

2002 – 2006 Official Scientific Inquiry Scoring Guide Benchmark 2

	Forming a Question or Hypothesis <i>Make observations. Ask questions or form hypotheses based on those observations which can be explored through scientific investigations.</i>	Designing an Investigation. <i>Design a simple scientific investigation to answer questions or test hypotheses.</i>	
6	<p>A) Explains the origin of the question or hypothesis based on background that is relevant to the investigation.</p> <p>N) Forms a question or hypothesis that can be answered or tested using data and provides focus for a simple scientific investigation.</p> <p>C) Communicates (A) & (N) clearly and effectively.</p>	<p>A) Records logical procedures with an obvious connection to the student's scientific knowledge. (Teacher guidance in safety and ethics is acceptable.)</p> <p>N) Presents a practical design appropriate for answering the question or testing the hypothesis with evidence of recognition of some important variables.</p> <p>C) Communicates an organized design and detailed procedures.</p>	6
5	<p>A) Links background to the question or hypothesis.</p> <p>N) Forms a question or hypothesis that can be answered or tested using data gathered in a simple scientific investigation.</p> <p>C) Communicates (A) & (N) clearly.</p>	<p>A) Records logical procedures that imply a connection to student's scientific knowledge. (Teacher guidance in safety and ethics is acceptable.)</p> <p>N) Presents a practical design for an investigation that addresses the question or hypothesis and attempts to provide a fair test.</p> <p>C) Communicates a general plan including some detailed procedures.</p>	5
4	<p>A) Provides some support or background (prior knowledge, preliminary observations, or personal interest and experience) which is relevant to the investigation.</p> <p>N) Forms a question or hypothesis that can be explored using data in a simple scientific investigation.</p> <p>C) Communicates (A) & (N) understandably.</p>	<p>A) Records logical procedures with only minor flaws. (Teacher guidance in safety and ethics is acceptable.)</p> <p>N) Presents a practical plan for an investigation that addresses the question or hypothesis.</p> <p>C) Communicates a plan and some procedures, but it may generally lack detail.</p>	4
3	<p>A) Background is either irrelevant or missing.</p> <p>N) Forms a question or hypothesis that provides limited opportunity for data collection.</p> <p>C) Communicates a question or hypothesis that is incomplete or only partially understandable.</p>	<p>A) Records generally logical procedures having flaws. (Teacher guidance in safety and ethics is acceptable.)</p> <p>N) Presents a practical plan related to the topic that minimally addresses the question or hypothesis.</p> <p>C) Communicates an incomplete plan, with few procedures.</p>	3
2	<p>A) Not Applicable</p> <p>N) Forms a question or hypothesis that cannot be explored through a simple scientific investigation.</p> <p>C) Communicates a question or hypothesis that is not understandable.</p>	<p>A) Records procedures that are significantly flawed. (Teacher guidance in safety and ethics, if offered, may not have been incorporated.)</p> <p>N) Presents a plan somewhat related to the topic which may not address the question or hypothesis.</p> <p>C) Communicates an incomplete plan that is difficult to follow.</p>	2
1	<p>A) Not Applicable</p> <p>N) Not Applicable</p> <p>C) Does not express the purpose of the investigation as either a question or a hypothesis.</p>	<p>A) Records procedures that are wholly inappropriate.</p> <p>N) Presents a plan that is impractical or unrelated to the topic.</p> <p>C) Communicates a plan or procedures that cannot be followed.</p>	1

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	Collecting and Presenting Data <i>Collect, organize, and summarize data from investigations.</i>	Analyzing and Interpreting Results <i>Summarize, analyze and interpret data from investigations.</i>	
6	<p>A) Records accurate data and/or observations consistent with complex procedures.</p> <p>N) Transforms data into a student-selected format that is most appropriate to clarify results.</p> <p>C) Designs a data table (or other format) for communicating observations and/or measurements which is efficient, organized and uses appropriate units.</p>	<p>A) Reports results and identifies simple relationships (e.g., connecting one variable to another).</p> <p>N) Not Applicable</p> <p>C) Explicitly uses results to address the question or hypothesis and illustrate simple relationships.</p>	6
5	<p>A) Records accurate data and/or observations completely consistent with the planned procedure.</p> <p>N) Transforms data into a student-selected format which is complete and useful.</p> <p>C) Designs a data table (or other format) for communicating observations and/or measurements that is organized and uses appropriate units.</p>	<p>A) Reports results accurately and identifies obvious patterns (e.g., noting a pattern of change for one variable).</p> <p>N) Not Applicable</p> <p>C) Explicitly uses results to address the question or hypothesis.</p>	5
4	<p>A) Records reasonable data or observations generally consistent with the planned procedure.</p> <p>N) Transforms original data into a useful format (e.g., graphs, averages, percentages, diagrams, tables) with teacher support and with minimal errors.</p> <p>C) Designs a data table for collection and organization of data using teacher suggestions.</p>	<p>A) Reports results accurately.</p> <p>N) Not Applicable</p> <p>C) Responds to the question or hypothesis with some support from results.</p>	4
3	<p>A) Records reasonable data or observations consistent with the planned procedure, with some obvious errors.</p> <p>N) Does not transform data into a teacher-recommended format.</p> <p>C) Uses teacher-supplied data tables for data collection with minor errors.</p>	<p>A) Reports results incompletely or in a misleading way.</p> <p>N) Not Applicable</p> <p>C) Responds to the question or hypothesis without support from the results.</p>	3
2	<p>A) Records insufficient data and/or observations inconsistent with the planned procedure.</p> <p>N) Not Applicable</p> <p>C) Uses a teacher supplied data table with minimal errors.</p>	<p>A) Reports results inaccurately.</p> <p>N) Not Applicable</p> <p>C) Provides a response(s) to the question or hypothesis that is unrelated to the investigation.</p>	2
1	<p>A) Records data and/or observations unrelated to the planned procedure.</p> <p>N) Not Applicable</p> <p>C) Does not correctly use a teacher-supplied data table.</p>	<p>A) Omits results in reports.</p> <p>N) Not Applicable</p> <p>C) Does not respond to the question or hypothesis.</p>	1