Material Checklist

All the hardware and components you'll need to build your game.

Hardware

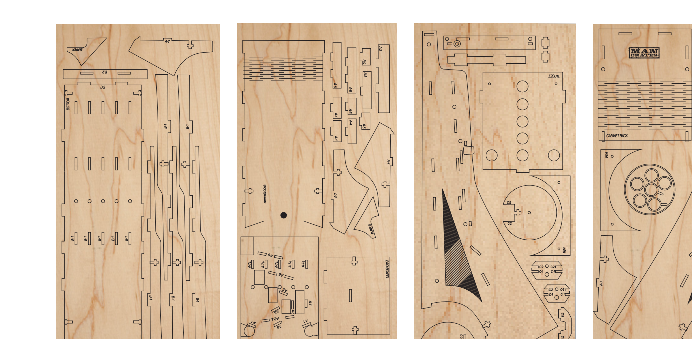
Item	Quantity
14 mm Screw	x 28
20 mm Screw	x 3
Machine Nut	x 30
Ball Knob	x 1
3/8" Ball Bearing	x 10
Nylon Locking Nut	x 1
10 mm Spring	x 1
Nylon Washer	x 1
15 mm Spring	x 1
Binding Post	x 1
50 mm Spring	x 1
70 mm Shoulder Screw	x 1

Tools

x 1
Philips Screwdriver

x 1
220 grit Sandpaper

Wood



SB-201 SB-202 SB-203 SB-204

Component Information:

The Hardware:
We've included an array of screws, nuts, washers, and every other doohickey you'll need to make your own skee-ball game "spring" to life. You'll also be making a pinball-style ball shooter and a spring-loaded ball add.

The Wood:
Your game board is cut from 3-ply, birch veneer plywood. It's been laser-cut to extreme precision, so each piece fits together snugly. The parts are also laser-marked to make assembly as simple as possible.

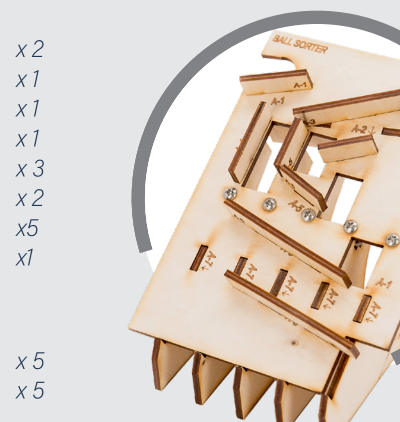
You Will Also Need: Wood glue or a glue stick. While most components can be assembled with just the hardware and a little friction, some pieces will require a more permanent bond.

Step 1: Ball Sorter

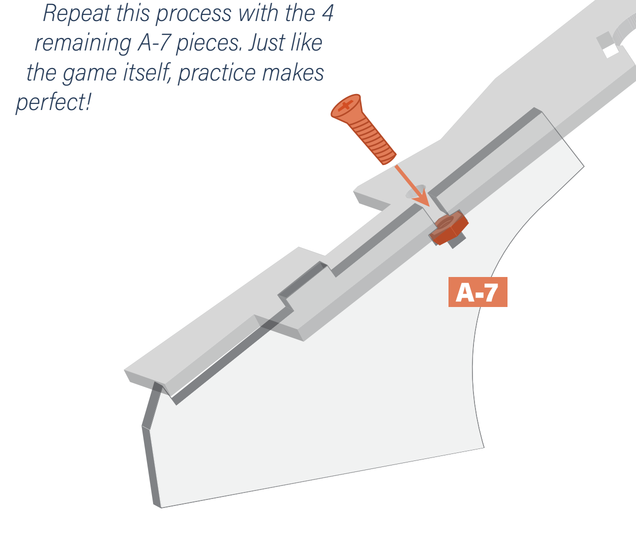
This will sort each shot into the correct score value in the ball return.

