

Grow North

Demonstration: How to Build a Cold Frame

In Northern climates, we have to do what we can to extend the growing season – it's the only way to get some of our favourite foods to grow here. Cold Frames can come in many different shapes and sizes, but the purpose is the same: to create a microclimate to get an early start in the spring and let plants ripen in the fall. Cold Frames come in handy all across Prince George, but are particularly handy if you live at higher elevations areas, like the Hart or College Heights.

While you can purchase cold frames fairly easily, they are also easy to make. Here we show you three different types that range in price and materials used. But again, these are only guidelines, so think about the materials you already have and adapt as necessary.

Here is a chart, comparing the three styles:

Style	Price	Difficulty	Comments
Traditional – Pallet	< \$20	Moderate	Deconstructing pallets can be time consuming, and requires a bit more tools. But, it fits four planting trays perfectly, and is very durable.
Traditional – Plywood	\$30-50	Very Easy	Easiest and fastest design to construct, but possible a little less user-friendly. Could be challenges with a deeper box, and the plywood may be more prone to warping.
Hoop-house Style	\$40-50	Easy	Easier to construct than the pallet style, but a little more expensive. This style allows for taller plants, and is very user-friendly.

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One Pallet = One Cold Frame

Pallets can be found for FREE all around. Some are treated with chemicals, which shouldn't be an issue since nothing is growing around the material, but if you're concerned it shouldn't be too hard to find untreated pallets too. Below are the plans to use wood from one pallet to make a traditional-style cold frame.

Materials:

- Pallet
- Reciprocating Saw (Sawzall)
- Circular Saw
- Hammer
- Crowbar
- Pry Bar
- Tape Measure, Pencil, Ruler
- Screws and Screwdriver
- Hand drill and drill bits
- Hinges
- Plastic/Glass for the lid
- Staple Gun



Method:

1. Deconstruct your pallet. Turn the pallet on end, and secure it to something so it doesn't move around. It's easiest done using a reciprocating saw to detach the back boards from the pallet (Remember – Safety First! Use safety glasses, hearing protection, long pants and closed-toed shoes). Once this is done, use the crowbar to remove the middle blocks. Turn the pallet upside down, and hammer out the nails. The nails attaching the front boards are often bent down, so use a pry bar to lift up the ends, then hammer through. You should be left with: 3 larger back boards, 3 middle boards and 8 front boards (depending on your pallet).
2. Cutting the boards to size. The 8 front boards will be used as is, can be set aside. You will use the middle three and back three boards to make the sides of the cold frame – as these are all generally thicker than the front boards.

Start by placing 2 middle boards and 2 back boards, alternating, on top of each other. The top two boards will be cut diagonally, to create the sloped edge for the lid to sit on; the wider back board cut diagonally will create two mirrored pieces, and the middle board needs one additional straight cut to create two mirrored pieces as well. From the diagonal, the bottom boards will be cut to give the front height (11.2" for the example). Use a circular saw to cut the pieces.

Pro Tip: clamp the pieces to a spare sheet of plywood to secure them in place. This keeps everything secure, and reduces the chance of the circular saw from binding.



3. Assemble your cold frame. Remember those “scrap” pieces you cut off the bottom two boards for the side? Those are perfect for adding some extra support to your cold frame. Cut the wider boards down to half an inch shorter than the back height of your cold frame, and the middle boards to half an inch shorter than the front of the cold frame.

Then, lay the front 3 pieces flat on top of the “scrap” piece, ensuring everything is flush along the edges, and screw the boards together. Generally 2 screws per board should work. Repeat for the back 5 pieces.

Pro Tip: Pre-drill your holes for each screw. This reduces the chance of the wood splitting, and makes it much easier in the long run.

Then, screw in the sidepieces, one at a time, to the front pieces. Try to make sure that you screw into the “scrap” pieces that are a little thicker, as it will reduce the wood from splitting. Also, if you’ve used a reciprocating saw to pull off those back pieces, there are still chunks of nail inside the board – be careful to avoid those as you’re screwing your cold frame together!

4. Assemble and attach a lid. Traditionally, old windows and pieces of glass have been used as lids. If you have an old window that’s the right size – simple use the hinges to screw in place, and your done! Caution: glass lids are great, but also allow in lots of light and plants may burn and/or lose water faster, so just check in regularly to make sure your plants are happy.

Don’t have glass? You can also use plastic – and it’s fairly easy to find at any supply store (e.g. Northern Hardware, Art Knapps, Canadian Tire, Home Depot, etc.). Use some scrap wood to construct a frame, staple the plastic over the frame, and attach using the hinges.

