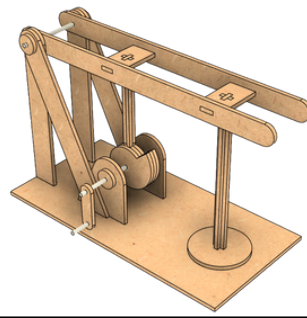
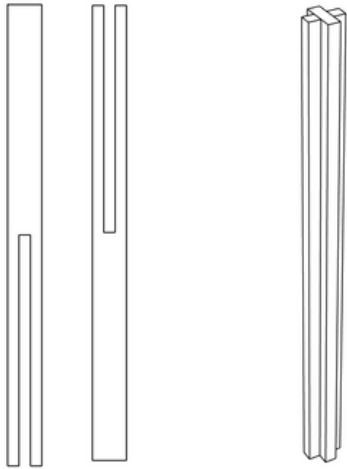


Graincrusher



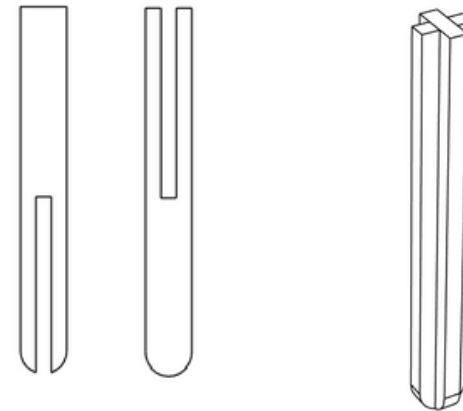
Follow each step in sequence and glue the pieces together as indicated in the images.

1



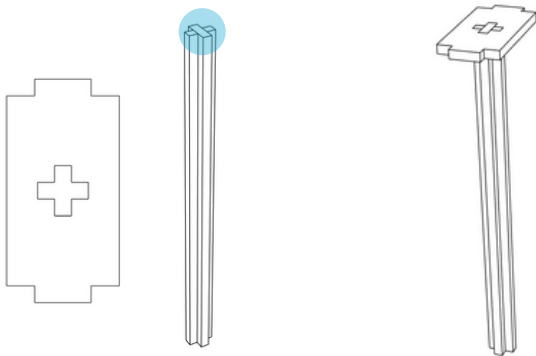
Start with the 2 long slotted beams. Put some glue down the slot of one of the beams, and slot the 2 pieces into each other. Set aside to dry.

2



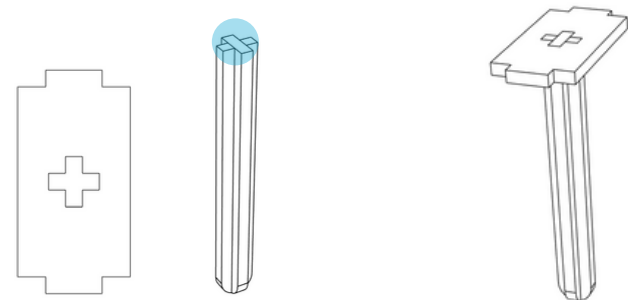
Take the 2 shorter slotted beams with the rounded ends. Put some glue down the slot of one of the beams, and slot the 2 pieces into each other. Set aside to dry.

3

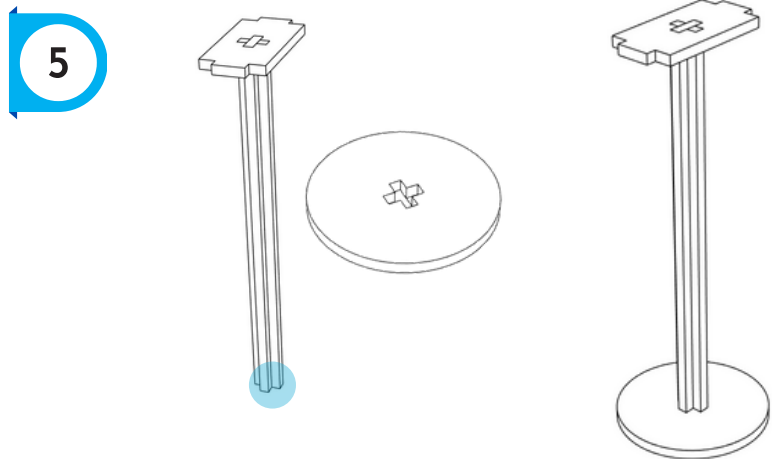


Take the piece from Step 1, and put some glue around the bottom of the beam. Slot that end into the cross-shaped hole of the piece in the image above. Make sure that it does not stick out the other side. Set aside to dry.

