

Build a Bat Box

Why would anyone want to build a bat house? Because bats are the primary predator of those annoying, flying nighttime insects like mosquitoes, moths, and beetles. One bat can eat thousands of insects in one evening! And if you build a bat house for them, they will stay out of your chimneys, rafters, and attics. Build your very own bat house for spring with these simple bat house plans!

Important Stuff: The law protects bats and their roosts. It is illegal to kill, injure, take a wild bat, or to intentionally or recklessly damage, destroy, or obstruct access to a bat roost.

Materials

- (1) 2' x 4' x ½" outdoor-grade solid board or plywood (nontoxic)
- (1) piece of 1" x 2" x 8' cedar or pine board
- (1) 1" x 4" x 28" cedar or pine board
- (25) 1½" coated deck screws (you'll have extras)
- (1) pint dark (brown or black) nontoxic water-based waterproof exterior stain
- (1) pint water-based exterior primer (optional)
- (1) quart dark (brown or black) water-based exterior paint or stain
- (1) tube of nontoxic, paintable exterior latex caulk

Tools

- Battery-powered drill
- Drill bit (appropriate size for the deck screws)
- Table or handsaw
- Circular saw (optional)
- Paint brushes
- Caulk gun (optional)
- Utility knife, or any sharp blade will do
- Sandpaper (medium to fine grit, optional)
- Tape measure/yardstick
- Tarp (plastic sheeting, newspapers, or even an old vinyl tablecloth will work to keep your workspace clean)
- Work gloves
- Goggles/eye protection

Prep your work space, and gather all of your materials. Remember to outfit yourself with a sturdy pair of **work gloves** as well as **eye protection**, to avoid injury via splinters or any flying wood dust. Ready to go? Let's do it!

Steps:

1. MEASURE AND CUT

Measure and then cut the 2' x 4' x 1/2" piece of plywood into three pieces:

- 26 1/2" x 24" to be used as the back plate
- 16 1/2" x 24" to be used as the top half of the front plate
- The remaining piece will be used as the bottom half of the front plate
 - It might be useful to label these pieces in pencil to keep from mixing them up later.

2. Get in the Groove

- Using a **sharp blade, handsaw, or circular saw** (set to 1/16" depth), you are going to carefully cut grooves into the back plate. Again, it is recommended to use **gloves** here for safety.
- These should be spaced about 1/4" to 1/2" apart, and are used as grips for roosting. Grooves do not have to be perfect, and the spacing may change depending on the tool you are using.
- The entire back plate of the box should have the grooves cut into it to serve as a landing area.



3. STAIN THE INTERIOR

Bats want a dark home, so that's why we stain the interior.

- Apply two coats of a dark, **water-based stain** to interior surfaces of the back plate and both pieces of the front plate (i.e. the side with the grooves that you cut). Allow to dry fully between coats, and after application of the second coat.
- Don't use paint on the back plate, because it can fill up the grooves that you just added.

4. CUT FURRING STRIPS

- Cut the 1" x 2" x 8' cedar or pine strip into one (1) 24" piece and two (2) 20 ½" pieces.
- Referred to as "furring strips," these long, narrow strips of wood will be used in this case as spacers, and they are sandwiched between the back plate and the front plates.

5. ATTACH FURRING STRIPS

- Apply **caulk** to all 3 of the furring strips and attach to the inside of the back plate (the side you cut grooves into). Cut the caulk open at an angle, and keep the tip of the caulk tube flush against the wood to get a straight bead. If you don't have a caulk gun, you can work without one. But it's easier to get an even, consistent flow with this tool.
- The 24" furring strip will be placed flush with the top of the backboard first. The two 20 ½" furring strips will each be placed flush on the sides of the board, butting against the 24" piece of cedar or pine at the top.
- These strips should be placed with the 1" side down
- Once they're all attached, your construction will resemble a frame.



6. ATTACH FRONT PLATE

- Caulk the inside perimeter of both sides of the front plate. Attach the top half of the front plate first, so that it sits squarely on the furring strips.
- Next, place the bottom half of the front plate so that it sits squarely on the furring strips. Leave a ½" space between the top half and the bottom half of the front plate. This functions as a vent.
- Wait at least half an hour for the caulk to set before moving on to the next step.



7. PUT A ROOF ON IT

Next, we will be adding the roof! Every house needs one, so this is a pretty exciting step.

- Attach the **1" x 4" x 28" piece of cedar or pine** to the top of the box to function as the roof. Apply some caulk to the bottom side of this (the end that touches the bat box directly). Add one or two **screws** to the top corners to hold the roof in place securely.

8. SEAL THE JOINTS

- Now fully assembled, caulk every joint of the exterior of the box where wood touches wood. Bats want to have a dry home, free from drafts.
- To avoid a messy final product, let the caulk dry before moving on to the next step.

9. DRILL AND SECURE

- Use a **drill** and **bit** to drive five to six holes, evenly spaced, on the left and right sides of the front plate. These holes should punch through the plate and the furring strip, then into the back plate.
- Watch where you're drilling so that you don't punch the bit through the side of the furring strips!
- Drive one or two screws into the bottom half of the front piece as described above.
- Also drill 4-6 additional holes along the top, again reaching through the front plate and furring strip, and into the back plate.
- Add the screws to hold the structure together firmly.

10. PAINT THE EXTERIOR

- Apply two to three coats of paint or stain to the exterior, allowing it to dry between each coat.
- For this project as it's pictured here, I did two coats of stain and one coat of paint.
- Allow the structure to fully dry overnight before mounting.

HANGING

Ready to hang what you've made? This can be done on the edge of a house, usually on the east-facing side, or on a tall 10-to-15-foot pole.

Although possible, it's recommended that you do not mount to a tree because it invites problems – easy access for predators, and a lack of sunlight and ventilation.

Once a furry friend (or friends) have moved in, do not walk beneath the box when they're home, or disturb the animals in any way. Bats will abandon a box that they don't feel is safe and secure.

Native Bats

The Bay Area is home to up to 16 species of bats, all of which are insectivores. Some of the more common bat species you might see in the Bay Area include the Mexican free-tailed bat (*Tadarida brasiliensis*), the big brown bat (*Eptesicus fuscus*), and various mouse-eared bats in the genus *Myotis*.

