

Low-Cost Field Perimeter Guide - Remote

Overview






The Low-Cost Field Perimeter Guide – Remote is a resource for teams to build an inexpensive field perimeter set. The field for remote events has an approximate 12 ft x 8 ft perimeter. This guide will walk through the tools and steps needed to create a perimeter for home or a robotics lab.

The perimeter structure uses $\frac{3}{4}$ in. PVC pipe. This guide also includes instructions on how to secure cardboard to the perimeter structure as walls to keep scoring elements from leaving the field. Note that teams can be creative and may use other materials to build the perimeter walls such as deer fence, window screen, Masonite panels, etc.



Revision History		
Revision	Date	Description
1	8/10/2021	Initial Release

Part List and Cut Guide


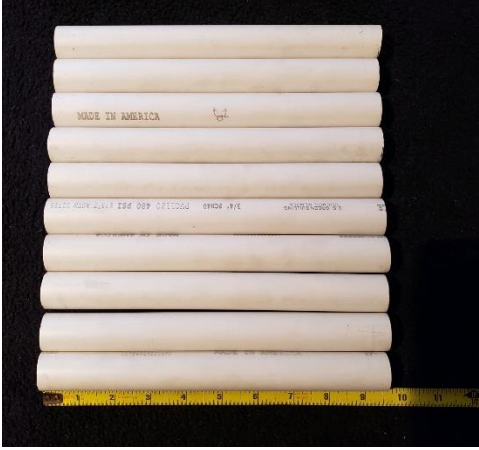
Item	Quantity	Home Depot SKU	Part Photo	Est. Unit Price
¾ in. PVC T-Joint	12	#187917		\$0.82
¾ in. 90 Degree Socket Elbow	8	#1002146031		\$2.73
¾ in. x 10 ft. PVC Pipe*	10	#193712		\$3.83
1-1/4 in. Ratcheting PVC Cutter**	1	#1003002231		\$13.98
Zip Ties	Pack of 40	CT10284		\$5.79
Cardboard	As needed	N/A		
Total				\$89.75

*These must be cut to length. See “Cut Guide” section for measurements. Many hardware stores can make these cuts in store.

**If the hardware store cannot cut the PVC, you may need to purchase a PVC cutter tool or Hacksaw.

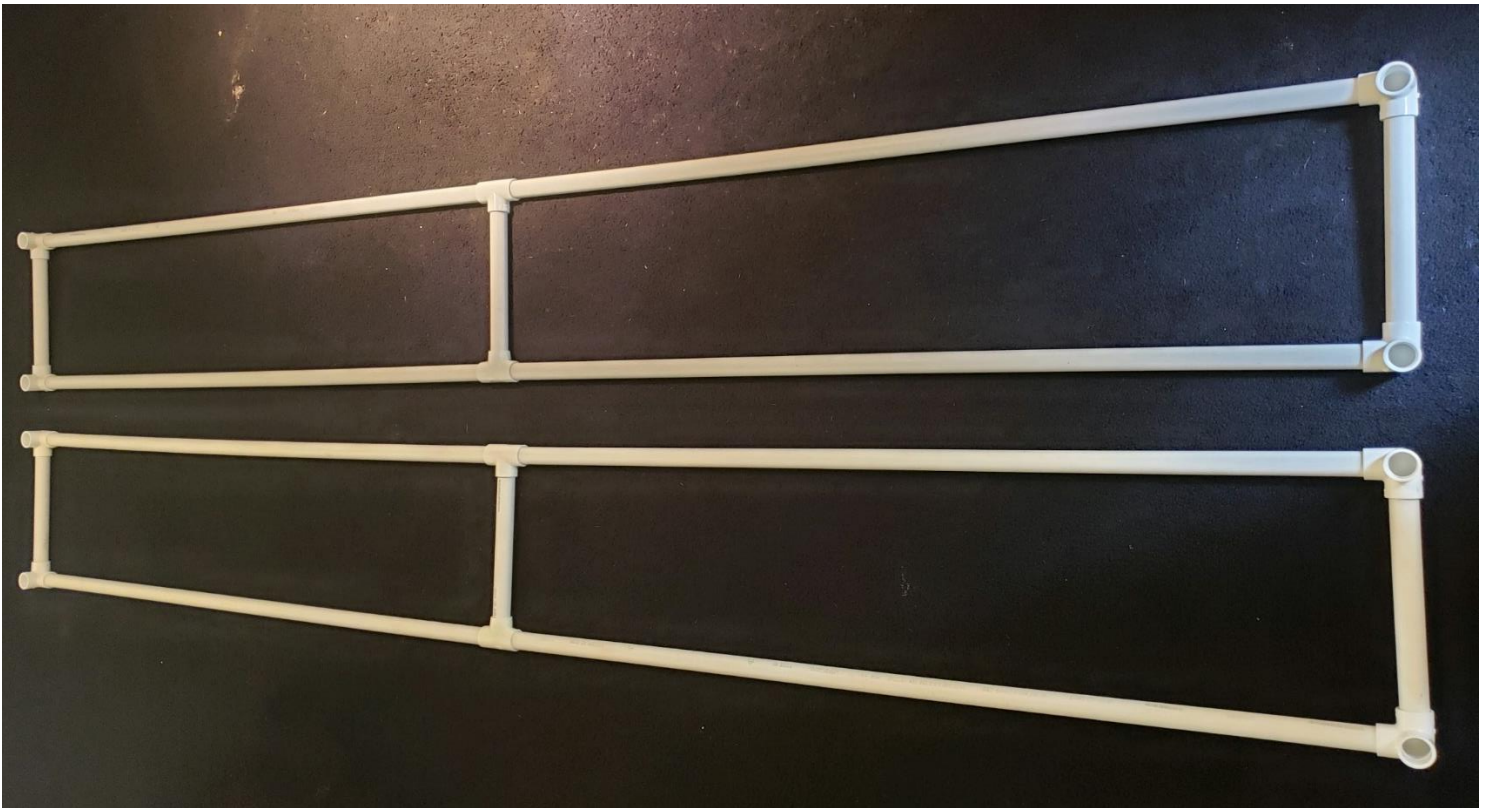
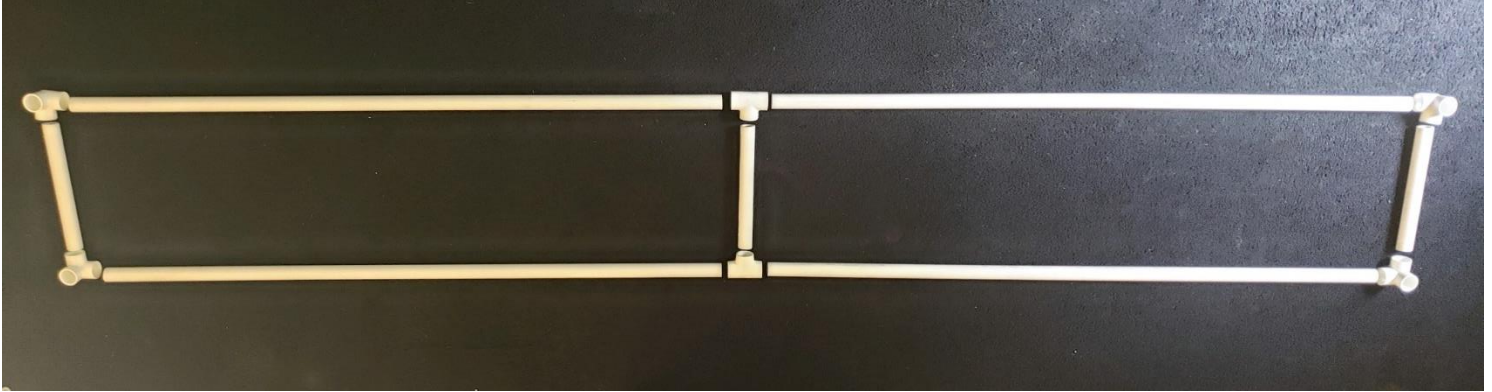
Cut Guide

