

FIELD TRIP GUIDE



Use this Field Trip Guide to plan a day trip and educate kids about the outdoors. Use www.traveliowa.com/99parks for a list of locations, plan a trip to a nearby park or just to the area around the school. These materials and lesson plans are provided free of charge to Iowa schools in partnership with the Iowa Tourism Office, Iowa's County Conservation System, Iowa Healthiest State Initiative and Next Step Adventure.

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FIELD TRIP PLANNING TEMPLATE

Field Trip Date: _____ **Park:** _____

Contact Person: _____

Planning Committee: _____

Transportation: _____

How will we get to the park? Who is funding transportation?

Lunch: _____

Sack lunches? Cooking in the park? For recipe ideas, check out the #99Parks Recipe Bundle!

Activity Rotations: _____

Contact your county conservation office to learn what programs and activities they offer. Another option is to use the activities included in this Field Trip Guide. For a list of county conservation offices, visit: www.mycountyparks.com

Rotation Leaders: _____

Who will lead rotation activities? Ask your county conservation office if they have staff available. If not, instructions are provided in this guide for school staff or volunteer leaders.

Chaperones: _____

Which adults are responsible for accompanying small groups of students to each rotation?

Alternate Weather/Emergency Plans: _____

Additional tasks to complete before leaving:

- Divide students into groups and assign adult leaders to each group.
- Gather materials - see Materials List.
- Communicate plans with school administration, specials teachers and other staff.
- Send home permission slips and/or email reminder to parents with trip information and any special instructions for the day (attire, sunscreen/hat, sack lunch, etc.).
- Confirm date/time with location/county park and confirm pick up/drop off time/location with transportation office.

SAMPLE SCHEDULE

9:00 - 9:30	Travel and unload buses
9:30 - 9:40	Welcome to the park, rules and expectations
9:40 - 9:45	Travel to first rotation
9:45 - 10:25	Rotation 1
10:25 - 10:30	Travel
10:30 - 11:10	Rotation 2
11:10 - 11:20	Travel, bathroom break, wash hands
11:20 - 12:00	Lunch, games and read aloud
12:00 - 12:05	Travel
12:05 - 12:45	Rotation 3
12:45 - 12:50	Travel
12:50 - 1:30	Rotation 4
1:30 - 2:00	Load buses, travel back to school and reflect on learning

MATERIALS NEEDED

- First aid kit
- Sunscreen
- Bug spray
- Hats
- Lunches / snacks
- Water bottles
- Paper towels
- Hand sanitizer
- Learning journals*
- Pencils
- Copies of the Cloud Viewer Handout - cardstock works best
- Scissors
- Paper
- Glue
- Cotton balls
- Bug boxes
- Magnifying glasses
- Rock collection bags
- Sidewalk chalk
- Crayons
- Examples of Andy Goldsworthy's nature art
- Map examples (Iowa road map, local bike trail map, city map, etc.)
- Tape
- Pennies
- Copies of Iowa's Glacier Detective Handout
- Clipboards - optional
- Copies of Sensory Scavenger Hunt Handout
- Phone or geocaching units
- Bucket of water
- Plastic cups
- Read aloud books - see recommended list

***Variation:** If journals aren't available, create a Foldable. See ideas at www.teachhub.com/teacher-foldable-fun

ROTATION 1: EXPLORATION

MAKE A CLOUD VIEWER

1. Provide a copy of the Cloud Viewer Handout for each student (See Attachment 1 on page 15). Students will cut out the cloud viewer along the dotted lines.
Note: Printing the cloud viewer on cardstock or gluing it to cardboard makes it sturdier.
2. Hold up the cloud viewer at arm's length, look through the center and use the cloud photos to identify the cloud type. Remember not to look directly at the sun.
3. Use your observations to document cloud cover using cotton balls. Shape the cotton to represent today's clouds, glue cotton to paper and use crayons to create sky. For example, cirrus clouds would be wisps of thin cotton while stratus would be a thick layer.
4. Elementary students: Find some shade and read *Cloud Country* by Bonny Becker and Noah Klocek, *The Cloud Book* by Tomie de Paola, *Explore My World Clouds* by Marfe Delano or *Clouds* by Anne Rockwell and Frane Lessac.
5. Learn more about clouds at www.weatherwizkids.com/?page_id=64

Cloud viewer adapted from Neal Smith National Wildlife Refuge's Project Bluestem

BUG HUNT

Turn bug sightings into a source of wonder, rather than a fear.