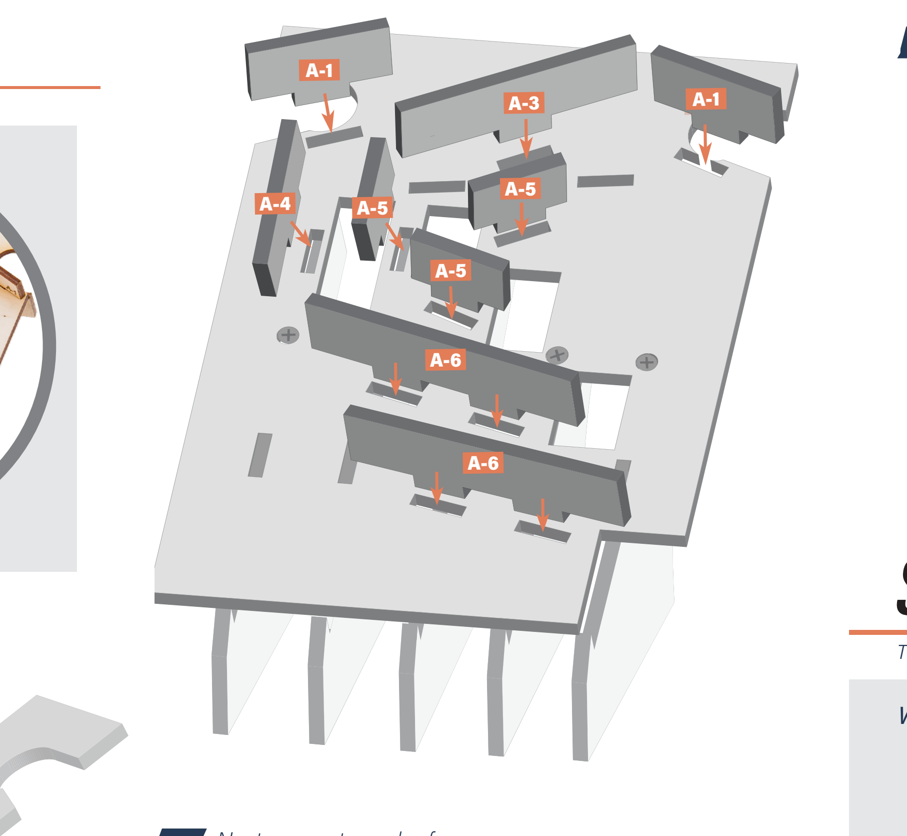
Wood List:
A-1 x 2
A-2 x 1
A-3 x 1
A-4 x 1
A-5 x 3
A-6 x 2
A-7 x5
Ball Sorter x1

Hardware List:
14 mm Screw x 5
Machine Nut x 5



1 Insert **A-7** into the bottom of the **ball sorter** as shown. Then, insert a nut into the cut pocket and use a screw to anchor the pieces together. Repeat this process with the 4 remaining A-7 pieces. Just like the game itself, practice makes perfect!

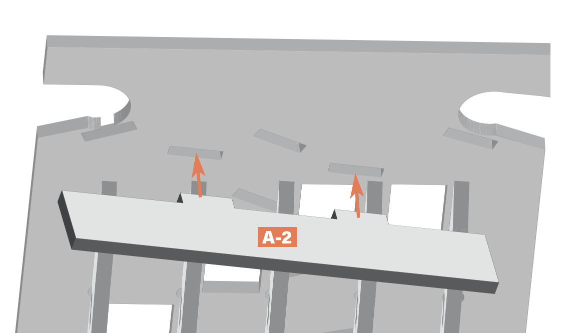




2 Next, separate each of the **A-1, A-3, A-4, A-5** and **A-6** pieces. Use the numbers engraved onto the ball sorter or the handy diagram above to locate and install each piece.

Pro-Tip: Each piece should already fit snugly, but if you don't have to take your game apart anytime soon, consider solidifying your build with a little glue. Start with **A-2** on the next page. That one can be tricky.

3 Turn the **ball sorter** over so the side with the A-7 legs faces toward you. Insert **A-2** into the underside of the ball sorter, then set this entire assembly aside for later use.



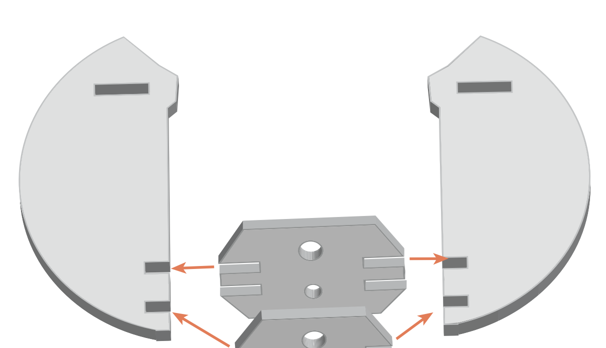
Step 2: Shooter

The spring-loaded plunger will aim and launch the balls.

