



Teacher's Corner

The Great Peregrine Scavenger Hunt – on the Internet ****Starring the Peregrine Falcon****

Grades:	4-8, teachers may adjust suggested activities to accommodate grade levels
Topic:	Peregrine Falcon: An Up Close and Personal Look
Content Area(s):	See attached content standards list – Science, Social Studies, Mathematics, Language Arts
Overview:	In this module, students will research the peregrine falcon using the Internet and share their findings through classroom discussion, investigation and with the school or community. Along the way, they will learn how humans create and adapt their habitat in different ways and how those adaptations can affect and has affected wildlife; they will analyze peregrine falcon habitats, behavior, migration and life cycle of the peregrine and examine how these raptors were almost extinct and how the species is recovering.
No. of Students:	Groups of four or five students
Time Allowance:	Six, one-hour classes

Environment: Classroom with a field trip and interactive distance learning module.

Equipment/Materials:

- Computers
- Internet Access
- Notebooks
- Pens/Pencils
- Easels with pads or white boards & markers
- Other materials outlined in activities

Objectives:

- Conduct investigations that require data to be gathered, charted and graphed and also require students to hypothesize, draw inferences and conclusions;
- Investigate and understand behavioral and physical adaptations through study of migration and habitat;
- Gain understanding of food chains and environmental effects;
- Learn about natural events and human influence;
- Learn how plants and animals interact with one another;
- Investigate and understand natural resources and conservation efforts and their importance;
- Demonstrate ability to work with technology, specifically, how to search the Internet, retrieve and use information;
- Write papers using research to convey key concepts;
- Work in a team to share ideas, learn new concepts, organize information logically, revise chosen project as a team and present final project in a written and oral presentation.

Resources: Include Internet addresses, books, videos, software, etc.

Standards/Indicators: See Attached

Technology Skills: Computer keyboarding, Internet searching

Author: Penni Wild for the Conserve Wildlife Foundation of New Jersey

School: Elementary to Middle School

Lesson Plan Overview

PEREGRINE SCAVENGER HUNT -- ON THE INTERNET

Ideally, this Peregrine module of six, one-hour classes would be presented between April and early June, when New Jersey's peregrine falcons begin to nest through the time when chicks hatch and fledge.

Follow our live peregrine webcam, located at 101 Hudson Street in Jersey City. Thanks to a grant from the Verizon Foundation, the webcam lets all of us view these rare species – their habitat, their behavior, and the hatching of the falcon chicks.

The following module consists of six integrated lessons that support New Jersey Core Curriculum Standards. Each requires one hour of class time, plus homework. The entire module can be adjusted to the needs of your grade level and student ability. For example, some of the work may be too intense and advanced for fourth graders. In this instance, you may want to condense activities, drop the homework and create a class project.

We welcome your feedback, comments and suggestions.

Number of Students: Groups of 4 or 5 – however many work in your classroom

Equipment/Materials:

Computers
Internet Access
Notebooks
Pens/Pencils
Easels with pads or white boards & Markers
Specific materials outlined with activities too!

Suggested Time Allowance: one hour

Lesson One: The Great Peregrine Race

Equipment/Materials:

Computers
Internet Access
Notebooks
Pens/Pencils

Suggested Time Allowance: one hour

Objectives:

- Conduct investigations that require data to be gathered, grouped and require students to hypothesize, draw inferences and conclusions;
 - Investigate and understand natural resources and conservation efforts and their importance;
 - Demonstrate ability to work with technology, specifically, how to search the Internet, retrieve and use information;
 - Work in a team to share ideas, learn new concepts, and organize information logically.
1. Assign each group one search engine, for example, yahoo.com; google.com; dogpile.com; altavista.com; msn.com. Tell students to pull up their assigned search engine.
 2. When you say “go,” each student is to type in peregrine + falcon and write down the answer to your question, which is:

How many entries came up in your search engine total for Peregrine Falcon?

3. Next, each group will pick one topic from the following list and narrow their search on the peregrine falcon to that topic, research articles or sites and print out those that give them information on their area of peregrine falcon research. (Note: Teacher may want to limit topic selection, depending on class size and interest.) While each member of the group is doing his or her own Internet search, tell them they will meet as a group in another class to compare notes and present their findings. Give the students about 10 minutes to talk about how they can work together – independently – to collect the most information on their topic. They should all raise their hands when they’ve set their Internet search strategy.

