Build a kids’ playhouse

Build a playhouse where kids can dream away the summer! Full plans and building details included.

By Dan Michie

For months, I tried to draw plans for a playhouse for my grandson, Bryton, but I just couldn’t get things going. Then, one Saturday morning, my good friend Marc was over for coffee. While discus?sing my woodworker’s block, Marc said we should just build it—now! After a quick trip to the lumberyard with my truck and trailer, we were building without any plans set down on paper. If this kind of cowboy construction isn’t for you, here are proper plans and instructions that take all the guesswork out of a project that will make the little ones in your life very happy.

Skill
4

Instructions

A Solid Foundation and Frame

Before you cut any lumber, start by clearing the ground. A flat, well-drained spot is best. I used four 4x4 vertical support posts resting on precast deck blocks set on top of 18"-deep holes filled with crushed stone for drainage. As you place these blocks according to the plans on page 23, add or remove crushed stone from beneath them so the top ends of all posts are level.

Next, attach the 2x6 front and back rim joists to the posts using 3"-long, brown, ceramic-coated deck screws. Repeat the process for the side rim joists that sit between the front and back rim joists. With these in place, install the floor joists, fastening them to the front and back rim joists. Although it may seem unnecessary, these joists should sit on galvanized joist hangers installed on 12" centres. Deck screws will hold perfectly well for a while, but corrosion will make them weak enough to break. Anchor the joist hangers with corrosion-proof nails that do not extend through the 2x6 rim joists.

With the ground-level floor frame complete, it’s time to move on up. Measure 41" up from the top of the first-floor joists to mark the bottom of where the second-floor joists should go. If you’ll be installing a plastic slide for the playhouse, as I did, double-check that it works with the second-floor height you use. Now is the time to adjust the height of the second-floor frame if your slide is different from mine.

Attach the second-floor rim joists in the same way as the first-floor version, using deck screws initially, ensuring that everything is level and square. It’s important to reinforce the front and back rim joints later with 3/8"-diameter x 5 1/2"-long, hot-dipped galvanized carriage bolts. Even a little corrosion can cause screws to shear off eventually when used outdoors, which is one reason deck screws are not permitted by code in applications involving shear forces. When it comes to installing the second-floor joists, attach them to the front and back rim joists. This arrangement makes for a clean look on the front, as the floorboards will run from side to side. Take a look at the plans and you’ll see a pair of extra joists set flush against the inside faces of the 4x4 supports. These extra joists support the flooring around the posts. The rest of the floor joists are on 12" centres.

Floored

With the floors framed, now it’s time to install the floorboards that cover the joists. The first-floor boards are 72" long, so if you buy 12' boards, you will have no waste. As you work, install the floorboards tightly to each other, with no gaps. A gap-free floorboard assembly such as this isn’t typical, but it means that small toys won’t go missing, nor will small fingers get stuck between the boards. Use two screws where each floorboard meets a joist, as you would when building a deck. This setup keeps everything nice and tight.

The second-floor boards are 67 1/2" long, which means they stop short of the side joists. Those extra joists on the inside of the 4x4s provide enough support for the floorboard ends. The exposed ends will be covered up later by the side walls and trim.

Wall It In

The walls keep the second storey safe and are as simple as they come, built by stacking 2x6s one on top of the other, edge to edge, giving the playhouse a log-cabin look. Start with the wall at the back of the playhouse. On top of the back second-floor rim joist, install a 70 1/2"-long 2x6 wall board. Screw this piece and the ones following to the 4x4s in the corners. Continue adding boards to the back wall in this fashion until all eight are installed. The top edge of the top board sits 2 1/2" taller than the 4x4s.

The side walls are built a little differently because they don’t extend all the way to the front of the playhouse. Instead, they stop partway, leaving room for the open porch. Start walling in one side by fastening a 42 1/2"-long 2x6 to the side face of one of the back 4x4s. At the other end of this board, “toe screw” the bottom edge to the side rim joist below. This joint will get strong later, as front wall boards are added. Continue by adding four more boards in the same way, each one on top of the edge of the one below. The next two levels of side wall boards must accommodate the 16"-wide windows, so they’re shorter than the ones beneath. Fasten a pair of 14"-long 2x6s on each side of what will become your window opening, then span the top of this opening with the uppermost side rim joist. The other side wall is simply a mirror image of the first one.