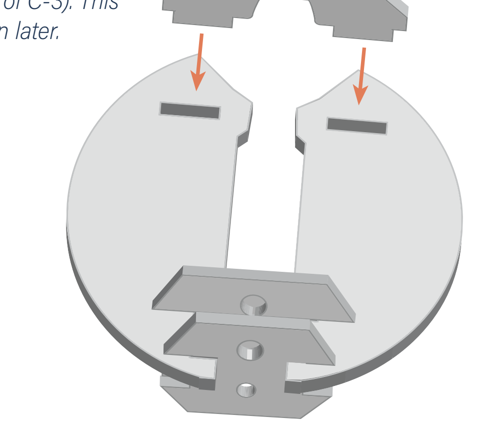
Wood List:
C-1 x 1
C-2 x 1
C-3 x 1
C-4 x 1
C-5 x 2
Shooter Ramp x 1

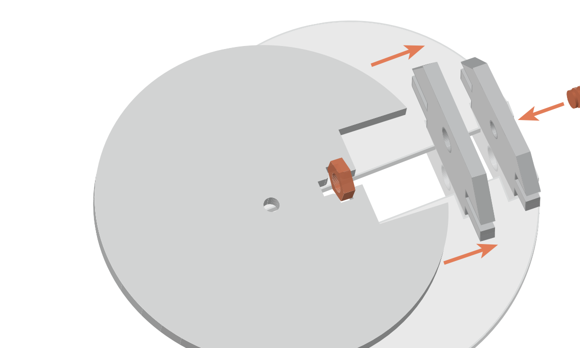
Hardware List:
14 mm Screw x 1
20 mm Screw x 1
Machine Nut x 1
Nylon Washer x 1
Locking Nut x 1
Shoulder Screw x 1
50 mm Spring x 1
10 mm Spring x 1
Ball Knob x 1

1 Slot **C-5** together with **C-1** and **C-2** as shown. Use the slots on C-1 and C-2 that are in line with the larger holes on top.

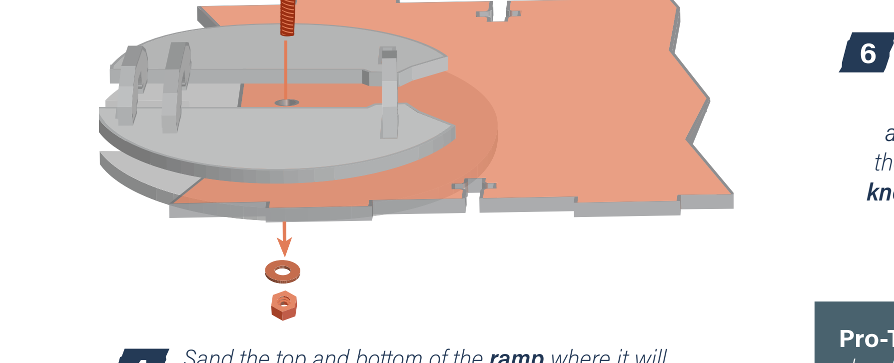


2 Insert **C-3** into the tops of both **C-5** pieces. This should be a snug fit. If it's even a little loose, use a little glue to make sure that it is fixed in place. Use the sandpaper to smooth the underside of both C-5 pieces (opposite of C-3). This will reduce friction later.

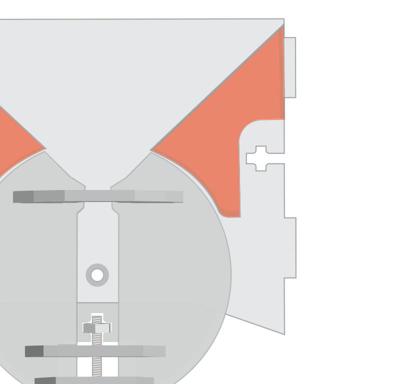




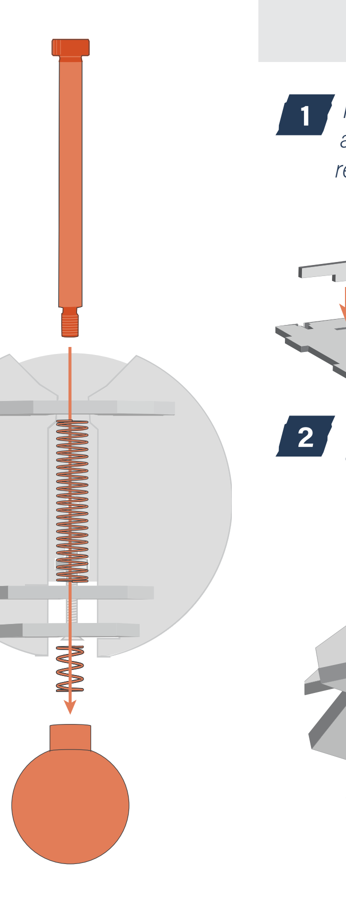
3 Sand the top side of **C-4** (the side that contacts the ramp) until smooth, then slide it into the open slots in the underside of **C-1** and **C-2**. Using a **20 mm screw** and a machine nut, tighten C-4 into place.



