

Efficient Garage Storage Building Plans

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This storage system is designed to scale to fit your needs. I highly recommend only using the bins listed in the link below. I've found other bins are not strong enough for this floating design and may crack or fall out of the shelf over time

USE THESE BINS:

27 Gal Totes: <https://amzn.to/3vCbMF9>

These are also available at Home Depot

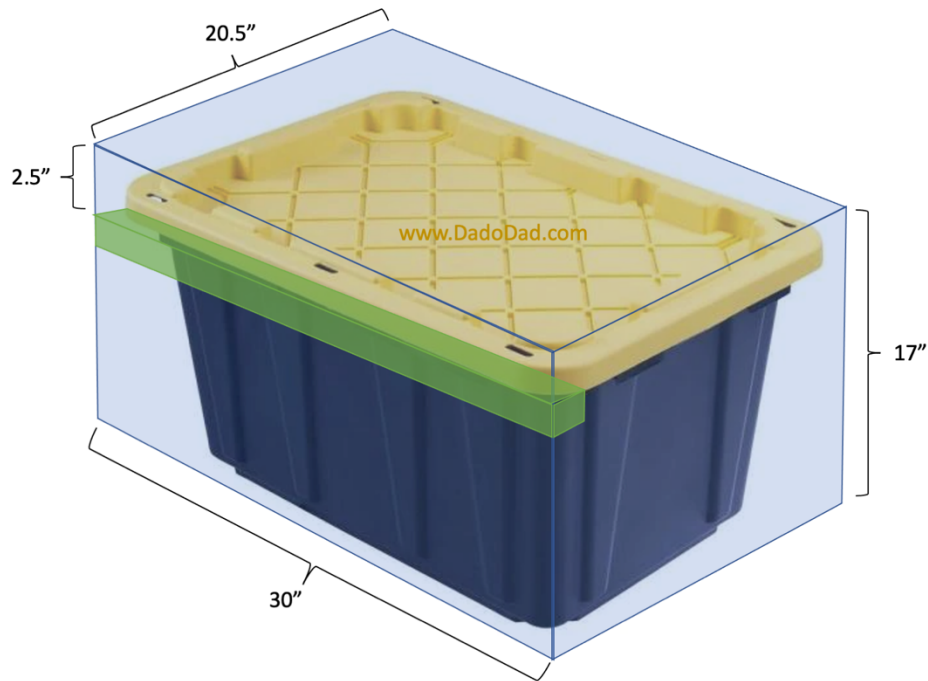
Tools/Supplies Needed:

- 90-degree clamp <https://amzn.to/3B2fdpY>
- Speed Square <https://amzn.to/3C2Fo0A>
- Tape Measure <https://amzn.to/3jnn7UN>
- Drill or Driver: <https://amzn.to/3E5U1Rx>
- Miter Saw <https://amzn.to/2Zfircl>
- 2-3/4" Screws
- Mounting hardware (varies – check your local requirements)
- 2x4 lumber (sizes calculated below)
- 2x2 lumber (sizes calculated below)

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Overview:

Each bin can fit inside a box that is 20.5" wide (side to side), 17" tall (top to bottom), and 30" deep (front to back). The top of the rails (that run from front to back) need to be 2.5" lower than the top of this box. Once you have these dimensions you can design a system to meet any needs.

