Title: Trees: 3 unit lesson
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Cooperating Teacher: Mrs. W. Smith, First grade

Rationale: Nature & the environment is an essential part of children’s daily lives. First graders are curious and like to explore the world around them. By using a constructivist approach to learning, students will explore and discuss how trees grow, what they provide, how they change and what the rings in a tree can tell us. Because first graders are inquisitive they will be given apples to use when they investigate how and why trees grow. Students will also explore changing trees through an active lesson. And through observation students will learn about the circles in trees and what they mean. This lesson takes students through a gradual process of learning about trees.

Prior Knowledge: The students have previously explored the parts of a tree and demonstrated knowledge of what the roots, trunk, branches and leaves do for a tree. Students participated in lessons that provided the basic facts about trees and their parts.

New Jersey Core Curriculum Content Standards
5.10 A1
5.10 B2

Lesson 1: How Trees Grow

Objectives: Students will learn that seeds are the essential beginning of a tree’s life and that not all seeds are the same.

Students will be able to …
1. … identify a seed.
2. … count & compare seeds in fruits.
3. … show how seeds are different.
4. … identify a seedling and explain that it is a new plant growing.
5. … describe the stages of a tree from seed to seedling, to full grown tree and to apples (or other product).

Assessment:
1. Observation of students picking out seeds from fruit when asked to find the seeds in the fruit will be done to assess identification of seeds.
2. Drawing pictures of the seeds for the fruit they have and stating the differences between them and the seeds of other students will be evaluated.
3. Observation of students’ responses to the differences between seeds presented
4. Observation of student responses to questions relating to what a seedling is will be used.
5. Evaluation of stages of tree activity will be used to assess knowledge of tree stages.

The hook: Show students an apple and ask “Where did this apple come from?” Discuss what they know about apples and how they grow to being on apple trees.

Activities:
Exploring Seeds of Fruits

- Ask students, “What are inside apples?”
- Students will be given either an apple or pear already cut in half
- Ask students to guess how many seeds are in the apple
- Have students take out the seeds and draw a picture of how many seeds they have.
- Take seed drawings and past on board and discuss how the seeds are different numbers.

Seeds

- Ask students, “What do we do with seeds?” “Why do we have seeds?”
- Ask “What does a seed grow to become?”
- Tell students that seeds grow and become seedlings.
- Write the word SEEDLING on the board and ask students if they notice anything about the word seedling. (The word “seed” is in the word Seedling.)
- Ask “What does the seedling grow to?” (Tree)
- Ask “What happens to a tree when it grows from a seedling?” (Think of an apple tree, what happens to the seed.. it grows to a seedling, what happens to the seedling.. it grows and becomes a tree, what does the tree do?)
- What kind of things grow on trees other than apples?

Stages of a Tree

- Students will put the stages of a tree in order using pictures.
- Tell students that we will be putting together three trees in the order that they grow.
- Pass out pictures of tree stages to students.
- Each picture will have a color on the back to indicate with tree it is.
- Together, ask students what is the first stage of a tree. (Seed)
- The students with the seed picture stand in front first.
- Have students continue to arrange themselves in order.
- Students will need assistance knowing which tree group they are in.
- Review each group’s stages; have each student say what picture they have and what their part grows to be or does.

Different Types of Seeds

- What other fruits have seeds?
- Where are seeds found?
- Show students some nuts and explain the nut is a seed of a tree. We eat the inside of the seed.
- Ask students if they know of any other type of seeds. (Closing of activity)

Questions and Examples:
- What is a seed?
- Where are seeds found?
- What do seeds help us do?
- What would happen if we didn’t have seeds?

