Appendices
Vocabulary

Each definition is immediately followed by the number of the activity or activities in which it is introduced or to which its meaning is most relevant. For example, (1-2) indicates the second activity in the first section. Vocabulary words may be found in other activities besides those listed below.

abdomen: in arthropods (animals like spiders and insects), the posterior section of the body (1-2)

antenna (singular); *antennae* (plural): paired, flexible, jointed sensory appendage on the head of some arthropods (1-2)

appendage: a part or organ that is joined to the main body of an object or organism; examples include legs and antennae (1-2)

arthropod: organism such as a scorpion, spider, tick, millipede, centipede, insect or crustacean; the body has an external, segmented covering and jointed appendages (1-2)

atmosphere: the gaseous mass surrounding the earth which is held in place by gravity (2-3)

bacterium (singular); *bacteria* (plural): one-celled organism without a true nucleus; some are free-living, and some are parasites (1-2)

biodiversity: the variety of life on earth, reflected in the variety of ecosystems and species, their processes and interactions and the genetic variation within and among species (1-1)

biogeography: the study of living systems and their distribution (3-3)

biosphere: the part of the earth and its atmosphere where living things exist (1-2)

cephalothorax: the joined head and thorax of arachnids (spiders, scorpions, ticks and others) and many crustaceans (1-2)

chromosome: structure that contains DNA in the cell and that is responsible for the determination and transfer of hereditary traits (1-4)

class: a taxonomic category that ranks below phylum and above order (1-2)

classification: grouping organisms into categories based on shared characteristics or traits (1-2)

conflict management: a practice in which disagreeing groups meet with an impartial person to discuss their concerns; each side listens closely to the other side; the impartial person helps clarify what each side is asking for; in many cases, both groups find that their needs can be met without further conflict (4-1)

consensus: collective opinion; general agreement or accord (4-1)

cultural diversity: differences in socially transmitted behavior patterns, arts, beliefs, institutions and other products of human work and thought characteristic of a community or population (4-1)

ecological processes: relationships between organisms and their environments (2-2)

economics: science that deals with the production, distribution and consumption of goods (2-2)

ecoregion: a relatively large unit of land that is characterized by a distinctive climate, ecological features and plant and animal communities (1-3)

Vocabulary *(continued)*

ecosystem: a community of organisms that are linked by energy and nutrient flows and that interact with each other and with the physical environment (1-1)

edge effect: when a habitat is divided into small sections, more boundaries are created between the habitat and its surroundings; these boundaries, or edges, are very different than the conditions in the habitat's interior; edge is often lighter and drier than the interior of the habitat and can change the types of organisms living in the area; in small fragments, edge conditions may compose most of the habitat (3-3)

endangered species: a species threatened with extinction (3-1, 3-2)

Endangered Species Act: legislation enacted to ensure the survival of endangered plant and animal species; habitats critical to their survival may be protected, too (3-1)

evaporation: changing from a liquid state to a gaseous state (2-3)

evolution: the process of change in the traits of organisms or populations over time (1-2, 1-4)

extinct: a species that no longer exists (2-2)

family: a taxonomic category that ranks below order and above genus (1-2)

fragmentation: the breaking up of large habitats into smaller, isolated chunks (3-3)

fungi: organisms that use living or dead organisms as food by breaking them down and then absorbing the substances into their cells (1-2)

gall: an abnormal swelling of plant tissue caused by insects, microorganisms or injury (1-3)

gene: a segment of DNA that includes the coded information in an organism's cells that makes each species and individual unique (1-1, 1-4)

genetic diversity: the genetic variation present in a population or species (1-4)

genus: a taxonomic category that ranks below family and above species (1-2)

global warming: the hypothesis that the earth's atmosphere is warming because of the release of "greenhouse gases" such as carbon dioxide (4-1)

ground-truthing: the process of going to an area to verify information; gives scientists a firsthand look at areas they're interested in and can help guide further studies (1-3)

habitat: the area where an organism lives and finds the nutrients, water, sunlight, shelter, living space and other essentials that it needs to survive (3-1, 3-3)

habitat loss: the destruction, degradation and fragmentation of habitats; primary cause of biodiversity loss (3-2)

heavy metals: natural metallic elements including cadmium, copper, lead and zinc; can be toxic to some organisms (2-3)

immigration: to move into an area (3-3)

impurity: a contaminant or pollutant (2-3)

inherit: to receive genetically from an ancestor (1-4)

introduced species: an organism that has been brought into an area where it does not occur naturally (3-1, 3-2)

