

Black-capped Chickadee Nest Box Plans

Poecile atricapillus

The Black-capped Chickadee is the perfect introductory project for backyard builders because these social, curious birds are quick to accept man-made housing. Their energetic 'chick-a-dee-dee' calls and acrobatic foraging make them a joy to observe through an AI-powered lens during the nesting season.

Nest Box Specifications

Entrance hole	1.125 inches (29 mm)
Floor dimensions	4 x 4 inches (102 x 102 mm)
Interior depth	7 inches (178 mm)
Mount height	4-10 feet (1.2-3.0 m) above ground
Facing direction	East or southeast, facing away from prevailing winds and shielded from the harsh afternoon sun.

Install the box on a tree trunk or 4x4 post near the edge of a wooded area or within a mature garden. Space boxes at least 50 feet apart to avoid territorial disputes with other chickadees. Avoid high-traffic areas or spots directly above dense shrubs where cats might hide.

Cut List

From a 1x6 x 6 ft

Panel	Dimensions	Qty	Notes
Front	5.50" x 9"	1	Drill a 1.125" entrance hole 7" from the bottom, centered. Score the interior wood below the hole to create 'ladder' grips for fledglings.
Back	5.50" x 16"	1	Provides a 3.5" mounting flange on both the top and bottom.
Side	5.50" x 9"	2	Cut the top edge at a 10-degree angle (sloping from 9" back to 8" front) to shed water.

Roof	5.50" x 9"	1	Attach with a hinge or screws for easy cleaning; if using a 1x8 scrap instead, it provides better side overhang.
Floor	4" x 4"	1	Recessed 1/4" up from the bottom of the sides; clip 1/2" off all four corners for drainage.

The main body panels (Front, Back, Sides) are all 5.5" wide. The floor must be ripped down to 4" to fit between the two side panels. Use the remaining 1x6 material for the roof, though a 1x8 scrap is a recommended upgrade for better weather protection.

Materials & Construction

Wood: 3/4-inch (19 mm) untreated cedar or white pine. Avoid pressure-treated lumber, plywood, or OSB.

Boards: A single 1" x 6" x 6' untreated cedar board provides enough material for all panels with room for errors.

Hardware: 20x 1-5/8" galvanized deck screws, 2x 1-1/2" stainless steel exterior hinges, 1x brass eye hook and latch, 4x 2-1/2" exterior wood screws for mounting, 1/4 cup wood shavings (optional)

Ventilation: Leave a 1/4-inch gap between the top of the side panels and the roof, or drill two 3/8-inch holes near the top of each side panel.

Drainage: Clip the corners of the floor panel at a 45-degree angle to create 1/2-inch gaps for drainage.

Predator guard: Use a 1.125-inch thick wood block (portal guard) over the entrance hole to prevent squirrels from chewing it wider. Install a 24-inch stovepipe baffle on the mounting pole to stop snakes, raccoons, and cats.

Materials Checklist

1x 1" x 6" x 6' untreated cedar or pine board

20x 1-5/8" galvanized deck screws

2x 1-1/2" stainless steel hinges

1x brass hook and eye latch

1-1/8" hole saw or spade bit

Drill with 1/8" and 3/8" bits

Measuring tape and carpenter's pencil

Circular saw or hand saw

80-grit sandpaper

Stovepipe baffle (optional for predator protection)

Small bag of kiln-dried wood shavings

2x 2.5" mounting screws

Seasonal Timeline

Install: Install by late January in the southern range and by late February in northern regions to allow birds to scout for winter roosting and spring nesting.

Nesting start: Nesting typically begins in late March in the Southeast and West, while Mid-April is more common in the Northeast and Midwest. High-elevation populations may wait until May. Chickadees usually raise one brood per year, though a second is possible in southern latitudes.

Clutch size: 6-8 eggs

Incubation: 12-13 days

Fledging: 16-18 days after hatching

Cleaning: Remove old nesting material immediately after the first brood fledges. Perform a deep clean with a 10% bleach solution in late fall after the birds stop using the box for winter roosting.

Regional Considerations

Black-capped Chickadees breed across the northern half of the United States, from Alaska through Canada to Newfoundland, and south into the northern Rocky Mountains and Appalachians. They are permanent residents and will use nest boxes throughout this entire range.

Nesting timing is heavily influenced by the emergence of caterpillars, their primary food source for nestlings. Earlier springs or lower elevations often result in earlier clutch dates, while a late frost can delay nesting by up to two weeks.

House Wrens and House Sparrows are the primary competitors; the 1.125-inch hole excludes sparrows, but wrens can still enter and may pierce chickadee eggs. Raccoons and snakes are the main physical predators, which the recommended stovepipe baffle and deep box design help mitigate.

Camera Placement

For Black-capped Chickadees, an interior camera mount is highly effective due to their tolerance of human-made structures. Because the interior of a chickadee box is quite compact (4x4 inches), a small USB-powered 'cube' camera or a dedicated nest box camera with a wide-angle lens is necessary.

Mount the camera to the underside of the roof, angled slightly toward the back wall where the nest cup is typically constructed.

Ensure the camera has high-quality Infrared (IR) capabilities, as the interior of the box will be dark once the mother is sitting on the nest. Avoid cameras with visible white LEDs, as these can disrupt the birds' natural circadian rhythm. Routing the cable is best done through a small notch cut into the top of a side panel, hidden under the roof overhang to prevent water ingress.

Exterior cameras, such as a Blink Outdoor or a trail camera, can be mounted on a separate post 4 to 6 feet away, focused directly on the entrance hole. This allows you to capture the fascinating 'food delivery' behavior and the moment the fledglings take their first flight. For the most comprehensive view, use a small interior cam for the hatching process and an exterior cam for activity monitoring.

Powering with a USB solar panel

Mount a 5V USB solar panel with a built-in battery 1-2 ft above the box on the same post, angled 30-45 degrees from vertical and facing south. Run the USB cable down the post inside split loom conduit (squirrels will chew unshielded wire), enter the box through the same grommeted hole as the camera cable, and seal with exterior silicone. Choose a panel with a 5-10 Ah battery buffer so the camera runs through cloudy days.

Common Problems & Solutions

House Wrens filling the box with sticks: If you see 'dummy nests' of sticks, the box is too close to thick brush; move the box to a more open area at least 15 feet from dense shrubbery.

House Sparrows trying to enlarge the hole: Install a metal 'hole protector' or a 1.5-inch thick block of hardwood with a 1.125-inch hole to prevent larger birds from chewing their way in.

Blowfly larvae in the nest: If the nest appears heavily infested, gently lift the nest and replace the bottom layer with clean wood shavings, though this should only be done by experienced handlers.

Box overheating in summer: Ensure ventilation gaps are clear and paint the exterior with a light-colored, non-toxic heat-reflective stain (never paint the interior).

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