

Project Save Halloween

K@ndi D-vic3

By

FTC Team 7078

0v3R1y K0Mp13x

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Shopping List

Part Name	Quantity
Bucket	1
Lid	1
PVC 4"x10'	1
PVC 1"x5'	1
PVC 1" Elbow	1
PVC 1" Cross	1
PVC 1" Coupler	1
Box 2.5" Screws (50 pack)	1
2"x4"x8" Wood	4

**Note: Prices may vary from store to store. The above chart is based off pricing at our local Lowes

Introduction

Hello! This device and instructions were created by students on *FIRST* Tech Challenge (FTC) team 7078 0v3R1y K0Mp13x. Why did we make this you ask, simply because many things have been ruined by COVID-19, Halloween does not have to be one of them. We worked hard to make our device simple enough to be replicated by anyone with tools and access to a Home Improvement store. K@ndi D-v1c3 works well and keeps COVID-19 guidelines in check, spacing you more than 6 feet from trick or treaters. The idea of our device keeps you from touching the candy, thus making it less of a risk for you and others! We hope you enjoy keeping this holiday alive despite the virus.

Follow the below instructions to create your own K@ndi D-v1c3. Don't forget to decorate it to make it your own! Happy Halloween.

-Team 7078, 0v3R1y K0Mp13x

Instructions

1. Make the following cuts on 4in PVC pipe:
 - 1.1. One (1) piece at 6ft 7.5in
 - 1.2. One (1) piece at 1in
 - 1.2.1. Cut this 1in section in half (see Image 1)



Image 1: PVC 1 in pipe half

2. Make marks half way around the pipe (from step 1.1) at the following location:
 - 2.1. From one end 2in (see Image 2)
 - 2.2. From the opposite end 3in (see Image 3)

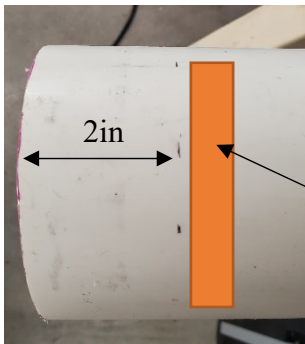


Image 2: 2 in measurement

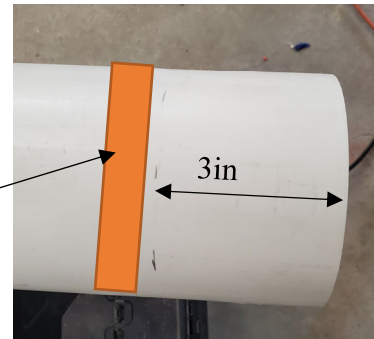


Image 3: 3 in measurement

3. Sand the inside of both of the 1in cut pieces of the 4in pipe (from step 1.2.1) and the areas near the marked lines in step 2 (see Image 2 and 3)
4. Take half of the 1in piece (from step 1.2.1) and hot glue it 2in from the end using the of the 4in pipe using the marks from step 2.1. Take the second half and hot glue it 3in from the other end using the marks from step 2.2



Image 4: Hot gluing examples

5. Cut the wood 2x4s using the following measurements:
 - 5.1. Two (2) each in 4.5in, 30in, 61in (see image 5)
 - 5.2. Two (2) each in 18in, 18in, 18in, 18in, 24in (see image 6)

