

Outcomes covered by a Science Fair Project

GRADE 12 Chemistry

STSE

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

117-7 – identify and describe science- and technology-based careers related to the science they are studying

Skills

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

212-2 – define and delimit problems to facilitate investigation

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

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

213-5 – compile and organize data, using appropriate formats and data treatments to facilitate interpretation of the data

213-6 – use library and electronic research tools to collect information on a given topic

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

213-8 – select and use apparatus and materials safely

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

214-10 – identify and explain sources of error and uncertainty in measurement and express results in a form that acknowledges the degree of uncertainty

214-17 – identify new questions or problems that arise from what was learned

214-18 – identify and evaluate potential applications of findings

215-2 – select and use appropriate numeric, symbolic, graphical, and linguistic modes of representation to communicate ideas, plans, and results

215-6 – work cooperatively with team members to develop and carry out a plan, 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