| Indiana DunesEducation | National Park ServiceU.S. Department of the InteriorIndiana Dunes National LakeshoreEducation Department | National Park Service Logo |
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**Fall Fanfare**

**Summary:**

Autumn is a time of many changes in the dunes. Search for evidence of the changing season. Learn of fall activities and adaptations that plants and animals use to prepare for winter. Discover how and why they change. Students will explore the dunes and forest on this outdoor program.

**Objectives:** students will be able to

1. Explain that Indiana Dunes National Lakeshore helps protect the wildlife therein during all seasons.

2. Describe why leaves change colors and fall off the trees.

3. Describe some method of seed dispersal**.**

**What to Expect during your Trip:**

 This 1.5 – 2 hour mainly outdoor program is on a one mile moderate to strenuous trail.



**Setting:**

Dune Ridge Trail at Kemil Beach or Miller Woods at the Douglas Center.

**Age/ grade:**

1st through 6th grade

**Ratio of students to ranger:**

30 per ranger is ideal; we will try to accommodate large groups within reason due to staffing levels.

**Safety Issues:**

Exposure to weather such as cold, snow and rain. The Dune Ridge Trail and the Miller Woods Trails are both sandy with some dune climbing.

**Background:**

Because the earths’ rotational axis tilts 23.5 degrees from the perpendicular to its solar orbital plane, we have seasons. Cooler weather and shorter days bring beautiful changes to the Great lakes region in the fall. Living creatures are constantly dealing with environmental changes on a daily and seasonal basis

**Prerequisite Classroom Activities:**

Materials: Leaves, paper clips, small shapes of cardboard, paper for recording observations; composting materials, cloth or socks, paper bags, scissors

Activities:

Have students draw a picture of their favorite fall scene and then describe why they chose this scene.

Have students bring in and describe family photos they may have performing various “fall tasks”.

Sit near a tree with falling leaves. Have students describe the way leaves fall.

Fall days bring shorter days. To learn the effects of lack of sunlight on plant leaves, have the students choose a small shrub or tree with leaves that are easily reached. Cut out circles and squares of cardboard, and attach them to several leaves with paper clips. After a few days, remove the cardboard and have the class observe the lighter-colored spot on each leaf where the cardboard deprived the leaf of light. Engage the students in a discussion of the effects of sunlight deprivation.

To help students understand the differences between deciduous and evergreen trees, take the class on a walk through a wooded area where you would find both types of trees. Have the students observe as many things as possible that indicate that fall is approaching. Have them discuss their observations. The discussion should include such things as:

How many different colors did they observe?

Which trees had the brightest colors?

Did they find much leaf litter on the ground? What color were these leaves?

Describe what might be happening to the ground leaves. Why are these changes taking place?

How do the evergreen tree leaves (needles) differ from the deciduous leaves?

Did they find evergreen leaves (needles) on the ground?

Why do leaves change colors?

Adopt a tree through the seasons. Take visits to the tree and take notes on its physical characteristics.

How does the tree look now?

How are the leaves shaped? What color are the leaves? Is the tree all alive or parts dead? Are there any animals living in it? What does the pattern of the park look like? Does the tree have an odor? How long has the tree been growing there?

To help students identify varying methods of plant seed dispersal, ask them to collect plant seeds from their neighborhood or school grounds, which will be used as classification material. One way to collect is by dragging a cloth fabric or a dry flannel sock through a wooded area. Another is to attach strips of masking tape, sticky side up, to pants and walk through a wooded area. Can the students identify the means by which various plants disperse their seeds?

To help students develop an understanding of the decomposition process that occurs with forest floor litter, have the class build a compost pile. There are several books available such as Save Our Planet by D. MacEachern, published by Dell, and Usborne Science and Experiments: Ecology by R. Spurgeon, published by Usborne

Make a fall color leaf collection. Put in extra effort and turn it into a Fall-Fashion show. Have students make templates shaped like the leaves of different trees they saw during their visit to the lakeshore or on the sojourns at school. The templates can be made of heavy paper, etc. Outline the shapes onto large paper bags and color the leaves accordingly. Put the bags into vests by:

 - drawing a straight line up the middle of the front or back of the bag.