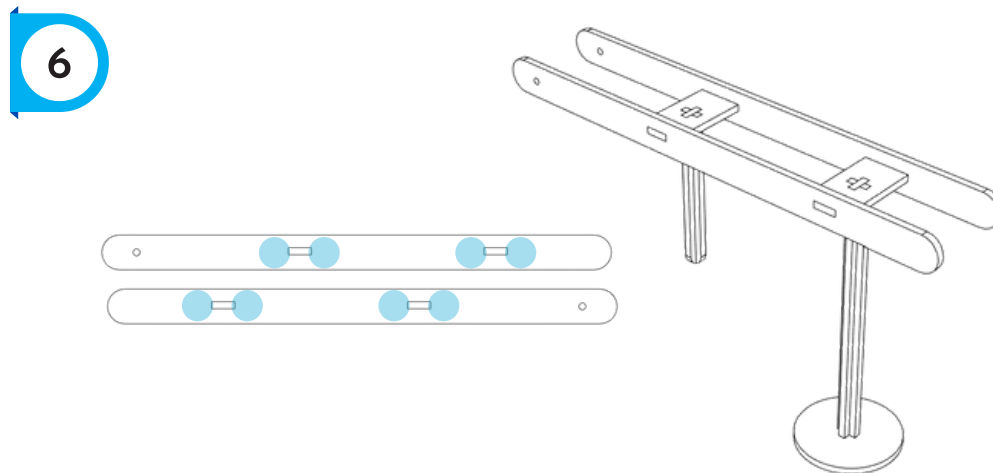
4



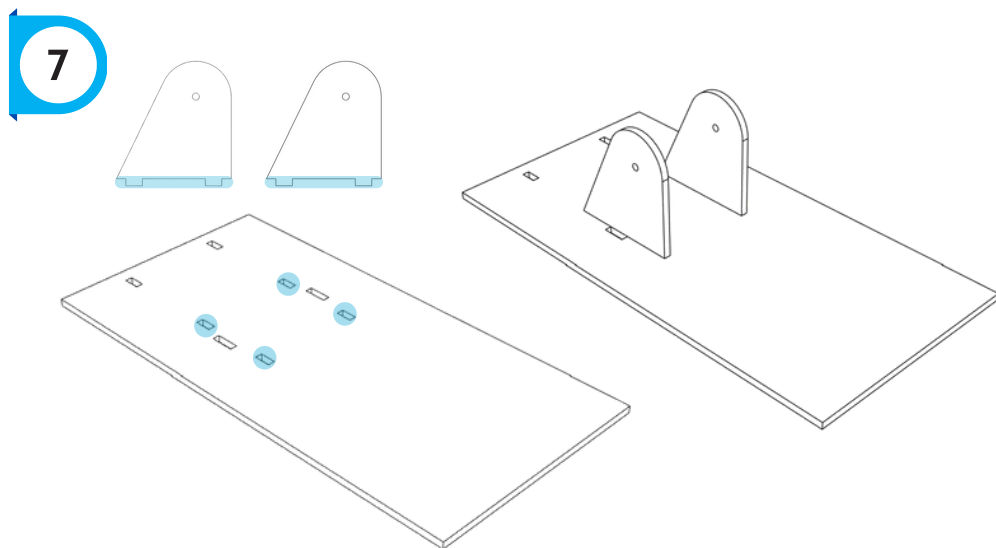
Take the piece from Step 2, and put some glue around the edge of the flat end of the beam. Slot that end into the cross-shaped hole of the piece in the image above. Make sure it does not stick out the other side. Set aside to dry.



