How I Made the Branch Terrarium (secrets revealed!)

This is Matthew of Another World Terraria, where I teach and inspire you on the topics of rare plants and artistic nature displays. In this highly requested video I'm going to share details and behind the scenes footage of how I made the brancharium. I'll show the entire process from start to finish while revealing lots of great insights, tips, and tricks. [Music]

The idea of this terrarium was to make it seem like you're looking at a section of a tropical tree branch in a cloud forest. I came up with the brancharium idea around 2014, but didn't get around to building it till 2020. Over the years before I could build mine I noticed other people came up with the same idea. When making mine I used my own design and ideas but I still took the opportunity to be inspired and learn from those people's work. I was originally going to use an Aquatop 6.5 gallon bookshelf tank for this build, which is about 24 inches long, but after thinking about it for a while I decided it would be way better in a larger tank since there'd be more room for plants and I could choose from a wider variety of species. Plus it would be more impressive at a bigger size, so instead of the six and a half gallon I used a 12 gallon bookshelf, which is almost 36 inches long. Another great thing about the 12 gallon tank is it has a more panoramic aspect ratio than the smaller version so it looks sleek and emphasizes the horizontal branch. After considering a few different types of wood I decided to use cork bark. I went with that because it's attractive, long lasting in moist conditions, lightweight, easy to cut, and because it's hollow and round, so I could place it over an inner structure, which you'll see later. Considering the long, thin, and shallow layout of the tank, I wanted to use a branch which was not too thick, so it wouldn't overpower the design or take up too much space needed for plants. After testing out various pieces of cork in the tank, I picked one of a thickness I thought would look good for the branch. Since it was only a short section, I had to come up with a way to visualize the full branch and also to test out various positions and angles, so I decided to make a template. To do this I cut a long piece of scrap styrofoam to the thickness of the cork I was considering. Holding the styrofoam template against the front of the tank, I found an angle and position I liked for the branch, then used painter's tape on the glass to mock it up. Choosing the angle of the branch included both practical and aesthetic considerations. I used a downward slope from one side to the other to increase the natural appearance and visual flow of the design. I positioned the branch slightly to the rear of the tank so there'd be more space for plants to grow along the front without hitting the glass. I also placed it low enough to allow vertical space for the plants. I wanted to prevent the branch from rotting and falling apart in the future, so I knew I couldn't just use a single piece of wood. Right away I thought of using a PVC pipe to create a structure for the branch, which would remain solid over time even if some of the cork bark rots. I held the PVC against the tank and marked the cut line for the length, then I cut it with PVC shears. Now, in order for the branch to be at an angle but still have the sides sit flush against the glass, I needed to skew the left and right sides of the PVC pipe. I marked it with a sharpie and then used a Dremel to grind it to the right shape.

