2011-12 Official Scientific Inquiry Scoring Guide
Grades 6, 7 and 8

	SI- Forming a Question or Hypothesis *Based on observations and scientific principles, propose questions or hypotheses that can be examined through scientific investigation.*	**SI- Designing an Investigation** *Design a safe and ethical scientific investigation to gather data to respond to a question or hypothesis.*	
5/6**	• Proposes a question or hypothesis that can be scientifically investigated and demonstrates understanding of scientific relationships. • Provides background, observations and science principles to establish a detailed context for this investigation. • The question or hypothesis clearly guides the design of an effective and/or innovative investigation.	• Proposes scientifically logical, safe, and ethical procedures in a precise and efficient design that maximizes resources which contribute to the outcome. • Thoroughly identifies relevant variables (including controls) and defines a systematic investigative process that is clearly defined and adaptable if necessary. • Presents a design that will provide data of exceptional quality and quantity to address the question or hypothesis and to investigate possible relationships.	**5/6****
4	• Proposes a question or hypothesis that can be scientifically investigated. • Provides background, observations and scientific principles related to the question or hypothesis. • The question or hypothesis is specific enough to guide the design of an effective investigation.	• Proposes a scientifically logical, safe, and ethical procedure that can be easily and accurately followed. • Identifies the variables and controls relevant to the procedure. • Designs a scientific investigation that uses appropriate resources/materials and techniques to collect data relevant to the question or hypothesis.	**4**
3	• Proposes a question or hypothesis that is incomplete but could be scientifically investigated. • Provides background, observations and/or scientific principles that partially relate to the question or hypothesis. • The question or hypothesis lacks the clarity necessary to guide the design of an effective investigation.	• Proposes a partially scientifically logical, safe, and ethical procedure that includes some or minor scientific errors. • Partially identifies the variables and controls relevant to the procedure. • Designs a scientific investigation with insufficient resources/materials and techniques to collect data relevant to the question or hypothesis.	**3**
1/2*	• Proposes a question or hypothesis that cannot be scientifically investigated. • Provides background, observations and/or scientific principles that are not relevant to the question or hypothesis. • The question or hypothesis cannot guide the design of an effective investigation.	• Proposes a procedure that is illogical and difficult to follow and/or includes significant scientific errors. • Variables and controls relevant to the procedure may be present, but are not identified. • Designs a scientific investigation lacking the necessary resources/materials and techniques to collect data relevant to the question or hypothesis.	**1/2***

**5 for preponderance (most) completed, 6 for all completed.
*2 for preponderance (most) completed, 1 for less completed or missing.
A hypothesis may be stated as a claim.

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	SI- Collecting and Presenting Data *Collect, organize, and display sufficient data to support analysis.*	SI- Analyzing and Interpreting Results *Summarize and analyze data including possible sources of error. Explain results and offer reasonable and accurate interpretations and implications.*	
5/6**	• Collects detailed data that are consistent with the planned investigation design. • Carefully records detailed, relevant and annotated data in a consistent and organized manner with the appropriate level of precision. • Displays data in a manner that highlights information and patterns and supports interpretation of relationships.	• Analyzes relevant data and forms a comprehensive explanation (including patterns and trends) and relates the results of the investigation to other scientific information. • Clearly communicates the conclusions including sources, magnitude, and significant sources of error and possible affect on results. • Relates detailed results to question or hypothesis. Suggests and outlines further investigations based on analysis of results with justification.	**5/6****
4	• Collects data that are consistent with the planned investigation design. • Records relevant and accurate data in a consistent and organized manner. • Displays data in a manner that supports analysis and interpretation.	• Analyzes relevant data and constructs an evidence-based explanation of the results of the investigation. • Clearly communicates the conclusions including possible sources of error and how these might affect the results. • Relates results to question or hypothesis. Suggests relevant revisions or further investigations based on analysis of results with justification.	**4**
3	• Collects data that are partially consistent with the planned investigation design. • Records relevant data in an inconsistent or disorganized manner. • Displays data in a manner that is incomplete or disorganized.	• Partially analyzes the data. Constructs an overly general explanation of the results of the investigation. • Communicates conclusions in a general manner; stated sources of error are irrelevant or overly formulaic. • Partially relates results to question or hypothesis. Suggests relevant revisions to the investigation, but without justification.	**3**
1/2*	• Collects data that are inconsistent with the planned investigation. • Records irrelevant or inaccurate data. • Displays incomplete and disorganized data.	• Inaccurately analyzes the data. Constructs a simplistic explanation of the results of the investigation. • Incompletely communicates conclusions; stated sources of error are missing or irrelevant. • Does not relate results to question or hypothesis. Suggested revisions are irrelevant to the investigation.	**1/2***

**5 for preponderance (most) completed, 6 for all completed.
*2 for preponderance (most) completed, 1 for less completed or missing.
Data means evidence or record which may or may not require transformation to communicate results.