book) sources | No background research was collected from printed sources |
| Electronic Sources | | Detailed background research was collected from four or more (4+) Internet sources | Background research was collected from 3-4 Internet sources | Background research was collected from 2 Internet sources | Background research was collected from 1 Internet sources | No background research was collected from Internet sources  Turn over for the rest of the rubric |
| Category | 4 | 3 | 2 | 1 | 0 |
| Hypothesis Development (Prediction) | Developed a hypothesis that is educated (has a good *because*…), reasonable, and testable | Developed a hypothesis that is reasonable and/or testable (If…then…) | Developed a hypothesis that is not practicable nor testable | Developed a weak hypothesis that is not practicable nor testable | No hypothesis was identified |
| Bibliography (Resources) | All sources are properly listed in student’s logbook in a Bibliography section. Work was done neatly | Most sources are properly listed in student’s logbook in a Bibliography section. Work was done neatly | Sources are listed in student’s logbook on a Bibliography page, but are missing details.  Or  Work was not done neatly | Sources are properly listed in student’s logbook, but not in a Bibliography page. Work was not done neatly. | No sources listed. |
| Logbook | All components above are included in a logbook. Work is ordered, dated, neat, and includes journal entries of all work done on the project. | Most components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Some components above are included in a logbook. Work is done neatly. Some journal entries of work done on the project. | Logbook is incomplete and missing components. Work is not neatly done and/or journal entries are missing. | No logbook |
| Deadline (Due Date) | All work was handed in on or before the deadline. | Most work was handed in on or before the deadline. Some details were missing | Work was handed in soon after the deadline without teacher prompting | Work was handed in much after the deadline or required teacher prompting | Work was handed in more than one week after the deadline. |
| Totals: |  |  |  |  |  |
| Grand Total: | /36 |  |  |  |  |

Teacher comments/notes:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Phase 3: Planning**

**Materials Needed to Test Your Hypothesis**

1) List the materials you might need to perform the experiments for your project in your logbook. Even if you have some of the materials around your home, find the cost of the materials you would need. You might try finding the cost of materials in home supply stores, etc.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Material/ Item needed | How many of each | Cost per item | Total cost of material/item | Where will I buy it? |
| Ex. Balloons | 5 | $0.05 | $0.25 |  |

Total cost of project: \_\_\_\_\_\_\_\_\_\_

Is it practical to perform the experiment as planned? Do I need to modify anything to make it more affordable?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) Create a diagram of what you will be building, being sure

-to label the parts of your diagram.

-to be neat

3) Come up with your procedure. A good procedure would allow me or anyone reading it to do your experiment. It is a good idea to have someone else read your procedure as your mind will fill in the gaps and miss holes in your explanation.

4) Identify your IV, your DV, and at least 5 control variables that you will keep the same.

*Hint: Remember all variables that you identified as possible IVs will be CVs if you they are not what you want how it affects your DV (not a part of your question)*

5) Set up your data table with your IV/DV so I know what data you are collecting.

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| ::Downloads:menu_top.gifScience Fair Experiment #2  Method – Plan your Experiment |

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade: \_\_\_\_\_\_\_ Due: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Follow the categories below as you continue working on your Science Fair Project. Continue to keep all your research in your logbook duotang and submit this on or before the deadline!

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Category | 4 | 3 | 2 | 1 | 0 |
| Apparatus (Materials & Equipment) | Provided an accurate, easy-to-follow list of materials required to complete the experiment | Student provided a somewhat detailed list of materials required to complete the experiment. | Student provided an apparatus section with some reference to the materials required to complete the experiment. | Important details were overlooked or missing in the apparatus section. | No apparatus was identified. |
| Diagrams | Provided an accurate, easy-to-follow diagram with labels to illustrate the procedure and/or apparatus being used. | Provided an accurate diagram with labels to illustrate the procedure and/or apparatus being used. | Provided an easy-to-follow diagram with labels to illustrate the procedure and/or apparatus being used. | The diagram was quite incomplete. | No diagram was identified. |
| Description of Procedure | Procedures were outlined in an accurate, step-by-step fashion that could be followed by anyone without additional explanations. | Procedures were outlined in a step-by-step fashion that could be followed by anyone without additional explanations. | Procedures were outlined in a step-by-step fashion, but had 1 or 2 gaps that require explanation. | Procedures that were outlined were seriously incomplete or not in order. | No procedure was listed. |
| Independent Variables (s) | Identified and clearly defined all variables that are going to be changed by the student. | Identified most variables that are going to be changed by the student. | Identified some variables that are going to be changed by the student. | Teacher help needed to identify and define almost all the variables being changed by the student. | No independent variables listed. |

