



## Project 6.3.6 Birdhouse Needed

### Purpose

Eighty-five species of North American birds excavate nesting holes, use cavities resulting from decay (natural cavities), or use holes created by other species in dead or deteriorating trees. Many species of cavity-nesting birds have declined because of habitat reduction. Of the 85 species, many of the cavity-nesting birds depend upon man-made nesting structures. Some of these birds may never be able to utilize the structures due to poor planning or other birds and wildlife invading the birdhouse.

In order to encourage population growth of cavity-nesting birds, proper understanding of environmental requirements should be incorporated into planning a birdhouse. Can you design the ultimate birdhouse for a species of your choice?

### Materials

#### Per student:

- Computer with internet access
- 2 copies of *Drawing Template*
- Blank sheet of paper
- Colored stickers
- Pencil
- *Agriscience Notebook*
- *Project 6.3.6 Evaluation Rubric*

### Procedure

For this project, research the natural habitat of a bird native to your area. Determine the needs of the bird and design a birdhouse providing appropriate and adequate shelter.

#### Part One – Research is for the Birds

Use the following websites to select a cavity-nesting bird from your region. Research this bird and develop a design for a birdhouse.

- [http://www.birds.cornell.edu/nestinginfo/bios/nest\\_require/habitat](http://www.birds.cornell.edu/nestinginfo/bios/nest_require/habitat)
- [http://www.na.fs.fed.us/spfo/pubs/wildlife/nesting\\_birds/birds5.htm](http://www.na.fs.fed.us/spfo/pubs/wildlife/nesting_birds/birds5.htm)

<b>Bird species selected:</b>	<b>Mourning Dove</b>
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Research the nesting needs of the bird to help aid in developing your design. Find and record information for each category in Table 1 *Project 6.3.6 Birdhouse Plan*.

#### Part Two – Sketching Your Design

Sketch a pictorial view of your proposed birdhouse on one of the *Drawing Templates*. Recognize funding to protect birds is limited and be responsible with your design.

Do not get hung up on your sketch if you feel it is not very accurate or to scale. The pictorial view will help you draft the two-dimensional drawings of each view. Determine the outer dimensions of the birdhouse and label on your sketch. Note: It may be helpful to label your sketch of the pictorial view with top, front, side, bottom, and so forth as you did with the bluebird birdhouse.

### **Part Three – From Sketching to Drafting**

Using the second *Drawing Template*, determine the scale you will use and complete the title box. Draw each view of your birdhouse to scale. Be sure to include your dimensions and at least four views of the birdhouse in your drawing.

### **Part Four – Project Plans**

Utilizing the same process you used in *Project 6.3.4 Road Trip*, to write a detailed set of steps to build the birdhouse you designed. List the steps on the birdhouse plan. Remember the steps need to be detailed enough that another classmate could pick up your Project Plans and easily build your birdhouse. Include proper names of tools and hardware you sorted in *Project 6.3.5 Tools of the Trade*.

### **Part Five – Bill of Materials**

Develop a bill of materials for all supplies needed to build your birdhouse. You will need to develop a list of all materials needed and research the current price of each item. Be specific, and do not leave anything out. Complete your bill of materials on Table 3 of the birdhouse plan.

### **Part Six – Comparing Birdhouses**

Arrange your research, sketch, three-view drawing, step-by-step plans, and bill of materials as instructed by your teacher. Write your name on a blank sheet of paper and place it with your other documents. When instructed to by your teacher, observe each of your classmates' plans. Use the colored stickers to vote for your favorite plans according to the categories provided by your teacher.

When your teacher has finished evaluating your project, place each part of *Project 6.3.6 Birdhouse Needed* in your *Career Portfolio*.

## **Conclusion**

1. Why is research a critical part of planning and design? To make sure the actual needs of the bird are met and offered. To make sure the bird house/nest will be used.
2. What are the steps involved to design a project? Plan out uses, shape, design and animal needs.
3. What was the most difficult part of planning a project? Why do you suppose this is so? Finding the correct information and to determine if the animal will use the nest.

Name \_\_\_\_\_

## Project 6.3.6 Birdhouse Plan

**Table 1. Cavity-Nesting Bird Information**

1. Physical description of bird – they are a blue grey, light grey to light tan underbelly, and grey and light brown feathers on their back and wings in color. About 9 - 13 inches from head to tail and can have up to 17 inch wing span. Their wings are darker than the rest of their body. They also have dark spots on their wings.
2. Habitat – They live all over the US. They prefer trees for their nests but will search out areas for grasses and insects.
Nesting habits - Mourning Doves sometimes reuse their own or other species' nests. They will even make nests in hanging pots or other elevated areas. They prefer to have their nests located up off of the ground away from predator and enclosed for protection of their young. But they will build them all over, the ground, trees, buildings, man made areas and in grasslands.
3. Food – grass seeds, insects and worms and small plants.
4. Winter movement and dispersal – some will move further south in the winter but usually stay within the US.
5. Breeding characteristics - Mate for life. Breed and nest between mid April through August. They can have from 1-6 broods each brood takes 14 days to incubate and 12 – 15 days to mature.
6. Cavity space requirements – Shape nests in a cone 6 inches in diameter. Use a 12 x 12 inch piece of wire mesh. Cut a 2 ½ in. triangle piece out of the square and then secure it into a circle with a cone point about 3 inches deep.
7. Cavity hole size of nest – 3 inches deep
8. Birdhouse height from ground and spacing from nearest birdhouse – 0 – 250 FT off the ground. Try to place in well protected trees up off of the ground away from cats and other prey.

Table 2. Project Plans for a

Birdhouse

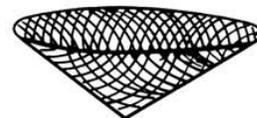
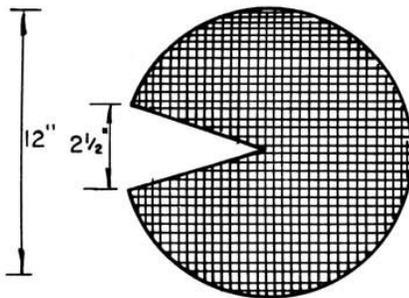
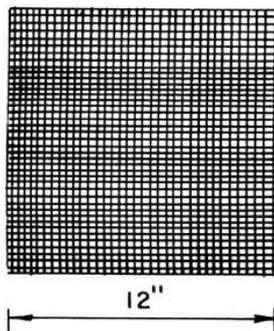
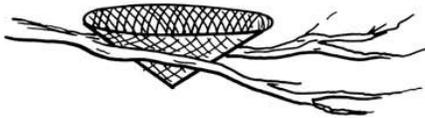
Steps:

**SUPPLIES NEEDED:**

One 12" X 12" Piece of Hardware Cloth

**INSTRUCTIONS:**

Cut with tin snips to form a circle. Cut out a narrow pie-shape and wire edges together to form a cone. Wire and/or staple cone into the crotch of a tree limb.



**Table 3. Bill of Materials**

<b>Item</b>	<b>Number of Units</b>	<b>Description and Type of Material</b>	<b>Size</b>	<b>Total Feet</b>	<b>Unit Cost</b>	<b>Total Cost</b>
Wire Mesh	12 x 12 in	Hard Ware Cloth	12 x 12 in	1 sq ft	\$2.50	\$2.50
Tie wire 16 guage	12 inches	Tie Wird				
Tin snips	1					
<b>Total Project Cost</b>						<b>\$10.00</b>