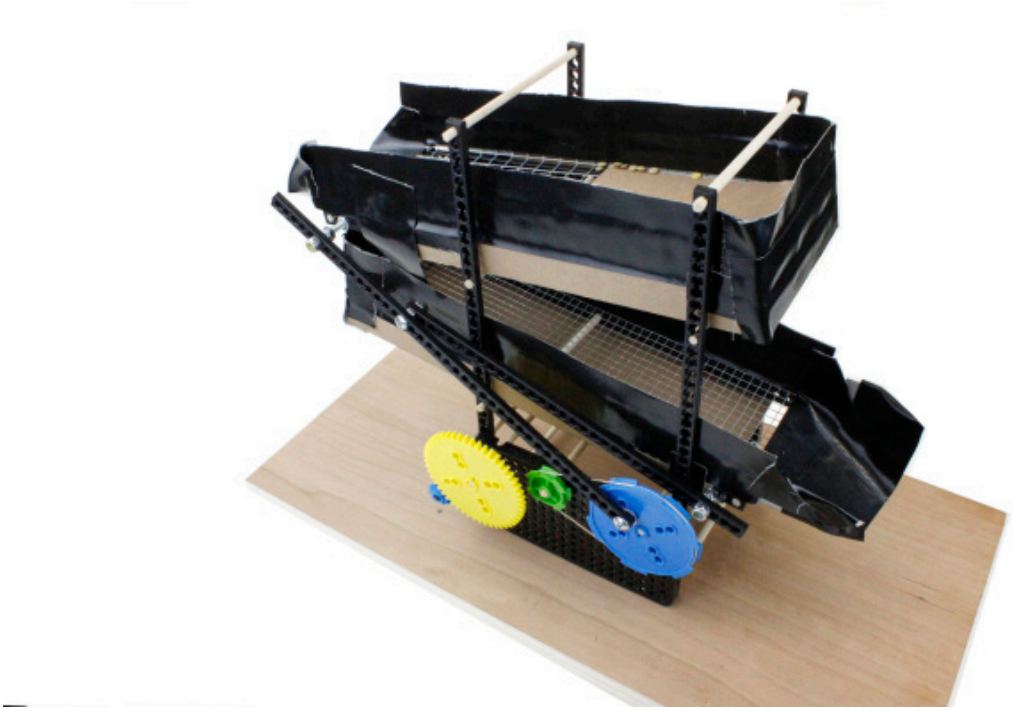
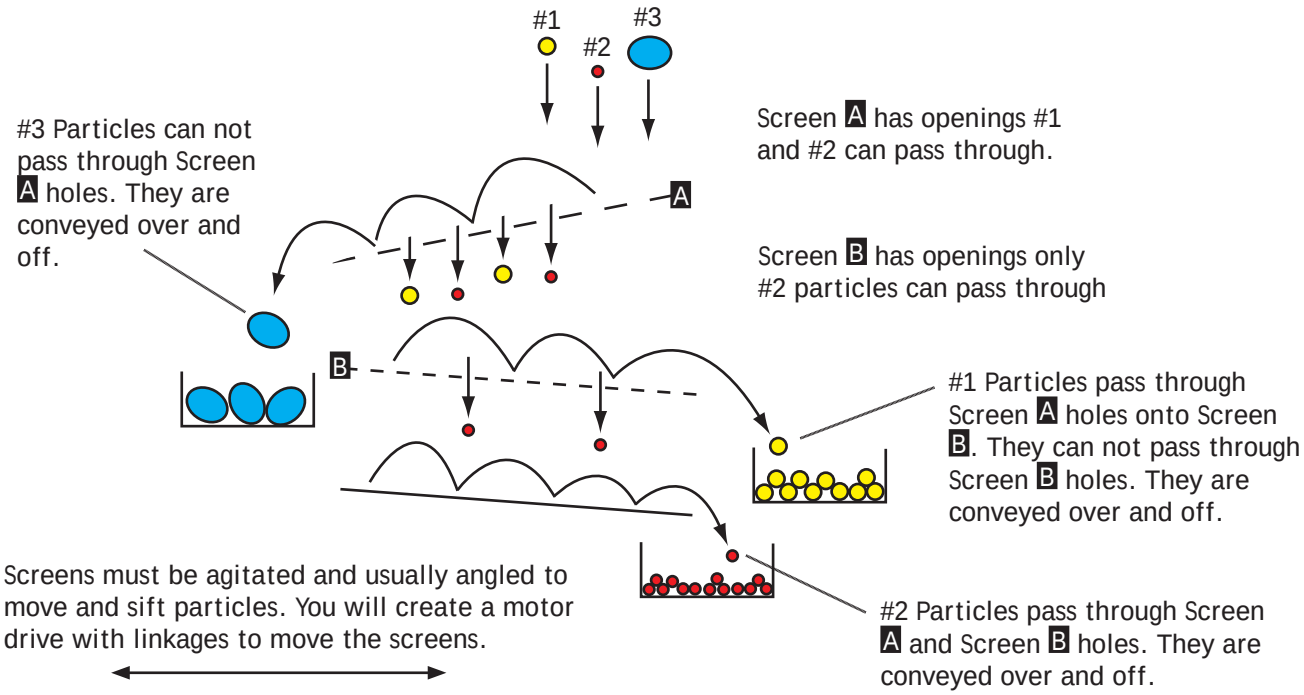