Turn over for the rest of the rubric

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Category | 4 | 3 | 2 | 1 | 0 |
| Dependent Variable (s) | Identified and clearly defined all variables that are going to be measured by the student. | Identified most variables that are going to be measured by the student. | Identified some variables that are going to be measured by the student. | Teacher help needed to identify and define almost all the variables being changed by the student. | No dependent variables listed. |
| Controlled Variables | Identified and clearly defined all variables that are kept constant throughout the entire experiment (5+) | Identified most variables that are kept constant throughout the entire experiment. (3-5) | Identified some variables that are kept constant throughout the entire experiment. (1-2) | One variable identified or teacher help needed to identify and define the variables that were kept constant throughout the entire experiment. (0-1) | No controlled variables listed. |
| Logbook | All components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Most components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Some components above are included in a logbook. Work is done neatly. Some journal entries of work done on the project. | Logbook is incomplete and missing components. Work is not neatly done and/or journal entries are missing. | No logbook |
| Deadline (Due Date) | All work was handed in on or before the deadline. | Most work was handed in on or before the deadline. Some details were missing | Work was handed in soon after the deadline without teacher prompting | Work was handed in much after the deadline or required teacher prompting | Work was handed in more than one week after the deadline. |
| Totals: |  |  |  |  |  |
| Grand Total: | /32 |  |  |  |  |

Teacher comments/notes:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Final Phase – The Experiment and Reflection

**All sections should have a title**

1. Conduct your experiment using your instructions and **Data Table** from phase four. If you are able to, conduct each trial multiple times and to see if you get the same patterns/results. If you do, find the average of the multiple trials and add it to your logbook.

Take pictures/video along the way if it is appropriate to do so.

1. If your data is numerical, create a **Graph** of the data. Be sure that the type of graph allows you to show the patterns you want. If it is not appropriate to create a graph, include pictures in your logbook.
2. Look at your results and create an **Analysis.** This means looking for how changing your IV caused or was linked to a change in the DV. You want to see what patterns your graphs show you. Try to figure out why your results turned out the way they did (why are your variables linked).
3. Write your **Conclusion** where you state whether or not your hypothesis was correct or not. If it was not correct, discuss what assumptions or knowledge you were using in your hypothesis that you discovered was wrong after doing the experiment. Then discuss several sources of error. Remember, sources of error are parts of your procedure that may not have been done perfectly, or control variables you didn’t take into account. Discuss how each of these might have affected your results.
4. Write down improvements that could be made to your project if you were to pursue this topic further, and try to predict how each of these changes might affect your results.
5. Who could benefit from knowing the results you discovered? In what situations might the knowledge be helpful?

|  |
| --- |
| Science Fair Experiment #3::Downloads:menu_top.gif  Results – Producing Your Answer |

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade: \_\_\_\_\_\_\_ Due: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Follow the categories below as you continue working on your Science Fair Project. Continue to keep all your research in your logbook duotang and submit this on or before the deadline!

