NECAP Assessment of Inquiry

The third session of the NECAP Science Assessment is an Inquiry Task that measures each student's ability to engage in the science process as defined by the thirteen constructs of the Four Broad Areas of Inquiry. The Inquiry Tasks at Grades 4, 8, and 11 have items from each of the Four Broad Areas, but not every construct will be represented in each task each year.

NECAP Schema for Assessing Scientific Inquiry (with DOK levels for constructs)				
Broad Areas of Inquiry to be Assessed	**Formulating Questions & Hypothesizing**	**Planning and Critiquing of Investigations**	**Conducting Investigations**	**Developing and Evaluating Explanations**
Constructs for each Broad Area of Inquiry (including intended DOK Ceiling Levels, based on Webb Depth of Knowledge Levels for Science – see also Section II) ***Inquiry Constructs answer the question: What is it about the broad area of Inquiry that we want students to know and be able to do?***	**1.** Analyze information from observations, research, or experimental data for the purpose of formulating a question, hypothesis, or prediction: **(DOK 3)** **1a.** Appropriate for answering with scientific investigation **1b.** For answering using scientific knowledge **2.** Construct coherent argument in support of a question, hypothesis, prediction **(DOK 2 or 3 depending on complexity of argument)** **3.** Make and describe observations in order to ask questions, hypothesize, make predictions related to topic **(DOK 2)**	**4.** Identify information/evidence that needs to be collected in order to answer the question, hypothesis, prediction **(DOK 2 – routine; DOK 3 non-routine/ more than one dependant variable)** **5.** Develop an organized and logical approach to investigating the question, including controlling variables **(DOK 2 – routine; DOK 3 non-routine)** **6.** Provide reasoning for appropriateness of materials, tools, procedures, and scale used in the investigation **(DOK 2)**	**7.** Follow procedures for collecting and recording qualitative or quantitative data, using equipment or measurement devices accurately **(DOK 1 – use tools; routine procedure;** **DOK 2 – follow multi-step procedures; make observations)** **8.** Use accepted methods for organizing, representing, and manipulating data **(DOK 2 – compare data; display data)** **9.** Collect sufficient data to study question, hypothesis, or relationships **(DOK 2 – part of following procedures)** **10.** Summarize results based on data **(DOK 2)**	**11.** Analyze data, including determining if data are relevant, artifact, irrelevant, or anomalous **(DOK 2 – specify relationships between facts; ordering, classifying data)** **12.** Use evidence to support and justify interpretations and conclusions or explain how the evidence refutes the hypothesis **(DOK 3)** **13.** Communicate how scientific knowledge applies to explain results, propose further investigations, or construct and analyze alternative explanations **(DOK 3)**