

LIVING HISTORY

THE FIRST THANKSGIVING (second grade)

Students reflect on their own Thanksgiving traditions before they delve into the past to recreate the First Thanksgiving. Participants are challenged to find food for the feast, prepare a fire for cooking, and then engage in Native American skill games.

Illinois Learning Standards: 4B1a, 16B1b, 19B1

NATIVE AMERICAN GAMES (second grade)

Native Americans learned important skills through playing games. Students will engage in these games which may include Stones, Sticks, Hunting Skills, Dart Toss, or Spear Throwing.

Illinois Learning Standards: 21A1b

NATIVE AMERICAN STORIES (second grade)

Students listen to and participate in Native American stories used to explain nature. There is a strong emphasis on the Native American respect for nature. Animal furs and parts may also be shared with students.

Illinois Learning Standards: 4A1a, 16A1c, 17C1a, 18A1

MEDICINE WHEEL (second grade)

The medicine wheel is a tool used by Native Americans to explain personal character development. Students learn the history of the wheel before creating one of their own. Students discuss the similarities and differences among people from different places and times.

Illinois Learning Standards: 4A1c, 26A1c, 27A1b, 27A2

ILLINOIS HISTORY (second grade)

This lesson introduces students to the three main inhabitants of Illinois: the Native Americans, the French and the Pioneer settlers. What drew these people into Illinois, and what kept them here? There will be a focus on natural resources which leads students to learn about our Illinois state symbols. This lesson includes an Illinois Jeopardy game for review.

Illinois Learning Standards: 16A1abc

SETTLEMENT OF ILLINOIS (NATURAL RESOURCES) (third grade)

Students learn about factors which influenced inhabitant's decisions to choose Illinois as a place to settle. Participants hike through the park following a specific guide and looking for items which would have proved useful to both the Native Americans and the Pioneers.

Illinois Learning Standards: 16E2a

NGSS: 3-LS4-3, 3-LS4-4

PIONEERING (third grade)

Students learn about westward expansion through the pioneers. Students discuss how the westward movement affected families during the frontier times, and they learn about the jobs of different family members. Students have the opportunity to engage in hands-on pioneer chores including candle dipping, rope making, leather branding, fire building with flint and steel, surveying using the Gunter's chain, and some wood working.

Illinois Learning Standards: 16B2d, 16D2b, 16D3b

UNDERGROUND RAILROAD: THE ESCAPE (fourth grade)

This is an outdoor action learning program. After establishing some background information about the Underground Railroad, students escape from a plantation in the south and run for freedom to Canada with the guidance of a conductor. Along the way they stop at a station, they look for signs left by other runaway slaves, and they discuss the relationships between slavery and the American economy. This is one of the more physically demanding lessons offered at the KCOEC.

Illinois Learning Standards: 16A2a, 16C3b

CC: MP.2, MP.4

UNDERGROUND RAILROAD: THE QUILT (fourth grade)

This indoor program is designed for students to learn about slavery and the Underground Railroad in the United States in the mid 1800s. Students will focus on Economic and Political climates as well as the geography of the country. Students will be introduced to several pieces of literature including Sweet Clara and the Freedom Quilt by Deborah Hopkinson. Students will be able to recount their experience through the creation of a class quilt.

Illinois Learning Standards: 16A2a, 16C3b

CC: SL4.1, L.4.5, RI.4.1, RI.4.9,

EARLY EXPLORERS (fourth grade)

Students journey through time starting with Marco Polo and the Silk Road. The journey continues as they learn about early sea explorers including Christopher Columbus, Ferdinand Magellan, John Cabot, Jacques Cartier, and Hernando Cortes. This lesson can be taught through team building or map and compass.

Illinois Learning Standards: 16A3b

ILLINOIS HISTORY (fourth grade)

Students step back in time and travel through Illinois from the earliest Native Americans to the French settlers to the pioneers of the prairie. Student discussions and activities include the prairie and its soils, environmental factors that drew settlers to Illinois and factors that influenced trade and transportation. We also discuss human impact on the environment in terms of John Deere and agriculture, as well as settlement patterns in Illinois. Students will have the opportunity to explore the prairie, work with some pioneer tools, and keep a journal of their experience.

