

The West Coast Bird House



ADST Project

Bird Houses are a great ADST project for students in grades 6.

The first thing that you will need to do as a teacher, is get trained in using your school Maker Cart. Once you are Safe and Certified you will need to do an inventory on your ADST Toolbox kits (there are 12 for your school) and your Maker Cart. Each cart and your 12 kits have master lists of what should be in them. If you are not sure or if you will need additional resources, please contact your District Careers Coordinator and they will be able to help you, Dawn.Anderson@sd71.bc.ca or Steve.Claassen@sd71.bc.ca

Jr. ADST (Applied Design Skills and Technology)

ADST courses have been designed so that students can gain hands-on learning experiences and skills through design and creation. The Curricular Competencies within these courses ask students to understand context, define what they need to do, ideate with others and evaluate, prototype, test their ideas, make and share.

With this, these booklets have been designed to support new to experienced users and there are many ways to approach each step.

Feel free to challenge your students to come up with new ways to compete a step in the booklet. Some of the steps are challenging and should be completed with a partner.

Please share if you have a good approach to a step and we can tweak the booklet for all.

For this project you will need the following items:



- | | |
|------------------------------------|-------------------------|
| 1. Hammer | 10. Hand Saw |
| 2. F Clamp | 11. 1 ½ Inch Nails |
| 3. Measuring Tape | 12. Speed Square |
| 4. Safety Glasses for each student | 13. 5' Cedar board |
| 5. Ear Plugs (if wanted) | 14. Bench hook |
| 6. Hand Drill | 15. PVC pipe 4" |
| 7. Pine | 16. 3/8" drill bit |
| 8. 3/8 Doweling | 17. Twine |
| 9. 2 Hooks | 18. 1 ½" Spade (or Hole |
| Saw w Man Drill) | |

Once you have everything you are ready to start your project. Don't forget to put on your safety glasses.

Step 1:

- Each student will need:
 - 1 wood board, 5 ½" wide x 27" long.
 - 1 piece of 3/8" doweling 6" long.
 - 1 piece of 4" long PVC pipe with a 4" diameter.
- We will use a tape measure to measure out all your cuts:
 - Student will use their Cedar board and measure out the following pieces. Then they will use their bench hook, glasses and hand saw to cut all of them out:
 - 2 x 5 ½" long, front and back walls.
 - 1 x 7" long, long side of roof.
 - 1 x 6 ½" long, short side of roof.
 - 6" long piece of dowelling.
 - 4" long piece of PVC pipe.



Step 2:

- We are now going to measure out where all the holes need to go on the front and back of the house. You will make 5 air holes on the back wall of the house and one entrance hole for the birds on the front, as well as one more 3/8" hole below the entrance hole so that the doweling can go through.
- Students will need to use the tools documented below in the picture. The spade tool on the right is an alternative tool to the man drill and hole saw (the tool to the left of the drill in the

main picture). Both work great for making larger holes in wood. We have chosen the 1 ½" size as most garden birds like a 1 ½"- 2" bird house entrance hole.



- Students will take their two pieces of wood and their speed square and will draw an X through both pieces.
- Choose a piece to be your front (place the nicer side down so the lines are on the inside), you will now take your tape measure and place it in the top right corner and slide it in, watch the line below your measuring tape. Once it hits 2" make a mark on the wood. This will be your big entrance hole.
- Then from the bottom opposite corner measure in 1 ½" on your line. This will be where you drill a 3/8" hole for your doweling. This will be a mini perch, as well, it will hold the PVC pipe in under your roof.
- For the back piece, students will measure in 2" for three holes, then 1 centre hole and one hole that is 1 ½ inches in. This last hole will be the hole that lines up with the front wall's dowelling hole.



Step 3:

- Students may now want to piece together their bird house so that they can get a visual of what their house will look like completed. As well, it will allow them to make sure that they place their roof pieces in the correct spot. The picture on the Right is what their houses should look like. Students may need to sand their doweling so that it fits through the hole. It should be a tight(ish) fit though.
- If students are happy with how it sits together, they can then take their shorter roof piece, 6 ½ inches long and nail the front and back walls to their house. You will need three nails for each side.



- To start, students will place the shorter roof piece on the ground and then line the walls up as seen in the picture above. Please note that the larger entrance hole will need to be placed closer to the roof peak. As well, for the back wall, the holes for the doweling will need to line up. Please ignore my extra front wall hole, mistake 😊
- Once in the correct spot, using a partner, flip the wood so that it is standing with the roof piece in the air, like it's on two legs. This is how you and a partner will nail these together.
- For most, I would recommend pre-nail holes so that the nails slide through the wood connecting the two pieces of wood so that nailing is smooth and easy.
- To do pre-nail holes, measure in 1 inch from the end where you will nail in a nail and make a hole with a nail and pull it out. For the piece on top, I would make the nail hole go all the way through so that the nail slides into the connecting hole. Place a scrap piece of wood under your wood that you are making a hole in so you don't make a hole in your table or desk. Then repeat

the same nail holes on the joining piece of wood. The nail holes should line up, make sure to measure them. Continue and make all your nail holes (3 per side).

