Nature-Watch Activity Kit

Tree-mendous

(Nature Watch Kit #101)

Kit Contents

Item:	Qty
Tree Discs	25
Necklace Cords	25
Tree-Mendous Leaf Card Decks	2
Books about Trees	2
Instructor's Manual	1

Additional Items Required:

Sandpaper

Markers, Paint, etc.

Items Requiring Replacement for Future Take-Home Projects:

Tree Discs

This page includes the Next Generation Science Standards (NGSS) mapping for this kit and Science, Technology, Engineering, and Math (STEM) extensions (on back) to use in adapting and extending this activity to other subject areas.

See Back for STEM Extensions

Next Generation Science Standards Alignment

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

MS-LS1-5. Construct an explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.

HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multi-cellular organisms.

This Nature Watch Activity Kit contains an Instructor Manual and materials to implement the curriculum. The kit was designed to be used with adult supervision only. Unsupervised use is not recommended.

Nature Watch 5312 Derry Ave. #R, Agoura Hills, CA 91301
800-228-5816 info@nature-watch.com www.nature-watch.com

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Science

- Make up a life story of a tree that lived 20 years. Briefly describe each year of the tree's life (1-2 sentences per year) and include various events that may have affected the tree's growth (weather, leaning, fires, etc.). Some of your years will just be normal years, favorable for growth. Then, draw a tree disc that corresponds to that life story. Tell your tree's story to your classmates, pointing out the details in your tree disc picture.

- Develop your own game using the Tree-Mendous Leaf Cards. Teach the rules to your classmates and play it with them.

- Take a close look at one selected tree to see what other kinds of life coexists with it. Look for signs of lichen, fungus, insects and spiders, mammals, and birds. See how many different types of living things you can find in the tree's own ecosystem.

Technology

- (Younger) Go online to find pictures and videos from tropical rainforests. Compare and contrast the trees in the tropical rainforest with the trees near you.

- (Older) Create an electronic bulletin board that shows the diversity of forests worldwide by "pinning" tree and forest pictures. Write an appropriate caption for each picture that explains where in the world it is or an interesting fact about it. Then share your board with classmates and take a look at their boards to learn more about forests.

Engineering

- Carefully positioned trees can help with energy conservation in buildings by reducing heating and cooling needs if they are planted in such a way to provide shade in summer but not in winter. Make plans to plant trees near your home/school/facility. Determine how many trees to plant, where to place them, and what kind of trees would be best. Pay close attention to the direction of the sun at different times of day and year to get the best possible protection from it. It is recommended to plant on the east, west, and northwest sides of a building.

- Learn about the different kinds of trees whose wood is used for furniture and other objects used by humans. What are the characteristics of different kinds of woods like oak, cherry, pine, maple, birch, cedar, etc.? Are they strong or do they scratch easily? Are they expensive or affordable? Are they long-lasting? Which types of wood are best used for specific kinds of things such as floors?

Math

- Measure the width (in millimeters) of each ring on your tree disc and record the measurements. Graph them to see the ups and downs of how the weather conditions changed over the tree's lifetime.

- Conduct a tree inventory of your street. Identify each tree along the sidewalk, and tally up how many of each kind there are. Or, do the same in your schoolyard or local park. Summarize what trees you saw and categorize them. Which trees are most common? Least common?