The following items are cut using the $\frac{3}{4}$ in. x 10 ft. PVC Pipe to make up the field perimeter.

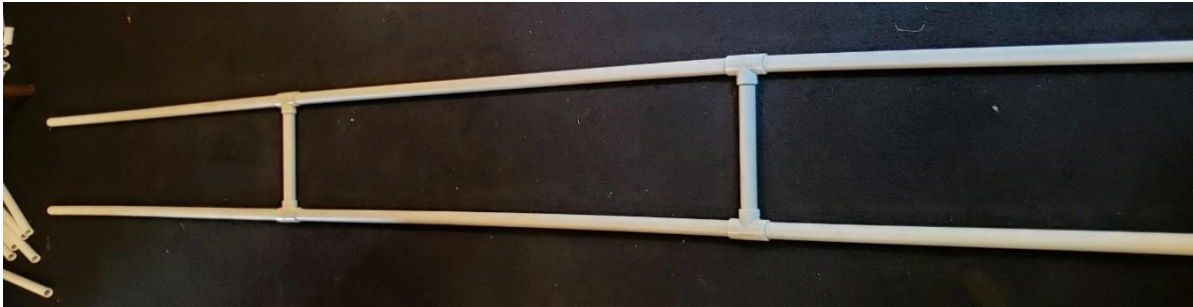
Item	Measurement	Quantity	
$\frac{3}{4}$ in. x 10 ft. PVC Pipe	46 inches	20	
	9.5 inches	10	

Build Steps

1. Using two T-joints, four 90-degree socket elbows, three 9.5-inch sections of PVC pipe, and four 46-inch sections of PVC pipe, assemble as shown. This step must be performed twice to make two 8-foot sections of the perimeter.



- Using four T-joints, two 9.5-inch sections of PVC pipe, and six 46-inch sections of PVC pipe, assemble as shown. This step must be performed twice to make two 12-foot sections of the perimeter.



- Assemble the sections to create an approximate 12 foot x 8 foot perimeter.



Perimeter Walls

In order to keep scoring elements from leaving the field perimeter, teams can install cardboard panels as barriers. Cardboard to build the walls can be purchased from a hardware or shipping store, obtained from a local recycling facility, donated, etc.

1. Cut the cardboard into 10 in x 48 ½ inch pieces. If your cardboard is not large enough to cut into a solid 10 in x 48 ½ inch piece, you can tape multiple pieces together to create the perimeter wall.

You will need 10 10 in x 48 ½ inch cardboard pieces to complete the walls.

2. Poke a hole in each corner and secure the cardboard to the PVC using a zip tie. Each cardboard piece should have at least 4 zip ties. If a more secure hold is needed, more zip ties can be used to secure the cardboard into place.

NOTE: Do not over tighten the zip ties as it could rip through the cardboard.



3. Repeat for each opening until the perimeter walls are complete.



Other options for a barrier to keep elements in:

- Deer Fence
- Window Screen
- 1/8" Masonite Panels