Transcript: COMPLETED DIY Build of Aquaponics System | Movie Length Full Version of Finished Project

Video ID: HZ0alnWbXhg

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**[00:00:00]** [Music]

**[00:00:04]** it's getting to that time of year again

**[00:00:06]** we're starting to warm up a little bit

**[00:00:08]** [Music]

**[00:00:12]** getting close to spring and starting to

**[00:00:14]** think about all the growing that we

**[00:00:16]** would love to do

**[00:00:17]** talked to bryson and we looked at

**[00:00:19]** bryson's aquaponics system we decided

**[00:00:21]** that

**[00:00:21]** that would be a really great solution

**[00:00:23]** for us too with its low water

**[00:00:25]** consumption

**[00:00:25]** we're going to put together ourselves a

**[00:00:27]** aquaponics system we're going to do a

**[00:00:28]** little bit different design just to try

**[00:00:30]** something else out

**[00:00:31]** this was our garden area when i was

**[00:00:32]** growing up and i think this is where

**[00:00:34]** we're gonna put the

**[00:00:34]** aquaponics system a row of grow beds

**[00:00:37]** here

**[00:00:38]** and road grow beds here and then the

**[00:00:40]** fish tank and

**[00:00:41]** your science stuff we'll be over there

**[00:00:45]** i'm not exactly sure how that's working

**[00:00:47]** so we're going to kind of clean this

**[00:00:48]** area out take this fence out

**[00:00:50]** yeah cut the grass get those little

**[00:00:52]** trellises out and i got some

**[00:00:53]** big holes to dig for some power poles

**[00:00:56]** that we ended up getting

**[00:00:57]** which are going to be perfect for

**[00:00:58]** raising our grow beds up off the ground

**[00:01:00]** so you're doing raised grow breads

**[00:01:01]** you're not doing the pipe system like

**[00:01:02]** dressing

**[00:01:03]** yeah we're going to do some raised grow

**[00:01:05]** beds that way the drainage

**[00:01:07]** works good we don't have to pump water

**[00:01:08]** in to the grow bed and then pump water

**[00:01:10]** back out of the grow bed we can just

**[00:01:12]** pump water into the grow bed and it will

**[00:01:13]** drain back out

**[00:01:14]** cool all right we ready to get started

**[00:01:17]** working then

**[00:01:18]** yeah let's do it

**[00:01:22]** these are the power poles we got and

**[00:01:24]** that's what i'm going to be using to

**[00:01:25]** raise these beds

**[00:01:27]** i'm going to go through and grab out all

**[00:01:28]** the holes i want here

**[00:01:30]** for the aquaponics what do you think

**[00:01:31]** azalea you're ready to work

**[00:01:36]** i don't think she's going to be able to

**[00:01:37]** help us today she's got a full schedule

**[00:01:40]** of napping this pole split in half when

**[00:01:42]** i dropped it off

**[00:01:43]** and you can see it's because it's hollow

**[00:01:45]** look at this there's a big beehive right

**[00:01:47]** in the middle of it that's pretty cool

**[00:01:48]** there's still honey in some of that look

**[00:01:50]** at that there's a couple pine ones in

**[00:01:51]** here that are really nice so i'm gonna

**[00:01:52]** cut these

**[00:01:53]** all at three foot chunks and that's

**[00:01:56]** gonna give us

**[00:01:57]** a foot in the ground two foot standing

**[00:01:59]** up and then there'll be a foot of tank

**[00:02:01]** so all the tanks are gonna set at about

**[00:02:02]** three foot tall that way you can reach

**[00:02:04]** all the way across plus that way i have

**[00:02:07]** a

**[00:02:08]** lot of material here that i can pick

**[00:02:10]** from it's pretty crazy where that

**[00:02:11]** beehive broke open

**[00:02:13]** like a half hour later attracted all of

**[00:02:15]** these bees look at this

**[00:02:17]** they're all through here and then the

**[00:02:19]** hive itself

**[00:02:20]** pretty crazy babies over there safe but

**[00:02:23]** i don't think tvs are going to do

**[00:02:24]** anything

**[00:02:25]** they're pretty focused trying to get

**[00:02:26]** stung

**[00:02:28]** [Music]

**[00:02:31]** all right you get them all cut up babe

**[00:02:33]** good get

**[00:02:34]** all your pools cut got our tanks in here

**[00:02:39]** that'll work huh we'll get these all

**[00:02:40]** leveled off nice

**[00:02:42]** out there very cool

**[00:03:10]** [Music]

**[00:03:16]** final poll these are looking so good

**[00:03:19]** babe

**[00:03:22]** can you imagine like how nice it's gonna

**[00:03:24]** be to garden without you know

**[00:03:25]** being on your hands and knees yeah that

**[00:03:28]** would be nice

**[00:03:30]** all done

**[00:03:35]** [Music]

**[00:03:46]** well hello oh i see you're rocking your

**[00:03:49]** merch there huh baby girl

**[00:03:51]** your little homestead merch that's

**[00:03:52]** looking good thanks

**[00:03:55]** for our grow beds and our fish tank we

**[00:03:58]** got a couple ibc tanks

**[00:04:00]** from a local guy we got them really

**[00:04:02]** cheap because they're

**[00:04:03]** filthy so a little bit of cleaning to do

**[00:04:06]** on them we got our work cut out

**[00:04:07]** yeah we do i guess i should have grabbed

**[00:04:09]** the hand part

**[00:04:11]** oh yeah you don't want to muscle through

**[00:04:13]** it

**[00:04:15]** i'm not really feeling it right now all

**[00:04:17]** right

**[00:04:23]** okay so i guess we take it apart first

**[00:04:26]** huh

**[00:04:28]** [Applause]

**[00:04:31]** [Music]

**[00:04:38]** maybe i should actually go the other way

**[00:04:47]** [Music]

**[00:04:54]** there's a lot of stuff in the bottom of

**[00:04:55]** this one wow

**[00:04:58]** that is gonna be a mess it's like five

**[00:05:01]** gallon buckets worth

**[00:05:02]** yeah it's pretty close and it's kind of

**[00:05:05]** sludgy too

**[00:05:06]** um so maybe the uh the watery stuff

**[00:05:10]** will take off and we'll save because

**[00:05:12]** it's actually pretty expensive

**[00:05:13]** to buy that concrete pigment

**[00:05:15]** [Applause]

**[00:05:21]** [Music]

**[00:05:22]** bucket and our trowels i'm just gonna

**[00:05:25]** try to scoop it in with this

**[00:05:26]** see how it goes here oh

**[00:05:29]** that's actually pretty hard interesting

**[00:05:31]** maybe we should tip it up

**[00:05:32]** oh boy prepare to get messy

**[00:05:35]** and look at how much is in there well

**[00:05:40]** the dogs knocked us over the dogs yeah

**[00:05:44]** we just wanted to um dye our bricks

**[00:05:46]** right yeah yeah that's

**[00:05:48]** we wanted a nice stain right there

**[00:05:50]** exactly dude boys

**[00:05:52]** this is five we're watching him oh my

**[00:05:54]** gosh look at his mouth

**[00:05:56]** i hope that's non-toxic

**[00:05:59]** you can't get sick you're not ours okay

**[00:06:01]** i cannot believe i just did that

**[00:06:05]** [Music]

**[00:06:18]** all right babe what you up to we got

**[00:06:21]** most of it

**[00:06:21]** yellow but there's still like a hint of

**[00:06:23]** it so we got some vinegar and we've just

**[00:06:25]** been spraying it out and we'll

**[00:06:27]** wipe it down and it kind of gets it

**[00:06:29]** cleaner yeah

**[00:06:30]** you can still kind of tell there was

**[00:06:31]** yellow in it but

**[00:06:34]** yeah i think it looks a lot better it's

**[00:06:36]** not supposed to be harmful so

**[00:06:38]** we'll just get it the best we can gonna

**[00:06:40]** work we got a little bit of a

**[00:06:42]** river it should wash away with rain and

**[00:06:45]** it's

**[00:06:46]** not harmful which is good

**[00:06:48]** [Music]

**[00:06:51]** how you doing sweet pea

**[00:06:56]** okay well we got my mess

**[00:06:59]** kind of cleaned up not really there's

**[00:07:01]** one tank that's a little bit different

**[00:07:03]** from all the others

**[00:07:04]** most of these tanks are like this one

**[00:07:07]** where

**[00:07:07]** the distance between the top of the rail

**[00:07:09]** and the bottom of the rail a little over

**[00:07:10]** 12 inches

**[00:07:12]** you can see this one this one's more

**[00:07:13]** like a 10 inch spacing

**[00:07:15]** because it's the odd one out safety

**[00:07:17]** first

**[00:07:18]** what i'm going to do is use that one for

**[00:07:20]** the fish tank because

**[00:07:21]** the fish tank is going to be cut up a

**[00:07:22]** little bit differently it's just going

**[00:07:24]** to have the top cut out of it and i'm

**[00:07:25]** going to use the whole tank instead of

**[00:07:27]** cutting the top off of it

**[00:07:28]** everything is going to look a lot more

**[00:07:29]** uniform and it's kind of what i'm going

**[00:07:31]** for

**[00:07:32]** tops off i just got to clean it out

**[00:07:35]** again

**[00:07:35]** try and save that and not spill it this

**[00:07:38]** time

**[00:07:39]** [Music]

**[00:07:41]** this your last one yeah this is the last

**[00:07:44]** one

**[00:07:46]** i gotta clean up some covered in red dye

**[00:07:52]** alrighty i got everything cleaned up and

**[00:07:55]** i got the

**[00:07:56]** all the tanks cut so the short ones are

**[00:07:59]** the grow beds and the tall ones are

**[00:08:01]** going to be in this case we have a

**[00:08:02]** duckweed tank

**[00:08:03]** and a sump tank the other two tanks i

**[00:08:05]** cut into grow beds so

**[00:08:07]** that'll be six grow beds in total this

**[00:08:09]** is the fish tank still a little bit

**[00:08:10]** tinted yellow shouldn't hurt the fish

**[00:08:12]** but i want to make sure that i wipe it

**[00:08:14]** out really good and clean out that way

**[00:08:15]** there's no

**[00:08:15]** actual residue of it last thing left to

**[00:08:18]** do

**[00:08:18]** is cut all the frames in order to house

**[00:08:21]** all the plastic tanks

**[00:08:31]** i got all the tanks cut and all the

**[00:08:32]** frames cut and put them all together

**[00:08:34]** just to kind of see what they'll look

**[00:08:35]** like

**[00:08:36]** inside the cages and i really like it i

**[00:08:38]** think that's gonna look super good

**[00:08:40]** and super clean when it's all painted up

**[00:08:42]** we got a nice red color to paint all the

**[00:08:44]** tanks and we're gonna leave the cages

**[00:08:45]** the silver

**[00:08:46]** and then all the growth in them all the

**[00:08:47]** green growth that's what we're hoping

**[00:08:49]** [Music]

**[00:08:52]** for

**[00:08:54]** i want to work

**[00:08:56]** [Music]

**[00:09:01]** now that everything's cut i'm going to

**[00:09:03]** start sanding i'm going to pull the

**[00:09:04]** tanks out of the cages because it's just

**[00:09:06]** going to make it a lot easier

**[00:09:09]** [Music]

**[00:09:18]** a lot of hand sanding in those little

**[00:09:19]** crevices but i got them all sanded i

**[00:09:21]** think that the paint's gonna stick

**[00:09:22]** really good

**[00:09:23]** i hope it lasts a long time we got cheap

**[00:09:25]** latex paint so we'll try that out if it

**[00:09:27]** doesn't work then uh

**[00:09:28]** lesson learned they look awesome babe

**[00:09:30]** i'm so excited to paint them and get

**[00:09:32]** them up on the poles

**[00:09:33]** yeah they turned out good they're so

**[00:09:35]** clean too

**[00:09:37]** good oh you're just so cute

**[00:09:41]** [Music]

**[00:09:46]** what do you think diesel oh

**[00:09:56]** even with how aggressive he was being

**[00:10:04]** [Music]

**[00:10:09]** it's time to get these tanks out of the

**[00:10:11]** cage and paint them they're all sanded

**[00:10:13]** up from last week

**[00:10:16]** it's kind of windy and cold today so

**[00:10:18]** we're going in shed

**[00:10:19]** isaiah is already waiting on us

**[00:10:23]** [Music]

**[00:10:28]** i guess we should put a tarp underneath

**[00:10:30]** this huh or do you not feel

**[00:10:32]** i mean i don't spill but i can't take

**[00:10:35]** for you

**[00:10:47]** that's a cool color huh yeah it's not

**[00:10:49]** pink at all

**[00:10:52]** not it yet wait

**[00:11:04]** relaxing in the sun baby girl

**[00:11:07]** hmm look at this the first paint spot on

**[00:11:10]** her cheek

**[00:11:11]** got there all on its own

**[00:11:18]** [Music]

**[00:11:31]** we got everything painted now it's time

**[00:11:33]** to put the tanks back in the cages and

**[00:11:34]** start setting them up

**[00:11:41]** [Music]

**[00:11:52]** those look so they do cool

**[00:11:56]** pretty good one more

**[00:11:59]** [Music]

**[00:12:03]** off to dig a hole what's this hole for

**[00:12:06]** it's fun oh you just dig it fun

**[00:12:09]** yeah just felt like i'm out digging a

**[00:12:12]** hole today

**[00:12:13]** this hole is for the sump tank

**[00:12:16]** so it's the lowest point of the whole

**[00:12:19]** aquaponics system

**[00:12:20]** and i'm just trying to lower it even

**[00:12:22]** further that way it all drains right

**[00:12:25]** [Music]

**[00:12:30]** the hole is dug not too bad the ground

**[00:12:33]** was pretty soft just a lot of dirt to

**[00:12:34]** move but

**[00:12:35]** our tank should fit right down that hole

**[00:12:37]** and we'll have probably duckweed pond

**[00:12:39]** and then fishpond at the end

**[00:12:40]** [Music]

**[00:12:47]** we got all the tanks in their cages so

**[00:12:49]** now i'm gonna get started putting them

**[00:12:50]** on the stumps that we have out there

**[00:12:52]** getting them leveled that way when the

**[00:12:54]** water sits in them it looks

**[00:12:55]** semi-good let's see how well my layout

**[00:12:58]** is

**[00:13:02]** [Music]

**[00:13:04]** it turned out to be really level which

**[00:13:06]** is awesome and i think i'll strap on the

**[00:13:08]** corners

**[00:13:09]** that way it doesn't slide all right i'm

**[00:13:12]** making little tiny straps

**[00:13:13]** to screw the grow beds to the poles i

**[00:13:16]** have out there i just grabbed one of

**[00:13:17]** these face plates

**[00:13:18]** i'm just gonna cut all the little slurps

**[00:13:21]** yeah 25 of them

**[00:13:22]** we need 24 so one extra nice

**[00:13:42]** we have two bottom tanks and four top

**[00:13:44]** tanks and the bottoms of the