 - Carefully cut the bag along the line.

 - On the bottom of the bag, draw a circle large enough to go around the neck. Keep the circles small and do not let it touch the edges of the bottom. Cut out the circle.

 - Cut square holes in the side for arms (branches).

 - Have the student try on the vest. You can make it fit better by trimming the bottom to make it shorter or by cutting the neck or armholes larger

 - Fringe or scallop the bottom of the vest in grass or humus.

**Vocabulary**

Adaptation, Hibernation, Migration, Stored Fat, Stored Food, Photosynthesis, Seed dispersal, climate

**Indiana Content Standards:**

The Fall Fanfare program can assist teachers in meeting the following Indiana standards.

**First Grade**

Science

Life Science

**SCI.1.3.1 2010**

Classify living organisms according to variations in specific physical features (e.g., body coverings, appendages) and describe how those features may provide an advantage for survival in different environments.

**SCI.1.3.2 2010**

Observe organisms closely over a period of time in different habitats such as terrariums, aquariums, lawns and trees. Draw and write about observations.

**SCI.1.3.3 2010**

Observe and explain that plants and animals have basic needs for growth and survival: plants need to take in water and need light, and animals need to take in water and food and have a way to dispose of waste.

**Second Grade**

Science

Life Science

**SCI.2.3.1 2010**

Observe closely over a period of time and then record in pictures and words the changes in plants and animals throughout their life cycles-including details of their body plan, structure and timing of growth, reproduction and death.

**SCI.2.3.2 2010**

Compare and contrast details of body plans and structures within the life cycles of plants and animals.

**Fourth Grade**

Science

Life Science

**SCI.4.3.2 2010**

Observe, compare and record the physical characteristics of living plants or animals from widely different environments. Describe how each plant or animal is adapted to its environment.

**SCI.4.3.3 2010**

Design investigations to explore how organisms meet some of their needs by responding to stimuli from their environments

**SCI.4.3.4 2010**

Describe a way that a given plant or animal might adapt to a change arising from a human or non-human impact on its environment.

**Fifth Grade**

Science

Life Science

**SCI.5.3.1 2010**

Observe and classify common Indiana organisms as producers, consumers, decomposers, predator and prey based on their relationships and interactions with other organisms in their ecosystem.

**SCI.5.3.2 2010**

Investigate the action of different decomposers and compare their role in an ecosystem with that of producers and consumers.

**Sixth Grade**

Science

 Life Science

**SCI.6.3.1 2010**

Describe specific relationships (i.e., predator and prey, consumer and producer, and parasite and host) between organisms and determine whether these relationships are competitive or mutually beneficial.

**SCI.6.3.2 2010**

Describe how changes caused by organisms in the habitat where they live can be beneficial or detrimental to themselves or to native plants and animals.

**SCI.6.3.4 2010**

Recognize that plants use energy from the sun to make sugar (i.e., glucose) by the process of photosynthesis.

**SCI.6.3.5 2010**

Describe how all animals, including humans, meet their energy needs by consuming other organisms, breaking down their structures, and using the materials to grow and function.

**Common Core:**

# English/Language Arts Grades 1-5

# STRAND – Reading Standards for Literature

**First Grade**

**RL.1.1** Craft and Structure

**RL.1.10** Range of Reading and Level of Text Complexity

**Second Grade**

**RL.2.7** Integration of Knowledge and Ideas

**Third Grade**

**RL.3.1** Key Ideas and Details

**Fourth Grade**

**RL.4.4** Craft and Structure

**Fifth Grade**

**RL.5.1** Key Ideas and Details

**RL.5.7** Integration of Knowledge and Ideas STRAND – Reading Standards for Informational Text

**First Grade**

**RI.1.1** Key Ideas and Details **RI.1.4 and RI.1.6** Craft and Structure

**RI.1.7 and RI.1.8** Integration of Knowledge and Ideas

**Second Grade**

**RI.2.1** Key Ideas and Details

**RI.2.4** Craft and Structure

**Third Grade**

**RI.3.1 and RI.3.2** Key Ideas and Details **RI.3.4 and RI.3.5** Craft and Structure**RI.3.7 and RI.3.8** Integration of Knowledge and Ideas

