

# ICCI Academy

## Science Fair 2018-19



It's that time of year again when our students will have a chance to solve their own science mystery by doing a science fair project. The science fair is a great way to get students excited about the scientific process and thinking like young scientists. Hands-on exploration of scientific principles is exciting and the educational benefits are plentiful as students develop skills in problem-solving, writing, and creative thinking. The science fair can create a passion for learning science in our students.

All students are required to design a science fair project that uses the scientific method to solve a problem. Students may work on a project individually or in groups of two. You may assist your child whenever he/she might need adult assistance, however, please make sure most of the work is done by your child. There are lots of books available at the public library and a ton of great websites to help select a project just right for you. In order to make a project selection more exciting for the students, they will not be restrained to a particular area in science. They may choose any grade appropriate project that sparks their personal science interest as long as the topic is approved by the teacher.

The final project will be displayed at the school **Science Fair** for the entire school and community to enjoy. It is important to do the best science project possible as **it will count towards the students' science grade for the 3<sup>rd</sup> Quarter as one of their TEST scores**. They will also be graded on following the project timeline when completing different parts of the project. The students who successfully complete a science fair project will receive a medal for their hard work.

Although most of our students are familiar with the scientific method, I will discuss it in detail in order to help guide them with the steps needed for a successful science fair project. I will also go more in depth on the importance of the variables in the project (independent, depended, and controlled variables). The students will be given practice time in class as to how to perform an experiment and go through the steps of the scientific method. Throughout most of this process I will be available for questions and guidance. Please feel free to call me or email with any questions or concerns. Ms. Manal, the reading teacher, will also be available to assist students in proof reading/typing their work before it is displayed on the board. Please take advantage of all the resources available. Together we can make this a fun and successful project!

Attached, you will find the final scoring rubric that will be used when grading the project, along with the scientific method, procedural safety guidelines, and a timeline for the project.

**All students are required to submit a completed project including the display board on Monday January 21, 2019 when they will have an in-class presentation.**

**The school Science Fair will be on Thursday January 24, 2019. On this day ICCI Academy will also be participating in *National School Choice Week*-a national educational event.**

## The Scientific Method

The **scientific method** is an organized way that helps scientist answer a question or begin to solve a problem in a scientific way.

These are the steps to follow:

### I. Question

Think of a question that you would like to answer through an experiment.

### II. Hypothesis

A hypothesis is an educated guess at the answer to your question based on your background knowledge and research.

### III. Experiment

Design an experiment, or think of a procedure, you will follow to find an answer to your question.

Make a careful list of all materials you use for your experiment.

List each step of what you do.

### IV. Data Collection

Carefully record data that you collect during your experiment or from your procedure.

It's better to have too much data than not enough, so keep lots of notes.

Pictures, graphs and charts can make it easier to see what your data is telling you.

### V. Data Analysis

Think carefully about what your data tells you, even if it shows that your hypothesis is not correct.

Think carefully about all the data together, not just one or two pieces of data, especially if they're very different from the rest.

### VI. Conclusion

The conclusion is simply the answer to the question with which you started.

Be sure your conclusion is based on the results of your experiment, survey, or demonstration.

## Research

When starting a science fair project, a student chooses a question he or she would like to answer. Then library and/or WEB research is needed. Background information is needed to formulate a hypothesis and design an experimental procedure. Research is also essential in order to help explain your results and conclusion.



## Safety Rules and Guidelines

### Safety Rules:

In order for the science fair project to be an enjoyable experience for all persons involved, there are some safety guidelines that should be followed. Models or photographs can be used in place of things that are restricted from display.

### Safety Guidelines:

**Safety gloves** should be used for any testing with food or chemicals.

**Eye-goggles** for eye protection: Safety glasses should be used for any experiments with chemicals or if any kind of splash may come in contact with your eyes

**Allergies:** Remember human subjects may be allergic to different substances. Always ask about allergies.

**Fire:** Projects that involve fire or burning objects are not allowed.

**Microbial** cultures or fungi, living or dead, are not permitted.

**Controlled substances**, poisons, or drugs are not permitted.

**No** projects using 110 volts (house current) are allowed.

**Sharp items**, such as syringes, knives, broken glasses/glass cups, and needles are not acceptable.

**Gases** are not permitted.

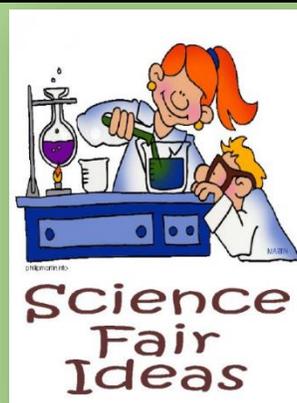


### RECOMMENDED WEBSITES WITH TONS OF SCIENCE FAIR PROJECT IDEAS ACCORDING TO EACH GRADE LEVEL:

[www.sciencebuddies.org](http://www.sciencebuddies.org)

[www.education.com/science-fair](http://www.education.com/science-fair)