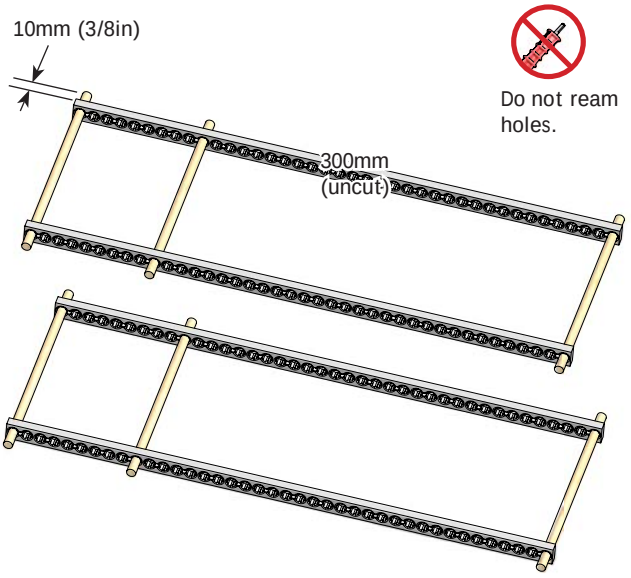
How it Works

There are many ways to create a sorting mechanism. The illustration show how the sample sorter works.

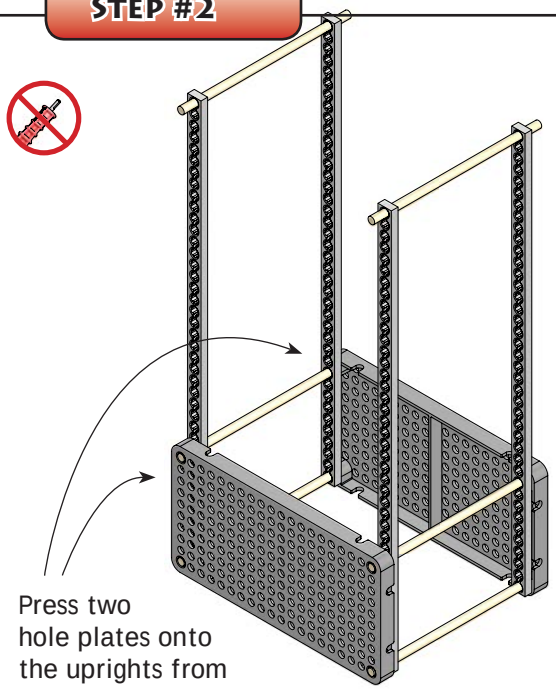


STEP #1

Cut six 125mm (5in) dowels and press them into 4 connector strips as shown.



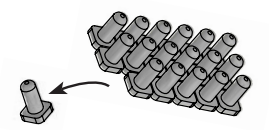
STEP #2



Press two hole plates onto the uprights from step #1

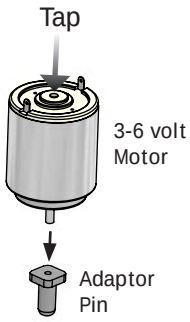
STEP #3

1. Cut off an adaptor pin.



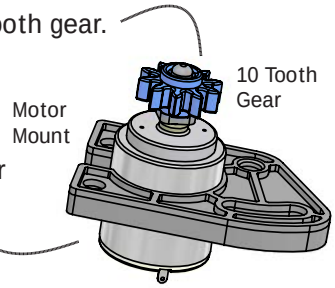
2. Tap or push the motor shaft into the adaptor pin from.

Warning: Do not hold the motor from the side when pushing on the adaptor pin. Holding the motor from the side could cause the motor back to fall off.

