



LESSON PLAN - "A TREE OF SEASONS"_VA SOL SCIENCE K.8

TARGET AGE GROUP: 1st Grade

ESTIMATED TIME: 30-45 Minutes

PURPOSE

The purpose of this activity is to teach first grade students about how seasonal changes impact the life cycle of deciduous trees.

VA SOLs

This activity can be used to complement classroom instruction related to the following VA SOLs:

First Grade: Science - Earth Patterns, Cycles, and Change 1.7 The student will investigate and understand the relationship of seasonal change and weather to the activities and life processes of plants and animals. Key concepts include how temperature, light, and precipitation bring about changes in:

- a.) Plants (growth, budding, falling leaves, and wilting);
- b.) Animals (behaviors, hibernation, migration, body covering, and habitat); and
- c.) People (dress, recreation, and work).

OBJECTIVES

- 1) Define natural resource and give examples of natural resources.
- 2) Recognize that a tree is a natural resource.
- 3) Identify daily weather patterns.
- 4) Compare and contrast the four seasons.
- 5) Define deciduous.
- 6) Identify the seasonal changes in trees - growth, budding, leaf changes, etc.

MATERIALS

- Classroom Set of Crayons
- Activity Worksheet: Signs of the Seasons (*1 per group of 2 or 3 students*)
- Book: "A Tree For All Seasons" by Robin Bernard
- Activity Worksheet: Trees of the Seasons (*1 per student*)
- Optional: Apple Chain Model

REFERENCE

- "Project Learning Tree: Pre-K-8 Activity Guide"

PREP WORK

- Print Worksheets

PART I: INTRODUCTION

If this is the first activity of the day, introduce yourself and the agency/organization you represent. Briefly discuss what you do and how it correlates with this particular lesson.

Instructor Dialogue Example: Good Morning! My name is Jane. I work for XYZ Soil and Water Conservation District. We protect and preserve the natural resources of XYZ County.

Student Question: What is a natural resource? *Answer: A natural resource is something that occurs naturally and has value.*

The conservation district and our many partners primarily focus on five natural resources. Let's identify those five natural resources: S = Soil; W = Water; A = Air; P = Plants; A = Animals (*Prompt students to guess what each letter stands for.*)

Today's lesson is going to focus on trees and how changes in weather patterns and changes in the seasons effect trees. **Student Question: Is a tree a natural resource?** *Answer: Yes, b/c a tree is a plant.*

PART II: WEATHER AND SEASONS

Let's get started with the lesson by talking about the WEATHER, specifically what the weather conditions are today. **Student Question: What is the temperature outside?**

Student Question: Is there any precipitation outside (Rain, Snow, Sleet)? Does the weather forecast call for any precipitation? What type of precipitation?

Weather is closely tied to our SEASONS.

Student Question: What are the four seasons? *Answer: Spring, Summer, Fall, and Winter.*

Student Question: What season are we experiencing now?

Let's talk about the characteristics of each season. **Student Question: How do you know it is Spring, Summer, Fall, and Winter?**

Seasonal Questions for Students:

What is one season that is considered to be a wet season? *Answer: Spring or Winter* **Why?** *Answer: Rains more.*

What is one season that is considered to be a dry season? *Answer: Summer and Fall* **Why?** *Answer: Does not rain frequently; Can have periods of drought b/c of hot temperatures.*

Do the days get longer or shorter in fall? *Answer: Shorter* **How do the shorter days affect the temperature?** *Answer: It gets colder.* **How does the colder temperature affect human behavior?** *Answer: We don't go outside as much or for as long a period of time; Wear clothes that will keep us warm (long shirts, long pants, socks, closed toe shoes, coats, etc.)* **How do the colder temperatures affect precipitation?** *Answer: May have more sleet and snow.*

ACTIVITY WORKSHEET: SIGNS OF THE SEASONS

1. Divide students into groups of 2 or 3. *(Can also be completed individually.)*
2. Give each group a copy of the worksheet "Signs of the Seasons".
3. Read the worksheet directions with the students.
4. Give each group the following crayons or colored pencils: Pink/Purple, Green, Orange, Black
5. Tell students to complete the worksheet as quickly as possible. Designate no more than 5 minutes for students to complete this part of the activity.
6. After the worksheet is completed, call upon individual groups to report on their findings column by column.
For example: Group 1 tell me how many signs of spring you found?

This worksheet shows that seasonal changes affect our life. For example, during the spring there is always a chance of spring showers so we carry an umbrella, wear raincoats, and rain boots. The summer brings hot temperatures so we may wear shorts or go swimming in our swim suit. Fall brings cooler days so we might wear a light jacket. Winter is very cold and sometimes snow falls so we wear big coats, hats, scarves, and gloves.

