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Science
High School Inquiry Skills

Make observations, raise questions, and formulate hypotheses	• Observe the world from a scientific perspective. • Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge. • Read, interpret, and examine the credibility and validity of scientific claims in different sources of information, such as scientific articles, advertisements, or media stories.	SIS1

Design and conduct scientific investigations	• Articulate and explain the major concepts being investigated and the purpose of an investigation.
	• Select required materials, equipment, and conditions for conducting an experiment.
	• Identify independent and dependent variables.
	• Employ appropriate methods for accurately and consistently
	  o making observations
	  o making and recording measurements at appropriate levels of precision
	  o collecting data or evidence in an organized way
	• Properly use instruments, equipment, and materials (e.g., scales, probeware, meter sticks, microscopes,computers) including set-up, calibration (if required), technique, maintenance, and storage.
	• Follow safety guidelines
		SIS2

Analyze and interpret results of scientific investigations	• Present relationships between and among variables in appropriate forms. • Represent data and relationships between and among variables in charts and graphs. • Use appropriate technology (e.g., graphing software) and other tools. • Use mathematical operations to analyze and interpret data results. • Assess the reliability of data and identify reasons for inconsistent results, such as sources of error or uncontrolled conditions. • Use results of an experiment to develop a conclusion that addresses the initial questions and supports or refutes the stated hypothesis. • State questions raised by an experiment that may require further investigation.	SIS3

Communicate and apply the results of scientific investigations	• Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations. • Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation. • Explain diagrams and charts that represent relationships of variables. • Construct a reasoned argument and respond appropriately to critical comments and questions. • Use language and vocabulary appropriately, speak clearly and logically, and use appropriate technology (e.g., presentation software) and other tools to present findings. • Use and refine scientific models that simulate physical processes or phenomena.	SIS4