Creative Science Investigation

Fall 2016

Lakeview Elementary

Instructor: Ashley Alred

WEEK 1

Topic: Intro to Science

To get a better understanding of what students understood about science, I created a worksheet that they completed during club, then everyone shared answers out loud. They then drew themselves as scientists. As is supported with other research, it was common for students to associate science mostly with chemicals and fire, so I think focusing on animal behavior was great for getting them to think outside of the chemist “box.” They produced some creative art!

Draw Yourself as a Scientist

Dyian
fier

Braelyn Napier Chemicals

Scienc

Jasmin

fashion-ologist

fake

Mckenzie

Nadya+

What is **SCIENCE**?

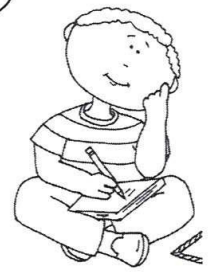
you study stuff
And learn really
smart stuff

What does a scientist **DO**?

it mackes you
think

What is your **FAVORITE** kind of science?

Macking and
exsploring



WHO can be a scientist?

Anyone can
be as
long as ther
willing to learn

If you could study **ANYTHING IN THE WORLD**, what would you study?

Animals
Plants and reptils

Jasmir

What is **SCIENCE**?

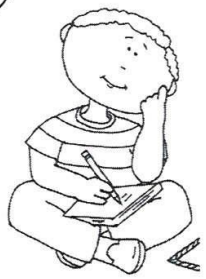
a science is a explorar

What does a scientist **DO**?

Reaerch and explores

What is your **FAVORITE** kind of science?

exproring



WHO can be a scientist?

anyone can be a scientist

If you could study **ANYTHING IN THE WORLD**, what would you study?

I would study under the ground

WEEK 2

Topic: Animal behavior as a science and Animal characteristics

-Focused on learning about “carnivore, herbivore, omnivore” since students were unfamiliar with that terminology at Park the day prior

Activities

- “Zebratonicus”: fun warm up tag game; introduced the concept of different words scientists use to classify and describe things they find
-Game where one student called out an animal and the other students tried to be first to say “herbivore, carnivore, or omnivore” to review those terms
-Sensory Reflection: Practiced observation skills like a naturalist in the field behind Lakeview
-Scavenger hunt to find carnivores, herbivores, and omnivores

Name: Ainsley

* Observations: Write and Draw! ☺

• What do you see?

I see trees plats a play groun

• What do you hear?

Bird cheping Braing voice

• What do you smell?

nice refeshing air

• What do you feel?

I feel COLM

Name: Mckenzie

* Observations: Write and Draw! ☺

• What do you see?

Lakeview, Trees, grass, DIRT, Plane taking off fastly, cars, Air, Houses, boys, girls, Birds, yawning, crichets, Bricks, Butterflies, Doctor Suce, football players, Madya

• What do you hear?

plane taking off fastly, Talking, cars, wind blowing, crichets,

• What do you smell?

Air, grass, trees,

• What do you feel?

~~Air, trees,~~

calm/scared/silly

Name: _____

Suzy

*Observations: Write and Draw! ☺

- What do you see? a Spider
- What do you hear? tree
- What do you smell? nathing
- What do you feel? Sweting

Name: _____

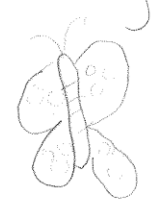
*Observations: Write and Draw! ☺

- What do you see?
  - football players
  - trees
- What do you hear?
  talking
- What do you smell?
  Pollution from cars
- What do you feel?
  - Sad !!

Name: _____

	What does it eat?	Example	What did you find?
Carnivore	meat	spider	spider
Herbivore	vegitation	turtles	moth
Omnivore	meat and vegitation	caterpiler Jacob	turtle

Name: Name Nadia

	What does it eat?	Example	What did you find?
Carnivore	fish meat	Seguil 	Seguil
Herbivore	Plants	butterfly  Monarch	butterfly
Omnivore	both both	Miss Ashly 	miss Ashly

WEEK 3

Park

Topic: The 5 senses, animal call matching, communication

Lakeview

Topic: Sensory systems; structure is related to function
(e.g., star-nosed mole has specialized nose→aids in sensing things underwater)

Activities

-Penguin game: Learned about auditory communication between parent and baby penguins

-Bird call game: Learned different local bird calls, then played a game

-"Feely bag": Students learned about raccoons and star-nosed moles and their tactile sense. Passed a bag around with different objects (pine cone, rock that felt like a tooth, turtle shell, etc.) and tried to guess what they felt.

Penguin Game:
Parent & Baby Communication

Sensory Follow-up Activity

Super Senses!

