

GULF of MEXICO FOUNDATION

Let's Migrate Like the Whooping Crane Lessons



Let's Migrate Like the Whooping Crane Lessons for Grades 2-4

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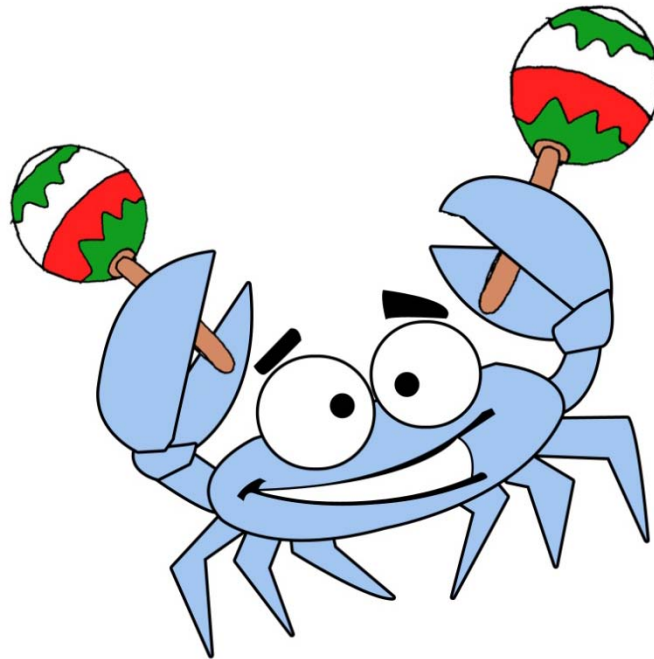
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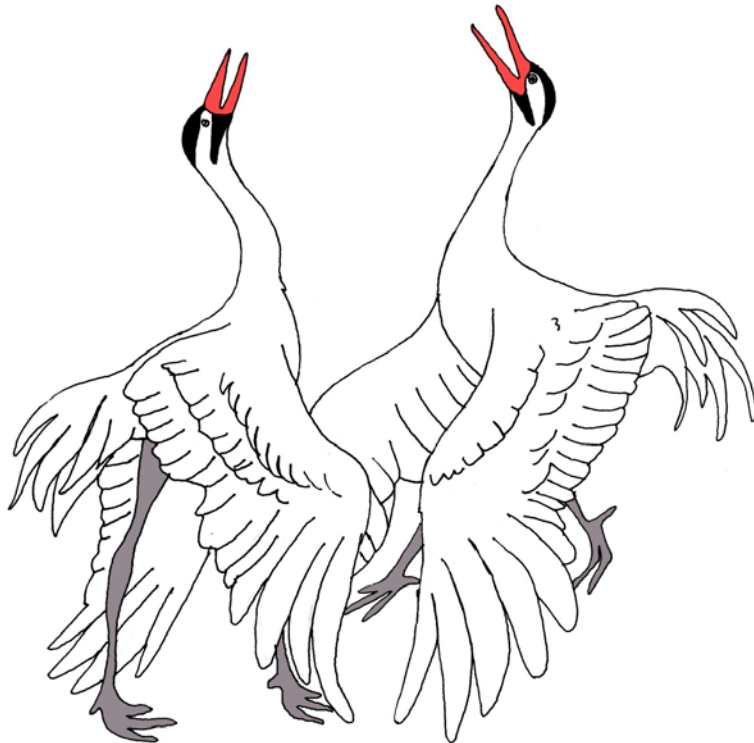
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Introduction

The plight of the endangered Whooping Crane in its Texas habitat at the Aransas National Wildlife Refuge is facing extreme challenges due to climate change conditions and human use impacts. The Gulf of Mexico Foundation created these lessons to not only help bring awareness to the endangered bird, its habitats, and main food resources but also to help students understand the long and difficult migration journey the Whooping Crane conducts every year. The integration of role playing and dancing lessons make learning about the Whooper fun and interactive and can be done alone or as a curriculum throughout a one week period. In addition, even though these lessons are TEKS aligned for grades 2-4, the migration game and Whoop song can be used for K-12 audiences in formal and non-formal educational settings.

The Whooping Game should be conducted as the main lesson. Mini-lessons are supplied to supplement certain aspects of the game and can be used after the game during other class periods to emphasize specific subjects. The Whoop song is made to be taught as a physical education and music lesson but can also be used in the regular classroom as a fun learning tool since the words of the song tell the story of the Whooping Crane's migration.



Main Lesson

Let's Migrate Like the Whooping Crane Game

Prepared By:

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Grade Levels: 2-4

Subject(s): Science, Language Arts, Geography, Physical Education

Time: 55 minutes

The game should be conducted outside or in large area in order to allow students to “migrate” or run.

Overview & Purpose: The migration ecology of the only wild endangered population of Whooping Cranes along the North American territory is a very interesting and complex process that involves an international geographical framework, wetlands use, energetics, and ecological impacts along the central flyway. The purpose of this lesson is to provide an interactive way to explain the migration ecology of the Whooping Crane in order help students visualize what is happening to this population at the wintering and breeding grounds during their migration journey.

Objectives:

- Students will learn about the Whooping Crane’s reproductive biology and territorial behavior.
- Students will learn about the Whooping Crane diet and how it can affect breeding success.
- Students will visualize links between winter/summer grounds and importance of wetland stopovers.
- Students will understand and identify human induced and natural factors impacting long distance migration and how those factors affect mortality/survivorship.

Information Materials/Resources:

- Whooping Crane Information Sheet
- More information on the Whooping Crane can be found at these websites:
 - International Crane Foundation <http://www.savingcranes.org/>
 - Operation Migration - <http://www.operationmigration.org/>
 - Parks Canada Woods Buffalo - <http://www.pc.gc.ca/eng/pn-nt/nt/woodbuffalo/index.aspx>

Activity Materials: Refer to the “Basic Game Layout” and “Game Key”

Wintering Grounds

- ~14 small pieces of material or some hankchiefs
- Poster board with state of Texas shape and name plus Aransas National Wildlife Refuge labeled
- 7 large, green pieces of felt or other material to be used as territories
- 14 printed photos of the Whooping Crane for each “Whooper” student with strings to hang on neck or have the students draw Whoopers on poster board the day before the activity
- Multiple blue crab cutouts – see sample to use or have students draw and color their own crabs
- Small red candied balls to represent the Carolina Wolfberry
- Reusable grocery bags for each whooper student
- Long tweezers or chopsticks for each student

Migration Path Stopovers

- Long, blue felt strips to represent wetland stopovers
- Poster board with the stat shapes and labels of OK, KS, NE, SD, ND (at least 2 states)
- Bag of candy corn
- Printed signs to hang on neck of a hunter, power lines, predators

Breeding Grounds

- 7 large, green pieces of felt or other material to be used as territories
- Poster board with Canada shape and name plus Wood Buffalo National Park of Canada labeled
- Spanish moss or other reusable “nesting” material to build nests
- Various plastic insects
- Bag of plastic eggs
- Printed pictures of whooper chicks to hang on neck

Procedure:

1. For a class of 24 students, you will have the following designations:
 - a. ~14 students (7 mating pairs) will represent the Whooping Cranes.
 - b. ~ 2 hunters, 2 power lines, and 2 predators, 2 scientists (one in Texas and the other in Canada)
 - c. 1 Texas and 1 Canada representative
2. All Whooper migration props should be prepared and set out before activity takes place or you can have students make the props themselves as a separate activity.