tank

**[00:13:45]** are a little bit deeper than the tops of

**[00:13:47]** the tanks so i'm going to just chop down

**[00:13:49]** these poles

**[00:13:51]** just a little bit just to make

**[00:13:52]** everything level across the top

**[00:14:05]** we want in the garden for a while now

**[00:14:07]** growing our own veggies and stuff

**[00:14:09]** and especially once we had this little

**[00:14:11]** kiddo and wanted to have that experience

**[00:14:13]** for her

**[00:14:14]** plus for health reasons and it's just

**[00:14:16]** good to have your own grown vegetables i

**[00:14:18]** think

**[00:14:18]** because of our well situation where it's

**[00:14:20]** not really producing very well ricin was

**[00:14:22]** showing us through the aquaponic system

**[00:14:24]** and tell us how little water it took to

**[00:14:26]** do we really fell in love with it and

**[00:14:27]** it's just such an interesting and cool

**[00:14:29]** way to grow food and fish at the same

**[00:14:33]** time

**[00:14:33]** i'm very excited about the maintaining

**[00:14:35]** process of it too

**[00:14:36]** yeah it's a little more unique and just

**[00:14:38]** in the soil which is fun too but

**[00:14:40]** i've done a lot of that so it's kind of

**[00:14:42]** fun to try a different way and

**[00:14:44]** see how things grow that way and stuff

**[00:14:48]** all the tanks are where they're going to

**[00:14:49]** sit now only thing left to do is going

**[00:14:51]** to be plumbing i really love the way it

**[00:14:53]** turned out it looks

**[00:14:54]** so good with the red paint isaiah can go

**[00:14:57]** out there and catch us a fish for dinner

**[00:15:01]** sounds good

**[00:15:06]** we are working on the plumbing today and

**[00:15:09]** two other barrels that we need to paint

**[00:15:11]** as

**[00:15:12]** well should we go get the plumbing

**[00:15:14]** started azalea

**[00:15:15]** i think the silence means yes

**[00:15:19]** plumb the grow beds so they'll have an

**[00:15:21]** inlet outlet it's a dual loop system

**[00:15:23]** so that means that the grow beds are on

**[00:15:25]** one pump

**[00:15:26]** loop of water and the fish tank and the

**[00:15:28]** duckweed pond are on another loop of

**[00:15:30]** water it's a little bit more reliable to

**[00:15:31]** do it that way from what i hear and i

**[00:15:33]** got the exits all done

**[00:15:34]** just using little bulkhead fittings and

**[00:15:37]** then that goes down into the two inch

**[00:15:39]** pipe which is the drain pipe

**[00:15:40]** underneath and for the inlet pipe that's

**[00:15:43]** going to be all one inch pipe

**[00:15:44]** these two will always be draining a

**[00:15:46]** little bit what's going in will be

**[00:15:47]** coming right back out

**[00:15:48]** and then this one will be filling and

**[00:15:50]** draining then all three of these are

**[00:15:51]** going to be filling and draining

**[00:15:53]** each tank is going to have a valve on it

**[00:15:54]** so i can adjust the flow

**[00:15:56]** into the individual tank rather than

**[00:15:58]** trying to adjust the flow at like one

**[00:16:00]** point

**[00:16:01]** there will be a main shut off to the

**[00:16:03]** whole system well

**[00:16:04]** actually i might do individual sides

**[00:16:06]** just in case i want to run one side or

**[00:16:07]** the other i think what i'm going to do

**[00:16:08]** is run a pipe right next to the drain

**[00:16:10]** pipe on the bottom

**[00:16:12]** i'll go up an elbow into this one tank

**[00:16:14]** here and then i'll t

**[00:16:15]** and then drop into each tank instead of

**[00:16:17]** using this fancy t-piece

**[00:16:19]** we ended up just deciding that this

**[00:16:21]** looks so much nicer

**[00:16:23]** just to have the single pipe coming up

**[00:16:24]** and dumping in with the valve

**[00:16:26]** on the side is going to look a lot

**[00:16:28]** cleaner with just the single piece

**[00:16:36]** [Music]

**[00:16:41]** this is our inlet line

**[00:16:44]** and then we'll connect to these guys

**[00:16:48]** looks pretty good nice

**[00:16:52]** sweet it's looking good

**[00:16:56]** what you're doing now well getting it

**[00:16:58]** plumbed down to the pump all the water's

**[00:17:01]** gonna

**[00:17:01]** end up here and get pumped out of here a

**[00:17:03]** little bit of

**[00:17:04]** twine right now but i'll get that

**[00:17:06]** switched out for something nicer we're

**[00:17:08]** gonna make brackets

**[00:17:09]** probably paint the pipe yeah clean it up

**[00:17:11]** a little once we're done

**[00:17:14]** we got all the inlet lines finished for

**[00:17:17]** the grow bed i just have to install the

**[00:17:19]** outlet side now which is all this two

**[00:17:21]** inch pipe

**[00:17:22]** build one more of these long pieces and

**[00:17:24]** then plumb it to

**[00:17:25]** the sump tank it's so much fun to have

**[00:17:28]** our own piece of land that we've bought

**[00:17:29]** and to

**[00:17:30]** dream up of different projects and

**[00:17:32]** improvements i really enjoy

**[00:17:34]** the dreaming process particularly that's

**[00:17:37]** half the fun right there but then to

**[00:17:39]** actually have that dream and eventually

**[00:17:41]** pull the trigger

**[00:17:42]** it's just a lot of fun to watch it come

**[00:17:44]** together

**[00:17:45]** what the goal is for this property is to

**[00:17:48]** set it up to raise a family on so things

**[00:17:50]** like

**[00:17:50]** having animals and just different things

**[00:17:53]** that they can

**[00:17:54]** learn and grow with as well like we did

**[00:17:57]** growing up we had

**[00:17:58]** great opportunities that way of being

**[00:18:00]** able to live out and

**[00:18:01]** animals to take care of and plants to

**[00:18:03]** take care of i didn't always enjoy it

**[00:18:06]** but looking back on it i really

**[00:18:07]** appreciate my parents for doing that

**[00:18:10]** yeah i wouldn't want it another way i

**[00:18:11]** always loved helping my dad with

**[00:18:13]** projects and stuff

**[00:18:14]** and i'm excited to have that for our

**[00:18:15]** kids too

**[00:18:18]** [Music]

**[00:18:26]** started raining pretty hard outside so i

**[00:18:28]** thought i would come inside the shed

**[00:18:29]** here

**[00:18:29]** and build the standpipes and the bell

**[00:18:31]** siphon the standpipe is what sets the

**[00:18:33]** height of the water

**[00:18:34]** once the water gets up to a certain

**[00:18:35]** level a siphon will start off of the

**[00:18:37]** bell siphon and that'll suck the water

**[00:18:39]** all the way down to the bottom of the

**[00:18:40]** tank and then it'll break the siphon and

**[00:18:41]** allow

**[00:18:42]** it to fill back up

**[00:18:43]** [Music]

**[00:18:47]** i got all the stand pipes done and then

**[00:18:50]** all of the

**[00:18:51]** bell siphons done now the bell siphons

**[00:18:53]** only go with the four

**[00:18:54]** grow beds that are gonna have rock in

**[00:18:56]** them these are gonna go with the raft

**[00:18:58]** beds

**[00:18:58]** they just need a stand pipe and they

**[00:19:00]** just have water constantly flowing

**[00:19:02]** through them

**[00:19:03]** gonna take these guys out and install

**[00:19:05]** them pretty straightforward just thread

**[00:19:07]** these into the bulkhead fittings and

**[00:19:08]** these just set right on top

**[00:19:21]** [Music]

**[00:19:26]** [Applause]

**[00:19:31]** we've got these two 55 gallon drums that

**[00:19:33]** are going to be filters

**[00:19:35]** so i'm going to paint them up the same

**[00:19:36]** color as the tank so it all looks nice

**[00:19:38]** and matches

**[00:19:41]** i got the tanks all painted up and we're

**[00:19:43]** gonna work next week on getting them set

**[00:19:45]** up out there and get the internal

**[00:19:46]** plumbing you know

**[00:19:47]** they look good hon really helped

**[00:19:51]** yeah did you do all the heavy lifting

**[00:19:53]** azalea she looks pretty tuckered out now

**[00:19:56]** uh she's growing up so fast too way

**[00:19:58]** quicker than

**[00:19:59]** i thought kids would and like i realized

**[00:20:01]** that she's not really

**[00:20:02]** growing up yet it's not that long it's

**[00:20:05]** like already

**[00:20:06]** out of the newborn phase it seems like

**[00:20:08]** she's just getting so much stronger and

**[00:20:10]** i don't know it's so fun to watch her

**[00:20:12]** grow

**[00:20:14]** soon enough she's going to be running

**[00:20:15]** around yeah i can't wait to

**[00:20:17]** get to know her brother

**[00:20:20]** [Music]

**[00:20:34]** we have a solid filter that i'm going to

**[00:20:36]** be building out of one of these buckets

**[00:20:37]** and then a bioreactor on the other

**[00:20:39]** starting off the solids filter it's

**[00:20:41]** going to have

**[00:20:42]** an l-shaped pipe it'll come in through

**[00:20:44]** the side and then come up and then just

**[00:20:46]** cut off it'll be kind of a stand pipe

**[00:20:48]** in the center of the tank i have some of

**[00:20:50]** the five inch well casing from mom and

**[00:20:52]** dad's house

**[00:20:52]** and we'll put a chunk of that pipe in

**[00:20:54]** over the top of that

**[00:20:56]** l-pipe and that'll make the solids flow

**[00:20:58]** in around and then they'll hit the side

**[00:21:00]** of that pipe and flow back down to the

**[00:21:01]** bottom of the tank

**[00:21:02]** then from there we'll have a out sitting

**[00:21:05]** somewhere at the top of the tank and

**[00:21:06]** that'll be clean water on the top all

**[00:21:08]** the salts will settle

**[00:21:09]** that stuff will come off the top i'm

**[00:21:11]** gonna build these solid

**[00:21:12]** pickups i guess because

**[00:21:17]** i cut circles out hole saw and then cut

**[00:21:19]** another hole saw circle out and this is

**[00:21:21]** going to sit on the bottom of the tank

**[00:21:22]** just off the tank i'm going to run

**[00:21:24]** screws up this way through it so the

**[00:21:26]** head of the screw

**[00:21:27]** is what it sets on it'll set there and

**[00:21:28]** then it'll just give me a little bit of

**[00:21:30]** a gap that way the solids when it goes

**[00:21:32]** to suck

**[00:21:32]** it's going to suck directly from the

**[00:21:34]** sides so it'll bring all those solids in

**[00:21:36]** and then pick them up and out so i'll do

**[00:21:38]** four of those

**[00:21:39]** spaced out evenly

**[00:21:51]** elle found us a piece of plumber for the

**[00:21:53]** lid

**[00:21:53]** [Music]

**[00:21:57]** someone is not happy

**[00:22:00]** better get that she loves the sun but

**[00:22:02]** sun does not love her

**[00:22:04]** she burns so fast she does i think she

**[00:22:07]** gets that from her dad

**[00:22:09]** i don't know what you're talking about

**[00:22:11]** are you gonna show us your

**[00:22:12]** circle tricks no i never i never tell my

**[00:22:15]** tricks

**[00:22:16]** we won't film this then don't look don't

**[00:22:18]** look so nine inches from each side

**[00:22:20]** and then start in the center and do a

**[00:22:21]** perfect

**[00:22:24]** string yep i think so measure twice and

**[00:22:26]** cut once

**[00:22:27]** yeah sorry cut twice measure once

**[00:22:32]** the grain is messing with my system oh

**[00:22:35]** my gosh

**[00:22:36]** that's it let's get another piece of

**[00:22:37]** wood look at that that is

**[00:22:40]** absolutely perfect oh that is absolutely

**[00:22:44]** perfect

**[00:22:44]** we got to cut her up little jigs on and

**[00:22:47]** they're good

**[00:22:48]** [Music]

**[00:22:52]** let me see if it fits yeah let's do

**[00:22:54]** [Music]

**[00:22:57]** perfect put a little handle on it some

**[00:22:59]** blocks

**[00:23:00]** yeah we'll be good custom lid by ellie

**[00:23:04]** and guerin

**[00:23:05]** all right should we see the workspace

**[00:23:06]** yeah

**[00:23:09]** it's close just one minor adjustment

**[00:23:15]** that'll work good huh

**[00:23:24]** [Music]

**[00:23:43]** it's really rainy today yeah so

**[00:23:47]** we got to work inside but it's good

**[00:23:49]** because we have small filter and out of

**[00:23:50]** the little five gallon bucket and then

**[00:23:52]** we have a bioreactor we're gonna build

**[00:23:53]** two

**[00:23:54]** this one's gonna be our moving bed

**[00:23:56]** bioreactor all this tank needs to be

**[00:23:58]** is an inlet and an outlet it just moves

**[00:24:00]** water through it

**[00:24:01]** and then we have the media moving around

**[00:24:03]** in there to kind of give that

**[00:24:04]** bacteria places to grow i'm just gonna

**[00:24:07]** make one more lid for the bioreactor

**[00:24:20]** [Music]

**[00:24:30]** so

**[00:24:31]** [Music]

**[00:24:33]** we got the filters finished up in here

**[00:24:34]** so i'm going to take them out and

**[00:24:35]** install them

**[00:24:52]** [Music]

**[00:24:58]** are you gonna put a power pole into this

**[00:25:00]** bucket i think so i'm gonna try and find

**[00:25:02]** a little chunk

**[00:25:03]** prop it up underneath there to keep it

**[00:25:04]** to be nice and sturdy

**[00:25:06]** okay so i'm getting the solid pickup

**[00:25:09]** tube

**[00:25:09]** into the fish tank now basically we fill

**[00:25:12]** the tank until it overflows

**[00:25:13]** through the solids tube and that's what

**[00:25:15]** gets our flow going back to the sump

**[00:25:16]** tank so i have to drill a hole

**[00:25:18]** and put a uni seal in this does set the

**[00:25:21]** level

**[00:25:21]** of the fish tank but i think this is

**[00:25:23]** going to be good

**[00:25:37]** and switched over to this saw from the

**[00:25:39]** wood saw i regret using the wood saw so

**[00:25:41]** much this thing is

**[00:25:42]** way easier

**[00:25:56]** [Music]

**[00:26:00]** take it all apart now and glue it

**[00:26:09]** looks up

**[00:26:13]** [Music]

**[00:26:27]** [Music]

**[00:26:28]** this is the continuation of the drain

**[00:26:31]** this comes out of the moving bed

**[00:26:32]** bioreactor

