STUDENT PAGE

Investigation Rubric

Criteria	Well Done	Could Be Improved	Needs Substantial Improvement
Scientifically Oriented Questioning: **Seed Production (Reproductive Success) and Environmental Factors**	Experiment is based on an interesting and scientifically testable question about the impact that an environmental stress might have on seed production (reproductive success) in a population of Fast Plants. Chosen question is directed toward finding out information that can be described, explained, or predicted by scientific investigation. Prediction and then hypothesis are clearly stated and include explanations.	Experiment is based on an interesting and scientifically testable question that relates to environmental stress without linking it to seed production (reproductive success). Chosen question needs additional clarification to focus it on information that can be described, explained, or predicted by scientific investigation. Prediction and then hypothesis are stated and include a brief explanation.	Experiment is based on a question that either is not scientifically testable or is unrelated to how environmental stress can affect seed production (reproductive success). Chosen question requires equipment, techniques, or time that is unavailable to this class Or question cannot be described, explained, or predicted by scientific investigation. Either the prediction or hypothesis is missing or lacks explanation.
Experimental Design—Variation and Environmental Factors Shows ability to design and conduct a scientific investigation	Experimental procedure sets the stage for gathering information that is clearly related to the chosen scientifically oriented question. Investigation design includes procedures for systematic observation, making accurate measurements, and identifying and controlling variables. Mathematics, tools, and techniques chosen are appropriate to the question asked.	Experiment is based on a scientifically oriented question that is indirectly related to the chosen scientifically oriented question. Investigation design either lacks procedures for systematic observation or accurate measurements, or else does not identify and control variables. Mathematics, tools, and techniques chosen could be improved in order to appropriately address the question asked.	Experiment is based on a question that is unrelated to the chosen question. Investigation design is poorly planned for making systematic observations, making accurate measurements, and identifying and controlling variables. Mathematics, tools, and techniques chosen are either missing or else inappropriate for the question asked.

Criteria	Well Done	Could Be Improved	Needs Substantial Improvement
Explanation: Uses evidence to explain the relationship observed between environmental influences and seed production (reproductive success)	Explanation clearly shows critical thinking about evidence. Explanation is based on claims that are supported by both experimental evidence and scientific information from reliable sources. Explanation is built from claims and evidence that are logically linked. Explanation is stated in terms of the relationship between two or more variables. Explanation clearly refers to the question and to the hypothesis or prediction.	Explanation generally refers to the evidence. Explanation relies heavily on claims supported by opinion and/or inferences rather than evidence. Explanation is based on unclear connections between claims and evidence. Explanation refers to variables without clearly stating relationships between them. Explanation refers only to the question or else to the hypothesis or prediction.	Explanation does not refer to the evidence. Explanation is based solely on opinion and/or guesses. Explanation either makes no connections or makes inappropriate connections between claims and evidence. Explanation lacks reference to variables. Explanation lacks reference both to the question and to the hypothesis or prediction.