

**Nebraska Science Standards Supported by Nature Center Hikes**  
**Kg-1<sup>st</sup> Grade**

**003.01 Unifying Concepts and Processes**

003.01A By the end of 1<sup>st</sup> grade, students will develop an understanding of systems, order, and organization.

Student demonstrations:

003.01A1a Use one or more of the five senses to observe object within the student's environment.

003.01A1b Use observations to sort objects by characteristics.

003.01D By the end of first grade, students will develop an understanding of form and function.

Student demonstrations:

003.01D1b Explain how living things interact with their environment because of specific characteristics, such as how the long neck of the giraffe helps it to reach its food.

**003.04 Life Science**

003.04A By the end of first grade, students will develop an understanding of the characteristics of living things.

Student demonstrations:

003.04A1a Differentiate between living and non-living things.

003.04A1b Investigate how living things need food, water, and air to survive.

003.04A1c Describe how roots, stems and leaves serve different functions for plants.

003.04A1d Compare and contrast animals by specific characteristics, such as body covering, diet and habitat.

003.04A1e Observe and recognize that organisms live and survive in distinct habitats.

003.04B By the end of first grade, students will develop an understanding of the life cycles of organisms.

Student demonstrations:

003.04B1a Describe how living things change as they grow.

003.04B1b Describe how offspring resemble their parents.

003.05C By the end of first grade, students will develop an understanding of the changes in the earth and sky.

Student demonstrations:

003.05C1b Describe seasonal weather changes.

**003.07 Science in Personal and Social Perspectives**

003.07B By the end of 1<sup>st</sup> grade, students will develop an understanding of resources.

Student demonstrations:

003.07A1a Observe and describe how reducing, reusing, and recycling help our environment.

## **Kg Science Unit – Characteristics of Living Things**

### **Objectives Supported by Nature Center Hikes**

- K.1.2 The student will be able to: predict and identify living and nonliving things found in a variety of locations. (Discovery, Animals and Their Habitats)  
Vocabulary: living, nonliving
- K.1.3 The student will be able to: observe and identify the three basic parts of green plants – roots, stems, and leaves. (Discovery)  
Vocabulary: leaves, roots, seeds, sprouts, stems
- K.1.4 The student will be able to: observe the growth of plants and identify what plants need to survive. (Discovery)  
Vocabulary: air, light, soil, water
- K.1.6 The student will be able to: observe that plants go through predictable life cycles. (Discovery, Nature’s Changing Seasons)  
Vocabulary: fruit, seedling
- K.1.7 The student will be able to: observe and identify familiar animals in their natural habitats and determine basic needs that are being met. (Animals and Their Habitats)  
Vocabulary: behavior, food, needs, shelter
- K.1.8 The student will be able to: identify similarities between animal offspring and their parents. (Discovery, Nature’s Changing Seasons – particularly in spring)  
Vocabulary: offspring, parents

## **Kg Science Unit – Explorations Using Senses**

### **Objectives Supported by Nature Center Hikes**

The Five Senses Hike is perfect for this unit, since we ask children to make observations using all their senses except the sense of taste, and we do talk about why that is not a good option in the wild unless you know what you are tasting.

- K.2.1 The student will be able to: make observations using the sense of sight.  
(Vocabulary: senses, sight)
- K.2.2 The student will be able to: make observations using the sense of touch.  
(Vocabulary: sensitive, shape, size, texture, touch)  
Possible activity – touchy, feely bags

- K.2.4 The student will be able to: make observations using the sense of smell.  
(Vocabulary: scent, smell)  
Possible activity – find your partner using herbal ‘pheromones’
- K.2.5 The student will be able to: make observations using the sense of hearing.  
(Vocabulary: hearing, sound)  
Possible activity: Find a Mate, sound map
- K.2.6 The student will be able to: classify objects by using the senses of sight, touch, taste, smell, and hearing.  
(Vocabulary: hearing, seeing, senses, smelling, tasting, touching)  
Possible activity: ?

### **First Grade Science Unit – Kinds of Living Things**

#### **Objectives Supported by Nature Center Hikes**

- 1.1.1 The student will be able to: differentiate between plants and animals.
- 1.1.2 The student will be able to: recognize that organisms live and survive in distinct habitats.  
Vocabulary: living, nonliving, habitat, shelter
- 1.1.3 The student will be able to: describe how roots, stems and leaves serve different functions for plants.
- 1.1.4 The student will be able to: describe how living things need food, water and air to survive.  
Vocabulary: habitat, shelter
- 1.1.5 The student will be able to: classify plants according to their characteristics.  
Vocabulary: cones, flowers, leaves, needle, roots, stems
- 1.1.6 The student will be able to: compare and contrast animals by specific characteristics, such as body coverings, diet, habitat, and mouth parts.  
Vocabulary: *vertebrate*, invertebrate  
amphibian, mammal, reptile, *bird, fish, insect*  
body coverings, feathers, fur, hair, quills, scales, shells, skin  
beak, gills
- 1.1.7 The student will be able to: classify animals according to their characteristics.  
Vocabulary: *vertebrate*, invertebrate  
amphibian, mammal, reptile, *bird, fish, insect*  
body coverings, feathers, fur, hair, quills, scales, shells, skin  
beak, gills

*In 1<sup>st</sup> grade other the Space/Earth topic of study is soil, particles, and critters  
(will this stay the same? - get this curriculum?)*

**Nebraska Science Standards Supported by Nature Center Hikes**  
**2<sup>nd</sup>-4<sup>th</sup> Grade**

**004.01 Unifying Concepts and Processes**

004.01A By the end of fourth grade, students will develop an understanding of systems, order, and organization.