With both side walls complete, add a 2x6 across the outside faces of the 4x4 support posts at the top, extending all the way from one post to the other. This board is the upper front rim joist, and it should be level with the top boards of the side walls, also 2 1/2" taller than the 4x4 support posts.

Unlike the side and back walls, the two short walls flanking the front door sit on top of the floorboards. The first board on each wall needs to be ripped 1 1/4" narrower to allow for the thickness of the floor it sits on. Without this step, the joints between the front wall boards won't line up with the joints on the adjoining side walls. As you work, fasten the ends of the front wall boards to the ends of the side wall boards, capping the side wall's end-grain. The lowest front wall boards on each side of the doorway should also be anchored by screws driven up through the floorboards. As you work your way up, make allowances for any small windows you may want to install next to the door. Finish up by adding the top front wall board that ties the two side walls together.

Walls with an angle

The roof starts with the front and back gable ends. Build these in a similar fashion to the other walls of the playhouse, but with a triangular shape. If you have a mitre saw that's capable of cutting a shallow angle of approximately 30°, count yourself lucky. If not, you'll need to cut the ends of the gable end boards with a handheld saw. Either way, plan on actually making the cuts later, after arranging all boards, with their ends still square, on the ground.

Begin by laying down a 78 1/2"-long 2x6 first, then four more square-ended 2x6s, edge to edge. Each new gable end level is shorter than the one beneath it, so it's a good time to use some scraps. Don't worry about how ragged the arrangement looks at this stage. As long as each board is long enough to be trimmed properly at an angle later, you're fine. You should now have a step-shaped, four-board pyramid in front of you, ready to cut to final shape.

Measure and mark 1 1/2" up from each bottom corner of the longest bottom board. From each of these marks, you want a 30° slope to the centre of the top board. I had misplaced my protractor when I got to this step, but I had a trick up my sleeve. I merely found the centre of the bottom board (39 1/4" from either end if you've cut it right), then extended this point upward to the top edge of the top board. Snap a chalkline down from this centre mark on the top board to each of the 1 1/2" marks at the ends of the bottom board. Cut along the lines (with a handheld circular saw or a shallow-angle mitre saw) and you have your angle.

If you're making a window in the front gable end, as I did, cut the opening now and screw the boards together at their angled ends. You can frame this opening later for strength and good looks. Build the back gable end now, the same as the front, except without the window.

Raising the Roof

If you didn't have help with this project so far, you'll need some now to put the roof together. Before you haul those gable ends up, attach 2x6 soffits at right angles to the outside faces of the gable ends, flush to their top edges. Also attach the side soffits with screws to the tops of the side walls. The front and back gable ends rest on the upper front rim joist and top back wall board, respectively. When the gable ends are up, attach them to the ends of the side soffits and then add six 2x4 purlins. The uppermost pair of purlins are 4" down from the peak. The following pairs of purlins are spaced 12" on centre.

Add a bit more support by attaching a 2x6 that overlaps the uppermost back wall board and the bottom board of the back gable end and sits on top of the back 4x4s. I built a secret loft into this playhouse. Well, it's not exactly a secret, but only my grandson can fit into the little space that is above the front porch of the playhouse. To build the loft, secure a 1 1/2"-thick x 2 1/2"-wide support strip onto the front 4x4s to support the ends of the loft floorboards. Reinforce this support with two 3/8"-diameter x 3 1/2"-long carriage bolts, located a foot or so in from the ends. Remember, deck screws can't be trusted for the long-term for shear loads. Next, fasten 13 25"-long 2x6 floorboards to the top of the front wall and the support strip. I'm sure your little one will get a kick out of this loft space.

I covered the roof with a product called Ondora, which fastened directly to the purlins. I also used a proprietary ridge cap to seal it all off.