<http://www.all-science-fair-projects.com/category0.html>



## ICCI Academy Science Fair 2018-2019

Student Guide

### Project Timeline

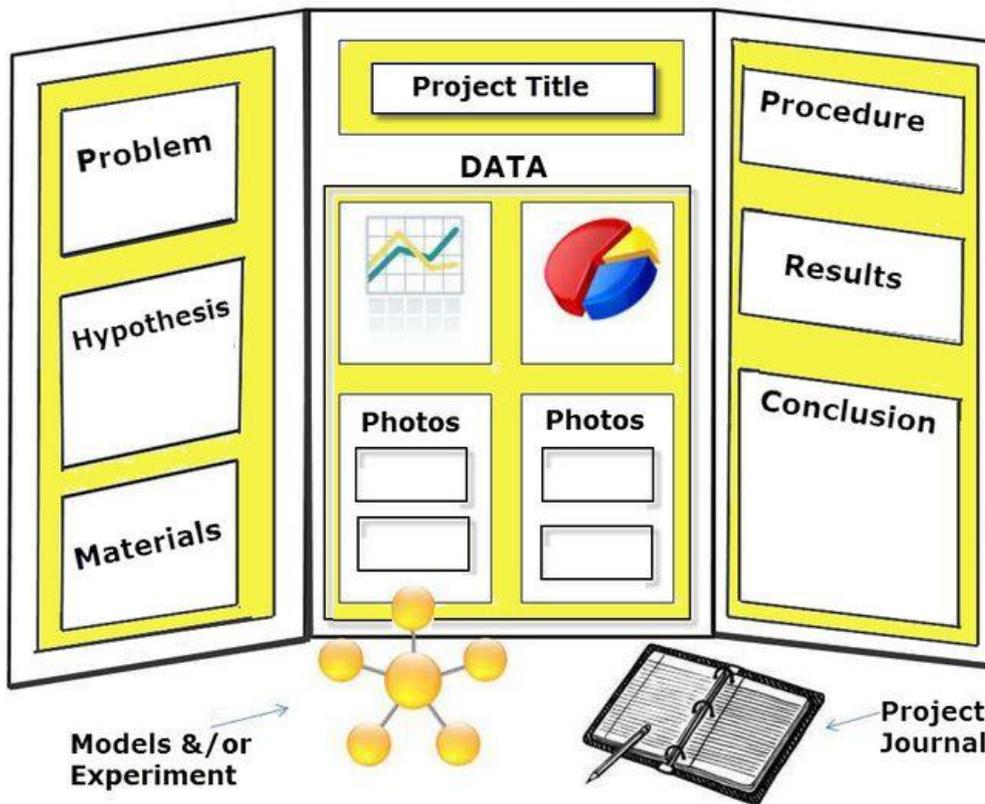
The following is a list of due dates for each section of the project. Careful – falling behind makes everything more difficult! It is better to work ahead of the due dates in case problems arise. Remember sometimes scientist need to redo a part of their experiment or even the whole thing!

ASSIGNMENT	DUE DATE
Select a <b>Research Question and Purpose</b>	<b>Fri. Dec. 21, 2018</b>
Conduct <b>Background Research</b> and write <b>Bibliography</b> . Change the research question and purpose if necessary.	<b>Mon. Jan. 7, 2019</b>
Write a <b>Hypothesis</b> .	<b>Mon. Jan. 7, 2019</b>
Write the <b>Material List</b> .	<b>Mon. Jan. 7, 2019</b>
Write the <b>Procedure</b> .	<b>Mon. Jan. 7, 2019</b>
Conduct the <b>Experiment</b> (Start to conduct the experiment as soon as possible over the winter break)	<b>Mon. Jan. 7, 2019</b>
Complete the <b>Results</b> section, including any graphs or tables.	<b>Mon. Jan. 14, 2019</b>
Write the <b>Conclusion</b> , which may include reflection and application.	<b>Mon. Jan. 14, 2019</b>
<b>Display Board</b>	<b>Mon. Jan. 21, 2019</b>
<b>Oral Presentation</b>	<b>Mon. Jan. 21, 2019</b>

Student Name \_\_\_\_\_ Grade \_\_\_\_\_

<p><b>Question Hypothesis and Variables</b></p>	<ul style="list-style-type: none"> <li>• Question/Problem is specific and very clear and can be answered by doing an experiment</li> <li>• Hypothesis/Prediction addresses the question very clear</li> <li>• Independent (manipulated), Dependent (responding) and Controlled variables are included and are clearly identified.</li> </ul>	<p>_____ / 15</p>
<p><b>Experimental Procedure</b></p>	<ul style="list-style-type: none"> <li>• Material list is very detailed, complete and clear.</li> <li>• Experimental procedure is very clear.</li> </ul>	<p>_____ / 15</p>
<p><b>Data</b></p>	<ul style="list-style-type: none"> <li>• Presents clear data using well-organized tables, graphs or charts and good use of photos.</li> </ul>	<p>_____ / 15</p>
<p><b>Conclusions</b></p>	<ul style="list-style-type: none"> <li>• Conclusions are clearly supported by the data.</li> </ul>	<p>_____ / 15</p>
<p><b>Display</b></p>	<ul style="list-style-type: none"> <li>• Display is very neat, creative and organized.</li> <li>• Display shows high involvement by the student/s in the procedure.</li> </ul>	<p>_____ / 15</p>
<p><b>Bibliography</b></p>	<ul style="list-style-type: none"> <li>• Student has cited all the sources used in the project.</li> </ul>	<p>_____ / 5</p>
<p><b>Class Presentation</b></p>	<ul style="list-style-type: none"> <li>• Student demonstrates knowledge of his/her project through their presentation by discussing the six main parts of the project (hypothesis, variables, materials, procedures, data and conclusion)</li> </ul>	<p>_____ / 20</p>
<p><b>TOTAL</b></p>		<p>_____ / 100</p>

## Science Fair Display Model



## SCIENCE FAIR PROJECT BOARD

### Science Fair Display Layout