Appendices
Vocabulary (continued)

invasive species: an organism that has been brought into or spread into an area where it does not occur naturally (4-1)

kingdom: one of the main taxonomic divisions into which natural organisms and objects are classified (1-2)

legislation: the act of making laws; a proposed or enacted law or group of laws (4-1)

lichen: a fungus and an alga or blue-green bacteria growing together in a mutually beneficial relationship often seen as crustlike scaly or branched growths on soil, rocks or tree bark (4-1)

migration: the movement of animals in response to seasonal changes or changes in the food supply (1-1, 1-3)

mineral: a natural inorganic substance with a definite, uniform chemical composition and characteristic crystalline structure, color and hardness (2-3)

native species: a species that occurs naturally in an area or habitat (1-3)

noxious: harmful to health (1-3)

nucleus: complex structure in some cells that contains the cell's hereditary material and that controls metabolism, growth and reproduction (1-4)

order: a taxonomic category that ranks below class and above family (1-2)

organism: a living thing (1-2)

over-consumption: the use of resources at a rate that exceeds the ability of natural processes to replace them (3-2)

pesticide: chemical that inhibits or kills the growth of organisms that people consider undesirable (2-3)

photosynthesis: the process by which green plants, algae and other organisms that contain chlorophyll use sunlight to produce carbohydrates (food) (2-3)

phylum: a taxonomic category that ranks below kingdom and above class (1-2)

pollination: the process by which pollen is transferred from the male part of a flower to the female part of the same or a different flower (2-2, 4-1)

population: all the individuals of one species in one place at one time (1-4)

precipitation: water droplets or ice particles condensed from the atmosphere and heavy enough to fall to earth's surface, such as rain or snow (1-3)

racial justice: equality among ethnic groups (4-1)

range map: graphic representation of the area in which a species lives (3-1)

rapid assessment: a quick scientific survey or count that helps measure local biodiversity (1-3)

recycling: to extract useful materials from; to extract and reuse; to use again or reprocess to use again (4-1)

sampling: studying a small portion of the total then using mathematics to extrapolate the findings to the larger whole (1-3)

sediment: material that settles to the bottom of a liquid (2-3)

Appendices
Vocabulary (continued)

smart growth: using new methods of building and rebuilding neighborhoods and incorporating long-term planning practices to protect the area's natural resources (4-1)

species: a group of organisms that have a unique set of characteristics that distinguishes them from other organisms; the basic unit of biological classification (1-1, 1-2, 1-4)

stewardship: the management of natural resources (4-1)

sustainable: capable of existing or being maintained (4-1)

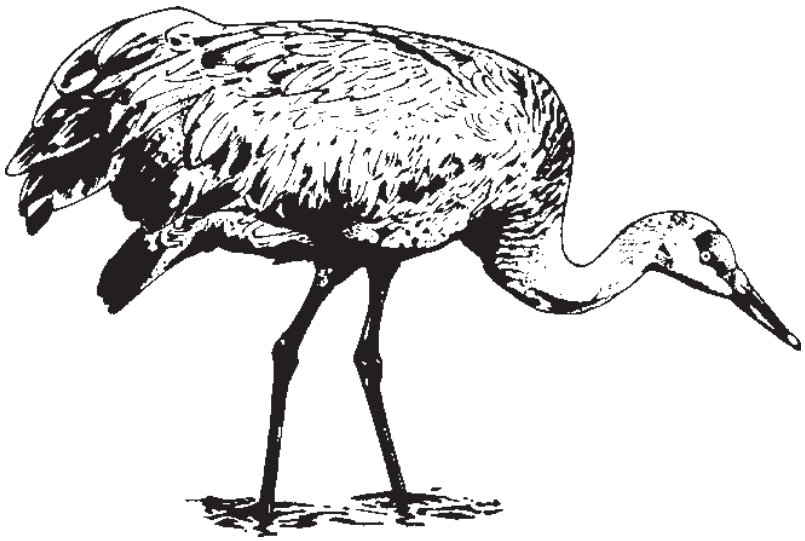
taxonomy: the process and study of classifying organisms (1-2)

toxic substance: one that is harmful, destructive or deadly (2-3)

trait: a genetic feature or characteristic, such as hair color or blood type, that may be passed on from one generation to the next (1-4)

transpiration: the process of giving off water vapor and other products through the stomata of plants (2-3)

wetland: area that, at least periodically, has waterlogged soils or is covered with a relatively shallow layer of water (2-3)



Appendices
Scientific Names

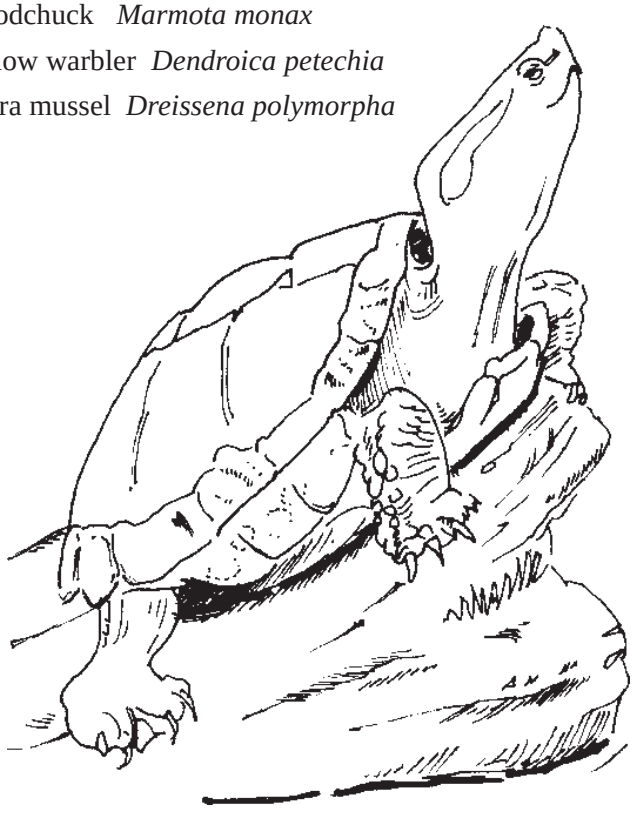
The scientific name is the official name for each organism. A scientific name is assigned after careful research. It is made up of two parts, the genus name (written first) followed by the species name. Your scientific name is *Homo sapiens*. Sometimes a third part, the subspecies name, is also used. The name is always in Latin because when this naming process started, most people everywhere knew Latin. The scientific name is underlined or in italics when written. Often a scientific name tells you something about the species or someone who studied it. Scientific names help scientists to study organisms, especially when working with other scientists.