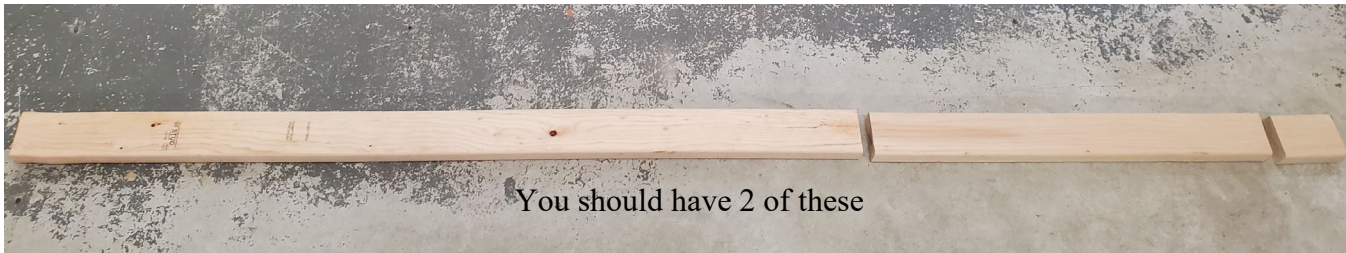


Image 5: Example of 4.5in, 30in, 61in



Image 5: Example of 18in, 18in, 18in, 18in, 24in

6. Create bases
 - 6.1. Using the four (4) 18in 2x4s and screws assemble a rectangle using image 6 as an example
 - 6.2. Repeat this so you have 2 bases



Image 6: Base

7. Create the front riser

7.1. On the two (2) 30in 2x4s, measure and make a line 4in from one end.

7.2. Using screws and the lines as a guide, attach the 4.5in 2x4 to create the short H assembly. See image 7 for an example.



Image 7: short H assembly

7.3. Using the short H assembly, attach it to one of the bases to create the front riser. Note: the location of the 4.5in 2x4 in image 8.



Note: this should be flush with the back of the 2x4s

Image 8: Front Riser

8. Create the Back riser

8.1. On the two (2) 61in 2x4s, measure and make a line 4in from one end.

8.2. Using screws and the lines as a guide, attach the 4.5in 2x4 to create the tall H assembly. See image 9 for an example



Image 9: Tall H

8.3. Using the tall H assembly, attach it to one of the bases to create the back riser. Note: the orientation of the H is opposite of the front riser



Note: this should be flush with the front of the 2x4s

Image 10: Back Riser

8.4. On the back riser mark the following measurements on both upright 2x4s:

8.4.1. 9in from the top on the front side (slide side)

8.4.2. 8in from the top on the back side (bucket side)

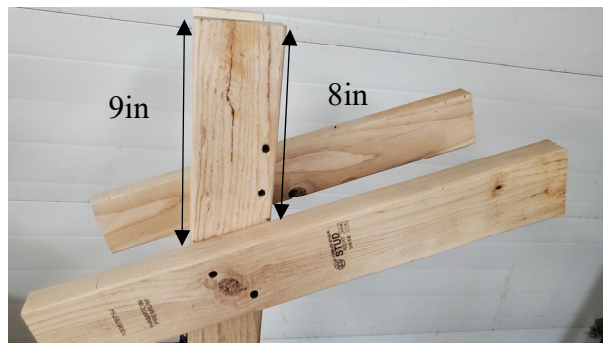


Image 11: Bucket Holder

8.5. Using the marks created in step 8.4 as a guide attach the two (2) 24in 2x4. There should be 13.5in on the back side (bucket side).



Image 12: Back Riser

9. Modify the bucket using these instructions:

9.1. Use the PVC Coupler as template to draw a circle in the middle of the bucket



Image 13: Bucket Center Hole

9.2. Cut hole out. Once cut the Coupler should be able to pass through



Image 14: Bucket Hole

9.3. Using the remaining portion the 4in pipe as a template, draw a circle in the location seen in image 15



Image 15: Marking candy opening

9.4. Within the circle drawn in step 9.3 measure from center hole 1in and draw a line. Cut out shape. See image 16 for example

