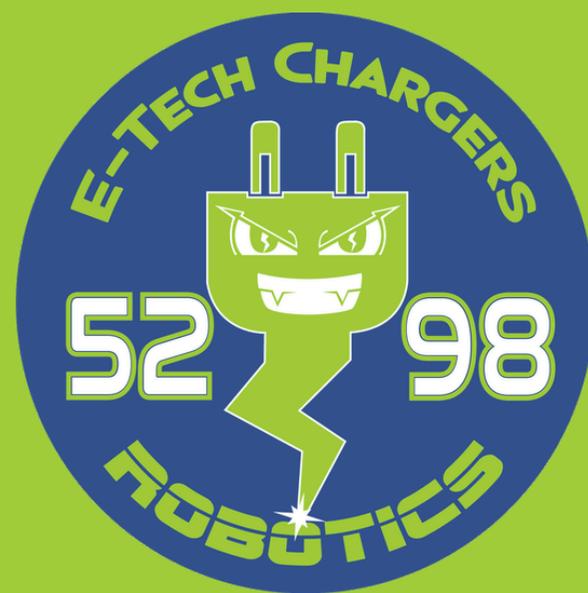
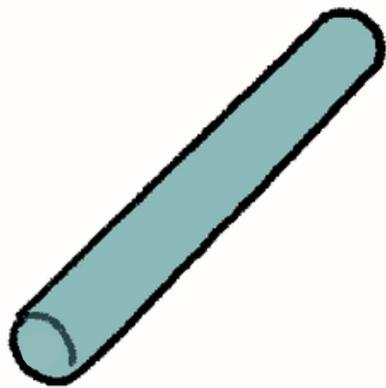


HOW TO MAKE
**THE BEST
REVERSIBLE
BUMPERS**

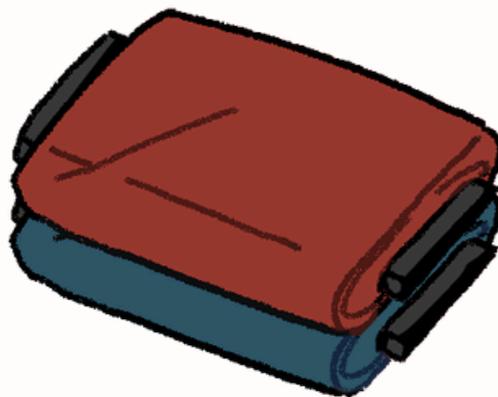


Etechchargers5298.org

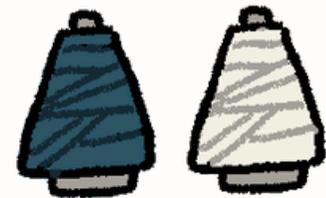
Materials?



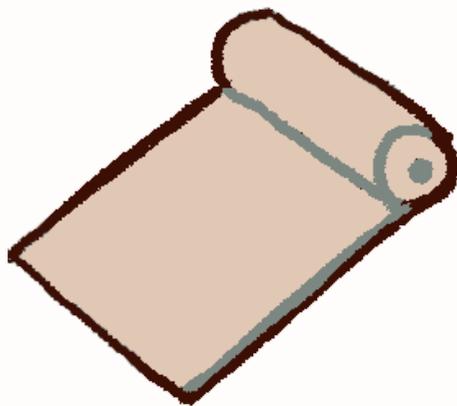
2.5 inch pool noodles



2 yd Heavy duty canvas or nylon in red and royal blue



Black and Invisible thread with Denim or heavy duty needles (for machine)



HTV white iron on vinyl

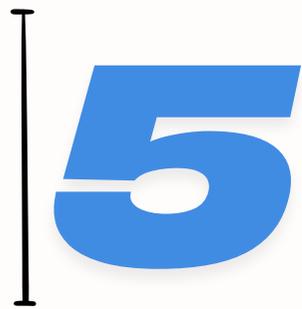


Sew on Velcro 1' wide, hook and loop, 2x the perimeter of the chassis



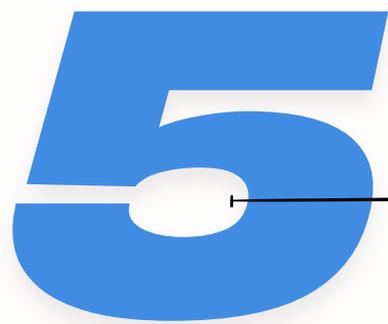
$\frac{3}{4}$ ' plywood thickness for bumper structure

Numbers?