After some trial and error I was happy with the fit. The often requested secret to how I mounted the branch is coming next, but real quick I just want to thank all my subscribers, fans, and anyone else who supports me. I enjoy hearing from you and appreciate the kind words, likes, and shares. Thanks for being part of Team Terraria. The branch mount was one of the trickier things to figure out because I wanted it to be invisible, I wanted the branch to be removable, I wanted the mounting method to be secure enough to support the branch's weight when wet and grown over with plants, and finally permanent so it wouldn't fail later. For all those reasons I couldn't simply glue the branch to the glass. After some brainstorming I came up with the idea of a peg and slot system. The branch would slide over some mounting pegs on the left and right of the tank inside, which would support it, and they'd be hidden by the branch at the same time. I thought about using acrylic for the pegs but then decided on glass instead. Even though the glass option was a lot more work, I went with it because silicone adheres far better to glass than acrylic, and I wanted to be positive the mount would never come loose. To create the glass pegs, I used a glass cutting tool to make six one-inch squares out of 3/32 inch thick glass, and then use silicone to adhere them together into two stacks of three. I clamped each stack together until the silicone cured, then wet sanded all the edges so they weren't sharp anymore. This left me with two glass mounting pegs about one inch across and a quarter inch thick. Next I needed to create a slot in the PVC which could slide over the mounting pegs. I carefully positioned the pipe, then marked the cut lines on the ends using the glass pegs as templates. I used a Dremel with a cutting wheel to remove the sections of the PVC where the pegs will fit. The next challenge was to create the appearance of a natural whole piece of wood even though I was using multiple pieces of cork. I gathered a variety of cork rounds at about the size and appearance I wanted and then after playing around with them I selected the best ones based on their color, texture, and thickness. Then I cut the rounds in half so I'd be able to attach them to the outside of the artificial branch core that I'd be making, which also gave me twice as many options to work with when trying to piece them together. I scraped out all the soft and loose material inside the cork rounds to reduce mold and decay. I broke away small pieces of the bark from the cork sections so they'd fit together better at the edges, then test fitted them over the PVC to visualize the branch and make sure everything worked as expected. Then I labeled the final sections with numbers so I could easily put them back together again in exactly the same way later. Now here's the next secret to the branch construction. I needed to increase the thickness of the core so it would be closer to the size of the cork rounds, and since PVC is flexible I also wanted to make the core more rigid so the branch wouldn't sag. For that I chose polyurethane spray foam because it's extremely lightweight but strong, waterproof, and easy to carve. I cleaned off the PVC core then sanded it to create a rougher surface so the spray foam would stick better. After wiping off the sanding residue, I prepped the work area by putting down plastic and covering anything I didn't want the foam to get on, such as the glass tank. Next I secured the PVC core in place using painter's tape to prevent it from rolling over during spraying. For this build I used a foam called Touch 'n Foam landscape. After shaking the can thoroughly per the instructions, I held it upside down and used the spray straw to apply the foam in short side to side motions as I worked my way down the PVC. The next day when the foam was cured I flipped the branch over, created some makeshift braces to hold it in place, then sprayed the other side. After the foam cured for a day I did the same thing again, this time filling any remaining gaps between the existing foam. Once the final coat of foam had cured, I was ready to begin carving it to the desired shape. I needed the branch core to fit as closely as possible to the bark sections and also

have a nice shape overall. In this case I used a large bread knife for carving, but depending on the project I'll sometimes use knives of other shapes and sizes or even other tools such as a Dremel. I always carve foam slowly and carefully so I don't cut too much off. In this case I frequently looked at the piece from different angles and tested the cork bark until I was satisfied that everything fit together perfectly and had the shape that I wanted. Something which isn't easily noticeable here is that I carved the foam to different thicknesses above and below in a few areas to create a wavy shape instead of a straight one. By the way, before I forget, I put some Amazon links in the video description for a bunch of the products and stuff used in this video, so hopefully you'll find those useful. It was time to make sure things were coming together as desired and to visualize the branch in the tank, so I temporarily attached the bark to the core using rubber bands. Now would be a good time for me to explain why I only put cork on the bottom of the branch. I thought ahead and decided that the substrate, moss, and plants would add thickness to the top of the branch, and I figured if I put cork all around, the design would be too top heavy and awkward. Also, using cork on top would be a waste because you wouldn't see it much after the moss and plants grew in, and finally it would probably rot faster for that reason as well. Here's the branch in the tank propped up with scrap materials. In this view you can see the curves in the branch due to how I carved the foam to varying thicknesses above and below in different areas. When I was happy with the branch and the exact position in the tank during test fitting, I marked the glass with a sharpie so I could place it in exactly the same spot later. The next step was to glue the bark onto the core with Gorilla Glue. I marked the cork's position on the foam with painter's tape so I could quickly and easily put it back in the same position after putting the glue on. After removing the rubber bands and first piece of cork, I sprayed the exposed foam area with water, which improves the bonding process of Gorilla Glue. I used original Gorilla Glue here due to its expanding property, which would fill all the gaps and texture in the bark and foam, creating an extremely strong bond which would grip both surfaces and resist detaching when the cork absorbed moisture later. I applied a good amount of glue to the inside of the bark, then placed it back onto the core. When the bark section was correctly positioned, I clamped it securely with zip ties. It's important to clamp when using Gorilla Glue because it expands a lot and you want to avoid the surfaces from being displaced, plus this forces the glue deeper into all the crevices which makes the bond way stronger. I also added a bit more glue around the edges of the cork where they contacted the foam. I repeated this process for the rest of the cork pieces on the branch, then let it sit for a day so the glue could cure. The next step was to attach a substrate over the top of the foam core where the moss and plants will be. For that I used a thick spacer mesh which I got from a friend. It's similar to Hygrolon but not as good as the real thing. I carefully cut pieces of the fabric to fit over the exposed foam on the top of the branch. I worked in small sections to make it easier. After a piece was cut, I marked its end position on the branch with painter's tape so I could move on to the next piece and see where to continue from. After all the sections of the fabric were cut, I loosely test fitted them just to be sure things were looking right. There were a few more things I needed to do before gluing the fabric on. First I removed the zip ties using side-cutter pliers. Next I needed to clean up and remove some of the Gorilla Glue which expanded out of the gaps in the bark. For that I used a Dremel with various cutting wheels and grinding bits. After that the Gorilla Glue was mostly invisible in the bark area and things were coming together nicely. Finally I wanted to hide any obvious gaps in the bark, which I did by filling them in with tiny pieces of cork held in place with super glue. I misted the bark lightly with water to make the glue cure faster. After the largest gaps were plugged with cork, the illusion of a single piece of wood was almost done The next step was to attach the mesh