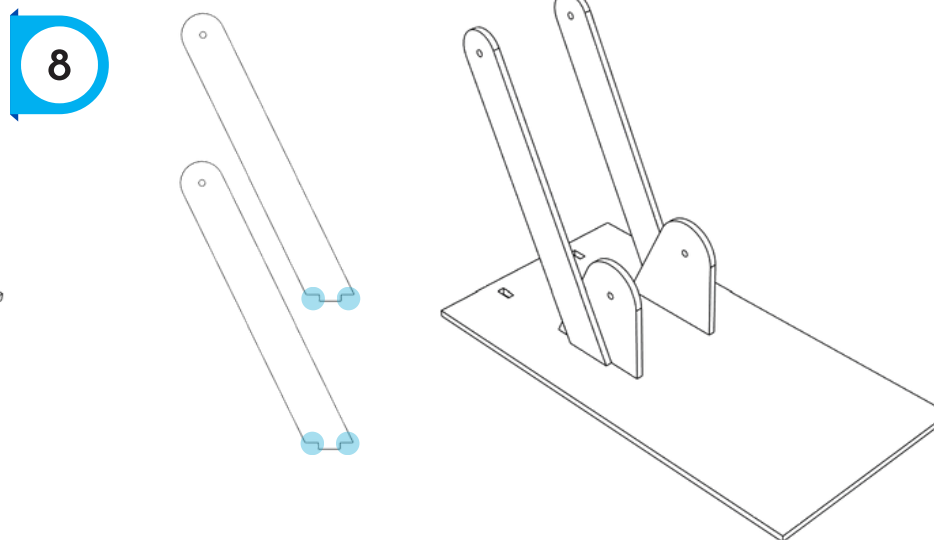
Take the piece from Step 3, and put some glue around the bottom of the beam. Slot that end into the cross-shaped hole of the circular piece in the image above. Make sure that it does not stick out the other side, and the beam is **straight**. Set aside to dry.



Take the 2 side beams in the image above. Put some glue on each side of the slots, as in the image above. Glue your 2 vertical beams into place in between the 2 horizontal beams. Make sure that the end with the hole in it, is closest to the shorter vertical beam.

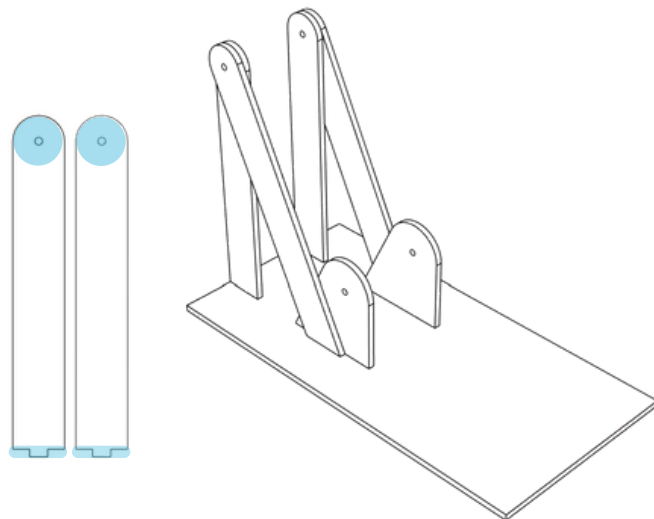


Take the 3 pieces above, and put glue along the bottom of the curved pieces, on each side of, and in between, the tabs. Slot the tabs into their respective slots on the base, and press firmly to make sure it sticks in place.



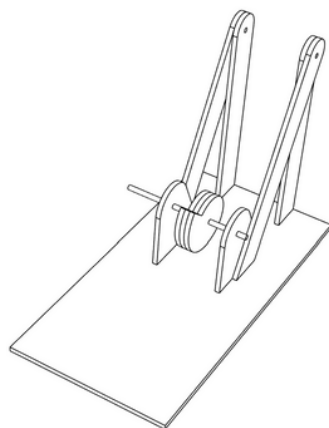
Take the 2 angled supports, put some glue along the bottom edge, on each side of the tab. Slot the tabs into their respective slots on the base, and press firmly to make sure it sticks in place. You can also add a small blob of glue between the support and the curved piece from Step 7.

