

STUDENT LEARNING OBJECTIVE – TEACHER

Content Area: Science

Grade Level: 8

Objective Statement:

Students will be able to analyze scientific texts and craft written responses supported by textual evidence in the four Areas of Inquiry: Formulating Questions & Hypothesizing, Planning & Critiquing Investigations, Conducting Investigations, and Developing and Evaluating Explanations.

Rationale:

Historical data consistently shows that our students perform weakest in the Inquiry domain of the NECAP Science Assessment. Additionally, the skills related to the Areas of Inquiry will enable to students to engage in any science curriculum by strengthening their ability to think scientifically. Finally, the Common Core State Standards emphasize teaching students to respond to informational science texts and to successfully translate information between qualitative and quantitative formats; these skills tightly align with the constructs in the Areas of Inquiry.

Aligned Standards:

RI Grade Span Expectations for Inquiry

- INQ-1a, 1b* Analyze information from observations, research, or experimental data for the purpose of formulating a question, hypothesis, or prediction.
- INQ-2* Construct coherent argument in support of question, hypothesis, or prediction.
- INQ-5* Develop an organized and logical approach to investigating the question, including controlling variables.
- INQ-8* Use accepted methods for organizing, representing, and manipulating data.
- INQ-10* Summarize results based on data.
- INQ-11* Analyze data including determining if data are relevant, artifact, irrelevant, or anomalous.
- INQ-12* Use evidence to justify interpretations and conclusions or explain how the evidence refutes the hypothesis.
- INQ-13* Communicate how scientific knowledge applies to explain results, propose further investigations, or construct and analyze alternative explanations.

Common Core State Standards for Literacy in Science and Technical Subjects

- RST.6-8.1:* Cite specific textual evidence to support analysis of science and technical texts.
- RST.6-8.2:* Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
- RST.6-8.7* Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
- WHST.6-8.2:* Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
 - a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
 - b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.

- c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Establish and maintain a formal style and objective tone.
- f. Provide a concluding statement or section that follows from and supports the information or explanation presented.

WHST.6-8.9: Draw evidence from informational texts to support analysis reflection, and research.

Students:

This objective applies to the 87 students in my 4 sections of 8th grade Science.

Interval of Instruction:

SY2012-2013

Baseline Data:

In September, students completed a baseline inquiry task I developed based on a NECAP Inquiry Task. This task contains items of varying DOK and is a good approximation of students' ability to analyze and respond to informational text and what students know and are able to do in the Areas of Inquiry. We used the NECAP Inquiry Task scoring guides and exemplars of student work to determine what constituted basic proficiency. Based on these results, I created the following groups:

- Group I (21) students scored Substantially Below Proficiency
- Group II (58) students scored Below Proficiency
- Group III (8) students scored Basic Proficiency

Target(s):

All students (87) will complete an Inquiry Portfolio, which is composed of 10 tasks completed throughout the year (2 per quarter, midterm, and final).

- a. Group I (21) will demonstrate basic proficiency (or better) on at least 7 tasks.
- b. Group II (58) will demonstrate basic proficiency (or better) on at least 8 tasks.
- c. Group III (8) will demonstrate basic proficiency (or better) on at least 9 tasks.

Rationale for Target(s):

These targets are tiered to reflect students' differing starting points, as determined by the baseline inquiry task. However, all students are expected to demonstrate basic proficiency on at least 70% of portfolio entries. Meeting this bar will indicate that they have the ability to interact with scientific informational text in the four Areas of Inquiry.

Evidence Source(s):

Student portfolios will consist of 10 entries (two per quarter, 1 mid-term, 1 final). Inquiry tasks and their accompanying scoring guides were created by the science Department Coordinator and reviewed by department members during common planning time. These tasks were developed in accordance with guidance from RIDE and Measured Progress and are intended to mimic the type of tasks students will encounter on the grade 8 science NECAP assessment.

Students begin by reading a scenario that sets the stage for inquiry and requires them to demonstrate understanding and skills via at least one item for each of the Areas of Inquiry. Students

are then asked to analyze and respond to informational text (using expository writing as well as graphs, charts, and tables).

Administration:

Inquiry tasks will be administered in class, twice per quarter (the exact timing of the administration will be at my discretion based on formative assessment of student skills). Finally, the midterm and final exam each include an inquiry task that will be administered according to the school-wide exam schedule.

Students will receive strategic supports throughout the instructional interval and the opportunity to submit at least two portfolio entries each quarter. Collecting data throughout the year will enable me to monitor their progress toward their targets and provide additional supports as necessary.

Scoring:

I will score the Inquiry Tasks, in collaboration with the other 8th grade Science teacher. We will norm our scoring using developed scoring guide developed with other members of the Science department and double scoring 5% of completed tasks to ensure calibration.