1. What would you want your **SUPER SENSE** to be? *Circle one!*

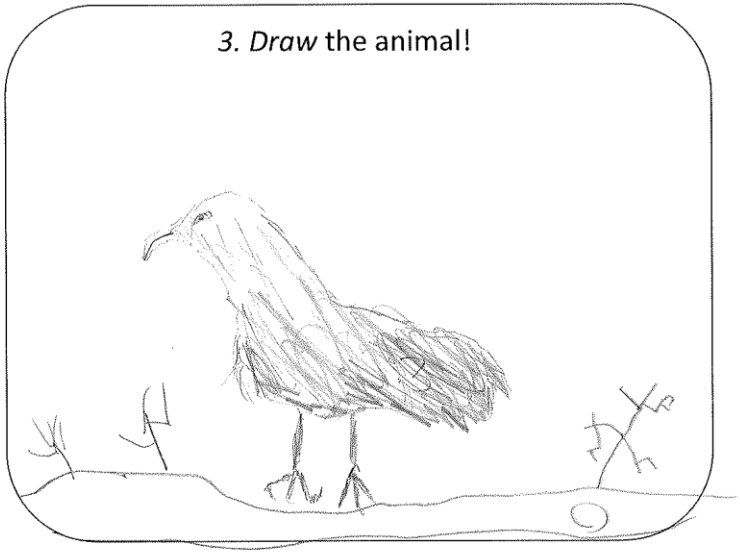
Sight *Smell* *Hearing*

Taste *Touch*

2. What is one **ANIMAL** that has this sense? *Write!* ↓

hawk

3. *Draw* the animal!



4. What does this sense help the animal **DO**?

get food

5. What **STRUCTURE** does the animal use for this sense?

?

Think like a scientist! What is one **QUESTION** you have about this sense?

how is it so good

WEEK 4

Park

Topic: Contest behavior (displaying); antagonism

Activities: *learned about jumping spiders; live crayfish*

Lakeview

Topic: Review display behavior; other forms of animal communication (predator-prey dynamics)

Activities

Project WILD game (modified): “Quick Frozen Critters”

Project WILD: Quick Frozen Critters

Outdoor tag game

Deer versus Coyotes

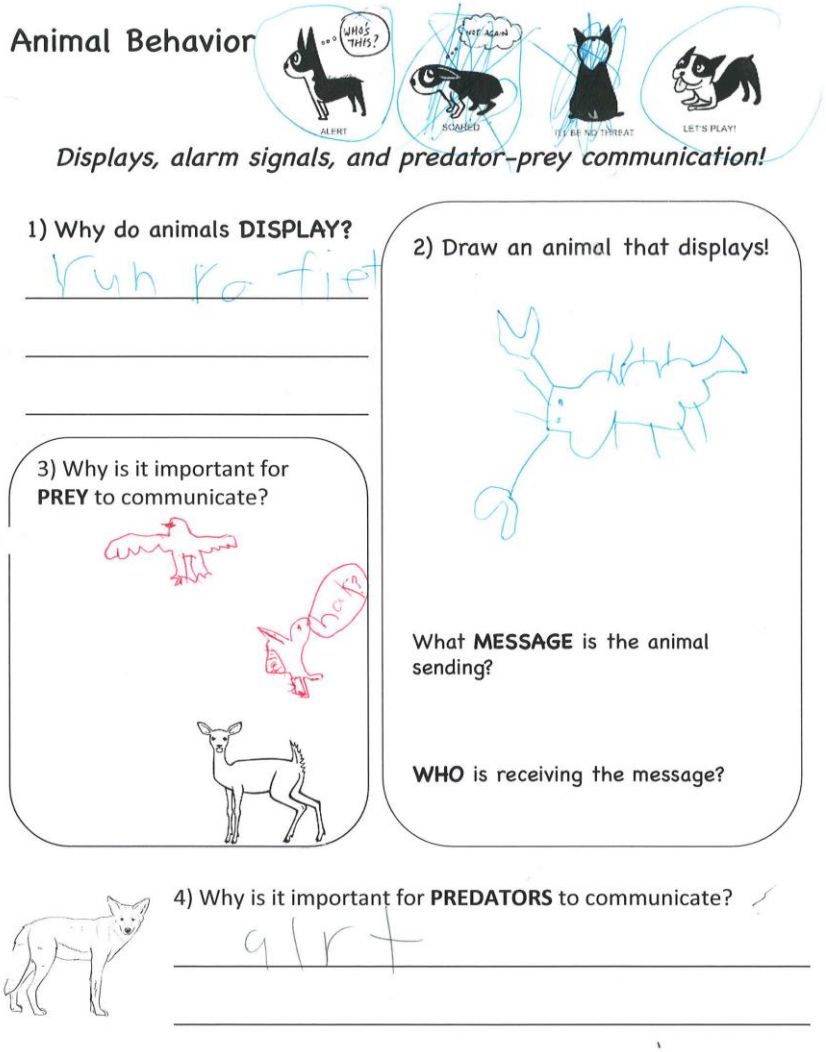
Deer use their white tails to signal to other deer and to their predators. They also use camouflage to “freeze” so predators can’t see them.

