



## **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 evidences-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**