**[00:26:33]** and goes into the sump tank i'm gonna

**[00:26:36]** paint these up pipes gray

**[00:26:38]** just so that they're protected from the

**[00:26:39]** sun and they look nice i don't think of

**[00:26:41]** the paint underneath

**[00:26:52]** [Music]

**[00:26:56]** this is the start of the system this is

**[00:26:58]** the start we kind of worked our way

**[00:26:59]** backwards

**[00:27:00]** so the pump connects right on this t

**[00:27:03]** yeah the pump's going to connect right

**[00:27:04]** here

**[00:27:05]** and then it pumps into those pipes

**[00:27:08]** through the duct weed into the fish tank

**[00:27:10]** and then starts the whole system

**[00:27:12]** yep so we're not going through the

**[00:27:13]** duckweed tank the duckweed tank is a

**[00:27:15]** separate little circle

**[00:27:16]** it's going over the duckweed and

**[00:27:17]** straight into the fish tank rule

**[00:27:19]** i'm gonna go on the final piece of the

**[00:27:20]** puzzle

**[00:27:22]** not the final but the final like

**[00:27:24]** plumbing of the flow you know that is

**[00:27:26]** awesome dude

**[00:27:27]** i don't know why it looks so much cooler

**[00:27:29]** with all the plumbing because it's kind

**[00:27:30]** of chaotic now looks really good

**[00:27:32]** guys it's gonna look good once it's all

**[00:27:34]** all this stuff is grey too then

**[00:27:36]** yeah all right i'm gonna finish painting

**[00:27:38]** them

**[00:27:41]** can we put the lids on

**[00:27:47]** pretty good yeah yeah i think so

**[00:27:52]** nice we got all the plumbing done

**[00:27:54]** secured a few more things to do on it

**[00:27:56]** before we can put water in it

**[00:27:57]** but we're getting really close it's

**[00:27:58]** looking so good isn't it

**[00:28:00]** it is so fun azalea is going to love the

**[00:28:03]** fishies

**[00:28:03]** [Music]

**[00:28:10]** i got the next piece of the puzzle this

**[00:28:13]** is

**[00:28:13]** two yards of lava rock i tested it

**[00:28:17]** vinegar and this is what the test looks

**[00:28:19]** like which i did do at the rock yard as

**[00:28:21]** well

**[00:28:22]** chunk of the material you want to use in

**[00:28:24]** this case we got the lava rock here

**[00:28:26]** it's been rinsed off so there's all the

**[00:28:28]** dust and powders are

**[00:28:29]** off of it and you just put the vinegar

**[00:28:30]** in there you just want to kind of cover

**[00:28:32]** you don't see a ton of bubbles which

**[00:28:33]** would indicate

**[00:28:34]** a lot of sodium in it and that will mess

**[00:28:35]** with the phs of the water this whole

**[00:28:38]** thing would turn white it looks really

**[00:28:40]** good let's get this unloaded

**[00:28:47]** [Music]

**[00:28:49]** how are you girls today doing good how

**[00:28:52]** you doing sweetheart

**[00:28:54]** how about you guys you guys doing good

**[00:28:55]** time to start rinsing off this rock

**[00:28:58]** i mean i just have a five gallon bucket

**[00:29:00]** with a bunch of holes drilled in the

**[00:29:01]** bottom i'm just gonna fill this bucket

**[00:29:02]** up with frocks and then just dunk it in

**[00:29:04]** and out a few times

**[00:29:05]** let it drain so i guess i'm gonna get

**[00:29:08]** started on that

**[00:29:13]** [Music]

**[00:29:15]** oh that looks really nice yes i think

**[00:29:18]** that's about our ideal level for this

**[00:29:20]** stuff

**[00:29:20]** i'll keep going now

**[00:29:27]** well the system is working i think to

**[00:29:29]** clean this out that's a good

**[00:29:30]** thick layer of fine silty mud in there

**[00:29:32]** this is a good first start of it

**[00:29:40]** [Music]

**[00:29:42]** i got all of the rock cleaned off and

**[00:29:44]** loaded up still got a little bit left

**[00:29:45]** over which is going to be nice

**[00:29:47]** for anything in the future but all these

**[00:29:49]** grow beds are filled up with rock and

**[00:29:51]** ready to go

**[00:29:51]** these two are going to be raft beds so

**[00:29:53]** they don't get any rock

**[00:29:55]** [Music]

**[00:29:59]** i need to make some i guess they're kind

**[00:30:01]** of shields for the bell siphons

**[00:30:03]** i want to put this big tube around the

**[00:30:05]** bell siphon with a bunch of slits cut in

**[00:30:07]** this tube

**[00:30:08]** that way when i have to do any

**[00:30:09]** maintenance to the

**[00:30:11]** bulkhead fitting or the bell siphon

**[00:30:13]** itself it'll be a whole lot easier

**[00:30:15]** basically one foot lengths cut up into

**[00:30:17]** little slits and then those are going to

**[00:30:18]** go in the tanks

**[00:30:20]** all righty i think that'll work good a

**[00:30:21]** lot of little slits in there so that the

**[00:30:23]** water can flow in just fine then we'll

**[00:30:25]** keep it safe so i can get my hand down

**[00:30:26]** there and work on stuff if i have to

**[00:30:28]** it's just gonna be nice for that so i'm

**[00:30:30]** gonna build some wooden caps i think

**[00:30:31]** it'll look a lot nicer out there

**[00:30:33]** and it'll be nice to keep the water

**[00:30:35]** that's sitting inside this clean

**[00:30:36]** if i didn't cap it anything could blow

**[00:30:38]** in and get into the system

**[00:30:40]** and plug up filters quicker and stuff

**[00:30:41]** okay that'll fit on nicely

**[00:30:43]** and then i think what i'm gonna do just

**[00:30:45]** cut out another one of these

**[00:30:46]** i'm gonna trace the center out of this

**[00:30:48]** one and then cut that

**[00:30:50]** out

**[00:30:53]** just like so

**[00:31:04]** [Music]

**[00:31:11]** all right well i kind of forgot to put

**[00:31:14]** these things in

**[00:31:15]** before i filled the rock up which is a

**[00:31:17]** bummer because

**[00:31:18]** it's gonna be a lot harder now to

**[00:31:20]** install them but it is what it is so

**[00:31:22]** i'm gonna dig around them and put those

**[00:31:25]** guys in put the caps on them

**[00:31:34]** [Music]

**[00:31:37]** now that i got my shield in i can set

**[00:31:39]** the heights of my standpipe i want this

**[00:31:41]** to sit

**[00:31:42]** i think about an inch below the surface

**[00:31:45]** of the rock

**[00:31:46]** so i need to take off at least an inch

**[00:31:48]** that's right at about inch below the

**[00:31:50]** surface of the rock

**[00:31:51]** i don't want the water coming above the

**[00:31:53]** rock it's going to start growing algae

**[00:31:54]** on the rock and that's

**[00:31:56]** just going to steal nutrients from the

**[00:31:57]** other plants our caps gonna fit on there

**[00:31:59]** nicely now we got plenty of room

**[00:32:01]** underneath there

**[00:32:02]** when we start adjusting siphons just

**[00:32:04]** took a little bit off of these so now i

**[00:32:05]** just got the four more to do

**[00:32:08]** and i think we'll be done with the grow

**[00:32:09]** beds for right now until we can get some

**[00:32:12]** water in the system

**[00:32:14]** [Music]

**[00:32:22]** i'm going to build a box for some of the

**[00:32:24]** electronics like

**[00:32:25]** the air pump and then i also have solar

**[00:32:28]** backup

**[00:32:29]** air system that i will be eventually

**[00:32:31]** putting in i don't have any more lumber

**[00:32:33]** left

**[00:32:33]** because we use a lot of it on the

**[00:32:35]** doghouse i think what i'm going to do is

**[00:32:36]** i'm going to use some pallet heaters

**[00:32:38]** and that should do the trick i'm going

**[00:32:39]** to start ripping these pallets down

**[00:32:47]** i got my pallets all stripped down and

**[00:32:49]** the center boards out of them

**[00:32:51]** so use these guys to build a quick box

**[00:32:55]** and then i'll probably put the same

**[00:32:56]** siding we'll use it on the doghouse and

**[00:32:58]** actually i think i have enough roofing

**[00:32:59]** left over that i'll be able to patch a

**[00:33:01]** roof together

**[00:33:10]** [Applause]

**[00:33:10]** [Music]

**[00:33:20]** got the box made so to put some siding

**[00:33:22]** on this i have a couple bigger pieces

**[00:33:23]** and start with those and then i'm going

**[00:33:24]** to move into the smaller little

**[00:33:26]** pieces i don't have enough to just do it

**[00:33:28]** so i'm just going to kind of patch it

**[00:33:29]** together

**[00:33:29]** and i think with paint and trim it'll

**[00:33:32]** still look really good

**[00:33:40]** thank you girl can you help me paint

**[00:33:44]** [Music]

**[00:33:46]** i'm gonna paint these boards up so gary

**[00:33:48]** can cut him up for trim

**[00:33:59]** [Music]

**[00:34:04]** so

**[00:34:06]** [Music]

**[00:34:08]** i don't have any more roofing material

**[00:34:10]** we were out looking

**[00:34:11]** and we're going to put a solar setup on

**[00:34:13]** this anyway for a backup system

**[00:34:15]** we have the solar panels already they

**[00:34:17]** would actually make a nice roof

**[00:34:18]** so i think that's what i'm going to do

**[00:34:20]** put these on and glue them together

**[00:34:22]** and put them at a bit of an angle and

**[00:34:24]** make them the lid

**[00:34:25]** for our box nice that's a really good

**[00:34:28]** idea dude

**[00:34:29]** that should make enough structure be

**[00:34:30]** just fine as a lid i think i might put

**[00:34:32]** one across the back

**[00:34:33]** just to screw my hinges to okay i got

**[00:34:36]** the lid on

**[00:34:37]** and working good it opens and closes

**[00:34:40]** nicely i decided to to go through and

**[00:34:42]** put a bead of caulking

**[00:34:43]** down each of the seams that way

**[00:34:45]** everything is sealed from water coming

**[00:34:47]** in through the sides we're gonna have an

**[00:34:48]** air pump in there and some solar

**[00:34:49]** electronics so the least amount of water

**[00:34:51]** we can get in there obviously the safest

**[00:34:54]** and then this is gonna have trim to all

**[00:34:56]** the way around so all this open stuff is

**[00:34:58]** gonna be sealed as well

**[00:34:59]** i think at this point gonna get some

**[00:35:01]** paint on here

**[00:35:02]** i think it's time to put the trim on

**[00:35:04]** this bad boy here i don't know how nails

**[00:35:05]** for the finished nail so

**[00:35:06]** got a few hammer nails again but it's

**[00:35:08]** all right put some trim on this puppy

**[00:35:10]** and the box is gonna be finished

**[00:35:15]** all right box is all trimmed out

**[00:35:18]** looks really good i think we got the

**[00:35:20]** solar panel roof on it

**[00:35:21]** box itself looks pretty good kind of

**[00:35:23]** pieced together in there obviously but

**[00:35:25]** you're not going to see the inside so

**[00:35:27]** not a big deal

**[00:35:30]** i'm building some lids for our fish tank

**[00:35:32]** and our sump tank i'm just going to use

**[00:35:34]** some plywood here

**[00:35:35]** and really just got to cut out the shape

**[00:35:37]** put some little blocks to hold it in and

**[00:35:38]** then cut out where our

**[00:35:39]** inlet pipe goes in some tanks a little

**[00:35:41]** more complicated but just get cutting

**[00:35:43]** i guess

**[00:35:46]** i have the two lids done as far as

**[00:35:49]** cutting

**[00:35:49]** and else started painting so i'm gonna

**[00:35:51]** finish up painting those two

**[00:35:53]** and then we'll probably go out and

**[00:35:54]** install everything

**[00:35:59]** [Music]

**[00:36:06]** hey sweetheart how you doing oh boy

**[00:36:10]** a lot of drool there did that for you

**[00:36:14]** there we go here you go

**[00:36:19]** [Music]

**[00:36:24]** all right get some ground level out and

**[00:36:27]** then we'll

**[00:36:28]** be able to place this thing nice it

**[00:36:30]** looks so good

**[00:36:32]** see if she's level excuse me boys

**[00:36:42]** yeah it looks good powering right there

**[00:36:46]** [Music]

**[00:36:48]** i guess we're at like finishing the

**[00:36:50]** wiring here installing the pumps and

**[00:36:52]** then

**[00:36:53]** put some water in the system warm in

**[00:36:55]** there

**[00:36:57]** you look cozy

**[00:37:01]** [Music]

**[00:37:05]** what you doing here baby

**[00:37:09]** and we'll start filling the tanks up

**[00:37:11]** right yeah

**[00:37:13]** we just want our water to be clean yeah

**[00:37:15]** you can't start off dirty

**[00:37:22]** [Music]

**[00:37:25]** ready oh it's installed

**[00:37:28]** should we test it i got the shop back

**[00:37:37]** hey the power works yeah all right now

**[00:37:40]** should i get around

**[00:37:41]** oh note to self don't vacuum up stuff

**[00:37:44]** inside

**[00:37:46]** there's a leak in our back that'll leak

**[00:37:48]** anyway

**[00:37:49]** i think that sucker up oh yeah i cleaned

**[00:37:51]** up nicely looks like

**[00:37:52]** algae and dust on the bottom all right

**[00:37:54]** well i'm gonna get ready to open i think

**[00:38:04]** [Music]

**[00:38:14]** pretty good keep our

**[00:38:18]** fish tank nice and dark so that we don't

**[00:38:20]** get a lot of algae build up

**[00:38:21]** it looks good

**[00:38:22]** [Music]

**[00:38:27]** get some water in this one and we can

**[00:38:28]** test fit our other one so

**[00:38:30]** i guess we're just pumping to the sump

**[00:38:32]** and then we're going to use that bad boy

**[00:38:34]** to pump it into the fish tank

**[00:38:39]** yeah that one turns off the tank or the

**[00:38:41]** grow beds

**[00:38:42]** the red one is the fish tank and the

**[00:38:44]** black one up there is the duckweed

**[00:38:46]** so just the fish tanks on right now

**[00:38:49]** yeah that's water flow

**[00:38:59]** details

**[00:39:05]** it's working

**[00:39:08]** [Music]

**[00:39:12]** all right first filter

**[00:39:20]** the water is flowing in here

**[00:39:23]** full flow all the way around so the

**[00:39:25]** water flows out here

**[00:39:27]** down around and back into the tank and i

**[00:39:30]** think we're working pretty good so the

**[00:39:32]** transfer between the two tanks is the

**[00:39:33]** only spot i'm kind of