3. Follow the basic layout below. All blue crabs and wolf berries should be placed under felt pieces so they are not showing. Each territory in Texas should have about 8+ crabs and some berries. Some territories can have fewer crabs and berries because food resources can vary from territory to territory.
4. For each territory there should be 2 pairs of tweezers, chopsticks, or grabbers so the students can “feed”. They cannot use their hands to feed. The reusable bags represent their stomachs that will be filled with any food they can eat. The hankkerchiefs will be used as flags are used in flag football (tucked into side of pants/shorts). If one of hazards affects them, they will lose the flag.
5. Stopovers should be set-up as the game layout indicates. Designate hunters, predators, and powerlines.
6. Students will begin their migration in Texas (wintering grounds).
7. Emphasize that Whooping Cranes are territorial so once a territory is chosen by the pair, they are NOT allowed to go to other territories.
8. Once the season begins, you will let them feed on blue crabs and berries for about 30 seconds to 1 minute. All items are to be placed in their bags.
9. Explain why some territories have more/less food than others. Have them explain some potential implications of this condition.
10. Before they begin their migration to the breeding grounds, have students look at the map so they can see the geography of the states covered during migration. Emphasize the distance they have to fly and have them think about potential energy requirements and dangers of flying so far.
11. Have students begin to “fly” to their first stopover location. Everyone will eat some corn or bugs. Explain that due to energy expenditures, they will have to give you some of their food because it takes energy to fly.
12. Some Whoopers will not survive or will be injured due to power lines, hunters, predators. Ask the students why this might be. Have students act out each part. The power line students should hold some yarn that stretches across but they cannot move. Hunters and predators will chase Whoopers and try to grab their flag. If the Whooper loses its flag or hit the power line, they are out of the game.
13. Once the surviving Whooping Cranes arrive in Canada, you can talk about who has survived and what that means. The pairs that did survive may or may not lay eggs. See options below:

- a. If both Whoopers did not survive then of course no eggs can be laid.
 - b. If only one Whooper survives the journey, the surviving Whooper does not receive an egg either.
 - c. If both Whoopers survive, then the number of eggs may depend on the number of crabs and berries in their bellies. Some may have fewer than others so less food will translate into less energy. Others lost or used up energy (represented by crabs and berries) by trying to avoid predators and hunters.
 - d. After assessing this, you can determine who will receive 0, 1, 2, or 3 eggs.
14. Next, you will talk about taking care of the eggs and how even if they have eggs it does not mean that the eggs will produce a chick. If they have chicks, then the chicks will need to be protected so they can survive to adulthood.
15. You can designate the winner of the game by the pair who produced the most chicks and contributed to the population of wild Whooping Cranes. Make sure to emphasize that we really want ALL cranes to have chick so the population will continue to grow.
16. The roles of the scientists are also important because they will play a role in tracking Whoopers to see where they go during migration, help raise orphaned eggs and chick, and must work together to help our Whoopers survive for many more years. Emphasize that even though they are from different countries, that they must work together to help the Whooping Crane.

Advanced Extensions:

The complexity of this game can be increased by:

- changing the condition in any of the grounds and stopovers (i.e. reduced food availability)
- Playing a second cycle, in order to show how decisions in one place of the continent could affect the individual and species.

Additional Notes: This activity can be made simple or more complex according to the grade level being taught. You can also emphasize specific components of the lessons; however this lesson is made to be interdisciplinary and does have cross-curriculum applications.

Whooping Crane Information Sheet

This sheet is to be used to give more details on each part of the game as well as to help with some of the mini-lessons. These facts and other information can be found at <http://www.cranetrust.org/whooping-cranes/> and other websites listed above.

The whooping crane (*Grus americana*) is not only the tallest bird in North America, it is one of the rarest!

There are approximately 280 whooping cranes in the wild, migratory flock that breeds in Wood Buffalo National Park in Canada and winters at Aransas National Wildlife Refuge in Texas. An additional 290 birds are either in captivity or part of re-introduction efforts, such as in eastern North America.

Since European settlers arrived in Nebraska in the 1840s, there have been written accounts of whooping cranes observed here during their spring and fall migrations. Never as numerous as sandhill cranes (*Grus canadensis*), whooping cranes reached the brink of extinction earlier in the last century. Only 15 birds remained in 1941 after more than a century of habitat loss and continuous hunting.

After 70 years of intensive conservation efforts, the population has increased but still faces many challenges. Their intrinsic rate of increase gives them the potential to double their population size in 8 years, as happened in the 1980's. However, environmental and anthropogenic factors (including loss of habitat, altered wetland conditions, climate change and collisions with power lines) cause the population to recover at a much slower rate.

Whooping cranes spend the winter from November to March along the Gulf coast of Texas at the Aransas National Wildlife Refuge. Each spring from late March to late April, the cranes migrate to their breeding grounds in northern Canada at Wood Buffalo National Park and remain there from May through September. Hence, the wild population is often called the "Aransas-Wood Buffalo population" or "AWBP" referring to their wintering and breeding grounds.

Fall migration takes place from September through the end of November, when the last cranes arrive at their wintering grounds. Adult cranes that have a successful breeding season in Canada migrate with their chick(s). Whooping cranes normally lay two eggs, but usually only one egg/chick survives. On rare occasions the second egg survives, and adult pairs are seen migrating with their "twins". In 2010, five pairs brought twins to Aransas, which was the second highest number of twins ever to reach the refuge. Whooping cranes are territorial at both their breeding and their wintering grounds and use the same territories year after year.

The migration route is long (about 2,500 miles) but narrow (less than 300 miles wide) and extends through Texas, Oklahoma, Kansas, Nebraska, South Dakota and North Dakota in the United States, and through Saskatchewan and Alberta in Canada.

Because the cranes' migration route is so long, the International Recovery Plan for the Whooping Crane (2005) designated four sites along the route as "critical habitat", meaning that this habitat "contains those physical or biological features, essential to the conservation of the species, which may require special management considerations or protection." From south to north, they are: Salt Plains NWR, Oklahoma; Cheyenne Bottoms State Waterfowl Management Area and Quivira NWR, Kansas; and the Platte River between Lexington and Denman, Nebraska.