Closure:
Review the pages in the science book and ask questions to assess what students know about trees and how they grow.
Lesson 2: How Trees Change

Objectives: Students will learn how trees change throughout the year.
   Students will be able to …
   a. … identify the four seasons
   b. … describe what a tree looks like during the different seasons
   c. … explain what happens to a tree during each season
   d. … identify an evergreen tree
   e. … compare evergreen trees to changing trees (deciduous)
   f. … put the four seasons in order that they occur

Assessment:
   a. Observation of students answers to the four seasons
   b. Observation of student responses to question of what the tree looks like as well as pictures of trees they draw for their chosen season.
   c. Observation of student responses to question
   d. Students will ask what is an evergreen tree and asked to tell where they see them (during Christmas, some people use them)
   e. Observation of student’s answers to tell what is different about evergreen trees from other trees
   f. Using an activity, students will place their pictures in the order of the season it occurs (a tree without leaves is places between a tree with orange leaves and a tree with green leaves)

The hook: Review the Terrific Trees website section about trees changing.

Activities:
Discussion of How Trees Change
   • Ask students, “Do trees look the same all year long?” “How do they change?”
   • Ask, “What are the different seasons?”
   • Write on board the names of the seasons.
   • Ask which season are we in now… what season comes next.
   • During winter what do the trees look like? Spring? Summer? Fall?

Life Cycle of Apple Tree
   • Remind students about apple tree discussion.
   • Ask, “When do the apples grow on trees, after or before the flowers grow?”
   • Show students the Large Apple Tree Picture
   • Ask students to help put the tree together as the season change.
   • Hand out green leaves, flowers (blossoms), yellow/orange leaves and apples
   • Students will place the parts of the tree for the appropriate season
   • Explain that in other trees in the spring have flowers and green leaves in the summer
   • Remind student of Pierre’s changing trees
Tree Art
- Have students create a tree during the season of their choice
- Provide students with material to build their own trees on paper
- Material will be separated for students to choose from
- Instruct students to write their name and the season their tree is in
- After all trees are done, post the trees in order of season in the front of the class

Questions and Examples:
- Why do trees change?
- What happens to trees in the spring, summer, fall, winter?
- Do all trees change? Which ones do not?
- What would happen if trees did not change? Would we have fruit the next year?

Closure:
Review the pages in the science book and ask questions to assess what students know about trees that change and why they change.

Lesson 3: How Old are Trees

Objectives: Students will learn what the rings on a tree tell us about the tree.
- Students will be able to …
  a. … describe the different rings found in the core of a tree
  b. … tell how old a tree was from a particular piece of wood
  c. … demonstrate knowledge of what the width of the rings mean

Assessment:
- a. Observation of student responses to describing what is inside a core of a tree
- b. Evaluation of student responses to counting rings on a tree and record the age
- c. From observation of pictures drawn of a tree rings and what weather it would be if the rings are fat or thin

The hook: Ask students how old they are and how do they know. What about trees how do you know how old a tree is.

Activities:
Rings Around the Tree
- Show students cross cut of a tree and discuss what the trees are
- Count with the students how many lines they see in the tree
- Ask, “How old do you think this tree was when it was cut?”
- Explain that every ring is one year; if a tree has 7 rings it is 7 years old
- How old is a tree that has 10, 15, 26, 30… rings in the tree?

Width of Tree Rings
- How wide are the rings? Wide/thick or thin?
- Why are some rings different?
- What does a tree need to grow? (Water and Sunlight)
• What would happen if a tree didn’t get enough water to grow?
• Discuss: If there was a lot of water and warmth from the sun, then the tree grows a lot that year.
• Discuss: If it was dry and it didn’t rain, then the tree does not grow much that tree.

**Weather Drawing**
• From the sample of tree cross-section cuttings, have each student draw a picture of the tree rings
• Draw what the weather was like for that tree.
• Fill in the sentence that tells if the tree rings are thick or thin. “The rings on this tree are ______.”

**Questions and Examples:**
How can we tell how old a tree is?
What does it mean if the rings are thick and wide?
What does it mean if the rings are thin?

**Closure:**
Review the pages in the science book and ask questions to assess what students know about the rings on a tree.