down Jersey LESSON PLAN

A Golden Plover at Ebb Tide

Theme: **Natural History**

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Subject Areas
Science, Language Arts

Duration
Two 42-minute class periods

Setting
Classroom

Skills
Reading comprehension, writing a character sketch, vocabulary development

Charting the Course
This activity focuses on the journey and life of a single bird during its migration that brings the golden plover to the shores of the Delaware Bay in Southern New Jersey. It is a fictional story about a single bird that addresses some of the perils faced by shorebirds during migration.

Vocabulary
Shorebird, migration, and others as determined by students from the story

Correlation to New Jersey Core Curriculum Content Standards

Science
5.12 (7)

Language Arts
3.4 (8, 12, 15, 24)

A Golden Plover at Ebb Tide

Objectives

Students will be able to:

1. Read a short story and recall facts
2. Identify and define new vocabulary words
3. Master character sketches

Materials

Copies of ***A Golden Plover at Ebb Tide*** (NJ Audubon "NJ at the Crossroads of Migration")

Copy Me page

Chalk and chalkboard

Index cards

Dictionaries

Lined paper

Pen or pencil

Pictures of shorebirds

Making Connections

Students will be able to understand that organisms within an ecosystem can be affected by both natural and human events. The historical connection that exists between the human inhabitants and the animal inhabitants of the Down Jersey region is evident by the continuous reliance of one on the other. This activity places a specific species of bird as the focal point, but presents a concept that may be applied in many other instances, through many other examples.

Background

Read ***A Golden Plover at Ebb Tide.*** Identify vocabulary words that may be a challenge for your students.

Procedure

Warm Up

Ask students what they know about shorebird migration.

The Activity

Day 1— Part 1

Introduce the short story, ***A Golden Plover at Ebb Tide.***

Distribute copies to each student.

Call on students to read each paragraph aloud. Students can finish the last page or two silently.

Discuss student feelings toward the story.

Elaborate on interesting and controversial thoughts that may be brought to the surface.

Distribute the Copy Me page.

Go over the answers to the questions.

Part 2

On the chalkboard, develop a list of words from the story that students need to define.

Break into groups (4-6 students).

Distribute dictionaries and index cards.

Student groups should look up the words and write the word on one index card and the definition on another.

Students can add words if they find more in the story that they need to look up.

Collect the index cards.

Day 2

Break up into groups from Day 1 (4-6 students).

Hand out the index cards so that each group has a set from another group.

Students should match the word cards to the definition cards and check for meaning by referring to the story.

Check groups for accuracy.

Do the wrap-up.

Wrap Up

Give each student a picture of a golden plover. Have each student create a character sketch of the bird. They should include what the bird felt, where he went on his journey, what caused him to die and maybe what they thought throughout the story.

Assessment

Evaluate student writing pieces for recall of facts, use of vocabulary, expressiveness of feeling, organization, grammar, and spelling.

