New York Science

Physical Science - Science and Engineering Practices

Asking questions and defining problems SEP.1	**A**	**Ask questions that can be investigated within the scope of the classroom, outdoor environment, and museums and other public facilities with available resources and, when appropriate, frame a hypothesis based on observations and scientific principles.** SEP.1-1
Developing and using models SEP.2	**A**	**Develop a model to predict and/or describe phenomena.** SEP.2-1
	B	**Develop a model to describe unobservable mechanisms.** SEP.2-2
Planning and carrying out investigations SEP.3	**A**	**Plan an investigation individually and collaboratively, and in the design: identify independent and dependent variables and controls, what tools are needed to to the gathering, how measurements will be recorded, and how many data are needed to support a claim.** SEP.3-1
	B	**Collect data to produce data to serve as the basis for evidence to answer scientific questions or test design solutions under a range of conditions.** SEP.3-2
	C	**Conduct an investigation and evaluate the experimental design to produce data to serve as the basis for evidence that can meet the goals of the investigation.** SEP.3-3
Analyzing and interpreting data SEP.4	**A**	**Analyze and interpret data to determine similarities and differences in findings.** SEP.4-1
	B	**Construct and interpret graphical displays of data to identify linear and nonlinear relationships.** SEP.4-2
Using mathematics and computational thinking SEP.5	**A**	**Use mathematical representations to describe and/or support scientific conclusions and design solutions.** SEP.5-1
Constructing explanations and designing solutions SEP.6	**A**	**Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints.** SEP.6-1
	B	**Apply scientific ideas or principles to design, construct, and test a design of an object, tool, process or system.** SEP.6-2

Engaging in argument from evidence SEP.7	**A**	**Construct and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.** SEP.7-1
Obtaining, evaluating and communicating information SEP.8	**A**	**Gather, read and synthesize information from multiple appropriate sources and assess the credibility, accuracy and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence.** SEP.8-1
	B	**Integrate qualitative scientific and technical information in written text with that contained in media and visual displays to clarify claims and findings.**