Illinois Learning Standards: 16C2b, 16E2a, 16E2c, 16E3abc, 17B2a, 17D2

FRENCH FUR TRADE (fifth grade)

In learning about the French Fur Trade Business of the 1600's, students will understand the environmental factors that influenced transportation and trade in Illinois, and discuss the economic factors related to the location of resources. Students learn about the primary characters of the fur trade business, and then they read maps to follow a course through the woods and along the river as they discover the life of the voyageurs.

Illinois Learning Standards: 16E2c, 16E3a, 17C2b

THE LEWIS AND CLARK EXPEDITION (fifth grade)

Celebrate this famous expedition and become members of the Corps of Discovery! Students brainstorm what to bring, identify objectives of the trip, and identify a variety of plants and animals discovered in the Louisiana Territory. They read maps and follow a course as they learn about Thomas Jefferson, Meriwether Lewis, William Clark, and Sacajawea.

Illinois Learning Standards: 16B2d

THE AMERICAN REVOLUTION (fifth grade)

Students learn about the major causes of the American Revolution as well as how and why the colonists fought for their independence. Students are challenged to read and follow a map course as they take on the role of the soldiers. Participants have the opportunity to learn about colonial taxes as they earn and spend shillings during their adventure.

Illinois Learning Standards: 16B2b, 16B3b

CC: RI.5.7, RI.5.9, MP.4

TEAM BUILDING

TEAM BUILDING: GAMES

Early elementary students work on following directions and working both independently and cooperatively to complete tasks. Participants are encouraged to practice team building skills such as playing safe, treating others with respect, using good communication skills (eye contact, listening, speaking and not yelling), cooperating, and encouraging others in the group.

Illinois Learning Standards: 21A1abc, 21B1, 24A1ab

TEAM BUILDING: MOBILE INITIATIVES

Late elementary students engage in initiatives that challenge them in problem solving, communication, trust and cooperation. Participants learn to work with others cooperatively in achieving a goal while still accepting responsibility for their own actions. The group is encouraged to play safe, have fun, and put forth their best effort.

Illinois Learning Standards: 21A2abc, 21B2, 24A2ab

TEAM BUILDING: CHALLENGE COURSE

Participants will engage in a variety of games and mobile initiatives before venturing onto the challenge course. Participants then work on following directions and adhering to safety precautions. They are encouraged to set goals for themselves and for the group, to reach consensus, to share ideas, and to share decision making. Students are encouraged to take on leadership roles as they work with their group. They are also encouraged to take risks and push themselves outside of their own personal comfort zones. Participants engage in processing throughout the challenge course to evaluate strengths and weaknesses of the group. The challenge course is designed to challenge participants both physically and mentally.

Illinois Learning Standards: 21A3abc, 21A4abc, 21B3, 21B4, 21A5, 21B5, 24A3bc, 24A4b, 24A5

MAP AND COMPASS SKILLS

FIRST GRADE MAP SYMBOLS (*Leprechaun Hike*)

Students will review different kinds of maps (globe, world map, relief map, U.S map, atlas, Illinois map, and the Hoover Forest Preserve map). Focus is on (1) maps of all types and (2) recognizing that symbols represent real features. Students then learn about map colors and symbols. They use the map and “Hike the Colors” of Hoover. This is a large group activity.

Illinois Learning Standards: 17A1ab

SECOND GRADE MAP SYMBOLS (*Why Go Outside? hike*)

Students will review different kinds of maps (globe, world map, relief map, U.S map, atlas, Illinois map, and the Hoover Forest Preserve map). Focus is on (1) map key/legend and (2) location of physical features on the map. A map symbols card game is used. Students travel together as a large group to find specific locations in the park.

Illinois Learning Standards: 17A1ab

THIRD GRADE MAP SKILLS WITH COMPASS (*Little Brown Shed hike*)

Students will review map skills from previous grades using a map symbols card game. Focus is on (1) map key/legend, (2) distance scale, and (3) introduction to the compass and its use in map orientation. Students seek specific locations in the park. Students are now working together in small groups but traveling together as a large group to find clues which guide them on the course. Each small group uses a compass and takes turns leading the whole group.