4 Sand the top and bottom of the **ramp** where it will contact the shooter assembly, then use a **14 mm screw**, the **nylon washer**, and the **locking nut** to mount the shooter assembly onto the ramp. The top of the ramp side of the ramp has a countersunk hole. You may need pliers to tighten the locking nut. It should hold everything in place while still allowing the assembly to rotate freely.



5 Once the assembly is in place. Locate both **bumper** pieces and glue them onto the ramp as shown. These will funnel the ball back down to the shooter.



6 Finally, insert the **shoulder screw** through the **50mm spring**, upper holes in **C-1** and **C-2**, and **10mm spring**, then cap the end with the **ball knob**.

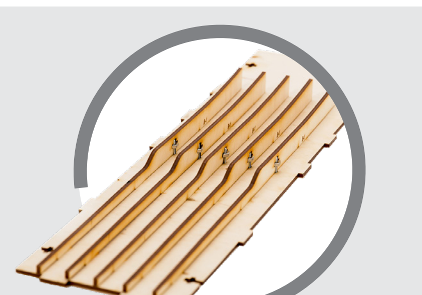
Pro-Tip: Make sure the shooter freely rotates left and right when pulling and shooting. If it's catching as you pull or release, try applying a little grease to where the shoulder screw passes through the wood.

Step 3: Ball Return

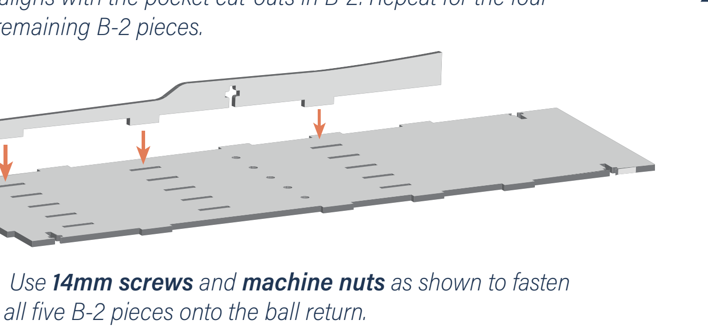
The ramp will return your shots and track your score. This scoring system works better than a chart, because our scores kept going off the charts.

Wood List:
Bottom x 1
B-1 x 5

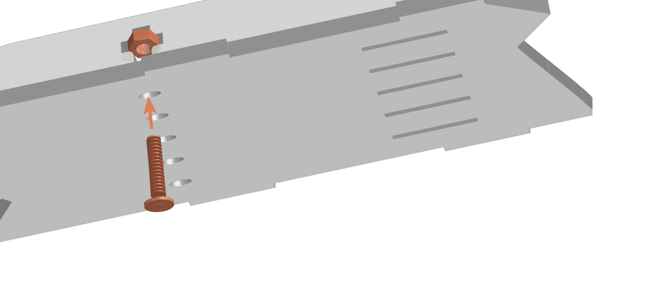
Hardware List:
14 mm Screw x 5
Machine Nut x 5



1 Insert **B-2** into the top of the **ball return** so the round hole aligns with the pocket cut-outs in B-2. Repeat for the four remaining B-2 pieces.



2 Use **14mm screws** and **machine nuts** as shown to fasten all five B-2 pieces onto the ball return.

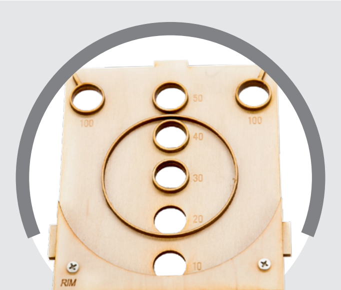


Step 4: Target

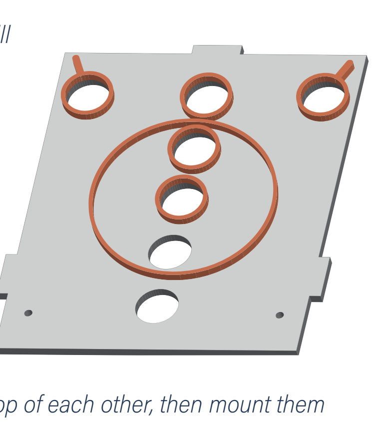
The target has rims for certain holes and different point values for each hole. Strategy tip: It's a good idea to roll the ball into the holes worth more points.