fabric to the foam core. I pretty much did it the same way that I showed in my 10 gallon vertical drip wall terrarium video series, which you can watch after this video if you want, but I'll explain the process here as well. One of my favorite glues is Gorilla Glue Clear Grip. It sticks to almost everything, is waterproof, and works great for gluing fabrics like Hygrolon, which don't respond as well to super glue. The primary downside is the very strong fumes which are dangerous to breathe, so you need to wear a good respirator and ventilate the work area. After putting a bunch of glue on the foam I used a silicone brush to spread it around. This was hard because Clear Grip is extremely sticky, and it gets even worse as it starts to cure. I did the best I could and worked quickly. The fabric needed to be secured to the surface until the glue cured, so I used zip ties to hold it in place. Then I inserted pins all over to make it fit the shape of the carved foam. This also improved the contact area of the fabric and foam so they'd stick together better. When inserting the pins using this method, I push them in at an angle, while also pushing them towards the fabric, so the shaft of the pin holds the fabric down. Also I only put the pins in part way so it's easier to remove them later. After a day the glue was mostly cured and the zip ties and pins could be removed. I removed most of the pins by hand but used needle nose pliers to remove any which were stuck. The final step in finishing the branch was to go over any imperfections with super glue, and coat it with dry peat moss. This hid the cut edges of the bark and the ground off Gorilla Glue. Next came the fun part of putting the finished branch in the tank to check how it looked. I used the Sharpie marks from earlier to align the branch in exactly the same spot as before, then used styrofoam scraps to hold it in place. I was extremely happy with how the branch looked and decided it was time to glue the mounting pegs into the tank. First I wiped the inside of the glass with isopropyl alcohol to remove dirt and oils. Then I applied aquarium grade silicone to the glass peg and carefully stuck it in position by matching it to the Sharpie marks on the glass. After making sure the peg was perfectly positioned, I used painter's tape to hold it in place while the silicone cured. After about a day I removed the tape and wiped the Sharpie marks off with alcohol. Finally, it was time to fit the branch in the tank over the mounting pegs. The branch slides right in and both ends fit perfectly flush against the glass. The entire mounting system is invisible when viewing the tank from the display side. I put the light on the tank for a better preview of how things would look later. The light is a NICREW Classic LED Plus. I've used these on a few other terrariums in a few sizes and really like them. I've put a link in the video description to this NICREW LED on Amazon in case you want to check it out. Next I ran the branch through a process I came up with that I call the Another World Terraria mold cycle method. I talked about this in my Crown Forest terrarium build series. The idea is to let the hardscape wood mold over for a period of time before adding plants, which lets the worst of the mold settle down so it doesn't cause issues for smaller plants and moss. I also add springtails and isopods which eat decaying matter and mold off the wood to speed up the cycle. After cleaning the tank of any dirt and stuff from the build process, I added a temporary bed of sphagnum and leaf litter on the bottom to increase the moisture and act as a place for springtails and isopods to live. Then I laid the branch down and sprayed it with water so it'd mold over faster and the microfauna could get to the branch. Next I added springtails from one of my cultures. I don't know the species of springtail, but they're white and of a decent size. Then I added dwarf white isopods, Trichorina tomentosa. It's the only species I use, mostly because I've never seen them eat any live plants, and also because I like how small they are. I covered the tank with plastic wrap and left it alone for about two and a half weeks until I was satisfied that most of the worst mold was gone and things were getting in balance. During the mold cycle, the cork absorbed moisture and expanded, so the branch wouldn't fit back in the tank over the mounts. I used a Dremel to

