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MEET A TREE – Cycles – SLIDE SHOW SCRIPT (Grades 3-6)

1. SUGAR MAPLE IN LATE WINTER

Getting to know one tree is a great way to learn about the cycles of life. Let's get acquainted with this Sugar Maple tree and follow it through the changing seasons. Our tree's year begins in the early spring after a long winter of rest.

2. ROOTS

Down under the ground, the tree's roots have been safe from the winter cold. Roots hold on to the soil, acting as an anchor for the tree. Along the roots are tiny root hairs. The tree uses these hairs to absorb water and minerals from the soil.

3. TRUNK WITH SAP BUCKETS

Here in New England, we know spring is on the way when we see buckets like these on our sugar maple trees. Freezing nights and warmer days are needed for the sap to flow. When the days start getting longer, the tree begins to wake up and thaw out. Now, water and other nutrients flow upward through tiny tubes called *xylem*, from the roots to the branches and twigs.

4. MAPLE FLOWERS AND NEW LEAVES

All winter, buds grown last year on the branches and twigs remain tightly closed. As spring arrives, some of the buds open into flowers like these, that later make seeds. Other buds unfold into leaves. Leaves come in many shapes and sizes, but they all have the same important job to do. They make food for the tree with the help of a special green substance called *chlorophyll*. The food then moves to all parts of the tree through more tiny tubes, called *phloem*.

5. TREE GROWTH RINGS

Each year, a tree grows by adding new cells just under the bark, in the layer of wood called the *cambium*, which is too thin to see. Every year, a new ring of wood is added to the tree's trunk, making it a little fatter. The twigs and branches grow, too. You can read some of the history of the tree's life cycle in its rings. Years of good growth, insect damage, fire, drought, injuries, ... all leave their mark.

6. BARK

What is a tree's bark for? (**possible answers:** *protects it from insects, disease, fire, drying out*) Like tree rings, bark also has a story to tell. You can often see marks of insects, disease or injury. What might have made the small round scar in the bark of our tree? (*a maple tap*).

7. SUMMER MAPLE

Throughout the long, hot days of summer, our tree continues to pull huge amounts of water up through its roots and trunk to its leaves – often hundreds of gallons a day! But it only keeps a small amount of this water. Most of it is released through the leaves and into the air as water vapor.

8. MAPLE SEEDS

As summer goes on, the tree's seeds develop. When they are ripe, maple seeds twirl around like helicopters in the wind. This helps them travel ...

9. SPROUTING MAPLE SEED

... to a place where they may have a good chance of sprouting into new trees. This type of seed, by the way, is also known as a *key*.

10. AUTUMN MAPLE

When the days grow shorter and cooler, it's time for our tree to start getting ready for winter. In the winter, the ground is frozen, so our tree can't draw up water to replace what is lost through the leaves. To keep from drying out, the tree seals off the base of each leaf, blocking the flow of water.

11. AUTUMN LEAF

Without water, the leaf can't make any more green chlorophyll, and the green color fades away. Now we can see the other colors in the leaf. No longer needed, the leaves drop off ...

12. WINTER TWIGS

... and now our tree is ready for its quiet winter sleep. Safe within its tightly closed buds, next year's flowers and leaves wait ...

13. WINTER MAPLE

... for the cycle to begin once again.