Wood List:
Target x 1
Rings x 6
Rims x 2

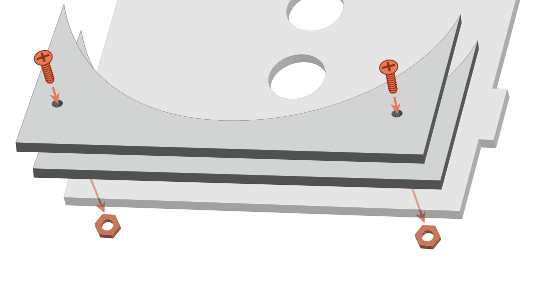
Hardware List:
14 mm Screw x 2
Machine Nut x 2



1 Locate the **rings** that will be used on the **target**. The two rings with tabs should be used on the top corner holes to prevent the balls from getting stuck. Using glue, adhere these into place on the target as shown.



2 Stack both **rim** pieces on top of each other, then mount them onto the target using two **14mm screws** and **machine nuts**.



DESKTOP SKEE-BALL

LASER-CUT WOOD SKEE-BALL KIT

Step 5: Ball Injector

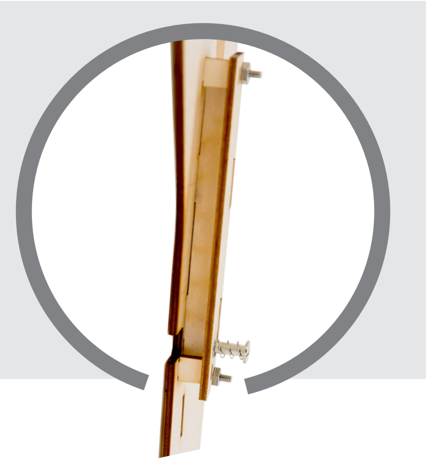
This spring loaded injector will hold all ten balls and release them individually.

Wood List:

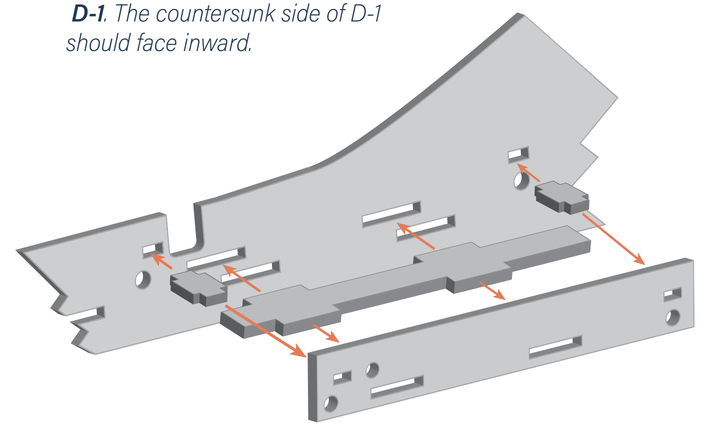
D-1 x 1
D-2 x 1
D-3 x 2
Cabinet Side A x 1

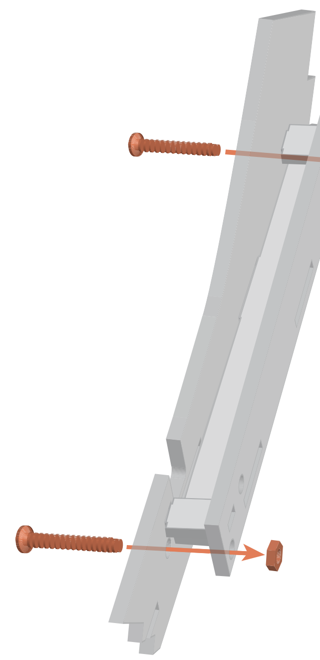
Hardware List:

20 mm Screw x 2
Machine Nut x 2
Binding Post x 1
15 mm Spring x 1



1 Following the diagram, insert **D-2** and both **D-3** pieces onto the right side of **cabinet side A**, then mount **D-1**. The countersunk side of D-1 should face inward.

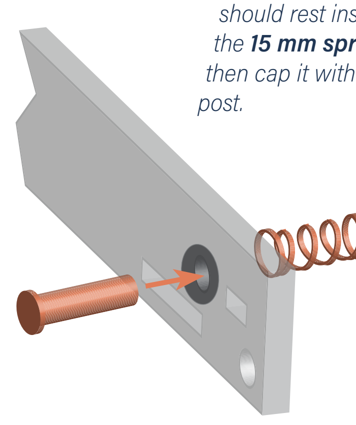




2 Secure the injector in place with the final two **20mm screws** and **machine nuts**. Finger tighten only.

Pro-Tip: *Some areas may have burn residue from the laser, especially countersunk areas. Some sandpaper will give it a nice clean finish.*

3 Insert the **binding post** through the countersunk hole in **D-1**. The head of the post should rest inside the countersunk area. Slide the **15 mm spring** over the binding post, and then cap it with the other end of the binding post.