watching right now

**[00:39:35]** because if that transfer is not fast

**[00:39:37]** enough i'll overflow the fish tank

**[00:39:39]** and lose a bunch of water basically the

**[00:39:40]** amount of water that's coming out of

**[00:39:41]** there

**[00:39:42]** needs to be the same amount of water

**[00:39:44]** that's coming into the tank here

**[00:39:45]** i think we're ready to start the grow

**[00:39:47]** beds and letting these start filling up

**[00:39:49]** so

**[00:39:49]** i'm gonna go for it here we go all

**[00:39:52]** flowing out

**[00:39:55]** i think our system's running good in the

**[00:39:57]** next week or so we'll get fish food to

**[00:39:59]** start building up those bacteria

**[00:40:00]** so put our new caps on

**[00:40:06]** nice oh boy i think the last thing to do

**[00:40:10]** is just to backfill this sump tank in so

**[00:40:12]** i'm just gonna put all this dirt around

**[00:40:14]** there as much as i can the tank's full

**[00:40:16]** of water now

**[00:40:16]** so it's not gonna cave in the sides and

**[00:40:18]** that's gonna be pretty much the last

**[00:40:20]** thing

**[00:40:21]** that we're gonna be able to do there's a

**[00:40:22]** couple more things with air pumps

**[00:40:24]** and of course getting the system cycled

**[00:40:27]** and then we're

**[00:40:28]** waiting on parts again

**[00:40:38]** [Music]

**[00:40:45]** [Applause]

**[00:40:49]** all right what are we doing we're gonna

**[00:40:51]** pull all these bricks out and make a

**[00:40:52]** little pathway in between the grow beds

**[00:40:54]** of the aquaponics system

**[00:41:10]** can't take this over the aquaponics

**[00:41:18]** system

**[00:41:19]** i'm thinking what we're gonna do is

**[00:41:21]** gonna do a pretty wide walkway

**[00:41:23]** because this will do a lot of harvesting

**[00:41:25]** and stuff and then if there's enough

**[00:41:27]** extra bricks

**[00:41:28]** maybe some stepping stones along the

**[00:41:29]** outside that sounds like a plan to me

**[00:41:34]** [Music]

**[00:41:53]** [Music]

**[00:41:56]** when we begin playing in the dirt

**[00:42:03]** yeah that was pretty cool huh

**[00:42:06]** [Music]

**[00:42:11]** this side stepping stones wouldn't look

**[00:42:12]** that good so what we're gonna do is

**[00:42:13]** we're gonna put a patio that goes all

**[00:42:15]** the way to the duckweed tank and also

**[00:42:17]** probably one in front of the fish tank i

**[00:42:19]** think that makes more sense

**[00:42:21]** did you find a place for the last of the

**[00:42:22]** bricks yeah you know that didn't look

**[00:42:24]** like that many bricks but that was

**[00:42:26]** actually a lot of bricks today

**[00:42:27]** yeah no i think it looks really good

**[00:42:29]** with our little extra room in there to

**[00:42:30]** work

**[00:42:30]** at the duckweed pond and then we got the

**[00:42:32]** patio for the fish here

**[00:42:34]** well done with that yeah i think we just

**[00:42:36]** got the

**[00:42:37]** air system to hook up and we'll be good

**[00:42:39]** to go

**[00:42:40]** [Music]

**[00:42:42]** can in your pacifier back here you go

**[00:42:46]** hey bud careful careful time we got i

**[00:42:49]** think the last step of the big

**[00:42:50]** installations and really it's not that

**[00:42:52]** big of one

**[00:42:52]** is going to be the air system that's

**[00:42:54]** going to run through this thing beast of

**[00:42:55]** an air pump

**[00:42:57]** and then i got my air stones and i'm

**[00:43:00]** gonna set these up and have two air

**[00:43:01]** stones in the fish tank to start out

**[00:43:03]** with and then we're gonna have

**[00:43:04]** one arizona piece in the raft beds and

**[00:43:07]** that's gonna give the plants a ton of

**[00:43:08]** oxygen i've heard it's supposed to help

**[00:43:10]** them grow a lot better

**[00:43:11]** oh i'm also going to set up a little bit

**[00:43:13]** of a cooling system so

**[00:43:14]** i have just an old fan that i'm going to

**[00:43:16]** put in on it at that sucker setup

**[00:43:19]** nice yeah we're so fast we are indeed

**[00:43:23]** i got the pump installed as well as the

**[00:43:25]** fan and it's running right now

**[00:43:27]** and i'm pretty happy with how quiet it

**[00:43:28]** really is oh yeah that's not bad at all

**[00:43:31]** now i got my air lines i'm gonna run

**[00:43:33]** these bad boys up and around to the tank

**[00:43:35]** and then the

**[00:43:36]** little girl beds there

**[00:43:40]** [Music]

**[00:43:42]** that's on the bottom maybe i should be

**[00:43:44]** hanging them off of these

**[00:43:46]** oh yeah like right in the middle of the

**[00:43:48]** tank huh yeah same thing

**[00:43:51]** so you got two of them in this one yeah

**[00:43:54]** i don't know if it's overkill or not but

**[00:43:56]** from what i've heard it's

**[00:43:58]** easy to not have enough air and it's

**[00:44:00]** hard to overdo it

**[00:44:02]** i don't know if it's possible so we'll

**[00:44:04]** find out

**[00:44:11]** this one will come up oh i think that

**[00:44:14]** one's a little long

**[00:44:16]** yeah maybe a smidge are you putting

**[00:44:19]** airstones on these ones too

**[00:44:21]** not yet eventually yes once we get water

**[00:44:23]** in these but they just clip them off not

**[00:44:25]** hard so

**[00:44:26]** okay so it's got tidy up how you get

**[00:44:28]** these lines with some

**[00:44:30]** zip it ties

**[00:44:34]** the wrong side to run on the bottom oh

**[00:44:36]** everything's ruined

**[00:44:38]** you're so dramatic i'm not dramatic i

**[00:44:41]** don't know what you're talking about

**[00:44:42]** so why do you have to have air in me for

**[00:44:44]** floating on i was told by my

**[00:44:46]** brother-in-law who does the five-gallon

**[00:44:47]** hydroponics

**[00:44:48]** systems and uh he just dropped an air

**[00:44:50]** stone right in the bucket with the plant

**[00:44:51]** and he said that his plants do

**[00:44:53]** way better like that so i figured if

**[00:44:55]** that works in the hydroponics that's

**[00:44:57]** basically what

**[00:44:58]** the aquaponics is in a hydroponic you

**[00:44:59]** just feed the water whereas in

**[00:45:01]** aquaponics you have the fish that supply

**[00:45:04]** the nutrients to the plants instead of

**[00:45:05]** adding it yourself

**[00:45:06]** i can't wait for fish it doesn't look

**[00:45:09]** like it's pinching any of our lines

**[00:45:11]** which is good

**[00:45:13]** almost good to go

**[00:45:18]** [Music]

**[00:45:19]** so i've been having to make a few

**[00:45:21]** modifications to the bell siphons

**[00:45:23]** because

**[00:45:23]** they just weren't reliable enough so the

**[00:45:25]** way i had them first design

**[00:45:27]** was like this and this is where you can

**[00:45:29]** see i just have a series of holes

**[00:45:31]** on the bottom it has a tough time

**[00:45:32]** engaging the siphon on this pipe as well

**[00:45:35]** as breaking the siphons

**[00:45:36]** i think i know why that was the case so

**[00:45:40]** this is the new one i have this one's

**[00:45:41]** working pretty good i think

**[00:45:43]** so i have the coupler on the bottom and

**[00:45:45]** that fits around the

**[00:45:46]** bulkhead fitting pretty well i had to

**[00:45:48]** kind of grind a little bit of the

**[00:45:50]** inside of it out and now when it goes in

**[00:45:52]** it snaps over it and you can see it's a

**[00:45:53]** little bit

**[00:45:54]** more stable than this one so that's the

**[00:45:56]** first thing i did

**[00:45:57]** as well as shortening it quite a bit

**[00:45:59]** that's a new design i have for those

**[00:46:01]** and it's working a lot better i'm

**[00:46:03]** actually getting pretty consistent

**[00:46:04]** reliable fills and drains

**[00:46:06]** [Music]

**[00:46:11]** i am testing for ammonia in the system i

**[00:46:14]** let that baby set for five minutes and

**[00:46:16]** then we'll be able to match it up and

**[00:46:17]** see if we got anything brewing

**[00:46:19]** and how we're building the ammonia in

**[00:46:21]** the system is we're just putting a

**[00:46:22]** little bit of fish food

**[00:46:24]** in each one of the tanks after a couple

**[00:46:26]** days of

**[00:46:27]** sitting there turns into a little bit of

**[00:46:29]** ammonia

**[00:46:30]** and then the ammonia is i believe what

**[00:46:32]** builds the bacteria

**[00:46:34]** to change that ammonia into nitrate so

**[00:46:36]** just check this against the other colors

**[00:46:37]** here

**[00:46:38]** looks like we're starting to get a

**[00:46:39]** little bit of ammonia in the system 0.25

**[00:46:41]** parts per million how much do we need

**[00:46:44]** if we were just straight up shocking the

**[00:46:45]** system with ammonia we would get it to

**[00:46:47]** four parts per million

**[00:46:48]** and then we let it fall off over a few

**[00:46:50]** days this is more of a slow building

**[00:46:52]** thing and we're probably getting ammonia

**[00:46:53]** from the first day we added we're

**[00:46:55]** probably three or four days in now of

**[00:46:56]** adding the fish food

**[00:46:57]** so starting to build up i think just

**[00:46:59]** taking this time

**[00:47:01]** system's gonna be cycle here in six to

**[00:47:03]** eight weeks sweet

**[00:47:05]** that took a little bit longer than we

**[00:47:06]** thought but it definitely turned out a

**[00:47:08]** lot better than we thought too it looks

**[00:47:10]** so good out there

**[00:47:11]** looks really cool much nicer than i was

**[00:47:13]** picturing

**[00:47:15]** yeah we also got our little starters

**[00:47:18]** planted so we can transfer them in six

**[00:47:20]** to eight weeks when the

**[00:47:21]** system is cycled and we'll just be able

**[00:47:23]** to pop them right in and hopefully be

**[00:47:25]** harvesting yeah we're a little late i

**[00:47:27]** think in the planting season just

**[00:47:28]** because like i said it took us a little

**[00:47:29]** bit longer

**[00:47:30]** to get the system up but i think we're

**[00:47:32]** still gonna be okay with a lot of things

**[00:47:34]** this is kind of a learning curve this

**[00:47:35]** year anyway so anything that comes

**[00:47:37]** through is gonna

**[00:47:38]** be bonus yeah anything look gross when

**[00:47:40]** we plant we'll also put our fish in at

**[00:47:42]** the same time

**[00:47:43]** it's gonna be a lot of fun to see if it

**[00:47:45]** works yeah definitely

**[00:47:47]** this little girl's gonna love the fish

**[00:47:50]** you excited

**[00:47:54]** [Music]

**[00:48:11]** so me and gary went down and got fish

**[00:48:13]** we're gonna drop

**[00:48:14]** some in his tank drop them in and kind

**[00:48:16]** of tie it off to the post here

**[00:48:17]** oh yeah we were on a bit of a drive so

**[00:48:21]** they need a little bit of air i'm sure

**[00:48:22]** we want to take some of this water and

**[00:48:24]** like

**[00:48:25]** add into there my ph right now is pretty

**[00:48:27]** high you know we don't troll the shock

**[00:48:29]** to fish and we dump them in right

**[00:48:30]** yeah all right karen it's like the only

**[00:48:32]** time we're gonna be able to see them

**[00:48:34]** before they go

**[00:48:35]** nice all right there's one first fishy

**[00:48:38]** release that's quite a bit colder in

**[00:48:39]** this water

**[00:48:43]** all right it's absolutely beautiful

**[00:48:47]** bye fishies thanks brian for coming with

**[00:48:49]** me show me where the good fish spot is

**[00:48:51]** is it yeah it's a competition fish live

**[00:48:55]** longer yeah

**[00:48:56]** i have a feeling i might lose fish oh

**[00:49:00]** it's diesel

**[00:49:11]** you're like no he's got a

**[00:49:14]** fun with the baby

**[00:49:18]** [Music]

**[00:49:23]** i uh quickly looked on thingiverse

**[00:49:24]** because i heard garen was having a

**[00:49:25]** little trouble with his bell siphon

**[00:49:27]** apparently there used to be an old

**[00:49:29]** funnel type reducer that you could buy

**[00:49:31]** and it would help that siphon start so i

**[00:49:33]** thought well maybe

**[00:49:34]** i could design it real quick or maybe

**[00:49:35]** they have it on thingiverse and i looked

**[00:49:37]** sure enough they do a model that's put

**[00:49:39]** out on thingiverse by crew zone

**[00:49:41]** it fits a three-quarter inch stand pipe

**[00:49:43]** with a two-inch casing that's around it

**[00:49:45]** which is actually the identical

**[00:49:47]** size that my brother has in his

**[00:49:48]** aquaponics if you want to print it we'll

**[00:49:50]** leave a link to his model on thingiverse

**[00:49:52]** down in the description

**[00:49:55]** first part done hopefully it fits on the

**[00:49:57]** pvc pipe

**[00:49:58]** [Applause]

**[00:49:59]** [Music]

**[00:50:00]** good beautiful

**[00:50:04]** [Music]

**[00:50:05]** yeah okay so bryson made these

**[00:50:09]** awesome little funnels for the bell

**[00:50:11]** siphons because those siphons weren't

**[00:50:12]** working super consistently

**[00:50:14]** i broke this one that's why there's

**[00:50:16]** super glue around it but super glue

**[00:50:17]** fixes everything so i thought you

**[00:50:18]** painted it

**[00:50:19]** oh sorry i yeah i painted a stripe on

**[00:50:21]** this one the mark this is bed one

**[00:50:23]** oh yeah yeah and then the other ones

**[00:50:24]** have no stripe because there's no need

**[00:50:27]** to mark those

**[00:50:27]** oh okay tested one out earlier and it is

**[00:50:31]** just working great

**[00:50:32]** oh that's awesome that look nice like a

**[00:50:35]** little flower

**[00:50:36]** they were perfect size and everything i

**[00:50:37]** didn't have to grind the inside them

**[00:50:39]** mouth or anything

**[00:50:40]** wow and the cool part with this design

**[00:50:42]** too

**[00:50:43]** is that it's not only a funnel but it

**[00:50:44]** holds the top of the pipe in place so

**[00:50:46]** when you put the pipe on

**[00:50:48]** it see if it's in the bottom and seats

