

NECAP Science 2010 Grade 11 Release Items Information

| Item | GE Connection | DOK | Domain and Target | | Prediction |
|------|-------------------|-----|-------------------|---|------------|
| 1 | S9-12: 9 | 2 | PS 1-1 | Students will use physical and chemical properties as determined through an investigation to identify a substance. | |
| 2 | S9-12: 11 | 2 | PS 1-3 | Students will explain how properties of elements and the location of elements on the periodic table are related. | |
| 3 | S9-12: 19, 20, 21 | 2 | PS 3-9 | Students will apply concepts of inertia, motion, and momentum to predict and explain situations involving forces and motion, including stationary objects and collisions. | |
| 4 | S9-12: 19, 20, 21 | 2 | PS 3-9 | Students will apply concepts of inertia, motion, and momentum to predict and explain situations involving forces and motion, including stationary objects and collisions. | |
| 5 | S9-12: 47 | 2 | ESS 1-1 | Students will, when provided with geologic data (including movement of plates) on a given locale, predict the likelihood for an earth event (e.g., volcanoes, mountain ranges, islands, earthquakes, tides). | |
| 6 | S9-12: 18, 47 | 1 | ESS 1-4 | Students will relate how geologic time is determined using various dating methods (e.g., radioactive decay, rock sequences, fossil records). | |
| 7 | S9-12: 27, 45 | 2 | ESS 3-7 | Students will, based on the nature of electromagnetic waves, explain the movement and location of objects in the universe or their composition (e.g., red shift, blue shift, line spectra). | |
| 8 | S9-12: 30, 31 | 3 | LS 1-1 | Students will use data and observations to make connections between, to explain, or to justify how specific organelles produce/regulate what the cell needs or what a unicellular or multi-cellular organism needs for survival. | |
| 9 | S9-12: 33, 34, 35 | 2 | LS 2-4 | Students will trace the cycling of matter (e.g., carbon cycle) and the flow of energy in a living system from its source through its transformation in cellular, biochemical processes (e.g., photosynthesis, cellular respiration, fermentation) | |
| 10 | S9-12: 42 | 2 | LS 4-9 | Students will use evidence to make and support conclusions about the ways that humans or other organisms are affected by environmental factors or heredity (e.g., pathogens, diseases, medical advances, pollution, mutations). | |

NECAP Science 2010 Grade 11 Inquiry Task Information

| Item | GE Connection | DOK | Inquiry Construct | | Prediction |
|------|----------------------|-----|-------------------|--|------------|
| 1 | S9-12: 1 S9-12: 2 | 3 | 1 | Students will analyze information from observations, research, or experimental data for the purpose of formulating a question, hypothesis, or prediction. (Formulating Questions and Hypothesizing) | |
| 2 | S9-12: 5 | 2 | 3 | Students will make and describe observations in order to ask questions, hypothesize, make predictions related to topic. (Conducting Investigations) | |
| 3 | S9-12: 6 S9-12: 7 | 2 | 12 | Students will use evidence to support and justify interpretations and conclusions or explain how the evidence refutes the hypothesis. (Developing and Evaluating Explanations) | |
| 4 | S9-12: 6 S9-12: 7 | 2 | 12 | Students will use evidence to support and justify interpretations and conclusions or explain how the evidence refutes the hypothesis. (Developing and Evaluating Explanations) | |
| 5 | S9-12: 6 S9-12: 7 | 2 | 12 | Students will use evidence to support and justify interpretations and conclusions or explain how the evidence refutes the hypothesis. (Developing and Evaluating Explanations) | |
| 6 | S9-12: 7 | 3 | 4 | Students will identify information/evidence that needs to be collected in order to answer the question, hypothesis, prediction. (Planning or Critiquing of Investigations) | |
| 7 | S9-12: 7 | 2 | 4 | Students will identify information/evidence that needs to be collected in order to answer the question, hypothesis, prediction. (Planning or Critiquing of Investigations) | |
| 8 | S9-12: 7 | 3 | 13 | Students will communicate how scientific knowledge applies to explain results, propose further investigations, or construct and analyze alternative explanations. (Developing and Evaluating Explanations) | |