Applicable High School Essential Content Standards and Expectations (HSCE)

Below is a list of content standards and expectations applicable to the program “Plant Identification and Ecology.”

Grade Levels 9-12:

High School Essential Content Standards and Expectations (HSCS): Biological Science (B)

- **Standard B1: Inquiry, Reflection, and Social Implication**
  - B1.1: Scientific Inquiry
    - B1.1A Generate new questions that can be investigated in the laboratory or field.

- **Standard B2: Organization and Development of Living Systems**
  - L2.p3: Plants as Producers (prerequisite)
    - L2.p3A Explain the significance of carbon in organic molecules. (prerequisite)
  - B2.3: Maintaining Environmental Stability
    - B2.3C Explain how stability is challenged by changing physical, chemical, and environmental conditions as well as the presence of disease agents.

- **Standard B3: Interdependence of Living Systems and the Environment**
  - L3.p1: Populations, Communities, and Ecosystems (prerequisite)
    - L3.p1A Provide examples of a population, community, and ecosystem. (prerequisite)
  - L3.p2: Relationships Among Organisms (prerequisite)
    - L3.p2A Describe common relationships among organisms and provide examples of producer/consumer, predator/prey, or parasite/host relationship. (prerequisite)
    - L3.p2D Explain how two organisms can be mutually beneficial and how that can lead to interdependency. (prerequisite)
  - L3.p3: Factors Influencing Ecosystems (prerequisite)
    - L3.p3B Distinguish between the living (biotic) and nonliving (abiotic) components of an ecosystem. (prerequisite)
    - L3.p3D Predict how changes in one population might affect other populations based upon their relationships in a food web. (prerequisite)
  - B3.1: Photosynthesis and Respiration
    - B3.1A Describe how organisms acquire energy directly or indirectly from sunlight.

- **Standard B5: Evolution and Biodiversity**
  - L5.p2: Classification (prerequisite)
    - L5.p2A Explain, with examples, that ecology studies the varieties and interactions of living things across space while evolution studies the varieties and interactions of living things across time. (prerequisite)
  - B5.1: Theory of Evolution
- **B5.1A** Summarize the major concepts of natural selection (differential survival and reproduction of chance inherited variants, depending on environmental conditions).
- **B5.1e** Explain how natural selection leads to organisms that are well suited for the environment (differential survival and reproduction of chance inherited variants, depending upon environmental conditions).