



LESSON TITLE: BRINGING UP BIRDY

GRADE LEVEL: 2 -3

TIME ALLOTMENT: One to two 45-minute class periods

OVERVIEW:

Students learn that living things experience diverse life cycles. For example, baby birds go through distinct stages as they grow up into adult birds. This lesson uses the eagle to model universal avian life stages: from egg, to chick, to fledgling juvenile, to adult.

Students begin by creating a collage of bird images, discussing the characteristics that all birds share. A well-known story, *The Ugly Duckling*, is then read to introduce the concept of change over the life span. Students then use segments from the NATURE film *American Eagle* to learn how eagles look and act in different stages of their life cycle. At the conclusion of the lesson, students diagram the eagle life cycle, and may enhance their science learning with vocabulary and math activities.

SUBJECT MATTER:

Science, Language Arts

LEARNING OBJECTIVES:

Students will be able to:

- Describe the characteristics of birds;
- Understand that different kinds of birds display a wide variety of similarities and differences;
- Identify the stages in the life cycle of birds;
- Understand vocabulary associated with the life cycle of birds;
- Diagram the life cycle of the American Bald Eagle.

STANDARDS:

From the [National Science Standards for Science Content](#), Grades K-4.

<http://www.nsta.org/publications/nses.aspx>



Learn more at www.pbs.org/nature.



CONTENT STANDARD C: *Life Science*

As a result of activities in grades K-4, all students should develop understanding of:

LIFE CYCLES OF ORGANISMS

- Plants and animals have life cycles that include being born, developing into adults, reproducing, and eventually dying. The details of this life cycle are different for different organisms.
- Plants and animals closely resemble their parents.
- Many characteristics of an organism are inherited from the parents of the organism, but other characteristics result from an individual's interactions with the environment. Inherited characteristics include the color of flowers and the number of limbs of an animal. Other features, such as the ability to ride a bicycle, are learned through interactions with the environment and cannot be passed on to the next generation.

MEDIA COMPONENTS

Video:

NATURE: *American Eagle*, selected segments

Clip 1: "Challenges of Incubation"

Eagles must protect their eggs from cold, snow and predators.

Clip 2: "Hatching"

For eagles, getting the hang of parenting takes practice.

Clip 3: "Fledglings"

Fledglings begin to fly.

Clip 4: "Growing Independent"

Young eagles learn to catch food.



MATERIALS:

For the class:

- Nature and wildlife magazines (or pictures of birds from other sources)
- Scissors and glue
- Oaktag, posterboard or construction paper

- Feathers (optional)
- Hans Christian Andersen's *The Ugly Duckling* (or any other storybook demonstrating changes in the bird life cycle)
- Photo of an American Bald Eagle
- Computer and projection system for class viewing of video segments

For each student:

- Eagle life cycle student organizer, or 4 sheets of paper to complete life cycle drawings
- Pencil and crayons or markers

Prep for Teachers:

Prior to teaching this lesson, you will need to:

Ask students to bring in nature and wildlife magazines from home.

Preview all of the video segments used in the lesson.

Download the video clips used in the lesson to your classroom computer, or prepare to watch them using your classroom's Internet connection.

If desired, make a word wall of any of the following vocabulary words your students do not yet know: *Egg, chick, eagle, eaglet, incubate, fledgling, hatch, instinct, endangered species.*

Introductory Activity:

1) Have students cut out and paste images of birds onto a collective class collage or individual collages. Students may decorate the collage with additional bird feathers, if available.



2) Ask them to observe the different kinds of birds on the collage. What are the differences? What are the similarities? Use this brainstorming activity to make a list of the characteristics of birds on a blackboard or flip chart. (Contribute any information with which students are not yet familiar.) Students will understand that all birds are warm-blooded animals with feathers, two wings, two legs and a beak -- also, that birds give birth by laying eggs in nests.

3) Ask students if they have ever had a baby sister or brother. Is he or she still a baby? Why not? (*He/she grew up.*) Ask if they have ever seen a photo of mom or dad as a child. Do they look the same now? (*Of course not, they are grown-ups now. They grew up.*) Ask students to think about what they looked like in kindergarten. Ask, “Have you changed since then? How?” Ask students to raise their hands if they’ve had a puppy or a kitten. Is the pet still a baby? Why not? (*It grew up.*) Just as people change as they grow up, baby animals change as they become adults. The different stages in an animal’s life make up what is called a *life cycle*. (You might choose to discuss the fact that some animals go through big changes as they go through the stages of their life cycle. Some animals, like frogs and butterflies go through complete changes, called *metamorphosis*, as they pass through each life cycle stage.) Let students know that today they are going to learn about the life cycle of *birds*.