Windows and a door

To make the playhouse look better and to strengthen the walls, I added frames around many of the window openings. All frame pieces have a 1 1/2"-wide x 3/4"-deep groove on their outside faces, which locks in with the surrounding wall. You should rip these grooves on long 2x6 boards on the tablesaw before cutting the pieces to their final lengths. You can make multiple passes with a regular blade or a single pass with a dado blade.

The rectangular window's side frame members are butted between the top and bottom pieces, with everything held in place with screws driven from the inside faces of the frames into the end-grain of the wall boards. The door also gets a similar frame for its top and sides.

To simplify the trim for the octagonal window in the front wall, I didn't add grooves. Instead, cut the inner trim from 2x6 lumber, then use 1"-thick x 1"-wide wood for the outer trim. All of these pieces get a 22.5° angle cut on their ends. Fasten each piece of outer trim to a piece of inner trim, positioned 1" in from its front edge. (I used my nailer for this work.) Once you have eight inner and outer trim pairs, you can assemble a window by sliding each piece into place.

Secure the frame with screws driven from inside of the wall into the outer trim pieces. For the gable end window, I went for an even simpler solution: trim ripped from a 2x6. For this step, I'd say trim to your taste.

The door is made with four ?36"-long 1x6 fence boards. They are attached to the horizontal 21"-long 1x6s across their inside-facing top and bottom edges and are spaced 1/8" apart. I cut a 8 3/4" x 8 3/4" window near the top of the door, rounding the edges with a 3/8"-radius roundover bit. To hang the door, I used two garden-gate strap hinges.

Ladder, Wall and Railing

To ensure my grandson would be safe on the second floor, I added a front railing. The top edge of this T-shaped railing is made from a 2x6 ripped into one 3 1/2"-wide piece and one 2"-wide piece. The wider wood forms the horizontal part of the T, and the narrower part fastens underneath for the vertical part of the railing profile, inset 1/2" from the rear edge. The top surface of the railing is best placed level with the top of the fourth wall board from the floor. Add five 1" x 1" balusters fastened with screws to the railing at the top, and more screws are driven up through the floorboards and into the bottom ends of the balusters. Depending on your particular playhouse design, you may want to add railings at the sides, as I did.

To hide the end-grain ends at the wall corners, I added trim. Make sure to mitre the trim at the back wall to match the angle of the soffits. I also hid the second-storey floorboard ends. Cover the 4x4 posts on the first floor with 2x6s butted together and add two 2x6s to cover the outer sides of each 4x4 support post on the second floor.

With the trim on, it's time to build the ladder. The stringers are 77" long and the treads are 18" long, with an 8" rise between each one. You may have to adjust the length of your ladder, depending on the slope of your lawn. I built mine by routing angled dados on the inside faces of the stringers to accept the ends of the treads. Fasten the stringers to treads with three deck screws per joint, then attach the ladder to the post trim and a baluster with carriage bolts.

The optional climbing wall uses 2x6s for its support legs and 5/4 boards for the surface. The whole thing measures 30" wide x 66" long. The climbing blocks are made from offcuts of wood with routered edges for hand- and footholds. Attach the climbing wall to one of the second-floor rim joists with carriage bolts. To provide your little ones with more help getting up this wall, drill a hole in the vertical part of the railing, then knot a rope through it that trails down the climbing wall.

I finished everything with a cedar-coloured stain before attaching any extras, such as handles and a steering wheel.

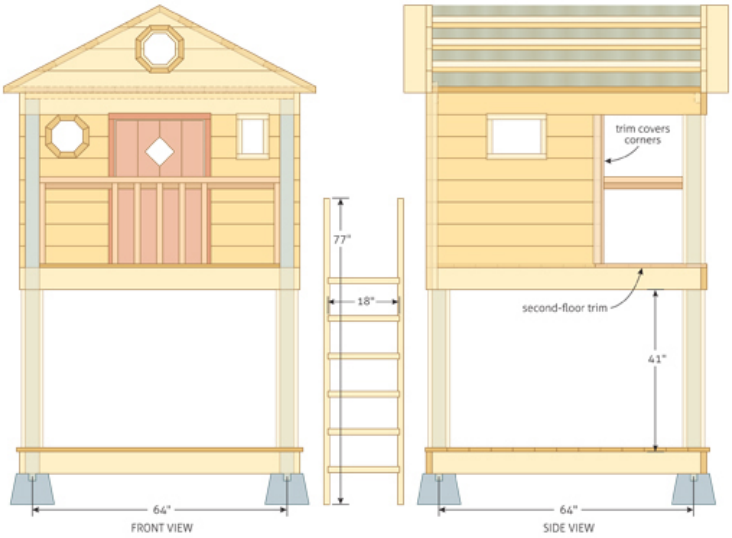
I must admit I wasn’t surprised that my grandson took to the playhouse. What little boy or girl wouldn’t want one of these? It’s the ultimate place to play and dream away the summer.