1. Distribute bug boxes or jars. Spread out around the area to look for bugs. Check on flowers and flip over stones or logs. Encourage students not to touch bugs (avoid bites and stings), but see if the bugs will freely walk into the bug boxes.
2. Examine the bugs with magnifying glasses. How many legs? What color are they? How do they move?
3. Only keep bugs in the boxes for a few minutes, then safely release them back to their habitat.
4. Learn more about bugs and insects in Iowa State University's Bug Guide at www.bugguide.net



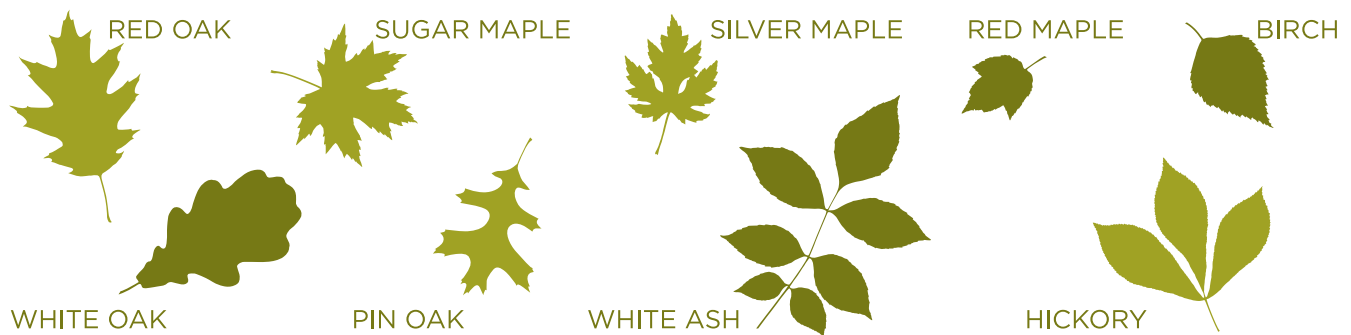
COLLECT, COUNT & SORT

1. Distribute collection bags. (If you don't have bags, use a "shirt basket" or your pockets.) Set a phone timer for five minutes or more depending on the size of the area and age of kids. Collect rocks.
2. Sit in the shade to count and sort rocks.
3. On a paved surface, use sidewalk chalk to draw square "display boxes" for the collections. Decorate and creatively label the museum rock displays.
4. Learn more about rock identification at www.geology.com/rocks

ROTATION 1: REFLECTION QUESTIONS/JOURNAL PROMPTS:

- What can the clouds tell us about the weather, climate or region where we live?
- Why do bugs live in particular habitats? What characteristics do bugs of a particular habitat share?
- What can we learn about the landscape from the rocks collected?

ROTATION 2: PLANTS AND ART



LEAF MATCHING

1. Gather 10 leaves from a variety of trees. Find leaves on the ground so no harm is done to the trees.
2. Hand pairs of children a leaf. Object of the game: Locate the tree that matches the leaf.
3. **Elementary students:** Sit in the shade and read *Red Leaf, Yellow Leaf* by Lois Ehlert, *We're Going on a Leaf Hunt* by Steve Metzger, *Leaves Fall Down* by Lisa Bullard or *Fletcher and the Falling Leaves* by Julia Rawlinson.
4. Learn more about tree identification at www.extension.iastate.edu/forestry/iowa_trees/tree_id.html

LEAF RUBBINGS

1. Gather dry leaves and place them on a flat surface.
2. Place a sheet of thin paper on top of the leaf.
3. Hold in place and color over the leaf until you can see its shape.
4. **Variations:** Make collages on a single sheet of paper using a variety of leaves and colors. Create animals or people by arranging leaves in the desired shape.



NATURE SCULPTURES

1. Learn about artist Andy Goldsworthy by checking out one of his photo art books from the library or visiting www.redtedart.com/kids-get-arty-andy-goldsworthy.
2. Gather nature objects such as leaves, grasses, stones, etc. to make a geometric sculpture. How do the variations in color and size impact the design?
3. If it is windy, spread paste on a flat surface and set objects in place. Paste can be made by mixing 1 part flour, 2 parts water and a pinch of salt. Stir until lumps are gone. Store in a cooler or refrigerator; it will keep a few days.
4. **Variations:** Use nature objects to create an animal or landscape.

LEAF TIC-TAC-TOE

1. Gather several sticks and five leaves from two different trees. Find sticks and leaves on the ground so no harm is done to the trees.
2. Create a tic-tac-toe board from the sticks. Use the leaves as X's and O's.

