

# Outcomes covered by a Science Fair Project

## Grade 11 Physics

### STSE

114-9 – explain the importance of communicating the results of a scientific or technological endeavor, using appropriate language and conventions

### Skills

212-1 – identify questions to investigate that arise from practical problems and issues

212-3 – design an experiment identifying and controlling major variables

212-4 – state a prediction and a hypothesis based on available evidence and background information

212-7 – formulate operational definitions of major variables

212-8 – evaluate and select appropriate instruments for collecting evidence and appropriate processes for problem solving, inquiring, and decision-making

213-2 – carry out procedures controlling the major variables and adapting or extending procedures where required

213-3 – use instruments effectively and accurately for collecting data

213-7 – select and integrate information from various print and electronic sources or from several parts of the same source

214-3 – compile and display evidence and information, by hand or computer, in a variety of formats, including diagrams, flow charts, tables, graphs, and scatter plots

214-5 – interpret patterns and trends in data, and infer or calculate linear and nonlinear relationships among variables

214-8 – evaluate the relevance, reliability, and adequacy of data and data collection methods

214-11 – provide a statement that addresses the problem or answers the question investigated in light of the link between data and the conclusion

214-14 – construct and test a prototype of a device or system and troubleshoot problems as they arise

### **Attitudes**

439 – Show a continuing and more informed curiosity and interest in science and science-related issues

440 – acquire, with interest and confidence, additional science knowledge and skills using a variety of resources and methods, including formal research

441 – consider further studies and careers in science and explore further science-and technology-related fields

442 – confidently evaluate evidence and consider alternative perspectives, ideas, and explanations

443 – use factual information and rational explanations when analyzing and evaluating

444 – value the processes for drawing conclusions

445 – work collaboratively in planning and carrying out investigations, as well as in generating and evaluating ideas