



FORTIS TCI
ENERGY FOR GOOD™

TCI's premier science showcase

NATIONAL SCIENCE PROJECT COMPETITION

Hosted in partnership with the TCI Ministry of Education.



This guide applies to primary school students only.

SHOWCASING BRIGHT MINDS

FortisTCI National Science & Technology Fair is one of the company's largest and longest running sponsored events. Launched in 2009, the fair is held in conjunction with the Education Department within the TCI Ministry of Education and brings together some of the country's brightest and most creative young minds.

www.fortistcisciencefair.com

Rationale

The science fair involves exhibiting an organized display of work carried out by primary school students. This display is to be evaluated and must be accessible for public viewing. This exercise is intended to create a learning environment for the students and residents at large; to increase their scientific knowledge and to foster greater appreciation for the role of Science in Education. The students who participate in the activities develop their confidence and skills, as well as, positive values and attitudes towards the environment. The Science Fair provides a sound foundation for our students to respond to challenges of a rapidly changing world.

Objectives

- To stimulate students' interest in Science and Technology.
- To improve on the scientific knowledge and skills of students.
- To help students understand and use the scientific method.
- To develop students' problem-solving skills and approach.
- To improve students critical-thinking skills
- To enhance students written and oral communication skills.

Project Guidelines

The science project **MUST** be an **EXPERIMENT** not just a model or display. In creating the project, students should follow the steps of the scientific method that tests something, captures data, gives information, and make a conclusion (Appendix A).

Topics may be chosen from one of three categories: Life Science, Physical Science or Earth and Space Science.

Project Categories

LIFE SCIENCE

This category deals with animals, plants, humans and the environment. Subcategories in this category include, Animal Behavior, Plant Activities and Health Science. Example of projects: Can Dogs see Color? Will Dish Detergent Affect Plant Growth? At which temperature does Popcorn pop best?

