

Science: Environmental Science
Unit 3: Wildlife

Essential Understandings	- Wildlife are an important natural resource. - There are many important relationships between habitat and wildlife species in Maine. - Wildlife ecology involves predator-prey relationships, adaptations, population dynamics, carrying capacity, limiting factors, food chains and food webs throughout the world. - There are many issues involving wildlife and society such as endangered and threatened species, land use and habitat loss, introduced and reintroduced species, hunting and trapping, and human health.
Essential Questions	- What is a forest and how is forestry related?. - What are the functional parts of a tree? - How is a forest inventory growth plot determined and used? - What are the benefits of a single tree species? - How does a forester measure diameter, height, and volume of a tree? - What is the calculated board footage of a tree and how is it used? - What are the common softwood and hardwood trees in Maine and how can we identify, harvest, and use them? - Is a forest sustainable?
Essential Knowledge	- Trees absorb carbon dioxide and give off oxygen through photosynthesis. - Forests provide us with resources to produce more than 5000 different commercial products. - There are two major types of trees commonly known as softwoods and hardwoods with numerous tree species of each type. - Succession produces a mature forest. - The major types of terrestrial climax communities are known as biomes.
Vocabulary	<u>Terms</u>: Ecology, environment, abiotic/biotic factors, range of tolerance, limiting factor, habitat, niche, species, natural selection, evolution, speciation, extinction, coevolution, predation, predator, prey, competition; intraspecific/interspecific, competitive exclusion principle, symbiosis, parasitism, parasite, host, vectors, ectoparasites, endoparasites, commensalism, mutualism, mycorrhizae, community, ecosystem, producers, consumers, primary consumers, herbivores, secondary consumers, carnivores, omnivores, decomposers, keystone species, trophic level, biomass, food chain, detritus, food web, nutrient cycles; carbon, nitrogen, and phosphorus cycle, nitrogen-fixing bacteria, nitrifying bacteria,

Science: Environmental Science
Unit 3: Wildlife

	denitrifying bacteria, wildlife management, cover, habitat management, migratory birds, common species, endangered species, threatened species, poachers, predator-prey relationships, adaptations, carrying capacity, limiting factors, hunting, trapping, Maine (MDIFW): common mammals, amphibians, reptiles, birds, and fish, and Maine Audubon. ○
Essential Skills	▪ Identify common Maine mammal skulls using teeth placement (carnivore/herbivore/omnivore), eye sockets (predator/prey/size), nasal cavity size, and ear pocket placement and size. ▪ Determine how a mammal lives, eats, and protects itself from the size and shape of its feet. ▪ Identify common mammals of Maine from size, shape, and color of pelts, scat, and tracks. ▪ After reading and highlighting the Maine Amphibian and Reptile packet information students will then select a common species of Maine and use the internet to research project information before presenting to some members of the class. ▪ Review and answer practice assessment questions for textbook chapters 5 and 12 by matching terms and definitions, determining true or false statements, identifying correct multiple choice responses, or writing complete sentences to answer challenging questions. ▪ Answer and review previous Envirothon questions for wildlife of Maine. ▪ After reading/highlighting a bird information packet students will identify common birds of Maine using posters, field guides, and songs. ▪ Select an endangered or threatened species in Maine and provide information in the form of a brochure/pamphlet to notify the class and public regarding your concern for this species. ▪ Perform a laboratory activity to determine if our BHS campus is friendly to all wildlife.
Related Maine Learning Results	E1 Biodiversity E2 Ecosystems
Sample Lessons And Activities	▪ Student groups will identify Maine mammal skulls using the Skull-king activity. ▪ Read Chapters 5 and 12 and answer the end of chapter review questions and practice test questions for each. ▪ Read and complete all parts of the Feet-Feet-Feet activity. ▪ Identify Maine mammals using the diagrams and samples of pelts, scat, and tracks. ▪ Draw, color, and label the Ideal Mammal for Maine.

Science: Environmental Science
Unit 3: Wildlife

	▪ Read and Give Me Ten facts about birds from the Bird Information handout packet. ▪ Use binoculars and Birds of North America field guides to identify common birds of Maine from the posters in the classroom. ▪ Select and research one Maine Amphibian or Reptile before presenting to members of the class.
Sample Classroom Assessment Methods	▪ Maine mammal skulls, pelts, scat and tracks quizzes. ▪ Textbook Chapters 5 and 12 Quizzes and Tests. ▪ Previous Maine Envirothon Test Questions on Wildlife ▪ Common Mammals and Birds of Maine quizzes. ▪ Wildlife Unit Test.
Sample Resources	▪ <u>Publications: Environmental Science: A Study of Interrelationships Eighth Edition by Enger/Smith</u> ▪ <u>Maine Envirothon Wildlife Station packet</u> ▪ <u>A Field Guide To The Mammals Of North America by William H. Burt and Richard P. Grossenheider, 3rd Edition in 1976</u> ▪ <u>Field Guide To The Birds of North America by the National Geographic , 3rd Edition</u> ▪ <u>Maine Amphibians and Reptiles by Malcolm L. Hunter Jr., Aram J.K. Calhoun, and Mark McCollough, UM Press 1999</u> ▪ <u>Field Guide To Tracks Of North American Wildlife; Nature Study Aids by Myron and Charles Chase, 1969</u> ▪ <u>Safari In A Box Skulls Guide</u> ▪ <u>Museum Products Replica Scat and Tracks, Mystic, Conn.</u> ▪ <u>Maine Hunting and Trapping, Maine Department of Inland Fisheries and Wildlife 2015-2016</u> ○ ▪ <u>Videos:</u> ▪ <u>You Tube: Various Videos and Photos of Wildlife in Maine</u> ○
Technology Link	▪ http://www.brunswick.k12.me.us/curriculum