

Owls and Raptors

By Ruth Manna

Owls and raptors are the focus for science lessons with an emphasis on discovery. Instead of textbooks, students use trade books and Web sites. They dissect owl pellets. Through play, they learn about predator-prey relationships.

OBJECTIVE

Students will:

1. Learn new words and ask/answer their own questions.
2. Dissect owl pellets and identify what owls eat.
3. Play Rabbits and Hawks board game and play with predator/prey puppets.
4. Think and act like scientists. (Ask questions, make predictions and guesses, try multiple strategies to solve problems, work collaboratively, and persevere)

LESSONS FOR THIS UNIT

- [Lesson 1: What is a Raptor?](#)
- [Lesson 2: Dissecting Owl Pellets](#)
- [Lesson 3: Learning Through Play](#)

REPRODUCIBLES

- [Lab reports \(PDF\)](#)
- [Hawks and Rabbits \(PDF\)](#)

CULMINATING ACTIVITY

I suggest two different ways to conclude the unit:

1. Field Trip

Find out what's available in your area. Try colleges, nature centers, and natural history or science museums. Ask parents to help you locate an expert bird watcher or naturalist. We were fortunate to have a raptor rehabilitation center in our town. Prior to our visit, we had a well-advertised bake sale and raised money for a donation to the rehabilitation center.

2. Owl Report

An alternate idea might be a report which could be shared. Keep it simple and have students try to answer one question. For example: How do raptors care for their young? Use a raptor book display in classroom library and internet sites for information. Have students write their question on the top of poster board and then draw and write their response. Reports could be shared with another grade or class. Put up posters in hallway so parents can see students' work.

SUPPORTING BOOKS

[Books and Internet Resources for Teaching About Owls and Raptors](#)

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What is a Raptor?

By Ruth Manna

Students discover characteristics of raptors, generate a word bank for Owls and Raptors unit, and practice key words.

OBJECTIVE

Students will:

1. Study examples of raptors.
2. Ask and answer questions.
3. Identify attributes shared by raptors.
4. Practice key vocabulary words.

MATERIALS

1. Teacher Selected List of Key Words
2. Photos of owls and other raptors. [See Booklist.](#)
3. Film clips of raptors
4. Chart paper, sentence strips, and markers
5. Butcher paper for Word Bank

SET UP AND PREPARE

1. Set up an area in your room as a resource library about raptors.
2. Bookmark Web sites you will use with students.
3. Select words to teach. Be flexible and ready to include words the students generate.
4. Write words on sentence strips and set aside.
5. Set up butcher paper for word bank and chart paper for characteristics.
6. [Key Words for Teaching Owls and Raptors](#)
(Think of this list as a reference and select the words that are appropriate for your class.)

binocular vision, carnivore, diurnal, eagle, species, facial disk, falcon, fledge, fledging, food chain, gizzard, habitat, incubate, kestrel, life cycle, migrate, nocturnal, osprey, owl, owl pellet, predator, prey, raptor, regurgitate, species, talons, territory, vulture

DIRECTIONS

As I teach this lesson I'm prepared but open to the thoughts and questions of students, encouraging them to help structure the lesson. I follow their interests within the framework of the topic. Meanwhile I'm thinking about concepts, (structure and function, adaptations, habitat, life cycle, food chain, etc.) that I want students to understand. They will discover these big ideas through observing, thinking, talking, and writing.

Day 1

Step 1: Show photos of raptors and ask students

- What do you notice?
- What do you wonder about these birds?
- What do the birds have in common?
- What words will help us as we think and write about birds?
- What would you like to find out?

Step 2: Have students come up and write vocabulary words on butcher paper.

Step 3: Make a list of characteristics on chart paper. Save and continue adding to the list over the next few weeks.