PART III: A TREE OF SEASONS

Like people, DECIDUOUS trees also change with the seasons. Observing a deciduous tree can often tell us what season we are in. **Student Question: What does it mean to be a deciduous tree?** *Answer: Deciduous trees change their appearance with the seasons.* For example: The oak tree will bud out in the spring; have bright, green leaves in the summer; the leaves will change color as the weather grows cooler and the days grow short in the fall; and by the start of winter all the oak tree leaves will be gone.

OAK TREE SEASONAL CHANGES ACTIVITY [Adapted from "Project Learning Tree" - Activity 79 (Tree Life Cycle)]

Ask students to imitate your movements as you enact the seasonal changes of an oak tree.

- 1) **Student Question: How are trees born?** *Answer: From a seed. What type of seed does an oak tree come from?*
Answer: Acorn Curl up in a tight ball - you are an acorn.
- 2) Uncurl and kneel - you have sprouted. **What season is it when you sprout?** *Answer: Spring*
- 3) Stick up one arm w/ fist clenched - you have grown a branch.
- 4) Stick up another arm w/ fist clenched - you have grown another branch.
- 5) Stand up w/ feet together - you grow tall.
- 6) Spread feet apart - you spread out lots of roots.
- 7) Wiggle your toes - you grow lots of little roots (rootlets).
- 8) Open your fists to reveal your fingers and Wiggle your fingers fast - you grow lots of green leaves. **In what season do the leaves turn deep green and fill every branch of the oak tree?** *Answer: Summer*
- 9) Start scratching all over - you are attacked by insects. It looks like the insects attacking you are ants. **What season would ants be active?** *Answer: Summer*
- 10) Stop scratching and gently pinch your cheeks - your leaves are changing color. **In what season do the leaves on an oak tree change color?** *Answer: Fall*
- 11) Curl your fingers up and make a fist w/ both hands - you have lost all your leaves. **What season is it?** *Answer: Winter*
- 12) Sway your arms around and Make a loud noise (kchhhhh!) - the wind is blowing hard and it is snowing, you lose a branch. **What season is it?** *Answer: Winter*
- 13) Gradually/Slowly open your fists to reveal your fingers - leaves are starting to bud out. **What season is it?**
Answer: Spring

READ A BOOK TO LEARN ABOUT THE SEASONAL CHANGES OF AN APPLE TREE

- If possible, children should sit in a listening/reading area within the classroom.
- Introduce a book about the seasonal changes of a maple tree titled "**A Tree for All Seasons**" by Robin Bernard.
- While reading the book, show pictures/illustrations from the book and asks children questions, as appropriate.

ACTIVITY WORKSHEET - APPLE TREES OF SEASONS

- Ask students to recall the seasonal changes the maple tree underwent in the book. State that a maple tree is like an oak tree, both are DECIDUOUS. **Student Question: What does it mean to be a deciduous tree?**
Answer: Deciduous trees change their appearance with the seasons.
- Distribute the "Trees of the Seasons" Worksheet and Crayons to each student. Review the directions w/ students.
 - 1) Read the "season" label above each tree. Using crayons or colored pencils, draw and color the maple tree as it would look in that season. Briefly review the seasonal changes of a maple tree: Spring = Leaf Buds Open, Floppy Green Flower Tassels, New Green Leaves; Summer = Dark Green Leaves, Fruit, called samaras, is growing; Fall = Leaves turn bright colors, Start to fall from tree as they dry up; Winter = Tree branches are bare w/ no leaves.
 - a. *Optional/Additional Activity: Have students do the same activity with an apple tree. Spring = White and Pink Blossoms, New Green Leaves; Summer = Dark Green Leaves and Green Apples; Fall = Red Apples and Leaves start to change color and eventually fall off the tree; Winter = No leaves, bare branches.*
 - 2) To the right of the maple tree, draw at least one person dressed appropriately for the season.

CONCLUSION Close w/ the following review questions:

1. What are the four seasons? *Answer: Spring, Summer, Fall, Winter*
2. True or False? Maple trees, Oak trees, and Apple trees change with the seasons because they are deciduous.
Answer: TRUE



SIGNS OF THE SEASONS

Directions

1. Circle the signs of **SPRING** in **PINK** or **PURPLE**.
2. Circle the signs of **SUMMER** in **GREEN**.
3. Circle the signs of **FALL** in **ORANGE**.
4. Circle the signs of **WINTER** in **BLACK**.

TREE LIFE CYCLE AND GROWTH RINGS IN RELATION TO SEASONS

Tell the students: "Life can be pretty tough on a tree! Drought, excessive rain, fire, insect plagues and disease epidemics, injuries, thinning, air pollution, all of these things leave their mark on a tree's annual growth rings. Trees are top-notch biological indicators. Their annual rings reveal the events that have occurred in our environment. That is what causes the annual growth rings." Also tell them that the changing seasons can also effect the growth of the trees especially hardwoods because they undergo many changes over the course of the year. These changes are adaptations to meet the tree's needs and in response to the harshness of the climate.

