Do It Yourself

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Creating Attic Storage

From "DIY Home Repair & Remodeling"
episode DIR-163 -- More Projects »

If you're like most homeowners, you probably need more storage space. Have you considered the attic? It may be hard to get up there now, and there may not be a floor, but you can change that.

If you need more storage space, you may be able to use your attic.

Before you start gathering materials for expanding the attic, you'll need to know whether it offers enough storage space to make the job worthwhile. If your roofline is very shallow (**figure A**), you probably won't have enough headroom to move around in the attic. If the roofline is reasonably steep (**figure B**), however, there's a good chance you've got enough room. The best way to check is to open the access panel and look inside.

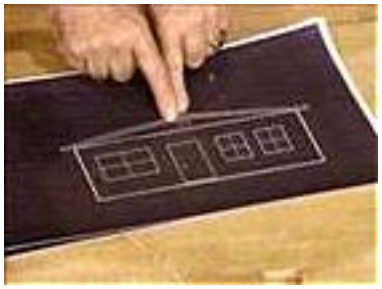

Figure A

The roofs of many older homes are supported by 2" by 8" or 2" by 10" trusses. If that's the way your house is built, you don't need to worry about the trusses' ability to support the weight of a floor. If the house is newer, however, it might have been constructed with engineered 2" by 4" roof joists (**figure C**), which are self-supporting and strong but weren't intended to support a floor.

Figure B

Most engineered joists will support about 10 pounds per square foot, including the joist's own weight and the weight of the plywood floor. The floor system will probably weigh about 5 pounds per square foot, so you won't be able to store heavy items in such an attic. Still, it should be fine for storing bulky lightweight items.

If you can get to the attic only through an access panel, the first thing you'll have to do is install a pull-down staircase. It's usually best to install attic stairs in place of the old access panel. However, you can install them almost anywhere. This is a two-person job: ask a friend to help you.

Ceiling joists are placed on 16" or 24" centers, which means the stair assembly will be 14 1/2" or 22 1/2" wide. Check the measurements before you purchase attic stairs.

If the attic doesn't already have a light, consider adding one. A simple pull-chain fixture should be adequate.

Materials:

Measuring tape
Drill, with assorted drill bits and a Phillips driver bit
Long all-purpose screws
Crowbar
Reciprocating saw with metal-cutting blade and dry-wall-cutting blade
Optional: ratchet and socket set
Optional: lag bolts
Miter box
Hammer
Nails
Nail stops
Yardstick
Circular saw
Pull-down staircase kit
3/4" plywood
1" x 2" furring strips
2" x 4" boards
Rope
Chalk line
Door-frame trim
Wood putty
Paint supplies
Safety glasses

1. Remove the access panel, and pry off any trim pieces. Make sure the area between the joists is free of obstructions such as plumbing or electrical wiring.

2. Remove any framing between the joists. Use the reciprocating saw and a flexible metal-cutting blade to cut through any nails holding the framing in place. You may need to pry the framing away from the joists to provide a gap for the blade.

3. Measure the dimensions of the stair assembly, and mark them onto the ceiling (**figure D**). Make sure the marks are between the joists.

4. Cut along the lines with the reciprocating saw (**figure E**). Support the edges of the dry wall as you cut to prevent it from breaking off

Figure C

Figure D

Figure E

Figure F

Figure G

Figure H

and tearing. You may want to cut the dry wall in small sections, and you can keep a lot of dust out of your face by cutting from above the ceiling.

5. Cut a 2" by 4" block to fit between two joists. Dry-fit the block at the cut end of the new opening so it's flush with the cut surface. Mark along the edges of the block where it butts against the joists. Drill two pilot holes (**figure F**) in each of the joists so you'll be able to secure the block with screws.

6. Set the block in place, and secure it by driving screws through the joists and into the ends of the block. Use dry-wall screws to fasten the cut edges of the dry wall to the ceiling joists and the new support block (**figure G**).

7. Tie the stair assembly together and lift it through the opening. You can rest it on the joists temporarily.

8. Install two boards across the opening, one near each end (**figure H**). These will hold the stair assembly in place so you can secure it.

9. Rest the stair assembly on the support boards. When you're sure it's positioned properly, use long screws to fasten the frame to the ceiling joists. For additional support, you may want to use lag bolts instead of screws.

10. After the stair assembly is secure, have a helper remove the support boards from the ceiling. Then lower the stairs and come down from the attic.

11. With the stairs unfolded, begin securing the rest of the frame to the joists. Use shims in the appropriate places (**figure I**) so the frame stays square. The shims will remain in place and be trimmed flush later. Attic stairs are usually long enough to accommodate different ceiling heights, so you'll probably need to trim them for a custom fit. The stairs are too long if the hinge for the lower section won't close all the way (**figure J**).

12. Fold the lower section into the assembly so it's out of the way. Hold a yardstick along the next-to-last section (**figure K**), and measure the distance to the floor from both the front and back edges.


Figure I


Figure J


Figure K


Figure L


Figure M

13. Unfold the last section, and transfer the measurements. Place the stairs on a stable surface, and cut them to size with a circular saw (**figure L**).

Try to match the angle the wires are facing when you mark the furring strips. This will make installation easier.

14. Now you can begin installing the attic floor. Because wires probably crisscross the joists, you won't be able to lay the plywood sheets atop the joists. Instead, you'll have to raise the plywood above the wires by using 1" by 4" furring strips. Start by grouping the wires together as best you can. Measure the distance from the flooring area to the grouped wires (**figure M**). Transfer the measurements to a furring strip, and cut the strip to size.

15. After cutting furring strips to size, dry-fit them on the joists. Each grouping of wires should fit neatly between the strips. When you're sure the strips fit properly, secure them with screws or nails.

Figure N

16. Attach nail stops over each grouping of wires (**figure N**). The nail stops will prevent you from accidentally nailing into a live wire.

17. Install furring strips and nail stops on each joist where you plan to install flooring.

Figure O

18. Cut plywood sheets into 2' by 8' strips so you can fit them through the door. It's okay to use low-grade 3/4" sheathing plywood for the floor. No one's going to see it, so it doesn't have to be pretty. Don't use particleboard for the floor. It's too heavy.

19. Snap a chalk line down the center of the area where you plan to install the floor. The chalk line will serve as a guide to help you install the boards straight.

20. Align the long side of the plywood with the chalk line so the ends fall in the center of a furring strip (**figure O**). That will make the flooring more stable.

21. Drive nails along the ends of the plywood to hold it in place. Slide the next piece of plywood against the first one, and attach it to the joists in the same manner. Repeat the process until the floor is complete. Install the sheets along the center line first. That will give you more room to work in when you start installing the sheets where there's less headroom.

22. You'll need to make some additional cuts on one of the sheets to form a landing for the stairs. Make sure to attach the landing securely: it's the spot that will get the most traffic.

23. Use finish nails to install trim around the edges of the stair opening. Miter the corners of the trim for a more professional look. Leave 1/4" clearance between the trim and the stair panel so that the stairs open easily. Set the nails, fill any nail holes, and apply touch-up paint if necessary.

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