**[00:50:49]** in the top and it's just solid in there

**[00:50:51]** that's a wonderful design for the

**[00:50:53]** starters that we're about to plant i

**[00:50:54]** think we're gonna pull all the bell

**[00:50:55]** siphons out because we want just a

**[00:50:57]** static water level but when they start

**[00:50:58]** getting older and growing a little bit

**[00:51:00]** bigger that's when we'll start adding

**[00:51:01]** these puppies in

**[00:51:02]** sweet let's go check on azalea here

**[00:51:06]** hi are you ready to plant

**[00:51:09]** [Music]

**[00:51:13]** peppers that sounds good to me

**[00:51:17]** our charters have not been faring too

**[00:51:19]** well no i hope this is not a sign of how

**[00:51:22]** we garden

**[00:51:25]** yeah but that's okay we lost our we lost

**[00:51:28]** our bean

**[00:51:28]** let's just focus on this one yeah focus

**[00:51:31]** on the good ones not the ones that

**[00:51:32]** didn't grow

**[00:51:33]** perfect all right i guess we're going to

**[00:51:35]** start planning

**[00:51:36]** yeah oh first try

**[00:51:40]** oh really so we got a lot of stuff in

**[00:51:43]** here we're going to get some lettuce

**[00:51:44]** from bry

**[00:51:45]** we're going to steal some of his oh cool

**[00:51:47]** he's got such a good crop

**[00:51:48]** so you want to do like spinach over in

**[00:51:50]** this corner

**[00:51:52]** hi darling are you playing

**[00:51:57]** no dirt right yeah

**[00:52:09]** we used rock wool to plant our seeds in

**[00:52:12]** that way we could plant them directly

**[00:52:14]** in grow beds did really well to hold the

**[00:52:17]** seat in place and then

**[00:52:18]** wick up the water to the seed yeah

**[00:52:20]** they're super easy to plant in too so

**[00:52:21]** it's kind of fun

**[00:52:22]** the rockwool is going to work really

**[00:52:24]** good yeah definitely

**[00:52:35]** ran to the store and i grabbed a lot of

**[00:52:38]** one inch pvc and some pvc couplings and

**[00:52:41]** i'm going to take

**[00:52:42]** and screw the cufflink to the side and

**[00:52:44]** then i'll be able to put the pvc in it

**[00:52:46]** bend it around

**[00:52:47]** stick it in the other side and that's

**[00:52:48]** going to give me a nice hoop over

**[00:52:50]** each bed and then i'll be able to hang a

**[00:52:51]** shade cloth from that or

**[00:52:53]** in the winter time i'll be able to hang

**[00:52:55]** plastic from it so that it'll either

**[00:52:57]** greenhouse or nice shaded for the really

**[00:52:59]** hot parts of the summer

**[00:53:01]** we found out when we planted our

**[00:53:03]** starters that we

**[00:53:05]** really don't have a knack for growing

**[00:53:07]** things in the soil

**[00:53:08]** yeah over half of them didn't come up it

**[00:53:11]** was a little embarrassing

**[00:53:12]** yeah and then when they did come up they

**[00:53:14]** died yeah so we got very few actual

**[00:53:16]** starters that made it we're just not

**[00:53:18]** good at like keeping them

**[00:53:19]** watered and i don't know why we're we

**[00:53:21]** could pretty consistent with everything

**[00:53:22]** else but not that apparently

**[00:53:24]** yeah i'm super excited to be growing in

**[00:53:26]** the raised beds and the rock and like

**[00:53:28]** it's just totally different and super

**[00:53:30]** exciting and fun

**[00:53:31]** yeah it's significantly easier because

**[00:53:33]** they're always watered the system does

**[00:53:34]** that already and they're always

**[00:53:36]** fertilized

**[00:53:37]** it really is an easy system once you get

**[00:53:39]** up and going there's still maintenance

**[00:53:40]** and stuff like you you have to check the

**[00:53:41]** water and stuff every day

**[00:53:43]** the fish yeah feed the fish make sure

**[00:53:45]** stuff's maintained but

**[00:53:46]** i think it's more of what we enjoy

**[00:53:47]** instead of the normal traditional

**[00:53:49]** gardening

**[00:53:50]** yeah i think so too

**[00:53:57]** all righty got the hoops done now we

**[00:54:00]** just got to give them a good coat of

**[00:54:01]** paint so that the sun doesn't

**[00:54:03]** deteriorate then

**[00:54:04]** that actually looks halfway decent i was

**[00:54:06]** a little worried there in the middle

**[00:54:11]** [Music]

**[00:54:19]** next morning let's see how these babies

**[00:54:21]** did i see green

**[00:54:23]** no wilting over here oh that's good

**[00:54:27]** oh look at even the little ones lasted

**[00:54:30]** that's awesome sorry got some plastic in

**[00:54:33]** there it's food grade plastic

**[00:54:35]** that oh it looks even better than it did

**[00:54:37]** in the little oh my

**[00:54:38]** god oh yeah man everything transplanted

**[00:54:42]** so well

**[00:54:42]** oh that's spinach i like spinach

**[00:54:46]** so excited bryson let us have some of

**[00:54:48]** his lettuce last night

**[00:54:49]** mmm that was delicious that was good

**[00:54:51]** lettuce he i think he's gonna let us

**[00:54:52]** steal some of his plants too because he

**[00:54:54]** has so many

**[00:54:55]** you guys excited about the aquaponics

**[00:54:57]** too well we should see how our fishies

**[00:54:58]** are doing too

**[00:55:07]** [Music]

**[00:55:09]** still all alive that one over there is

**[00:55:11]** really big

**[00:55:12]** yeah that's a chunky one i put a

**[00:55:14]** temperature gauge in the water last

**[00:55:16]** night or yesterday rather

**[00:55:19]** 69 degrees in there it's pretty hot here

**[00:55:21]** already so should we get the shade cloth

**[00:55:23]** on this morning

**[00:55:24]** yeah i think so i think we can roll the

**[00:55:26]** shea cloth up on the top and get it out

**[00:55:28]** of the way

**[00:55:29]** let him get some sun and then cover him

**[00:55:31]** before it gets too hot

**[00:55:32]** maybe we have to cut it i can't remember

**[00:55:34]** what i bought from being honest with you

**[00:55:35]** that's like two

**[00:55:37]** are these two no

**[00:55:42]** i think i got a long one let's see

**[00:55:46]** how much we need to go over huh yeah

**[00:55:48]** well only eight foot to go over

**[00:55:50]** oh one idiot it fit nicely

**[00:56:03]** [Music]

**[00:56:16]** it's been a couple days and the shade

**[00:56:18]** costs they've done really well in the

**[00:56:19]** wind actually yeah it's been really

**[00:56:21]** windy too so and they've held up super

**[00:56:23]** good

**[00:56:24]** i think we're gonna roll one side up on

**[00:56:26]** this one and this has a lot more of our

**[00:56:28]** hot weather plants in it

**[00:56:29]** yeah it's kind of why we put this pipe

**[00:56:31]** on the bottom so that you could easily

**[00:56:33]** roll it up

**[00:56:34]** that works they're good those are pretty

**[00:56:36]** good our one really good starter is

**[00:56:38]** looking really nice yeah tomato

**[00:56:42]** that's rooney they look good they're a

**[00:56:44]** little bigger than they were yeah

**[00:56:45]** very vibrant oh diesel sauce i'm here

**[00:56:48]** too

**[00:56:53]** all right nice well these suckers look

**[00:56:55]** really good

**[00:56:56]** get a few other little things to do like

**[00:56:58]** the duckweed pond and those last two

**[00:57:00]** grow beds on the end which we may start

**[00:57:02]** off this year we may wait till next not

**[00:57:04]** 100 sure what we're gonna do on that

**[00:57:05]** again

**[00:57:05]** now we just wait for harvesting yeah

**[00:57:15]** [Music]

**[00:57:24]** be there for a minute

**[00:57:31]** can you not you don't want any dirt um

**[00:57:34]** you can just give it a rinse baby

**[00:57:38]** roman noodles

**[00:57:40]** [Laughter]

**[00:57:43]** [Music]

**[00:57:52]** [Music]

**[00:58:06]** oh

**[00:58:09]** yeah he's had a good day he's gonna

**[00:58:12]** sleep good tonight

**[00:58:23]** [Music]

**[00:58:34]** so

**[00:58:40]** we're going out to the garden here see

**[00:58:42]** if i lost any more fish

**[00:58:44]** i'm really good at killing fish

**[00:58:47]** so you're a good fisherman then huh

**[00:58:49]** exactly

**[00:58:51]** i could not describe it better myself oh

**[00:58:53]** what's this

**[00:58:54]** look at this our eggs are growing great

**[00:58:57]** look at that we got four of them

**[00:59:01]** are those fishes yeah these are these

**[00:59:04]** are fish eggs

**[00:59:06]** oh look at the plants though

**[00:59:08]** [Music]

**[00:59:10]** the cilantro needs picking we've

**[00:59:11]** actually eaten some of the cilantro it's

**[00:59:13]** really good

**[00:59:14]** yeah then our tomatoes they've come up

**[00:59:17]** quite a bit

**[00:59:18]** they're looking really good our prized

**[00:59:20]** zucchini plant

**[00:59:22]** yes the only starter we successfully

**[00:59:24]** grew

**[00:59:26]** yep and that that sucker is taking off

**[00:59:29]** yeah it's got little flowers on it and

**[00:59:31]** everything yeah there's actually a

**[00:59:33]** little anaheim pepper hiding in there

**[00:59:35]** that i don't know if he's gonna make it

**[00:59:37]** or not because he's not gonna get any

**[00:59:38]** sun

**[00:59:38]** and then our lettuce is doing actually

**[00:59:40]** it's doing good we're getting really

**[00:59:41]** tall so we chop them off

**[00:59:43]** and so they just take a little bit of

**[00:59:44]** time to come back in this really gets a

**[00:59:46]** lot of sun

**[00:59:47]** and i don't know what's wrong with our

**[00:59:49]** spinach it's pretty warm right now

**[00:59:51]** for for those kind of things our shade

**[00:59:54]** cloth doesn't completely enclose it so i

**[00:59:56]** think i think it's just burning

**[01:00:00]** [Music]

**[01:00:04]** see how our fish are doing see we

**[01:00:06]** started with 13

**[01:00:07]** we're down to seven but we haven't lost

**[01:00:10]** any in

**[01:00:11]** three or four weeks now so i think i got

**[01:00:14]** it kind of ironed out

**[01:00:15]** they're probably going to be hiding but

**[01:00:16]** there's oh there's a couple down there

**[01:00:18]** look how big they're getting

**[01:00:19]** [Music]

**[01:00:23]** yeah you can kind of see them in there

**[01:00:25]** swimming there swimming around

**[01:00:27]** the system's been running really good

**[01:00:29]** just been having to keep putting

**[01:00:31]** a little bit of nutrients in it for the

**[01:00:32]** plant once we get the fish tank stocked

**[01:00:34]** up good the plants and stuff will have a

**[01:00:35]** lot more nutrients

**[01:00:36]** yeah it's doing really good though

**[01:00:45]** [Music]

**[01:00:49]** he did hey so we have

**[01:00:52]** our solids filter here so the pipe

**[01:00:55]** coming

**[01:00:56]** out of the fish tank and into this

**[01:00:58]** settler is

**[01:00:59]** only a one inch pipe and it's a little

**[01:01:01]** too small we'd like to run a little

**[01:01:02]** higher pressure into the tank keep the

**[01:01:04]** tank a little cleaner as well as not

**[01:01:06]** cause any backup if we have too much

**[01:01:07]** water going into the fish tank and on

**[01:01:09]** off coming out will overflow the fish

**[01:01:10]** tank we need

**[01:01:12]** to get this puppy upgraded to a two inch

**[01:01:14]** system

**[01:01:15]** so here's our old solid pickup system

**[01:01:18]** and you can see it's all the one inch

**[01:01:20]** i think what the key is going to be

**[01:01:21]** right now is we need to get

**[01:01:24]** this tank drained i was thinking maybe

**[01:01:26]** we should try and drain it back into the

**[01:01:28]** sump tank

**[01:01:29]** [Music]

**[01:01:34]** nice that was a lot easier than i

**[01:01:36]** thought that was expected

**[01:01:39]** i'm impressed a little board on the back

**[01:01:41]** of it yeah if you've ever tried to drill

**[01:01:43]** a bigger hole without the pilot it's not

**[01:01:46]** easy this seemed to work pretty good

**[01:01:53]** [Music]

**[01:01:57]** the solids pickup tube is basically just

**[01:01:59]** a piece of pipe that goes right down to

**[01:02:00]** the bottom of the tank

**[01:02:01]** and then there's a flange that we build

**[01:02:03]** on the bottom that's just a circle of

**[01:02:04]** plastic that we screw to a cup link

**[01:02:06]** and that kind of helps the fish from

**[01:02:08]** swimming back up

**[01:02:10]** into the filtration system and also

**[01:02:12]** picks up all the solids really nicely

**[01:02:23]** [Music]

**[01:02:34]** [Music]

**[01:02:43]** all right put our final piece in the

**[01:02:46]** solid pickup tube

**[01:02:48]** this is just going to hopefully

**[01:02:51]** oops let's turn the bubbles off so we

**[01:02:55]** can see

**[01:02:56]** what the bottom looks like looks like

**[01:02:59]** that's sitting pretty good turn on full

**[01:03:02]** power

**[01:03:03]** i really like that that turned out

**[01:03:05]** really good should we turn on the water

**[01:03:06]** and let it fill

**[01:03:07]** yeah turn on full power

**[01:03:11]** see if we can handle it perfect looks to

**[01:03:13]** me like

**[01:03:14]** everything's flowing correctly and it's

**[01:03:17]** more than keeping up

**[01:03:18]** with flow now so perfect i think we're

**[01:03:20]** good come on give it a quick coat of

**[01:03:22]** paint then

**[01:03:22]** yeah it sounds like plain it'll protect

**[01:03:24]** our pipes at least yeah

**[01:03:25]** keep them from getting that sun damage

**[01:03:27]** that looks good babe i think we're done

**[01:03:29]** let's uh let's clean up close up

**[01:03:31]** everything

**[01:03:31]** yeah it's been running for a couple days

**[01:03:34]** now it's been working

**[01:03:35]** flawlessly the fish tank is staying nice

**[01:03:37]** and clean and we can run our water

**[01:03:38]** pressure through a little higher

**[01:03:40]** than we used to be able to so it's

**[01:03:42]** working really well

**[01:03:46]** [Music]

**[01:04:12]** if you would like to help us out you can

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**[01:04:16]** support us on patreon see the links in