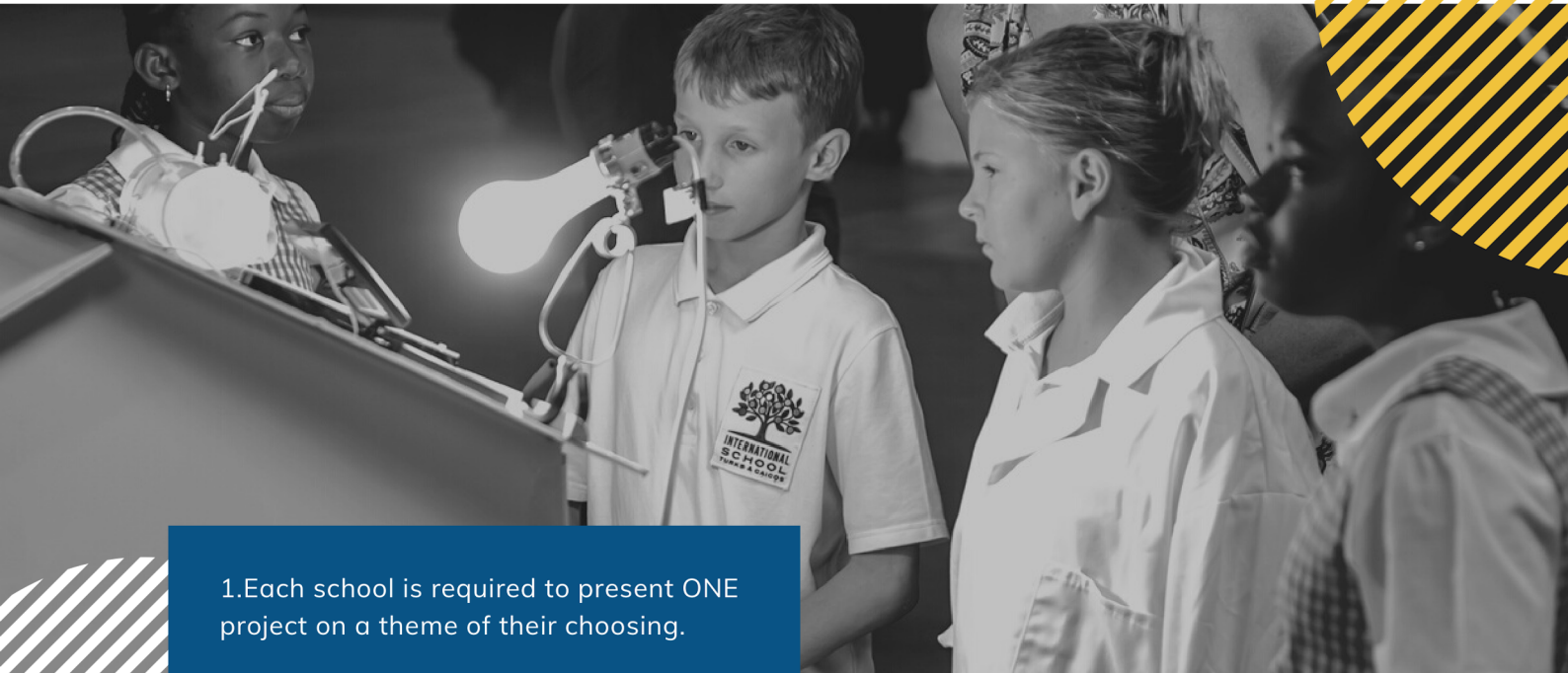
PHYSICAL SCIENCE

This category deals with finding out how things work, and the composition of matter. Subcategories in this area include Electricity and Magnetism, Sound and Light, Chemistry and Physics. Example of projects: Which Battery Lasts the Longest? How can You Increase the Strength of an Electromagnet? How can I Amplify Sound?

EARTH AND SPACE SCIENCE

Subcategories include Weather, Geology, and Astronomy. Sample projects could include How does weather affects our landscape. Does road construction create problems with the habitat in an area? Does a full moon affect plant growth? How has the temperature affected our water supply?

SCIENCE PROJECT RULES



1. Each school is required to present ONE project on a theme of their choosing.

2. Display board must be self-supporting; single sided and must NOT exceed the size requirement: 2 meters wide, 2 meters high and 40 centimeters deep.

3. All displays should be mounted at booth on the evening preceding, the first day of the fair.

4. At least one teacher with two students must be present during the period of judging. ONLY the students will answer questions from the judges. Students should also be prepared to present their projects to guests and the public.

5. A table and three chairs will be provided for use in each booth. Extension cords and other accessories for use in display will be the responsibility of the school.

6. You may have up to four (4) students per project (if participating in the quiz, two (2) of the students should be from the quiz competition).

7. Project must be an experiment, not a model.

8. You cannot perform the experiment during judging.

9. Judges will judge your project by the information that is shown on your project board and oral presentation.

10. Any project that involves animals, drugs, firearms, or explosives are NOT permitted.

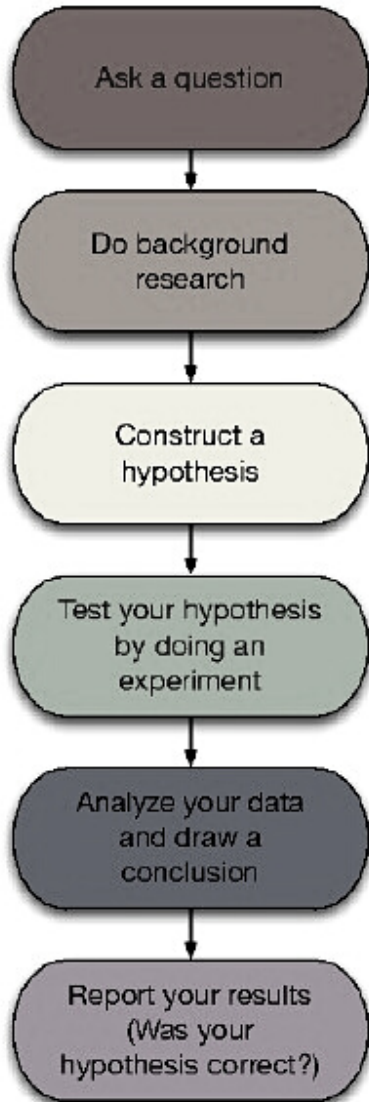
11. Any project that breaks any laws are not permitted.



