

# Science Fair Project Information Packet

Due: April 15, 2019

Scholar Name: \_\_\_\_\_

Dear Families,

The R.I.S.E. Grammar School is excited to announce its Annual Science Fair. This will be an exciting experience for your scholar. Parent support and assistance is essential to a scholar's success. We hope that with your encouragement, your scholar will participate in the Fair by conducting an experiment.

The primary objective of this project is to have scholars approach a problem scientifically. This includes:

1. Asking questions and forming hypotheses
2. Creating experiments to test those hypotheses
3. Organizing data and drawing conclusions
4. Writing about scientific research

The project must be **experimental** in nature as opposed to research oriented. In other words, scholars must do a test, survey, or experiment to determine the answer to their question instead of just looking it up in a book. We encourage scholars to pick topics that they are genuinely interested in, since they will be working on these projects for the next month. Please take a moment to review all the attachments with your child in order to generate topic ideas:

- [http://www.sciencebuddies.org/science-fair-projects/project\\_ideas.shtml](http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml)
- <https://www.education.com/science-fair/>
- <http://www.all-science-fair-projects.com/>
- <http://www.cool-science-projects.com/science-fair-topic.html>
- <https://sciencebob.com/science-fair-ideas/ideas/>
- <https://kids.usa.gov/science/science-fair-projects/index.shtml>

A general rule of thumb is that 2nd-4th grade scholars should be able to do many parts with minimal assistance. We are confident the following benefits will result from your scholar's participation in the Science Fair:

- Reinforcement of grade level science, literacy and math skills
- Foster curiosity, awareness, and creativity
- Increasing research techniques
- Growth in ability to work independently
- Having fun with science!

In addition to the opportunity to work on a project, the Science Fair provides scholars with an increased awareness of science and an opportunity for them to develop positive attitudes about themselves and their work. The science project allows children to use critical thinking and problem solving skills learned in science and math.

We are looking forward to working with you to make this a valuable learning experience for your scholar. All Science Fair projects and related materials are due on **April 15, 2019**.

Sincerely,

The RISE Team

# Science Fair Project Planner

Name(s): \_\_\_\_\_

✓	Due Dates	Tasks
		Choose topic and write project question.
	March 8, 2019	Get approval from your teacher.
		Research your topic. Write science terms and paragraph.
		Write hypothesis.
		Design experiment; list variables and write procedure.
		List and gather materials.
		Conduct experiment multiple times. Record observations and data.
		Create a table, chart, or graph of the data.
		Draw conclusions. Explain how you would improve your experiment.
		Make the project display.
		Write and print abstract.
	April 15, 2019	Present project at science fair.

# Project Question

## Think of a Question

Your question will drive your entire project. Make sure that your question is something that can be measured and answered by following the scientific process. You may use the project question for your project title.

Brainstorm some possible questions that you are interested in learning more about.



Once you have decided on your project question, write it on the lines below and then get approval from your teacher to begin your project.

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# Project Research

## Research Your Topic

Spend some time learning more about your topic. Use reliable Internet sources, books from the library, your science book, or other resources. Not only do you want to be an expert on your topic, but you want to teach others about your topic.

*Science Terms* - locate at least 3 key science words related to your topic. Your science book is an excellent place to find these. Make sure that the words you choose are directly related to your topic. Provide a definition of each key word **IN YOUR OWN WORDS**.

Term	Definition

# Project Research

*A paragraph describing the science behind your project* - after you have completed your research give us, your audience, some background information on your topic in a complete and well-written paragraph. Give us specific, rather than general information. Use the space provided to write a draft. You will edit a final copy to place on your display board.

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# Project Hypothesis

## State Your Hypothesis

Based on your research, decide what you think the outcome of the project will be and make a good guess as to what you think the answer to your question will be. **Also explain WHY you think that will be the outcome.** Remember, it is ok if you don't have the right answer; that is how scientists make discoveries. Make sure that your hypothesis is written in a complete sentence.

Start by listing some possible outcomes or answers to your question.



Decide which outcome is most likely. This will be your hypothesis. Clearly write your hypothesis in complete sentences.

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# Project Experiment

## Design Your Experiment

Clearly write out the procedure you are going to follow. Remember that your experiment needs to follow the scientific process and that you need to have one variable that you are going to change (independent variable). There are three variables in a scientific experiment: independent, dependent, and controlled.

The *independent variable* is the one, and only one, variable you will change.

