

Taken from the *Science Day Standards* (<http://ohiosci.org/sds.htm>)

JUDGING CRITERIA and RATINGS

INDIVIDUAL PROJECTS

Criteria	SUPERIOR	EXCELLENT	GOOD	*SATISFACTORY
KNOWLEDGE ACHIEVED	10-9	8-7-6	5-4-3	2-1
EFFECTIVE USE OF SCIENTIFIC METHOD	10-9	8-7-6	5-4-3	2-1
CLARITY OF EXPRESSION	10-9	8-7-6	5-4-3	2-1
ORIGINALITY AND CREATIVITY	10-9	8-7-6	5-4-3	2-1
RANGE OF SCORES	40-36	35-24	23-12	*11-4

TEAM PROJECTS

Criteria	SUPERIOR	EXCELLENT	GOOD	*SATISFACTORY
KNOWLEDGE ACHIEVED	10-9	8-7-6	5-4-3	2-1
EFFECTIVE USE OF SCIENTIFIC METHOD	10-9	8-7-6	5-4-3	2-1
CLARITY OF EXPRESSION	10-9	8-7-6	5-4-3	2-1
ORIGINALITY AND CREATIVITY	10-9	8-7-6	5-4-3	2-1
TEAMWORK	10-9	8-7-6	5-4-3	*2-1
RANGE OF SCORES	50-45	44-30	29-15	29-15

*There is no "Satisfactory" Rating given at [State Science Day](#).

Minimum number of points for each rating:

INDIVIDUAL Projects:

Superior 36, Excellent 24, Good 12, Satisfactory 4 (Not given at State Science Day).

TEAM Projects:

Superior 45, Excellent 30, Good 15, Satisfactory 5 (Not given at State Science Day).

All students at local, District or State Science Days shall have an abstract and a written report, which documents that the student has searched relevant literature, stated a question and/or tested a hypothesis or technological design statement, collected and analyzed data, and drawn conclusions.

For a superior rating, an individual student shall receive a minimum of 36 points, or 45 points for a team, based on the criteria of (1) knowledge achieved, (2) effective use of scientific method, (3) clarity of expression, and (4) originality and creativity. A fifth criterion, teamwork, consisting of a maximum of 10 points, shall be applied to team student research projects. Thus, a team research project needs a minimum of 45 points for a superior award.

The following paragraphs interpret the various criteria on which the student's project or exhibit will be judged.

1. Knowledge Achieved (considering student's age and grade level)

Has there been a correct understanding and use of scientific terms?

Is there evidence of an acquisition of in-depth knowledge through the research or has he or she merely acquired a manipulative technique?

Does he or she show evidence of knowing what the underlying principle(s) is? In brief, has he or she actually learned scientific content through his/her study and research?

Mentoring of students and professionals alike is common and expected in the world of science, engineering and technology. Although The Ohio Academy of Science expects all students to use advisors and/or mentors for projects, a project entered into a science day activity must be researched and developed by the student participant(s).

The Academy cautions judges that a student's access to mentors may be limited. The Academy directs that judges shall not bias their ratings either for or against students with or without mentors.

2. Effective Use of Scientific Method or Technological Design

Does the student have a clear-cut idea of the purpose of his/her project, or is it something thrown together and manipulated? While the mere assembly of a "kit" is frowned upon, there can be a definite research approach wherein there may be an effective use of scientific method (s). However, it should not be the principal element of the project.

Is he or she aware of other approaches or theories relative to this problem or project?

Is there evidence of both contemporary literature search and actual experimental research with results?

Has he or she been thorough and have there been prolonged or sustained experimentations?

Has he or she observed any basic phenomena?

Has he or she experimented sufficiently to have collected an appropriate amount of data?

Has he or she analyzed observations or results in a logical manner and drawn valid conclusions?

Has he or she used an adequate sample to be able to generalize?

3. Clarity of Expression

Can he or she orally explain the project concisely and answer questions well? Try to weigh evidence of a student's nervousness. Listen carefully to a student's presentation for understanding of scientific principles or relevance to actual, unique results derived from experimentation.

Has the participant expressed himself or herself well in all written material, such as the abstract and research report? Ask student about words or terminology in the abstract or report to validate that he or she clearly understands their use and that he or she actually wrote the report. Ask what specific knowledge or information came from specific references.

Is the physical display neat and sufficiently definitive to act as a stand-alone summary of the student's entire project?

Note misspelled words and weak or imprecise grammar.

Does the research report include a literature review, experimental data, statistics, results, and conclusions? Does it follow an accepted form of technical reporting?

4. Originality and Creativity

It is true that the approach may not be new to the judge, but is the problem or the approach to the problem developed in a particularly significant or unique manner?

Has he or she a new approach to an old subject?

Has he or she a unique presentation or organization of materials?

The assembly of a "kit" may not be original or creative but again, it may be a new and unique approach to a problem and may economize on time and effort.

Is there evidence of initiative? Place a premium on the ingenious uses of available materials. Collections and manufactured apparatus can be creative if they are assembled and used to achieve, show, or support a stated purpose or provide effective comparison with previously collected or published data.

5. Teamwork

Team Projects shall be accepted at all District Science Days. A revised 50-point rating scale (see table above) shall be used to evaluate team projects.

A team consists of a maximum of three students. A District science day may allow a maximum of two students per team due to local limitations.

All team members must be present to be judged at District and State Science Day or the project will be disqualified.

All team members are required to belong to the same school and same grade brackets (a) grades 5-6, (b) grades 7-8, and (c) grades 9-12.

Each team should appoint a team leader to coordinate the work and act as spokesperson. However, each member of the team should be able to serve as spokesperson, be fully involved with the project, and be familiar with all aspects of the project. The final work should reflect the coordinated efforts of all team members.

A supplemental sheet of the contribution each member made towards the team project must be signed by each member and must be included in the project display and in the research notebook.

Full names of all team members must appear on the abstract and registration forms.

The judges should ask each team member for a one or two sentence description of what they consider to be their most important contribution.