Student “deer” could freeze and not get tagged by the student “coyotes.” They also had to collect at least two food items in order to survive each round.

Kids loved it! Great activity!

I lost the pictures from this day ☹

Communication Follow-up Activity



Animal Behavior

WHO'S THIS? ALERT — NOT AGAIN SCARED — IT'LL BE NO THREAT — LET'S PLAY!

Displays, alarm signals, and predator-prey communication!

1) Why do animals **DISPLAY?**

run ro fiet

2) Draw an animal that displays!

3) Why is it important for **PREY** to communicate?

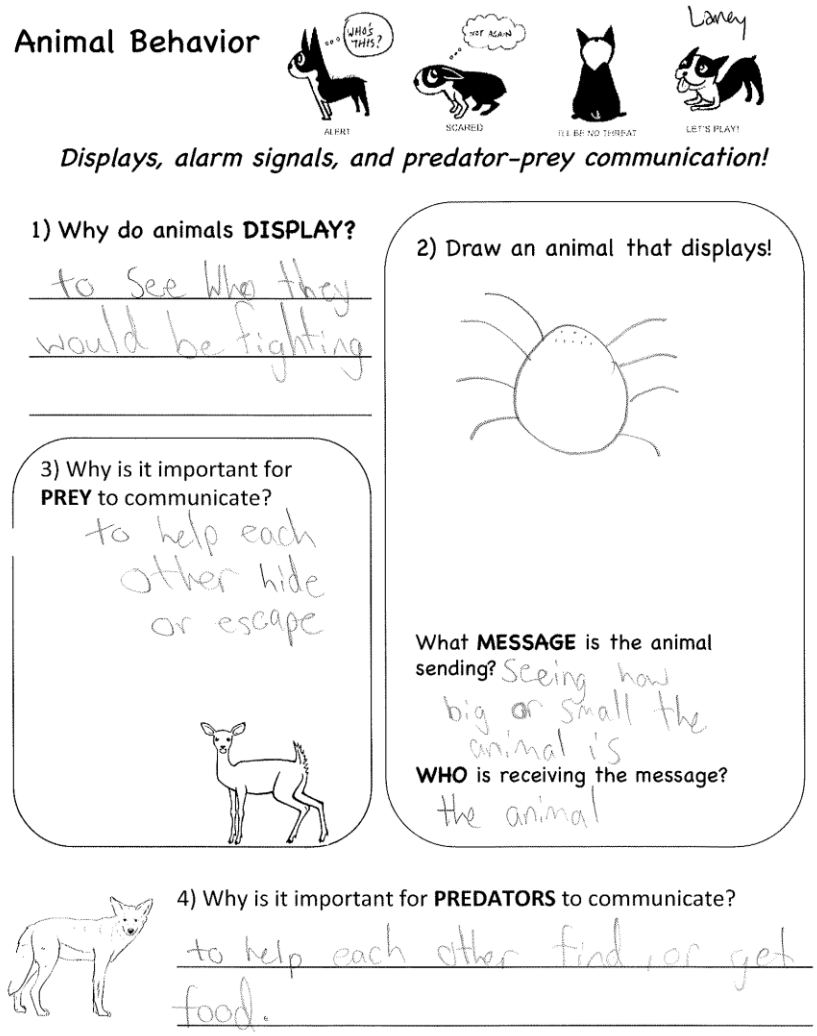
help

What **MESSAGE** is the animal sending?

WHO is receiving the message?

4) Why is it important for **PREDATORS** to communicate?

alrt



Animal Behavior

Laney

WHO'S THIS? ALERT — NOT AGAIN SCARED — IT'LL BE NO THREAT — LET'S PLAY!

Displays, alarm signals, and predator-prey communication!

1) Why do animals **DISPLAY?**

to See Who they would be fighting

2) Draw an animal that displays!

3) Why is it important for **PREY** to communicate?

to help each other hide or escape

What **MESSAGE** is the animal sending? Seeing how big or small the animal is

WHO is receiving the message? the animal

4) Why is it important for **PREDATORS** to communicate?

to help each other find, or get food.

WEEK 5

Park

Topic: Migration. Multiple wildlife species, wildebeest migration in Africa, etc.