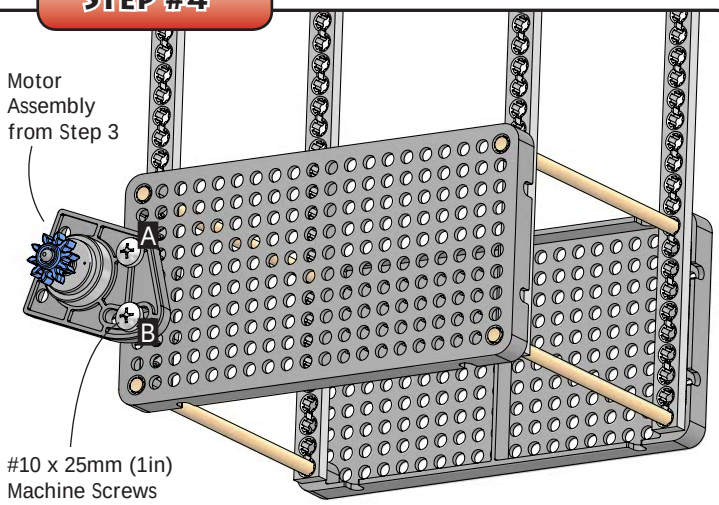


3. Press on a 10 tooth gear.

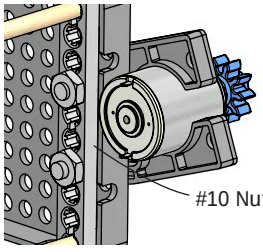
4. Place the motor assembly into a motor mount.



STEP #4

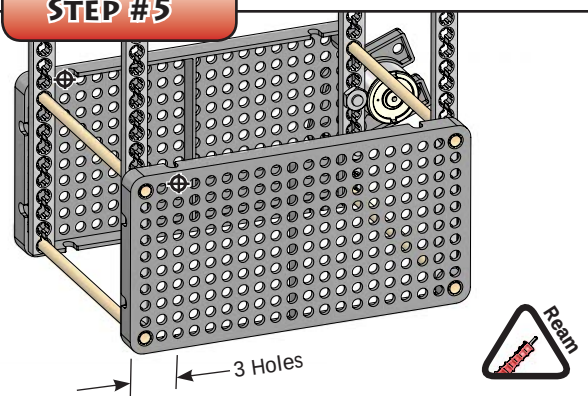


Attach the motor assembly using machine screws and nuts. Leave Screw B loose to allow the motor mount to pivot on screw A.



Note: The project motor is design to run on 3-6 volts DC.

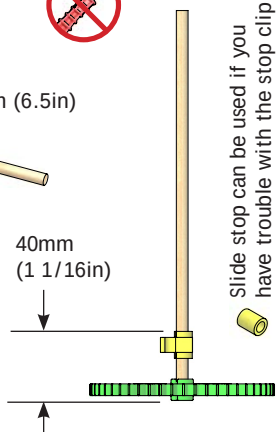
Step #5



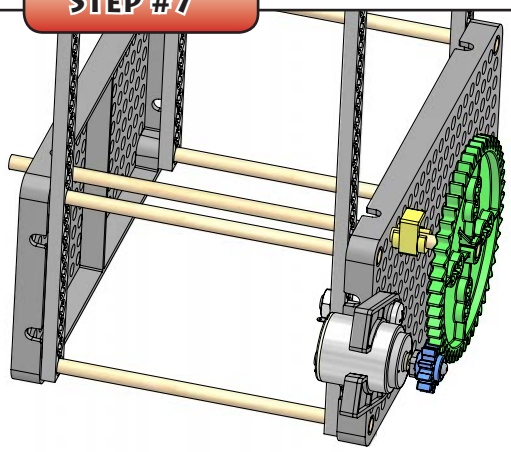
Ream the two holes marked with a ⊕.
This will allow a dowel to spin in the holes.

Step #6

1. Cut a 165mm (6.5in) dowel and insert it into a 50 tooth gear.
2. Place a stop clip or slide stop as shown.

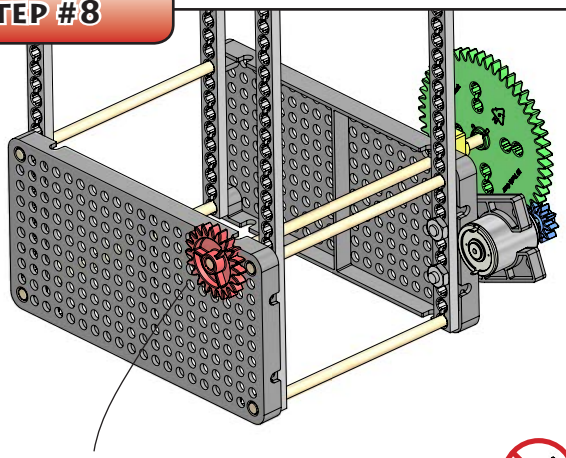


Step #7



Insert the gear assembly from Step #6 into the reamed hole from Step #5.

