

SUBJECT AREAS:

Natural science

ACTIVITY DESCRIPTION:

Lecture, discussion, observation

OBJECTIVES:

Students will be able to explain different stages of tree growth, parts of a tree and their functions, the role of trees in the environment.

MATERIALS:

Pictures of tree parts, seedlings, markers, handouts, worksheet assessment

GRADE/LEVEL:

Upper Elementary School (12-14)

DURATION:

Preparation time: 20 min.

Activity time: 25 min.

PLACE:

Classroom

AUTOR:

Civil Society Organization Eco
Logic - Republic of North
Macedonia

How do Trees Grow nature

INTRODUCTION:

Briefly engage students by asking them about their observations of trees e.g. "What do you notice about trees around your house, school, neighborhood?" and "How do you think trees change?" Introduce the lesson topic: How do Trees Grow? Today, we're going to explore the amazing journey of trees, from tiny seeds to towering giants. We'll learn how trees grow, the different parts of trees and what they do, and why trees are so important for our planet.

BACKGROUND:

Trees are vital for a healthy planet, contributing to oxygen production, habitat provision, soil conservation, climate regulation, and air quality improvement. But it all starts at a micro level, when a seed germinates and begins to grow.

Seed Germination: A seed contains an embryo, a tiny plant waiting to develop. When conditions are favorable (moisture, warmth), the seed absorbs water and the embryo swells. A root tip emerges first, anchoring the seedling in the soil and searching for water. Then, a shoot emerges, pushing upwards towards sunlight.

The Role of Different Parts:

Roots: Absorb water and nutrients from the soil, anchor the tree, and store food.

Stem/Trunk: Provides support and structure, transports water and nutrients between roots and leaves.

Branches: Grow from the trunk and support leaves, flowers, and fruits.

Leaves: Are the food factories of the tree, using sunlight, water, and carbon dioxide to produce food (sugar) through photosynthesis. They also release oxygen as a byproduct.

Once a tree is established, it continues to grow taller and wider throughout its life. The growth process is influenced by many factors, including sunlight, water availability, temperature, and nutrients in the soil.

The teacher presents the tree parts on pictures/slides, then assigns an exercise to the students to connect the part with the function.

FUN FACTS:

- *Trees communicate with each other! They can send messages through underground fungal networks, warning each other about dangers like insect attacks or disease.*
- *Nicknamed Methuselah, the oldest known living tree is a Great Basin bristlecone pine in California, estimated to be over 4,800 years old! That's older than the Egyptian pyramids!*
- *The world's largest tree by volume is the General Sherman Sequoia in California. It's so massive it would take over 1,400 people holding hands to encircle its trunk!*
- *The Bonsai Bonsai are miniature trees that are cultivated in pots to remain small. The art of bonsai originated in China and has become a popular tradition around the world. These tiny trees can live for hundreds of years!*

ASSESSMENT:

Worksheet with questions about tree growth stages, functions of tree parts.

Free Writing Assignment: My Favorite Tree (instruct students to describe the roots, trunk, leaves, how it changes through the seasons. etc.)

EVALUATION:

Reflect on the effectiveness of the lesson by considering student engagement, understanding of the concepts, and completion of the assessment tasks.