The common and scientific names for most species discussed in this guide (except the list of endangered and threatened species included with Activity 3-1) are listed below. Those species referred to in general terms will not be found in this list.

almond *Prunus triloba*
American woodcock *Scolopax minor*
antlion *Myrmeleon spp.*
apple *Malus pumila*
avocado *Persea spp.*
bald eagle *Haliaeetus leucocephalus*
bald cypress *Taxodium distichum*
bison *Bos bison*
black bear *Ursus americanus*
blackpoll warbler *Dendroica striata*
bloodroot *Sanguinaria canadensis*
blue cheese fungus *Penicillium roqufortii.*
blueberry *Vaccinium spp.*
bobcat *Lynx rufus*
brown-headed cowbird *Molothrus ater*
California kingsnake
Lampropeltis getulus californiae
cantaloupe *Cucumis melo*
carrot *Daucus spp.*
cat *Felis catus*
celery *Abelmoschus esculentus*
cheetah *Acinonyx jubatus*
cherry *Prunus spp.*
corn snake *Elaphe guttata*
corn *Zea mays*
cow *Bos taurus*
coyote *Canis latrans*
cranberry *Vaccinium macrocarpon*
cucumber *Cucumis sativus*
dog *Canis familiaris*
downy serviceberry *Amelanchier arborea*
eastern sand darter *Ammocrypta pellucidum*
elk *Cervus elaphus*
firefly *Photinus pyralis*
geranium *Geranium spp.*
giant panda *Ailuropoda melanoleuca*
ginseng *Panax quinquefolius*
gray fox *Urocyon cinereoargenteus*
gray wolf *Canis lupus*
gray squirrel *Sciurus carolinensis*
great plains rat snake *Elaphe guttata emoryi*
greater prairie-chicken *Tympanuchus cupido*
hoary elfin butterfly *Incisalia polios*
honey bee *Apis mellifera*
horse *Equus caballus*
house sparrow *Passer domesticus*
human *Homo sapiens*
Illinois (yellow) mud turtle
Kinosternon flavescens spooneri

Scientific Names *(continued)*

jackal *Canis aureus*
lion *Panthera leo*
little brown bat *Myotis lucifugus*
lynx *Lynx canadensis*
masked shrew *Sorex cinereus*
mayapple *Podophyllum peltatum*
mite *Demodex folliculorum*
mite *Demodex brevis*
mountain lion (puma) *Felis concolor*
mud snake (hoop snake) *Farancia abacura*
multiflora rose *Rosa multiflora*
osprey *Pandion haliaetus*
ovenbird *Seiurus aurocapillus*
paddlefish *Polyodon spathula*
passenger pigeon *Ectopistes migratorius*
pear *Pyrus communis*
peregrine falcon *Falco peregrinus*
pimpleback *Quadrula pustulosa*
plum *Prunus spp.*
potato *Solanum tuberosum*
purple coneflower *Echinacea purpurea*
raccoon *Procyon lotor*
red panda *Ailurus fulgens*
red fox *Vulpes vulpes*
red-tailed hawk *Buteo jamaicensis*
ring-necked pheasant *Phasianus colchicus*
river otter *Lontra canadensis*
ruby-throated hummingbird
Archilochus colubris
sea lamprey *Petromyzon marinus*
short-tailed shrew, northern
Blarina brevicauda
soybean *Glycine max*
spiny water flea *Bythotrephes cederstroemi*
tiger *Panthera tigris*
tomato hornworm *Manduca quinquemaculata*
vampire bat *Desmodus rotundus*
wart hog *Phacochoerus aethiopicus*
watermelon *Citrullus lanatus*
waterweed *Anacharis spp.* (also known as
Elodea spp.)
weasel *Mustela spp.*
white fringed orchid
Platanthera leucophaea
white pine *Pinus strobus*
white oak *Quercus alba*
white-tailed deer *Odocoileus virginianus*
wild turkey *Meleagris gallopavo*
willow *Salix spp.*
woodchuck *Marmota monax*
yellow warbler *Dendroica petechia*
zebra mussel *Dreissena polymorpha*



Appendices

Conceptual Framework and Correlation to *Illinois Biodiversity Basics*

Because the issues surrounding biodiversity can be complex, the topic can be challenging to understand and to teach. The following Conceptual Framework is based on World Wildlife Fund's "A Biodiversity Education Framework" section in the *Windows on the Wild: Biodiversity Basics* educator's guide. The framework in *Windows on the Wild: Biodiversity Basics* is much more extensive than the one shown here and is a general framework for biodiversity education. You may want to reference "A Biodiversity Education Framework" to assist you in teaching about biodiversity.