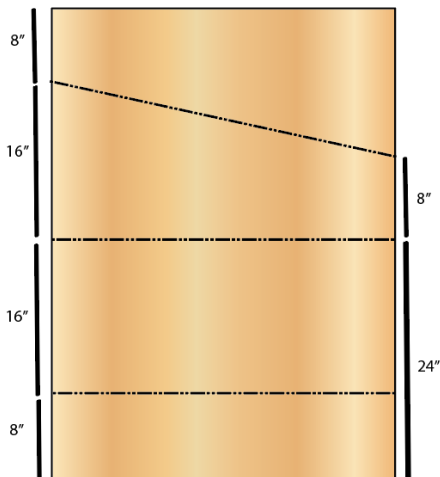
5. Start growing. You’re all done! Place the cold frame so the lid slopes towards the sun, and start growing. You will be left with one extra piece of wood from the pallet – it would be a good thing to hold on to in order to prop up the lid on those really hot days. Heat and dehydration are much more common issues with plants in cold frames than the risk of too chilly air!

Traditional-Style Using Plywood

While re-using pallets is very affordable, it does require some time and access to tools. An alternative way to use the same style is by using plywood instead. You can use a spare piece lying at home, or you can go and purchase one sheet of plywood locally. Plus, some places will even cut the plywood for you – a perk if you don't have tools yourself. The down side of using plywood? It tends to warp when wet, and may not last as long.

Materials:

- One sheet of plywood. (Thicker = more sturdy)
- Circular Saw
- Screws and screwdriver
- Hand drill and drill bits
- Hinges
- Glass/Plastic Lid
- Staple Gun
- Tape Measure, Pencil and Ruler



Method:

1. Make your measurements. Using a tape measure and ruler (carpenter's squares are great!), draw horizontal lines at: 8", 24" and 48". Then, in the largest square, draw a diagonal line across that leaves 8" on one end and 16" on the other. (See diagram above).
2. Make your cuts. Using your circular saw to cut along the ends. These can be long cuts, so be careful and consider cutting from each side and meeting in the middle.
3. Assemble your cold frame. Screw together all four sides of your cold frame together. Again, remember that pre-drill tip mentioned earlier – it really makes it easier.

4. Attach your lid. Traditionally, old windows and pieces of glass have been used as lids. If you have an old window that's the right size – simple use the hinges to screw in place, and you're done! Caution: glass lids are great, but also allow in lots of light and plants may burn and/or lose water faster, so just check in regularly to make sure your plants are happy.

Don't have glass? You can also use plastic – and it's fairly easy to find at any supply store (e.g. Northern Hardware, Art Knapps, Canadian Tire, Home Depot, etc.). Use some scrap wood to construct a frame, staple the plastic over the frame, and attach using the hinges.

This design gives you a much deeper cold frame than using pallets. You may want to make two smaller lids that are attached separately. It would make using this design much easier.

5. Start growing. You're all done! Place the cold frame so the lid slopes towards the sun, and start growing. You'll also need to find something to prop up the lid on those really hot days. Heat and dehydration are much more common issues with plants in cold frames than the risk of too chilly air!

Hoop-House Style Cold Frame

Hoop houses are great for creating a microclimate to grow plants in – and it gives you more height than traditional-style cold frames. This makes season extension easier, as those tall tomato and pepper plants will still fit! What's great about this design, is that it has the hoops attached to a lid which makes it easier to access your plants without having to crawl in or remove the plastic.

Materials:

- 2 of the 1"x6"x8'
- 2 of the 1"x3"x8'
- 4 pieces of 8' tubing (0.5' diameter)
- Hinges
- Screws and Screwdriver
- Hand drill and drill bits
- Tape measure, ruler and pencil
- Circular Saw
- Staple Gun
- Plastic Sheet



Method:

1. Measure and Cut. Measure and cut each board to make 5' and 3' boards using a circular saw.
2. Assemble. Screw together the 6" boards to make the bottom frame. Screw together the 3" boards to make the lid frame. Use the hinges to attach the lid frame to the bottom frame.

Pro Tip: Sometimes the lid might not fit square to the bottom frame. Attaching a small scrap piece of wood to the inside front corners of the bottom frame, sitting an inch above the frame, will ensure a better fit.

3. Add the hoops. Pre-drill small holes into one side of the tubing, and screw into the corner of the lid. Bend the tubing into place, pre-drill a hole on the other side, and screw into the other corner. Repeat with the other two pieces

of tubing. Cut the fourth piece of tubing to 5' and attach along the top of the frame to provide additional support.

4. Add the plastic. Cut a piece of plastic to size, and attach over the hoops using a staple gun. Since this style has a lid, you don't have to worry about being able to remove the plastic to access the plants.
5. Start growing! You're all set to get started! While there isn't a sloped lid to worry about, still find a nice sunny spot for your hoop-house cold frame. You'll also need to find something to prop up the lid on those really hot days. Heat and dehydration are much more common issues with plants in cold frames than the risk of too chilly air!