

## Alternatives to Chick Hatching Projects: Online Resources

These resources may be used to create exciting and enriching lessons about birds, embryo development, reproduction, evolution, and other topics usually covered by chick hatching projects. See the flip side of this sheet for links to lesson plans.

### **Morphing Embryos** (time lapse sequences)

<http://www.pbs.org/wgbh/nova/odyssey/clips/>

### **The Visible Embryo** [human embryonic and fetal development]

<http://www.visembryo.com/baby/>

### **Feathered Dinosaurs** [web exhibit]

<http://www.carnegiemuseums.org/cmnh/exhibits/feathered/index.html>

### **Dinosaur Eggs** [simulated "hatching" of fossilized eggs]

<http://www.nationalgeographic.com/dinoeggs/index.html>

### **The Biology Project: Cell Biology** [problem sets & tutorials]

[http://www.biology.arizona.edu/cell\\_bio/cell\\_bio.html](http://www.biology.arizona.edu/cell_bio/cell_bio.html)

### **Zoom Birds** [various resources and activities about birds, for elementary students]

<http://www.enchantedlearning.com/subjects/birds/>

### **Migrating Birds Know No Boundaries** [wealth of resources for secondary students]

[http://www.birds.org.il/show\\_item.asp?levelId=457](http://www.birds.org.il/show_item.asp?levelId=457)

### **North American Bird Project** [photos and lesson plans]

<http://birdcentral.net/index.htm>

### **Bird Printouts** [including chicken embryo printouts for labeling and coloring]

<http://www.enchantedlearning.com/subjects/birds/printouts/>

### **Which Embryo Is Human?**

<http://www.exploratorium.edu/exhibits/embryo/embryo.html>

### Two on Bird Songs: [both include sound clips and explanatory text]:

#### **Birdsong and Motivation** [Starlings]

[http://whyfiles.org/shorties/114bird\\_song/index.html](http://whyfiles.org/shorties/114bird_song/index.html)

#### **Bird Mating Call** [Chickadees]

[http://whyfiles.org/shorties/104chick\\_sex/index.html](http://whyfiles.org/shorties/104chick_sex/index.html)

### Several on Prairie Chickens:

#### **Attwater's Prairie Chicken: Keep the Wild Alive** [includes audio and video]

<http://www.nwf.org/keepthewildalive/prairiechicken/>

#### **Newton Central on Prairie Chickens** [information and class projects]

[http://www.museum.state.il.us/mic\\_home/schools95/newton/project/](http://www.museum.state.il.us/mic_home/schools95/newton/project/)

#### **Attwaters Prairie Chicken Printout** [information plus handout]

<http://www.enchantedlearning.com/subjects/birds/printouts/Prairiechicken.shtml>

#### **USGS Greater Prairie Chicken pages**

<http://www.mbr-pwrc.usgs.gov/id/framlst/i3050id.html>

### Several on Chickens:

#### **United Poultry Concerns**

<http://www.upc-online.org>

#### **Eastern Shore Sanctuary and Education Center**

<http://www.bravebirds.org>

#### **Farm Sanctuary**

<http://www.factoryfarming.com/poultry.htm>

## Alternatives to Chick Hatching Projects: Online Lesson & Unit Plans

To find more lessons suited to your needs, go to sites offering science lesson plans and search using keywords to describe your learning objectives. Both Google and Yahoo offer directories of sites offering science lesson plans. See the flip side of this sheet for more resources.

### **Wings Across the Ocean** [unit] (grade 6-12)

[http://www.birds.org.il/show\\_item.asp?levelId=642](http://www.birds.org.il/show_item.asp?levelId=642)

Series of seven lessons concerning migrating birds. Website allows students to access data from satellites, "falcon cams" and other technologies utilized to track and assist migrating wild birds. Includes coverage of courtship, reproduction, and parenting.

### **Building a Baby** (grade 6-12)

<http://school.discovery.com/lessonplans/programs/buildingababy/>

Groups of students research phases of fetal development in humans and other animals. Groups prepare presentations including verbal and visual materials. Teacher directs construction of a timeline including all of the presentations and guides subsequent discussion to specific areas of interest (evolution, cell structure, etc.)

### **Bird Evolution** (grade 6-12)

<http://school.discovery.com/lessonplans/programs/birdsofprey/>

Students research and debate the question of whether birds evolved from reptiles or dinosaurs. Number and complexity of arguments for each position may be varied to accommodate different grade levels. Can be adapted to include a visit to a local wildlife rehabilitation or preservation center serving local captors. Teaches critical thinking about competing claims.

### **Penguin** [unit] (grade 3)

<http://www.libsci.sc.edu/miller/penguins.htm>

Through a range of lessons and activities, students learn about 9 types of penguin. Students learn how penguins gather food, feed their chicks, and protect their chicks and themselves from predators.

### **Animal Adaptations: Focus on Bird Beaks** (grade 6)

<http://ericir.syr.edu/cgi-bin/printlessons.cgi/Virtual/Lessons/Science/Animals/ANM0116.html>

A hands-on lesson in which students use various implements to try to pick up items such as seeds and gummy worms. In conjunction with pictures of various beak shapes, this leads students to understand the evolution of beak shapes in response to available food sources. Could be made simpler or more complex for younger or older students.

### **Bird Study** [Unit] (grade 3-6)

<http://ericir.syr.edu/cgi-bin/printlessons.cgi/Virtual/Lessons/Science/Animals/ANM0010.html>

This is a unit rather than a single lesson plan. Through a wide range of activities, students learn the parts of a bird, how to recognize different bird calls, and how to describe 20 different kinds of bird. Includes in-class activities as well as field study. Could easily be adapted upwards by increasing the quantity and complexity of facts to be learned about each bird.

### **Build an Animal** (grade 10)

<http://www.lessonplanspage.com/ScienceAnimalsAdaptToEnviron-BuildAnimal10.htm>

Using common materials, each student constructs an animal to suit a specific environment, assigning a proper genus-species name to the creation. Students must specify behavior, food sources, and means of reproduction for their invented animals and might also be required to envision fetal development.

### **Be a Birder** [Unit] (grade 3-6)

Link: <http://www.inhs.uiuc.edu/chf/pub/virtualbird/teacher/lespl11.html>

Summary: Students build a bird feeding and observation area and then learn to identify and carefully observe birds. Students make a journal, which includes both text and art work.

### **Bird Banter** (grade 3-8)

<http://www.inhs.uiuc.edu/chf/pub/virtualbird/teacher/lespl6.html>

Students listen to bird calls on tape and then learn to both imitate the calls and recognize them in the wild. Can be adapted for older students by including more technical information about how the birds make the sounds and the evolutionary function of the sounds.

### **Birds of a Feather** (grade 4-6)

<http://www.inhs.uiuc.edu/chf/pub/virtualbird/teacher/lespl3.html>

Students learn to distinguish the characteristics of the major classifications of birds, and about the notion of species classification, through a classroom activity in which students are classed according to various characteristics.