Steps to creating your project

- 1. Choose a topic.** Choose a topic that is interesting to you, NOT because you think it will be easy.
- 2. Come up with a good question.** What is it that you want to find out by doing this project? Types of question: The “Effect” Question: What is the effect of _____ on _____? The “How Does” Question: How does the _____ affect _____? “Which or What” Question: Which/What _____ makes _____?
- 3. Research your problem.** Find out at much as possible about your topic. Look at encyclopedias, books or articles and websites that have information about your topic. Keep notes of all information needed for citing your resources.
- 4. Form a Hypothesis.** This is a prediction about your experiment. What do you think is going to happen? Based on what you know or found out from your research, what do you think the results of your experiment will be?
- 5. Create your experiment.** Design an experiment to test your hypothesis. You need to determine your variables, control, equipment and materials. Remember you need to measure something and use numbers to record data. You will also need to make observations. Keep directions clear, but simple, and number your steps. Remember the more times you do an experiment the more reliable the results.
- 6. Record your data.** As you do your experiments, you will want to write down what you saw or found out. Organize this information in an orderly manner. Use data table and graphs to show results.
- 7. Draw Conclusions.** This is a summary of what you have learned. Have you proved or disproved your hypothesis? You made a guess about what you thought would happen. Now tell us what really happened.
- 8. Prepare your display.** (See Appendix B)