In this Conceptual Framework you will find the biodiversity topic broken down into small components to help you see, and communicate the relationships among, the different levels of biodiversity, the ecological principles behind it and how we relate to it. We've also linked the concepts to the *Illinois Biodiversity Basics* activities that are designed to teach them. While no single activity can teach the concepts completely, each can contribute to your students' growing understanding. In each activity you will find a section titled "Links to *Illinois Biodiversity Basics* Conceptual Framework." The related conceptual framework topic(s) will be listed there. This section of the guide will explain the framework link in more detail. The concepts are organized under four themes, and the themes are arranged to build on one another, starting with the basic ecological foundation and expanding to include societal issues.

What is Biodiversity?

The concepts within this theme provide students with a fundamental knowledge and appreciation of biodiversity. These concepts also help students understand the characteristics of living systems and the fact that the environment is made up of systems within larger systems.

Biological diversity, also called biodiversity, encompasses the variety of all life on earth, including life on land, in the oceans and in freshwater ecosystems, such as rivers and lakes. People often analyze biodiversity at many levels, ranging from large to small. The three most common levels of analysis focus on ecological diversity, species diversity and genetic diversity. (Activity 1-1)

Species diversity describes the number and variety of species that live on earth. Species diversity can refer to the diversity within specific groups of organisms as well as the total diversity of organisms on earth and the relationships among them. (Activities 1-2, 1-3)

Genetic diversity refers to the variety of genetic information contained in the genes of individuals, species, populations within a species or evolutionary lineages. (Activity 1-4)

A group of organisms that is evolving separately from other groups is called a **species**. For organisms that reproduce sexually, a species can also be defined as organisms that interbreed only among themselves. (Activity 1-2)

Scientists use the terms **endangered, threatened and extinct** to describe the status of species. Endangered species are those species that are in immediate danger of becoming extinct. Threatened species are those whose numbers are low or declining and whose gene pool is becoming too small to ensure variation in offspring. A threatened species is not in immediate danger of extinction but is likely to become endangered if it isn't protected. Extinct species are no longer living. (Activities 3-1, 3-2)

Why is Biodiversity Important?

Concepts in this section can help students investigate how biodiversity affects their lives and supports life on earth. Recognizing the importance of biodiversity increases students' awareness of why and how people's actions affect biodiversity, and why it's important to maintain and restore biodiversity.

Conceptual Framework and Correlation to *Illinois Biodiversity Basics* *(continued)*

Each level of biodiversity is essential to fundamental life processes (life support systems):
Genetic diversity within species allows species to adapt to changes in the environment over time.
Species diversity provides a variety of interactions that contribute to energy flow and nutrient cycling in ecosystems.
Ecological diversity provides habitat for different species, as well as essential services that maintain the biosphere, including water and air purification, microclimate control and soil formation and stability. (Activity 2-3)

The decision to protect biodiversity (or not to protect it) is the result of choices people make as families, community members, voters, consumers, employees, politicians and neighbors. These choices can reflect **values and beliefs**, knowledge of the issues and the consequence of a choice, a need to satisfy basic human needs or other factors. An understanding of biodiversity issues can help us predict future trends and determine the positive and negative effects of our choices and the values they reflect. (Activities 2-2, 4-1)

The ways different **cultures** around the world feel about and use the natural world are expressed through art, architecture, urban planning, music, language, literature, theater, dance, sports, religion and other aspects of their lives. (Activity 2-1)

Human values can be affected by a variety of factors, including wealth, health, religion, ecology and culture. These factors influence the development of lifestyles that may or may not be supportive of maintaining biodiversity. (Activity 4-1)

What's the Status of Biodiversity?

Concepts in this theme can help students understand the status of biodiversity and why it is declining. By learning about causes and consequences of biodiversity loss, students will be able to participate in actions to maintain biodiversity in the future.

The **five major causes of biodiversity decline** are human population growth; loss, degradation and fragmentation of habitat; introduced species; over-consumption of natural resources; and pollution. (Activity 3-2)

The **loss, degradation and fragmentation of habitats**, such as forests and wetlands, is the single most important factor behind species extinction. This large-scale loss is the result of human population growth, pollution and unsustainable consumption patterns. (Activity 3-3)

How Can We Protect Biodiversity?

Concepts in this section help students identify ways to ensure that adequate biodiversity will be maintained for future generations. For students to willingly and effectively take action to protect biodiversity, they must have a thorough understanding and appreciation of what biodiversity is, why it's important, why we're losing it and what people can do to help maintain and conserve it. Students also begin to understand that ecological integrity, social equity and economic prosperity are connected and are important components of a sustainable society.

Because issues related to biodiversity are complex and require the synthesis of information gathered by **investigators in different fields**, biodiversity research involves professionals with backgrounds in science, sociology, demographics, technology, planning, history, anthropology, mathematics, geography and other disciplines. (Activity 4-2)

All sectors of society influence biodiversity to some extent and can work to protect biodiversity through policy initiatives, media campaigns, corporate mission statements and other public activities. (Activity 4-2)

Appendices
Cross-Reference and Planning Chart

Goal: To introduce students in grades five through eight to local biodiversity concepts, issues and conservation.
Objectives: As a result of participating in the unit activities, students will: 1) possess a basic understanding of biological, species and genetic diversity; 2) be able to explain the role biodiversity plays in ecosystem stability and health; 3) be able to report on its current status; and 4) know strategies to employ for its conservation and preservation.