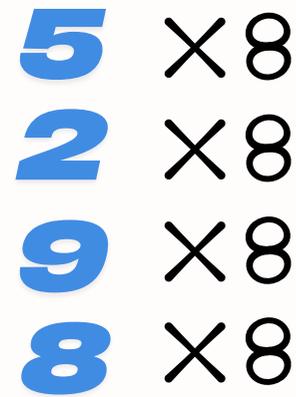
1

4 inches tall.



2

at least 1/2 inch stroke thickness.



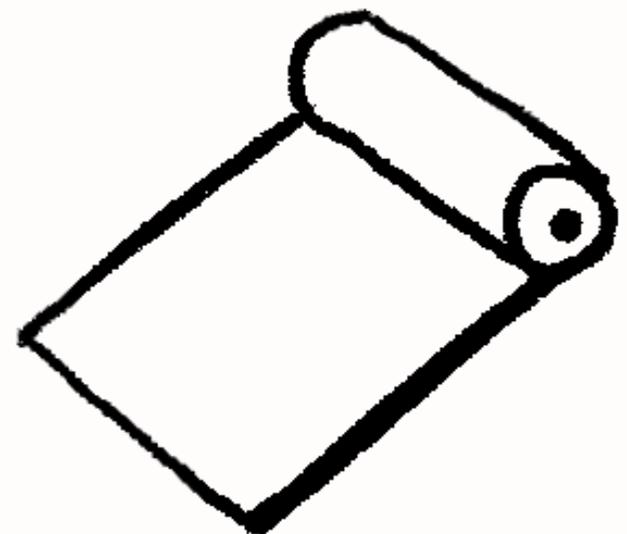
3

You will need 8 sets of each number.

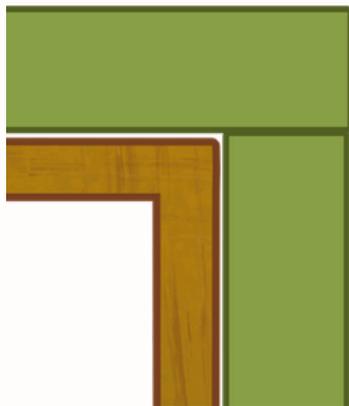
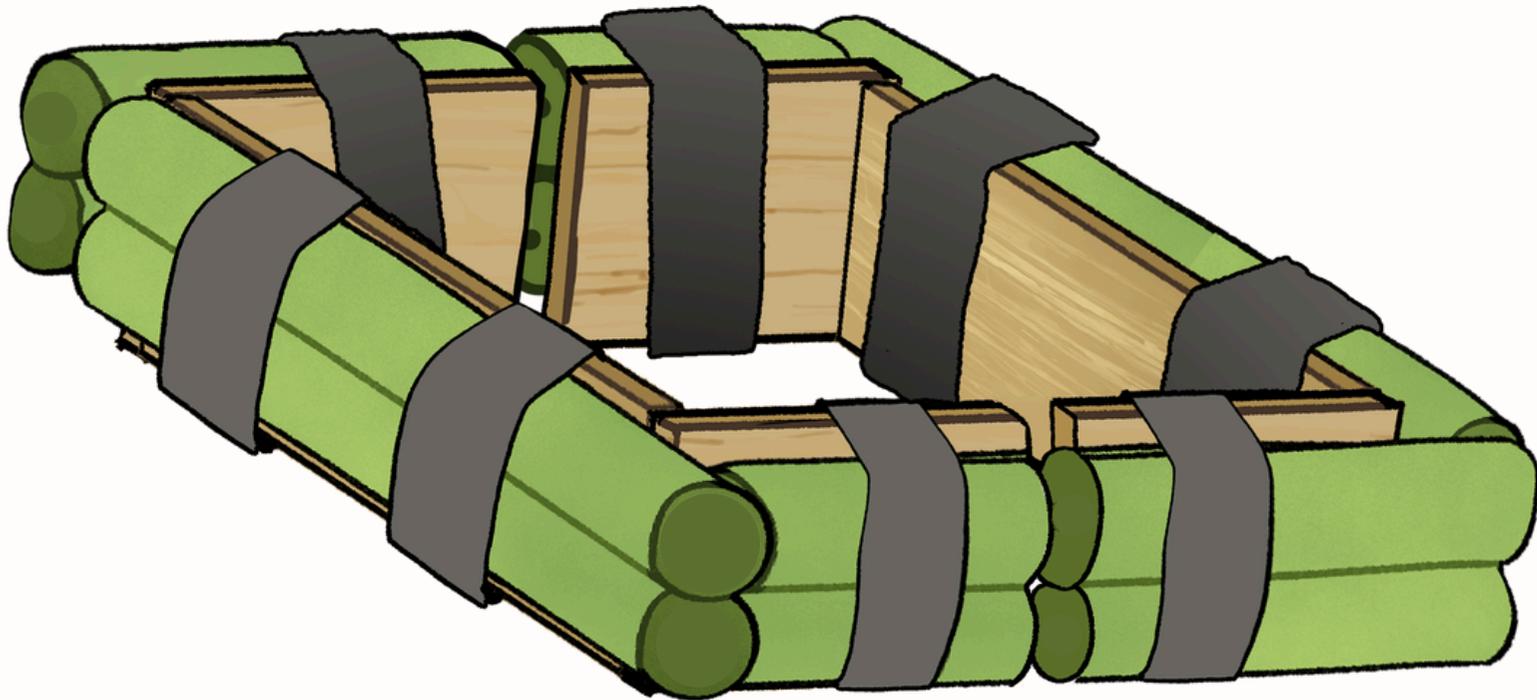
Notes : Best to use Cricut machine and HTV vinyl

