

3rd Grade Lessons in March

Tree Growth and Forests

1) Introduction and Reviewing Parts of a Tree and Life Cycle of Trees

Objectives:

- Students will be able to identify and sequence the stages of a tree's life cycle
- Students will be able to identify parts of a tree and their function for the tree's survival

Students will read the book *Mama Miti* and reflect on the book specifically calling out the different parts of the life cycle represented in the book and noting how the different parts of the tree benefited the women of Kenya. To review, students will play a matching game with their table groups, matching the parts of a tree, with the function of various parts. After going over the functions of each part as a class on the Smartboard, students will create a diagram with labels and captions to describe the parts of a tree and their function.

2) Observing and Measuring Tree Growth – Charting/Mapping the School Grounds

Objectives:

- Students will use appropriate measurement tools to observe and record data on trees
- Students will Chart and Map data for the school grounds tree cover.

On the Smartboard students will be introduced to different types of trees that have very different growth patterns to compare and contrast them. In class students will discuss different methods for measuring trees and tree growth as well as some of the challenges associated with measuring trees. Then students will go outside and with a partner choose a tree to measure the growth in terms of diameter of the trunk, height of the first branch, approximate height of the tree etc. Once each pair has data collected on their tree we will come back inside and represent the data visually as a class on either a chart/graph or map. Students will be posed questions to think about such as do we know the age of any of the trees we measured based on the data we collected?

3) Observing and Measuring Tree Rings

Objectives:

- Students will understand that we can measure tree age by counting tree rings
- Students will be able to discuss the conditions that could affect tree growth
- Students will be able to analyze tree rings to make conclusions about a tree's life and growth pattern
- Students will be able to apply their understanding of tree ring patterns to represent their own lives in tree rings.

Students will complete a “do now” reflection on entering class on the question “how can we learn about a tree's life?”. After a few minutes, we will share responses, discussing how we can use observations over time but we can't always rely on just our observations of living things sometimes we need further evidence of what might have happened in the past. Explain that we don't just study tree growth by how tall it is but also by the width of it's trunk and when a tree dies or is cut down we can study the tree rings that are created for each year of growth. We can study the past history or life of a tree by studying it's tree rings. As a class we will discuss how not all the rings are the same size (some

thick/thin) and that some tree rounds have scars or indents. Students will think pair share about what could cause differences in the growth of the tree each year and what damage could cause scars and indentations. Students will work in table groups to observe and record observations of a sample tree round. Students will complete observation sheets to count the rings and use appropriate tools to measure the spacing of the rings. Students will share insights gained about the tree the round came from or infer what happened in it's life based on their observations.

4) Making Tree Rings for our Lives

Objectives:

- Students will be able to analyze tree rings to make conclusions about a tree's life and growth pattern
- Students will be able to apply their understanding of tree ring patterns to represent their own lives in
- a tree rings art project.

Students will review what we can learn from studying tree rings. Ask students how they might represent their own lives in rings if they were a tree. Explain that before we start drawing the rings we need to take some time to reflect about our lives. The teacher will use her own life as an example to model the beginning process for the project (see example chart). Explain that each year of our life is like one ring. We have to decided how many rings to include and whether each ring should be thick/thin depending on how much growing we did/didn't do that year (based on life events). Also students should note any hard times they have experienced with scars or indents. Explain that once they each have their life chart complete they can come get paper and materials to start drawing their own tree rings. Students will write on the back of their artwork the reasoning for why their rings look the way they do.

5) Trees as Part of a Forest / Forest Succession

Objectives:

Students will be able to sequence the stages of forest succession

Students will List causes of disturbance for forests (road construction, development, timber cutting, agriculture clearing and natural events such as storms, fires, etc.,)

Students will read the book called *A Forest Grew* together. Students will discuss the stages of forest succession as revealed in the book. Students will individually draw pictures to create a flip book for the succession of a forest. Students will look at maps of forest and tree cover for the globe and Philadelphia from now and hundreds of years ago. Students will discuss the difference between natural and human disturbances on forests and forest succession. Students will discuss as a class the ways in which we can prevent or improve the human disturbances such as selectively cutting instead of clear cutting.

6) Human Impact on Trees and Forests

Objectives:

Students will evaluate the multiple perspectives of human's relationship with trees and forests

Students will suggest possible solutions to problems of human forest disturbances

Students will discuss as a class the ways in which we can prevent or improve the human disturbances

such as selectively cutting instead of clear cutting. Students will work in their table groups to identify one issue, read about it and create a plan or suggest a course of action to raise awareness, etc.