Section 1: What is Biodiversity?

Activity	***At a Glance***	***Conceptual Framework Links***	***Illinois Learning Standards Links***
Activity 1-1: What's Your Biodiversity IQ?	Take a "gee-whiz quiz" to find out how much you know about biodiversity, especially in Illinois.	biological diversity	English language arts: 1.C.2a, 1.C.3a science: 12.B.2a, 12.B.2b, 12.B.3a, 12.B.3b
Activity 1-2: Sizing Up Species	Classify organisms using a classification flow chart, play a team game to find out how many species may exist within different groups of organisms, and make a graph to illustrate the relative abundance of living things.	species diversity, defining "species"	mathematics: 6.C.2a, 6.C.3a, 6.D.2, 6.D.3, 10.A.2a, 10.A.3a
Activity 1-3: Backyard BioBlitz	Answer an ecoregional survey, then take a first-hand look at biodiversity in your community.	species diversity	English language arts: 3.C.2a, 3.C.2b, 3.C.3b, 4.B.2a, 4.B.2b, 4.B.3a, 5.A.2a, 5.A.3b, 5.B.3a, 5.C.2a, 5.C.2b, 5.C.3b science: 13.B.2e, 13.B.2f social science: 16.E.3c
Activity 1-4: The Gene Scene	Play several different games that introduce genetic diversity and highlight why it's important within populations.	genetic diversity	English language arts: 3.C.2a, 3.C.3b, 5.C.2a science: 12.A.2a, 12.B.2b, 12.B.3b social science: 17.C.3a

Cross-Reference and Planning Chart *(continued)*

Section 2: Why is Biodiversity Important?

Activity	At a Glance	Conceptual Framework Links	Illinois Learning Standards Links
Activity 2-1: The Nature of Poetry	Read and discuss several poems related to biodiversity then write original biodiversity poetry.	culture and nature	English language arts: 1.A.3b, 1.C.2e, 1.C.3e, 2.A.2c, 2.A.3a, 2.A.3c, 2.A.3d, 2.B.2a, 2.B.2c, 2.B.3a, 3.B.2b, 3.B.3a
Activity 2-2: The Spice of Life	Explore beliefs and values about why biodiversity is important and why it should be protected.	conflicts in values lead to obstacles when solving problems	English language arts: 4.B.2a, 4.B.2b science: 13.B.2f, 13.B.3d social science: 17.C.2c
Activity 2-3: Secret Services	Perform simulations that demonstrate some of the important ecosystem services that biodiversity provides.	genetic/species/ecological diversity are essential to life processes	English language arts: 4.B.2a, 4.B.2b, 4.B.3a science: 11.A.2e, 12.E.2a, 12.E.2b, 12.E.3b social science: 17.B.2a, 17.B.2b, 17.B.3a

Section 3: What's the Status of Biodiversity?

Activity	At a Glance	Conceptual Framework Links	Illinois Learning Standards Links
Activity 3-1: Endangered Species Gallery Walk	Conduct research to create a poster about an endangered species in the state of Illinois and then take a walk through a poster "gallery" to find out more about threatened/endangered species around the state.	defining endangered, threatened and extinct	English language arts: 3.A.3, 4.B.2b, 5.A.3a science: 13.B.3d social science: 17.B.3b, 17.C.2c
Activity 3-2: The Case of the Greater Prairie-Chicken	Work in small groups to discover how the greater prairie-chicken's decline is tied to the major causes of biodiversity loss in Illinois and discuss what people are doing to help protect the greater prairie-chicken.	the five major causes of biodiversity loss: 1) degradation and fragmentation of habitat lead to species extinction; 2) some technologies result in the loss of biodiversity; 3) nonnative species reduce biodiversity; 4) pollution affects biodiversity; and 5) we are still learning about biodiversity thus some interpretations differ	English language arts: 3.A.3, 3.B.3b, 4.A.2b, 4.B.3b, 5.A.2a, 5.A.2b, 5.A.3a, 5.A.3b, 5.C.2a, 5.C.3a science: 13.B.2e, 13.B.2f, 13.B.3d, 13.B.3e social science: 16.E.3c, 17.B.2a, 17.B.3b, 17.C.2c
Activity 3-3: Space for Species	Play an outdoor game, conduct a survey of plant diversity and analyze current research to explore the relationship between habitat size and biodiversity.	degradation and fragmentation of habitat lead to species extinction	English language arts: 3.A.3, 3.B.2b, 3.C.3b, 4.A.2b, 4.B.2b, 4.B.2d mathematics: 6.B.3a, 6.C.3a, 10.A.2a, 10.A.2c, 10.A.3a, 10.C.3a science: 11.A.2c, 11.A.2d, 11.A.2e, 11.A.3a, 11.A.3g, 13.A.3c, 13.B.2f, 13.B.3b, 13.B.3e

Section 4: How Can We Protect Biodiversity?