Things to keep in hand :

1. Chalk for marking
2. Good scissors
3. Duct tape or gaffers tape
4. Ruler or measuring tape
5. Handy dandy wood construction tools.

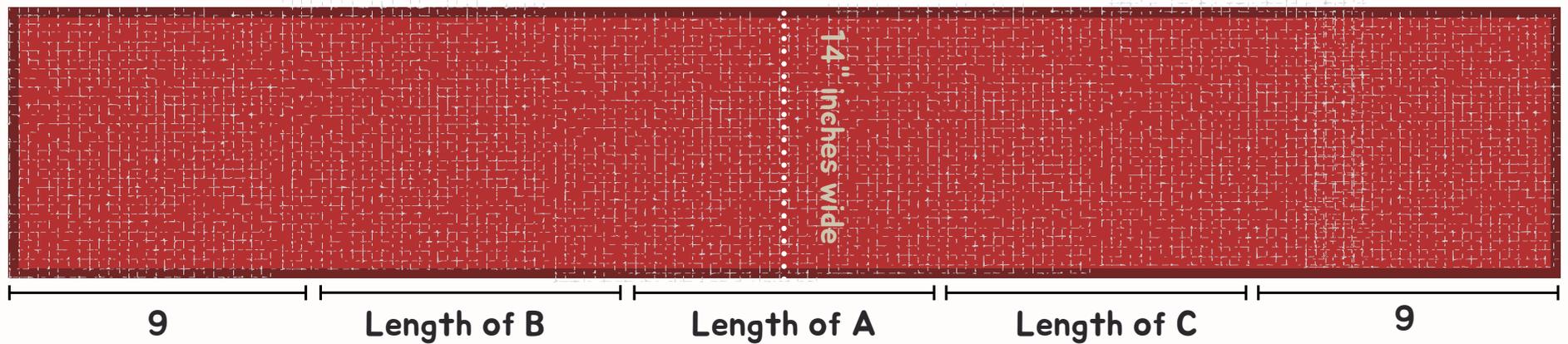


Setting up U shaped bumper



← Corners should look like this.