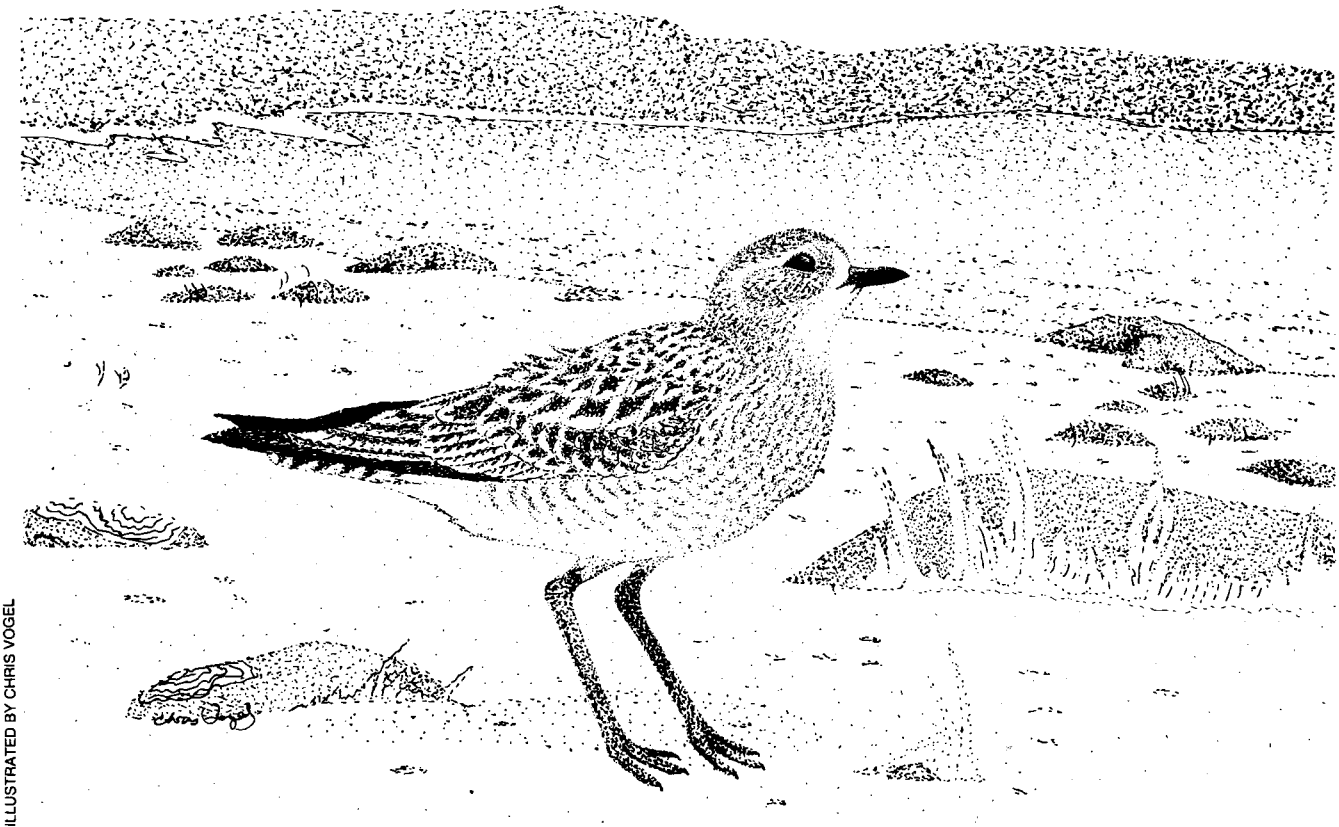
Extension

Do the "Think About It" section.

CHAPTER 2

A GOLDEN PLOVER AT EBB TIDE

The bird was crouched in a shallow depression just above the reach of the morning tide on a beach that linked the two towns. A casual stroller would never have seen it. Even a very attentive passer-by, one skilled at sifting sand-colored birds from sand, could not have been certain (the bird blended in so well with her surroundings). If the bird remained very still, there was nothing to distinguish her from the darker patches of sand. And the bird remained very still. This was the second most important day in her young life. This is the day she would die.



ILLUSTRATED BY CHRIS VOGEL

Reprinted from the NJ Audubon Society's *New Jersey at the Crossroads of Migration*, 1989. May be purchased at Society Sanctuary Bookstores.

Her life had begun on a bluff rich with flowers that fell sharply into the Arctic Ocean. To her left, the channels of the Mackenzie River delta shimmered like a tangled web of silver. Overhead, snow buntings spiraled and the shadows of jaegers haunted the earth. But the first thing the plover had seen when she opened her eyes (before she was three minutes old) was the gray arctic sea.

A writer would find this significant: the fact that the bird would begin and end her life within sight of two oceans thousands of miles apart—but it would mean nothing to the bird. Her mind had no gift for recalling places and events outside of immediate time and need, the thing we call memory. In the orbit of her existence, the bluff and its carpet of flowers were four months behind (or six months ahead). If her fortune were different, the knowledge of the place and its significance would awaken in her when it was time—on some day in May during a spring that she would never see.

