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| **Exploring Trees** |
| *These project activities are meant to build upon each other and be completed over the course of a week or so. They incorporate learning opportunities from many content areas such as: Science, Math, Language and Literacy, Physical Activity, Social Studies, Health, World Languages, Career Exploration and Visual and Performing Arts. Some activities are focused on spending time outdoors. Parents and caregivers need to make appropriate decisions for each child, based on their location and availability of materials. The most important thing you can do for your child is to talk with them during each aspect of their day. Explain what you’re doing, let them be involved and assure them that they are loved and safe every day.* |
| **Introduction**  In the state of Maine, trees are all around us. While people come from all over to see our foliage in the fall, trees and forests can be enjoyed year-round. Starting in the spring, buds begin on trees and they come alive with leaves forming and birds calling from their branches. Maine is fortunate to have a wide variety of trees for people to observe. Our forests also have an important legacy as our lumber, pulp and paper industries were the lifeblood of much of the state for many years.  A glossary is provided after the activities to help you make sense of words you may not recognize. |
| **Materials**  Paper / Notebook / Notepad with a pen or pencil  Measuring Tape  Yardstick  Rope / String / Twine  Crayons |
| **Activities**  **Activity 1: Tree Observation Log**  Trees are all around us, so you can pick one to observe over time or several different ones to observe, compare, and contrast. Since it is spring, conifer (evergreen) trees will have needles and while other trees will have buds that you can watch over time. Your observations can be gathered in many ways – you can write descriptions, you can draw pictures of your observations, you could also use a device and app (ex. Book Creator) to capture photographs to pair with your observations.  **Activity 2: Learn the Trees Around You**  Using print or web resources, learn the different trees around you. Maine has 14 native conifers and 52 native leaf trees. How many can you locate around you? Using this knowledge, you can try several different mini-activities.   * Create a map of the trees around you * Make a Venn Diagram of trees (compare and contrast them) * Write a poem describing a specific tree   **Activity 3: Trees & Numbers – Tallest, Biggest, Oldest**  Trees are primarily measured in two ways – their height and their circumference. There are some creative ways to measure both and they can tell you a lot about your tree’s age and how it compares to others.   * Measuring the height of a tree (see attached PDF) * [Measure the height of a tree](https://www.youtube.com/watch?v=cDy5OjfMfZ8) (YouTube video) * [Measure the circumference of a tree](https://youtu.be/R9eQ9qFrSVs) and find it’s DBH (Diameter at Breast Height)   (YouTube video)   * [Tree Age Calculator](https://goodcalculators.com/tree-age-calculator/) (Website) * Tree Age Table – requires DBH calculation (see attached table) * [Oldest Trees in the World](https://www.oldest.org/nature/trees/) * [Big Trees](https://www.maine.gov/dacf/mfs/projects/fall_foliage/kids/bigtree.html) (lists for Maine and the US)   **Activity 4: Reading Trees**  Trees are a frequent topic of children’s books and forests are a frequent setting for children’s stories. Here is a text set with suggested titles, links to online read alouds. Titles written about Maine or by Maine authors and/or illustrators are marked with an asterisks (\*). Since paper comes from trees, people spend more time looking at trees than you might originally think!   * [The Lorax](https://www.youtube.com/watch?v=EdWesdMfyd4) by Dr. Seuss * [The](https://www.youtube.com/watch?v=ZdWnH-wv_vg) Giving Tree by Shel Silverstein * [Gus is a Tree](https://www.youtube.com/watch?v=ve42x0kE5AY) by Clair Babin * [Paul Bunyan](https://www.youtube.com/watch?v=i4nojtg_vzA) by Steven Kellogg * [Why Would Anyone Cut Down a Tree](https://www.fs.usda.gov/naspf/sites/default/files/publications/whycutatree-web-book.pdf) by Roberta Burzynski * *Giants in the Land* by Diana Muir Appelbaum\* * [The Seasons of Arnold's Apple Tree](https://www.youtube.com/watch?v=FNOqc4iJNXw) by Gail Gibbons\* * *A Possible Tree* by Josephine Haskell Aldridge\* * *The Little Fir Tree* by Margaret Wise Brown\* * [The Story of Paul Bunyan](https://www.youtube.com/watch?v=26e90DHM-FU) by Barbara & Ed Emberley\* * *Into the Deep Forest with Henry David Thoreau* by Jim Murphy\* * *Rough & Ready Loggers* by A.S. Gintzler\* * *Apples, How They Grow* by Bruce McMillan\*   **Activity 5: Who works with trees?