Along the Platte River, whooping cranes rest and feed in wet meadows, sloughs and crop fields and roost in the shallow waters of the river at night. Whooping cranes in the AWBP may make brief stops (one to a few days) on the Platte River before continuing their migration, and a few have spent more than a month on the Platte, especially individuals that migrate with flocks of sandhill cranes.

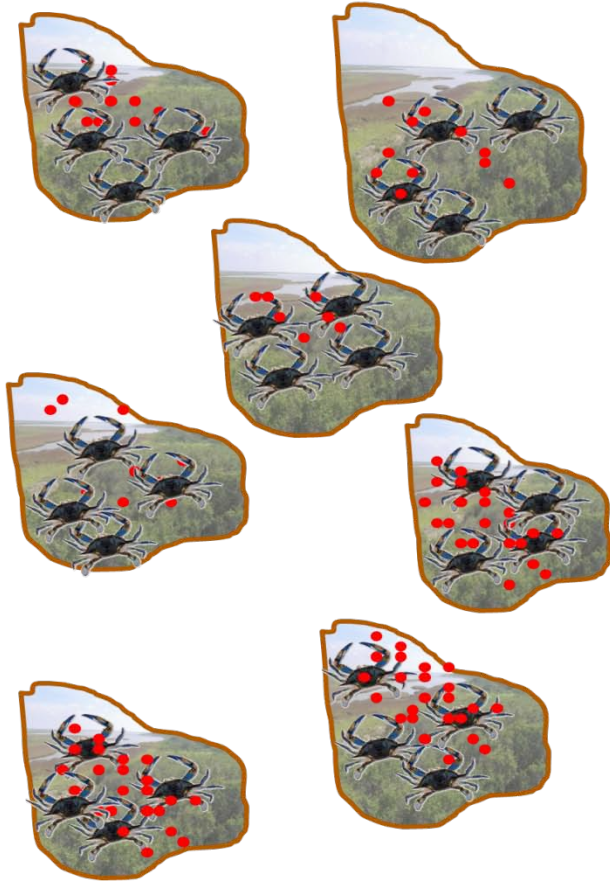
Whooping Crane Migration Map



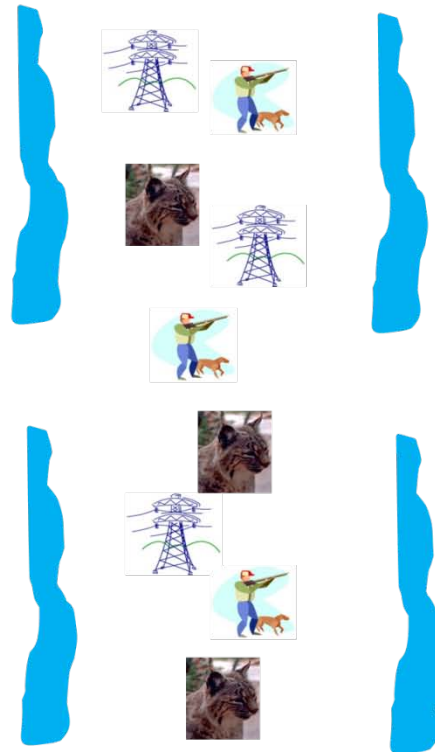
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Basic Game Layout

Wintering Grounds
Aransas Wildlife Refuge, US



Migration Path
Stopovers



Breeding Grounds
Wood Buffalo National Park Canada



Game Key



Blue crab, *Callinectes sapidus*, is the major food source for the Whooping Crane during wintering times in the Aransas Wildlife Refuge.



The Carolina Wolfberry, *Lycium carolinianum*, is another major food for the Whooping Crane during wintering times in the Aransas Wildlife Refuge.



Whooping Crane wintering territories in the Aransas Wildlife Refuge.



Whooping Crane nesting territories are generally smaller than their wintering territories.



The number of eggs a Whooper pair produces is usually 1-rarely 3 eggs. Remember, if the Whooping Crane does not get much food while wintering they may not produce any eggs.



Hunters are just one threat the Whooping Cranes as they migrate 2,500 miles.