*Right now, the incredible mechanism that was her brain told her that it was time to migrate. It told her how she should do this, what route she should take, where she should rest and feed, and, ultimately, it would tell her when and where to stop. Even now, dying, the brain said "***south***"; so this was the direction she faced, her head drawn back, eyes closed, the tip of the wing that had been injured barely touching the sand.*

Migration is a time of great stress and peril for birds. The dangers are magnified by inexperience. Only a small fraction of the birds born in any given year survive to maturity, harsh terms by human standards. Migration is the first major cut in the rank of birds, and survival depends as much upon innate skills as it does upon finding places **en route** *that meet the needs of migrating birds—places to rest and feed. Unfortunately, these migratory way stations often conflict with the habitat needs of a more aggressive species, our own. Each year, because of man and his activities, migration becomes just a little bit more perilous. Fewer and fewer birds make the cut.*

But **our** *bird's injury was an accident, a near brush with an ancient enemy that claimed the life of another plover feeding nearby. Though not the intended prey, the hard leading edge of the Peregrine Falcon's wing struck the young plover's wing as the falcon cut through the panicked flock. Two of the very fine bones near the end of the wing were broken.*

The bird could still fly, but not as well as a Golden Plover should. When the restless flocks departed on the last day of August to begin their great journey south, she remained. Three weeks passed, and though not fully mended she could wait no longer. She left on a morning with the air filled with snow and migrating sea ducks.