9



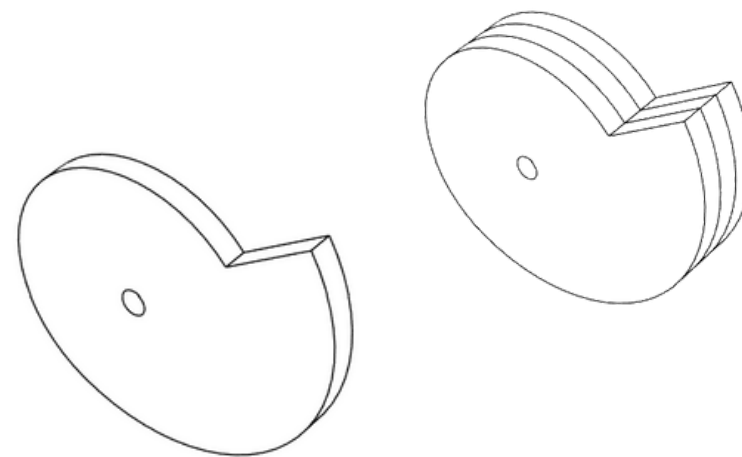
Take the two vertical supports. Put some glue on each side of the tabs at the bottom, and a small amount around the hole at the top (not too much!). Slot it into the slots in the base, aligning the holes of the upright and angled supports. Use the glue at the top of your upright support to glue it to inside of the angled support. Use a skewer to clear any excess glue out of the hole once the pieces are all stuck together. Set aside to dry.

11



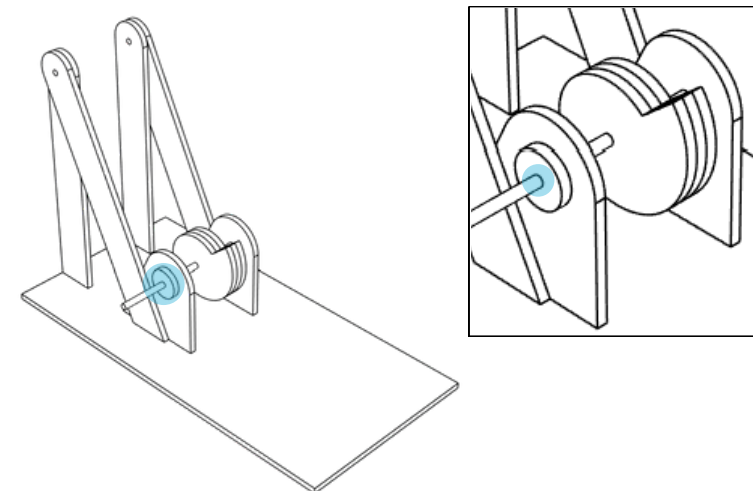
Take one of your skewers, and cut it to the length of 80mm. Thread it through the first curved piece on your base, then through your cam, and then through the second curved piece. Allow about 5mm to stick out the one side, so that the other side is much longer. **DO NOT GLUE ANYTHING HERE!**

10



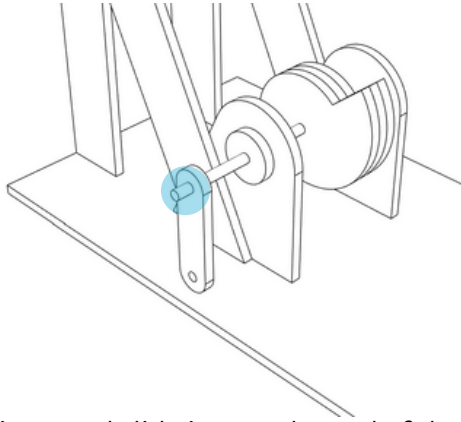
You should have 3 pieces like in the image above. These will form the **cam**. Glue the 3 pieces together, and use a skewer to clear any excess glue out of the hole once the pieces are stuck together. Set aside to dry.