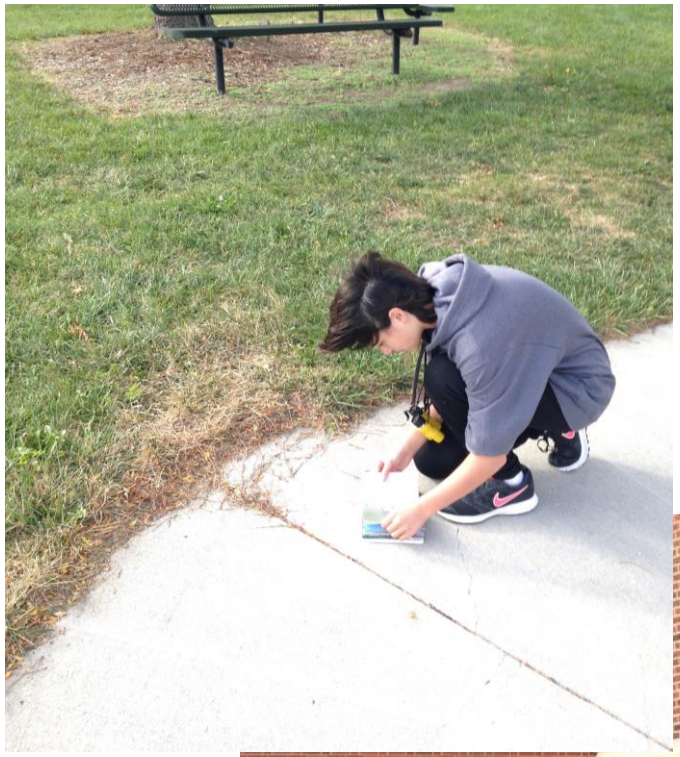
Lakeview

Topic: Local bird migration. Learned how to use binoculars and field guides to identify local bird species
Activities
-Review lesson from day before
-Bird identification: characteristics that make bird species unique
-Field guide and binoculars instruction
-Practice finding and identifying birds! Used laminated cutouts, set them out in a designated area outside of school, and students completed field sheets. This activity was a hit!

Lakeview: Birding & Migration

Borrowed bird trunk from NE Game & Parks

Bird cutouts from Morrill Hall



Lakeview:
Birding & Migration

Lakeview: Birding & Migration

Bird Scavenger Hunt!

Bird Species	What color is it?	What does it eat?	Does it migrate?
Canada goose	Brown	Plants seeds insects	NO
Woodpecker	white black red	nuts	NO
Dove	brown	Seeds	Partial
robin	red black	insets	yes
chickadee	white black	seeds	NO

Why do birds **migrate**?

to find food, a climate or to give birth

What was your **favorite bird** you observed today?

What **characteristics** helped you identify it?

What is one **question** you have about the bird's **behavior**?

Bird Scavenger Hunt!

Bird Species	What color is it?	What does it eat?	Does it migrate?
hawks	brown	worms	No
Canada goose	black	plants	No
American cardinal	Red	seeds and bugs	No
Owl	[illegible]	[illegible]	yes
American robin	black brown	insect	yes
[illegible]	yellow	seeds	NO
[illegible] dove	Brown	seeds	NO
Red bellied woodpecker	Orange	nuts	NO

Why do birds **migrate**? So they can [illegible] or a [illegible]

What was your **favorite bird** you observed today?

What **characteristics** helped you identify it?

it was small

What is one **question** you have about the bird's **behavior**?