**  Maine has a long history of using trees. The lumber industries and pulp & paper industry have been a significant part of the state economy for years. Trees are also used to produce maple syrup, apples and firewood. Our tourist economy relies on our forests as people come from all over for “leaf peeping,” hunting and fishing, camping and being in nature. Explore careers related to trees.  **Forester**   * <https://www.careerexplorer.com/careers/forester/> * <https://www.yourfreecareertest.com/forester/>   **Logging Worker**   * <https://www.careerexplorer.com/careers/logging-worker/> * <https://www.yourfreecareertest.com/logging-worker/>   **Arborist**   * <https://www.careerexplorer.com/careers/arborist/> * <https://www.yourfreecareertest.com/arborist/>   **Truck Driver**   * <https://www.yourfreecareertest.com/truck-driver-trucker/>   **Apple Growing in Maine**   * <https://www.maineapples.org/growing-apples/>   **Maine Maple Production**   * <https://www.mainemaple.com/>   **Activity 6: Experiment with Trees**  Hopefully you can get outside and be close to trees and collect some materials from trees to do some careful studying, experimenting and artwork.   * Cut some buds, place them in water, watch them uncurl and make observations; you can document these changes through drawings or photographs. * Do a rubbing of different tree leaves or bark - <https://www.youtube.com/watch?v=_JXO0ICwYcs> * Collect some tree materials (acorns, pinecones, leaves, buds, leaflets, twigs, etc.); time yourself doing a drawing of each of those items; reflect on which aspects of your drawing you focused on. * Find a pinecone and study the patterns in its form – this is the Fibonacci Sequence (aka the Golden Ratio) - <https://www.youtube.com/watch?v=ahXIMUkSXX0> |
| **Glossary**  **(curated from:** [**Maine Forest Service's Kids Page**](https://www.maine.gov/dacf/mfs/projects/fall_foliage/kids/glossary.html)**)**  **Conifer**: Cone bearing trees; the "evergreens"  **Crown** [of the tree]: Branches, twigs, buds, leaves, flowers and fruit.  **Deciduous** [leaves]: All leaves drop in the autumn; not evergreen  **Fruit**: The seed-bearing part of a tree  **Habitat**: The place where a plant usually grows, e.g., a rocky, moist, well-drained, etc…  **Hardwood**: Term used to describe all broadleaved trees. These tree species are deciduous, retaining their leaves only one growing season. Despite the term, some "hardwoods" such as the aspens, have wood that is relatively soft.  **Leaf**: Stalk and blade of hardwoods: needles and scales of conifers.  **Leaflets**: Smaller leaf units or leaflets which together form a compound leaf.  **Photosynthesis**: This is the process that occurs in the leaves. From energy produced by sunlight, the leaves combine carbon dioxide from the air and water from the soil to produce carbohydrates. Oxygen is released in the process. Carbohydrates plus fats and proteins are the plant foods necessary for growth and respiration of the tree.  **Roots**: Root hairs absorb water and mineral salts from the soil. Larger roots anchor the tree and store nitrogen and carbohydrates.  **Seed**: That part of the fruit capable of germinating and producing a new plant.  **Softwood**: Term used to describe all needle-leaved trees. These species are typically evergreen, retaining their leaves through two or more growing seasons. Larches, including tamarack, are exceptions, being deciduous "softwoods"  **Tree**: A woodyplant, generally single-stemmed, that reaches a height of more 15 feet at maturity. A tree has three major parts: roots, trunk and the crown.  **Trunk**: The main body of the tree. |
| **Additional Readings/Links**   * [The Kid Should See This](https://thekidshouldseethis.com/?s=trees) has many videos * [Maine Project Learning Tree](http://meplt.org/) has many tree-related activities |