The *dependent variables* are those being observed and measured throughout the experiment.

The *controlled variables* are those that remain constant and allows you, the scientist, to understand how the experiment would react under normal circumstances.

Independent Variable:

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Dependent Variables:

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Controlled Variables:

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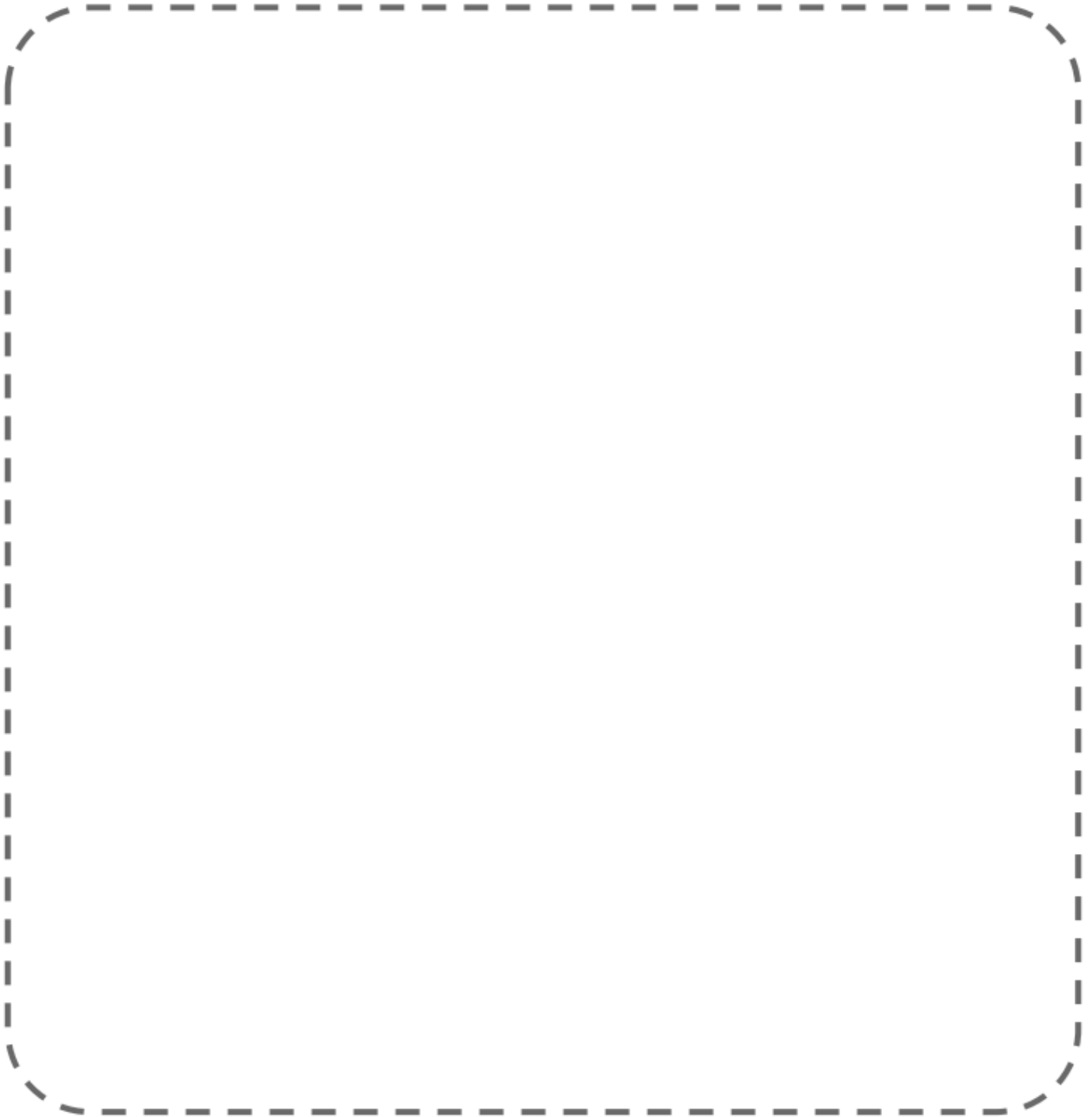
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# Project Experiment

## Materials

List all materials needed to complete the experiment. Be specific about type, size, brand, etc.