Step 6: Cabinet Assembly

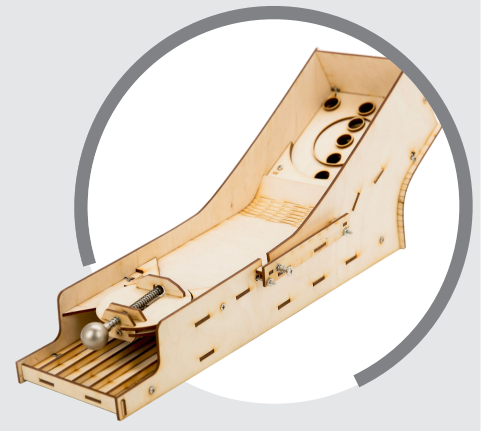
Finish putting all the pieces together, pretend it "needs to dry" so you can practice in secret, then dominate the competition.

Wood List:

Shooter Ramp x 1
Cabinet Side A x 1
Cabinet Side B x 1
Ball Return x 1
Ball Sorter x 1
Cabinet Back x 1
Target x 1
Backboard x 1
B-3 x1

Hardware List:

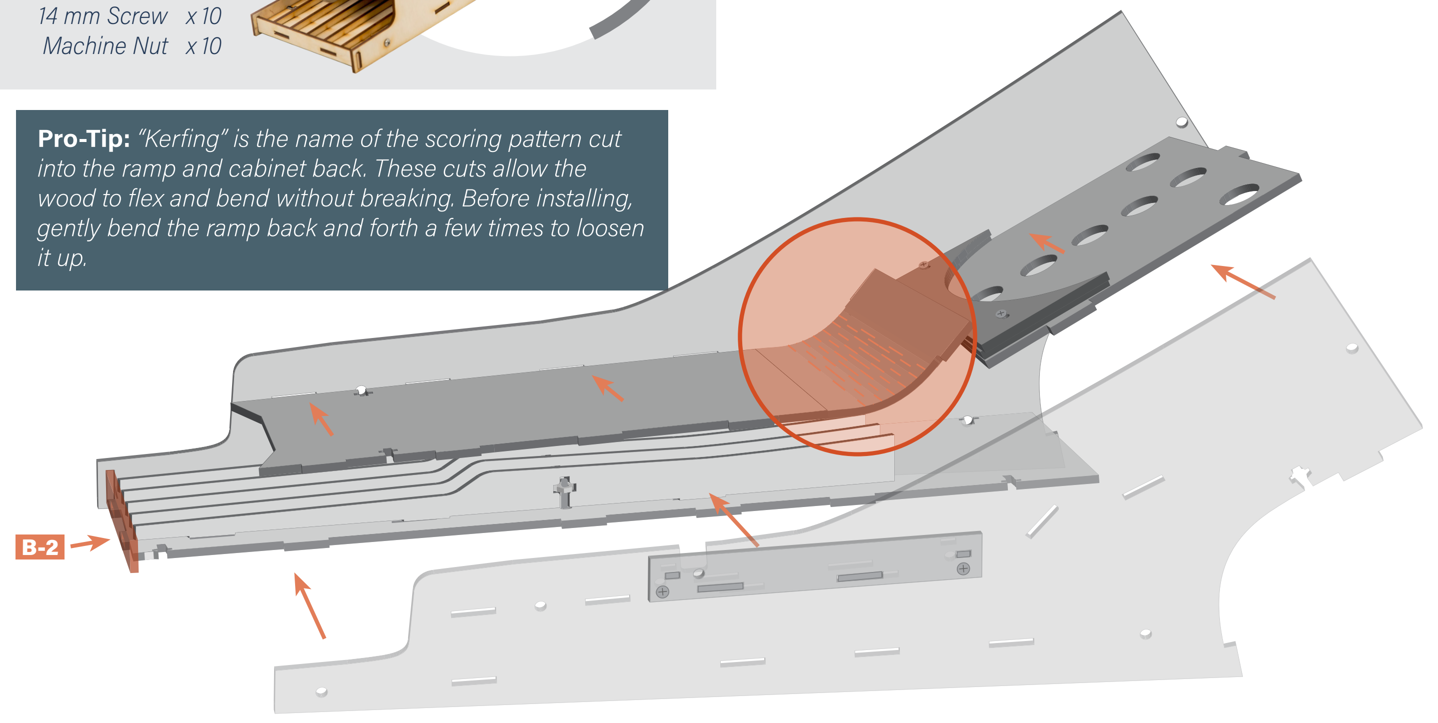
14 mm Screw x 10
Machine Nut x 10



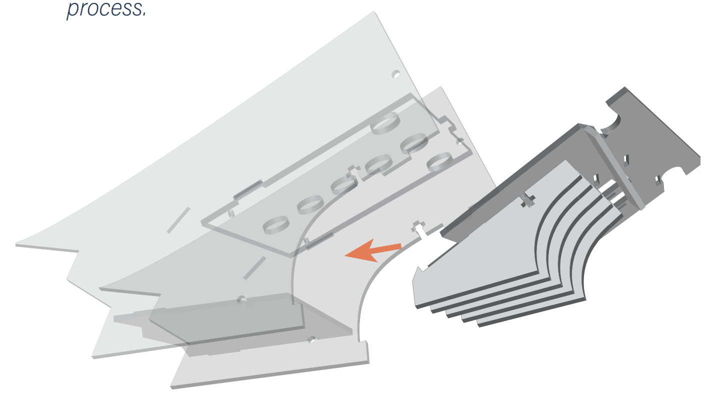
Pro-Tip: *"Kerfing" is the name of the scoring pattern cut into the ramp and cabinet back. These cuts allow the wood to flex and bend without breaking. Before installing, gently bend the ramp back and forth a few times to loosen it up.*