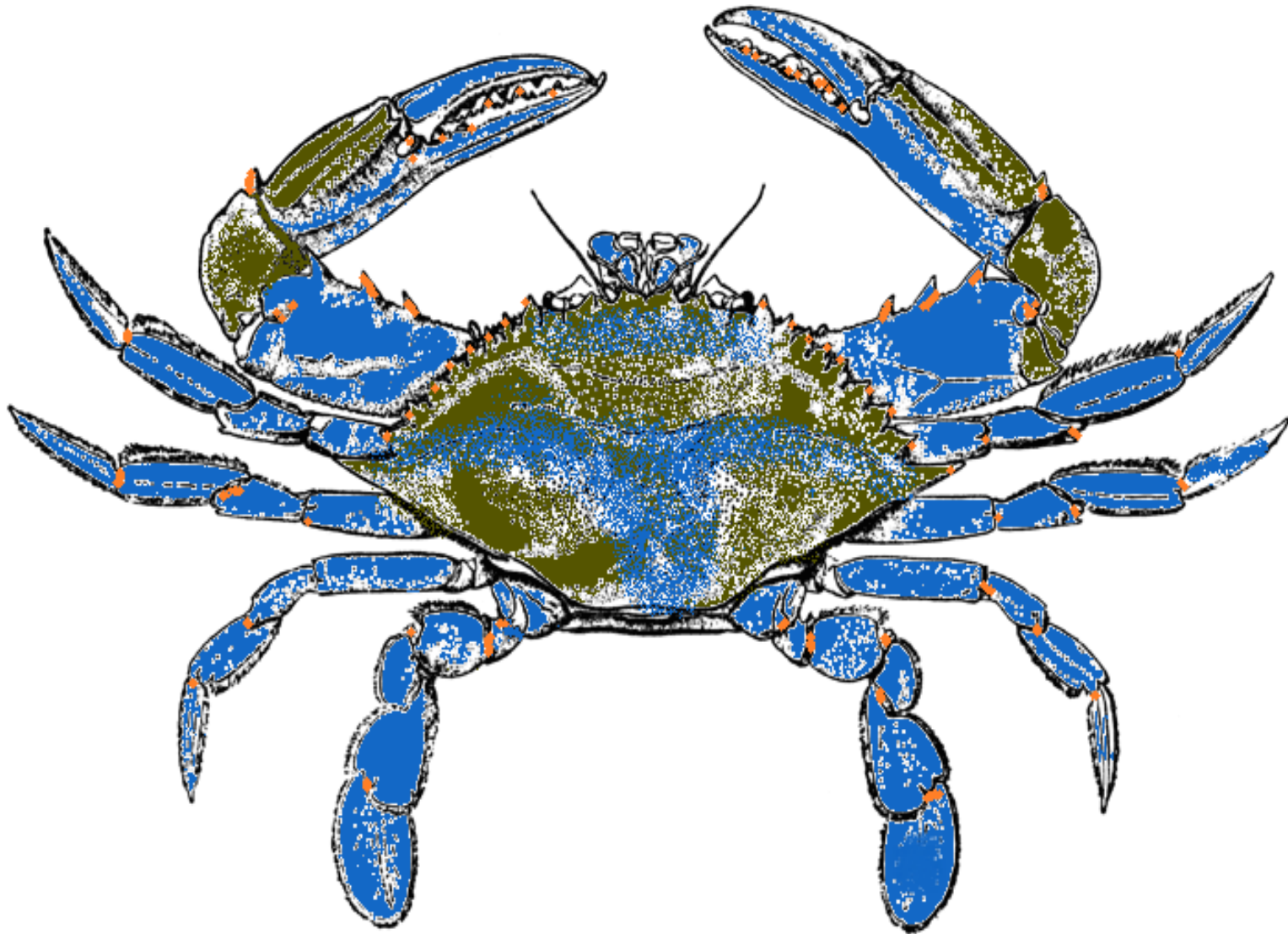


Powers lines and various predators are also a major threat to the Whooper.

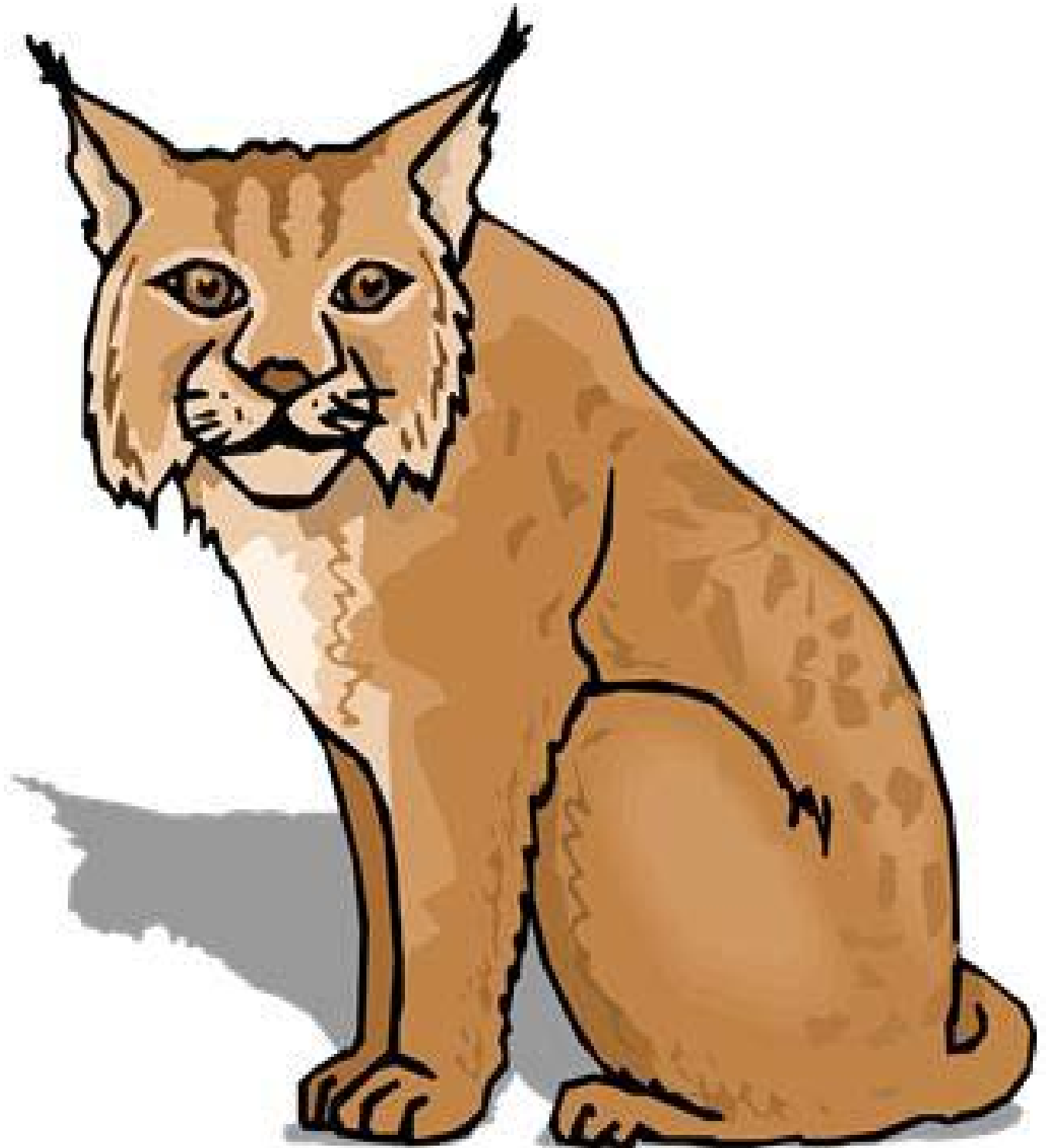


Wetland stopovers during migration provide food and shelter for the Whooping throughout their migration. Some of these habitats are being lost or fragmented habitats and/or are sometimes low in food resources.