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Category | 4 | 3 | 2 | 1 | 0 |
| Data Collection (Experimental Trials) | The experiment was repeated at least 3 times. Data were collected several (3+) times. It was independently summarized, in a way that clearly describes what was discovered | Data were collected more than one (2) time. It was independently summarized, in a way that clearly describes what was discovered | Data were collected more than one time. Assistance was needed to summarize what was discovered. | Data were collected only once and assistance was needed to summarize what was discovered. | No data were collected |
| Data Table | Data in the table is well organized, accurate, and easy to read | Data in the table is organized, accurate, and easy to read. | Data in the table is accurate and easy to read. | Data in the table is not accurate and/or cannot be read | No table was used. |
| Graphing | Graph fits the data well and makes it easy to interpret.  Correct choice of graph type is used and is free of errors | Graph is sufficient but interpretation of the data is somewhat difficult.  Correct choice of graph type may contain a few errors | Graph distorts the data somewhat and interpretation of the data is somewhat difficult or the incorrect type of graph with many errors is used. | Graph seriously distorts the data making interpretation almost impossible. Wrong graph type with many errors. | No graph was created. |
| Results & Analysis | The relationship between the variables is discussed and trends/patterns logically analyzed (include why they might be related) | The relationship between the variables is discussed and trends/patterns are mentioned | The relationship between the variables is discussed but does not include analysis of trends/patterns. | The relationship between the variables is not discussed. | No results were given |
| Improvements | 4+ ideas on how the experiment or design could be improved are made. P**redictions** are made about what might happen with each change. | 3 ideas on how the experiment or design could be improved are made. P**redictions** are made about what might happen with some of the changes. | Predictions are made about what might happen if part of the lab were changed or how the experimental design could be improved. (2) | A single prediction is made about what might happen if part of the lab were changed or how the experimental design could be improved. (1) | No improvements, changes, or predictions were suggested. |

Turn over for the rest of the rubric

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Category | 4 | 3 | 2 | 1 | 0 |
| Conclusion/ Summary | Conclusions are detailed and include whether the findings supported the hypothesis, possible sources of error, and what was learned from the experiment. | Conclusions are somewhat detailed and include whether the findings supported the hypothesis, and what was learned from the experiment. | Conclusions include what was learned from the experiment. | A weak conclusion was included in the report OR shows little effort and reflection. | No conclusion was listed. |
| Applications (Connections) | Many connections between the project and real life/ other science are offered (4+) | Several connections between the project and real life/ other science are offered. (3) | Some connections between the project and real life/ other science are offered. (2) | A single connection between the project and real life/ other science are offered. (1) | No connection was offered. |
| Logbook | All components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Most components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Some components above are included in a logbook. Work is done neatly. Some journal entries of work done on the project. | Logbook is incomplete and missing components. Work is not neatly done and/or journal entries are missing. | No logbook |
| Deadline (Due Date) | All work was handed in on or before the deadline. | Most work was handed in on or before the deadline. Some details were missing | Work was handed in soon after the deadline without teacher prompting | Work was handed in much after the deadline or required teacher prompting | Work was handed in more than one week after the deadline. |
| Totals: |  |  |  |  |  |
| Grand Total: | /36 |  |  |  |  |

Teacher comments/notes:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Putting your board together

1. Give yourself space to create a title. The title should be centered on the project board, and should be catchy, but still explain what your project was about.

b) A list of recommended sections to type up/include on your board, with a large title:

-Question -Hypothesis -Procedure/variables -Data Table

-Graphs/Pictures -Analysis -Conclusion -Applications

\*Additional categories you may have room to include and help to tell the whole picture include

-Background/reason for doing the project -Materials

-Credit to people who helped you -Improvements you can make

c) Get your logbook in order with all the sections. Rewrite messy sections if you have to. All sections should have an underlined title.

d) Type up the different sections (with larger titles) and have someone edit them. The font size should be large enough to easily read from arm’s length. Print them out.

e) Arrange the sections on your board, and look for ways to add colour (backgrounds behind your sections, additional pictures). Remember about half of the area of your board should be empty space.

|  |
| --- |
| ::Downloads:menu_top.gifScience Fair Research #1  Question & Hypothesis – Pick Your Topic |

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade: \_\_\_\_\_\_\_ Due: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Follow the categories below as you begin working on your Science Fair Project. Assemble all your research in your logbook duotang and submit this on or before the deadline!