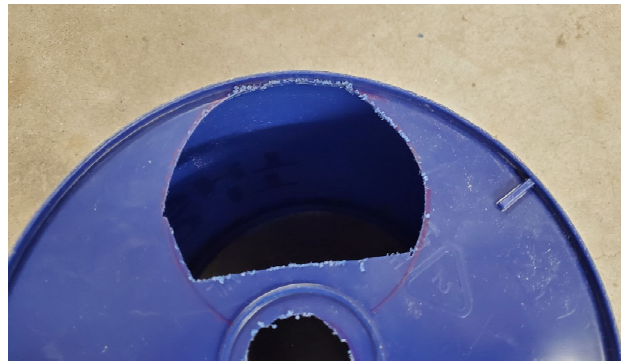


Image 16: Bucket with candy hole

10. Modify the lid using these instructions:

10.1. Using the 1in PVC pipe as a template, draw a circle in the middle of the lid.



Image 17: Lid center Hole

10.2. Cut out circle. NOTE: the PVC pipe should pass through but the couple should not.

10.3. Measure 1in from the cut circle towards the lid and draw a line. Note: this does not need to be exact



Image 18: Lid Marking

10.4. Cut out a semi-circle using this line and the lid structure as a guide. See image 19



Image 19: Lid

11. Create the mixer

11.1. From the PVC pipe cut the following:

11.1.1. Three (3) 4in pieces

11.1.2. One (1) 11in piece

11.1.3. One (1) 5in piece

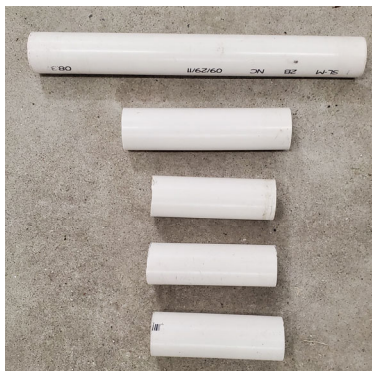


Image 20: PVC pipes

11.2. Assemble the mixer as follows:

11.2.1. Connect two (2) 4in pieces to opposite sides of the cross connector

11.2.2. Connect the 11in piece to one of the open sides NOTE: one of the 4 sides remain open

11.2.3. Connect the coupler to the 11in pipe open end



Image 21: Mixer assembly

11.2.4. Using the elbow connect the 5in piece and the third 4in piece to make the handle



Image 22: Handle

11.2.5. Attach the 4in PVC pipe through the lid and into the coupler on the mixer. See image 23 for example



Image 23: Lid and mixer

NOTE: the PVC pipes should be a tight fit in the connectors and not need glue to operate. If they twist during operation, you can use a screw in the joint, hot glue, or PVC pipe glue.

12. Setup your K@ndi D-V1c3

12.1. Place the front and back risers approximately 6ft apart with the bases facing each other.



Image 24: Step 1 of setup

12.2. Place 4in pipe assembly in risers. Note: the 1in stops should prevent it from sliding

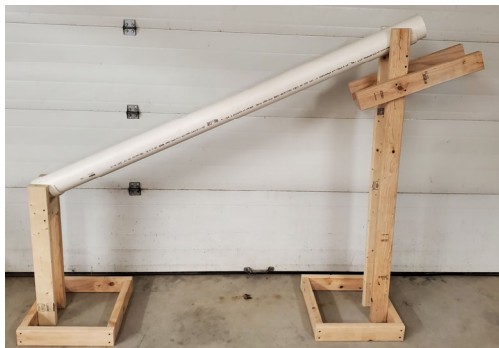


Image 25: step 2 of setup

12.3. Place lid assembly on bucket. Make sure the open hole in bucket and lid are aligned. Note: the open side of the cross connector should be in the center hole of the bucket



Image 26: step 3 of setup

12.4. Place bucket on back riser. Make sure to line up the hole in bucket with 4in PVC pipe
Note: you can secure the bucket in place with screws, glue, or tape



Image 27: Ready to go

Note: It is highly encourage to decorate your K@ndi D-V1c3 to make it your own!

Operation

1. Rip open candy bag (mixture bags are great for Halloween and work well with K@ndi D-V1c3)
2. Pour ENTIRE bag in
3. Turn handle slowly to give out candy!

If you have any questions, email us at ftc7078@gmail.com

You can also contact us via Instagram @FTC7078