Tools and Materials

Part	Material	Size (T x W x L*)	Qty.
All parts made of SPF lumber. **Some parts trimmed to accommodate windows. ***Total length required			
Support Posts		3 1/2" x 3 1/2" x 8'	4
Front/Back rim joists		1 1/2" x 5 1/2" x 70 1/2"	5
Side rim joists		1 1/2" x 5 1/2" x 67 1/2"	6
Floor joists		1 1/2" x 5 1/2" x 67 1/2"	12
First floor boards		5/4 x 5 1/2" x 72"	13
Second floor boards		5/4 x 5 1/2" x 67 1/2"	13
Back wall boards		1 1/2" x 5 1/2" x 70 1/2"	8
Long side wall boards		1 1/2" x 5 1/2" x 42 1/2"	10
Short side wall boards		1 1/2" x 5 1/2" x 28"	8
Bottom front wall boards		1 1/2" x 4 1/4" x 22"	2
Front wall boards		1 1/2" x 5 1/2" x 22"	12**
Top front wall board		1 1/2" x 5 1/2" x 67 1/2"	1
Bottom gable end boards		1 1/2" x 5 1/2" x 78 1/2"	2
Gable end boards		1 1/2" x 5 1/2" x 26' ***	6
Side soffits		1 1/2" x 5 1/2" x 67 1/2"	2
Front/back soffits		1 1/2" x 5 1/2" x 45"	4
Purlins		1 1/2" x 3 1/2" x 67 1/2"	6
Back support strip		1 1/2" x 5 1/2" x 60 1/2"	1
Front support strip		1 1/2" x 2 1/2" x 67 1/2"	1
Loft floor boards		1 1/2" x 5 1/2" x 25"	13
Side Window rails		1 1/2" x 3 1/2" x 16"	4
Side window stiles		1 1/2" x 3 1/2" x 9 1/2"	4
Front window rails		1 1/2" x 3 1/2" x 8 3/8"	2
Front window stiles		1 1/2" x 3 1/2" x 18 1/4"	2
Octagonal window frame		1 1/2" x 5 1/2" x 4 1/2"	8
Octagonal window trim		1" x 1" x 5 1/4"	8
Door frame rail		1 1/2" x 5 1/2" x 25"	1
Door frame stiles		1 1/2" x 5 1/2" x 36 1/4"	2
Door boards		3/4" x 5 1/2" x 36"	4
Door boards support		3/4" x 5 1/2" x 21"	2
Front railing top		1 1/2" x 3 1/2" x 60 1/2"	1
Front railing bottom		1 1/2" x 2" x 60 1/2"	1
Balusters		1" x 1" x 18"	5
Side railings tops		1 1/2" x 3 1/4" x 20 1/4"	2
Side railings bottoms		1 1/2" x 2" x 20 1/4"	2
Second floor trim		1 1/2 x 1 1/2" x 18"	2
Back-wall corner trim		5/8" x 5" x 56"	2
Side-wall corner trim (rear)		5/8" x 4 5/8" x 49 1/2"	2
Front-wall corner trim		5/8" x 2 5/8" x 37"	2
Side-wall corner trim front		5/8" x 2" x 37"	2
First-floor post trim		1 1/2" x 5 1/2" x 39 3/4"	16
Second-floor post trim		1 1/2" x 5 1/2" x 38 1/2"	4
Ladder stringers		1 1/2" x 5 1/2" x 77"	2
Ladder treads		1 1/2" x 5 1/2" x 18"	6
Climbing wall supports		1 1/2" x 5 1/2" x 66"	2
Climbing wall boards		3/4" x 5 1/2" x 30"	12
Climbing blocks			varies
Other Material			
Slide			1
Roofing			27 sq. ft.
Deck blocks			4
Rope		8'-long	1

