Leaf and Seed Study

Location: Schoolyard, park, or local greenspace

SUPPLIES

- Life Cycle of a Tree flashcards
- Seed Chart
- Leaf Chart
- First, Next, Then, Last Worksheet
- Pencils
- Clipboards or folders to lean on

Pairs with: watershed education activities, schoolyard report card

Key Terms: life cycle, seed, seedling, sapling, mature tree, snag

Total time: 30 mins, *but can be expanded with other activities, research, or discussion*

Example of an aligned standard: CCSS.ELA-Literacy.W.3.3.c

INTRODUCTION, *10 mins*

Today we're going to look closely at trees. A tree is a type of plant, but it's different from a bush or grass. How is a tree different from other plants?

- They're taller! Some trees are short and more like shrubs, but they're still much taller than grass. The tallest trees are Coastal Redwoods, which can grow to be over 300 feet tall!
- Trees have trunks instead of stems. Tree trunks are much thicker, woodier, and sturdier versions of a stem. They're harder to bend and have more structures than a plant stem.
- Trees have a longer lifespan than other plants. Some plants only last one year or one season, while trees can live to be much older.

How does a tree start growing?

A tree starts growing from a seed. Seeds contain everything a tree needs to grow! Seeds contain an embryo, or baby plant with a root, stem, and leaves. Seeds also contain the nutrition that a tree needs to start its life.

We'll look for examples of seeds as we walk around today. Do you know what the seed of an oak tree is called?

An acorn!

HAND OUT FLASHCARDS

These cards show the life cycle of a tree. Can you put them in order?

seed→ seedling→ sapling→ mature tree→ snag

Do you think **snags** (standing dead trees) or decaying logs are good for the environment? Why or why not?The answer is: Decaying takes a long time and snags provide an important service to the forest. They provide habitat for moss and other small plants, as well as insects and animals like birds, toads, salamanders, & chipmunks. They allow decomposers like fungus, worms, & millipedes to do their job breaking down the dead tree into nutrients to put back into the earth.

FIELD INVESTIGATION, *10 mins*

Let's OBSERVE the trees around us. What does it mean to observe? To look carefully.

Use as many senses as you can to describe the trees.

- What does the texture of the bark feel like?
- What does the shape of the leaf look like
- What do you hear when you stand under the tree?
- Can you smell anything?

Fall is the best time to observe seeds. In pairs or groups, students should collect seeds on the trees or the ground beneath the trees. Set physical boundaries so students know where they can go (eg: stay between the sidewalk and the playground). Let students know what the signal is to come back together in a few minutes.

After the time has elapsed, give the signal to come back together as a class.
Ask students to count their seeds and discuss their shape, color, and texture.

Use the seed chart to help them describe their seeds.

Some seeds have a **hard shell**, like an acorn from an Oak Tree.
Others grow in a **winged samara**, like a Maple Tree, which spins like a helicopter and gets carried by the wind.
Others grow in a **flat pod**, like an Eastern Redbud Tree.
Some seeds grow in a **spiny seed pod**, like an American Sweetgum. This seed pod acts like a treat toy does for cats, where the seeds fall out of the holes as the ball rolls.
Other seeds, like the Cottonwood Tree, have **fluffy seeds** like a dandelion. Those blow in the wind even further than the winged samaras of a Maple Tree.

Remember: inside of every seed we collected today is a tiny root, a stem, and leaves, plus ALL the nutrition that a tree needs to start its life.

WRITING ACTIVITY, *10 mins*

HAND OUT WRITING ACTIVITY SHEETS

Let's practice our first, next, then, and last writing. Write a full sentence for each step of the life cycle of a tree. Then, we can share out.

LIFE CYCLE OF A TREE FLASHCARDS

See next pages.

seed

seedling

Sapling

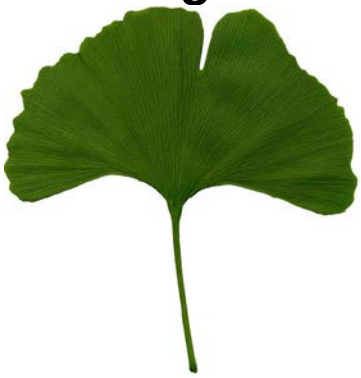
mature tree

Snag

Types of Seeds

hard shell 	**Winged** 
flat pod 	**spiny pod** 
cone 	**fluffy** 

Leaf Shapes

White Oak 	**Tuliptree** 	**Gingko** 
Eastern Redbud 	**American Sweetgum** 	**American Elm** 

Urban Adventure Seed!

Describe the journey of a seed. Think back to the life cycle of a tree. What happens first, next, then, and last?

First_____

_____.

Next _____

_____.

Then _____

_____.

Last _____

_____.