Topics: Peregrine Falcon – New Jersey
 Peregrine Falcon – Canada
 Peregrine Falcon -- West Coast U.S.A.
 Peregrine Falcon – Other locations
 (For smaller classes, these four above can be collapsed to
 Peregrine + USA; Peregrine + Canada)

Peregrine Falcon – Migration
Peregrine Falcon – DDT or Pesticide
Peregrine Falcon – Habitat
Peregrine Falcon – Food Chain
Peregrine Falcon – Environmental Laws or Legislation
Peregrine Falcon – Songs/Poems
Peregrine Falcon – Talons or Wings or Speed
Peregrine Falcon – Nesting
Peregrine Falcon – Conservation

Note: For best results on this overall module, you might want to consider at minimum assigning the following topics: Peregrine + NJ (or USA); Peregrine + Habitat; Peregrine + Food Chain; Peregrine Falcon + Conservation.

4. Again, students should note the total number of entries that show up on their search engine for their topic. This time, students also should note whether the suffix was a “dot” .org; .net; .edu or .com. You could introduce the concepts of these different domains and talk about why they exist and how they came to be.
5. If there’s not enough time (or aren’t enough printers) for students to print the articles or pages they find, they can write them down in their notebook and print them out either at home as homework (if they have a computer and printer), or make an appointment to come back and do the search and print materials.
6. **Homework:** Students are to take the information they printed out and write an essay on what they learned about their particular topic, the sites they found and the total number of sites. They will present this information next class to the students in their group. Students will share their findings within the group. (For younger students, it may be more effective and productive to create a poster project where they could draw ideas and concepts and add a paragraph or two to share their findings. This could take a couple of classes alone!)

Lesson #2: The Great Peregrine Race Continues

Equipment/Materials:

Notebooks
Pens/Pencils
Easels with pads or white boards & Markers
Specific materials outlined with activities too!

Suggested Time Allowance: one hour

Objectives:

- Conduct investigations that require data to be gathered, charted and graphed and also require students to hypothesize, draw inferences and conclusion;
 - Investigate and understand behavioral and physical adaptations through study of migration and habitat;
 - Gain understanding of food chains and environmental effects;
 - Learn about natural events and human influence;
 - Learn how plants and animals interact with one another;
 - Investigate and understand natural resources and conservation efforts and their importance;
 - Write papers using research to convey key concepts;
 - Practice public speaking and critical thinking to draw original conclusions;
 - Work in a team to share ideas, learn new concepts, organize information logically, revise chosen project as a team and present final project in a written and oral presentation.
1. In this class, students will share their reports with classmates in their group. When the groups are assembled, each is to assign a “reporter” who will take notes on the presentations and list what the students found in common and what was different. Together, the group will use these notes to create a presentation for the entire class on its peregrine-related topic. Students will hand in the essays from the first lesson.
 2. Allow 15 to 20 minutes for the groups to meet and for each student to read his/her essay.
 3. After they’ve shared their essays, reporters should get ready with pen in hand and facilitate the group to answer a variety of questions that will be gathered into a big “group” report. Here are some questions each group will want to answer, no matter what their focus area, based on this preliminary Internet search:

- What is the main theme of our topic? What is it and why is it important?

- What have we learned, individually and as a team about this?
 - In what areas do we need more information or research?
 - Why is this important? Why should we care about this?
 - What are the facts we want to share with the rest of the class?
 - Does human behavior affect the overall health of the Peregrine Falcon population and if so, how?
 - How can humans keep peregrine falcon's safe?
 - How can society get that message out? Brainstorm 10 outreach activities.
4. If toward the last five minutes of class, it's clear that the group will not finish answering these questions as a group, it becomes a homework assignment for each to answer the questions on their own. During the next lesson, the groups can spend another 15 minutes to reconvene with the reporter to finish answering the questions.

Lesson #3 - The Great Peregrine Race – Class Presentations

Equipment/Materials:

Notebooks
Pens/Pencils
Easels with pads or white boards & Markers
Specific materials outlined with activities too!

