Study Guide for CA#1 Sustainability & Nature of Science

Date received \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date of assessment \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Essential Vocabulary**

* Sustainability
* Ecological footprint
* Scientific method
* Hypothesis
* Independent variable
* Dependent variable
* Control
* Controlled experiment
* Conclusion
* Theory
* Law

**SC.912.L.17.20** *Predict the impact of individuals on environmental systems, and examine how human lifestyles affect sustainability.* DOK 3

***Textbook Reference: Unit 1: Chapter 1 The Environment & Sustainability pages 17-23***

* Be able to predict how the actions of humans may impact environmental systems and/or affect sustainability.
* Be able to determine benefits of sustainable forest ecosystems.
* Be able to describe a sustainable development.
* Be able to identify factors that affect sustainability.
* Be able to describe what a ecological footprint is
* Be able to determine how certain changes might affect a person's ecological footprint.
* Be able to explain what a sustainable yield is.

**SC.912.N.1.1** *Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following:*

*1. Pose questions about the natural world 2. Conduct systematic observations 3. Examine books and other sources of information to see what is already known 4. Review what is known in light of empirical evidence 5. Plan investigations*

*6. Use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems, and also the generation and interpretation of graphical representations of data, including data tables and graphs)*

*7. Pose answers, explanations, or descriptions of events 8. Generate explanations that explicate or describe natural phenomena 9. Use appropriate evidence and reasoning to justify these explanations to others 10. Communicate results of scientific investigations 11. Evaluate the merits of the explanations produced by others. DOK 3*

***Textbook Reference: Chapter 2 Science, Matter, Energy and Systems page 46-52***

* Be able to design and/or evaluate a scientific investigation using evidence of scientific thinking and/or problem solving.
* Be able to interpret and analyze data to make predictions and/or defend conclusions.
* Given a scenario, be able to identify the independent and dependent variables.
* Given a scenario with data, be able to come to a valid conclusion.

**SC.912.N.3.1** *Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory represents the most powerful explanation scientists have to offer.* DOK 3

**SC.912.N.3.4** *Recognize that theories do not become laws, nor do laws become theories; theories are well-supported explanations, and laws are well-supported descriptions.* DOK 2

***Textbook Reference: Chapter 2 Science, Matter, Energy and Systems page 46-52***

* Be able to explain the development of a theory.
* Be able to recognize the differences between theories and laws.
* Know that theories do not become scientific laws with more evidence.