* Length indicates grain direction

Plan


trim covers corners
77"
18"
second-floor trim
41"
64"
FRONT VIEW
64"
SIDE VIEW

64"
FIRST-FLOOR JOIST LAYOUT
SECOND-FLOOR JOIST LAYOUT

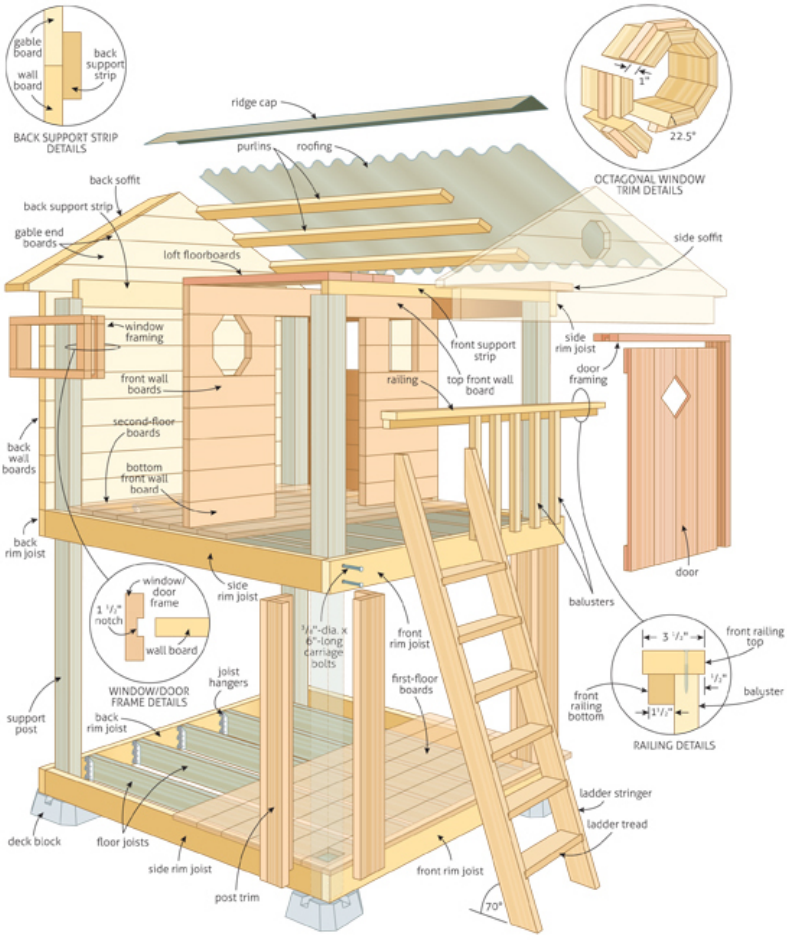

gable board
wall board
back support strip
BACK SUPPORT STRIP DETAILS
ridge cap
purlins
roofing
1"
22.5°
OCTAGONAL WINDOW TRIM DETAILS
back soffit
back support strip
gable end boards
loft floorboards
side soffit
window framing
front support strip
side rim joist
door framing
front wall boards
railing
top front wall board
second-floor boards
back wall boards
bottom front wall board
back rim joist
window/ door frame
1 1/2" notch
wall board
side rim joist
door
balusters
3/4"-dia. x 6"-long carriage bolts
front rim joist
front railing top
1 1/2"
baluster
front railing bottom
1 1/2"
RAILING DETAILS
WINDOW/DOOR FRAME DETAILS
joist hangers
first-floor boards
support post
back rim joist
ladder stringer
ladder tread
deck block
floor joists
side rim joist
post trim
front rim joist
70°

Illustration by Len Churchill