

Science and Sustainability Scoring Guides

The Variables

Understanding Concepts (UC)

Analyzing Data (AD)

Designing Investigations (DI)

Evidence and Trade-offs (ET)

Communication of Scientific Information (CM)—Organization Element

Communication of Scientific Information (CM)—Technical Aspects Element

Group Interaction (GI)—Role Performance / Participation Element

Group Interaction (GI)—Shared Opportunity Element

Scoring Guide: Understanding Concepts (UC) Variable

What to look for: Response uses relevant scientific information in new situations, such as solving problems or resolving issues.

Score	Student Work
4	Accomplishes Level 3 AND goes beyond in some significant way.
3	Accurately and completely uses scientific information to solve problem or resolve issue.
2	Identifies and describes relevant information. Shows an attempt to use scientific information BUT the explanation is incomplete; also may have minor errors.
1	Uses scientific information incorrectly and/or provides incorrect scientific information, OR provides correct scientific information BUT does not use it.
0	Missing, illegible, irrelevant, or off topic.
X	Student had no opportunity to respond.

Scoring Guide: Analyzing Data (AD) Variable

What to look for: Response accurately summarizes data, detects patterns and trends, and draws valid conclusions based on the data used.

Score	Student Work
4	Accomplishes Level 3 AND goes beyond in some significant way, e.g. providing innovative analysis, explaining unexpected results, judging the value of investigation, suggesting additional relevant investigation.
3	Analyzes data correctly and completely; interpretation is compatible with data analysis.
2	Logically and completely organizes and records data. Notes appropriate patterns or trends but does so incompletely.
1	Data recorded incompletely or illogically and/or interpretation is illogical or shows a lack of understanding.
0	Missing, illegible, or no attempt to organize or interpret data.
X	Student had no opportunity to respond.

Scoring Guide: Designing Investigations (DI) Variable

What to look for: Response states problem and general approach for the investigation. Relevant procedures are described accurately and safely.

Score	Student Work
4	Accomplishes Level 3 AND goes beyond in some significant way.
3	Includes complete statement of the purpose, prediction, and design which demonstrates complete understanding and reflects complete, accurate, and appropriate procedures.
2	Correctly but incompletely states the purpose or the design of the experiment; some steps are not fully described or are omitted.
1	Purpose not stated or stated incorrectly; design demonstrates lack of understanding of investigation.
0	Design missing, illegible, or unrelated to purpose of investigation.
X	Student had no opportunity to respond.

Scoring Guide: Evidence and Trade-offs (ET) Variable

What to look for: Response recognizes multiple perspectives of issue and explains each perspective using objective reasons, supported by evidence, in order to make a choice.

Score	Student Work
4	Accomplishes Level 3 AND goes beyond in some significant way, e.g. suggesting additional evidence beyond the activity that would influence choices in specific ways, OR questioning the source, validity, and/or quantity of the evidence and explaining how it influences choice.
3	Uses relevant and accurate evidence to weigh the advantages and disadvantages of multiple options, and makes a choice supported by the evidence.
2	States at least two options AND provides some objective reasons using some relevant evidence BUT important evidence and/or analysis is missing; OR uses relevant and accurate evidence to weigh the advantages and disadvantages of only one option.
1	States at least one perspective BUT does not provide relevant objective evidence and analysis.
0	Missing, illegible, or completely lacks reasons and evidence.
X	Student had no opportunity to respond.

Scoring Guide: Communication of Scientific Information (CM) Variable—Organization Element

What to look for: Response logically organizes arguments, evidence, and/or ideas related to a problem or issue.

Score	Student Work
4	Accomplishes Level 3 AND goes beyond in some significant way.
3	All parts present and logically organized.
2	Shows logical order BUT part is missing.
1	Lacks logical order OR is missing multiple parts.
0	Missing, illegible, or contains no evidence or ideas related to the task.
X	Student had no opportunity to respond.

Scoring Guide: Communication of Scientific Information (CM) Variable—Technical Aspects Element

What to look for: Response clearly conveys a concept or idea by using the assigned medium appropriately.

Score	Student Work
4	No technical errors; accomplishes Level 3 AND enhances communication in some significant way.
3	Clear and easy to understand, with few minor errors.
2	Understandable BUT clarity is missing in places; technical errors may exist BUT do not prevent audience from understanding the message.
1	Unclear; technical errors seriously distract audience from understanding the message.
0	Missing, illegible, or contains no evidence or ideas related to the task.
X	Student had no opportunity to respond.

Scoring Guide: Group Interaction (GI) Variable—Role Performance/Participation Element

What to look for: Group members actively participate, assume appropriate roles, contribute their best effort.

Score	Student Work
4	Group defines useful roles not mentioned to them. Role changes take place that maximize individual capabilities and interests.
3	Group accepts all roles and actively participates.
2	Group utilizes some roles, but not others.
1	Group assigns roles, but does not accept or employ them.
0	Group does not assign roles.
X	Group was not present.

Scoring Guide: Group Interaction (GI) Variable—Shared Opportunity Element

What to look for: Group members work together as a team and the ideas of all members are valued and weighed in working toward the common goal.

Score	Student Work
4	Group makes specific efforts to involve reticent members.
3	Group gives all ideas equal consideration.
2	Group accepts some ideas, but does not give others adequate consideration.
1	Group totally disregards some members' comments and ideas.
0	Single individual does entire task.
X	Group was not present.