grind away the swollen cork until it slid down all the way onto the mounting pegs. Finally I was at one of the most exciting yet challenging stages of the build, the beginning of planting. I spent a good amount of time going through all of my plant bins and terrariums to collect a bunch of mosses, liverworts, and mini plants. People always ask me how I grow such nice moss in terrariums and bins. The most important thing is I use tropical species, not temperate ones. Tropicals do way better in terrarium conditions because everything is pretty much the same as their natural habitat. I don't do anything special for moss care; they just grow along with the other tropical plants. For the branchárium, I focused mostly on the moss and some tiny plants, which aren't too flashy, because I wanted it to look elegant and showcase the things that most people don't pay attention to, and I also wanted it to look unique instead of featuring bromeliads and other stuff that you see all the time. I started planting with only moss and liverworts. This kind of set a foundation which helped me visualize how it will look later and helped me figure out the best positions for the larger plants. I misted things occasionally to prevent the moss and plants from drying out. Next I started adding other types of moss, liverworts, micro ferns, and orchids. I took my time and carefully positioned each species, considering their shape, size, and texture, in relation to each other and the entire design. I split the planting over a couple days because I went so slow and there were so many tiny plants and things to consider. I wanted to give myself some breaks and come back later to see how it looked with fresh eyes. On the first day of planting I put a PC fan in the tank to reduce mold growth which might show up, and to keep the plants healthy. During the breaks, I covered the tank with a plastic wrap to keep it humid. When planting, I tried to space the larger species out to create a balanced composition. I also consider which direction a plant will grow, and what its growth habit is, and try to visualize how it will look in the tank over time. That helps me put things in the ideal spot. Some species needed sphagnum moss around the roots, which I temporarily supported with pins. I also put sphagnum on top of the mesh fabric in some places to give the moss and plants more moisture and organic material to grow in. Also, while planting, I paid careful attention to the thickness of the plants and substrate in relation to the thickness of the cork bottom, to make sure they looked balanced. Once I was happy with the planting, I wanted to attach the plants to the branch so they wouldn't fall off before rooting. For that, I wrapped dark green 100% polyester thread around the branch and plants. This was a bit of a challenge because of the tight space inside the tank, how delicate the plants were, and how loosely everything was placed. I took my time and used long tweezers to make it a little easier. When I wrapped the thread around, I wove it between the plant leaves and stems to avoid damaging them. Polyester thread is synthetic and it's very resistant to degrading under terrarium conditions. By the time it does break down, if ever, the moss and plants will already be rooted and attached to the branch anyway. After the thread was applied all around, I removed the pins I put in earlier to support the bigger plants. There were just a few more steps to do on the project. I left everything for a couple days and then came back to remove all the substrate and unused plants from the bottom of the tank. Then I misted the branch with a little diluted liquid fertilizer. As I said earlier, I wanted this tank to look like a slice of a tree branch up in the forest canopy, so I didn't want there to be any substrate on the bottom, but in the end I changed my mind and decided to add a layer of SeaChem Onyx sand. I did this so there'd be some land at the bottom, in case any isopods fell off the branch, so they wouldn't drown in the runoff from watering. Another good thing is it covers the bottom glass so there aren't any annoying reflections. If you enjoy my videos, please consider giving them a like, and join Team Terraria by subscribing now. Remember to click the bell so you'll get notified when I post new content.

END OF TRANSCRIPT

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