

NGSS Connections for Spring Orchard Activity Stations

Reading and apple tasting:

Students get cozy and taste apples for snack while reading some of our favorite apple-themed books.

Shake a Tree:

Students predict and make observations to learn what can be found on the limbs of a tree in an orchard in the springtime and how to use scientific tools to make observations. The instructor spreads a white sheet on the ground below a tree and shakes the branches. Students observe and sort what falls from the tree and records their findings.

Plant Needs Relay Game:

Students learn about a plant's needs (water, soil, sun, air, space, and pollination of flowers) through a safe, fun, and interactive game. In pairs, students collect representations of a plants needs in a fun and engaging way to complete a relay, bringing all the needs to their own plant pot.

Tree Buddies:

Students learn what it means to make observations as they get to know a special tree in the orchard and observe it with all of their senses. First, students close their eyes and use their remaining senses. Next, students record their observations in their science notebooks, drawing their tree and doing leaf/bark rubbings. Students are asked where the tree gets its needs, what those needs are, and then they assess if the tree appears to have all of its needs met.

Apple Lifecycle Puzzle:

Using an apple lifecycle puzzle, students will use their knowledge of the seasons to show the lifecycle stages of an apple tree. Guided questions will invite them to think about the process of growing, harvesting, and eating apples and when those local apples are ready for harvest.



Dimensions from Framework	What students are doing
<p>Science and Engineering Practices (SEP)</p> <p>Analyzing and Interpreting Data: Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.</p> <p>Organizing Data</p> <p>Using models</p> <p>Scientific Knowledge is Based on Empirical Evidence</p>	<p>Lifecycle Puzzle- Students build on their previous experiences (their observations of a tree through the seasons, knowledge of seasons, understanding of plant needs) and apply this knowledge to ordering the lifecycle stages of an apple tree.</p> <p>Shake a Tree- Students use magnifying lenses to make observations about what falls from the tree and describe patterns in their findings, identifying different types of organisms and different parts of a tree.</p> <p>Lifecycle Puzzle- Students organize the given data (lifecycle puzzle cards) into the order of the lifecycle which they will use as a tool to communicate the lifecycle stages and answer the inquiry questions.</p> <p>Lifecycle Puzzle- Students use a puzzle as a model to represent a process in the natural world.</p> <p>Tree Buddies- Students collect, record, and share observations about their special tree. Students look for patterns in their own tree observations and compare to their peers' trees.</p>
<p>Disciplinary Core Ideas (DCI)</p> <p>LS1.A: Structure and Function: ... Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.</p> <p>K-ESS3.A: Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.</p> <p>K-LS1.C: Organization for Matter and Energy Flow in Organisms- All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.</p>	<p>Lifecycle Puzzle- Students arrange puzzle pieces depicting a flower, a bee visiting that flower, etc. to show stages in the plant lifecycle. They determine the purpose, or function, of that plant part.</p> <p>Shake a Tree- Students identify different parts of a tree in an orchard and explore how tiny bits of life on the tree's limbs relate to the whole tree's survival and the survival of the organisms using the tree as a habitat.</p> <p>Plant needs relay game: Students enact gathering various plant needs (soil/nutrients, water, sun, space, pollination) in a relay activity.</p>
<p>Crosscutting Concepts (CC)</p> <p>Structure and Function: The shape and stability of structures of natural and designed objects are related to their function(s).</p> <p>Patterns: Patterns in the natural and</p>	<p>Lifecycle Puzzle- Students identify the parts of the apple tree that develop during the lifecycle of that tree (including flowers and fruits.)</p> <p>Lifecycle Puzzle- Students compare the observations of trees in their own school yard to the apple trees in the orchard, noting what occurs seasonally to the trees. They will draw from this knowledge to arrange the lifecycle cards and pinpoint similarities and differences between</p>

<p>human designed world can be observed and used as evidence.</p> <p>Stability and Change</p>	<p>tree types.</p> <p>Lifecycle Puzzle- Students depict the lifecycle of an apple tree using a model to show its cyclical changes along with the seasons over a year.</p> <p>Shake a Tree- Students observe patterns in the items that fall from the tree and sort their findings into different categories.</p> <p>Tree Buddies- Students identify patterns of what they observe and what these patterns might mean regarding the health of their tree, the type of tree, and what organisms interact with the tree. Students compare observations from different trees and explore patterns between trees.</p>
<p>Performance Expectation (P.E.) supported: K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.</p>	