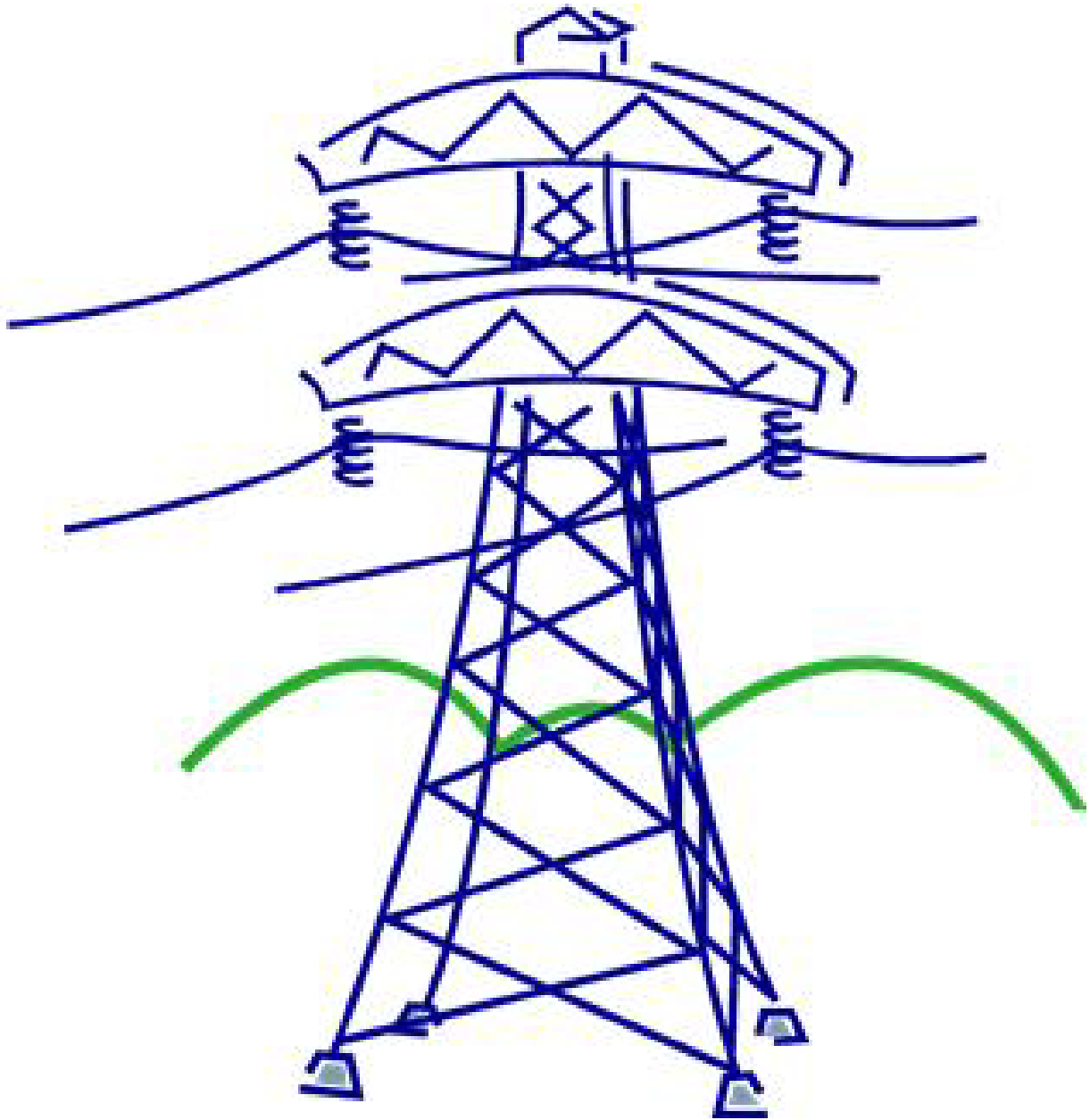
Blue Crab



Bobcat (Predator)



POWER LINES



HUNTER



Whooping Crane Chick



Free download: http://www.savingcranes.org/index.php?option=com_rsgallery2&page=inline&id=92&Itemid=191

Mini-lesson 1

Migrate Back and Forth: The “Whoop” Song and Dance

Grade Levels: 2-4

Subject(s): Physical Education, Theatre, Science, Geography, Language Arts, Music

Time: 2 - 55 minute class periods

Vocabulary:

- Dance – movement to music
- Melody – a series of notes that form a theme
- Rhythm – music performed in time
- Song Title – very important because you want your title to be memorable and fitting to the theme of the song. You should also highlight your title by placing it within the lyrics of the song.
- Verse – part of the song that tells a story
- Chorus – part of the song that often sticks to the mind of a listener because it is repeated several times

Overview & Purpose: The Whoop song was created to teach students about the Whooping Crane migration and is meant to be a combined PE and Music lesson. The dance was choreographed to help students connect the science lessons in the song to body movements and words all connected to the Whooping Crane. The dance and song emphasize the coordination of both fine and gross motor skills within the rhythmic and melodic structure of the song.

Objectives:

- Students will learn and study the song lyrics of the Whoop and learn about the migration of the Whooping Crane
- Students will identify and perform the main dance movements of the "Whoop dance" according to the song the "Whoop!"
- Students will identify song parts.
- Students will sing and perform the Whoop

Activity Materials:

- Whoop song and lyrics video
- Whoop dance video
 - Both lyrics and dance videos can be viewed at GMF Whooping Crane resources at www.gulfmex.org
- Song lyric sheet for each student or each pair
- Lyric explanation sheet for teacher

- Whooping Crane migration map for each student or each pair

Procedure for Class Period 1:

1. This period will focus on introducing the students to the lyrics and the song.
2. Have the students read through lyric sheet (without the music) and discuss what the words mean using the lyric explanation sheet. Remember the song can be used with the migration game to help students better understand the information on the Whooping Crane.
3. Then have the students listen to the song as they read the words.
4. After going through the lyrics and explanation, have the students identify and label parts of the song on their lyric sheet. Discuss what each part means and why it is important to the song.
5. Finally, have the students sing along with the video.

Procedure for Class Period 2:

1. This period will focus on introducing the “Whoop” dance.
2. Play the dance video for the students.
3. Teach each movement of the dance separately and then combine all movements to the dance. Repeat until the dance has been learned.
4. Play the video and have students perform the dance in class.

Advanced Extensions: The lesson can be adapted to any grade level and older students could compete with each other to see who could perform the dance the best. Students could also perform the dance at a school or community event.

The “Whoop” Lyrics

Hilda Lamas featuring URBANO B
Produced by URBANO B Music
Music Composed by Chris “URBANO B” Dominguez

Get on up,
Time to spread those wings
Get on up,
Time to follow who loudly sings

Beaks to the South
Time to fly, Canada to Texas in two weeks time
Let's go, let's go Wood Buffalo
Let's go, let's go Wood Buffalo

15 to 241
Come on let's dance for there to be more
Stretch your wings, get on the floor
Dance, dance, dance, dance some more

Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
Whoop-whoop-whoop
What are you waiting for

Repeat

Move to the east to get down south
Move to the west to get up north
Migrate-migrate-migrate
Back and forth, back and forth, back and forth

Repeat

Da flock flying to Aransas
Passing thru Kansas
Whooping cranes dances, whooping cranes dances
All the winter in Aransas
Passing back thru Kansas
Whooping crane, whooping cranes dances

**Whoop-whoop-whoop
Whoop-whoop-whoop
Now rock the flock – rock the flock
Rock the flock – now rock the flock**

**Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
What are you waiting for
Rock the flock – rock the flock
Rock the flock – now rock the flock**

**Old man Lobstick, bold bright Lipstick
Molding n holding li'l Chapstick
A modern family, I'm flying out to leave
Love that marshy tasty blue crab
Love that bushy-wushy wolfberry
Love me some of this
H₂O in the mix**

**Migrate back and forth
Migrate to the north
Time to leave the bay
Fly back where whooping cranes lay**

**Whoop-whoop-whoop
Whoop-whoop-whoop
Now rock the flock – rock the flock
Rock the flock – Now rock the flock**

**Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
What are you waiting for
Rock the flock – rock the flock
Rock the flock – Now rock the flock**

**Whoop-whoop-whoop
Whoop-whoop-whoop
The flock won't stop the clock
The flock won't stop the clock**

Repeat

The “Whoop” Lyric Explanation

Get on up,
Time to spread those wings
Get on up,
Time to follow who loudly sings

The Whooping Crane starts to stretch out its wings and get ready to fly back to its wintering grounds in Texas. The whooping crane will fly over 1200 miles!