Flying alone, without other birds to take their turn breaking trail, she used energy quickly. Friction dragged at her wings. She tried flying with the sea ducks but their speed was not her speed. Even injured she outflew them. She was a Golden Plover and, injured or not, she was one of the most incredible mechanisms of flight ever conceived by God or man.

The bird put down in a newly harvested wheat field in northern Manitoba. The place was rich in grasshoppers made torpid by the deepening cold. Two other plovers were there, juveniles like herself. One bird had a broken leg. In a week, when they left, she joined them. Although her energy reserves were insufficient, her need for company was great.

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Flying as three was easier than solo flight, but the bad wing was a handicap and it sapped her energy quickly. Over northern Maine, she dropped back and pitched into a potato field. Strangely, the other plovers joined her. A bond had been formed. They were a team. But food was not plentiful. Winter was driving the worms they sought beyond the reach of their bills. Two days later, the threesome took wing again, heading south and east.

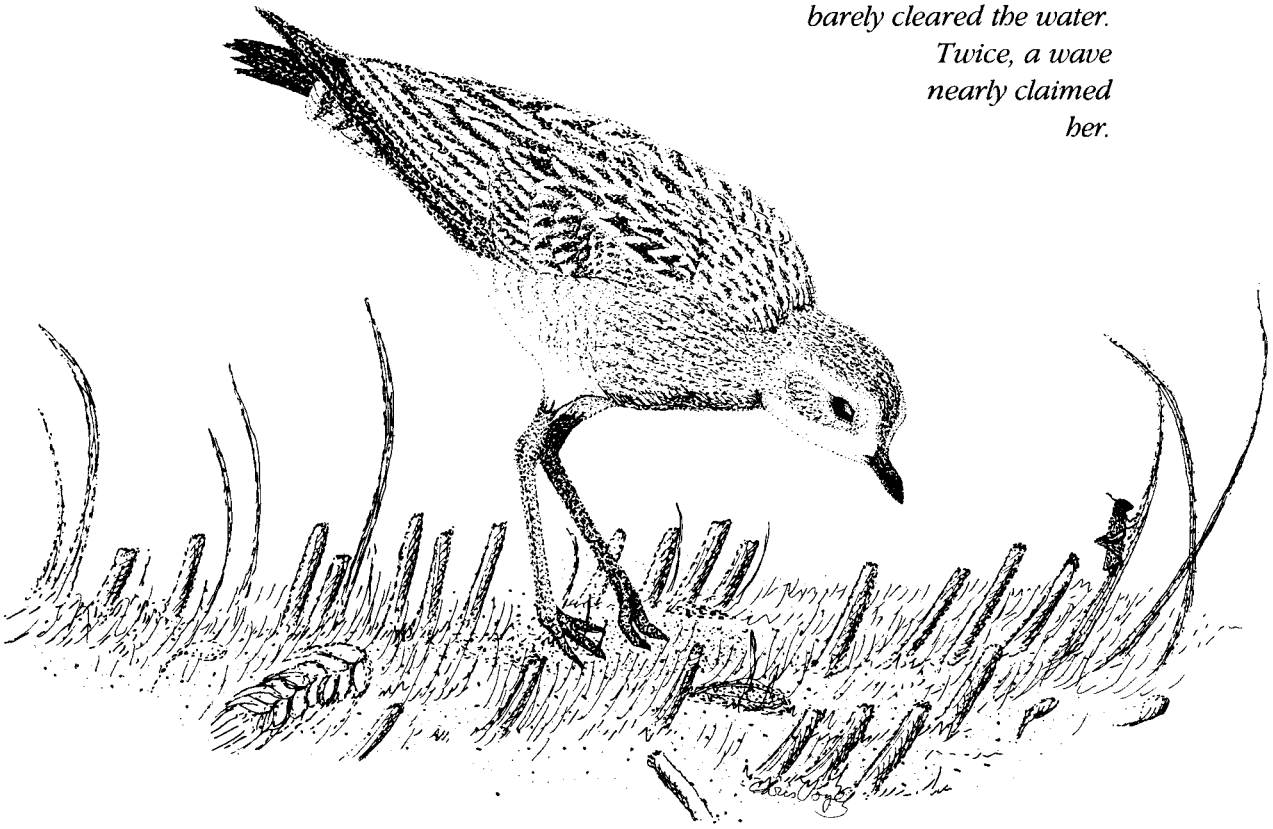
The storm that forced them to make landfall on an island off the coast of Massachusetts lasted two days. During that time, the birds huddled under a sandy lip on the lee side of a grassy knoll. They spent the week following the storm searching the short-cut grass for the food they desperately needed (avoiding as best they could grounds keepers and men who moved about in motorized carts).