During the winter, the temperature drops and the sun rides low on the horizon. Both the ground and water lie frozen. The broadleaf trees stand bare. The trees don't grow or reproduce. They are dormant.

In the spring, the temperature increases, melting off the snow. There's plenty of water in the ground and the sun shines brightly. It's a time of bounty that trees put to good use to develop, grow, and produce flowers and leaves.

Summer brings hot, sunny weather, but it's often a time of drought. Trees take this time to store reserves using photosynthesis to stabilize the new tissue that has developed.

When fall comes around, fruit ripens and trees start preparing for the arrival of winter. Days grow shorter and the sun loses some of its strength. Leaves can no longer carry out photosynthesis and start to display their festive fall colors. When winter arrives, trees become dormant and the cycle begins again. Life can be pretty tough on a tree! A tree's annual growth rings reveal the events that have occurred in our environment.

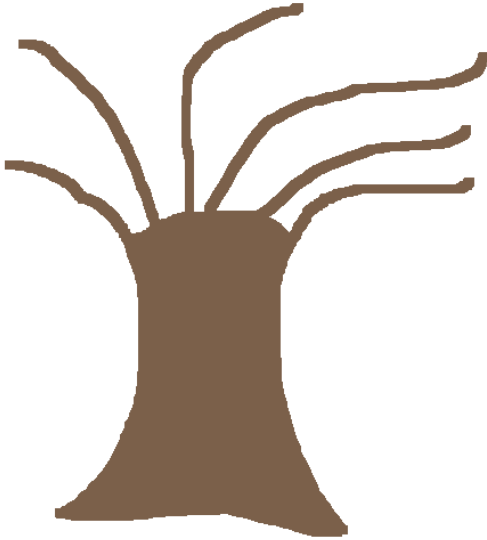
TREES OF THE SEASONS

NAME: _____

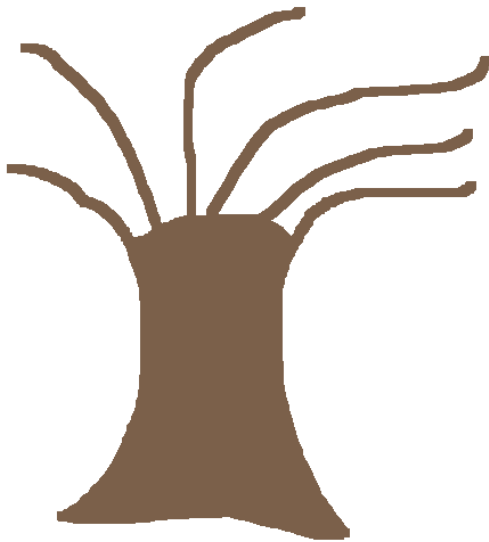
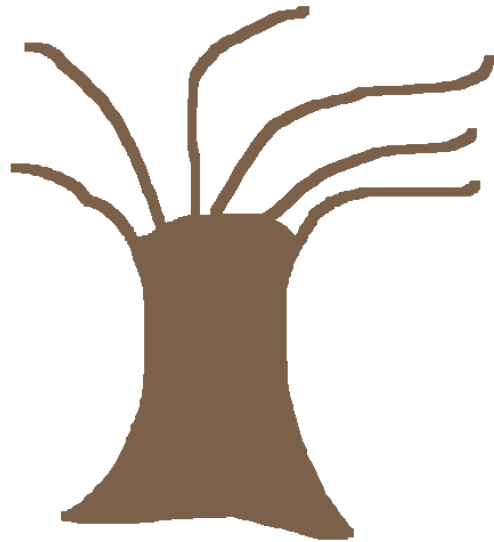
DIRECTIONS

- 1) Write your name in the space provided.
- 2) Read the "season" label above each tree. Using crayons or colored pencils, draw and color the tree as it would look in that season.
- 3) To the right of the tree, draw at least one person dressed appropriately for the season.

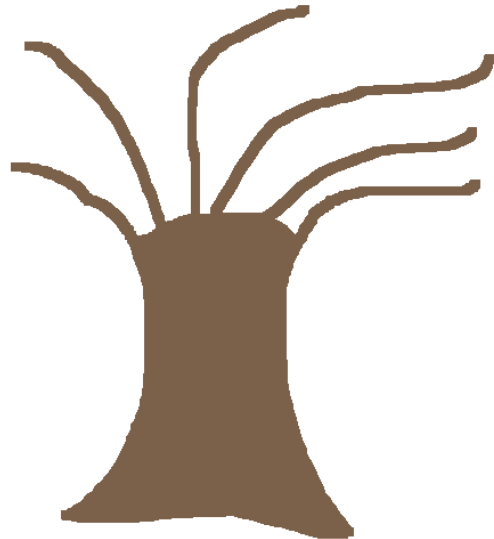
SPRING



SUMMER



FALL



WINTER