Learning Activity 1:

1) Read Hans Christian Anderson’s story *The Ugly Duckling*. Discuss the “ugly duckling’s” life cycle from egg, to cygnet, to swan. Compare the stages in the life cycle. Discuss how the bird looked at each stage.

Learning Activity 2:

PRE-VIEWING DISCUSSION:

1) Tell students you are now going to watch some video about another kind of bird, a bird that is the national symbol for the United States of America. Does anyone know what kind



of bird this is? Show class a photo of an American Bald Eagle and see if they recognize the bird now. Discuss the places where the symbolic eagle can be found, e.g., on our currency, and that the bird has recently been an endangered species. Discuss what we mean by an “endangered species.” (In the 1960s, the bald eagle was on the brink of extinction caused by the pesticide DDT and other human pressures). Following their protection as an endangered species, bald eagles have come roaring back.

2) Tell the class that in the video you are going to watch American Bald Eagles go from *egg*, to *chick* or *eaglet*, to *fledgling*. You are going to see how an eagle couple (male and female) prepare for and take care of their eggs. Tell them to watch for:

- How the eagle parents take care of the eggs
- The challenges the eagles face in trying to take care of the eggs and later, the chicks
- How the baby eagle gets out of the egg (*hatching*)
- The differences between the young chick eaglet and the older fledgling eaglet
- Things the birds know to do by *instinct* and things they need to learn.

3) Frame the first video segment. This segment will show the very beginning of the eagle’s life cycle – the egg. Provide the students with a focus, asking them to find out how the eagle parents take care of the egg.

4) PLAY video segment #1, “Challenges of Incubation.” After watching the segment, discuss how the eagle parents take care of the egg. Questions to ask include:

- What dangers does the egg face? (*Cold, predators, and getting broken*)
- What do the eagle parents need to do to keep the eggs safe? (*They must carefully sit on the egg to protect it from the cold, and protect it from predators*)
- Who does the work? (*The parents take turns*)



- How long is incubation? (*35 days*)

5) Ask the students what happens when the baby eagle is ready to come out of the egg? (It hatches!). When it hatches from the egg, the baby eagle is called a **chick**, or **eaglet**.

Frame the next video segment, telling the students that they will see a mother eagle and her just-hatched eaglet. Provide the students with a focus, asking them to figure out who is the more experienced parent – the mother eagle or the father eagle?

6) **PLAY** Video Segment #2, “Hatching.” After the segment, discuss:

- Who was the more experienced parent, the mother eagle or the father eagle? (*The father eagle. This was the mother eagle’s first attempt at parenting; the father was older and had already successfully raised many baby eagles in the past.*)
- What “mistakes” did the young mother eagle make in the beginning? (*She had trouble feeding the eaglet, stepped on the eaglet, faced the wrong way into the wind when trying to protect the eaglet and was blown upside down.*)
- Does it seem like good parenting, eagle-style, comes automatically? (*No – while some aspects of parenting are automatic, the ability to parent well improves with experience.*)
- What did the eaglet look like when it hatched? (*grayish white, wobbly, covered in fuzzy down*) How do you think it felt?

7) Explain that the eaglets spend the first ten to thirteen weeks of their lives without leaving the nest, eating and growing. At about six weeks of age, they start to lose their fuzzy down, and black feathers start to grow in. Soon, the eaglets are as big as their parents. In the next video segment, the students will see a ten-week-old eaglet named “Underdog” who is getting ready to take his first flight (called his “maiden flight” in the film). Explain that a bird who has reached the age of taking his or her first flight is called a **fledgling**. Provide the students with a focus, asking them to look for how the fledgling gets ready to fly.