Beaks to the South
Time to fly, Canada to Texas in two weeks time
Let’s go, let’s go Wood Buffalo
Let’s go, let’s go Wood Buffalo

Texas is South of Canada so that is the direction they will fly. Look at the Whooping Crane migration map so you can see where Texas is located.

15 - 241

Come on let’s dance for there to be more
Stretch your wings, get on the floor
Dance, dance, dance, dance some more

A long time ago, people hunted and killed the Whooping Crane. Also, the places they lived and ate their food were being destroyed. Because of these things, there was only about 15 Whooping Cranes left in the world! However, people helped to bring back the endangered population to over 240.

The Whooping dances so they can attract mates and make more whooping crane babies. This helps the population to grow.

**Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
Whoop-whoop-whoop
What are you waiting for**

**“Whoop” is the sound the
Whooping Crane makes. How do
you think they got their name?**

Repeat

**Move to the east to get down south
Move to the west to get up north
Migrate-migrate-migrate
Back and forth, back and forth, back and forth**

**Look at you map and pretend you
are a Whooping Crane. Which
way/direction do you have to
move to get to Texas? Which
direction do you move to get to
Canada. The Whooping Crane
migrates or flies back and forth to
Canada and Texas EVERY year.
That is over 2500 miles of flying!**

Repeat

**Da flock flying to Aransas
Passing thru Kansas
Whooping cranes dances, whooping cranes dances
All the winter in Aransas
Passing back thru Kansas**

The Whooping Crane flies to the Aransas National Wildlife Refuge in Texas but before that, it has to pass through many other states in the US including Kansas.

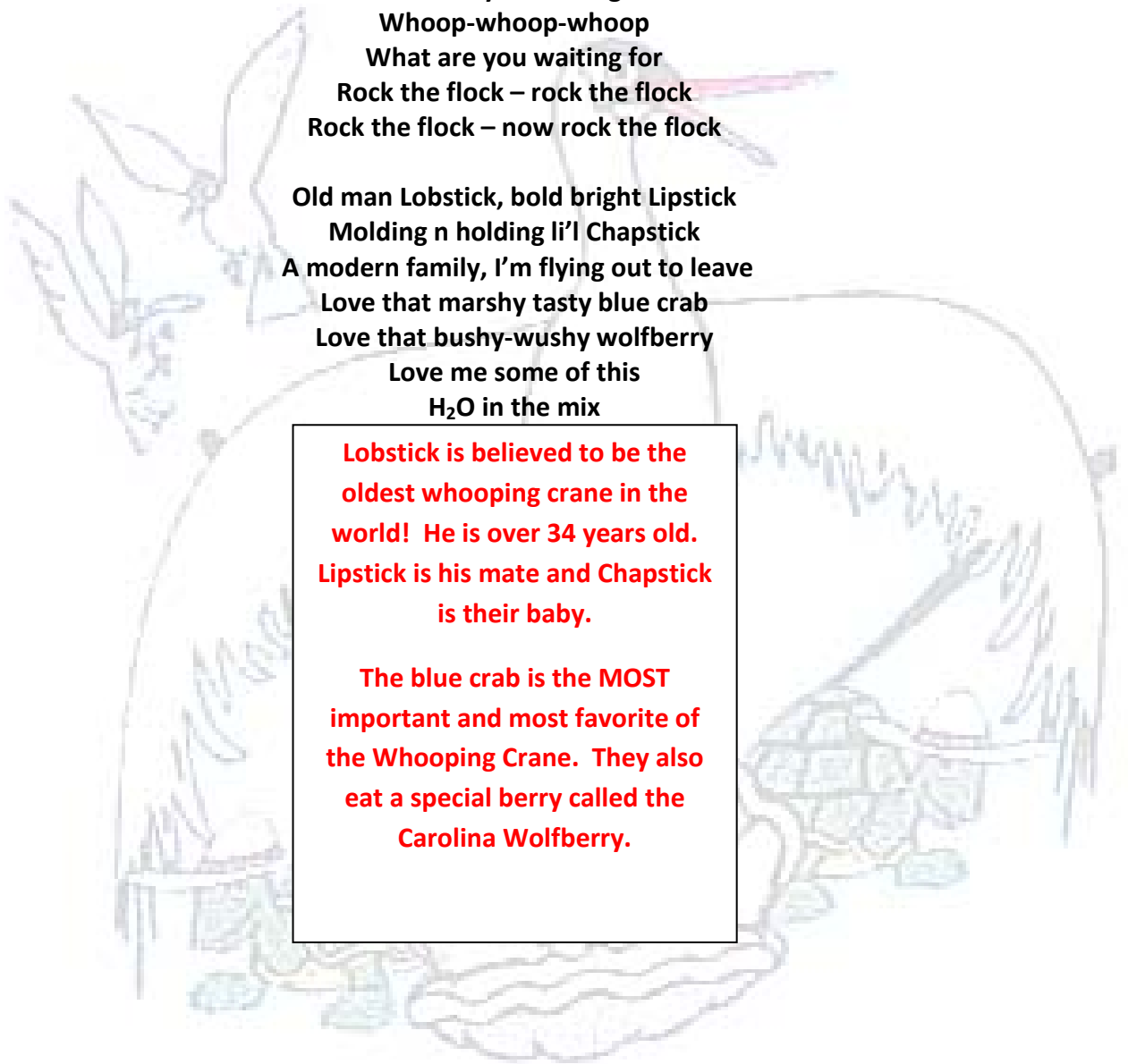
**Whooping crane, whooping cranes dances
Whoop-whoop-whoop
Whoop-whoop-whoop
Now rock the flock – rock the flock
Rock the flock – now rock the flock**

**Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
What are you waiting for
Rock the flock – rock the flock
Rock the flock – now rock the flock**

**Old man Lobstick, bold bright Lipstick
Molding n holding li'l Chapstick
A modern family, I'm flying out to leave
Love that marshy tasty blue crab
Love that bushy-wushy wolfberry
Love me some of this
H₂O in the mix**

Lobstick is believed to be the oldest whooping crane in the world! He is over 34 years old. Lipstick is his mate and Chapstick is their baby.

The blue crab is the MOST important and most favorite of the Whooping Crane. They also eat a special berry called the Carolina Wolfberry.



Migrate back and forth
Migrate to the north
Time to leave the bay
Fly back where whooping cranes lay

Whooping Cranes use important habitats like wetlands to feed and get lots of energy for their journey. Now that they have eaten lots of good blue crabs and wolfberries, they are ready to fly back to Canada.