ROTATION 2: REFLECTION QUESTIONS/JOURNAL PROMPTS

- What parts of plants did you use in your art? Why do plants have leaves, stems and other structures? How are the plant structures of various species similar and different?
- How did you choose your plant materials for your artwork? What would you change if you made another?

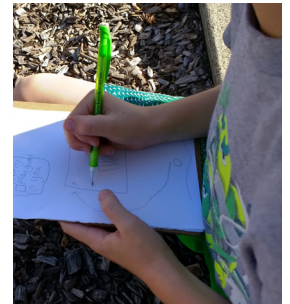
ROTATION 3: MAPPING

MAPPING WITH TREASURES

1. Examine examples of maps, discuss characteristics of good maps and set boundaries for students to explore and map.
2. Small groups of students will create 3-D maps of the park with “treasures” marking various locations.
3. For example, pick up a leaf from the ground and glue it to the map location of a large oak tree. Brush the sticky side of a two-inch piece of tape in the sand and attach it to the map to show the location of a swimming beach.

HIDE A PENNY

1. Object: Find the penny hidden and mapped by a student.
2. Each “hider” receives a penny. On a piece of paper, write down the year of your penny. Hide the penny, for example, on a picnic table, under the slide, next to the maple tree, etc.
3. Draw a map showing the penny’s hiding spot - X marks the spot.
4. Exchange maps and become a “finder.” Use the map to find the hidden penny. Confirm they found the correct penny by matching the year.



IOWA'S GLACIER DETECTIVES

1. Distribute the Iowa's Glacier Detectives Handout (See Attachment 2 on page 16). Students observe the landscape and determine if they are standing in an area of Iowa that was once covered by glaciers.
2. Discuss their observations and the map on the handout.
3. Additional glacier history can be found at www.ihr.uiowa.edu/igs/landscape-features-of-iowa

ROTATION 3: REFLECTION QUESTIONS/JOURNAL PROMPTS

- What went well when you created maps? What mapmaking skills could you improve?
- How have glaciers and geographic features impacted humans?
- What elements of this park do you think your family or friends would enjoy?

ROTATION 4: HIKE

Ask the county conservation office to recommend a good hiking trail for your age group.

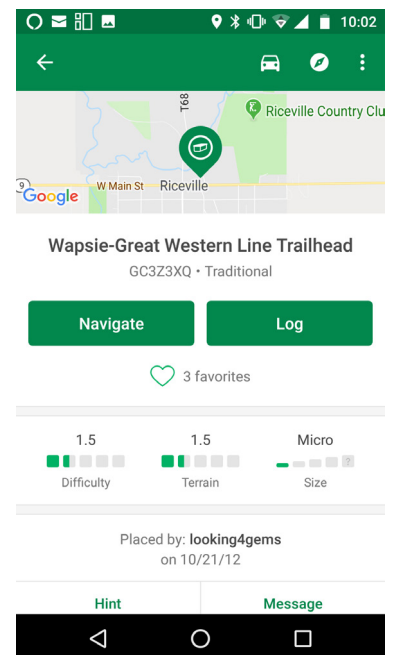
HIKING GAMES AND ACTIVITIES

- **Sensory Scavenger Hunt** - Print a copy for each student (See Attachment 3, page 17).
- **I Spy** - One person chooses an object and gives clues until others guess the object.
- **I'm going on a trip and bringing...** - The first player answers, "Apple," the next player says, "I'm going on a trip and bringing an apple and binoculars." The next player must add something beginning with "C" and so on through the alphabet. The answers will probably get sillier as you proceed.
- **"How many" questions** - How many birds can we see? How many squirrels? How many streams have we crossed? How many steps to the log ahead?
- **Step Counter** - Use an app or a pedometer to track the steps of your hike.
- **Download a hike-tracking app!** Older kids may enjoy mapping the hike and documenting with in-app photos. Plus, you can remember favorite trails for your next visit.

GEOCACHING

Part scavenger hunt, part hike, geocaching catches the interest of adventurous older kids and adults. Use a GPS unit, such as your phone, to find hidden treasures. Learn more at www.geocaching.com/play.