Activity	At a Glance	Conceptual Framework Links	Illinois Learning Standards Links
Activity 4-1: Future Worlds	Build a pyramid to reflect personal priorities for the future. Investigate the way humans affect the natural world and discover how people are working to protect the environment and improve the quality of life in Illinois and on earth.	human values influence biodiversity; knowledge of biodiversity can help predict trends and determine effects of our choices	English language arts: 4.B.2a, 4.B.2d, 4.B.3d, 5.A.2a, 5.A.2b, 5.A.3a, 5.A.3b, 5.C.2b social science: 16.E.2c, 16.E.3b, 16.E.3c, 17.C.2c physical development and health: 22.C.2, 22.C.3a, 22.C.3b
Activity 4-2: Career Moves	Read profiles of people who work in biodiversity-related professions in Illinois. Conduct interviews of people in your community with similar occupations.	study of biodiversity is interdisciplinary; all sectors of society influence biodiversity	English language arts: 5.B.3a, 5.C.3c science: 13.B.2c, 13.B.3b, 13.B.3c social science: 17.c.2c

Appendices
Correlation to Illinois Learning Standards and Benchmarks

For each subject area, the benchmark is followed by the activity which could help students to achieve it.

English language arts
1.A.3b (2-1)
1.C.2a (1-1)
1.C.3a (1-1)
1.C.2e (2-1)
1.C.3e (2-1)
2.A.2c (2-1)
2.A.3a (2-1)
2.A.3c (2-1)
2.A.3d (2-1)
2.B.2a (2-1)
2.B.2c (2-1)
2.B.3a (2-1)
3.A.3 (3-1, 3-2, 3-3)
3.B.2b (2-1, 3-3)
3.B.3a (2-1)
3.B.3b (3-2)
3.C.2a (1-3, 1-4)
3.C.2b (1-3)
3.C.3b (1-3, 1-4, 3-3)
4.A.2b (3-2, 3-3)
4.B.2a (1-3, 2-2, 2-3, 4-1)
4.B.2b (1-3, 2-2, 2-3, 3-1, 3-3)
4.B.2d (3-3, 4-1)
4.B.3a (1-3, 2-3)
4.B.3b (3-2)
4.B.3d (4-1)
5.A.2a (1-3, 3-2, 4-1)
5.A.2b (3-2, 4-1)
5.A.3a (3-1, 3-2, 4-1)
5.A.3b (1-3, 3-2, 4-1)
5.B.3a (1-3, 4-2)
5.C.2a (1-3, 1-4, 3-2)
5C.2b (1-3, 4-1)
5.C.3a (3-2)
5.C.3b (1-3)
5.C.3c (4-2)

mathematics
6.B.3a (3-3)
6.C.2a (1-2)
6.C.3a (1-2, 3-3)
6.D.2 (1-2)
6.D.3 (1-2)
10.A.2a (1-2, 3-3)
10.A.2c (3-3)
10.A.3a (1-2, 3-3)
10.C.3a (3-3)

science
11.A.2c (3-3)
11.A.2d (3-3)
11.A.2e (2-3, 3-3)
11.A.3a (3-3)
11.A.3g (3-3)
12.A.2a (1-4)
12.B.2a (1-1)
12.B.2b (1-1, 1-4)
12.B.3a (1-1)
12.B.3b (1-1, 1-4)
12.E.2a (2-3)
12.E.2b (2-3)
12.E.3b (2-3)
13.A.3c (3-3)
13.B.3b (4-2)
13.B.3c (4-2)
13.B.2e (1-3, 3-2)
13.B.2f (1-3, 2-2, 3-2, 3-3)
13.B.3b (3-3)
13.B.3d (2-2, 3-1, 3-2)
13.B.3e (3-2, 3-3)

social science
16.E.2c (4-1)
16.E.3b (4-1)
16.E.3c (1-3, 3-2, 4-1)
17.B.2a (2-3, 3-2)
17.B.2b (2-3)
17.B.3a (2-3)
17.B.3b (3-1, 3-2)
17.C.2c (2-2, 3-1, 3-2, 4-1, 4-2)
17.C.3a (3-3)

physical development and health
22.C.2 (4-1)
22.C.3a (4-1)
22.C.3b (4-1)

Appendices
Correlation to Subject Areas

	English language arts	mathematics	science	social science	physical development and health
What's Your Biodiversity IQ? (Activity 1-1)	x		x		
Sizing Up Species (Activity 1-2)		x			
Backyard BioBlitz (Activity 1-3)	x		x	x	
The Gene Scene (Activity 1-4)	x		x		
The Nature of Poetry (Activity 2-1)	x				
The Spice of Life (Activity 2-2)	x		x	x	
Secret Services (Activity 2-3)	x		x	x	
Endangered Species Gallery Walk (Activity 3-1)	x		x	x	
The Case of the Greater Prairie-Chicken (Activity 3-2)	x		x	x	
Space for Species (Activity 3-3)	x	x	x	x	
Future Worlds (Activity 4-1)	x			x	x
Career Moves (Activity 4-2)	x		x	x	