Illinois Learning Standards: 17A2ab

FOURTH GRADE MAP SKILLS WITH COMPASS (*Landmark Navigation*)

Students review maps using a map key game in small groups. Focus is on (1) map key/legend, (2) distance scale, and (3) topography. There is an emphasis on use of the compass to both orient the maps and recognize cardinal directions. Students seek specific locations through landmark navigation. Students are now working together and traveling in small groups. Each group/student uses a compass.

Illinois Learning Standards: 17A2ab

FIFTH GRADE COMPASS SKILLS

Students may review maps using a map key game in small groups. Focus is on the review of compass parts and how it works. Students learn to set the compass for specific bearings and follow those bearing to a predetermined location. Activities can include Triangulation, Decoding, and Distance Pacing. Students are now working together in small groups. Each group/student uses a compass.

Illinois Learning Standards: 17A2ab

FIFTH GRADE IDITAROD LESSON (*winter only*)

The famous dogsled race, the Iditarod, takes place every year in March. Students learn about race history, rules and requirements, and details about the current race. Focus is on compass skills. After some indoor compass training, mushers and their dogs select a sled to compete in the Hoover Iditarod by following compass bearings from checkpoint to checkpoint. Snow is most helpful in this race!

Illinois Learning Standards: 17A2ab

SIXTH GRADE ORIENTEERING

Students briefly review map and compass, and they learn about orienteering as a sport. Students work together independently in small groups. Each group uses a map and compass to follow an orienteering course in an orienteering race. Groups are timed and scores are kept based on the number of correct locations found as indicated on the group punch cards.

Illinois Learning Standards: 17A2ab

SEVENTH-EIGHTH GRADE INTRO TO GPS AND GEOCACHING

Students learn how to use GPS units (provided by the KCOEC) to follow a course. This lesson can include the history of navigation. GPS instruction includes trilateration, an overview of topographical maps, and an opportunity for geocaching.

Illinois Learning Standards: 17A3ab

HIGH SCHOOL ORIENTEERING

Students briefly review map and compass. Students will set the compass for specific bearings and follow those bearings to a predetermined location. Students work independently in small groups with a map and compass to follow an advanced orienteering course.

Illinois Learning Standards: 17A3ab

ENVIRONMENTAL SCIENCE

RECYCLING AT LUNCH (any grade)

Every day at lunch students will receive a quick lesson on sorting garbage and recycling. Items will be placed in appropriate collection containers. Emphasis is on reducing the impact of humans in our local environment.

NGSS: K-ESS3-3

INTERPRETIVE HIKE (any grade)

Groups of students and adults are led on a hike of exploration. Naturalists will provide interpretation of group discoveries. Hikes will focus on group learning needs as well as hiking abilities.

Illinois Learning Standards: 21A1

SENSORY AWARENESS (PRE-K)

Using Miss Inga Face, students will identify their five senses. Those senses are then tested through a variety of activities involving listening, touching, smelling and looking. This lesson includes an interpretive hike and may include some songs, games and station activities (leaf rubbing and wood blocks).

Illinois Learning Standards: 21A1abc

SIGNS OF THE SEASON (PRE-K)

What is Fall? Winter? Spring? Summer? What clues does nature give us each season? How is nature changing right now in preparation for the next season? Weather is a combination of sun, wind, temperature and precipitation in a specific region at a specific time. When people track these conditions over time, weather patterns emerge. Students will take a hands-on approach to identifying elements of weather and patterns before embarking on an interpretive hike to find natural clues to support predictions.

NGSS: K-ESS2-1, K-PS3-1

CC: MP.2

ANIMALS IN ILLINOIS (Indoor Lesson) (KDG)

What do plants and animals need to survive? Where do animals live and why do they live there? Students will determine the difference between wild and domestic animals, as well as native and nonnative animals of Illinois. Students will identify different animal parts (feet, pelts, skulls, etc) and describe their major functions. Discussion will focus on the relationship between what animals need to survive and where they live. Students will have the opportunity to touch real animal pelts.

