Student name: _____

Grade/class:_____

Science Fair Rubric for Experiments

	Novice	**Apprentice**	**Practitioner**	**Expert**
Hypothesis/ Scientific Question	Did not identify a question to be tested or identify variables to be studied.	Asked a question that could not be tested, and identified only some variables to be tested.	Asked a testable question. Stated the variables to be studied. Did not make a prediction.	Asked a testable question. Explicitly stated independent and dependent variables.
Scientific Procedures/ Reasoning	Steps/ strategy of the experiment were not explained.	An incomplete explanation was provided or the procedure/ strategy is somewhat illogical and could not be followed by others.	Followed a procedure/ strategy that is mostly logical and detailed and could be followed by others but are not numbered.	Provided a clear explanation detailing how the project was carried out and each step is numbered.
Scientific Evidence/ Concepts	There were too many errors in the process of investigation for data to be gathered. Little use of scientific terminology or concepts.	Observations were shared, but data was not well organized. Little use of scientific terminology or concepts.	Gathered and recorded data, but did not repeat the experiment. Appropriately used some scientific terminology.	Gathered and recorded data at least twice (i.e. repeated the experiment). Appropriately used scientific terminology.
Analysis/ Conclusion	Did not use graphs and/or tables to show data, relationship between variables not discussed, and no conclusion stated.	Charts and graphs were not complete, relationship between variables discussed but not based on data collection, and conclusion not supported by the data.	Appropriate charts and graphs to display information. Used effective scientific reasoning to analyze results. Interpretation of data partially supported conclusions.	Appropriate charts and graphs to display information. Used complex reasoning to demonstrate understanding of cause and effect. Interpretation of data supported Conclusion.
Organization	No sequence of the Scientific Method presented- display has many organizational errors.	. Some originality is present in at least one part of the investigation. Materials used are not appropriate.	Some originality is present, and data collection and materials used are age appropriate.	Provided in depth understanding of relevant principles or theories. Question is creative and original, and data collection and materials used are age appropriate. Display is neat with no/ few spelling errors.

Preparation/ Presentation	Student was not prepared and seemed unsure of their project.	Student was somewhat prepared but may not have practiced.	Student is fairly well prepared and has practiced.	Student is extremely well prepared and has practiced the information.
Total: **Please circle the level with the greatest# of tallies on page 1**				

Comments:

Judge's initials_____

Student name:_____

Date: _____

Science Fair Rubric for Demonstrations

	Novice	**Apprentice**	**Practitioner**	**Expert**
Scientific Question/ Reasoning	Did not state a question. No evidence of a strategy for investigation.	Asked a question that is not science based.Used a strategy that partially answered the question.	Asked a question and used a useful strategy to answer the question.	Asked a question related to a valid scientific concept and used a sophisticated strategy to answer the question.
Material used/Scientific Steps and Procedures	Materials are not described. Steps of the experiment were not explained.	Only some materials are described An incomplete explanation was provided (e.g. out of sequence, missing steps, etc.)	Followed a procedure that is mostly logical and detailed and could be followed by others but are not numbered.	Provided a clear explanation detailing how the project was carried out. Each step is numbered and could be easily followed without additional explanation.
Scientific Observations	There were too many errors in the process of investigation for observations to be made.	Observations were shared, but were not well organized.	Gathered and recorded most observations.	Gathered and recorded all observations.
Cause and Effect	Cause and effect were not discussed.	Cause and effect were discussed but inaccurate.	Cause and effect were discussed and mostly accurate.	Used complex reasoning to demonstrate accurate understanding of cause and effect.
Results/ Conclusions	No conclusion was stated.	Conclusions were not supported by the student's observations.	Interpretation of observations partially supported conclusions drawn by the student.	Interpretation of observations supported conclusions that related to the student's question.
Scientific Concepts Demonstrated	No use or inappropriate use of scientific terminology. No reference to concepts or principles.	Made several mistakes in relevant terminology and concepts/ principles.	Appropriately used scientific terminology. Provided evidence of understanding relevant principles or theories.	Appropriately used scientific terminology. Provided evidence of understanding relevant principles or theories.

Display	Student did not provide a display or any visual aids.	Display/ visual aid was incomplete.	Display was mostly complete and included a mostly complete or adequate visual aid.	Student used a complete and well organized visual display that showed exceptional effort or creativity.
Preparation	Student was not prepared and seemed unsure of their project.	Student was somewhat prepared but may not have practiced.	Student is fairly well prepared and has practiced.	Student is extremely well prepared and has practiced the information.
Total: **Please circle the level with the greatest# of tallies on page 1**				

Comments:

Judge's initials_____

Student name:_____

Science Fair Rubric for Research Projects

Date: _____

	Novice	**Apprentice**	**Practitioner**	**Expert**
Thesis Topic/ Reason for researching	Purpose is not clearly stated or missing. Student did not explain their reason for researching this topic.	Thesis is unclear. Student partially explained their interest in this topic.	Thesis is clear but position is not clearly stated. Student explained their interest in this topic and some of their reason for the investigation.	Thesis is clear and well developed. Student elaborated on their interest in this topic and stated a well developed rationale.
Quality of Information/ procedures	Information gathered has little connection to the topic and appears to be gathered from a single resource.	Information relates to the main topic and examples are given. A limited variety of sources was used.	Information relates to the main topic and research is detailed. A limited variety of sources was used.	Information relates to the main topic, is detailed, and scientifically accurate. Research effort was exceptional. A wide variety of resources were consulted.
Scientific Concepts	No use or mostly inappropriate use of scientific terminology and principles.	Made several mistakes in relevant terminology. Minimal reference to relevant concepts or principles.	Appropriately used some scientific terminology. Provided evidence of understanding relevant principles or theories.	Appropriately used scientific terminology. Provided in depth understanding of relevant principles or theories.
Support of Thesis/ Conclusions	Limited connections were made between information and thesis. Lack of summary. No take away conclusion.No reference to other scientific ideas.	Some connections were made between information and thesis. Basic summary with some concluding ideas.	Consistent connections were made between information and thesis. Good analysis. Good summary with clear conclusion.	Consistent connections were made between the information and the thesis. Excellent analysis. Excellent summary with clear conclusion.
Scientific Communication	Did not use scientific representations (e.g. diagrams).	Scientific representations were incomplete (e.g. no labels or information was missing).	Appropriately used scientific representations (e.g. diagrams) to illustrate what was discovered.	Appropriately used scientific representations (e.g. diagrams) to illustrate what was discovered.
Citations/ Bibliography	No references provided.	Two or fewer references cited.	Several references are cited, but formatting is inconsistent.	Several references cited and formatting is consistent.
Display	Student did not provide a	Display was incomplete.	Display was mostly complete.	Student used a complete and

	display.			well organized visual display.
	Student did not provide visual aid (e.g. model, photographs, drawing, etc.)	Student provided an incomplete visual aid or one that did not help explain the science involved.	Student provided a mostly complete or adequate visual aid.	Student provided a complete and complex visual aid that showed exceptional effort or creativity.
Preparation	Student was not prepared and seemed unsure of their project.	Student was somewhat prepared but may not have practiced.	Student is fairly well prepared and has practiced.	Student is extremely well prepared and has practiced the information.
Total: **Please circle the level with the greatest# of tallies on page 1**				

Comments:

Judge's initials:_____