Food was difficult to find. Grounds keepers wage a ferocious war against insects that might mar a fairway. When the two birds finally lifted off heading out over open water, the injured bird hesitated. Her strength was not up to theirs. Locked in her brain was the number of miles that lay ahead, and the same brain told her that her fuel, the layers of fat she had amassed, was not sufficient for such a journey. She hesitated, staring after her retreating companions.

One of the pair called back to her, a low, plaintive whistle. She answered immediately and lifted off in pursuit.

For several hours she managed to hold the hemisphere crossing pace but slowly her energy played out. Land, she knew, lay somewhere to the west. She fell behind, trailed the pair for a time, and then turned away, heading west. It took most of the night, fighting a northwest headwind before she found the land she sought.

As her strength waned, she lost
altitude until her wings
barely cleared the water.
Twice, a wave
nearly claimed
her.



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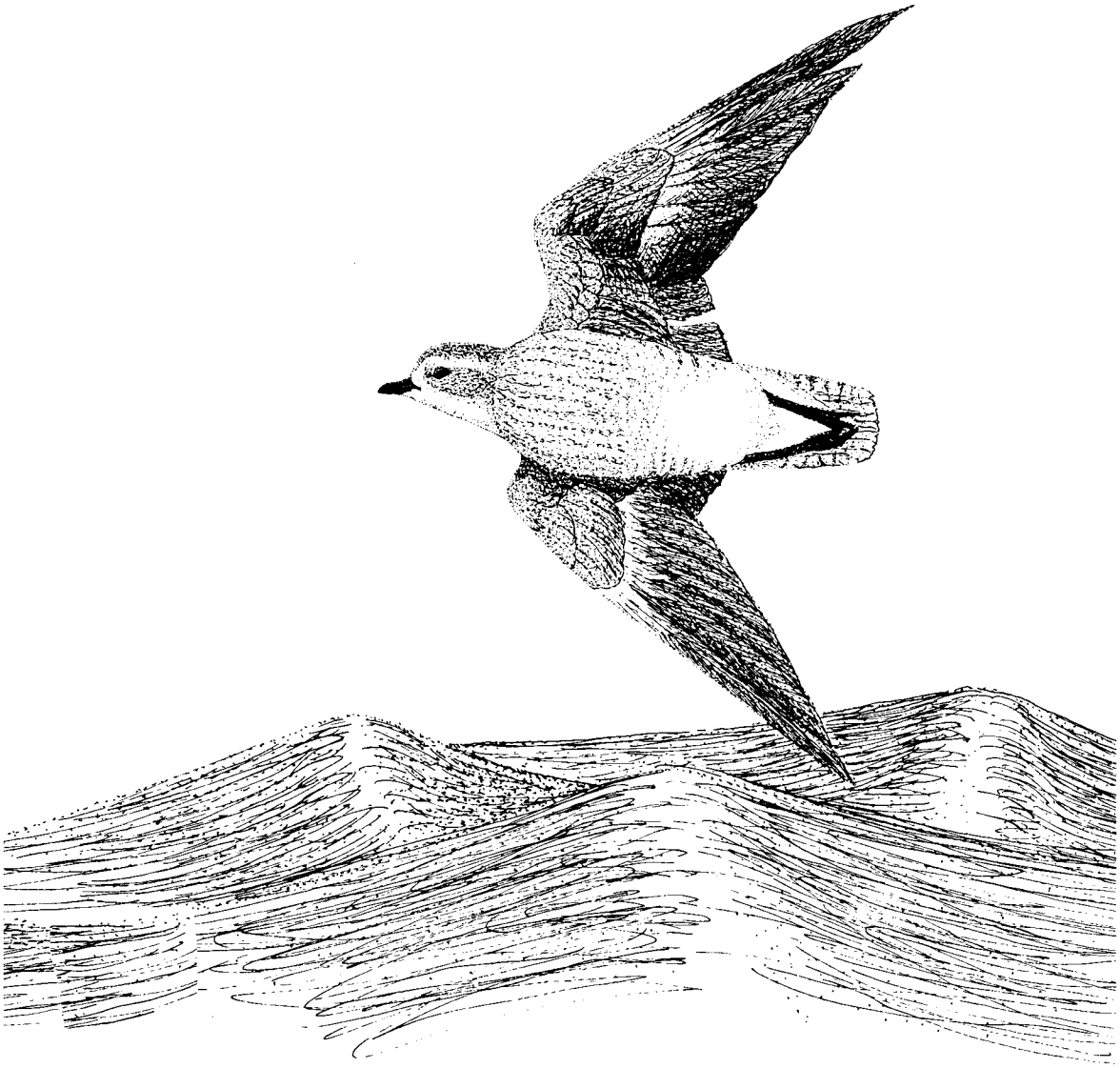

When morning came, she remained where she was. There was no energy left to search for the food that might have sustained her life. What was left of her life would be measured in hours.

Near noon, a young couple, enjoying the last days of Indian summer, came down to the beach accompanied by a large red setter. Though the dog was supposed to be on a leash, few people paid attention to the regulation. The couple walked within twenty feet of the bird without seeing her. Even the coursing setter missed her twice, but on its third pass, the dog nearly tripped over the huddled form.

The bird felt the dog's inquisitive nose move over her back. She tried to stand but could not. With an effort she succeeded in opening her eyes. In front of her, to the south, was the sea.

The dog ran down the beach at full gallop, eager to show its prize, nearly bowling the woman over in its excitement.

"What do you have there, Loki?" the man demanded. "Hold up, damn it! Let me see. Stop!" With incredible effort, the dog managed to immobilize its fore-end (but the hindquarters were simply out of control).

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"Oh, my God!" the woman exclaimed, horrified . "It's a dead bird. A dirty old dead bird. Drop, it," she commanded, dealing Loki a sharp slap on the nose, "Drop it!"

Loki dropped it.