NGSS: K-ESS3-3; K-LS1-1

CC: K.MD.A.2, K.CC

ANIMALS IN ILLINOIS ECOSYSTEM HIKE (KDG)

What do plants and animals need to survive? Where do animals live and why do they live there? This lesson is used in conjunction with the indoor lesson and builds on those concepts. Students will be challenged to find examples of how plants and animals change their environment to meet their needs. Students are looking for nests, holes, seeds and plants growing in strange places. Students will identify components of a woodland ecosystem based on their findings.

NGSS: K-ESS2-2, K-ESS3-1, K-ESS3-3; K-LS1-1

CC: K.MD.A.2

WEATHER: DESIGN SHADE (KDG)

What is the weather like today, and how is it different from yesterday? Students will focus specifically on the sun and how it affects different earth surfaces (sand, soil, rocks, snow, and water). Students can use thermometers as needed to determine “warmer/cooler”. Students will also be given materials to create shade over their earth surface that will reduce the warming effect of the sun.

NGSS: K-PS3-1; K-PS3-2

CC: K.MD.A.2

INSECTS AND LIFE CYCLES (First Grade)

Students will briefly identify major characteristics of insects (3 body parts, 6 legs, exoskeleton) before going out to collect samples. Insects are collected using sweep nets in grasses or the hunt-and-search method in the woods. Students then sort their findings to identify the true insects. Of the insects collected, we will determine life stages of those insects, discuss life cycles, identify how young insects are *like* but not *exactly like* their parents, and determine how insects fit into the food chain. Students will also learn about galls.

NGSS: 1-LS3-1

CC: MP.2, MP.5, W.1.8

PLANTS AND ANIMALS (First Grade)

Young plants and animals are *like* but not *exactly like* their parents. Students show how traits and behaviors of plant and animal offspring are inherited from their parents to help them survive. Students will find and identify same-species plants in different growing stages to see how they are the same and different. What characteristics help these plants survive? In animal survival, what tricks do animals use to protect and care for their young? Learn about coloration, sound and homes. Finally, students will be asked to use a plant or animal “trick” to create protection for themselves.

NGSS: 1-LS1-1; 1-LS1-2; 1-LS3-1

CC: W.1.8, MP.2, 1. MD.A.1

SEASONAL CYCLES (first grade)

How does the rotation of the earth and its orbit around the sun cause seasonal change? Review the seasons. Students will conduct research by making observations that describe patterns of the sun and moon during an interpretive hike to look for clues about the changing seasons. Discussion will focus on observation of the sun and its movement across the sky, and that relationship between the amount of daylight and the time of year. Students will create or use a sun dial to track sun movement during their visit and demonstrate seasonal cycles. This lesson may include some games to demonstrate the challenge of plant and animal survival during different seasons.

NGSS: 1-ESS1-1; 1ESS1-2

CC: W.1.8, MP.2, MP.4, MP.5, 1.OA.A1

UNNATURE HIKE (first grade)

How sharp are your observation skills? When you are hiking, where do you look? Students learn the value of walking slowly, looking up, down and all around, and staying together as a group as they venture down a short trail in search of items that do not belong in nature. This activity is designed to precede an interpretive hike.

Illinois Learning Standards: 21A1abc, 21B1

ANIMAL HABITATS: HIKE and GAMES (second grade)

There are many different kinds of living things in an area, and they exist in different places on land and in water. Students will identify the 5 components of habitat: food, water, shelter, air and space. Students will identify ways in which living things depend on one another for survival. Discussion will include food webs. What kinds of animals and homes are found in this local habitat? How does that differ from animals in other habitats (ie: desert, ocean, polar regions)? Compare the diversity of life within different habitats. Students may match animals with their homes using picture cards. Games exemplify the struggle for survival in the wild and may include Predator-Prey, Bat and Moth, Hibernate Migrate Stay Active, Shrinking Habitat, or Oh Deer!