**Fourth Grade**

**RI.4.1 and RI.4.2** Key Ideas and Details**RI.4.4 and RI.4.5** Craft and Structure

**Fifth Grade**

**RI.5.1 and RI.5.2** Key Ideas and Details**RI.5.5** Craft and StructureSTRAND – Reading Standards: Foundational Skills

**First Grade**

**RF.1.1a** Print Concepts**RF.1.2** Phonological Awareness**RF.1.4a.b.c.d.e.f.g.** Phonics and Word Recognition**RF.1.4.a.b.c.** Fluency

**Second Grade**

**RF.2.3.a.b.c.d.e.f.** Phonics and Word Recognition**RF. 2. 4.a.b.c.** Fluency

**Third Grade**

**RF.3.3.a.b.c.d.** Phonics and Word Recognition **RF.3.4.a.b.c.** Fluency

**Fourth Grade**

**RF.4.3.a.** Phonics and Word Recognition

**RF.4.4.a.c.** Fluency

**Fifth Grade**

**RF.5.3.a** Phonics and Word Recognition

**RF.5.4.a.c.** Fluency

# STRAND – Writing Standards

**First Grade**

**W.1.1** Text Types and Purposes

**W.1.8** Research to Build and Present Knowledge

**Second Grade**

**W.2.8** Research to Build and Present Knowledge

**Third Grade**

**W.3.1.a.b.** Text Types and Purposes

**W.3.4** Production and Distribution of Writing

**W.3.10** Range of Writing

**Fourth Grade**

**W.4.1.a.b. and** Text Types and Purposes

**W.4.3.b**

**W.4.4** Production and Distribution of Writing

**W.4.10** Range of Writing

**Fifth Grade**

**W.5.1.a.b.c. and** Text Types and Purposes

**W.5.3.b.d.**

**W.5.4.** Production and Distribution of Writing

**W.5.10** Range of Writing

STRAND – Speaking and Listening Standards

**First Grade**

**SL.1.1.a.b.c. and** Comprehension and Collaboration

**SL.1.3**

**SL.1.4, SL.1.5 and** Presentation of Knowledge and Ideas

**SL.1.6**

**Second Grade**

**SL.2.1.a.b.c., SL.2.3,** Comprehension and Collaboration

**SL.2.4 and SL.2.6**

**Third Grade**

**SL.3.1.b.c.d. and**  Comprehension and Collaboration

**SL.3.3**

**SL.3.4 and SL.3.6** Presentation of Knowledge and Ideas

**Fourth Grade**

**SL.4.1.b.c.d. and** Comprehension and Collaboration

**SL.4.3**

**SL.4.4 and SL.4.5** Presentation of Knowledge and Ideas

**Fifth Grade**

**SL.5.1.b.c.d. and** Comprehension and Collaboration

**SL.5.3**

**SL.5.4 and SL.5.6** Presentation of Knowledge and IdeasSTRAND – Language Standards

**First Grade**

**L.1.1b.c.d.e.f.g.h.i.j.** Conventions of Standard English

**and L.1.2.b.c.d.e.**

 **L.1.4.a.b., L.1.5.c.d** Vocabulary Acquisition and Use

**and L.1.6**

**Second Grade**

**L.2.1.a.b.c.d.e.f.,** Conventions of Standard English

**L.2.2.c.d. andL.2.3.a**

**L.2.4.a.b.c.d.,** Vocabulary Acquisition and Use

**L.2.5.a.b. and L.2.6**

**Third Grade**

**L.3.1.b.c.d.3.f.g. and** Conventions of Standard English

**L.3.2.e.f.**

**L.3.3.a.** Knowledge of Language

**L.3.4.a.b.c., L.3.5.b.** Vocabulary Acquisition and Use

**and L.3.6**

**Fourth Grade**

**L.4.1.a.b.c.d.e. and** Conventions of Standard English

**L.4.2.a.d.**

**L.4.3.a.b.c.** Knowledge of Language

**L.4.5.c. and L.4.6** Vocabulary Acquisition and Use

**Fifth Grade**

**L.5.a.b.c. and** Conventions of Standard English

**L.5.2.a.e.**

**L.5.3.a.** Knowledge of Language

**L.5.4.a and L.5.6.** Vocabulary Acquisition and Use

**First Grade**

Geometry

**1.G.1** Reason with shapes and their attributes

**Second Grade**

Geometry

**2.G.1 and 2.G.2** Reason with shapes and their attributes

**Third Grade**

Geometry

**3.G.2** Reason with shapes and their attributes

**Fourth Grade**

Geometry

**4.G.1** Draw and identify lines and angles, and classify shapes by properties of their lines and angles

**Fourth Grade**

Measurement and Data

Geometric measurements:

 **4.MD.5** Understand concepts of angle and measure angles

**Fifth Grade**

Geometry

**5.G.3** Classify two-dimensional figures into categories based on their properties

**Extension or Follow-up Activity:**

Class reflection paper or writing sample:

Ask each student to write a short essay, letter or story about what they learned on their field trip to Indiana Dunes National Lakeshore. Rangers love receiving mail from their students. Send the ranger the packet of essays from your class (or a copy of them), and your ranger will send your class a certificate from the dunes. Send your essays to:

## Indiana Dunes National Lakeshore

1100 N. Mineral Springs Road

Porter, IN 46304

Attn: Your ranger’s name or just Education Department

If you are using this essay as a class assignment for a grade, we would like to suggest that each essay contain the following elements. Use the rubric below to score them.

\* The name of the park and the location of their field trip—for example: Douglas Center, Indiana Dunes National Lakeshore

\* Three facts they learned on the field trip about the fall ecology.

\* A brief explanation of why Indiana Dunes is unique and therefore a national park.

\* At least two things the student can do to help take care of his or her national park.

\* Fill in the blank of this statement and provide an explanation: I would like to learn more about \_\_\_\_\_\_\_\_\_\_ at Indiana Dunes.

\*\*\* For advanced groups, add the following element:

Tell the park rangers if you would like to bring your families and friends to the dunes and if so what would you do here and where would you go.

**Assessment:**

**Grading for Class reflection writing assignment:**

1. **Writing and organization-** ***4 points*** the writing sample is very well written and organized by the elements provided. It has a strong introduction, middle and conclusion. ***3 points*** the writing sample is well written and organized by the elements provided. It includes an introduction, middle and conclusion. ***2 points*** the writing sample is choppy and is not well organized. It lacks an introduction or conclusion. ***1 point***the writing sample is very short and unorganized.
2. **Grammar & Spelling-** ***4 points*** Mistakes in spelling and grammar are minor or non-existent. ***3 points*** Mistakes in spelling and grammar are minimal—about 4-5. ***2 points*** mistakes in spelling and grammar are numerous—5-10. ***1 point*** mistakes in spelling and grammar are more than 10.
3. **Facts and content-** ***4 points*** the writing sample demonstrates the student’s learning on the dunes program and includes three or more facts provided by the park staff. ***3 points*** the writing sample demonstrates the student’s learning and includes only two facts provided by the park staff. ***2 points*** the writing sample does not demonstrate much learning and only includes one fact provided by the park staff.***1 point*** the writing sample does not demonstrate any learning and does not include any facts provided by the park staff.
4. **National Park Service theme** - ***4 points*** the writing sample clearly demonstrates the student’s understanding of the role of the NPS in preserving the dunes by explaining why Indiana Dunes is such a unique treasure.***3 points*** the writing sample mentions the NPS and its role in preserving the Indiana Dunes. ***2 points*** the writing sample mentions the NPS and Indiana Dunes. ***1 point*** the writing sample does not mention anything about the NPS or its role at Indiana Dunes.
5. **Stewardship**- ***4 points*** the writing sample lists three things the student can do to assist in taking care of the Indiana Dunes. ***3 points*** the writing sample lists two things the student can do to assist in taking care of the Indiana Dunes. ***2 points*** the writing sample lists one thing the student can do to assist in taking care of the Indiana Dunes. ***1 point*** the writing sample does not list anything about what the student can do to take care of the Indiana Dunes.