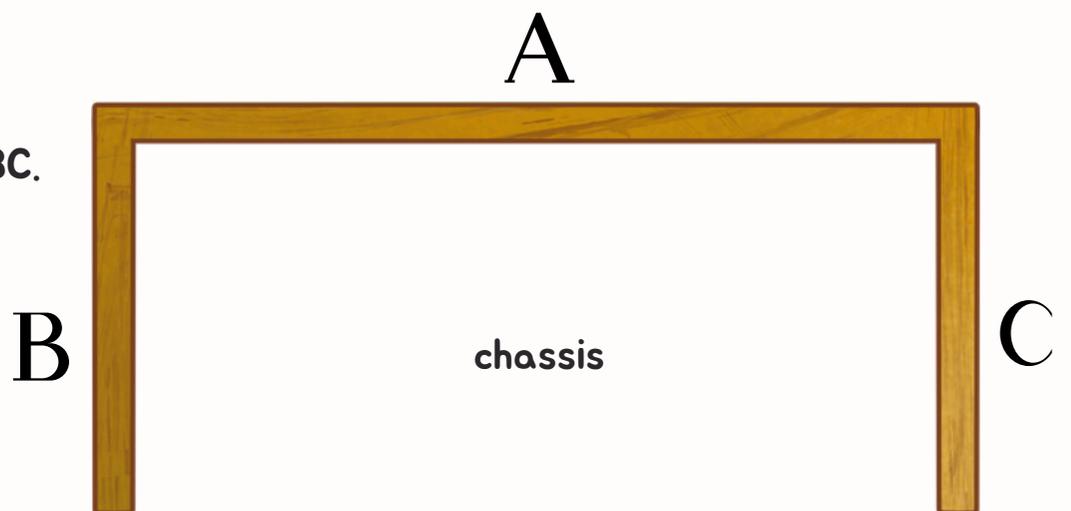
Measuring the fabric



Add 18 inches for the fabric along with ABC.

$A+B+C+18$ for fabric length.

With the same measurement
Red fabric X2
Blue fabric X2



Numbers on fabric



Blue fabric : the last 2 digit of your number's **BOTTOM** will touch the 3.5" line from the **BOTTOM** the blue fabric, and the left of your numbers will touch the 6.5 inch line from the left of your fabric.



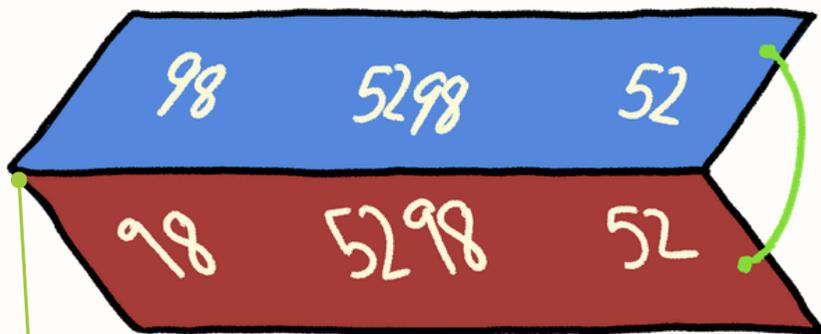
Red fabric : the last 2 digit of your number's **TOP** will touch the 3.5" line from the **TOP** of the red fabric, and the left of your numbers will touch the 6.5 inch line from the left of your fabric.

Note: Use chalk or pencil to mark the 3.5 horizontal and 6.5 vertical line

sewing

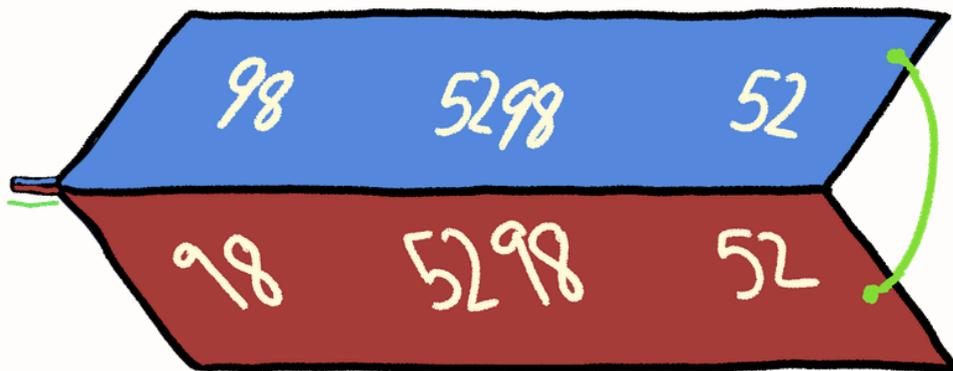
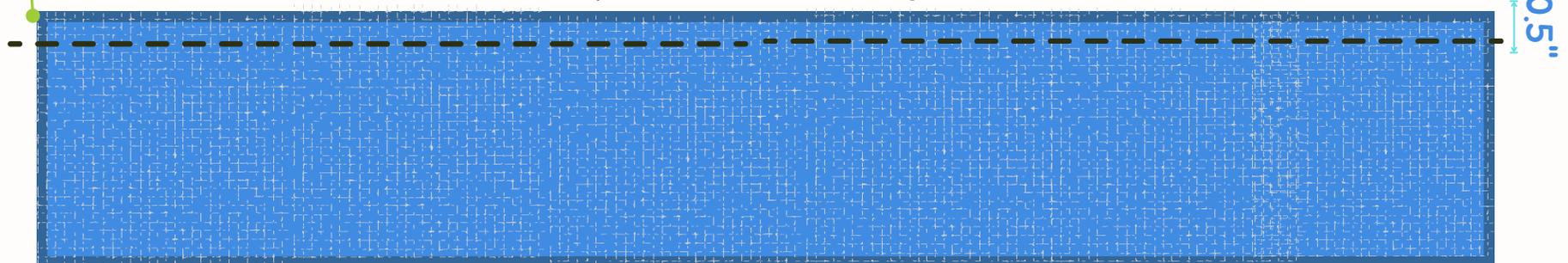


