

Forestry, Wildlife and Fisheries

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Forestry

- Explain the differences between plant and animal cells.
- Draw and label the parts of the plant cell.
- Describe the three plant cell types and their functions.
- Examine the two types of leaves of deciduous trees.
- Categorize different tree shapes and leaf structure (parts of a leaf) as either deciduous or coniferous.
- Identify leaf function and purpose: photosynthesis, oxygen production, carbon dioxide usage.
- Define the following terms: symbiosis, canopy, morphology, pH, cation, anions, silviculture, topography, aspect.
- Classify the major elements of soil as either macro- or micro-nutrients.
- Describe the role of climate on tree growth.
- Measure board foot of trees by calculating the height and diameter at breast height.

Wildlife

- Research common diseases among wildlife in Tennessee, such as chronic wasting disease, canine distemper, rabies and avian influenza.
- Compare and contrast reproduction in mammals, fish, birds, reptiles, insects and amphibians.
- Explain how changes in biodiversity would impact ecosystem stability and natural resources.
- Design a possible solution for maintaining biodiversity of ecosystems while still providing necessary human resources without disrupting environmental equilibrium.
- Define habitat fragmentation and provide real-world examples.
- Explain hunting laws and protocols, including the use of hunting as a conservation practice and element of a wildlife management plan.



- Create an educational display for younger 4-H'ers on effective wildlife management practices.

Fisheries

- Identify fish by species.
- Describe three key aspects of fish physiology: respiration, metabolism and fluid and ion regulation.
- Describe the physical elements of a fish habitat including aquatic plants, substrate and water velocity.
- Describe the water quality of a fish habitat including temperature, conductivity and dissolved oxygen.
- Describe in detail each of the growth stages of a given fish species.
- Define fisheries assessment tools – electrofishing, gill netting, seining, angler/creel surveys.

Careers in Forestry, Wildlife and Fisheries

- List considerations important to selecting a career in forestry, wildlife or fisheries.
- Identify sequential steps for education and training in the fields of forestry, wildlife and fisheries.
- Using internet resources identify prerequisites for studying forestry, wildlife and fisheries at a collegiate level.

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