Whoop-whoop-whoop
Whoop-whoop-whoop
Now rock the flock – rock the flock
Rock the flock – Now rock the flock

Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
What are you waiting for
Rock the flock – rock the flock
Rock the flock – Now rock the flock

Whoop-whoop-whoop
Whoop-whoop-whoop
The flock won't stop the clock
The flock won't stop the clock

Repeat

Whooping Crane Migration Map



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Song title

The “Whoop” Lyrics

Hilda Lamas featuring URBANO B
Produced by URBANO B Music
Music Composed by Chris “URBANO B” Dominguez

Get on up,
Time to spread those wings
Get on up,
Time to follow who loudly sings

Verse

Beaks to the South
Time to fly, Canada to Texas in two weeks time
Let’s go, let’s go Wood Buffalo
Let’s go, let’s go Wood Buffalo

Verse

Fifteen to forty one
Come on let’s dance for there to be more
Stretch your wings, get on the floor
Dance, dance, dance, dance some more

Chorus

Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
Whoop-whoop-whoop
What are you waiting for

Repeat

Move to the east to get down south
Move to the west to get up north
Migrate-migrate-migrate
Back and forth, back and forth, back and forth

Repeat

Verse

Da flock flying to Aransas
Passing thru Kansas
Whooping cranes dances, whooping cranes dances
All the winter in Aransas
Passing back thru Kansas
Whooping crane, whooping cranes dances

Chorus

Whoop-whoop-whoop
Whoop-whoop-whoop
Now rock the flock – rock the flock
Rock the flock – now rock the flock

Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
What are you waiting for
Rock the flock – rock the flock
Rock the flock – now rock the flock

Verse

Old man Lobstick, bold bright Lipstick
Molding n holding li'l Chapstick
A modern family, I'm flying out to leave
Love that marshy tasty blue crab
Love that bushy-wushy wolfberry
Love me some of this
H₂O in the mix

Migrate back and forth
Migrate to the north
Time to leave the bay
Fly back where whooping cranes lay

Whoop-whoop-whoop
Whoop-whoop-whoop
Now rock the flock – rock the flock
Rock the flock – Now rock the flock

Chorus

Whoop-whoop-whoop
What are you waiting for
Whoop-whoop-whoop
What are you waiting for
Rock the flock – rock the flock
Rock the flock – Now rock the flock

Whoop-whoop-whoop
Whoop-whoop-whoop
The flock won't stop the clock
The flock won't stop the clock

Repeat

Mini-lesson 2

Where does the Whooping Crane Migrate?

Grade Level: 4

Subject(s): Science, Geography

Time: 55 minutes or 2 class periods depending on access to computers and internet

Overview & Purpose: The migration route of the Whooping Crane is pretty extensive. They cover a number of US states as well as various habitats, including those in their breeding grounds in Canada. Although much information is still being researched on the habitats the Whooper use, researchers are conducting many studies to help get more information on the Whooping Crane. The whooping crane breeds, migrates, winters, and forages in a variety of wetland and other habitats, including coastal marshes and estuaries, inland marshes, lakes, ponds, wet meadows and rivers, and agricultural fields. Whooping cranes breed and nest in wetland habitat in Wood-Buffalo National Park, Canada. Bulrush is the dominant vegetation type in the potholes used for nesting, although cattail, sedge, musk-grass, and other aquatic plants are common. Nest sites are primarily located in shallow diatom ponds that contain bulrush. During migration, whooping cranes use a variety of habitats; however wetland appear to be the most suitable. For feeding, whooping cranes primarily use shallow, seasonally and semi permanently flooded palustrine wetlands for roosting, and various cropland and emergent wetlands. In Nebraska, whooping cranes also often use riverine habitats. Wintering habitat in the Aransas National Wildlife Refuge, Texas, includes salt marshes and tidal flats on the mainland and barrier islands, dominated by salt grass, saltwort, smooth cordgrass, glasswort, and sea ox-eye.

Objectives:

- Students will learn the geographical places where the migrate flies.
- Students will become aware of the various habitats used by the Whooping Crane during its migration to and from the Texas.

Activity Materials:

- Computer and internet access
- Copies of map for each student
- Copies of worksheet for each group

Procedure:

1. Have students break up into group of 2-3.
2. Hand out all worksheets and map.

3. Go over the introduction above.
4. Have students look a map that includes both the US and Canada and go over the migration route.
5. Have students label each of their maps as a short quiz.
6. After the map exercise, have each group look up information on the habitats used in Canada, Nebraska, and Texas. 1/3 of the class will research Canada, 1/3 Nebraska, and the last 1/3 Texas. You should have 3-4 groups for each location doing research. Use the reference sites mentioned in the game above.
7. Have students work together to answer the questions on their worksheets.
8. Discuss their findings and why these habitats are so important. Students should share their findings with each.

Advanced Extensions: Have students build or draw each habitat and display in class.

Whooping Crane Migration Map

Label each of the states the Whooping Crane migrates through.
Label the country where the Whooping Crane goes to breed.



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Map Key



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Habitat Research Sheet

Use a computer to search the internet for the habitats used by the Whooping Crane in the States of Canada, Nebraska, Texas.

Canada

1. What type of habitat does the Whooping Crane use here?
2. What kind food (plants and animals) live the habitat?
3. Do the Whooping Cranes use these resources? How?
4. Why do you think these habitats are important to the Whooping Crane?
5. What do you think would happen to the Whooping Crane if these habitats were destroyed?

Texas

1. What type of habitat does the Whooping Crane use here?
2. What kind food (plants and animals) live the habitat?
3. Do the Whooping Cranes use these resources? How?
4. Why do you think these habitats are important to the Whooping Crane?
5. What do you think would happen to the Whooping Crane if these habitats were destroyed?

Nebraska

1. What type of habitat does the Whooping Crane use here?
2. What kind food (plants and animals) live the habitat?
3. Do the Whooping Cranes use these resources? How?
4. Why do you think these habitats are important to the Whooping Crane?
5. What do you think would happen to the Whooping Crane if these habitats were destroyed?

Mini-Lesson 3

Who Eats Who in the Whooping Crane Food Chain?

Grade Levels: 2-4

Subject(s): Science, Language Arts

Time: 55 minutes

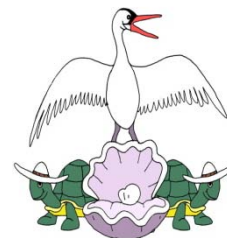
Overview & Purpose: The purpose is for students to learn the basic Whooping Crane while learning the basic vocabulary. Whooping cranes are omnivorous, probing the soil subsurface with their bills and taking foods from the soil surface or vegetation. Young chicks are fed by their parents. Summer foods include larval forms of insects, frogs, rodents, small birds, minnows, and berries. Foods utilized during migration are poorly documented but include frogs, fish, plant tubers, crayfish, insects, and agricultural grains. The largest amount of time is spent feeding in harvested grain fields. In the winter, whooping cranes forage for blue crabs, clams and the plant wolfberry in the brackish bays, marshes, and salt flats on the edge of the Texas mainland and on barrier islands.

