



INVESTIGATE THE WORLD

What is the evidence that the student uses scientific procedures and disciplines to investigate natural and/or human global phenomena?

| | Emerging | Developing | Proficient | Advanced |
|---------------------------|---|--|---|---|
| SCI6-8.INV1.QUESTN | Refines or expands a teacher-formulated global scientific question and hypothesis | Raises questions about a science issue. | Formulates questions about a significant global science issue. | Formulates questions about a significant global science issue and develops a hypothesis or research thesis. |
| SCI6-8.INV2.SOURC | Uses a variety of provided sources to research the given hypothesis or research thesis. | Gathers background information from a limited number of sources and begins to analyze these sources. | Gathers background information from a variety of secondary sources and compares and analyzes it, with results beginning to support the hypothesis or research thesis. | Gathers relevant background information from a combination of primary and secondary global sources and compares and analyzes it, providing support for most issues raised by the hypothesis or research thesis. |
| SCI6-8.INV3.MODEL | Explains and analyzes scientific questions using a given model or theory. | Identifies existing theories and/or models related to a scientific question. | Identifies an existing theory and/or model related to an experimental hypothesis or research thesis and begins to question the credibility and reliability of the theories and/or models, identifying limited evidence to support or refute them. | Identifies an existing theory and/or model related to an experimental hypothesis or research thesis and questions and analyzes the credibility and reliability of the theories and/or models, identifying evidence to support or refute them. |

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|--------------------------|---|--|--|--|
| SCI6-8.INV4.XPRMT | Explains how data in an experiment relates to the scientific question and can suggest design changes. | Designs an experiment that is related to the stated question and bases conclusions on opinions as well as some observation, measurement, and data. | Designs an experiment that is related to the stated problem and bases conclusions on observations, measurements, and empirical data. | Designs an experiment that is relevant to the stated problem and partially tests the hypothesis or research thesis, bases conclusions on empirical evidence, and the data are discussed in support of the hypothesis or research thesis. |

RECOGNIZE PERSPECTIVES

What is the evidence that the student interprets and discusses scientific data in the context of complex global systems?

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|--------------------|--|--|---|---|
| SCI6-8.PERS1.CNTXT | Uses a given context to explain a global science issue. | Identifies and uses a single context to explain a global science issue. | Identifies and uses two contexts to interpret a global science issue and discusses alternate viewpoints. | Identifies and compares two or more contexts to analyze a global science issue, with discussion of the interrelationships and contrasts one or more alternate views. |
| SCI6-8.PERS2.DATA | Explains data based on given patterns and relationships. | Organizes and restates experimental data, begins to identify patterns, and refers back to the original question in the conclusion. | Identifies patterns or relationships in the data with limited mathematical or statistical analysis or minor errors, identifies and discusses experimental error, outliers, and/or inconsistencies in the data, and refers to the hypothesis or research thesis in the conclusion. | Analyzes patterns and relationships in the data by mostly correct application of mathematical or statistical techniques, identifies and interprets experimental error, outliers, and/or inconsistencies in the data, and concludes by evaluating the hypothesis or research thesis based on evidence from the data. |
| SCI6-8.PERS3.QUSTN | Explains how the chosen new question relates to the research findings. | Poses new questions with some relevance to the research findings. | Poses new questions with clear relevance to the research findings. | Poses relevant new questions that extend the original research question. |

COMMUNICATE IDEAS

How clearly and accurately does the student communicate and defend his/her mathematical thinking, approaches, representations, solution, and decisions?

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|--------------------|--|--|--|---|
| SCI6-8.COMM1.PRCDR | Explains given procedures. | Describes experimental and/or research procedures generally, but cannot replicate them and bibliographic format for references or citations is inconsistent. | Explains experimental and/or research procedures in detail, some steps required to replicate the experimental design may be incomplete, and bibliographic format is consistent for each type of reference or citation. | Demonstrates experimental and/or research procedures in sufficient detail to replicate and bibliographic format is consistent for each type of reference and includes multiple sources and citations. |
| SCI6-8.COMM2.VSULS | Adds scientific conventions to given visual representations. | Presents data with visual representations, demonstrating a basic understanding of the science issue and experimental or research presentation partially follows the conventions of scientific communication. | Presents data with visual representations that mostly support explanation of the science issue and experimental or research presentation follows most conventions of scientific communication. | Presents data with visual representations that support explanation of the science issue and experimental or research presentation follows most conventions of scientific communication. |
| SCI6-8.COMM3.TECHL | Uses some technology or media to share science information. | Uses technology and media to express ideas and collaborate within the classroom. | Uses technology and media to express and discuss scientific ideas and collaboration within the classroom, as well as beyond the classroom at a limited level. | Uses technology and media to express and discuss scientific ideas and collaboration beyond the classroom. |
| SCI6-8.COMM4.FORMT | Understands the need to choose a communication format that enhances the discussion of a science issue, including global implications and personal reflections. | Selects from limited communication choices, indicating a basic understanding of a science issue. | Selects communication format indicating a developing understanding of a science issue. | Selects communication formats to support discussion of scientific ideas and personal reflection. |

TAKE ACTION

What is the evidence that the students translates scientific inquiry or research results into actions that increase awareness and improve global conditions?

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|--------------------------|---|---|--|--|
| SCI6-8.ACT1.PLAN | Participates in collaboratively planning a class action to increase awareness of an issue based on experimental or research findings. | Develops a basic action plan that describes positive actions or policy. | Develops an action plan that describes positive actions or policy relevant to scientific inquiry or research findings. | Develops an action plan that details collaborative actions or policy based on experimental or research findings that have the potential to improve conditions locally. |
| SCI6-8.ACT2.IMPCT | Explains the impact of technology or personal views in a given science issue. | Identifies available technology for selected actions. | Identifies available technology and personal views for selected actions and begins to think about their impact. | Evaluates available technology and personal views for their impact on the choices made and actions selected. |
| SCI6-8.ACT3.IMPLT | Identifies action steps for implementing a given plan and adds ideas for positive change. | Implements and discusses an action plan. | Implements an action plan, collects and discusses data, and begins to identify changes in a local or global science issue. | Implements an action plan and collects and discusses data to identify and analyze changes in the local or global science issue. |
| SCI6-8.ACT4.RFLCT | Reflects on changes in feelings about a given project. | Mentions in a reflection how feelings and thinking about the issue was informed by the project. | Describes in a reflection how feelings and thinking about the issue was informed by the project. | Describes in a reflection specific ways feelings and thinking about the issue and future choices were influenced by the project. |