Day 2 (and throughout the unit)

Step 4: Review the words. Here are a few suggestions:

- Snap, clap, stomp - Students stand and snap fingers, clap, or stomp feet as they spell new words.
- Jumping Jacks - Students jump to the letters in the key words.
- Guessing Game - "I'm thinking of a word that starts with T and means claws. What's my word?"
- Word Lotto - Improvised, teacher-made game that involves reading and identifying words.
- Crossword Puzzle
- Word Search
- Letter Scramble
- Cloze Activity

SUPPORTING ALL LEARNERS

Set aside a few minutes during reading groups to reinforce vocabulary. This is repetitive but

some students need extra practice. Continue to refer to the word bank and encourage students to use new words in their writing.

LESSON EXTENSION

Can you create a raptor?

Students use the raptor attributes to create an original raptor.

Can you add to our list of key words?

Students add to the word bank. Students generate lists of words from their reading about raptors and determine their meanings using context or dictionaries. Then they record these words on the class word bank.

ASSESS STUDENTS

Here's what I'm looking for:

Are students:

- using key words orally and in writing?
- asking questions that show higher level thinking?
- drawing conclusions based on their new knowledge?
- engaging one another in conversation about raptors?
- researching the topic on their own?

Wait several weeks to formally assess students so they have opportunities to practice the words. Assess by giving a writing prompt in which you ask students to use several words from the word bank. Ask students to draw and label a raptor.

HOME CONNECTION

Whether you live in a city, suburb, or rural area, there are birds in your area. Ask parents to help children learn about local birds. They can listen for calls and record them, draw pictures or take photos of birds, and bring their findings to school to share with classmates.

EVALUATE THE LESSON

In thinking about your teaching ask yourself:

Did I:

- practice vocabulary words for students who are visual, auditory, and kinesthetic learners?
- elicit higher level thinking?
- allow enough time for practice?
- keep in mind concepts I want students to understand?
- assist students in finding answers to their questions?
- Help students sum up what they learned?

Dissecting Owl Pellets

By Ruth Manna



Opening an owl pellet

After observing the teacher model the lab, students work with lab partners to dissect an owl pellet and identify its contents. Later, they will record data about prey on a graph.

OBJECTIVE
Students will:

1. Observe teacher dissect owl pellet.
2. Work with lab partner to dissect owl pellet.
3. Record results on lab report sheet.
4. Share results with class and record findings on graph.
5. Repeat lab later in unit.

MATERIALS

1. Owl pellets, one for every two students. Order one per student and set aside half of the pellets for the second lab.
2. [Lab reports](#) (PDF)
3. Pencils
4. Black construction paper
5. Magnifying glass, toothpicks, rulers
6. Tweezers, lab aprons, and latex gloves (all optional)
7. Owl Pellet Bone Chart, to identify skeletons of prey
8. Chart paper and colored markers, for graph

ABOUT OWL PELLETS - Owl pellets contain regurgitated bones, fur, and feathers that owls cannot digest. Pellets can be ordered from a biological supply house. Commercial pellets have been sterilized and arrive individually wrapped in aluminum foil. They can be handled safely with bare hands.

SET UP AND PREPARE

1. Practice dissecting an owl pellet ahead of time.
2. Copy lab reports, one per partnership plus a few extras.
3. Get out all materials.

REPRODUCIBLES

1. [Lab reports](#) (PDF)

DIRECTIONS

Day 1 - Teacher Demonstrates

Teacher demonstrates owl pellet dissection while students observe. The purpose of the demonstration is for students to understand the process, not for the teacher to give away the discoveries.

Step 1: Put pellet on black construction paper.

Step 2: Observe outside of pellet before opening it. Measure it.

Step 3: Ask students for their predictions about what's inside.

Step 4: Show how to use a lab report sheet.

Step 5: Pretend to do lab.

Step 6: Answer student questions about process.

Day 2 - Students do the Lab

Step 1: Set up for lab while students are out of the room. Put black construction paper, a wrapped pellet, toothpicks, rulers, aprons, and an Owl Pellet Bone Chart at each station. I do this during my prep period so lab is ready to go when students return. Have latex gloves in case anyone asks for them.

Step 2: Go over lab sheet with class.

Step 3: Students record their names on lab sheets and start lab. Tell students to record their observations as they work.

Step 4: Circulate, encourage, and observe without giving students information. When students need help, refer them to their lab partner. If they continue to need help, give

hints.