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# Project Experiment

## Conduct experiment

Scientists conduct an experiment many times in order to get the most accurate data, so make sure you also conduct your experiment multiple times. During your experiment you need to collect data and make observations. You will record these in your Experiment Log. After you have completed the experiment use your log to write down the data and observations below. In your log you will need to:

*Collect Data* - you will need to collect numerical data; that means you need to take measurements during the experiment. Measurements can be temperature, distance, height, etc. Creating a chart is a helpful way to organize your data. You will analyze the data later to determine the results of your experiment.

*Make Observations* - as you conduct your experiment you will use your senses (sight, smell, touch, etc.) and write down any observations you make during the process.

## Observations

# Project Experiment

Data

# Project Results

## Determine the Results

Now it is time to review your data and observations to find out what happened during the experiment. Think about the best way to show your data: bar graph, line graph, chart, etc. and then create a table or a graph below. This visual will help you analyze your data for trends.

## **Results**

Use this space, or a separate sheet in your notebook, to sketch 1 or more tables, charts, or graphs to analyze your data.



# Project Conclusions

## Draw Conclusions

Analyze the results and determine how the results helps you answer your project question. Write your answer in a complete sentence using the question to begin your answer. You also need to tell whether your hypothesis was supported or if the results contradict the hypothesis. If it was not supported, explain why you think so. End this paragraph by saying how you would change or improve your experiment in the future.

Answer to your project question: \_\_\_\_\_

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Did the results support or contradict the hypothesis? Explain. \_\_\_\_\_

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How would you improve or change the experiment? \_\_\_\_\_

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# Project Presentation

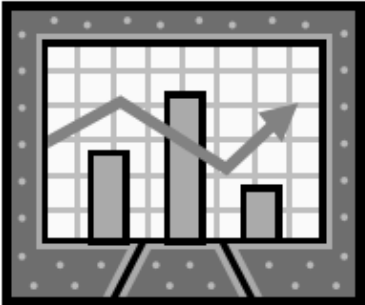
## Display board

Now that you have completed your experiment you will begin setting up your display board to communicate the results of your experiment to others.

Remember, the board is graded on the information you present, not how colorful or pretty it looks. Your display board must have ALL of the following components located in the same places.

Other board guidelines:

- Font should be easy to read and at least a size of 16pt or greater.
- Photos should not include faces of students.
- Information on the board can be typed or written neatly by hand.

<p><b>Hypothesis</b></p> <div data-bbox="181 919 483 1058"></div> <p><b>Key Words and Research</b></p> <div data-bbox="181 1157 483 1318"></div> <p><b>Procedure and Materials</b></p> <div data-bbox="181 1419 483 1671"></div>	<p><b>Question/Title</b></p> <div data-bbox="571 919 1052 989"></div> <p><b>Photos or Drawings</b></p> <div data-bbox="592 1100 1052 1241"></div> <p><b>Graphs</b></p> <div data-bbox="636 1352 998 1654"></div>	<p><b>Results</b></p> <div data-bbox="1140 919 1442 1192"></div> <p><b>Conclusion</b></p> <div data-bbox="1140 1329 1442 1602"></div>
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# Project Component Score Sheets

Name(s): \_\_\_\_\_

You will receive a grade for completing the required components of a science fair project. Use this score sheet as a checklist as you complete your science fair project.

<b>Component</b>	<b>Points Possible</b>	<b>Points Received</b>
Science Fair Planning Packet	10 pts	
Display Board with: Question/Title Hypothesis Science Terms/Research Procedure and Materials Photos/Drawings Chart or Diagram Results Conclusion	10 pts	
Experiment Log	10 pts	
Abstract	10 pts	
<b>TOTAL →</b>	<b>40 pts</b>	

# Project Content Score Sheets

Name(s): \_\_\_\_\_

You will receive a grade for the quality of the content of your science fair project. Use the score sheet as a guide as you complete your project.

<b>Content</b>	<b>Points Possible</b>	<b>Points Received</b>
Question * Question is relevant and testable through experimentation.	10 pts	
Research * Science terms and research are relevant to the question being tested.	10 pts	
Hypothesis * Hypothesis is based on observations.	10 pts	
Procedure * Procedure is clearly outlined and presents a controlled experiment.	10 pts	
Results * Results are communicated clearly through graph/chart and well written explanation.	10 pts	
Conclusion * Conclusion includes appropriate evaluation of data and proves or disproves the hypothesis.	10 pts	
TOTAL →	60 pts	