Study Guide/ Mastery Check List

**Embedded Inquiry in Ecology**

Inq.1: I can conclude using data from a scientific experiment if a hypothesis is rejected or failed to be rejected

Inq.2: I know the steps of the scientific method and what happens in each step

Inq.3: I know when to use specific scientific instruments to measure volume, mass, and length.

Inq.6: I can identify bias from an experiment and make suggestions to reduce bias in future experiments

Math.2: I can look at growth curve and interpret what is occurring at each stage (lag, growth, steady-state, and death phase).

Math.2: I know the difference between a J and S growth curve and causes of each

**Interdependence and Flow of Energy in Ecology**

2.1: I can analyze graphs of predator prey population fluctuations. \_\_\_\_\_\_\_

2.2: I can analyze population growth curves and age structure diagrams. \_\_\_\_\_\_\_

2.3: I can determine how the carrying capacity of an ecosystem for one species can be affected by changes in the populations of other species in that ecosystem. \_\_\_\_\_\_\_

2.4: I can research and debate how various types of human activities affect the populations of organisms and/or lead to the extinction of a species.

2.5 + 2.6: I can research and communicate an evidence-based argument that supports the claim that greater biodiversity and complex interactions within an ecosystem tend to enhance ecosystem stability in response to disturbances. \_\_\_\_\_\_\_

2.7: I can analyze examples of ecological succession, identifying and explaining the factors and order of events responsible for the formation of a new ecosystem in response to extreme fluctuation in environmental conditions or catastrophic events.

3.1: I can create a food chain, web, and pyramid and calculate the change of energy from each tropic level and show how the inefficiency of energy transfer between trophic levels affects the relative number of organisms supported at each trophic level, and 2) how energy loss and organic matter loss between trophic levels remains consistent with the laws of conservation of energy and matter. \_\_\_\_\_\_\_

3.4 I can describe the major events which occur during the carbon, nitrogen, and water cycles. \_\_\_\_\_\_\_\_

3.4 I can model the tracking of carbon atoms between inorganic molecules and organic molecules in an ecosystem, identifying the processes that transform carbon between each carbon pool, including: photosynthesis, respiration, consumption, decomposition, combustion, and diffusion. \_\_\_\_\_\_\_