**[01:04:18]** the description

**[01:04:27]** [Music]

**[01:04:38]** [Music]

**[01:04:39]** you

# Full Text (without timestamps)

[Music] it's getting to that time of year again we're starting to warm up a little bit [Music] getting close to spring and starting to think about all the growing that we would love to do talked to bryson and we looked at bryson's aquaponics system we decided that that would be a really great solution for us too with its low water consumption we're going to put together ourselves a aquaponics system we're going to do a little bit different design just to try something else out this was our garden area when i was growing up and i think this is where we're gonna put the aquaponics system a row of grow beds here and road grow beds here and then the fish tank and your science stuff we'll be over there i'm not exactly sure how that's working so we're going to kind of clean this area out take this fence out yeah cut the grass get those little trellises out and i got some big holes to dig for some power poles that we ended up getting which are going to be perfect for raising our grow beds up off the ground so you're doing raised grow breads you're not doing the pipe system like dressing yeah we're going to do some raised grow beds that way the drainage works good we don't have to pump water in to the grow bed and then pump water back out of the grow bed we can just pump water into the grow bed and it will drain back out cool all right we ready to get started working then yeah let's do it these are the power poles we got and that's what i'm going to be using to raise these beds i'm going to go through and grab out all the holes i want here for the aquaponics what do you think azalea you're ready to work i don't think she's going to be able to help us today she's got a full schedule of napping this pole split in half when i dropped it off and you can see it's because it's hollow look at this there's a big beehive right in the middle of it that's pretty cool there's still honey in some of that look at that there's a couple pine ones in here that are really nice so i'm gonna cut these all at three foot chunks and that's gonna give us a foot in the ground two foot standing up and then there'll be a foot of tank so all the tanks are gonna set at about three foot tall that way you can reach all the way across plus that way i have a lot of material here that i can pick from it's pretty crazy where that beehive broke open like a half hour later attracted all of these bees look at this they're all through here and then the hive itself pretty crazy babies over there safe but i don't think tvs are going to do anything they're pretty focused trying to get stung [Music] all right you get them all cut up babe good get all your pools cut got our tanks in here that'll work huh we'll get these all leveled off nice out there very cool [Music] final poll these are looking so good babe can you imagine like how nice it's gonna be to garden without you know being on your hands and knees yeah that would be nice all done [Music] well hello oh i see you're rocking your merch there huh baby girl your little homestead merch that's looking good thanks for our grow beds and our fish tank we got a couple ibc tanks from a local guy we got them really cheap because they're filthy so a little bit of cleaning to do on them we got our work cut out yeah we do i guess i should have grabbed the hand part oh yeah you don't want to muscle through it i'm not really feeling it right now all right okay so i guess we take it apart first huh [Applause] [Music] maybe i should actually go the other way [Music] there's a lot of stuff in the bottom of this one wow that is gonna be a mess it's like five gallon buckets worth yeah it's pretty close and it's kind of sludgy too um so maybe the uh the watery stuff will take off and we'll save because it's actually pretty expensive to buy that concrete pigment [Applause] [Music] bucket and our trowels i'm just gonna try to scoop it in with this see how it goes here oh that's actually pretty hard interesting maybe we should tip it up oh boy prepare to get messy and look at how much is in there well the dogs knocked us over the dogs yeah we just wanted to um dye our bricks right yeah yeah that's we wanted a nice stain right there exactly dude boys this is five we're watching him oh my gosh look at his mouth i hope that's non-toxic you can't get sick you're not ours okay i cannot believe i just did that [Music] all right babe what you up to we got most of it yellow but there's still like a hint of it so we got some vinegar and we've just been spraying it out and we'll wipe it down and it kind of gets it cleaner yeah you can still kind of tell there was yellow in it but yeah i think it looks a lot better it's not supposed to be harmful so we'll just get it the best we can gonna work we got a little bit of a river it should wash away with rain and it's not harmful which is good [Music] how you doing sweet pea okay well we got my mess kind of cleaned up not really there's one tank that's a little bit different from all the others most of these tanks are like this one where the distance between the top of the rail and the bottom of the rail a little over 12 inches you can see this one this one's more like a 10 inch spacing because it's the odd one out safety first what i'm going to do is use that one for the fish tank because the fish tank is going to be cut up a little bit differently it's just going to have the top cut out of it and i'm going to use the whole tank instead of cutting the top off of it everything is going to look a lot more uniform and it's kind of what i'm going for tops off i just got to clean it out again try and save that and not spill it this time [Music] this your last one yeah this is the last one i gotta clean up some covered in red dye alrighty i got everything cleaned up and i got the all the tanks cut so the short ones are the grow beds and the tall ones are going to be in this case we have a duckweed tank and a sump tank the other two tanks i cut into grow beds so that'll be six grow beds in total this is the fish tank still a little bit tinted yellow shouldn't hurt the fish but i want to make sure that i wipe it out really good and clean out that way there's no actual residue of it last thing left to do is cut all the frames in order to house all the plastic tanks i got all the tanks cut and all the frames cut and put them all together just to kind of see what they'll look like inside the cages and i really like it i think that's gonna look super good and super clean when it's all painted up we got a nice red color to paint all the tanks and we're gonna leave the cages the silver and then all the growth in them all the green growth that's what we're hoping [Music] for i want to work [Music] now that everything's cut i'm going to start sanding i'm going to pull the tanks out of the cages because it's just going to make it a lot easier [Music] a lot of hand sanding in those little crevices but i got them all sanded i think that the paint's gonna stick really good i hope it lasts a long time we got cheap latex paint so we'll try that out if it doesn't work then uh lesson learned they look awesome babe i'm so excited to paint them and get them up on the poles yeah they turned out good they're so clean too good oh you're just so cute [Music] what do you think diesel oh even with how aggressive he was being [Music] it's time to get these tanks out of the cage and paint them they're all sanded up from last week it's kind of windy and cold today so we're going in shed isaiah is already waiting on us [Music] i guess we should put a tarp underneath this huh or do you not feel i mean i don't spill but i can't take for you that's a cool color huh yeah it's not pink at all not it yet wait relaxing in the sun baby girl hmm look at this the first paint spot on her cheek got there all on its own [Music] we got everything painted now it's time to put the tanks back in the cages and start setting them up [Music] those look so they do cool pretty good one more [Music] off to dig a hole what's this hole for it's fun oh you just dig it fun yeah just felt like i'm out digging a hole today this hole is for the sump tank so it's the lowest point of the whole aquaponics system and i'm just trying to lower it even further that way it all drains right [Music] the hole is dug not too bad the ground was pretty soft just a lot of dirt to move but our tank should fit right down that hole and we'll have probably duckweed pond and then fishpond at the end [Music] we got all the tanks in their cages so now i'm gonna get started putting them on the stumps that we have out there getting them leveled that way when the water sits in them it looks semi-good let's see how well my layout is [Music] it turned out to be really level which is awesome and i think i'll strap on the corners that way it doesn't slide all right i'm making little tiny straps to screw the grow beds to the poles i have out there i just grabbed one of these face plates i'm just gonna cut all the little slurps yeah 25 of them we need 24 so one extra nice we have two bottom tanks and four top tanks and the bottoms of the tank are a little bit deeper than the tops of the tanks so i'm going to just chop down these poles just a little bit just to make everything level across the top we want in the garden for a while now growing our own veggies and stuff and especially once we had this little kiddo and wanted to have that experience for her plus for health reasons and it's just good to have your own grown vegetables i think because of our well situation where it's not really producing very well ricin was showing us through the aquaponic system and tell us how little water it took to do we really fell in love with it and it's just such an interesting and cool way to grow food and fish at the same time i'm very excited about the maintaining process of it too yeah it's a little more unique and just in the soil which is fun too but i've done a lot of that so it's kind of fun to try a different way and see how things grow that way and stuff all the tanks are where they're going to sit now only thing left to do is going to be plumbing i really love the way it turned out it looks so good with the red paint isaiah can go out there and catch us a fish for dinner sounds good we are working on the plumbing today and two other barrels that we need to paint as well should we go get the plumbing started azalea i think the silence means yes plumb the grow beds so they'll have an inlet outlet it's a dual loop system so that means that the grow beds are on one pump loop of water and the fish tank and the duckweed pond are on another loop of water it's a little bit more reliable to do it that way from what i hear and i got the exits all done just using little bulkhead fittings and then that goes down into the two inch pipe which is the drain pipe underneath and for the inlet pipe that's going to be all one inch pipe these two will always be draining a little bit what's going in will be coming right back out and then this one will be filling and draining then all three of these are going to be filling and draining each tank is going to have a valve on it so i can adjust the flow into the individual tank rather than trying to adjust the flow at like one point there will be a main shut off to the whole system well actually i might do individual sides just in case i want to run one side or the other i think what i'm going to do is run a pipe right next to the drain pipe on the bottom i'll go up an elbow into this one tank here and then i'll t and then drop into each tank instead of using this fancy t-piece we ended up just deciding that this looks so much nicer just to have the single pipe coming up and dumping in with the valve on the side is going to look a lot cleaner with just the single piece [Music] this is our inlet line and then we'll connect to these guys looks pretty good nice sweet it's looking good what you're doing now well getting it plumbed down to the pump all the water's gonna end up here and get pumped out of here a little bit of twine right now but i'll get that switched out for something nicer we're gonna make brackets probably paint the pipe yeah clean it up a little once we're done we got all the inlet lines finished for the grow bed i just have to install the outlet side now which is all this two inch pipe build one more of these long pieces and then plumb it to the sump tank it's so much fun to have our own piece of land that we've bought and to dream up of different projects and improvements i really enjoy the dreaming process particularly that's half the fun right there but then to actually have that dream and eventually pull the trigger it's just a lot of fun to watch it come together what the goal is for this property is to set it up to raise a family on so things like having animals and just different things that they can learn and grow with as well like we did growing up we had great opportunities that way of being able to live out and animals to take care of and plants to take care of i didn't always enjoy it but looking back on it i really appreciate my parents for doing that yeah i wouldn't want it another way i always loved helping my dad with projects and stuff and i'm excited to have that for our kids too [Music] started raining pretty hard outside so i thought i would come inside the shed here and build the standpipes and the bell siphon the standpipe is what sets the height of the water once the water gets up to a certain level a siphon will start off of the bell siphon and that'll suck the water all the way down to the bottom of the tank and then it'll break the siphon and allow it to fill back up [Music] i got all the stand pipes done and then all of the bell siphons done now the bell siphons only go with the four grow beds that are gonna have rock in them these are gonna go with the raft beds they just need a stand pipe and they just have water constantly flowing through them gonna take these guys out and install them pretty straightforward just thread these into the bulkhead fittings and these just set right on top [Music] [Applause] we've got these two 55 gallon drums that are going to be filters so i'm going to paint them up the same color as the tank so it all looks nice and matches i got the tanks all painted up and we're gonna work next week on getting them set up out there and get the internal plumbing you know they look good hon really helped yeah did you do all the heavy lifting azalea she looks pretty tuckered out now uh she's growing up so fast too way quicker than i thought kids would and like i realized that she's not really growing up yet it's not that long it's like already out of the newborn phase it seems like she's just getting so much stronger and i don't know it's so fun to watch her grow soon enough she's going to be running around yeah i can't wait to get to know her brother [Music] we have a solid filter that i'm going to be building out of one of these buckets and then a bioreactor on the other starting off the solids filter it's going to have an l-shaped pipe it'll come in through the side and then come up and then just cut off it'll be kind of a stand pipe in the center of the tank i have some of the five inch well casing from mom and dad's house and we'll put a chunk of that pipe in over the top of that l-pipe and that'll make the solids flow in around and then they'll hit the side of that pipe and flow back down to the bottom of the tank then from there