Step 5: Stop lab after 30 minutes. Discuss with the class both their discoveries and the process.

Step 6: Make sure students recorded their discoveries on their lab report sheets. Collect lab sheets.

Day 3 - Recording the Results

Step 1: Make up grid for bar graph ahead of time on chart paper. Title of graph might be *What Owls Eat*.

Step 2: Pass out lab sheets. Ask lab partners to share their findings.

Step 3: With student help, record results with tally marks on blackboard. Transfer the tally marks to the bar graph.

Step 4: Ask students for statements they could make based on data:

"What do we know about what owls eat?"

"Were our predictions accurate?" Refer to predictions on chart paper.

"Was there anything in our data that surprised you?"

"When we do this lab again what do you think we'll find?"

SUPPORTING ALL LEARNERS

Yuck! Factor: I do the lab first to reassure students who are timid or hesitant about handling owl pellets. I'm enthusiastic but calm, and tell students this work is what scientists do. My positive attitude sets the tone for the lab. I don't force participation. Since we do the lab twice, usually all students participate in one or both labs.

LESSON EXTENSION

Gluing Skeletons Together

Some students use the Owl Pellet Bone Chart to piece together skeletons and glue them to cardboard with craft glue. Be prepared for creative skeletons.

ASSESS STUDENTS

Here's what I'm looking for:

Did students:

- participate in lab?
- organize themselves and their materials?
- ask questions?
- stay on-task?
- help one another?
- gather and record data?
- draw conclusions and interpret data?
- show growth from first to second lab?

ASSIGNMENTS

Students will dissect an owl pellet and record findings on lab sheet. Later they will share results with class and transfer data to a bar graph. After one or two weeks they will repeat the lab.

HOME CONNECTION

Wild Owl Pellets - Depending on where you live, students may find owl pellets around the base of trees where owls nest. Since these owl pellets have not been sterilized, they contain bacteria. Tell students to ask an adult to help them collect the owl pellet. Ask them to put it in a zippered baggy if they bring it to school to share. Don't dissect unsterilized owl pellets.

EVALUATE THE LESSON

When you think about your teaching ask yourself these questions:

Did I:

- set a positive, calm tone during the demonstration?
- establish clear expectations so most students completed the lab without hesitancy?
- encourage collaboration?
- assist in analyzing data?
- give too much information?
- note any misconceptions that I want to clarify later on?

Name: _____ Date: _____

Owl Pellet Lab Report

My lab partner's name _____

We predict we will find these things in our owl pellet: _____

Outside of Owl Pellet

Here is a sketch of the outside of our owl pellet:



Our owl pellet feels like _____

Our owl pellet looks like _____

Inside of Owl Pellet

Here is a sketch of the inside of our owl pellet:



Here is what we found inside _____

Details we see are _____

Now we know that owls _____

Our predictions were _____

Learning Through Play

By Ruth Manna



During puppet play a student dresses up as a tree.

Students learn more about predator-prey relationships through a board game. They play with raptor and prey puppets and create their own stories.

OBJECTIVE
Students will:

1. Play board game with small group.
2. Share discoveries from board game with class.
3. Play with puppets.
4. Create stories with puppets.

MATERIALS

1. [Hawks and Rabbits](#) (PDF) from *Science Quick and Easy Learning Games: Grades 1-3* by Maria Guevarra-Chang
2. Dice
3. Raptors and prey puppets

SET UP AND PREPARE

1. Purchase or make raptor and prey puppets. Set up area for puppet play.
2. Make copies of game board and directions.
3. Cut out game boards and piece together.
4. Get out dice. Use one die per game board, instead of spinner.
5. Get out plastic discs or paper squares for food tokens. Each group will need a small stack of tokens.
6. Divide students into groups of three or four.

REPRODUCIBLES

1. [Hawks and Rabbits](#) (PDF)

DIRECTIONS

Part I: Rabbits and Hawks

Step 1: Go over the directions for [Hawks and Rabbits](#) (PDF) with the class and answer questions.

Step 2: Assign groups to areas in classroom and pass out materials.