Objectives:

- Student will be able to understand the concept of the food chain.
- Students will be able to understand the significance of each link in the food chain of the Whooping Crane.

Activity Materials:

- Activity Sheet
- Flash card sheet for each student
- Food Chain answer Key
- Scissors



Procedure:

1. Introduce the topic of food chains by using simple words and examples that students are familiar with, such what do they eat or what does their cat eat.
2. Establish the link between plants and animals and then humans to form a food chain.
3. Have the students cut out their flash cards. Have them name each animal and give their explanation of what each might eat.
4. Have each student build their food chain with their flashcards.

5. Check their work and see if anyone was incorrect. If there are errors, ask why they formed the food chain in that order.
6. Another way to get the students involved is to assign student roles. Have them act out the roles and explain to you who eats who in the Whooping Crane food chain.
7. Once the students are done with the activity, have a discussion about the food chain. This will give you a better idea of how far the students have understood the concept.

Advanced Extensions: Have students do more than one food chain using other potential animals and plants in the Whooping Crane's life cycle.



Food Chain Activity Worksheet



Answer and discuss the following questions.

1. Where do we get our food from?

2. Why do we need food?

3. What do plants gives us?

4. What do animals gives us?

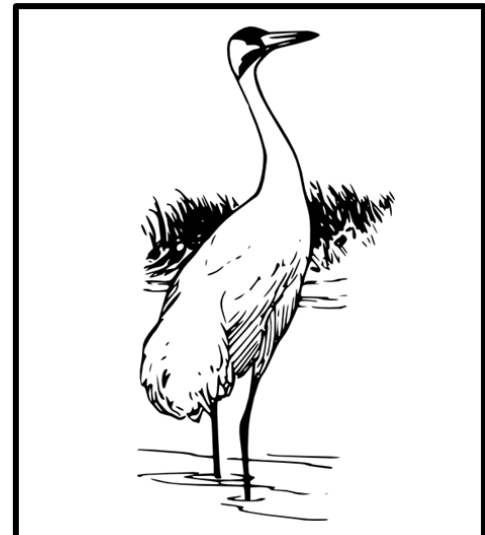
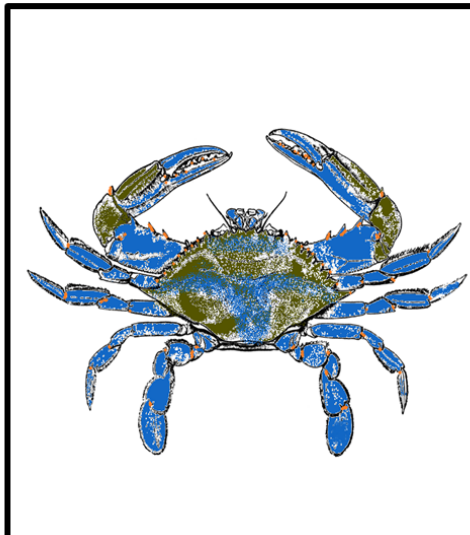
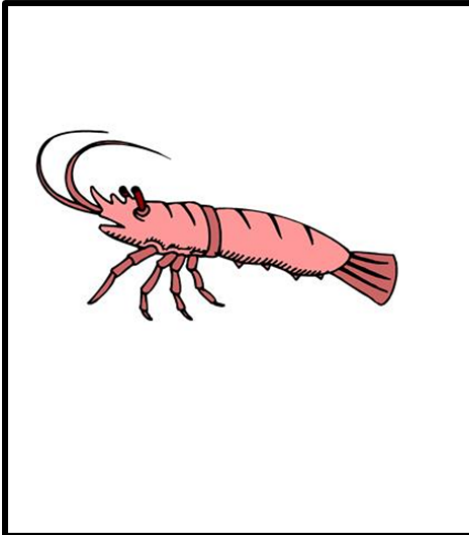
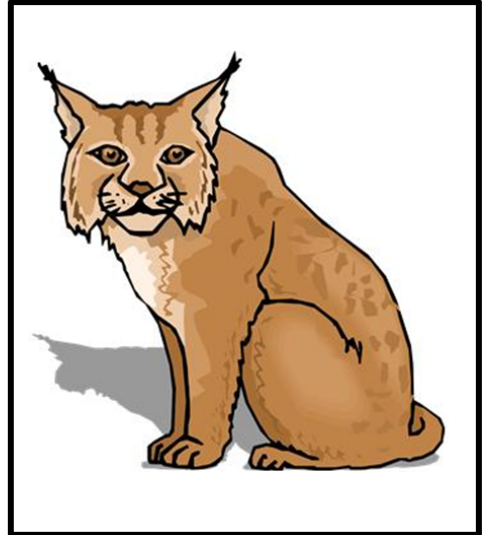
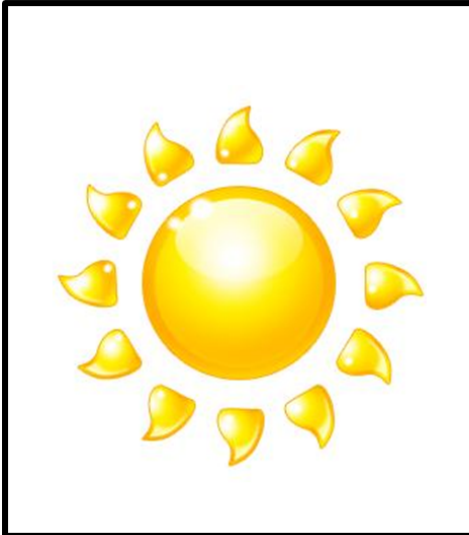
5. Who gives food to animals?

6. Who gives food to plants?

7. How are we all related to each other?

Food Chain Cards

Print on paper stock and cut out



Vocabulary and Key to Food Chain

Trophic Levels: The trophic level of an organism is the position it holds in a food chain.

1. **SUN CARD:** Life source of all living things



2. **PHYTOPLANKTON CARD:** **Primary producers** are the organisms that make their own food using the energy from the sun are the base of every food chain. They are called **autotrophs**.



3. **SHRIMP CARD:** **Primary consumers** are animals that eat primary producers; they are also called **herbivores** (plant-eaters).



4. **BLUE CRAB:** **Secondary consumers** eat primary consumers. They are **carnivores** (meat-eaters) and **omnivores** (animals that eat both animals and plants).



5. **WHOOPING CRANE:** **Tertiary consumers** eat secondary consumers.



6. **BOBCAT CARD:** **Quaternary consumers** eat tertiary consumers.