why was it by its self

WEEK 6

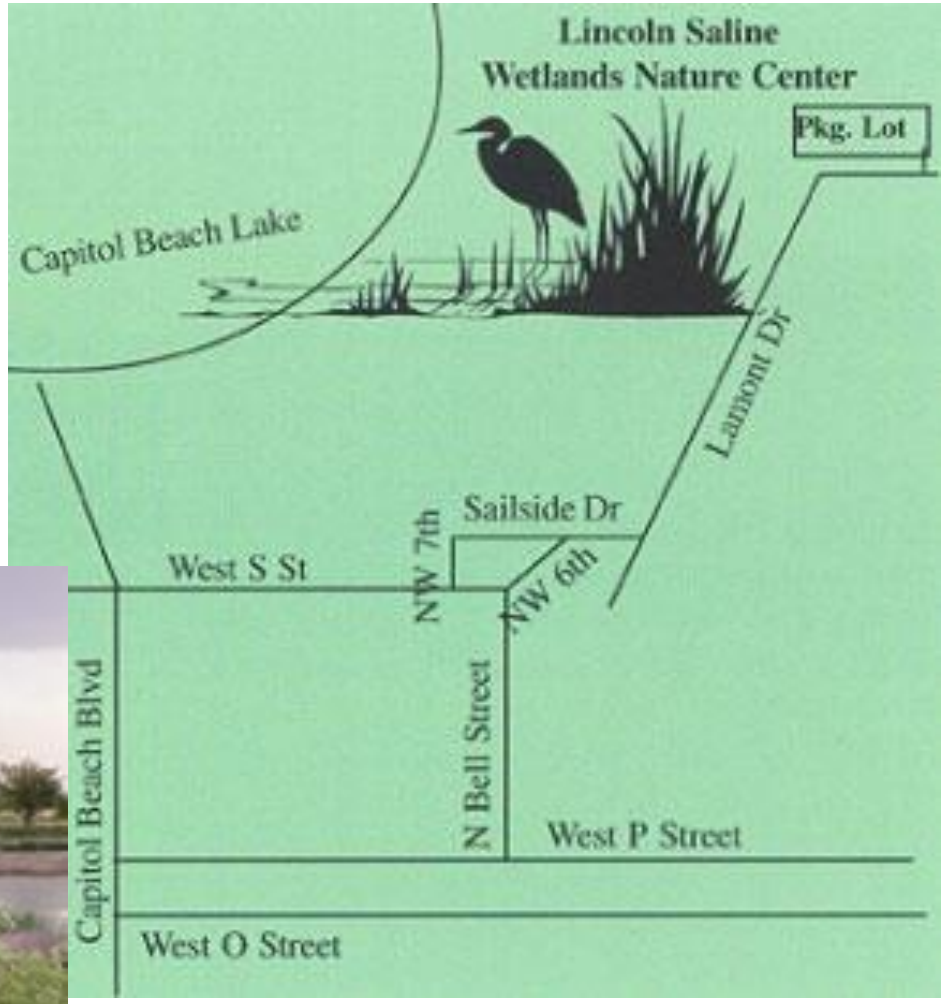
Park

Halloween-themed activities

Lakeview

Topic: Being a naturalist
Activity: *Fieldtrip to Lincoln Saline Wetlands*
- “Get in the moment”: observation activity
-Used binoculars and field guides and we explored the area for the first time! Found frogs and birds and some got a little muddy in the process. ☺ It also happened to be pajama day at Lakeview.