Student demonstrations:

004.01A1a Describe the parts that make up a system.

004.01A1b Relate how the parts of a system affect the whole system.

**004.04 Life Science**

004.04A By the end of fourth grade, students will develop an understanding of the characteristics of living things.

Student demonstrations:

004.04A1a Describe the differences between plants and animals.

004.04A1b Describe the various structures of plants and animals necessary for growth, survival, and reproduction.

004.04A1c Describe internal causes of behavior, such as hunger, and external causes of behavior, such as change in the environment, in living things.

004.04B By the end of fourth grade, students will develop an understanding of the life cycles of living things.

Student demonstrations:

004.04B1a Describe the life cycle of an organism.

004.04B1b Recognize inherited characteristics of living things, such as color and number of eyes.

004.04B1c Recognize learned characteristics of living things, such as language or hunting for food.

004.04C By the end of fourth grade, students will develop an understanding of living things and environments.

Student demonstrations:

004.04C1a Diagram a food chain.

004.04C1b Explain how environmental changes affect behavior and survival of living things.

004.04C1c Describe how humans and other living things cause positive and negative changes in their environment.

**004.07 Science in Personal and Social Perspectives**

004.07B By the end of fourth grade, students will develop an understanding of environmental changes.

Student demonstration:

004.07C1a Distinguish between natural environmental changes and human influenced environmental changes.

## Second Grade Science Unit – Life Cycles

### Objectives Supported by Nature Center Hikes

2.1.1, 2 are directly related to observing the growth of a caterpillar (larva) and butterfly.

2.1.3 The student will be able to: identify the major body parts of a caterpillar and butterfly.

Our contribution here can be to reinforce knowledge of insect body parts.  
Vocabulary: insect, metamorphosis, egg, larva, pupa, chrysalis, cocoon, emerge, adult

prolegs, true legs

abdomen, thorax, antennae, exoskeleton, mandibles, proboscis

2.1.4 The student will be able to: relate what he/she has learned about the butterfly life cycle to other living organisms (ie. plants and/or animals), through drawing and/or writing.

Our contribution here can be to expose children to various life cycles:  
(dragonfly, grasshopper, mealworms, frog, animals that do not go through metamorphosis)

Vocabulary: metamorphosis, migration, molting

2.1.5, 6 are directly related to observing the growth of a plant from a seed.

Vocabulary: embryo, seed coat, germinate, sprout

bud, bulb, flower, fruit, leaf, petal, pollen, root, seedling, stem

2.1.7 The student will be able to: relate other ways that a plant can reproduce.

Our contribution here can be to show children plants that reproduce via stolons (wild strawberries), underground rhizomes (sumac) spores?.

2.1.8 The student will be able to: classify different seeds and how they travel.

The fall is a perfect time to find a variety of seeds that travel in various ways in the wild.

*In 2<sup>nd</sup> grade the Space/Earth topic of study is sun & seasons and the STS/Environment topic is ecology (they visit the museum)*

*(will this stay the same? - get this curriculum)*

### **Third Grade Science Unit – Embryology**

#### **Objectives Supported by Nature Center Hikes**

Support of this topic seems largely tangential. Clarification might be offered for the following two topics:

- 3.1.1 The student will be able to: explain a life cycle.
- 3.1.7 The student will be able to: investigate other animals that lay eggs.  
(We can definitely expose them to the eggs of reptiles, perhaps also (depending on the time of year) to snails, frogs, etc.)

*In 3<sup>rd</sup> grade the STS/Environment topic is natural resources  
(will this stay the same? - get this curriculum)*

### **Fourth Grade Science Unit – Ecology of the Plains**

#### **Objectives Supported by Nature Center Hikes**

- 4.1.1 The student will be able to: apply knowledge of a grassland ecosystem's living and non-living components by drawing, building, or modeling.
- 4.1.2 The student will be able to: classify organisms from a grassland ecosystem as producers, consumers (herbivores, carnivores, omnivores) or decomposers.
- 4.1.3 The student will be able to: demonstrate knowledge of energy flow through an ecosystem by creating a model food web.
- 4.1.4 The student will be able to: observe the cycles of matter (water, oxygen, carbon dioxide) between living and non-living things in a grasslands ecosystem.
- 4.1.5 The student will be able to: compare characteristics of a grassland ecosystem to another biome by describing climate, location, and biodiversity of living things.
- 4.1.6 The student will be able to: analyze the impact of natural changes on living things in the grasslands ecosystem.
- 4.1.7 The student will be able to: analyze the positive and negative impact of human intervention and use of resources on the grassland ecosystem.

## **Ecology of the Plains Vocabulary**

abiotic/biotic, living/non-living

ecology/environment/ecosystem/biome/biodiversity/conservation

endangered/extinct

habitat/community/niche/population/biodiversity

herbicide/pesticide

food chain/food web

*producer*/consumer/decomposer/scavenger

*carnivore*/herbivore/omnivore/predator/prey

burrower/grazer/adaptation

water cycle

natural resource/renewable resource

Biomes: deciduous forest, desert, grassland, taiga, tropical rainforest, tundra

Nebraska specific: crane migration, monarch butterfly, sod

*In 4<sup>th</sup> grade the STS/Environment topic is recycling*

*(will this stay the same? - get this curriculum?)*

**Nebraska Science Standards Supported by Nature Center Hikes**  
**5<sup>th</sup>-8th Grade**

**005.01 Unifying Concepts and Processes**

005.01A By the end of eighth grade, students will develop an understanding of systems, order, and organization.

Student demonstrations:

005.01A1c Create and use classification schemes.

05.04 Life Science

005.04C By the end of the eighth grade, students will develop an understanding of regulation and behavior.

Student demonstrations: