

## Math Projects

**Math Projects** investigate a problem and gather data which the learner analyzes mathematically. The focus is on the math skills and processes used to explain the investigations results. Consumer-product surveys are good examples of math fair projects. Consumers are polled about their likes and dislikes. The data gathered is analyzed mathematically by the learner and the results of the survey are explained. The project should examine a mathematics standard with the rigor expected at your grade-level. The labels and steps below explain what you will need to display on your math project board.

<b>MATH LABELS</b>	<b>WHAT TO WRITE ON MY MATH BOARD</b>
<b>Problem/Question</b>	The problem is a statement/question explaining what you are investigating. <b>Research</b> your topic and learn more about the problem you are investigating, what has already been studied, and what questions still remain about your investigation topic. Your research will help you understand more about your problem and help you write a conjecture that can be proven by collecting experimental data.
<b>Hypothesis/Conjecture</b>	A <b>conjecture</b> is a prediction based on incomplete information. It uses the research you gathered to inform your conjecture and design an investigation that you can use to test your prediction.
<b>Materials</b>	This includes a list of all the equipment and materials you used in your investigation. List each item by quantity, in a column, and include the units of measure wherever applicable.
<b>Procedure</b>	The procedure is a list of all the steps in your investigation, in the exact order you perform them. Be clear, but keep it simple. Other mathematicians should be able to <b>replicate</b> your experimental results by following the same procedures.
<b>Data Tables</b>	Data is a written record of all the observations ( <b>qualitative data</b> ) and measurements ( <b>quantitative data</b> ) made in your investigation. It is important to record everything that takes place. Include photographs from various phases of the investigation (do not photograph any human faces). Include the data (including units) from the trials that took place during your investigation in a data table and/or graph (bar, line, and circle graphs are all excellent ways to display your data). Your calculations and graphs should be made using both <b>accuracy</b> and <b>precision</b> . Note: tables, charts, and graphs can be layered on top of each other when taped on the project board.
<b>Conclusion and Proofs</b>	Write a conclusion explaining the results/outcome of your investigation or any patterns found in the investigation (provide data from your investigation that supports these statements). Do your results support or reject your conjecture? What issue/problems occurred during your tests that may have affected your results, if any? Any conclusions you make must be supported by proofs (the data recorded in your tables/charts/graphs).
<b>Real World Connections</b>	Real Life Connections explain how your project relates to the real-world, or how it pertains to everyday life. Why is it important to know the results of your project? Could it create new jobs or career opportunities? How does it benefit or apply to our everyday experiences?