Adopt-A-Duck – Wood Duck
Curriculum Introduction

Objectives:

- Describe the viewpoint of a dabbling duck while dabbling underwater through group discussion, in writing, and/or through watercolor painting
- Identify waterfowl food sources from a wetland through group discussion, in writing, and/or through watercolor painting
- Demonstrate/describe dump nesting group discussion and/or through acting
- Identify the pros and cons of dump nesting through group discussion
- Identify the importance of wetlands for waterfowl survival through group discussion

Materials:

- 4-H "Wetlands and Waterfowl Kit" (contact your local Delaware 4-H office for more information)
  - 6 tin cans with edges taped in box
  - Plastic wrap
  - Black trash bags
  - Rubber bands
  - Tape
  - Aquarium rocks
  - Aquarium plants
  - Fishing worms
  - Large- and medium-sized rocks
  - Shells
  - Plastic Easter eggs
- Watercolor paints
- Plastic cups with water
- Watercolor paper
- Paint brushes
- Several small cardboard boxes
- Wood shavings
- Feathers
- Pencils
- Nature Notebooks (or notebook paper)

Instructions:
Go through each of the sections below and lead discussion on each topic, then complete the associated science and/or art activity associated with each. The sections/activities are as follows:

Following the Adopt-A-Duck curriculum, visit:

- http://extension.udel.edu/4h/junior-duck-stamp-program/ for more information on the Delaware Junior Duck Stamp Program (DE JDSP) and state competition deadlines
- http://www.fws.gov/birds/education/junior-duck-stamp-conservation-program/junior-duck-stamp-contest-information.php for more information on JDSP competition rules and resources

Developed by A. Starcher, December 2015

What is a Wood Duck?

Wood ducks (*Aix sponsa*) are a type of dabbling duck common in Delaware, but are found throughout North America. During migration, these waterfowl fly to the southern part of their ranges using the Atlantic and Pacific Flyways, respectively; however, many are permanent residents due to the little difference between winter habitats from the habitat at other times of the year. Because they are cavity nesters, wood ducks prefer forested wetland habitats for breeding.

"Male wood ducks have a crested head that is iridescent green and purple with a white stripe leading from the eye to the end of the crest, and another narrower white stripe from the base of the bill to the tip of the crest. The throat is white and the chest is burgundy with white flecks, gradually grading into a white belly. The bill is brightly patterned black, white and red. The legs and feet are a dull straw yellow and the iris is red. The male call is a thin, high, rising 'jeeeeee.' Female wood ducks have a gray-brown head and neck with a brownish, green, glossed crest. A white teardrop shaped patch surrounds the brownish-black eye. The throat is white and the breast is gray-brown stippled with white, fading into the white belly. The back is olive brown with a shimmer of iridescent green. The bill is blue-gray and the legs and feet are dull grayish-yellow. Females utter a drawn-out, rising squeal, 'oo-eek,' when flushed, and a sharp 'cr-r-ek, cr-e-ek' for an alarm call." – Ducks Unlimited Waterfowl ID – Wood Duck

To listen to a wood duck call, visit http://www.ducks.org/hunting/waterfowl-id/wood-duck#ad-image-0.

Images and description quotation retrieved on 6 December 2015 from http://www.ducks.org/hunting/waterfowl-id/wood-duck#ad-image-0

Wood Ducks are Dabbling Ducks
Wood ducks are a type of dabbling duck (also called a puddle duck). Read the information on "Puddle Duck Behavior" from the Junior Duck Stamp Educator Guide and discuss with the participants. Follow this discussion with the "Darby Duck, the Aquatic Crusader: Critter Scope" observation and the "The world from the point of view of a dabbling duck" painting activities.

Puddle Duck Behavior[1]

Puddle ducks are typically birds of fresh, shallow marshes and rivers rather than of large lakes and bays. They are good divers, but usually feed by dabbling or tipping rather than submerging.

The speculum, or colored wing patch, is generally iridescent and bright, and often a telltale field mark.

Any duck feeding in croplands will likely be a puddle duck, for most of this group are sure-footed and can walk and run well on land. Their diet is mostly vegetable, and grain-fed Mallards or Northern Pintails or acorn-fattened Wood Ducks are highly regarded as food.