1 Set **cabinet side B** flat and slot the **target** and **ball return** assemblies into place. Install **B-2** onto the edge of the **ball return** through the frontmost slot in side B. To install the **ramp**, start from the shooter end and line up the slots. Gently bend the ramp along the kerfing* until all tabs are inserted.

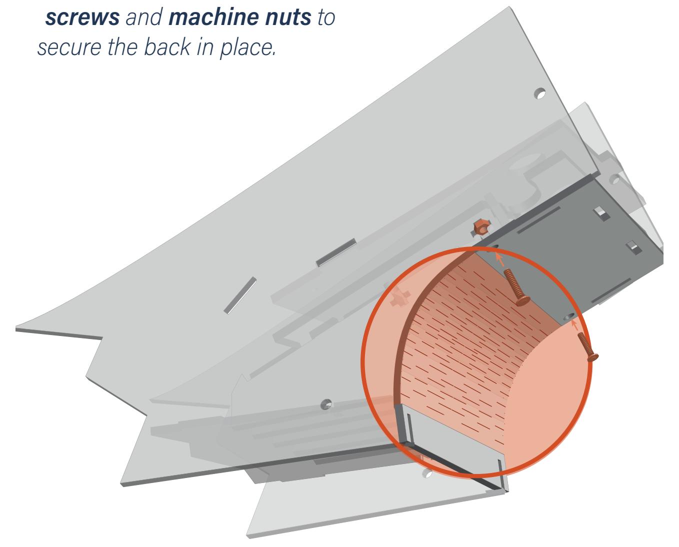
2 Install **cabinet side A** onto the open end to complete the main structure. The **ramp** can be tricky, so start there and make sure all tabs fit snuggly. You can apply a little pressure as you start each tab to ensure they lock into place.

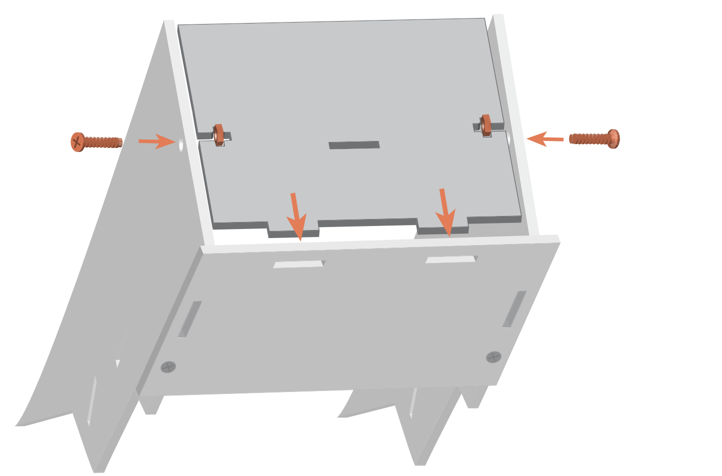


3 Install the **ball sorter** into the back of the cabinet assembly. It should sit cleanly below the **target** and on top of the **ball return**. Double check to make sure **A-2** didn't fall off the bottom in the process.