Step 3: Students play game and teacher assists as needed.

Step 4: After about 20 minutes, stop the game.

Step 5: Small groups share results and discuss process.

Part II: Puppet Play

Make puppet area available to students. Observe the stories students create. Encourage students to help one another and make suggestions as needed. Open-ended, playful activities can lead to meaningful learning.

SUPPORTING ALL LEARNERS

Puppet play:

Less fluent readers and writers are successful at puppet play, because they can tell a fact-filled story without having to read or write. When coupled with praise from their teacher and recognition from their classmates, this activity bolsters their self-esteem.

LESSON EXTENSION

Making Up Games:

If a student is interested in making his own raptors game, before he starts talk with him about board games, directions, and scientific accuracy. Help him as he designs his game. When he is finished and has played the game with you, share it with a small group or another grade/class.

ASSESS STUDENTS

Here's what I'm looking for:

Did students:

- work cooperatively?
- share materials?
- follow the rules of the game?

- learn something new about predator – prey relationship?
- have fun?
- create stories with puppets?
- put on a puppet play for a small group or class?

ASSIGNMENTS

Students play a board game with a small group. They play with predator and prey puppets and act out stories.

HOME CONNECTION

Family Game Night: Playing board games brings different ages together in a fun, light-hearted way, makes family members talk and listen, and strengthens the family bond. Encourage families to have a regular time for playing board games.

EVALUATE THE LESSON

When evaluating this lesson, think more about process than product, both for your students and yourself. Ask yourself these questions:

Did I:

- stay in the background?
- observe carefully while I was on the edge of the action?
- encourage students to rely on one another?
- help students sum up what they learned?
- learn something new about my students as individuals and a group?
- gain understanding about students' personalities, preferences, strengths, and weaknesses?

Finally ask yourself: What would I do differently next time?

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Players: 2 to 4

Hawks and Rabbits

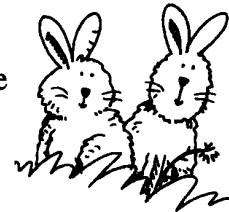
Science Topics: food chain, predator/prey, animal interdependence

Objective: Students infer how predators find and catch food, and how prey keep safe from enemies. They also infer how plants and animals form a food chain.

Materials: • 16 buttons (food tokens) • spinner (see page 9)

BACKGROUND

Every living thing on earth is part of a *food chain*. In a food chain, energy from the sun passes to plants, then to animals in the form of food. Plants use energy from the sun to make their own food. Some animals, like rabbits, eat plants. They, in turn, become *prey* to other animals, like hawks. These animals are called *predators*.



TO PLAY

- 1 Place a button on each of the food spaces where you see plants. The buttons are the food tokens. Decide which player will be the hawk (one) and which will be rabbits (up to three).
- 2 The rabbits start at one end of the board, the hawk at the other (opposite their homes). Rabbits can move forward, sideways, or diagonally, but not backward. The hawk can move in all directions. Players use the spinner to see how many spaces they can move. A rabbit moves first.
- 3 To pick up a food token, a rabbit has to land on a food space box with food in it. Once a rabbit has picked up a token, the food is gone. But the rabbit also has to watch out for the hawk. To keep safe from the hawk, the rabbit has to get to a safe place before the hawk catches it.
- 4 The hawk spins in turn, trying to catch the rabbits. If the hawk lands on the same box as a rabbit, the rabbit is caught. But the hawk can't touch a rabbit if it's in a safe space. The rabbit that reaches home with the most food tokens wins. If the hawk catches all the rabbits, the hawk wins.

Think About It










- How do you think a rabbit keeps safe from a hawk? (*It hides in a safe place.*)
- Why do you think the hawk chases the rabbit? (*The hawk needs the rabbit for food.*)
- What other small animals do you think are prey for a hawk? (*snakes, birds, mice, rats, and other small animals*)

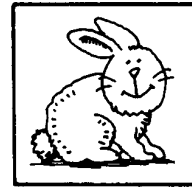
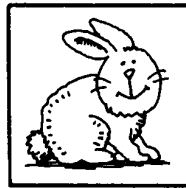
Extension Activities

- **Favorite Foods:** Students research what animals eat, then create a display, using yarn to connect pictures of animals to food sources.
- **Animal Adaptations:** The kiwi, whose eyesight is poor, has nostrils at the tip of its bill to sniff out insects. Explore other adaptations of animals that are predator/prey.