Illustrations by Bob Hines

[1] From: http://flyways.us/duck-identification-resources/ducks-at-a-distance/puddle-ducks

[2] From: http://www.ducks.org/conservation/waterfowl-biology/duckling-survival

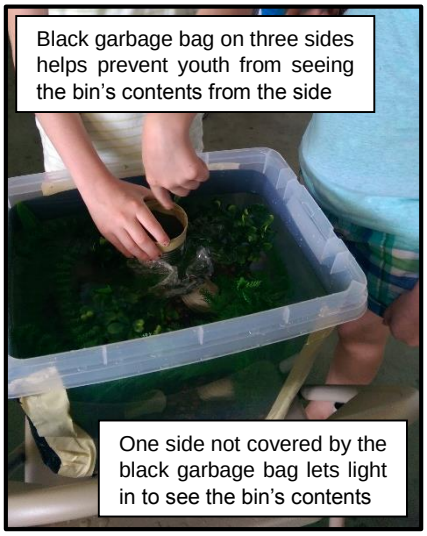
USFWS JDSP Educator Guide "Puddle Duck Behavior" retrieved on 6 December 2015 from http://www.fws.gov/migratorybirds/ pdf/education/JuniorDuckStamp-EducatorGuide.pdf

Critter Scope

- To prepare the critter scopes, follow the directions given in the "Critter Scope" instructions below. These can be used with the "Wetlands and Waterfowl" kit indoors or they may be taken outside and used in a pond or wetland.

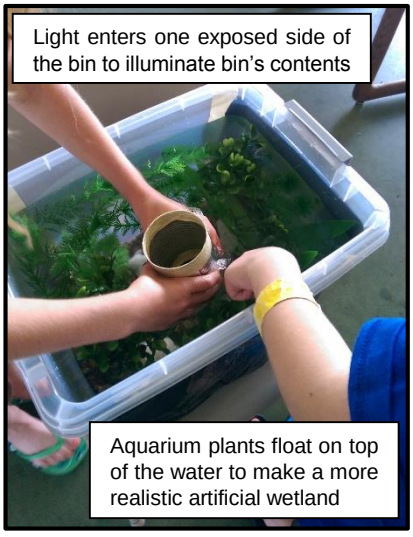
  **Note: If using the critter scopes outside, it is important that the participants are supervised at all times.*

- Wetland Kit Preparation:
  - To use the critter scopes with the "Wetlands and Waterfowl" kit, begin by removing all of the bin's contents.
  - Using masking tape, tape a black garbage bag around three sides of the bin, leaving one of the longer sides exposed to light (see image below). Using the black garbage bag in this way helps conceal the contents of the bin from the participants while they are not doing the activity, but also allows sufficient light in to see the bin's contents while they are completing the activity.
  - Pour aquarium rocks into the bin, and top with larger rocks, shells, fishing worms, and the aquarium plants with bases.
  - Fill the bin with DISTILLED WATER.
  - Allow the aquarium plants without bases to float on top of the water.



- Wetland Kit Use:
  - Tell the participants that they will get to be a dabbling duck and see what a dabbling duck sees while it is dabbling underwater.
  - The participants can come to the side with the black garbage bag to look into the artificial wetland using their critter scopes. Discuss with them what a dabbling duck sees. Ask them what they see in this "wetland" that would be good food for a dabbling duck. They should list vegetation, roots (not seen but implied), worms, and mollusks (indicated by the shells). Discuss with them other waterfowl food sources in a wetland.

- Wetland Kit Cleanup:
  - Plastic wrap used for critter scopes and the black trash bag may be discarded.
  - Remove floating aquarium plants and place on paper towels to air dry.
  - Carefully pour the water from the bin.
  - Remove all aquarium plants, large rocks, shells, and fishing worms, and place on a paper towel to air dry.
  - Use paper towels to soak up as much water from the small aquarium rocks as possible, and then allow to air dry.
  - Allow all items to air dry completely before returning to the bin in their proper containers.



Darby Duck, the Aquatic Crusader: Critter Scopes

Critter Scope

Did you ever wonder what life is like under water?

Well now is your chance to find out where different insects and their larvae or nymphs live in a stream. The critter scope is an exploring tool that can peek into the lifestyles of the wet and wiggly world.