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Category | 4 | 3 | 2 | 1 | 0 |
| Idea/ Question | Identified a question which was interesting and which could be investigated. Topic is at or above grade level. | Identified a question which was interesting and which could be investigated. Topic is at grade level. | Identified a question that could be investigated. Topic is below grade level. | Identified a question that could not be tested/investigated or one that was not worthy of investigation. Topic is well below grade level. | No question was identified |
| Graphic Organizer (Word Web) | Graphic organizer or outline shows clear, logical relationships between all topics and subtopics | Graphic organizer or outline shows clear, logical relationships between most topics and subtopics | Graphic organizer or outline has been started and includes several topics and subtopics | Graphic organizer or outline has been started and includes few topics and subtopics | No graphic organizer was created |
| Printed Sources | Background research was collected from four or more (4+) print (book) sources | Background research was collected from 3-4 print (book) sources | Background research was collected from 2-3 print (book) sources | Background research was collected from 1 print (book) sources | No background research was collected from printed sources |
| Printed Sources | Background research was collected from four or more (4+) Internet sources | Background research was collected from 3-4 Internet sources | Background research was collected from 2-3 Internet sources | Background research was collected from 1 Internet sources | No background research was collected from Internet sources |
| Hypothesis Development (Prediction) | Developed a hypothesis that is educated, reasonable, and testable | Developed a hypothesis somewhat reasonable and/or testable | Developed a hypothesis that is not practicable nor testable | Developed a weak hypothesis that is not practicable nor testable | No hypothesis was identified |

Turn over for the rest of the rubric

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Category | 4 | 3 | 2 | 1 | 0 |
| Bibliography (Resources) | All sources are properly listed in student’s logbook with the Bibliography worksheet. Work was done neatly | Most sources are properly listed in student’s logbook with the Bibliography worksheet. Work was done neatly | Some sources are properly listed in student’s logbook with the Bibliography worksheet  Or  Work was not done neatly | Few sources are properly listed in student’s logbook with the Bibliography worksheet. Work was not done neatly | No sources listed. |
| Logbook | All components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Most components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Some components above are included in a logbook. Work is done neatly. Some journal entries of work done on the project. | Logbook is incomplete and missing components. Work is not neatly done and/or journal entries are missing. | No logbook |
| Deadline (Due Date) | All work was handed in on or before the deadline. | Most work was handed in on or before the deadline. Some details were missing | Work was handed in soon after the deadline without teacher prompting | Work was handed in much after the deadline or required teacher prompting | Work was handed in more than one week after the deadline. |
| Totals: |  |  |  |  |  |
| Grand Total: | /32 |  |  |  |  |

Teacher comments/notes:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- |
| ::Downloads:menu_top.gifScience Fair Research #2  First Draft of Your Report |

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade: \_\_\_\_\_\_\_ Due: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Follow the categories below as you continue working on your Science Fair Project. Continue to keep all your research in your logbook duotang and submit this on or before the deadline!

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Category | 4 | 3 | 2 | 1 | 0 |
| Question/ Purpose | The purpose (main topic) of the report or the question to be answered is clearly identified and stated. | The purpose of the report or the question to be answered is identified, but is stated in a somewhat unclear manner. | The purposed of the report o r the question to be answered is partially identified, and is stated in a somewhat unclear manner. | The purpose of the report or the question to be answered is erroneous or irrelevant. | No purposed or question is identified. |
| Notes | Notes are recorded and organized in an extremely neat and orderly fashion. | Notes are recorded legibly and are somewhat organized. | Notes are recorded. | Notes are recorded only with teacher/ peer assistance and reminders. | No evidence of notes/ research. |
| Organization | Information is very organized with well-constructed paragraphs and subheadings. | Information is organized with well-constructed paragraphs. | Information is organized, but paragraphs are not well constructed. | The information appears to be poorly organized. | No information of information is evident. |
| Amount of information | All topics are addressed and all questions answered with at least 2 sentences about each. | All topics are addressed and most questions answered with at least 2 sentences about each. | All topics are addressed and most questions answered with at least 1 sentence about each. | One or more topics were not addressed. | No information was collected. |