1. Search for and download the FREE Geocaching app to your phone. Create an account and log in.
2. Look at a map of your area. Click on green geocaches. To see more details, click on the name of the cache. Pro tip: look for caches that are low difficulty and terrain. A "regular" sized cache is probably a small plastic container; they are easier to find than a "micro" which is likely a film canister or smaller. Micro caches probably only contain a log to sign and date. Regular caches usually contain a log, as well as tradeable "swag." Leave an item, trade an item!
3. Follow the coordinates to a general area and start searching! Look for items out of place. Check in tree stumps. Search high and low.
4. Consider the season. Bug spray and long pants are important during the buggy, poison-ivy-prone months. Tall grasses make caches more challenging. If the cache proves too difficult, consider trying again in the fall or winter.



ROTATION 4: REFLECTION QUESTIONS/JOURNAL PROMPTS:

- Describe your favorite part of hiking.
- What do you imagine this hike looked like 50 / 500 / 50,000 years ago?
- Why is it important to spend time outside? What can we learn being outdoors?

BONUS ACTIVITIES

Perfect for down time!

NINJA WARRIOR COURSE

Kids will design a Ninja Warrior-style course. Use a phone timer to see how long it takes to complete the challenges. Ideas to initiate creativity: On a playground, get to the top and back down using only ____ (blue, wooden, plastic, etc.) play equipment. On a trail, use logs as balance beams, leap across puddles and hop down trails. In a grassy area, bear crawl from one edge of the shade to the other, then frog hop back. Keep this activity safe by supervising closely.

MISSION IMPOSSIBLE

Cross the grassy area without touching the grass.

Standing only on nature items, other than grass, participants determine how to get to the other side of a designated area. Show kids their “collection area” where they can gather sticks, logs and leaves to stand on as they cross. Great for creativity and teamwork skills! Before leaving, remember to return the sticks, logs and leaves to where you found them.

BUILD SHELTERS

Create shelters by leaning large sticks against a fallen tree or large rock. Weave grasses between sticks. Provide rope and an old sheet or tablecloth to add complexity. A grassy field alternative: Challenge kids to build a nest using freshly cut grass.

WATER RELAYS

Time to cool off! Complete the challenge in as little time as possible.

Players stand in a line with a full bucket of water at the beginning and empty bucket at the end of the line. Give each player a plastic cup. Start the timer. The first player scoops up some water and pours it in the cup of the next person in line. Continue pouring water until the last person pours it in the bucket.

Variations: Try a relay of passing the cup “over / under” each player. Or, move the buckets a distance apart and have players transport the water one cup at a time.

DRIP, DRIP, SPLASH

In this variation of Duck, Duck, Goose, one player stands holding the water cup while other players sit in a circle. The standing player walks around the circle dripping water on players’ heads. They will dump the water cup (splash!) on one player’s head and start running around the circle, like saying Goose.



PICK UP LITTER

Leave the park looking better than you found it!

Learn about the impact of trash on plants and animals. Read *Tracking Trash* by Loree Griffin Burns or view www.washedashore.org

RECOMMENDED READ ALOUD LIST

PICTURE BOOKS

Books about Gardens and Plants

- *The Curious Garden* by Peter Brown
- *Jack's Garden* by Henry Cole
- *Red Leaf, Yellow Leaf* by Lois Ehlert
- *A Seed is Sleepy* by Sylvia Long and Dianna Aston
- *Sunflower House* by Eve Bunting and Kathryn Hewitt

Gain an Animal Perspective

- *In the Tall, Tall Grass* by Denise Fleming
- *Jump, Frog, Jump* by Robert Kalan and Byron Barton
- *Over and Under the Pond* by Kate Messner

Bugs, Butterflies and Creatures

- *Diary of a Worm* by Doreen Cronin and Harry Bliss
- *Under One Rock: Slugs, Bugs and other Ughs* by Anthony Fredericks
- *The Very Hungry Caterpillar* by Eric Carle
- *Waiting for Wings* by Lois Ehlert

Family Fun

- *Cloud Country* by Bonnie Becker and Noah Klocek
- *Drawn Together* by Minh Lê and Dan Santat
- *We're Going on a Bear Hunt* by Helen Oxenbury and Michael Rosen

Making the World a Better Place

- *One Plastic Bag* by Miranda Paul and Elizabeth Zunon
- *Rachel Carson and Her Book that Changed the World* by Laurie Lawlor and Laura Beingsner
- *The Tree Lady* by H. Joseph Hopkins and Jill McElmurry
- *The Water Hole* by Graeme Base