Hawks and Rabbits

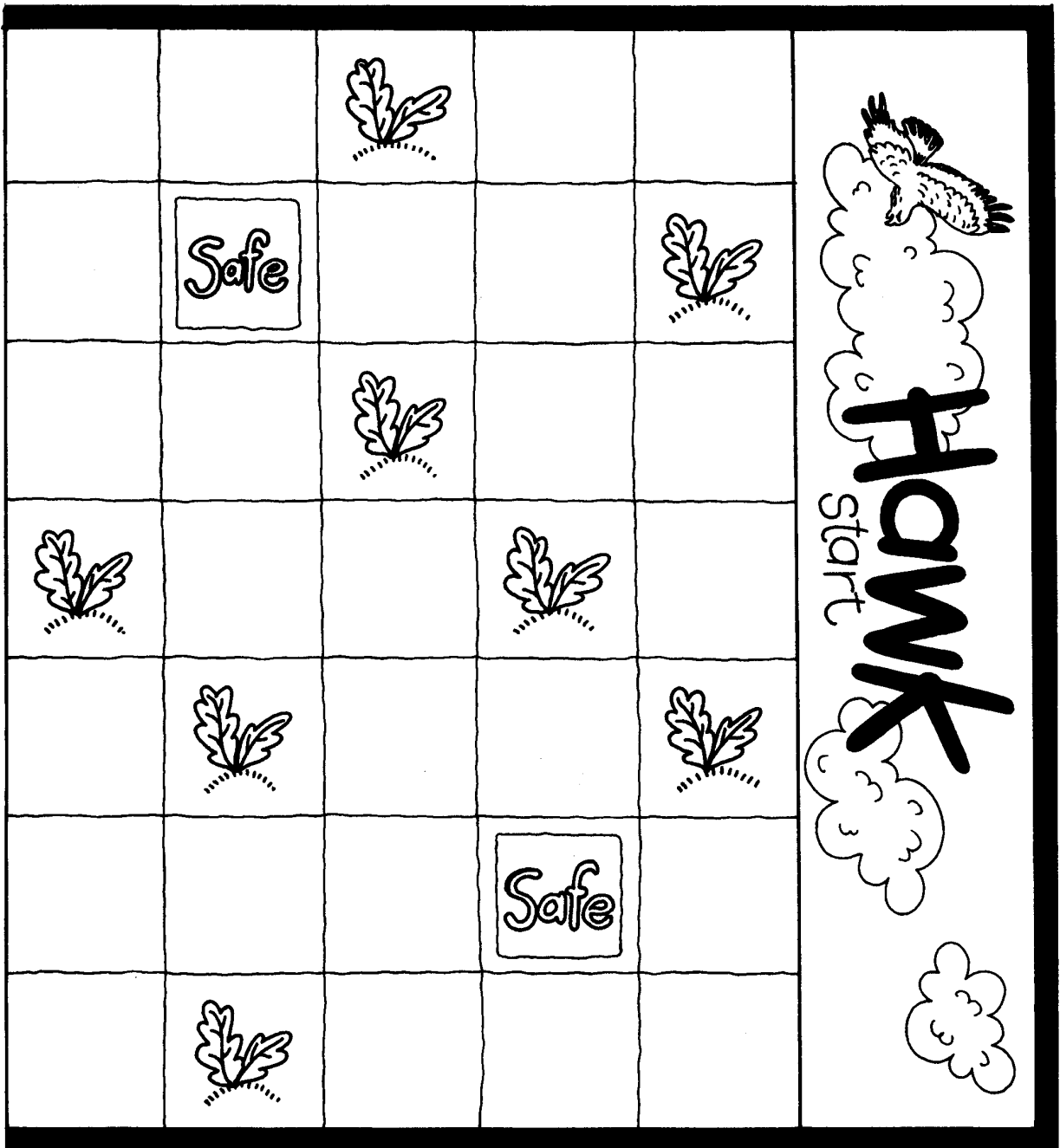
Game Board

 Rabbits start					
					
			Safe		
					
					Safe
					
	Safe				



Hawks and Rabbits

Game Board



Books and Internet Resources for Teaching About Owls and Raptors

[Unit Plan Title: Owls and Raptors](#)

I have divided this booklist into fiction, nonfiction, and professional resources.