Step 4:

- Once both walls are on you will now be able to nail on the second piece of roof. Please make sure to place the roof piece on the house so that the roof makes a proper peak. This piece is the longer side and will be nailed into the end of the first roof and side walls. Consider nailing your nails in starting 1" in from the edge of the roof. Then a nail every 2". Make sure to make pre-nail holes so they go together easily.



Step 5:

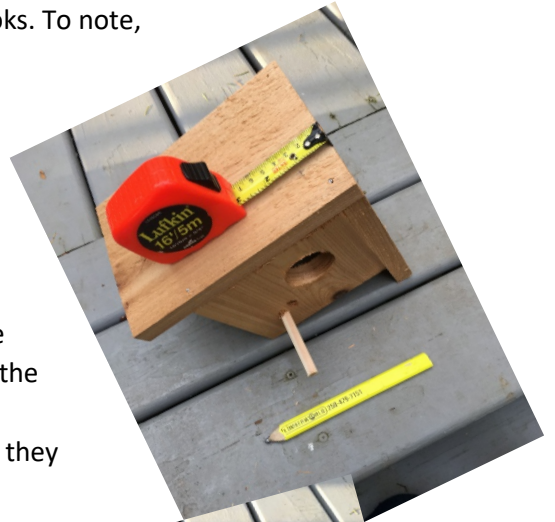
- Your house should now look like the picture to the right. You can now assemble the rest of your house.
- Take your piece of doweling and give it a little sand, with sandpaper. If you don't have any sandpaper you may want to take the drill and run it through your front doweling hole a couple times to make the hole clear and a little wider. Once good, slide the doweling into the back of the bird house.
- If that goes in nicely, pull it out a fair bit and slide the PVC pipe in under the roof and then slide the doweling back in. The doweling should hold the pvc pipe in place.



Step 6:

- Next, we will need to get some hooks in the roof so that you can hang your house from a tree. To do this the students will need a measuring tape, pencil, hammer, nail, twine and 2 hooks.

- The first step is to measure out where you will screw in the hooks. To note, there will be one hook on each side of the roof peak, opposite ends.
- The students will start with a measuring tape and pencil. They will measure 1" down and 1 ½" in from one end of the roof.
- Once this spot is marked with a pencil, flip down to the other side of the roof and do the same measurements on the opposite side.
- Next, students will take their hammer and nail and hammer the nail in a tiny amount, just starting a hole for the hook. Remove the nail, try not to bend it and do the same on the other hole.
- Students may now take their hooks and screw them in as far as they can- a little challenge 😊
- Finally, students may now get a piece of twine, you choose how long, and they can tie one end to each hook.



Congratulations! You should now have a class set of bird houses- YAH

Resources

Curriculum

Subject	Big Idea
English Language Art	Exploring stories and other texts helps us understand ourselves and make connections to others and the world.
Mathematics	Properties of objects and shapes can be described, measured, and compared using volume, area, perimeter, and angles.
ADST	Complex tasks require the acquisition of additional skills.

Websites

- You can select your Province and area (it will show an American Map-ignore) but it will tell you information about local birds, where to place the bird house based on wind direction etc.
<https://nestwatch.org/>

Videos

- Things to consider when trying to attract birds, water, food, area in yard, etc. (13min) The first part of the video is great for showing yard considerations, the second half gives info on bird types and houses of interest. Your house is 5 ½" x 5 ½" with a 1 ¾" entrance hole. As well, your house is easy to clean when birds are gone as they like a clean home.
<https://www.youtube.com/watch?v=3AA4xpYxe-U>
- This video is great for getting you to think about where to put your house, how high, how far from another bird house etc. <https://www.youtube.com/watch?v=k3W1yL2OLt4> (4 min)

The 15 Most Common Garden Birds

<http://www.vancouverbirdweek.ca/common-garden-birds/>

Trees, shrubs and flowers attract birds to gardens and a bird bath and bird feeder will make your yard even more popular. Here are some of the common birds you might encounter. To learn more about the birds in Greater Vancouver, check out the [Bird Week events](#) happening May 2-9, 2020.



BLACK-CAPPED CHICKADEE

You will probably hear 'chick-a-dee-dee-dee' before you see a Black-capped Chickadee. In spring, you might also hear its 'fee-bee' song. One of the most common and perennial favourite garden birds, the chickadee was the City Bird for Vancouver in 2015. The Black-capped Chickadee frequents gardens and woodlands throughout the year in Vancouver. Insects, seeds and nuts make up its food. Chickadees nest in holes in trees they excavate and will use nest boxes.