NGSS: 2-LS4-1

CC: MP.2, W.2.7

WATER ON EARTH (second grade)

Students will understand the difference between creeks, rivers, ponds and lakes, and they will demonstrate that understanding by creating a map of these different water bodies. Students will then learn about where water is found on Earth; discussion includes water all forms through the water cycle. Finally, students will explore water movement that changes the shape of land, and then create solutions that slow or prevent that change. This lesson includes a hike to find water in the woodlands.

NGSS: 2-ESS2-1, 2-ESS2-2, 2-ESS2-3

CC: MP.5, W.2.8, SL.2.2

PLANTS AND SEED DISPERSAL (second grade)

What do plants depend on to grow? Sunlight and water, of course! Hike through the grasslands and woodlands in search of evidence to support this fact. Students will make observations and collect data which they will use to make comparisons in a bar graph. Discussion points along the hike include pollination, seed development, and seed dispersal. How do animals assist plants in these processes? Students will work in small groups to create and share their interpretations through a short skit.

NGSS: 1-LS2-1, 2-LS2-2

CC: MP.2, 2.MD.D.10

WEATHER (second grade)

Students will use a variety of instruments to measure the weather. Through this process they will observe the day's weather, formulate questions, collect and record data, determine how the data is related, and compare findings in a large group. Students will determine weather patterns as related to seasons.

Illinois Learning Standards: 11A1abcdef, 12E2a

ENVIRONMENTAL CHANGES (Third grade)

When the environment changes, what happens to its organisms? Some life forms that once lived on Earth are no longer here. Fossil provide evidence of such life forms and their environments. Students will learn about people and animals of Illinois' past, and how life changed for both over time. Activity will include a fossil study. Students will play "Oh Deer" to understand environmental change in our modern world and how organisms react to that change. Finally, students will hike and study specific plants (dependent on the season) and how they survive in their habitat (well, less well, or not at all).

NGSS: 3-LS4-1, 3-LS4-3, 3-LS4-4

CC: 3.MD.B.3

TRAITS (third grade)

Many characteristics are inherited from our parents, but others are a result of our environment. How does the environment affect the traits that organisms develop? How do those variations provide advantages in surviving, mating and reproducing (natural selection)? Students define the term “trait” and identify life cycle stages to recognize that all living things go through the same process of birth, growth, reproduction and death. In the woods, students will select trees of the same species to identify traits and variations, and each group will make a brief presentation on their species. Discussion continues into animal traits.

NGSS: 3-LS3-1, 3-LS3-2, 3-LS4-2

CC: R.I.3.7, SL.3.4, MP.2, 3.MD.B.3

PLANT AND SEED STUDIES/WILDFLOWERS (third grade)

Students will identify seed parts through the story of Little Sprout. They will dissect bean seeds, and then play a germination game. Lesson will include discussion of the unique and diverse life cycles of plants to understand the common factors of birth, growth, reproduction and death. The main focus will be on seasonal wildflowers and their life cycles. Activities include matching picture cards, hiking, and plant ID. Small groups of students will be asked to research and then introduce a specific plant to the rest of the group.

NGSS: 3-LS1-1

CC: RI.3.7, SL.3.4

LANDFORMS: WEATHERING AND EROSION (fourth grade)

The lesson begins with examination of topographic maps to identify landforms. They may play a game using landform words. Students will hike to find examples of erosion and ongoing earth changes with a focus on rainfall and the movement of particles. Lessons taught in the winter may be able to use ice from the river to discuss glaciers and their effects on Illinois.

NGSS: 4-ESS2-1, 4-ESS2-2

CC: RI.4.7

ANIMAL SURVIVAL (fourth grade)

Plants and animals have internal and external structures that serve various functions in growth, survival, behavior and reproduction. The lesson will focus on unique animal structures and how they receive and process information. Students will handle animal pelts and parts. In the woods, students will identify a variety of animals living in that area, and they will gather evidence to explain specific animal behaviors. Student presentations will include facts taken from text, and measurements taken from lines of symmetry on plants.