Materials

- a can opener
- a clean coffee can or large juice can
- waterproof tape or duct tape
- clear plastic wrap
- a large and strong rubber band
- scissors

Procedure

1. Carefully remove both ends of the can and cover sharp edges with tape.
2. Place plastic wrap around one end of the can, leaving about one inch extra around the edge.
3. Put a rubber band around the can and plastic to keep the plastic wrap tight.
4. Cut excess plastic wrap away and put tape over the rubber band and plastic wrap.
5. Take your critter scope for a test run in a sink. Look through the open end and place the closed end (the one with the plastic on it) in the water.
6. Now you are able to visit the wet and wiggly world of a stream.

Note: You might want to try using a clear plastic cover from a fast food salad as a critter scope too!

Darby Duck the Aquatic Crusader "Critter Scope" activity instructions retrieved on 10 March 2013 from http://www.epa.gov/owow/NPS/kids/critterscope.html

The World from the Point of View of a Dabbling Duck
Following the "Critter Scope" Activity described above, complete the watercolor portion of this exercise using the instructions below. The participants should use the observations they made during the "Critter Scope" activity to help them develop images for their watercolor painting.

The world from the point of view of a dabbling duck. You've seen examples of how **dabbling ducks** "dabble" in the water and how **diving ducks** dive. Now think of what the underwater world looks like to each of them.

EXPRESS

ACTIVITY: Imagine you are a dabbling duck, tipping upside down, usually in shallow water to feed on water plants and small animals. What do you see? Now imagine that you are a diving duck. You actually dive underwater and swim around looking for small animals and fish. What do you see? Use watercolors to paint the underwater world that each duck may see.

Dabbling ducks "tipping up." © Ted Nigrelli

USFWS JDSP Youth Guide "The World from the Point of View of a Dabbling Duck" retrieved on 6 December 2015 from http://www.fws.gov/migratorybirds/pdf/education/JuniorDuckStamp-YouthGuide.pdf

Wood Ducks are Cavity Nesters
Wood ducks are cavity nesters. Cavity nesters make nests in cavities, such as holes in trees. Because they can't create holes for their nests, wood ducks depend on holes created by other animals or damage from decay, wind, or lightning. Wood ducks will also lay their clutches of eggs in man-made nesting boxes, such as the one pictured below (USFWS).

Cavity Nesters and Dump Nesting
"Not surprisingly, nesting sites are more limited for cavity nesters than they are for upland- and overwater-nesting ducks. Nesting cavities are often made in trees by the excavations of pileated woodpeckers or are created by decay caused by old age or damage from wind or lightning. Although tree cavities are relatively safe from most predators, female ducks must select a nest site that has an entry hole large enough for the birds to enter and a cavity roomy enough to hold a clutch of eggs. As a result, cavity nesters must carefully explore and scout for suitable cavities before making a decision about a nest site.

Wood duck females typically build their nests in tree cavities near wetlands. When a prospective cavity is found, a hen wood duck will land in the tree and carefully inspect the site for a variety of characteristics, including size, shape and security from predators and the elements. In many areas, wood ducks have difficulty finding suitable natural nesting sites."

-Joann Walker and Scott Stephens ("Nest Site Selection")
And Scott Stephens ("Wood Duck Boxes")

http://bio3520.nicerweb.com/Locked/chap/ch02/adaptations.html

US Fish and Wildlife Service. Youth Guide: Federal Junior Duck Stamp Program: Connecting Youth with Nature Through Science and Art! p.98.
Walker, J. and Stephens, S. "Nest Site Selection: Where ducks make their nests is vital to the birds' breeding success." Retrieved on 29 January 2014 from http://www.ducks.org/conservation/waterfowl-biology/understanding-waterfowl-nest-site-selection
Stephens, S. "Wood Duck Boxes." Retrieved on 29 January 2014 from http://www.ducks.org/conservation/waterfowl-biology/wood-duck-boxes

Let's Play a Nesting Game!
Now, let's make a nest for your eggs like a female wood duck would. Can't find a suitable place to make a nest? Practice dump nesting!