CHAPTER BOOKS

Better Together

- *Every Soul a Star* by Wendy Mass
- *Hello Universe* by Erin Entrada Kelly and Isabel Roxas
- *Maniac McGee* by Jerry Spanelli
- *Seedfolks* by Paul Fleischman and Judy Pedersen
- *Wishtree* by Katherine Applegate

Kids Save the Day

- *Hoot* by Carl Hiaasen
- *Jackie's Wild Seattle* by Will Hobbs
- *Operation Redwood* by S. Terrell French

Classics

- *Charlotte's Web* by E.B. White
- *Island of the Blue Dolphins* by Scott O'Dell
- *Mrs. Frisby and the Rats of NIMH* by Robert C. O'Brien and Zena Bernstein
- *Tuck Everlasting* by Natalie Babbitt

True Stories

- *The Hive Detectives: Chronicle of a Honey Bee Catastrophe* by Loree Griffin Burns
- *Once a Wolf: How Wildlife Biologists Fought to Bring Back the Gray Wolf* by Stephen Swinburne
- *Tracking Trash: Flotsam, Jetsam, and the Science of Ocean Motion* by Loree Griffin Burns
- *Wild Horse Scientists* by Kay Fydenborg

Animal Lovers

- *Because of Winn Dixie* by Kate DiCamillo
- *Where the Red Fern Grows* by Wilson Rawls
- *The Wild Robot* by Peter Brown
- *Wish* by Barbara O'Connor

Survival Adventure

- *Hatchet* by Gary Paulsen
- *My Side of the Mountain* by Jean Craighead George
- *Sign of the Beaver* by Elizabeth George Speare

Middle School

- *Going Blue: A Teen Guide to Saving Our Oceans, Lakes, Rivers & Wetlands* by Cathryn Berger Kaye
- *Touching Spirit Bear* by Ben Mikaelson
- *World Without Fish* by Mark Kurlansky

CONNECTIONS TO THE IOWA CORE

K-5 SCIENCE STANDARDS

- K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.
- K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.
- K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
- K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
- 1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.
- 1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
- 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.
- 2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
- 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.
- 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well and some cannot survive at all.
- 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
- 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior and reproduction.
- 4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
- 4-ESS2-1. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind or vegetation.
- 4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features.
- 5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere and/or atmosphere interact.
- 5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

MIDDLE SCHOOL SCIENCE STANDARDS

- MS-LS1-4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.
- MS-LS1-5 Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.
- MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
- MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
- MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
- MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
- MS-ESS1-4. Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.
- MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.
- MS-ESS2-3. Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.
- MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.
- MS-ESS2-6. Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.
- MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy and groundwater resources are the result of past and current geoscience processes.

K-6 SOCIAL STUDIES STANDARDS

- SS.K.13. Create a route to a specific location using maps, globes and other simple geographic models.
- SS.1.16. Using maps, globes and other simple geographic models, compare and contrast routes for people or goods that consider environmental characteristics.
- SS.2.16. Using maps, globes and other simple geographic models, evaluate routes for people or goods that consider environmental characteristics.
- SS.3.19. Create a geographic representation to explain how the unique characteristics of a place affect migration.
- SS.4.17. Create a geographic representation to illustrate how the natural resources in an area affect the decisions people make.
- SS.5.19. Create geographic representations to illustrate how cultural and environmental characteristics of a region impacted a historical event.
- SS.6.16. Utilize and construct geographic representations to explain and analyze regional, environmental and cultural characteristics.

99 PARKS

#THISIOWA

Explore more of Iowa's county parks! Get ideas at www.traveliowa.com/99parks

Activities provided in partnership with Travel Iowa, Iowa's County Conservation System, Iowa Healthiest State Initiative and Next Step Adventure.



ATTACHMENT 1

CUT ALONG THE BLUE DASHED LINES AROUND THE OUTSIDE EDGE AND REMOVE CENTER CIRCLE VIEWING AREA.

The cloud viewer is a circular template with a central viewing area and ten surrounding cloud images. The background is blue with a white dotted pattern. The central viewing area is a dark blue circle with a dashed line around it and a scissors icon. The surrounding cloud images are arranged in a ring, each with a white border and a label. The labels are: CUMULUS, ALTOCUMULUS, CIRROCUMULUS, CIRROSTRATUS, CIRRUS, CUMULONIMBUS, STRATUS, STRATOCUMULUS, NIMBOSTRATUS, and ALTOSTRATUS. The clouds are categorized into three altitude groups: Low-Level Clouds (Below 6,000 ft.), Mid-Level Clouds (6,000 ft. - 20,000 ft.), and High-Level Clouds (Above 20,000 ft.).