Suggested Time Allowance: one hour

Objectives:

- Conduct investigations that require data to be gathered, charted and graphed and also require students to hypothesize, draw inferences and conclusions;
 - Investigate and understand behavioral and physical adaptations through study of migration and habitat;
 - Gain understanding of food chains and environmental effects;
 - Learn about natural events and human influence;
 - Learn how plants and animals interact with one another;
 - Investigate and understand natural resources and conservation efforts and their importance;
 - Demonstrate ability to use information from the Internet;
 - Write papers using research to convey key concepts;
 - Work in a team to share ideas, learn new concepts, organize information logically, revise chosen project as a team and present final project in a written and oral presentation.
1. Groups reconvene to share answers with “reporter” to complete answering the questions from last class. Review oral presentation and prepare to present. (10 minutes)

The objective for this class is for all the students to come together and learn about aspects of the peregrine falcon they didn't come across in their narrow area of research. By the end of the group presentations, students should have a much broader picture of the challenges faced by this species, their future prospects and a host of ways in which students can choose to get involved with conservation initiatives.

All students in the class are to take notes on the presentations. In another class, students will return to their groups and consider the information they heard to determine if and how this new information changes the approach they took to the issue – now that it's much bigger.

1. Class presentations – 30 minutes total
2. Group discussion to consider and incorporate new concepts/ideas.

Note to teacher: At this point, you can decide whether to have your class pick the one group that seems to be the “most exciting” on the topic and do a class project, or keep the small groups in place and follow the next set of suggestions.

Following are questions/issues for four of the “study” groups. As a group and individually, they should conduct the research to answer the questions and present their information in a fun way: a chart, a map, an interactive game, story, poem, song – let them pick how to deliver their information. The only requirement is it must be creative and interactive. Hint: There are a lot of great suggestions they can find during their Internet search!

The three remaining modules for this class are designed by you, according to how you’d like the rest of the project to unfold and the time your students need to conduct their research and create and deliver their projects. Have fun and let us know how this works for you...and your students!

Share your results with us via e-mail at Linda.Tesauro@dep.state.nj.us

Thank you!

Questions to consider for key groups:

Peregrine + Food Chain

What is/are:

DDT?

Food Chain?

Predators?

Prey?

Competition?

Raptors?

How does the peregrine catch its food?

What does it eat?

How did what it eats become a problem and why?

What is DDT and where does it accumulate?

How do peregrines “eat” it?

What is the impact of digesting DDT?

Peregrine + Habitat

Where do peregrines live...what continents?

Where do they nest? Is height important? Why or why not?

What are some of the challenges of a city habitat versus a natural cliff?

How do humans choices about living and lifestyle impact natural wildlife, especially peregrines?

Where do peregrines go in the winter? Why?

Peregrine + Conservation

How many conservation groups are there for peregrines? Other raptors?

Imagine you are a biologist for an environmental organization. Your job is to follow the birds' migration using maps and follow their direction. Along the way, you are a detective of sorts, picking up clues about their migration.

What are some of the environmental habitats for these traveling raptors?

What are some of the hazards they face in traveling?

What kind of climate/temperature do they prefer?

How many miles can they fly in a day?

What kind of food do they eat along the way?

Where do they sleep and find shelter?

Peregrine + NJ

Using www.njfishandwildlife.com or www.conservewildlifenj.org create a daily or weekly newsletter using daily updates from the site to inform your school about New Jersey's nesting peregrines, 2002.

Further Questions/Discussion:

- Describe some important characteristics about the peregrine.
 - What is their habitat?
 - What's different about their eyes and why is this important for falcons?
 - What are "talons" and what purpose do they serve?
 - Talk about their wings, their size, and how it helps them in various ways for survival.
 - What's so special about their bones?
 - Why is their beak special and how is that different from other birds?
 - When do you expect the eggs to hatch? Based on what?
 - How many eggs did the female lay in 2002?
 - How does the male peregrine help take care of the chicks after they hatch?
 - Does the peregrine falcon have any predators they should fear?
 - What observations can you make on the female's behavior during the nesting period? After the nesting period?
 - How old are the chicks when they fledge?
 - How does this site compare/contrast to other peregrine webcams you found on the Internet?
 - What is New Jersey doing to help keep peregrine falcons? How can you help?
-
- Evaluation/Assessment – Pretest students on their knowledge of endangered/threatened species and specific knowledge of raptors and peregrines. Prepare post-test when unit completed.
 - Vocabulary- *hatchling, nesting, predator, restoration, DDT, hack boxes, migration, fostering ornithologist, ecosystem, habitat, pesticide, trophic, food chain, bioaccumulation.*
 - Extension Activities – Field trips; water sample testing in ponds, rivers, streams for chemicals and other elements (many municipalities perform water sample testing at no charge).