Nonfiction

***Adopted by an Owl: The True Story of Jackson the Owl* by Robbyn Smith van Frankenhuyzen**

This true story recounts the relationship a family had with an owl they knew over a period of years.

Classroom Tip: Read aloud over several days.

Eyewitness Juniors: Amazing Birds of Prey

One of the Eyewitness series for 3rd and 4th graders.

Classroom Tip: Students use book to find answers to their report questions about raptors.

***One Wing's Gift: Rescuing Alaska's Wild Birds* by John Harris**

A book of short stories about wild birds that have passed through Bird Treatment and Learning Center in Anchorage. Stories of hope about dedicated volunteers who work for birds' survival.

Classroom Tip: Short stories so I skip around and select the raptor stories. Helps students understand about becoming stewards of the environment.

***Owl Puke: The Book* by Jane Hammerslough**

A humorous look at owls that is full of fun activities and loads of facts. It comes packaged with an owl pellet and dissection.

Classroom Tip: Good book to use at beginning of unit. Includes recipe for edible, candy "owl pellets." I made them and wrapped them in aluminum foil so they resembled real pellets. Includes a funny owl puke card which we made for parents.

[All About Owls by Jim Arnosky](#)

Well-illustrated book by a noted science and nature author.

Classroom Tip: An age-appropriate, informative book that can be read by a second grade reading group if you have copies.

FICTION

***The Barn Owls* by Tony Johnston and Deborah Kogan Ray**

Simple story with little text and lovely illustrations which is worthwhile, though easy.

Classroom Tip: When I read this book aloud I combine it with another, *Billywise*, by Judith Nicholls. Both books can be read during independent reading.

***Frightful's Daughter* by Jean Craighead George**

Fabulous story that's connected to the chapter book, *My Side of the Mountain* by the same, famous author of science fiction nature books.

Classroom Tip: This is an opportunity for me to introduce my students to Jean Craighead George, an author I hope to read as they develop as readers. There are two other books of nonfiction short stories by George that I also use: *The Tarantula in My Purse* and *There's an Owl in the Shower*.

[Guardians of Ga'hoole: Book One: The Capture](#) by Kathryn Lasky

This is the first in a series of seven fantasy books written for older students.

Classroom Tip: I recommend this book for gifted 2nd graders.

[Owl Moon by Jane Yolen](#)

Beautiful, poetic language fills this picture book about a father and child's midwinter, late-night search for an owl.

Classroom Tip: I use this book for writing workshop mini-lessons about word choice, poetic language, and voice.

Poppy by Avi

An exciting and sometimes scary adventure story starring animals that live in fictitious Dimwood Forest. This is the first in a series of four books sold as a boxed set. The other three books are *Ragweed*, *Poppy and Rye*, and *Ereth's Birthda*.

Classroom Tip: I use this as my read-aloud chapter book while we study owls. I copy the map in the front of the book and make a map transparency for the overhead. We refer to the maps every day while I read and they help with students' comprehension. After I read *Poppy*, some students read the rest of the series themselves.

PROFESSIONAL RESOURCES

www.owling.com

Owl calls, photos, and information about a wide variety of owls.

Classroom Tips: I work with students gathered around me at the computer. I show them how to listen to owl calls and gather information for reports.

www.owlpages.com

Photos and information about North American owls. Students can listen to owl calls.

Classroom Tips: I use this site as I do owling.com.

www.raptorsinthecity.homestead.com

Science curriculum for ages 7 – 11. It also links to real-time nesting falcons.

Classroom Tip: When falcons are nesting I have a student check in daily and report findings to the class.