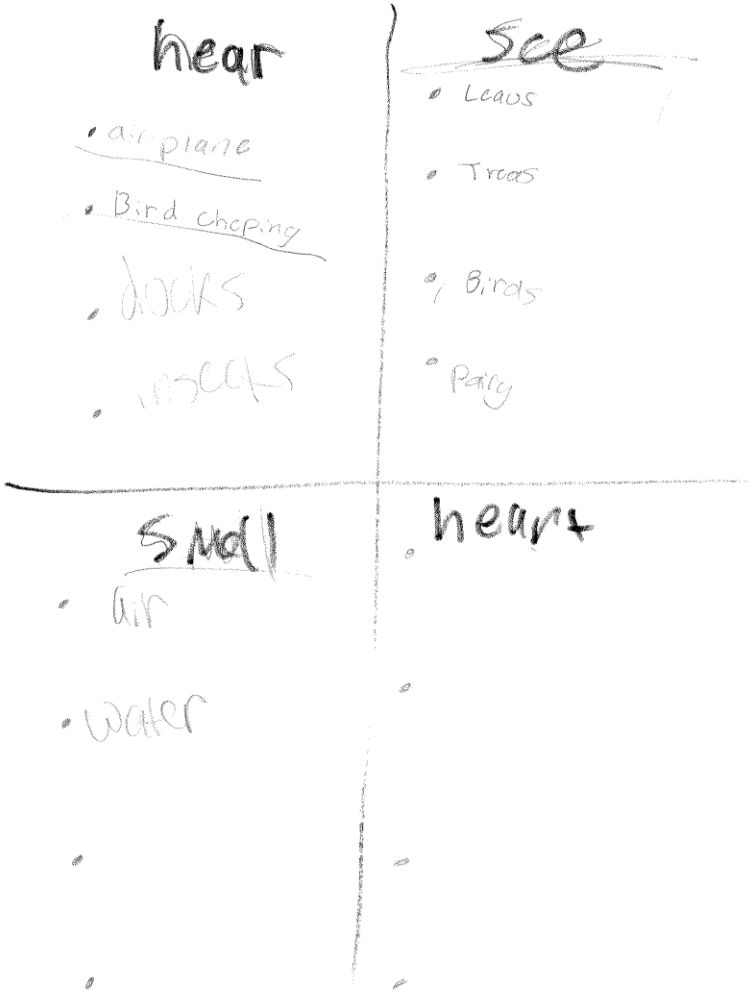
Lincoln Saline Wetlands

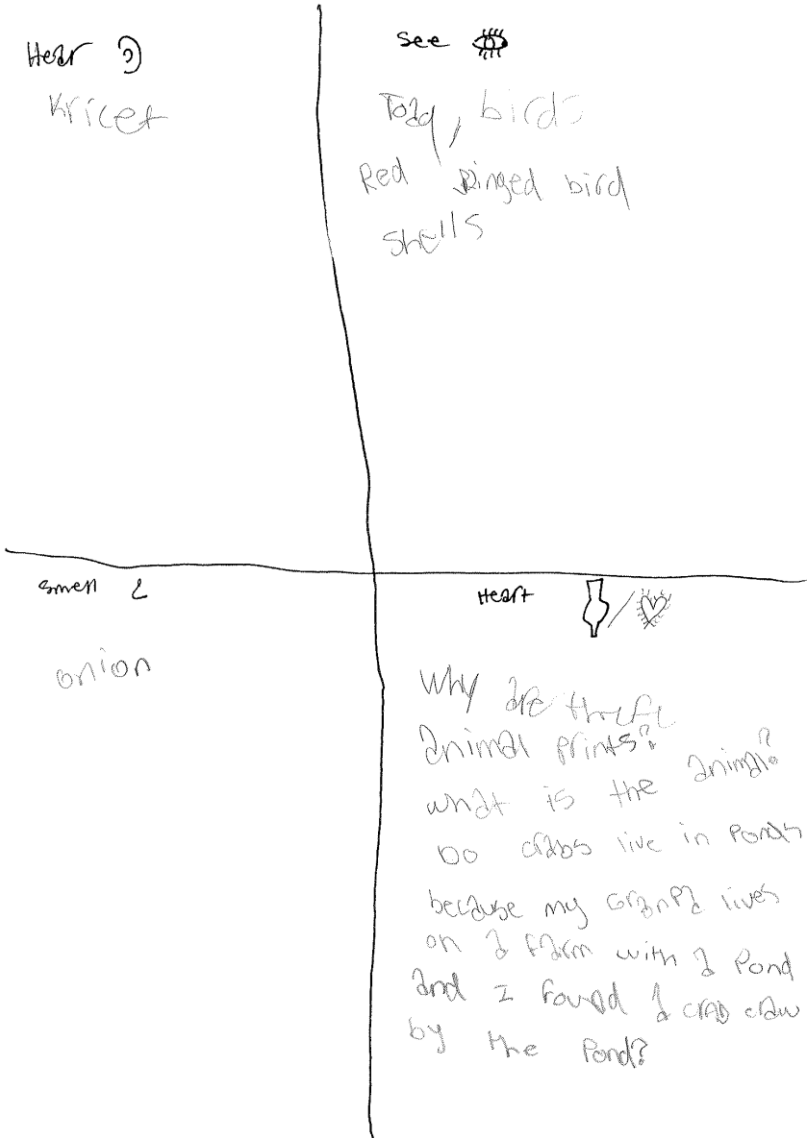


Wetlands: Birding & Exploring

Hear	See
pan s frogS	rark water frogs
smell	**Heart**
air sofe	fun Happy

Wetlands: Birding & Exploring





WEEK 7

Park

Trip to UNL Laboratories

Lakeview

Fieldtrip to Lincoln Saline Wetlands
Activity: “Bioblitz”. Students created data sheets to document the mammals, birds, insects, and plants they found (plus one frog!)

UNL Labs

Wetlands: Bioblitz

Birds
Starlings
Woodpecker

Bugs

Mammals
Squirrel
Snake frog
Ducks

Plants
Weeds
Sunflower
Corn
wood chips

Birds
-~~[illegible]~~
-Starling

Bugs
-ladybug

mammals
-squirrel
-ducks/Mallard

Plants
-elm tree leave
-Wheat
-grass
-tree

Wetlands: Bioblitz

WEEK 8

Park

Topic: Home ranges; turtles

Lakeview

Topic: Review of species versus individual home range; Native species' home ranges around Lakeview

Activity: Observation & data collection worksheet

Park: Home Range Activity

Lakeview: Home range data collection

Name: Jasmin

Animal Species: Ant	
At Lakeview Elementary, does the animal have...	
Space to live and move? YES or NO	How many ants do you think could live at Lakeview? More than 1,000,000
Shelter to hide and sleep? YES or NO	What kind of shelter? Dirt
Water to drink? YES or NO	Where can the animal find it? Sap of tree
Food to eat? YES or NO	What kind of food? Grass
Do you think this animal could use the area around Lakeview for its entire home range? Why? yes becaus they are really small and the school is big If not, what places near Lakeview could the animal use?	

ANIMAL SPECIES: robin	
At Lakeview Elementary, does the animal have...	
Space to live and move? YES or NO	How many ants do you think could live at Lakeview? 50-1,000
Shelter to hide and sleep? YES or NO	What kind of shelter? tree
Water to drink? YES or NO	Where can the animal find it? Sap of trees
Food to eat? YES or NO	What kind of food? worms
Do you think this animal could use the area around Lakeview for its entire home range? Why? NO because they are a little to big If not, what places near Lakeview could the animal use? The lake	

Name: Cai

Animal Species: fox	
At Lakeview Elementary, does the animal have...	
Space to live and move? YES or NO	How many ants do you think could live at Lakeview? none
Shelter to hide and sleep? YES or NO	What kind of shelter? In the middle of the f
Water to drink? YES or NO	Where can the animal find it? Rain Puddles
Food to eat? YES or NO	What kind of food? none
Do you think this animal could use the area around Lakeview for its entire home range? Why? No because they aren't If not, what places near Lakeview could the animal use?	