NGSS: 4-LS1-1, 4-LS1-2

CC: SL.4.5, 4.G.A.3

SCIENTIFIC METHOD/GEOLOGY (fourth grade)

Students will understand the scientific method and apply it to real situations in the natural world. What happened to that tree? Why does the creek turn there? How did that boulder get here? For a more specific focus, students will become geologists as they learn to identify igneous, metamorphic and sedimentary rocks (and some minerals) through a variety of tests. Data will be collected and recorded

and a group conclusion will be drawn. Students will also have the opportunity to examine a variety of fossils and minerals, and sing the rock cycle song.

Illinois Learning Standards: 10B2a

WETLANDS AND WATERSHEDS (fifth grade)

How is water distributed on Earth? Students begin with a water distribution activity so they can create a graph. Next, students engage with the enviroscape watershed model to define watershed and differentiate between point source and non-point source pollution. During a hike, students examine facts about Illinois water, analyze settlement patterns, and evaluate the values and threats of wetlands.

Finally, students are challenged to assess their own impact on the local watershed and identify stewardship practices currently in place to protect Earth's resources in each of its four major systems (geosphere, biosphere, hydrosphere and atmosphere).

NGSS: 5-ESS2-1, 5-ESS2-2, 5-ESS3-1

CC: W.5.9, MP.2, MP.4

ECOSYSTEMS (fifth grade)

Students will offer ideas to define ECOSYSTEM, a definition to be revisited at the conclusion of the lesson. Students will develop a food chain model using examples from the prairie, and the focus will be on the origin of energy from the sun. Students will conclude that plants get the materials they need for growth from the air and sun, and less from the soil. In the woods, students will find examples of food web components including fungi and bacteria as decomposers to recycle nutrients back into the soil.

They will define by example the cycle of matter and energy in this ecosystem. Students will find examples to support an argument for a healthy ecosystem in which specific needs of a variety of organisms are met. What happens to the balance of an ecosystem when a new species is introduced?

NGSS: 5-PS3-1, 5-LS1-1, 5-LS2-1

BIODIVERSITY (sixth grade)

Students will begin by playing a game to illustrate the necessity of balance within an ecosystem. With that concept clear, students will move into a woodland ecosystem to conduct a plot study. They will review vocabulary, conduct the study, and analyze data. They will identify populations of organisms and how they are dependent on their environment with consideration of both biotic and abiotic factors. After analyzing competition of organisms for resources, students should be able to predict outcomes in terms of growth and reproduction. Students will provide examples of symbiosis, competition and predation. Students are encouraged to identify patterns of interactions between organisms, both living and nonliving.

NGSS: MS-LS2-1, MS-LS2-2

CC: WHST.6-8.9, SL.8.4, 6.SP.B.5

ENERGY IN ECOSYSTEMS (sixth grade)

Remember those formulas for photosynthesis and respiration? After a quick review, students will engage in hands-on experiments outside which illustrate the transfer of matter and energy between producers, consumers and decomposers. Students will identify real-life examples of these components

and create a model to demonstrate understanding of their work within the ecosystem. The lesson includes both classroom time, experiment time, and an outdoor hike.

NGSS: MS-LS1-6, MS-LS1-7, MS-LS2-3

CC: WHST.6-8.9, RST.6-8.1

HUMAN IMPACT (sixth grade)

Students will evaluate human use of renewable and nonrenewable resources to determine the impact on humans, the environment, and ecosystem biodiversity. After contrasting renewable and nonrenewable natural resources, students will be divided into different world regions with respective natural resources to collect using respective technology. Following the activity, students will construct an argument for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

NGSS: MS-ESS3-1; MS-ESS3-3, MS-ESS3-4

CC: MP.2; 7.RP.A.2; 7.EE.B.4

ILS: 21A2abc, 21B2

TREES: ALL DAY CROSS –CURRICULAR PROGRAM (sixth grade)

This very unique curriculum was written by a local 6th grade teacher to tie together Math, Language and Science. The program is designed to last for a full day and includes both small group and large group activities. The materials are available for review upon request.

ALDO LEOPOLD CONSERVATION (seventh and eighth grades)

Students will learn about Aldo Leopold and his conservation land ethic. A selection will be read from [A Sand County Almanac](#) before students engage in related activities. His essays follow the months, so this topic is relevant any time of the year. Instructors will tailor this package curriculum to meet the specific needs of your group.