

Lake Asbury Junior High School Science Fair

Judging Criteria

Thank you for participating in this important process which will determine those projects that will move on to the Clay County Science Fair in February.

As you evaluate each of the projects:

- Many judges find it helpful to first do a walk by of all the projects you will be evaluating before actually evaluating the projects. You want to compare projects only with those in the same competition and not with projects seen elsewhere under other circumstances.
- Keep in mind the age level of the student who performed the research. Sometimes judges tend to go to extremes, giving students either far more credit than they deserve or not enough credit because it is not in the Nobel Prize category. Remember these are middle school students so a “real world” problem to an adult might not be the same as a “real world” problem to a middle school student.
- The projects in the school science fair have been selected by the students’ science teacher to compete in the school fair. Since students are not present at the evaluation of their projects please feel free to write any constructive comments or suggestions. Although students will not be given your scoring sheets we will pass along comments to the students.
- Students will be evaluated in 5 basic categories on a scale of 0-5 with zero being the lowest and 5 being the highest.
 - Creative ability and originality
 - Scientific thought
 - Thoroughness
 - Skill
 - Clarity
- Feel free to review the following information packet as needed in helping you to evaluate projects based on the criteria above

Creative Ability / Originality

Average project (3)	Excellent Project (5)
➤ Scientific question asked is original and the answer is not known	
This may be an idea that you have seen before if you have judged in other fairs, however the student has changed the idea in such a way as to make it his/her own. This could include changing the type of test subject, the number of experimental groups, and/or the dependent variable.	An original idea for a project shows greater creativity than a suggested project from a textbook or website. It should be clearly evident that the question being asked is original based on observations made by the student to solve a real world problem.
The answer to the question may already be known but is not easily found in a basic internet web search.	The answer would be unknown or known only to individuals with expertise on the topic.
➤ Approach to answering the question is creative ➤ Creativity in the construction or use of equipment to answer the question	
The approach to solving the project and the use of the equipment are common practice to the average adult individual, but may not be readily apparent to a junior high student.	The approach used to answer the problem or the use of the equipment is different than what would normally be practiced, has been specifically created by the student and/or is usually only used by an individual with expertise on the topic or in the field.
➤ Creativity in applying the project results to a real world setting	
The project results are applied to one or two specific groups of individuals that would commonly be associated with the project topic, i.e. a plant project would benefit farmers or gardeners.	The project results would apply to groups that one might not commonly associate with the project topic and a clear rationale is provided for how these groups could use the results.

Creative research should support an investigation and help answer a question in an original way. The assembly of a kit would not be creative unless an unusual approach was taken. Collections, models, and/or demonstrations should not be considered creative unless they are used to support an investigation and to help answer a question in a creative way.

Scientific Thought

Average project (3)	Excellent Project (5)
➤ Scientific literature examined (sources cited) as a basis for solution	
Basic background research of all scientific concepts related to the experimental topic is present and five resources were used of which two of those are non internet resources.	Knowledge of all scientific concepts related to the experimental topic is present. This information is clear and detailed. Key words, and concepts related to the project are addressed completely in a review of literature or background research. Scientific literature is cited as opposed to popular resources only and uses a variety of sources including books, magazines, and the internet. In an excellent project more than 5 resources are used.
➤ Logical hypothesis was developed for the study	
A hypothesis is stated which provides a prediction of the outcome of the experiment and provides a rationale based on research.	A hypothesis is stated which provides a prediction of the outcome of the experiment and provides a detailed rationale citing background research. Thought by the student is apparent in the formulation of the hypothesis.
➤ Procedure tests hypothesis	
A materials list and procedural steps are complete and logical for the hypothesis being tested	A clear and precise description of materials and procedural steps are followed that logically test the hypothesis and provides the reader with a detailed account of how the experiment was conducted to the point that the reader would feel comfortable replicating the experiment.
➤ Variables are identified (independent, dependent, constants, and control)	
All variables are correctly identified as the independent variable (what the experimenter is changing), dependent variable (the change that is being measured), at least 5 constants and a control group	All variables are correctly identified as the independent variable, dependent variable, a detailed and substantial amount of (greater than 5) constants and a control group
➤ Logical analysis and interpretation of data	
The student finds the mean/average of the trials and experimental groups and uses this information to state if the hypothesis is supported or is not supported.	The student uses mathematical formulas and/or processes other than the mean/average to state if the hypothesis is supported or not supported by the data. The student also communicates how the results compared to a control group if one is present.
➤ Conclusion is logical and supported by experimental results	
The student communicates the following; reasons for the results based on differences of the experimental groups, problems or errors that could have affected the results.	The student communicates in detail the following; reasons for the results based on differences of the experimental groups, problems or errors that could have affected the results. The student also discusses how to improve the experiment and extensions to the project. The student discusses the limitations of the project.