Place the fabrics on top of each other where the numbers will be facing each other.



like this, where bottom of blue fabric touch the top of red fabric.

Sew all the way in the 0.5 line using the black thread



open and flip, Iron the seam for best results.

Velcro and invisible thread



98

5298

52



Loop
Hook

98

5298

52

Secure the two Velcro strips with clips. (Binder clips work great!)
Slightly loosen the tension of the thread. At the same time, sew both
Velcro strips to the fabric. Go down the length of the Velcro on both edges,
and use a zigzag stitch down the middle of the Velcro to make sure it is secure.
Hook on red fabric 2" above numbers. Loop on the Blue fabric 2" below numbers

98

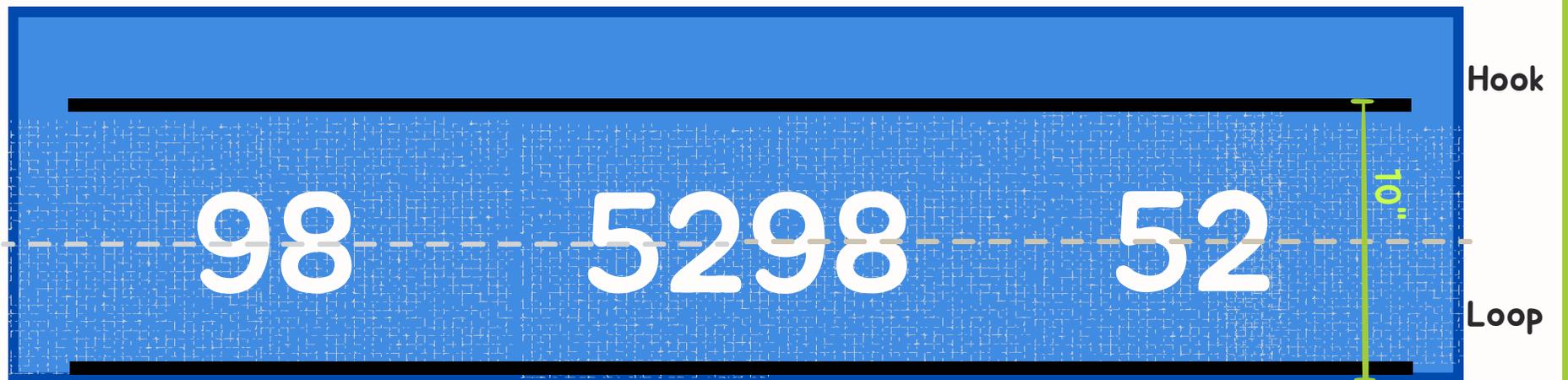
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52

Seam

Sew both fabrics together 5" from the seam, straight down the middle
of the numbers with invisible thread, creating a flap.

