Next Generation Science Standards
Applied to Talk About Trees Classroom Programs
Second Grade

Life Science - Standard 2-LS2.1
Ecosystems: Interactions, Energy and Dynamics
Students who demonstrate understanding can: Plan and conduct an investigation to determine if plants need sunlight and water to grow.

Disciplinary Core Idea
*Interdependent Relationships in Ecosystems
  -Plants depend on water and light to grow.

Science and Engineering Design
*Planning and Carrying Out Investigations (Planning and carrying out investigations to answer questions or test solutions to problems in K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.)
  -Plan and conduct an investigation collaboratively to produce data to serve as a basis for evidence to answer a question.

Crosscutting Concepts
*Cause and Effect
  -Events have causes that generate observable patterns.

TAT Classroom Programs: Tree Talk #1 - Tree Talk #2 - Outdoor Program

Life Science – Standard 2-LS2.2
Ecosystems: Interactions, Energy and Dynamics
Students who demonstrate understanding can: Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

Disciplinary Core Ideas
*Interdependent Relationships in Ecosystems.
  -Plants depend on animals for pollination or to move their seeds around.

Science and Engineering Practices
*Developing and Using Models (Modeling in K K-2 builds on prior experiences and progresses to include using and developing models (i.e.: diagrams, drawing, physical replica, diorama, dramatization, storyboard) that represent concrete events or design solutions.)
  -Develop a simple model based on evidence to represent a proposed object or tool.

Crosscutting Concepts
*Structure and Function
  -The shape and stability of structures of natural and designed objects are related to their functions.

TAT Classroom Programs: Tree Talk #2 - Outdoor Program (winged seed activity)
**Life Science – Standard 2-LS4.1**  
**Biological Evolution: Unity and Diversity**  
*Students who demonstrate understanding can: Make observations of plants and animals to compare the diversity of life in different habitats.*

**Disciplinary Core Ideas**
- **Biodiversity and Humans**
  - There are many different kinds of living things in any area and they exist in different places on land and in water.

**Science and Engineering Practices**
- **Planning and carrying out Investigations** (Planning and carrying out investigations to answer questions or test solutions to problems in K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.)
  - Make observations (first hand or from media) to collect data which can be used to make comparisons.

**Connections to Nature of Science**
- Scientific knowledge is based on empirical evidence
  - Scientists look for patterns and order when making observations about the world.

**TAT Classroom Programs: Tree Talk #1 - Tree Talk #2 - Outdoor Program**

**Physical Science – Standard 2-PS1.3**  
**Matter and its Interactions**  
*Students who demonstrate understanding can: Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.*

**Disciplinary Core Ideas**
- **Structure and Properties of Matter**
  - Different properties are suited to different purposes.
  - A great variety of objects can be built up from a small set of pieces.

**Science and Engineering Practices**
- **Constructing Explanations and Designing Solutions** (Constructing explanations and designing solutions in K-2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.)
  - Make observations (first hand or from media) to construct an evidence-based account for natural phenomena.

**Crosscutting Concepts**
- **Energy and Matter**
  - Objects may break into smaller pieces and be put together into larger pieces, or change shapes.

**Talk About Trees Classroom Program: Paper Making**
Engineering Design – Standard K-2 ETSI.2

Students who demonstrate understanding can: Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

Disciplinary Core Ideas

*Developing Possible Solutions
- Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.

Science and Engineering Practices

*Developing and Using Models (Modeling in K K-2 builds on prior experiences and progresses to include using and developing models (i.e.: diagrams, drawing, physical replica, diorama, dramatization, storyboard) that represent concrete events or design solutions.)

- Develop a simple model based on evidence to represent a proposed object or tool.

Crosscutting Concepts

*Structure and Function
- The shape and stability of structure of natural and designed objects are related to their functions.

Talk About Trees Classroom Program: Paper Making