Turn over for the rest of the rubric

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Category | 4 | 3 | 2 | 1 | 0 |
| First Draft | Detailed draft is neatly presented and includes all required information. | Draft includes all required information and is legible. | Detailed draft is neatly presented and includes most required information. | Draft includes most required information and is legible. | Draft is missing required information and is difficult to read. |
| Logbook | All components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Most components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Some components above are included in a logbook. Work is done neatly. Some journal entries of work done on the project. | Logbook is incomplete and missing components. Work is not neatly done and/or journal entries are missing. | No logbook |
| Deadline (Due Date) | All work was handed in on or before the deadline. | Most work was handed in on or before the deadline. Some details were missing | Work was handed in soon after the deadline without teacher prompting | Work was handed in much after the deadline or required teacher prompting | Work was handed in more than one week after the deadline. |
| Totals: |  |  |  |  |  |
| Grand Total: | /32 |  |  |  |  |

Teacher comments/notes:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Science Fair Research #3::Downloads:menu_top.gif  First Draft of Your Report |

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade: \_\_\_\_\_\_\_ Due: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Follow the categories below as you continue working on your Science Fair Project. Continue to keep all your research in your logbook duotang and submit this on or before the deadline!

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Category | 4 | 3 | 2 | 1 | 0 |
| Organization | Information is very organized with well-constructed paragraphs and subheadings. | Information is organized with well-constructed paragraphs. | Information is organized, but paragraphs are not well constructed. | The information appears to be poorly organized. | No information of information is evident. |
| Amount of information | All topics are addressed and all questions answered with at least 2 sentences about each. | All topics are addressed and most questions answered with at least 2 sentences about each. | All topics are addressed and most questions answered with at least 1 sentence about each. | One or more topics were not addressed. | No information was collected. |
| Quality of Information | Information clearly relates to the main topics. It includes several (3+) supporting details and/or examples. | Information clearly relates to the main topic. It provides 1-2 supporting details and/or examples. | Information clearly relates to the main topic. No details and/or examples are given. | Information has little or nothing to do with the main topic. | No information was collected. |
| Paragraph Construction | All paragraphs include introductory sentence, explanations or details, and concluding sentence. | Most paragraphs include introductory sentence, explanations or details, and concluding sentence. | Paragraphs include related information but were typically not constructed well. | Paragraphing structure was not clear and sentences were not typically related within the paragraphs. | Information was not presented in paragraph or sentence form. |

Turn over for the rest of the rubric

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| --- | --- | --- | --- | --- | --- |
| Category | 4 | 3 | 2 | 1 | 0 |
| Mechanics | No grammatical spelling, or punctuation errors. (0) | Almost no grammatical spelling, or punctuation errors. (1-2) | A few grammatical spelling, or punctuation errors. (2-5) | Many grammatical, spelling, or punctuation errors. (5+) | No proof reading or editing is evident. |
| Diagrams & Illustrations | Diagrams and illustrations are neat, accurate, and add to the reader’s understanding of the topic. | Diagrams and illustrations are accurate and add to the reader’s understanding of the topic. | Diagrams and illustrations are neat, accurate, and sometimes add to the reader’s understanding of the topic. | Diagrams and illustrations are not accurate OR do not add to the reader’s understanding of the topic. | No diagrams or illustrations are included. |
| Logbook | All components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Most components above are included in a logbook. Work is done neatly and includes journal entries of all work done on the project. | Some components above are included in a logbook. Work is done neatly. Some journal entries of work done on the project. | Logbook is incomplete and missing components. Work is not neatly done and/or journal entries are missing. | No logbook |
| Deadline (Due Date) | All work was handed in on or before the deadline. | Most work was handed in on or before the deadline. Some details were missing | Work was handed in soon after the deadline without teacher prompting | Work was handed in much after the deadline or required teacher prompting | Work was handed in more than one week after the deadline. |
| Totals: |  |  |  |  |  |
| Grand Total: | /32 |  |  |  |  |

Teacher comments/notes:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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