Appendix A



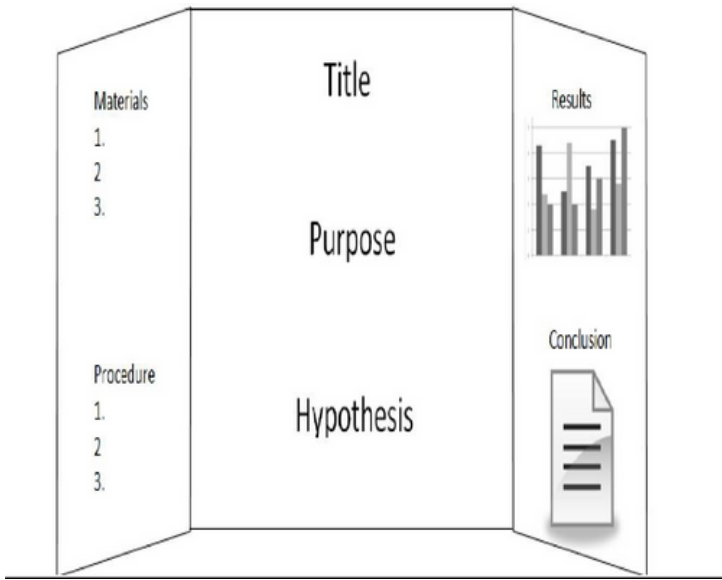
Appendix B

Checklist for Project Display Board

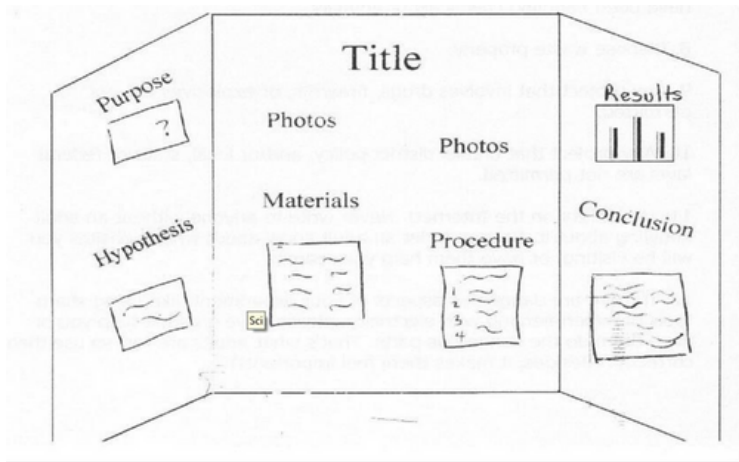
- 1. Statement of Purpose – State the purpose of the project in the form of a question.
- 2. Hypothesis- State the hypothesis (educated guess that answers the project question)
- 3. Materials – List the materials used in the experiment
- 4. Procedure – Describe how the experiment was carried out. Provide a systematic explanation of how you conducted the experiment. Include drawings/photos to help clarify your procedures.
- 5. Data/Results – Present data tables and graphs that show the outcome of your experiment
- 6. Conclusion– Compare your results to your hypothesis. Did your findings support your hypothesis or not?
- Miscellaneous: Be sure to include names
- Include photos or drawings
- This is a visual way to communicate to others so take your time and do a good job.

**Adopted from Berkeley Lake Elementary Science Fair
Planning Guide 2013**

Appendix C
Sample A. Display board



Sample B. Display board



Hints for Display Board

- Keep lettering neat and use a dark color such as black or blue
- Frame your work with a complementary color.
- Lay out your papers before you attach them
- Use a ruler to keep it straight.
- Type or print very neatly
- No Cross Outs. Erase Neatly
- No tape should be showing!
- Space your items
- Fill empty space with drawings or clip art, but do not clutter
- Use a larger font for titles
- Each section should be titled
- Follow sample display (Appendix C) format as closely as possible. It makes it easier to read for the judges
- Do not use too much color
- Keep it simple and attractive
- Be creative with your title to invite the judges to read it
- Use photos/drawings to document your experiment

Judging Criteria for Science Project

Project Elements	Possible Score	Score
Presentation: <ul style="list-style-type: none"> • Project board is well designed and constructed • Clarity of Text/ important ideas are emphasized • Project is visually appealing 	10	
Creativity: - project is unique. Exhibit shows original thinking or a unique method or approach. Project demonstrates ideas arrived at by students.	10	
Testable question:- reference a cause and effect relationship and measurable change	3	
Background Research:- research is diverse, uses multiple sources and complete citations	7	
Abstract: - concisely sums up the project explaining the test, the outcome and conclusion.	5	
Hypothesis:- based on background research	5	
Variables: - are clearly defined (independent, controlled, dependent) maybe be worded as “what we changed”, “What we kept”, and “what we measured”.	5	
Materials: - are appropriate and a detailed list is given	3	
Procedure: - is sequential and describes the investigation clearly	10	
Data: - Quantitative data: - uses numbers, standard metric units, scale made up by the students. Qualitative data: - words, descriptions of physical or behavioral change.	7	
Analysis: - describe the trends or patterns found in the data; may have comments on reasons for trends or patterns.	10	
Conclusion: - based on analysis of data; acceptance or rejection of hypothesis.	7	
References: - sources of data written in an appropriate form (MLA)	3	
Total Score	85	

Oral Presentation	Possible Score	Score
<p>Understanding of scientific concepts: Does the student understand the project? Scientific literature shown and understood/ students anticipated problems encountered.</p>	5	
<p>Skillful use of information (explanation, clarity, comfort level, teamwork): the approach to answering the question is creative. Are the task and contributions of each team member clear? Were all team members fully involved and familiar with all aspects of the project?</p>	5	
<p>Understanding of practical concepts and the theme: Students can practically link the project with theme.</p>	5	
Total score	15	



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