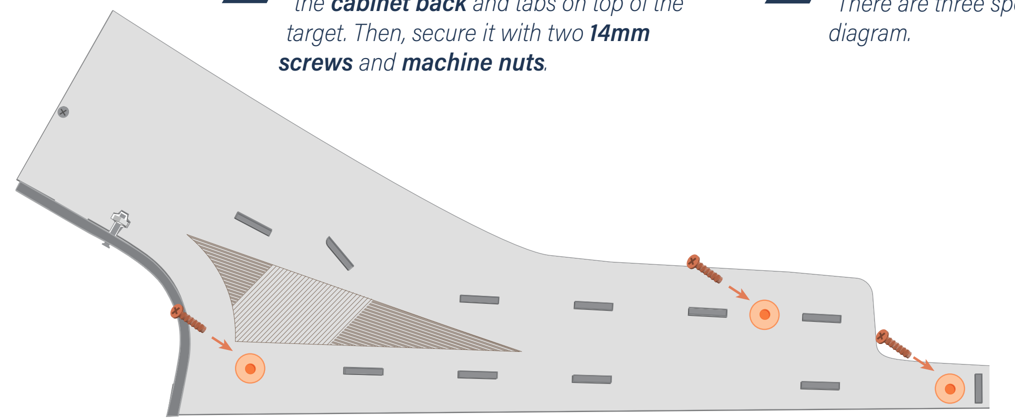


4 To close off the cabinet, set the bottom of the **cabinet back** onto the slots on the **cabinet sides**, then carefully bend the remaining tabs into place. Then, use two **14 mm screws** and **machine nuts** to secure the back in place.



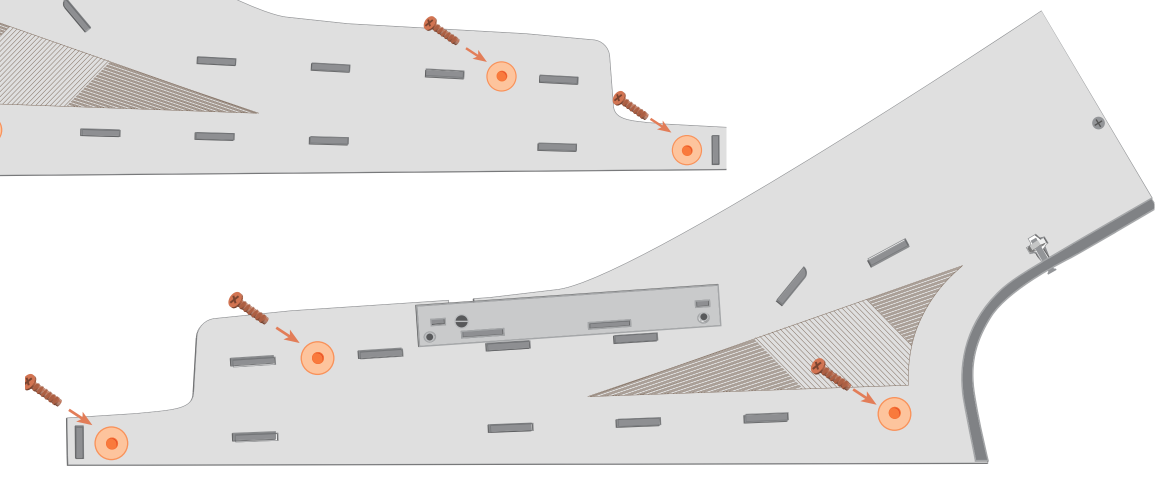


5 Insert the **backboard** into the slots on the **cabinet back** and tabs on top of the target. Then, secure it with two **14mm screws** and **machine nuts**.



Pro-Tip: *Once you're done with the assembly, you could start playing. OR you could take some time to decorate your creation.*
Use any paints or wood finish appropriate for plywood, but avoid applying near the moving parts where it might cause pieces to stick in place.

6 Finally, install the six remaining **14mm screws** and **nuts**. There are three spots on each side as depicted on the diagram.



Game Rules

Here's our starter rules for play, but feel free to make your own variations. House rules rule.

Each player takes turns shooting 10 balls. Scores are as listed on the ball return and the target board.

One match is composed of three rounds of shooting, and each player's score is the running total of their three rounds. The player with the highest score at the end of the match wins. But in a way, the player with the lowest score wins, too. That's how fun works, right?

Ties are settled in a three ball sudden-death round where each player shoots 3 balls and the highest total score wins.

Optional Rules:

- Balls shot out of play (i.e. fly out of the cabinet) count as a 0.
- Balls that don't make it up the ramp and roll back down can be re-shot.
- Any ball that gets stuck but does not leave the cabinet can be re-shot.

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