HOUSE SPARROW

Listen for on going chirps in urban areas and you will likely see House Sparrows. It is an introduced species that has taken to gardens and city streets of Vancouver. House sparrows feed mostly on the ground around the garden and streets. The male house sparrow has a grey crown, black bib, white cheeks and chestnut nape. House sparrows are year round residents in Vancouver. Nests are built in cavities in building and nest boxes.



EUROPEAN STARLING

Squeals, chirps and mimicked bird calls coming from a tree will usually reveal a European Starling. It is an introduced species that lives year round in Vancouver. Flocks will sometimes descend into gardens to feed at bird feeders and on insects on the ground. Starlings eat insects and fruits. Nests are built in cavities and spaces in trees, buildings, and street lights. Starlings form large flocks in winter that gather at roosts under bridges and wood lots.



NORTHWESTERN CROW

The 'caw' of the crow rings out in every neighbourhood. The Northwestern Crow is a native resident bird found throughout the city. Nests are made from twigs and built in trees. Food includes insects, fruit, and scraps. Following breeding, most crows from Vancouver fly to an evening roost near Still Creek in Burnaby.



AMERICAN ROBIN

From a treetop the 'cheer-up cheerily cheer-up' song of the American Robin rings out every spring morning in gardens and parks in Vancouver. The red breast of singing makes the American robin one of the most conspicuous birds in the city. Robins build nests of grass and mud in shrubs and trees. Their food is mostly insects, earthworms and fruit.



SONG SPARROW

Song sparrows live up to their name with a loud regular song in spring and summer. Shrubs and forest edges are its haunt and it readily visits bird feeders. Nests are small compact grass lined cups hidden from sight in shrubs. Song sparrows are common to gardens and parks.



NORTHERN FLICKER

The flicker gets its name from its 'flicka-flicka-flicka' call. In spring, it drums on roof flashing, hard wood or any other surface that resonates loudly. Northern Flickers are woodpeckers identified by their orange under wing and tail. They are widespread year-round denizens of the city where they inhabit gardens, suburban streets and forests. Flickers eat ants that they hunt along the ground and insect larvae found in snags. Their nest is built in holes in trees that they excavate using their bills.



VIOLET-GREEN SWALLOW

The Violet-green Swallow is one of the first birds to arrive in spring and first to depart in summer. The swallow is mostly found in residential areas where it perches on telephone wires or flies overhead. Nests are built in cavities in buildings and in nest boxes placed in open areas high above the ground. Swallows eat flying insects.



HOUSE FINCH

Melodious is probably a word to describe the song of the House Finch. It is a year round and widespread resident in Vancouver gardens and parks. The male is either red or orange on the head and breast while the female is streaked with brown feathers. Nests are small cups of twigs and grasses built in shrubs. Finches are mostly seed eaters and take readily to bird feeders in gardens.



BUSHTIT

The Bushtit frequents gardens and forest edges throughout the year in Vancouver. They build a distinctive nest of moss, lichen and spider webs suspended from the ends of branches. After breeding, flocks of bushtits roam neighbourhoods in search of insect larvae and bird feeders, especially those with suet feeders.



ANNA'S HUMMINGBIRD

The Anna's Hummingbird is a recent and increasingly common backyard bird in Vancouver. Nests are built on the ends of branches between mid winter until late summer. Hummingbirds take readily to hummingbird feeders and flowers such as Oregon grape, fuschia, and crocossmia.



STELLER'S JAY

The harsh 'jay jay jay' call of the Steller's Jay is heard year-round in Vancouver especially in autumn and winter when jays are most numerous. The blue back, wings and sides and black head with a crest is unmistakable. Jays build twig nests hidden away in shrubs and trees. They eat insects and nuts, take other birds eggs, and readily come to feeders supplied with peanuts or sunflower seeds.



SPOTTED TOWHEE

The Spotted Towhee is a widespread and year-round resident in Vancouver. Towhees spend most of their time on the ground and in shrubs searching for insect prey and seeds. They are one of the most frequent visitors to bird feeders. Nests are concealed in shrubs low to the ground and difficult to find.



DOWNY WOODPECKER

The Downy woodpecker is our smallest woodpecker. It visits gardens and resides in forested areas throughout Vancouver. Downy woodpeckers use their stubby bills to excavate insect larvae for food and to build Nests in trees and stumps. They regularly visit gardens with suet bird feeders.



DARK-EYED JUNCO

Dark-eyed Juncos are present year round in Vancouver but are most abundant in fall and winter. Juncos are sparrow-sized birds with conspicuous white outer tail feathers that are visible when the birds fly. The diet is mostly seeds that they eat on the ground.