SARSEF Fair Science and Engineering Judging Guidelines
Middle School Grades 6-8

The following evaluation criteria will be used for judging at SARSEF. This may assist you in evaluating each of these categories, however, the points are provided as guidelines only. Students are encouraged to design their posters in a clear and informative manner to allow thorough evaluation. Examine the student notebook.

I. Research Question/Problem (15 pts.)

- project has a clear and focused purpose
- idea is a question/problem that needs solving in student's life, school, community, world
- the answer is not already obvious or out there if a simple search is conducted
- idea is testable using a scientific process, can be retested AND/OR
  definition of criteria for proposed solution and explanation of constraints

II. Design and Methodology (25 pts.)

- exploration of several alternatives to answer need or problem
- well-designed plan and data collection methods that will ensure consistent recording or results AND/OR
  realistic plan for development of an actual prototype/model
- control group and variables are defined AND/OR
  identification of a possible solution that is practical, reasonable, doable
- reproducibility of results, i.e. clearly written, step by step plan to implement or construct
- identification of variables that either cannot be controlled or were not anticipated, but might affect the results
- considered what would be the appropriate # of subjects or prototypes, adequate # of planned trials/retrials

III. Execution: Data Collection, Analysis and Interpretation (25 pts.)

For **ALL** projects:

- systematic data collection and analysis - same procedure each time, little variation conditions of testing
- sufficient data collected to support interpretation and conclusions - several trials, many test subjects
- appropriate application of mathematical methods for comparison - averaging, percentages, etc.
- understanding limitations of results and conclusions, constraints
- makes conclusions based on the data and evidence, refers to data and results
- implications for broader community are thought about, ideas for further research, links to other studies
- considers limitations of findings including challenges faced

For those with an **Engineering** component- Construction and Testing:

- prototype demonstrates the intended design
- prototype was tested in multiple conditions, and in multiple trials
- prototype demonstrates an engineering skill and completeness

IV. Creativity (20 pts.)

A creative project demonstrates imagination and inventiveness. Such projects are ones that the student personally cares about, have not been widely done before or listed on Science Fair idea lists. Creative projects offer different perspectives that open up new possibilities or new alternatives.

- project demonstrates significant creativity in one or more Criteria I, II, III or V
- idea appears novel – at least to the student (not copied or seen repeatedly)
- idea appears to be something that student genuinely cares about, passion or enthusiasm is communicated

V. Presentation (15 pts.)

- clear communication and evidence of understanding basic relevant science/engineering concepts
- logical organization of display facilitate communication of project
- clarity of graphs, legends & graphics – at this level more than one graph or chart is expected
- supporting documentation displayed – multiple references listed on board or in notebook