ANIMAL SPECIES: Rabbit	
At Lakeview Elementary, does the animal have...	
Space to live and move? YES or NO	How many ants do you think could live at Lakeview? Bushes, yes
Shelter to hide and sleep? YES or NO	What kind of shelter? Bushes
Water to drink? YES or NO	Where can the animal find it? Puddles, rain, leaks
Food to eat? YES or NO	What kind of food? berries
Do you think this animal could use the area around Lakeview for its entire home range? Why? If not, what places near Lakeview could the animal use?	

WEEK 9

Park

Field trip to Morrill Hall

Lakeview

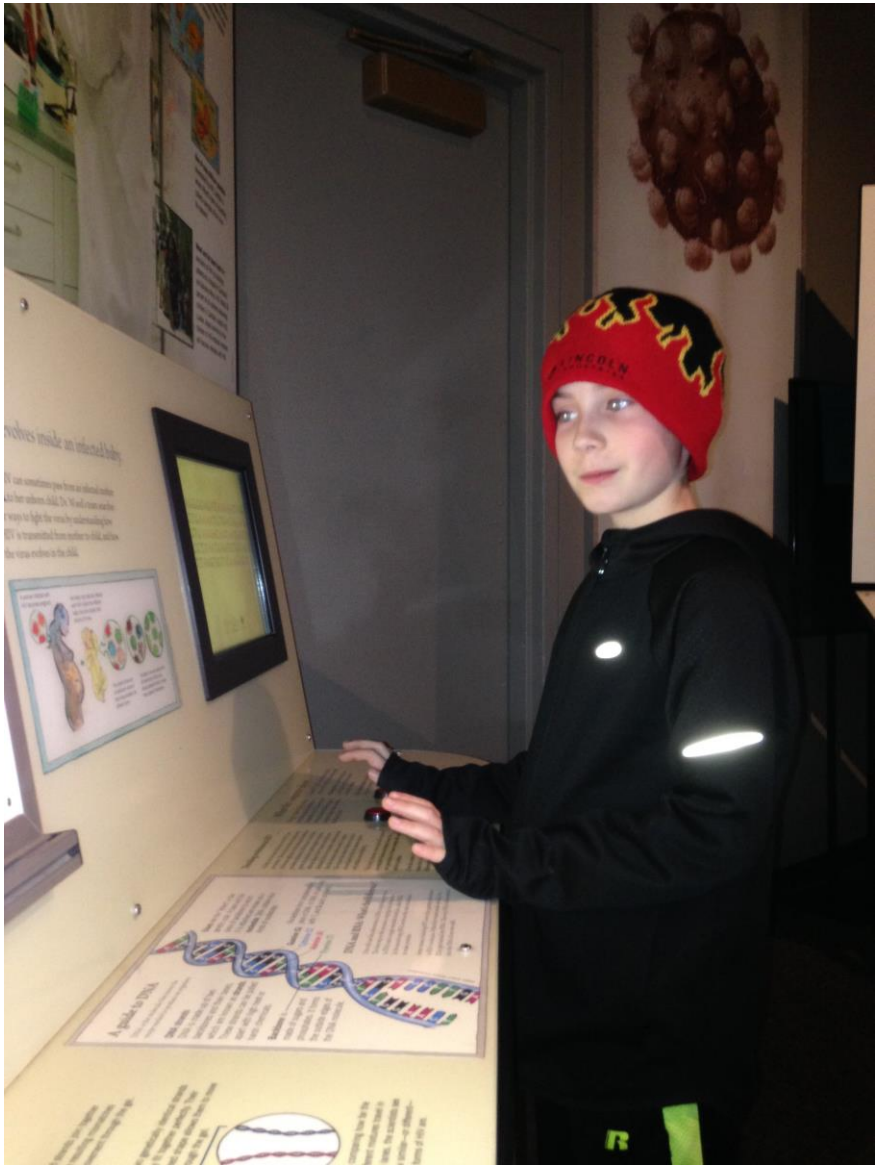
Topic: Review of biodiversity; conservation

Activities

-Tag activity (illustrating strength of having diversity within populations)

-Students chose a species and created a page showing what threatens the species' survival and what could be done to help it. Definitely a good topic to pursue in the future because the kids knew little about dangers facing wildlife both around the world and in their own country (focusing on local species conservation would be awesome for spring)

Morrill Hall



Lakeview: Species Conservation

WEEK 10

Lakeview

Topic: Habitat Use and Population Dynamics; Graphing data

Activity: Project WILD— “Oh Deer!”
Students were assigned to be habitat (food, water, or shelter) or to be deer. When I called out “Oh Deer!” the deer students had to run across and find the habitat requirement they needed. We did 15 rounds of this, and I collected data on how many deer we had in each round. We then went inside and students graphed the results. This lesson was an introduction to how wildlife populations fluctuate and they learned the term “carrying capacity.” (This was done in the final weeks and I forgot to scan the student work. But they made graphs and did a great job!)