we'll have a out sitting somewhere at the top of the tank and that'll be clean water on the top all the salts will settle that stuff will come off the top i'm gonna build these solid pickups i guess because i cut circles out hole saw and then cut another hole saw circle out and this is going to sit on the bottom of the tank just off the tank i'm going to run screws up this way through it so the head of the screw is what it sets on it'll set there and then it'll just give me a little bit of a gap that way the solids when it goes to suck it's going to suck directly from the sides so it'll bring all those solids in and then pick them up and out so i'll do four of those spaced out evenly elle found us a piece of plumber for the lid [Music] someone is not happy better get that she loves the sun but sun does not love her she burns so fast she does i think she gets that from her dad i don't know what you're talking about are you gonna show us your circle tricks no i never i never tell my tricks we won't film this then don't look don't look so nine inches from each side and then start in the center and do a perfect string yep i think so measure twice and cut once yeah sorry cut twice measure once the grain is messing with my system oh my gosh that's it let's get another piece of wood look at that that is absolutely perfect oh that is absolutely perfect we got to cut her up little jigs on and they're good [Music] let me see if it fits yeah let's do [Music] perfect put a little handle on it some blocks yeah we'll be good custom lid by ellie and guerin all right should we see the workspace yeah it's close just one minor adjustment that'll work good huh [Music] it's really rainy today yeah so we got to work inside but it's good because we have small filter and out of the little five gallon bucket and then we have a bioreactor we're gonna build two this one's gonna be our moving bed bioreactor all this tank needs to be is an inlet and an outlet it just moves water through it and then we have the media moving around in there to kind of give that bacteria places to grow i'm just gonna make one more lid for the bioreactor [Music] so [Music] we got the filters finished up in here so i'm going to take them out and install them [Music] are you gonna put a power pole into this bucket i think so i'm gonna try and find a little chunk prop it up underneath there to keep it to be nice and sturdy okay so i'm getting the solid pickup tube into the fish tank now basically we fill the tank until it overflows through the solids tube and that's what gets our flow going back to the sump tank so i have to drill a hole and put a uni seal in this does set the level of the fish tank but i think this is going to be good and switched over to this saw from the wood saw i regret using the wood saw so much this thing is way easier [Music] take it all apart now and glue it looks up [Music] [Music] this is the continuation of the drain this comes out of the moving bed bioreactor and goes into the sump tank i'm gonna paint these up pipes gray just so that they're protected from the sun and they look nice i don't think of the paint underneath [Music] this is the start of the system this is the start we kind of worked our way backwards so the pump connects right on this t yeah the pump's going to connect right here and then it pumps into those pipes through the duct weed into the fish tank and then starts the whole system yep so we're not going through the duckweed tank the duckweed tank is a separate little circle it's going over the duckweed and straight into the fish tank rule i'm gonna go on the final piece of the puzzle not the final but the final like plumbing of the flow you know that is awesome dude i don't know why it looks so much cooler with all the plumbing because it's kind of chaotic now looks really good guys it's gonna look good once it's all all this stuff is grey too then yeah all right i'm gonna finish painting them can we put the lids on pretty good yeah yeah i think so nice we got all the plumbing done secured a few more things to do on it before we can put water in it but we're getting really close it's looking so good isn't it it is so fun azalea is going to love the fishies [Music] i got the next piece of the puzzle this is two yards of lava rock i tested it vinegar and this is what the test looks like which i did do at the rock yard as well chunk of the material you want to use in this case we got the lava rock here it's been rinsed off so there's all the dust and powders are off of it and you just put the vinegar in there you just want to kind of cover you don't see a ton of bubbles which would indicate a lot of sodium in it and that will mess with the phs of the water this whole thing would turn white it looks really good let's get this unloaded [Music] how are you girls today doing good how you doing sweetheart how about you guys you guys doing good time to start rinsing off this rock i mean i just have a five gallon bucket with a bunch of holes drilled in the bottom i'm just gonna fill this bucket up with frocks and then just dunk it in and out a few times let it drain so i guess i'm gonna get started on that [Music] oh that looks really nice yes i think that's about our ideal level for this stuff i'll keep going now well the system is working i think to clean this out that's a good thick layer of fine silty mud in there this is a good first start of it [Music] i got all of the rock cleaned off and loaded up still got a little bit left over which is going to be nice for anything in the future but all these grow beds are filled up with rock and ready to go these two are going to be raft beds so they don't get any rock [Music] i need to make some i guess they're kind of shields for the bell siphons i want to put this big tube around the bell siphon with a bunch of slits cut in this tube that way when i have to do any maintenance to the bulkhead fitting or the bell siphon itself it'll be a whole lot easier basically one foot lengths cut up into little slits and then those are going to go in the tanks all righty i think that'll work good a lot of little slits in there so that the water can flow in just fine then we'll keep it safe so i can get my hand down there and work on stuff if i have to it's just gonna be nice for that so i'm gonna build some wooden caps i think it'll look a lot nicer out there and it'll be nice to keep the water that's sitting inside this clean if i didn't cap it anything could blow in and get into the system and plug up filters quicker and stuff okay that'll fit on nicely and then i think what i'm gonna do just cut out another one of these i'm gonna trace the center out of this one and then cut that out just like so [Music] all right well i kind of forgot to put these things in before i filled the rock up which is a bummer because it's gonna be a lot harder now to install them but it is what it is so i'm gonna dig around them and put those guys in put the caps on them [Music] now that i got my shield in i can set the heights of my standpipe i want this to sit i think about an inch below the surface of the rock so i need to take off at least an inch that's right at about inch below the surface of the rock i don't want the water coming above the rock it's going to start growing algae on the rock and that's just going to steal nutrients from the other plants our caps gonna fit on there nicely now we got plenty of room underneath there when we start adjusting siphons just took a little bit off of these so now i just got the four more to do and i think we'll be done with the grow beds for right now until we can get some water in the system [Music] i'm going to build a box for some of the electronics like the air pump and then i also have solar backup air system that i will be eventually putting in i don't have any more lumber left because we use a lot of it on the doghouse i think what i'm going to do is i'm going to use some pallet heaters and that should do the trick i'm going to start ripping these pallets down i got my pallets all stripped down and the center boards out of them so use these guys to build a quick box and then i'll probably put the same siding we'll use it on the doghouse and actually i think i have enough roofing left over that i'll be able to patch a roof together [Applause] [Music] got the box made so to put some siding on this i have a couple bigger pieces and start with those and then i'm going to move into the smaller little pieces i don't have enough to just do it so i'm just going to kind of patch it together and i think with paint and trim it'll still look really good thank you girl can you help me paint [Music] i'm gonna paint these boards up so gary can cut him up for trim [Music] so [Music] i don't have any more roofing material we were out looking and we're going to put a solar setup on this anyway for a backup system we have the solar panels already they would actually make a nice roof so i think that's what i'm going to do put these on and glue them together and put them at a bit of an angle and make them the lid for our box nice that's a really good idea dude that should make enough structure be just fine as a lid i think i might put one across the back just to screw my hinges to okay i got the lid on and working good it opens and closes nicely i decided to to go through and put a bead of caulking down each of the seams that way everything is sealed from water coming in through the sides we're gonna have an air pump in there and some solar electronics so the least amount of water we can get in there obviously the safest and then this is gonna have trim to all the way around so all this open stuff is gonna be sealed as well i think at this point gonna get some paint on here i think it's time to put the trim on this bad boy here i don't know how nails for the finished nail so got a few hammer nails again but it's all right put some trim on this puppy and the box is gonna be finished all right box is all trimmed out looks really good i think we got the solar panel roof on it box itself looks pretty good kind of pieced together in there obviously but you're not going to see the inside so not a big deal i'm building some lids for our fish tank and our sump tank i'm just going to use some plywood here and really just got to cut out the shape put some little blocks to hold it in and then cut out where our inlet pipe goes in some tanks a little more complicated but just get cutting i guess i have the two lids done as far as cutting and else started painting so i'm gonna finish up painting those two and then we'll probably go out and install everything [Music] hey sweetheart how you doing oh boy a lot of drool there did that for you there we go here you go [Music] all right get some ground level out and then we'll be able to place this thing nice it looks so good see if she's level excuse me boys yeah it looks good powering right there [Music] i guess we're at like finishing the wiring here installing the pumps and then put some water in the system warm in there you look cozy [Music] what you doing here baby and we'll start filling the tanks up right yeah we just want our water to be clean yeah you can't start off dirty [Music] ready oh it's installed should we test it i got the shop back hey the power works yeah all right now should i get around oh note to self don't vacuum up stuff inside there's a leak in our back that'll leak anyway i think that sucker up oh yeah i cleaned up nicely looks like algae and dust on the bottom all right well i'm gonna get ready to open i think [Music] pretty good keep our fish tank nice and dark so that we don't get a lot of algae build up it looks good [Music] get some water in this one and we can test fit our other one so i guess we're just pumping to the sump and then we're going to use that bad boy to pump it into the fish tank yeah that one turns off the tank or the grow beds the red one is the fish tank and the black one up there is the duckweed so just the fish tanks on right now yeah that's water flow details it's working [Music] all right first filter the water is flowing in here full flow all the way around so the water flows out here down around and back into the tank and i think we're working pretty good so the transfer between the two tanks is the only spot i'm kind of watching right now because if that transfer is not fast enough i'll overflow the fish tank and lose a bunch of water basically the amount of water that's coming out of there needs to be the same amount of water that's coming into the tank here i think we're ready to start the grow beds and letting these start filling up so i'm gonna go for it here we go all flowing out i think our system's running good in the next week or so we'll get fish food to start building up those bacteria so put our new caps on nice oh boy i think the last thing to do is just to backfill this sump tank in so i'm just gonna put all this dirt around there as much as i can the tank's full of water now so it's not gonna cave in the sides and that's gonna be pretty much the last thing that we're gonna be able to do there's a couple more things with air pumps and of course getting the system cycled and then we're waiting on parts again [Music] [Applause] all right what are we doing we're gonna pull all these bricks out and make a little pathway in between the grow beds of the aquaponics system can't take this over the aquaponics system i'm thinking what we're gonna do is gonna do a pretty wide walkway because this will do a lot of harvesting and stuff and then if there's enough extra bricks maybe some stepping stones along the outside that sounds like a plan to me [Music] [Music] when we begin playing in the dirt yeah that was pretty cool huh [Music] this side stepping stones wouldn't look that good so what we're gonna do is we're gonna put a patio that goes all the way to the duckweed tank and also probably one in front of the fish tank i think that makes more sense did you find a place for the last of the bricks yeah you know that didn't look like that many bricks but that was actually a lot of bricks today yeah no i think it looks really good with our little extra room in there to work at the duckweed pond and then we got the patio for the fish here well done with that yeah i think we just got the air system to hook up and we'll be good to go [Music] can in your pacifier back here you go hey bud careful careful time we got i think the last step of the big installations and really it's not that big of one is going to be the air system that's going to run through this thing beast of an air pump and then i got my air stones and i'm gonna set these up and have two air stones in the fish tank to start out with and then we're gonna have one arizona piece in the raft beds and that's gonna give the plants a ton of oxygen i've heard it's supposed to help them grow a lot better oh i'm also going to set up a little bit of a cooling system so i have just an old fan that i'm going to put in on it at that sucker setup nice yeah we're so fast we are indeed i got the pump installed as well as the fan and it's running right now and i'm pretty happy with how quiet it really is oh yeah that's not bad at all now i got my air lines i'm gonna run these bad boys up and around to the tank and then the little girl beds there [Music] that's on the bottom maybe i should be hanging them off of these oh yeah like right in the middle of the tank huh yeah same thing so you got two of them in this one yeah i don't know if it's overkill or not but from what i've heard it's easy to not have