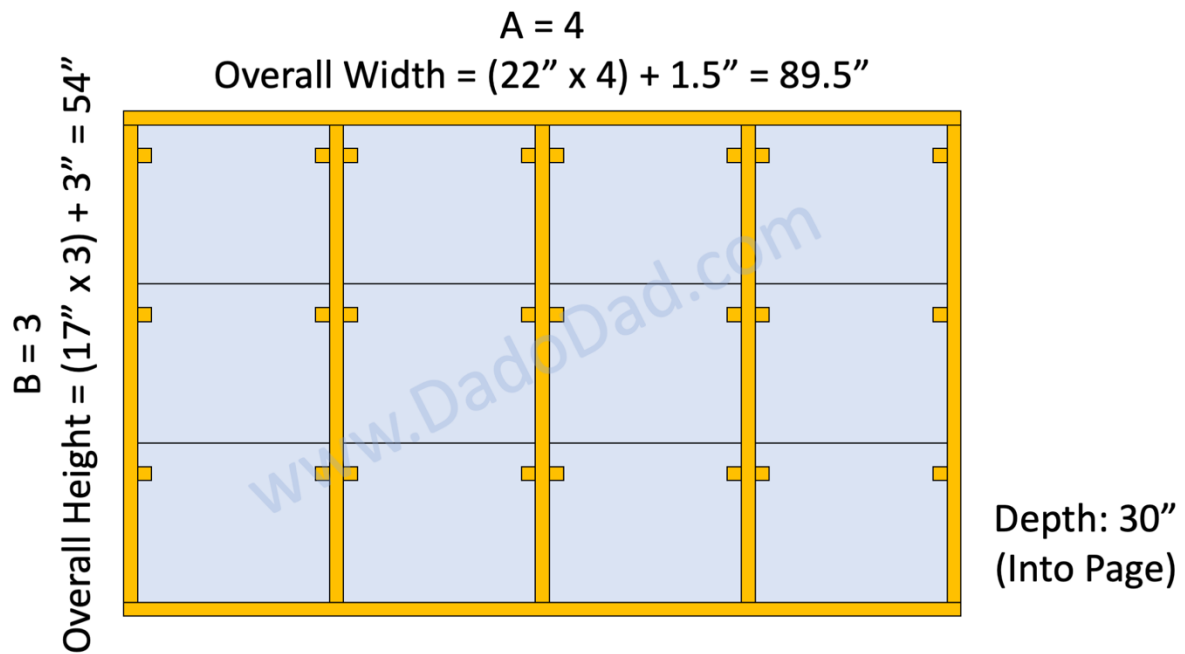


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Overall Rack Dimensions:

Width: Because standard 2x4 lumber is actually only 1.5" wide, you'll be spacing the vertical support posts 1.5" + 20.5" = 22" apart on-center. Add one additional 1.5" beam for the far end and your overall rack will be $(22" \times A) + 1.5"$ where A is the number of columns you want.

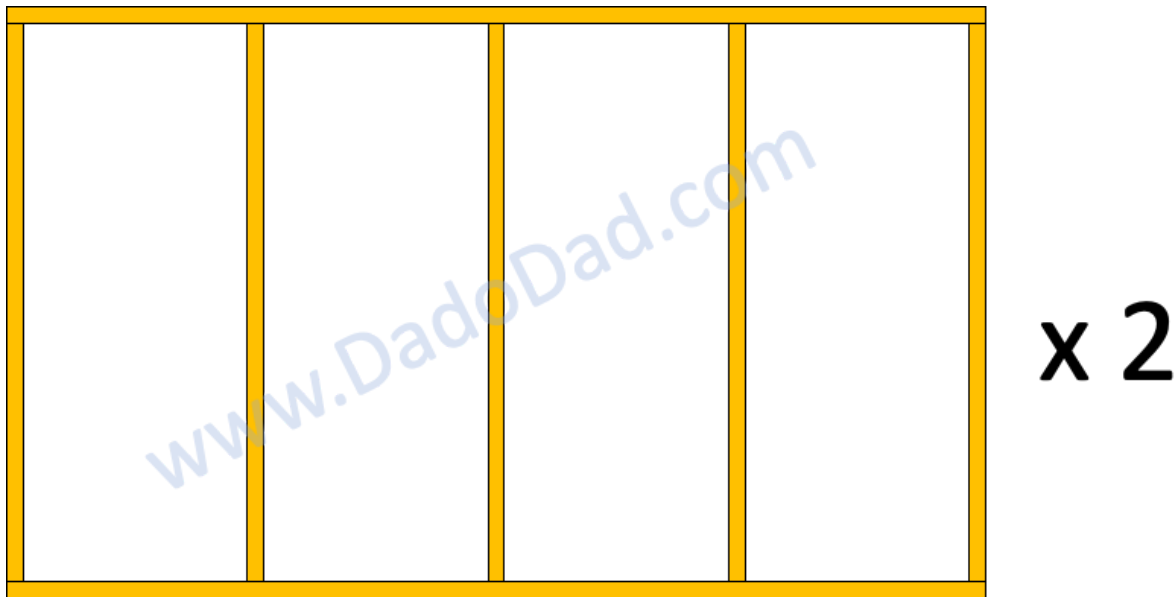
Height: Each bin needs 17" of vertical space and the entire rack needs a 2x4 base beam and a 2x4 top beam. So the height is $(17" \times B) + 3"$ where B is the number of rows you want. Depth: The rack will be 30" deep. Here's an example where A (columns) = 4 and B (rows) = 3:



Calculating Lumber Needs/Cuts

2x4s:

You'll need 4 pieces that are the overall width of your project. They will lay flat to make the top and bottom pieces of the frame. You will need $(2 \times A) + 2$ vertical pieces that are each $(B \times 17\text{'})$ tall. In our example where $A = 4$ and $B = 3$ that means you'll need $(2 \times 4) + 2 = 10$ vertical pieces of 2x4. They will be $(3 \times 17\text{'}) = 51\text{'}$ tall. Your vertical pieces will always be 3" shorter than your overall project height (to account for the height of the 1.5" on both the top and bottom). With your 2x4 pieces you can make two "frames" like this (one for the front and one for the back):



2x2s:

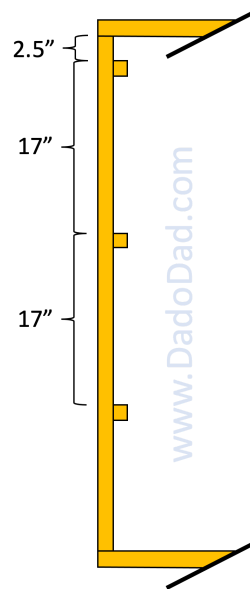
You'll need 2 rails that are 30" long each for every bin. So for $A = 4$ and $B = 3$ we have $(4 \times 3) = 12$ bins. Each bin needs two rails so we'll need $(12 \times 2) = 24$ rails overall.

Optional: cut additional rails to mount to the top of the rack if you'd like to set anything on top. Space them according to your needs. Alternatively you could use a sheet of plywood.

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Steps:

1. Cut all lumber to length.
2. Assemble the front frame comprising of the vertical and horizontal 2x4s. Ensure there is 20.5" of space between each vertical post (spaced 22" on-center). Use at least two screws for every connection to prevent twisting.
3. Repeat step 2 to build the back frame.
4. VERY IMPORTANT: Mount the back frame to your wall. Check your local building requirements for how to do this. The horizontal top and bottom plates will cross many studs in your walls. It's recommended to secure the top and bottom of the frame to all of studs in the wall. Try to align your project so at least one vertical post is directly in front of a wall stud. You can mount the post to the wall stud to provide extra rigidity. You cannot overdo this step.
5. Mark a line 2.5" below the top of the vertical post and then every 17" below that until you get to the bottom of the post. These lines will mark the top of your rails that connect the frame from the front to the back. Repeat for all posts.



6. Using the lines you just drew to mark the tops of the rails, connect the front frame to the back frame with the 30" rails. Use one screw on each end of the rail and use a square to ensure everything lines up. Remember you are screwing into a vertical post from both sides (except the two posts at the edges) so stagger your screws so they don't hit each other.
7. Test your frame for stability before and after loading any bins.
8. Like the YouTube video, subscribe to the channel and post a comment on the youtube video of how your build went!

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