POLIC

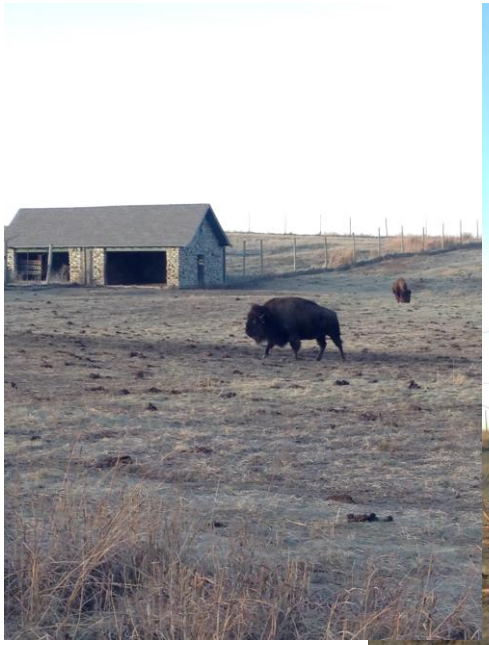
WEEK 11

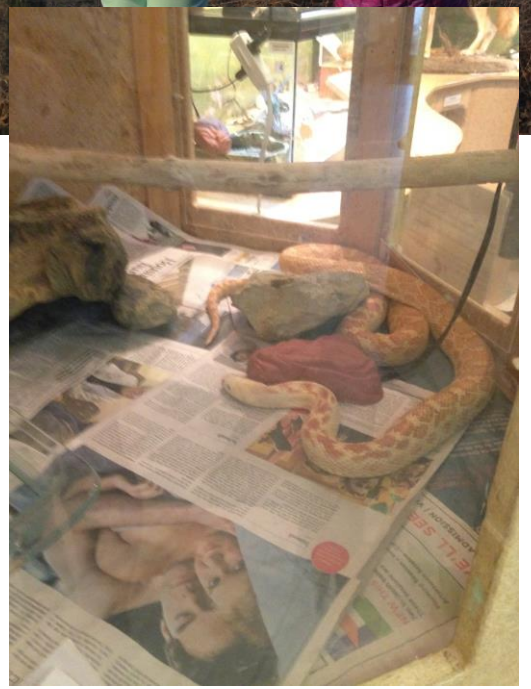
Lakeview

Wednesday: Pioneers Park
Activities: Saw the bison and talked about their history in North America, visited the nature center and an employee there took out a box turtle and the kids were so well behaved and asked awesome, specific questions! They were so good, they got to play on the playground on the way back. ☺

Thursday: Reflection activity & celebration at Lakeview

Pioneers Park Nature Center



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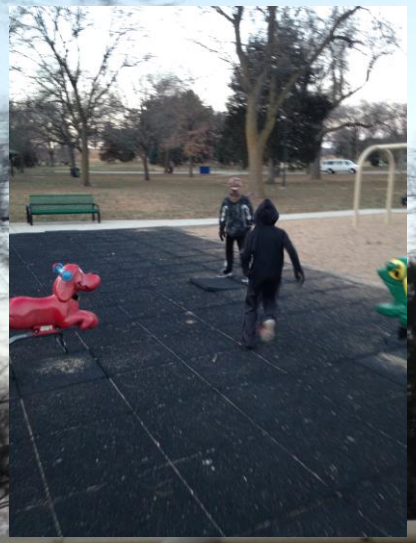

Student Reflection

- Favorite Activities
  - Wetlands field trips: 5
  - Penguin game: 4
  - Feely bag: 4
  - Migration & birding: 2
  - Bug catching: 2
  - Quick frozen critters: 2
  - Home range data collection

- Least Favorite Activities
  - Learning bird calls & bird call game: 2
  - Feely bag: 2
  - Bug catching: 2
  - Sensory reflection
  - Home range data collection

Student Reflection

Fun Fact: What was the most interesting science information you learned during science club?

- "Trips"—Dylan
- "Bird sounds"—A'Rely, Laney
- "Turtle shell in feely bag: turtle shell is connected" —Jacob
- "Bats share blood…ewww!"—McKenzie
- "A bird has a "cheeseburger" call"—Chloe
- "Everything because now I'm smarter than before" —Nadya
- "The wildebeest noise that it makes" –Braelyn
- "I learned that science is very fun" –Cori
- "I like spiders, and tarantulas can shoot their hair" —Kolton

Future Ideas

- Field journals: continue theme of training to be naturalists→ encourages scientific thought, critical thinking, student-lead inquiry
- Inspired by prairie-wetland field school in Minnesota
- Focus on phenology to connect students to the local environment
- Use first few weeks to practice skills/incorporate with middle school lesson
- Second half of spring: Wetlands every week performing an ongoing science “experiment”