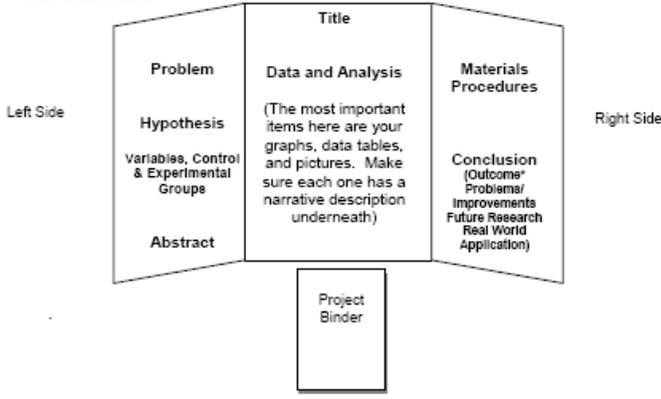
Thoroughness

Average (3)	Excellent (5)
➤ Sample size was large enough to conclude it was not chance	
Sample size for animals, humans, and plants should be at least 3 per experimental group	Samples size for animals, humans, and plants should be more than 5 per experimental group
➤ Multiple replications (trials) performed	
A minimum of 3 trials is performed for all experimental and control groups	A minimum of 5 trials is performed for all experimental and control groups
➤ Data is documented clearly in proper quantitative units (metrics)	
The majority of measurements and data is documented clearly in the appropriate metric units	All measurements and data is documented clearly in the appropriate metric units

Skill

Average (3)	Excellent (5)
➤ Skill and precision shown in experimental design and safety protocols	
Common safely protocols are listed and procedure is detailed enough to show that precision was used.	The student shows a high level of precision in procedure, recording of both quantitative and qualitative observations, and in mathematical processes. Advanced mathematical processes and/or formulas other than finding the mean of trials is used. Detailed safety protocols are given.
➤ A detailed binder and logbook was compiled to document research	
The binder and logbook is present and has all of the components given especially qualitative and quantitative observations and research notes	The project has a detailed binder with all phases of the process written. It is evident that the student used the logbook (spiral bound notebook) as a journal to document the entire process.
➤ Project was within student's ability range; excessive help not utilized	
The project was at the level of the average middle school student	The project shows that the student was challenged and though help may have been given it was not excessive and all help was documented by the student

Clarity

Average (3)	Excellent (5)
➤ Display follows a logical scientific sequence	
<p>The display follows the requirements shown below. Decoration is used that enhances the project and is relevant to the topic. The decoration has purpose.</p> 	<p>The display is attractive, legible, accurate, and follows the requirements given on the left. Any decorations are used only to enhance the information presented on the board and are not considered “fluff.”</p>
➤ Graphs, data tables, photographs, and diagrams clarify process	
<p>The graphs, data tables, photographs, and diagrams clarify the process for the reader.</p>	<p>The project has written explanations that accompany graphs, data tables, photographs, and diagrams. An excellent project does not necessarily have the most graphs, data tables, and photographs, but it is apparent that care was taken in the choice of items that would enhance the overall explanation of the project.</p>