enough air and it's hard to overdo it i don't know if it's possible so we'll find out this one will come up oh i think that one's a little long yeah maybe a smidge are you putting airstones on these ones too not yet eventually yes once we get water in these but they just clip them off not hard so okay so it's got tidy up how you get these lines with some zip it ties the wrong side to run on the bottom oh everything's ruined you're so dramatic i'm not dramatic i don't know what you're talking about so why do you have to have air in me for floating on i was told by my brother-in-law who does the five-gallon hydroponics systems and uh he just dropped an air stone right in the bucket with the plant and he said that his plants do way better like that so i figured if that works in the hydroponics that's basically what the aquaponics is in a hydroponic you just feed the water whereas in aquaponics you have the fish that supply the nutrients to the plants instead of adding it yourself i can't wait for fish it doesn't look like it's pinching any of our lines which is good almost good to go [Music] so i've been having to make a few modifications to the bell siphons because they just weren't reliable enough so the way i had them first design was like this and this is where you can see i just have a series of holes on the bottom it has a tough time engaging the siphon on this pipe as well as breaking the siphons i think i know why that was the case so this is the new one i have this one's working pretty good i think so i have the coupler on the bottom and that fits around the bulkhead fitting pretty well i had to kind of grind a little bit of the inside of it out and now when it goes in it snaps over it and you can see it's a little bit more stable than this one so that's the first thing i did as well as shortening it quite a bit that's a new design i have for those and it's working a lot better i'm actually getting pretty consistent reliable fills and drains [Music] i am testing for ammonia in the system i let that baby set for five minutes and then we'll be able to match it up and see if we got anything brewing and how we're building the ammonia in the system is we're just putting a little bit of fish food in each one of the tanks after a couple days of sitting there turns into a little bit of ammonia and then the ammonia is i believe what builds the bacteria to change that ammonia into nitrate so just check this against the other colors here looks like we're starting to get a little bit of ammonia in the system 0.25 parts per million how much do we need if we were just straight up shocking the system with ammonia we would get it to four parts per million and then we let it fall off over a few days this is more of a slow building thing and we're probably getting ammonia from the first day we added we're probably three or four days in now of adding the fish food so starting to build up i think just taking this time system's gonna be cycle here in six to eight weeks sweet that took a little bit longer than we thought but it definitely turned out a lot better than we thought too it looks so good out there looks really cool much nicer than i was picturing yeah we also got our little starters planted so we can transfer them in six to eight weeks when the system is cycled and we'll just be able to pop them right in and hopefully be harvesting yeah we're a little late i think in the planting season just because like i said it took us a little bit longer to get the system up but i think we're still gonna be okay with a lot of things this is kind of a learning curve this year anyway so anything that comes through is gonna be bonus yeah anything look gross when we plant we'll also put our fish in at the same time it's gonna be a lot of fun to see if it works yeah definitely this little girl's gonna love the fish you excited [Music] so me and gary went down and got fish we're gonna drop some in his tank drop them in and kind of tie it off to the post here oh yeah we were on a bit of a drive so they need a little bit of air i'm sure we want to take some of this water and like add into there my ph right now is pretty high you know we don't troll the shock to fish and we dump them in right yeah all right karen it's like the only time we're gonna be able to see them before they go nice all right there's one first fishy release that's quite a bit colder in this water all right it's absolutely beautiful bye fishies thanks brian for coming with me show me where the good fish spot is is it yeah it's a competition fish live longer yeah i have a feeling i might lose fish oh it's diesel you're like no he's got a fun with the baby [Music] i uh quickly looked on thingiverse because i heard garen was having a little trouble with his bell siphon apparently there used to be an old funnel type reducer that you could buy and it would help that siphon start so i thought well maybe i could design it real quick or maybe they have it on thingiverse and i looked sure enough they do a model that's put out on thingiverse by crew zone it fits a three-quarter inch stand pipe with a two-inch casing that's around it which is actually the identical size that my brother has in his aquaponics if you want to print it we'll leave a link to his model on thingiverse down in the description first part done hopefully it fits on the pvc pipe [Applause] [Music] good beautiful [Music] yeah okay so bryson made these awesome little funnels for the bell siphons because those siphons weren't working super consistently i broke this one that's why there's super glue around it but super glue fixes everything so i thought you painted it oh sorry i yeah i painted a stripe on this one the mark this is bed one oh yeah yeah and then the other ones have no stripe because there's no need to mark those oh okay tested one out earlier and it is just working great oh that's awesome that look nice like a little flower they were perfect size and everything i didn't have to grind the inside them mouth or anything wow and the cool part with this design too is that it's not only a funnel but it holds the top of the pipe in place so when you put the pipe on it see if it's in the bottom and seats in the top and it's just solid in there that's a wonderful design for the starters that we're about to plant i think we're gonna pull all the bell siphons out because we want just a static water level but when they start getting older and growing a little bit bigger that's when we'll start adding these puppies in sweet let's go check on azalea here hi are you ready to plant [Music] peppers that sounds good to me our charters have not been faring too well no i hope this is not a sign of how we garden yeah but that's okay we lost our we lost our bean let's just focus on this one yeah focus on the good ones not the ones that didn't grow perfect all right i guess we're going to start planning yeah oh first try oh really so we got a lot of stuff in here we're going to get some lettuce from bry we're going to steal some of his oh cool he's got such a good crop so you want to do like spinach over in this corner hi darling are you playing no dirt right yeah we used rock wool to plant our seeds in that way we could plant them directly in grow beds did really well to hold the seat in place and then wick up the water to the seed yeah they're super easy to plant in too so it's kind of fun the rockwool is going to work really good yeah definitely ran to the store and i grabbed a lot of one inch pvc and some pvc couplings and i'm going to take and screw the cufflink to the side and then i'll be able to put the pvc in it bend it around stick it in the other side and that's going to give me a nice hoop over each bed and then i'll be able to hang a shade cloth from that or in the winter time i'll be able to hang plastic from it so that it'll either greenhouse or nice shaded for the really hot parts of the summer we found out when we planted our starters that we really don't have a knack for growing things in the soil yeah over half of them didn't come up it was a little embarrassing yeah and then when they did come up they died yeah so we got very few actual starters that made it we're just not good at like keeping them watered and i don't know why we're we could pretty consistent with everything else but not that apparently yeah i'm super excited to be growing in the raised beds and the rock and like it's just totally different and super exciting and fun yeah it's significantly easier because they're always watered the system does that already and they're always fertilized it really is an easy system once you get up and going there's still maintenance and stuff like you you have to check the water and stuff every day the fish yeah feed the fish make sure stuff's maintained but i think it's more of what we enjoy instead of the normal traditional gardening yeah i think so too all righty got the hoops done now we just got to give them a good coat of paint so that the sun doesn't deteriorate then that actually looks halfway decent i was a little worried there in the middle [Music] next morning let's see how these babies did i see green no wilting over here oh that's good oh look at even the little ones lasted that's awesome sorry got some plastic in there it's food grade plastic that oh it looks even better than it did in the little oh my god oh yeah man everything transplanted so well oh that's spinach i like spinach so excited bryson let us have some of his lettuce last night mmm that was delicious that was good lettuce he i think he's gonna let us steal some of his plants too because he has so many you guys excited about the aquaponics too well we should see how our fishies are doing too [Music] still all alive that one over there is really big yeah that's a chunky one i put a temperature gauge in the water last night or yesterday rather 69 degrees in there it's pretty hot here already so should we get the shade cloth on this morning yeah i think so i think we can roll the shea cloth up on the top and get it out of the way let him get some sun and then cover him before it gets too hot maybe we have to cut it i can't remember what i bought from being honest with you that's like two are these two no i think i got a long one let's see how much we need to go over huh yeah well only eight foot to go over oh one idiot it fit nicely [Music] it's been a couple days and the shade costs they've done really well in the wind actually yeah it's been really windy too so and they've held up super good i think we're gonna roll one side up on this one and this has a lot more of our hot weather plants in it yeah it's kind of why we put this pipe on the bottom so that you could easily roll it up that works they're good those are pretty good our one really good starter is looking really nice yeah tomato that's rooney they look good they're a little bigger than they were yeah very vibrant oh diesel sauce i'm here too all right nice well these suckers look really good get a few other little things to do like the duckweed pond and those last two grow beds on the end which we may start off this year we may wait till next not 100 sure what we're gonna do on that again now we just wait for harvesting yeah [Music] be there for a minute can you not you don't want any dirt um you can just give it a rinse baby roman noodles [Laughter] [Music] [Music] oh yeah he's had a good day he's gonna sleep good tonight [Music] so we're going out to the garden here see if i lost any more fish i'm really good at killing fish so you're a good fisherman then huh exactly i could not describe it better myself oh what's this look at this our eggs are growing great look at that we got four of them are those fishes yeah these are these are fish eggs oh look at the plants though [Music] the cilantro needs picking we've actually eaten some of the cilantro it's really good yeah then our tomatoes they've come up quite a bit they're looking really good our prized zucchini plant yes the only starter we successfully grew yep and that that sucker is taking off yeah it's got little flowers on it and everything yeah there's actually a little anaheim pepper hiding in there that i don't know if he's gonna make it or not because he's not gonna get any sun and then our lettuce is doing actually it's doing good we're getting really tall so we chop them off and so they just take a little bit of time to come back in this really gets a lot of sun and i don't know what's wrong with our spinach it's pretty warm right now for for those kind of things our shade cloth doesn't completely enclose it so i think i think it's just burning [Music] see how our fish are doing see we started with 13 we're down to seven but we haven't lost any in three or four weeks now so i think i got it kind of ironed out they're probably going to be hiding but there's oh there's a couple down there look how big they're getting [Music] yeah you can kind of see them in there swimming there swimming around the system's been running really good just been having to keep putting a little bit of nutrients in it for the plant once we get the fish tank stocked up good the plants and stuff will have a lot more nutrients yeah it's doing really good though [Music] he did hey so we have our solids filter here so the pipe coming out of the fish tank and into this settler is only a one inch pipe and it's a little too small we'd like to run a little higher pressure into the tank keep the tank a little cleaner as well as not cause any backup if we have too much water going into the fish tank and on off coming out will overflow the fish tank we need to get this puppy upgraded to a two inch system so here's our old solid pickup system and you can see it's all the one inch i think what the key is going to be right now is we need to get this tank drained i was thinking maybe we should try and drain it back into the sump tank [Music] nice that was a lot easier than i thought that was expected i'm impressed a little board on the back of it yeah if you've ever tried to drill a bigger hole without the pilot it's not easy this seemed to work pretty good [Music] the solids pickup tube is basically just a piece of pipe that goes right down to the bottom of the tank and then there's a flange that we build on the bottom that's just a circle of plastic that we screw to a cup link and that kind of helps the fish from swimming back up into the filtration system and also picks up all the solids really nicely [Music] [Music] all right put our final piece in the solid pickup tube this is just going to hopefully oops let's turn the bubbles off so we can see what the bottom looks like looks like that's sitting pretty good turn on full power i really like that that turned out really good should we turn on the water and let it fill yeah turn on full power see if we can handle it perfect looks to me like everything's flowing correctly and it's more than keeping up with flow now so perfect i think we're good come on give it a quick coat of paint then yeah it sounds like plain it'll protect our pipes at least yeah keep them from getting that sun damage that looks good babe i think we're done let's uh let's clean up close up everything yeah it's been running for a couple days now it's been working flawlessly the fish tank is staying nice and clean and we can run our water pressure through a little higher than we used to be able to so it's working really well [Music] if you would like to help us out you can like this video share it subscribe or support us on patreon see the links in the description [Music] [Music] you