Appendices
Correlation to Skills

	gather	organize	analyze	interpret	apply	evaluate	present	develop citizenship skills
What's Your Biodiversity IQ? (Activity 1-1)			x	x	x			
Sizing Up Species (Activity 1-2)		x	x	x				
Backyard BioBlitz (Activity 1-3)	x	x	x	x	x	x		
The Gene Scene (Activity 1-4)	x		x	x				
The Nature of Poetry (Activity 2-1)	x		x				x	
The Spice of Life (Activity 2-2)		x	x				x	x
Secret Services (Activity 2-3)		x		x			x	x
Endangered Species Gallery Walk (Activity 3-1)	x		x	x	x		x	
The Case of the Greater Prairie-Chicken (Activity 3-2)	x		x		x			
Space for Species (Activity 3-3)	x	x	x	x	x			x
Future Worlds (Activity 4-1)	x	x	x	x			x	x
Career Moves (Activity 4-2)	x		x	x			x	

Appendices
Correlation to Time Required

	one class period	two class periods	three or more class periods
What's Your Biodiversity IQ? (Activity 1-1)	***x***		
Sizing Up Species (Activity 1-2)		***x***	
Backyard BioBlitz (Activity 1-3)		***x*** (Part II)	***x*** (Part I)
The Gene Scene (Activity 1-4)			***x***
The Nature of Poetry (Activity 2-1)		***x***	
The Spice of Life (Activity 2-2)	***x***		
Secret Services (Activity 2-3)		***x***	
Endangered Species Gallery Walk (Activity 3-1)			***x***
The Case of the Greater Prairie-Chicken (Activity 3-2)		***x***	
Space for Species (Activity 3-3)	***x*** (Part I)	***x*** (Part II)	
Future Worlds (Activity 4-1)		***x***	
Career Moves (Activity 4-2)		***x***	

Appendices
Resources

The following organizations worked in partnership to produce *Illinois Biodiversity Basics*. Although these groups are not the only sources for biodiversity materials, they can provide you with basic information and educational tools to assist you in implementing this activity guide.

Chicago Wilderness

Education and Communication Team
(312) 665-7444
http://www.chicagowilderness.org

Chicago Wilderness is a regional nature reserve of globally significant rare natural communities in an area encompassing southeastern Wisconsin, the six-county Chicago region and northwestern Indiana. Chicago Wilderness is also a partnership of more than 150 public and private organizations whose goals are to protect, restore and manage these lands. The Education and Communication Team of Chicago Wilderness works to increase and diversify public participation in and the understanding of the region's biodiversity by developing collaborative education programs, events and professional development opportunities. They disseminate existing and newly developed educational materials/programs/information through training and appropriate channels. Educators may access many biodiversity teaching tools through Chicago Wilderness.

Illinois Department of Natural Resources

Division of Education
One Natural Resources Way
Springfield, IL 62702-1271
217/524-4126
http://dnr.state.il.us
teachkids@dnrmail.state.il.us

The Illinois Department of Natural Resources' Division of Education is responsible for the development, training and dissemination of educational programs and events; and for providing hands-on outdoor education and recreational programming for park visitors. The Division works closely with educators, state agencies and other groups to ensure that environmental education goals are being met. The Division of Education develops and distributes a variety of biodiversity and other environmental education materials. All materials are correlated to the Illinois Learning Standards. For monthly updates on new materials and scheduled workshops visit http://dnr.state.il.us/lands/education/monthly.htm.

World Wildlife Fund

1250 24th Street, NW
Washington, DC 20037
http://www.worldwildlife.org

Working with partners around the world, World Wildlife Fund (WWF) developed a Biodiversity Education Framework to help guide people in life-long learning about biodiversity, sustainability and conservation. The core of their *Windows on the Wild (WOW)* program is a series of middle school modules on key topics related to biodiversity, including *Biodiversity Basics*, *Wildlife for Sale*, *Marine Biodiversity* and *Building Better Communities*. Each module contains background information, resource ideas and unit plans for the educator, as well as creative and challenging interdisciplinary activities for students. *WOW* curriculum materials are designed to help students explore the social, political, scientific, economic and ethical issues surrounding biodiversity and to give them the knowledge and skills they need to build a more sustainable future. If you are interested in more biodiversity information, you may want to obtain a copy of the educator and student guides for *Windows on the Wild: Biodiversity Basics* and/or other materials from WWF. *Windows on the Wild: Biodiversity Basics* is available for purchase from Acorn Naturalists (800/422-8886).

Appendices
Action Projects

Many organized action projects to help monitor, maintain and preserve biodiversity are available for you to join. Listed below are a few examples.

Illinois EcoWatch Network
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271
217/785-5409
http://dnr.state.il.us/orep/inrin/ecowatch/forest/

Help keep an eye on the environment by becoming a Citizen Scientist with the Illinois EcoWatch Network. Through programs such as RiverWatch, ForestWatch, PrairieWatch, WetlandWatch and UrbanWatch, adult volunteers, high school science teachers and students monitor rivers, forests, prairies and more. Coordinated through the Illinois Department of Natural Resources, the volunteers collect quality data, increase public awareness and promote environmental stewardship. Biological monitoring allows scientists to identify long term changes in the health of ecosystems.

Illinois Environmental Protection Agency
Lake Education Assistance Program
Division of Water Pollution Control
P.O. Box 19276
Springfield, IL 62794-9276
217/782-3362
http://www.epa.state.il.us/org/bow/

The Lake Education Assistance Program is part of the education initiative within the Illinois Lake Management Program Act. Funding is provided through Conservation 2000, an environmental protection program signed into law by Governor Jim Edgar in 1995. The program provides up to $500 for schools or not-for-profit organizations to participate in lake- or watershed-related educational field trips and activities. Projects selected for funding will enhance inland lake or lake watershed education of teachers, students, organizations and/or the community. Recipients are reimbursed for activities and supplies. Application deadlines are September 30 and January 31 annually.