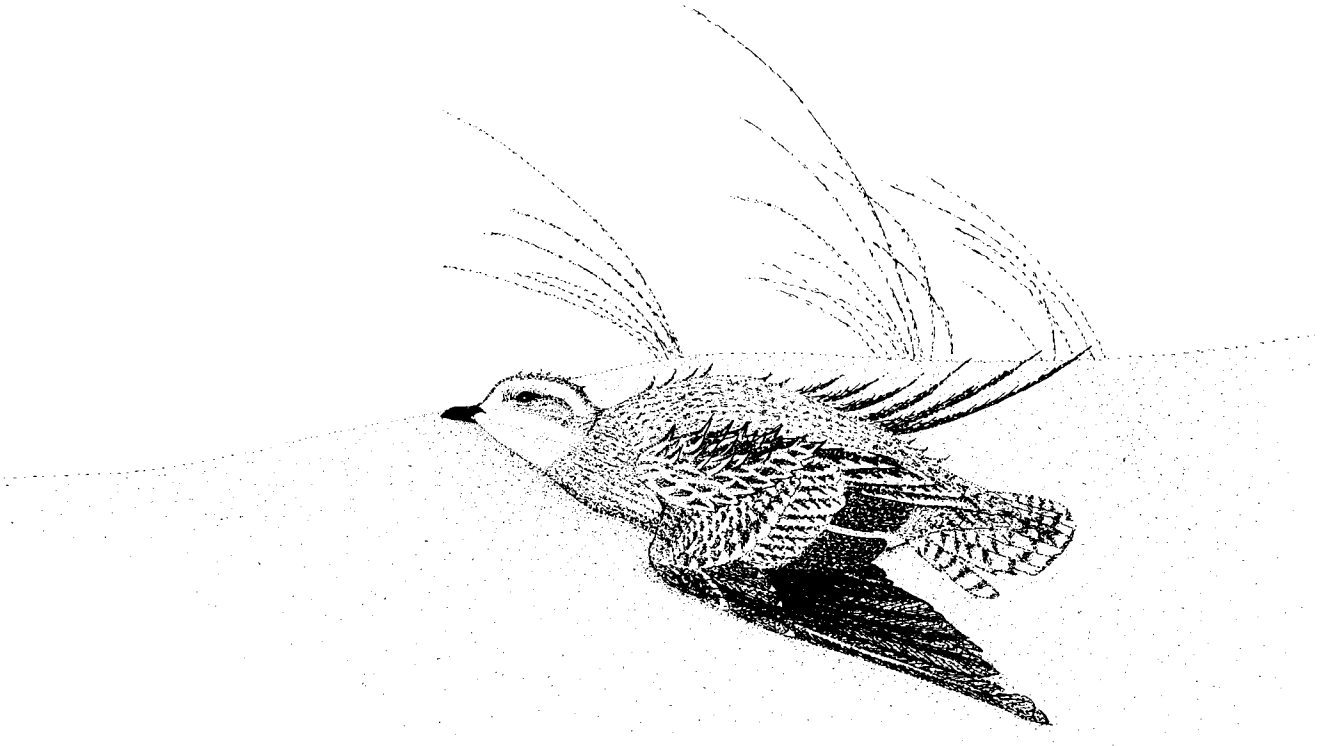
The morning sun spread a golden wash over the still form, making its underparts glow warmly. Even now, it was beautiful.

"Huh, I wonder what kind of bird it is?" the man mused aloud. "It's not a sea gull."

"It's a dead one," his companion said impatiently, as she stepped in front of Loki, whose interest in the bird was unabated. "Come on," she demanded, "let's get away from here before he picks it up again. It probably has some kind of disease."

An hour later, a wave propelled by the incoming tide claimed the bird and carried it into Delaware Bay.

Many hundreds of miles to the south, a single golden plover landed on a shallow coral flat and proceeded to feed, clumsily because of exhaustion and because of its broken leg.



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Student Worksheet

"A Golden Plover at Ebb Tide"

1. Where was the Golden Plover born?

_____

2. What happened to the Golden Plover that caused her injury?

_____

_____

3. From context, what does "torpid" mean in the sentence "... grasshoppers made torpid by the deepening cold."

_____

_____

4. Why did the Golden Plover have a better chance of survival with birds of her own kind than flying alone or with other species?

_____

_____

5. When the birds landed on an island of the coast of Massachusetts what type of human development did they encounter?

_____

6. What human activity made the search for food in Massachusetts so difficult?

_____

_____

7. From context, what is a characteristic of "phalaropes"?

_____

_____

8. What human activities made her search for food in Cape May, New Jersey, difficult?

_____

_____

Think About It

Nearly 50% of all juvenile birds die during their first migration south. What are some natural causes of death? What are some human causes of death? What are some things that humans can do to assist shore birds in their migration both north and south?