12



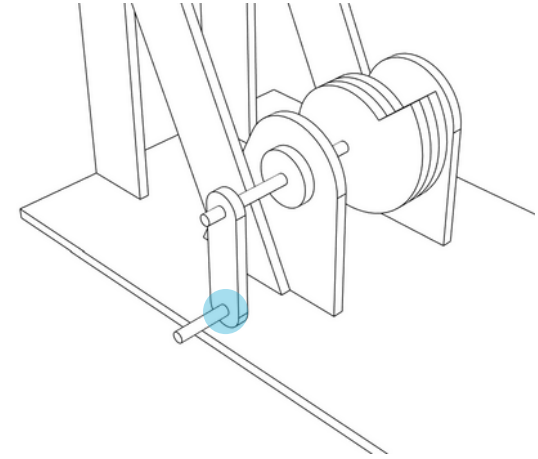
Take 2 of your small circles, and slide them onto each end of the skewer. Put some glue around the part of the skewer sticking out each circle, to glue the circle to the skewer. Ensure the circles sit flush against the curved base pieces.

13



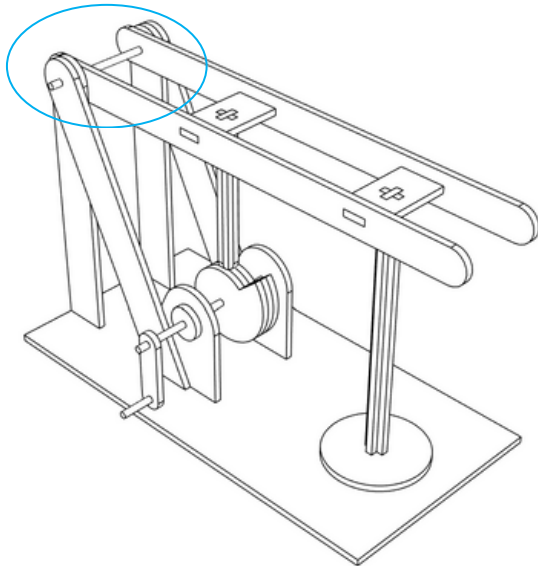
Take your handle piece, and slide it onto the end of the skewer, leaving a small piece sticking out the end. Put glue around the end of the skewer to attach it to the handle.

14



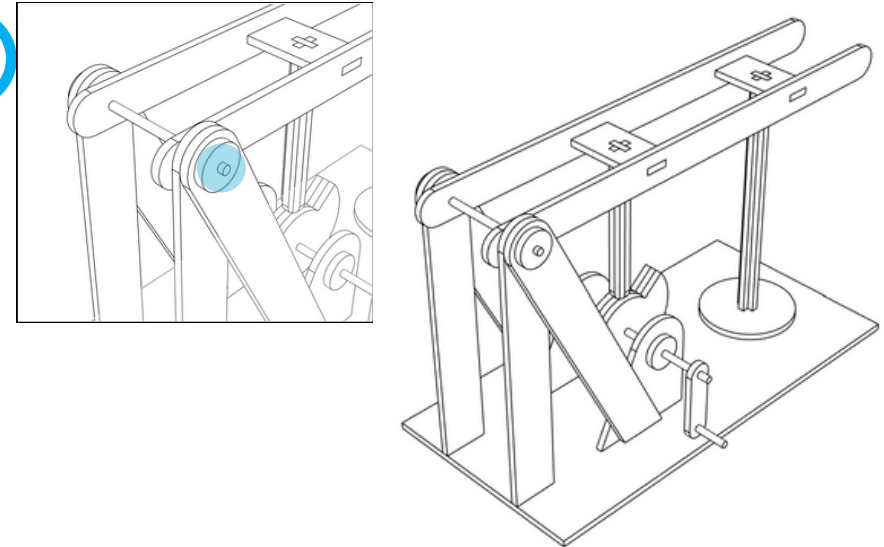
Cut a small piece of skewer about 20mm long, and slide it into the bottom hole of the handle. Put some glue around the end of the skewer to attach it to the handle. Leave to dry.