Materials:

- Several small cardboard boxes
- Wood shavings
- Feathers
- Plastic Easter eggs (enough for each participants to receive five eggs)

Instructions:

- Set up 3-5 uniform containers with ripped up newspaper or pet bedding (optional) to serve as cavities for nesting. Place these in various locations around the room, but don't tell the participants where they are located.

  **Note: Containers and optional "nesting material" are not provided in this kit.*

- Tell the participants that they are wood ducks and that they have to find a cavity to make a nest in, but there's a problem – there are more wood duck hens wanting to make nests than there are cavities available. Ask them "What does that mean you'll have to do?" and they should respond by saying "dump nesting." The objective is to dump nest while still keeping as many clutches from being abandoned as possible.

- Rules:
  - They have to put their entire clutch (set of eggs) into one nest.
  - The first "hen" to lay her clutch in a nest must stand by that nest. Any "dump nesters" who lay their eggs in her nest after her must return to their seats.
  - If a nest has more than 15 eggs in it upon completion of the activity, it must be abandoned (this number can be adjusted depending on group size). Any nest with less than 15 eggs is assumed to be successfully raised.

- Provide each participant with up to 5 plastic Easter eggs from the kit to serve as their clutch (this number can be adjusted depending on group size).
- Allow them to play the game.
- Count up how many eggs were successfully raised as a result of dump nesting and how many had to be abandoned. Discuss the pros and cons of dump nesting with the participants.

Why are Wetlands Important for Wood Duck Survival?
Wetlands, and the uplands surrounding them, provide habitat essential for waterfowl survival. Vegetation, as well as some animals (invertebrates and fish), found in wetland environments are primary food sources for waterfowl. These areas also offer shelter for building nests, incubating eggs, and raising young.

Create a Conservation Message
Create a conservation message inspired by the Wood Duck's dependence on wetlands for their survival. Use the Junior Duck Stamp Program Conservation Examples below to assist you in developing this message. The Conservation Message participants prepare today can compete in the State Competition with their Artwork.

Examples of Conservation Messages

The Conservation Message is meant to be a motto, saying or guiding principle expressed as a short statement that expresses what students have learned, experienced, and think about nature and wildlife conservation. It encourages students to use language arts, along with their paintings and drawings, to help record what they see, feel and think.

When developing their message, students might want to ask themselves the following questions:

- What have you learned about ducks, geese, or swans?
- What do you like about waterfowl?
- What is the most important thing you learned about wetlands?
- Using all your senses, how would you describe a wetland?
- Why is it important to learn about conservation efforts?
- What do you think are the greatest threats to waterfowl habitats?
- How can you personally impact waterfowl habitat?
- How can you change the world?

While students are encouraged to read published works and collect their favorite nature-oriented sayings, we again caution them against plagiarizing and copying quotes from others.

Below are the Conservation Messages that have been judged best of show at the Federal Junior Duck Stamp Contest. They are examples of the many thoughts students express each year.

"When conservation becomes a way of life, it benefits all life."
Chris Thiessen, Kentucky, 2006

"Conservation is the key to a better environment for all."
Paul Willey, age 18, Arkansas, 2007

"Conservation is our respect for the past, participation of the present, and or responsibility to the future."
Jeriel Chalk, Colorado, 2008

"Our environment, our responsibility, our future."
Christopher Voekel, age 8, New Mexico, 2009

"Wildlife speaks only the truth about our planet's future, but our greatest challenge is learning to listen."
Patrick Hull, age 14, Arizona, 2010

"Spread your wings, create a splash, make a difference."
Allison Armstrong, age 17, Arkansas, 2011

"Valora, Proteje y Preserva su Habitat." ("Appreciate, Protect and Preserve Your Habitat.")
Amarylis Montalvo, age 15, Puerto Rico, 2012

"Nature is our history, conservation is our future."
Samuel Lambert, 11, Kentucky, 2013

"Conserving a habitat is like painting a background. Without it the picture is not complete."
Max Cheng, age 15, California, 2014

"Nature painted us the wetlands, but it is we who must conserve and appreciate the art."
Sherry Xie, age 14, Virginia, 2015

USFWS JDSP "Examples of Conservation Messages" retrieved on 23 November 2015 from http://www.fws.gov/migratorybirds/pdf/Education/junior-duck-stamp-conservation-program/ExampleConservationMessages.pdf