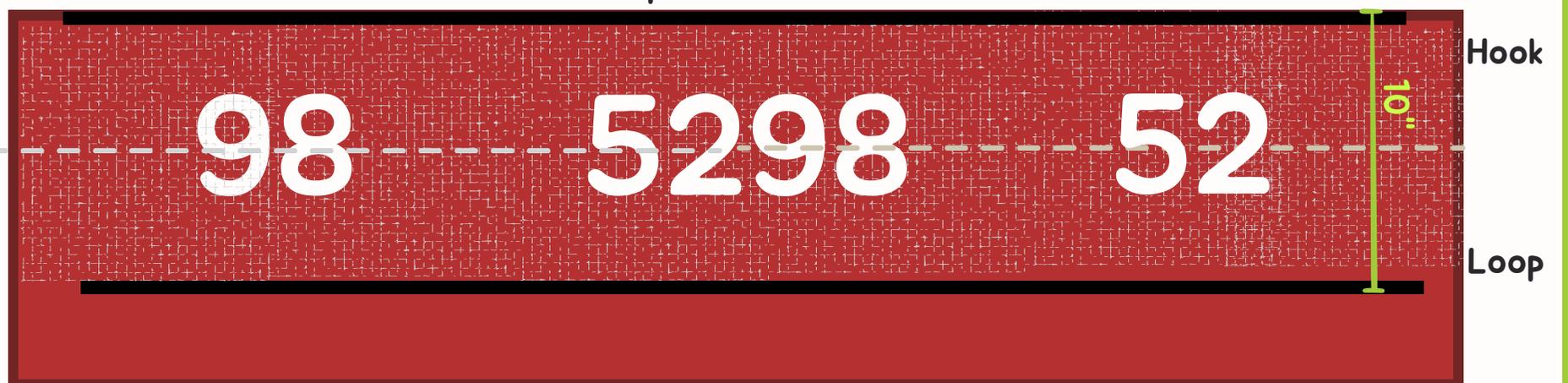
Velcro pt2



seam ↗
↘

sew hook Velcro on the top flap

Flip to the red side

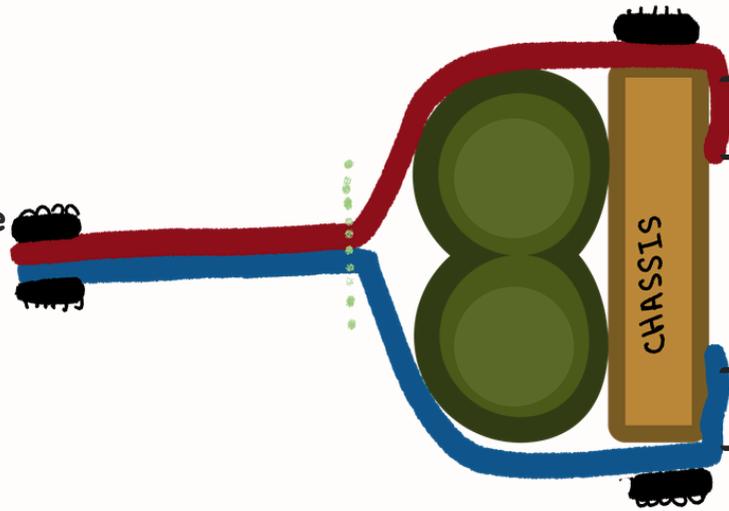


sew hook Velcro on the bottom flap

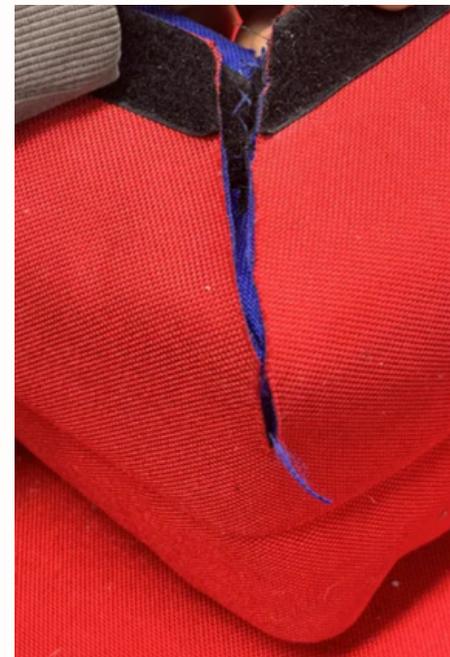
Corners



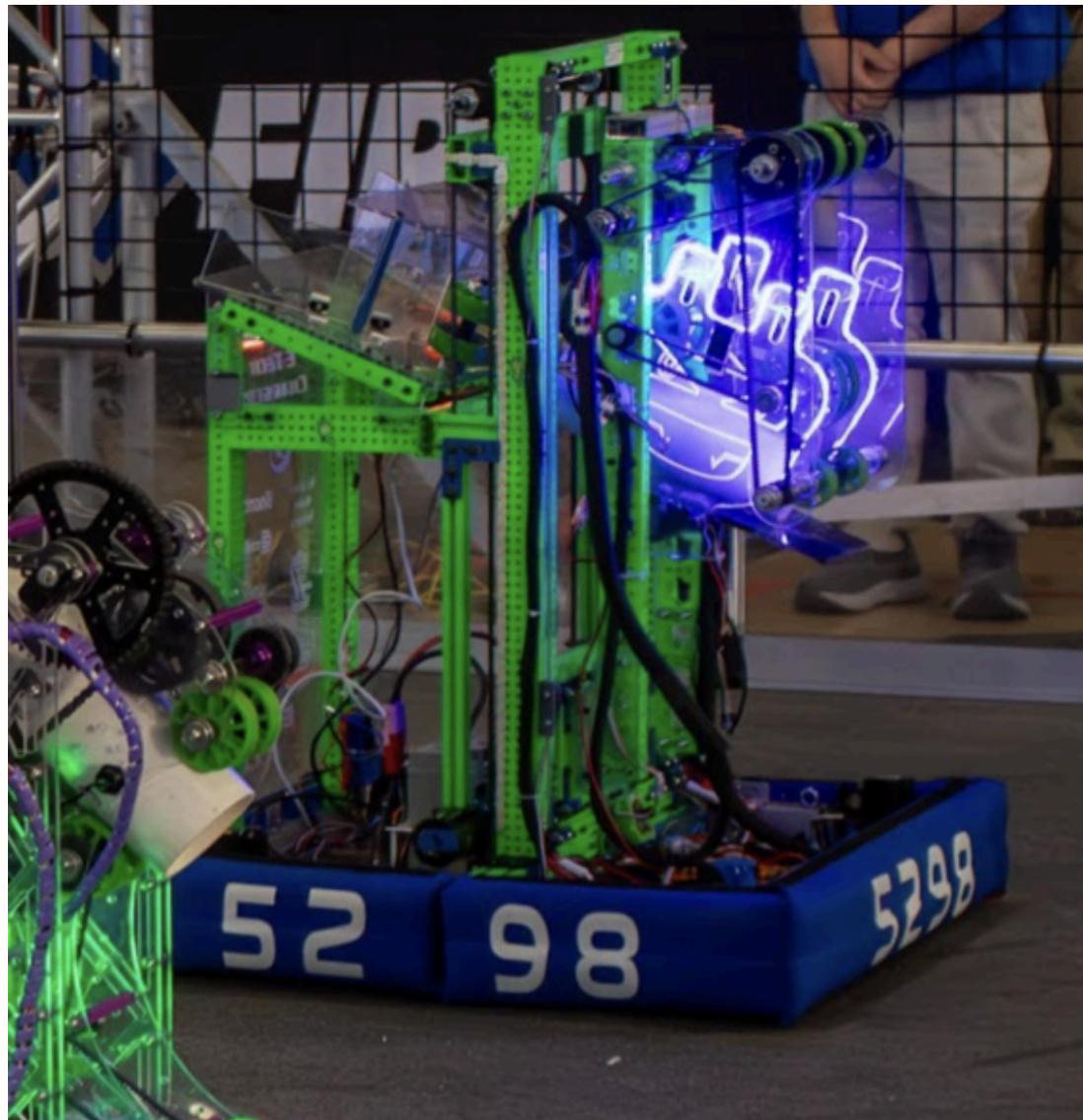
- Make sure center of your numbers are on the center of the chassis.
- Blue on bottom Red on top.
- Staple the fabric on the back of the wood, Trim away excess.



Cut extra fabric away from the corners so that the fabric doesn't overlap inside, and are adjacent to the chassis.



DONE!



The Velcro on the flap should meet the Velcro you sewed on Velcro pt2, so that you can easily flip between red and blue. Congratulations on your reversible bumpers!