15



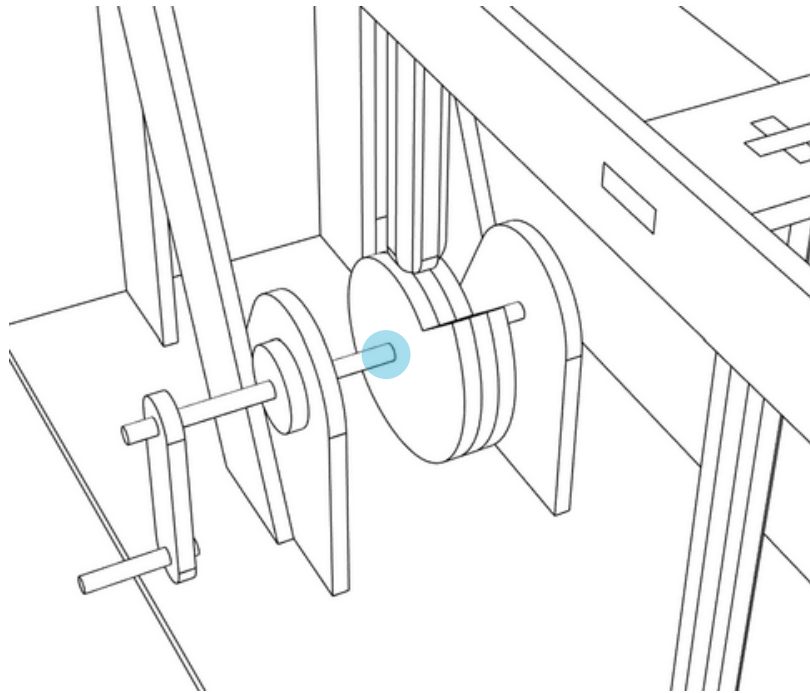
Cut another piece of skewer to a length of 65mm. You can now attach your graincrusher arm to the base, by threading the skewer through the holes of the upright supports and the end of the graincrusher beams.

16



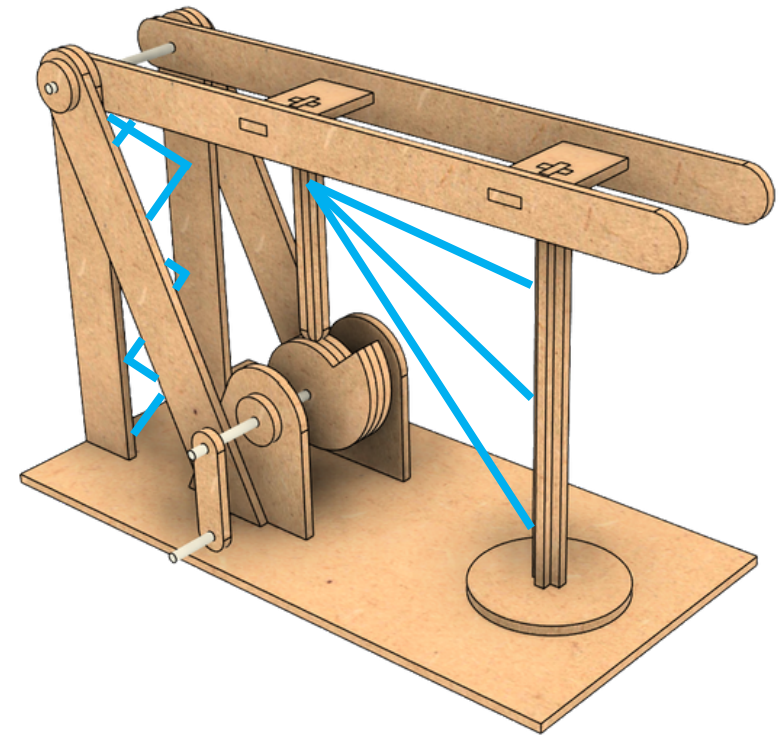
Take your remaining 2 small circles and slide them onto each end of the skewer. Put some glue around each end of the skewer to attach it to the circles, making sure the circles sit flush against the supports. Leave to dry.

17



You can now finally glue your cam into place. Making sure it is perfectly aligned underneath the cam follower, put some glue around the skewer coming out each side of the cam, to fix the cam to the skewer in the middle. **LEAVE TO DRY COMPLETELY! (preferably overnight)**

18



The main structure of your graincrusher is now complete! You will see you still have some wooden stirrers in your pack. Use them to design some **struts** for your model, maybe between the follower and the crusher arm, or between the upright supports, in order to make your structure stronger. Remember, triangles are the strongest shape!

Turn the handle attached to the **cam** in a clockwise direction, to see how the **cam turns rotary motion into the linear motion** of the grain crusher moving up and down.