Low-Level Clouds
Below 6,000 ft.

Mid-Level Clouds
6,000 ft. - 20,000 ft.

High-Level Clouds
Above 20,000 ft.

CUMULUS

ALTOCUMULUS

CIRROCUMULUS

CIRROSTRATUS

CIRRUS

CUMULONIMBUS

STRATUS

STRATOCUMULUS

NIMBOSTRATUS

ALTOSTRATUS

VIEWING AREA

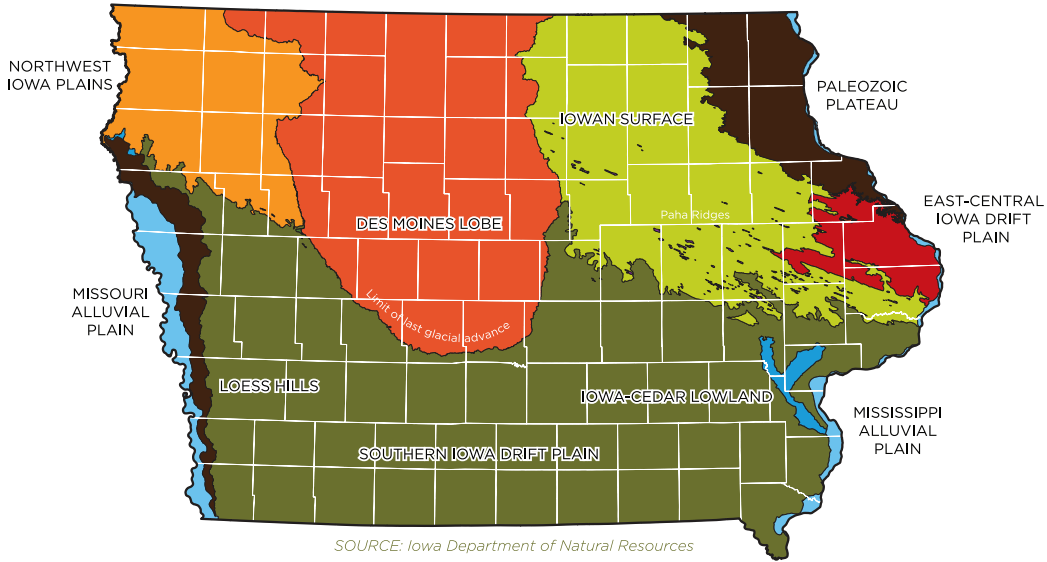
CLOUD VIEWER

ATTACHMENT 2

IOWA'S GLACIER DETECTIVES HANDOUT

A magnifying glass is not necessary for this kind of detective work!

LANDFORM REGIONS OF IOWA



Clues on the land tell us about the past. Large sheets of solid ice called glaciers covered most of Iowa thousands of years ago and shaped the landforms we see today. Parts of Iowa never covered by glaciers are called driftless areas. Are you standing in a glaciated or driftless area? Check off the characteristics you see.

Clues left by glaciers

- Level land - since the glaciers left more than 10,000 years ago, erosion may have created gentle hills and valleys, especially near rivers and streams
- Glacial boulders - giant rocks (up to the size of trucks!) were carried by glaciers as they moved south and dropped in Iowa as the glaciers melted
- Little exposed bedrock
- Excellent top soil created by glacial deposits, often farmland today

Driftless area clues

(an area never covered by glaciers)

- Deep, narrow valleys
- Rock outcroppings and ledges, not just near running water
- Heavily wooded

Note: Clues will be more obvious in northern Iowa than southern Iowa due to the greater number of glaciers in northern Iowa.

Are you standing in a driftless or glaciated area? How can you tell? Describe the clues you observed.

Clues for two other unique landforms

Loess Hills Clues

- Steep ridges
- Prairie and woods covered slopes
- Loess deposits - fine-grained particles left by glaciers transported by the wind to create distinct bluffs

Clues for an Alluvial Plain

- Level terrain along valleys
- Sand dunes
- I'm standing near a large river

ATTACHMENT 3

SENSORY SCAVENGER HUNT



LISTEN FOR
Birds Chirping

SMELL
Fresh Cut Grass



FEEL
Pinecone



Moving Water



Rock



Wind in the Trees

Campfire



Water

Soil



Leaves on a Tree

LOOK FOR
Animal Tracks




Cloud

Butterfly



Bird Nest



Squirrel

Flower



Rotting Log



Insect