8) PLAY Video Segment #3, “Fledglings.” After video segment #3, discuss:

- How did Underdog get ready to fly? (*Jumped up and down on the nest flapping his wings in little “flights to nowhere”*)
- What part of flying is “the tricky part”? (*the landing*)
- What is meant when we say for birds flying is completely *instinctive*? (*The birds do not have to be taught how to fly – they fly naturally when they are old enough.*)
- What did these eaglets look like? How do they differ from hatchlings? How do they differ from adult eagles? (*Fledglings are covered in black feathers rather than fuzzy down. While fledglings are the same size as adult eagles, adults have white heads and white tails while fledglings have black feathers head to tail, sometimes with splotches of white feathers here and there.*)

9) Frame the next video segment: as the eagles grow up further, they must learn more skills. Provide a focus, asking the students what the next “big test” is for the fledglings.

10) PLAY Video Segment #4, “Growing Independent.” Follow up by asking the students:

- What must an eaglet learn to do before he/she becomes an adult? (*Learn to hunt successfully, in this case catching a waterbird called a coot*)
- Could you tell the difference between the fledglings and the adult eagles? How? (*Adult eagles had white heads and tails while fledglings were black all over*)
- Who was “playing with the food,” fledglings or adults? (*Everyone!*)

Culminating Activity:

1) Distribute the Eagle Life Cycle student organizer to each student. The students will sketch the four stages of the eagle life cycle that they have learned about: egg, chick, fledgling, and adult (if the squares on the organizer are too small for student drawings,



this exercise can be completed on four separate pieces of paper). The students should label each stage appropriately and place them in the correct order. Help students with their life cycle drawings and collect them as an assessment or to make a classroom display.

Cross-Curricular Extensions:

LANGUAGE ARTS EXTENSION:

Using an experience chart, define the following words by using them each in a sentence: hatch, hatching, eaglet, cygnet, nest, fledgling, incubate, endangered species. Where possible, use sentences contributed by class members. For example:

- Birds *incubate* the eggs by sitting on them to keep them warm before they hatch.
- A *fledgling* is a young bird just learning to fly.

When discussing the noun ‘eaglet,’ you may also want to look at other words using the suffix –let to denote young animals or something small, e.g., piglet, cutlet, owlet, booklet.

MATH EXTENSION:

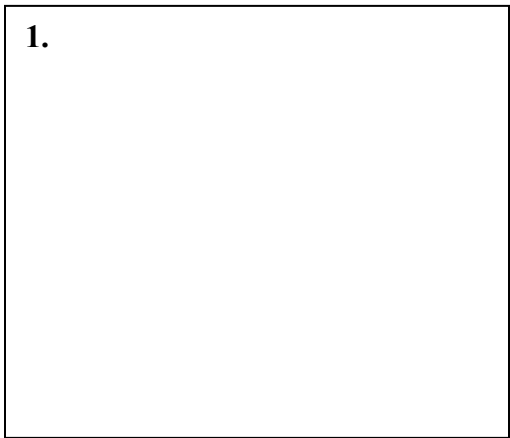
The incubation period of bird eggs varies from species to species. (There are also temperature variables.) Students can research and make up a table or graph indicating the varying lengths of different birds’ incubations periods. For example:

Chickens	20-22 days
Ostrich	42-50 days
Budgies	27-28 days
Pigeon	14-18 days
Swan	30 days
Eagles	35 days

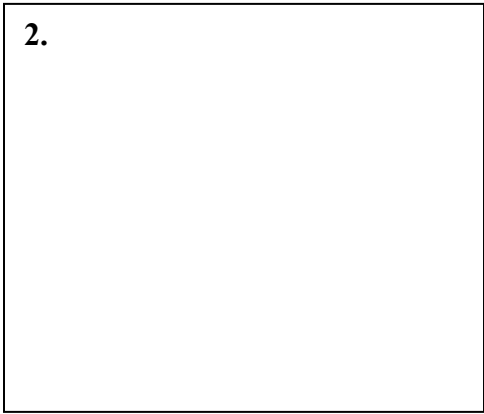


Life Cycle of the American Bald Eagle

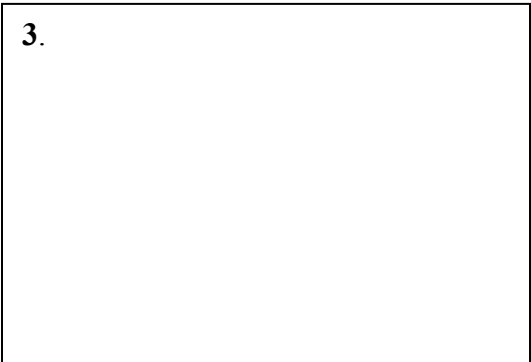
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