Illinois Middle School Groundwater Project
SIUE
P.O. Box 2222
Edwardsville, IL 62026-2222
309/672-6906 or 618/692-2446
rivers@siue.edu

This cooperative project between many state agencies, local organizations and schools provides opportunities for middle school students to study groundwater through hands-on experiences.

Illinois Resource Watch Program
Illinois Department of Natural Resources
Office of Law Enforcement
One Natural Resources Way
Springfield, IL 62702-1271
217/782-6431

The Illinois Resource Watch program is a joint effort of the Illinois Department of Natural Resources and the Conservation Police Lodge of the Fraternal Order of Police. It is a multi-faceted program which has a single goal of promoting a sense of stewardship toward the natural resources of our state. Resource Watch is targeted on the local needs and problems of an area's natural resources. Local units have a Conservation Police Officer assigned to them to serve as facilitator. Although each unit might have a different goal or current focus, one aspect of the Resource Watch program is the same throughout Illinois: each participant "adopts" an area for the purpose of environmental protection. As a Resource Watch participant, you are asked to monitor an area for environmental threats such

as timber cutting, stream alteration, wetlands alterations or poaching; and for positive environmental signs such as sightings of endangered or threatened species of wildlife. There is a role for everyone in the Resource Watch program. Resource Watch members also have the opportunity to participate in "hands-on" resource management programs. In this manner, you make a positive contribution to our resources and directly observe the results.

Illinois Schoolyard Habitat Action Grant Program

Illinois Department of Natural Resources
Division of Education
One Natural Resources Way
Springfield, IL 62702-1271
217/524-4126
teachkids@dnrmail.state.il.us

Project WILD, Project WILD Aquatic, Project Learning Tree and Project WET are national, supplemental, environmental education programs. Students learn by doing and become actively involved in the world around them. Supported by a gift from the Jadel Foundation, the grant program is based on the idea that youths and teachers who have had contact with these supplemental projects need opportunities to take environmental action. Children, their educators and the community are encouraged to conduct a habitat improvement project on school property. Recipients are granted up to $600 and the opportunity to receive free seedling stock and technical assistance from the Illinois Department of Natural Resources. Applications are due October 15 each year, and successful applicants are notified by December 1.

Kankakee River Project

Northern Illinois Anglers' Association
P.O. Box 188
Bourbonnais, IL 60914

Since 1983, the Northern Illinois Anglers' Association has sponsored the Annual Kankakee River and Streams Clean Sweep Outing. One of the most extensive programs of its kind in the nation, the outing involves volunteers from scouting and community groups, sportsmen's clubs and school organizations. Volunteers are assigned sections along a 60-mile stretch of the river. An emphasis is placed on collecting cans, bottles, paper litter and other easily removed trash. Special crews are formed to deal with larger items of debris.

Ohio River Sweep and RiverWatchers

ORSANCO
534 Kellogg Avenue
Cincinnati, OH 45228
1/800/359-3977

The Ohio River Sweep cleanup is held the third Saturday of June each year along the Ohio River and its tributaries. More than 2,100 volunteers from six states bordering the river band together to pick up more than 9,000 tons of debris. The Sweep is organized by the Ohio River Valley Water Sanitation Commission (ORSANCO). RiverWatchers, a citizen volunteer monitoring program was initiated in 1992 and involves students from grades K-12 in the collection of water samples.

Rivers Project

SIUE
P.O. Box 2222
Edwardsville, IL 62026-2222
618/692-2446
rivers@siue.edu

The Rivers Project is an integrated, multi-dimensional science, social science, mathematics and language arts project developed to introduce water quality dimensions into the nation's high schools. Educators attend a week-long summer session to learn sampling techniques. Teachers and their students conduct water quality tests, learn about the cultural and historic impact of the river, assess data and write about rivers.

Appendices
Distribution Information for *Illinois Biodiversity Basics*

Copies of *Illinois Biodiversity Basics* may be obtained free of charge from the Illinois Department of Natural Resources and Chicago Wilderness. *Illinois Biodiversity Basics* is available to educators upon request or through training sessions. Contact either of the following addresses for more information or a copy of this activity guide.

Chicago Wilderness
Education and Communication Team
312/665-7444
http://www.chicagowilderness.org/educators.html

Illinois Department of Natural Resources
Division of Education
One Natural Resources Way
Springfield, IL 62702-1271
217/524-4126
teachkids@dnrmail.state.il.us

Illinois Biodiversity Basics is also accessible at the following Internet address:

http://dnr.state.il.us/lands/educationILBiodiversityBasics/index.htm

Appendices
Credits

The following people were instrumental in adapting *Illinois Biodiversity Basics* from World Wildlife Fund's *Windows on the Wild: Biodiversity Basics*. Their dedication has made this publication possible.

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Lanis Petrik, Brookfield Zoo, Brookfield, Illinois
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Appendices

Illustration List By Common Name and By Page Number

Appendices
Activities (alphabetical order)