Step #8



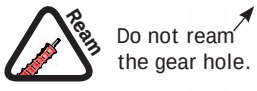
Place a 20 tooth gear on the back side of the dowel inserted in step #7.

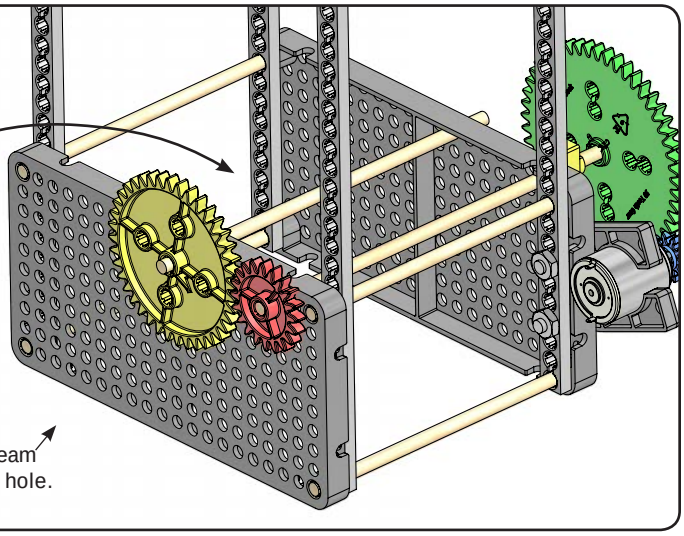
Step #9

1. Cut a 150mm (6in) dowel and insert it into a 40 tooth gear.

2. Determine what hole the loose dowel and gear assembly should be in to mesh with the 20 tooth gear. Ream the hole.

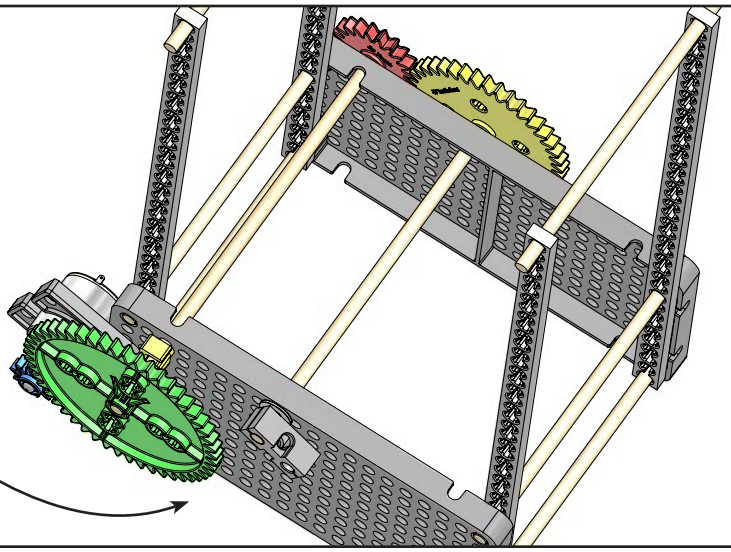
3. Insert the dowel and gear assembly into the reamed hole.





STEP #10

Place a perpendicular block on the end of the dowel from step #9. It's a good idea to place a washer in between the perpendicular block and hole plate.

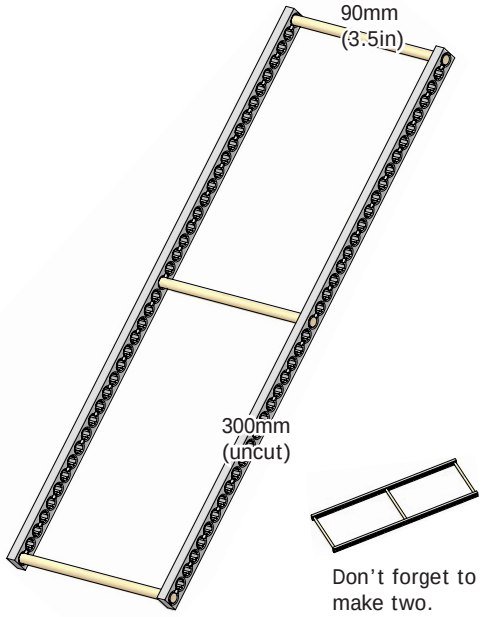


☐ Complete the "Gears Activity" sheet if this box is selected.

This is a great time to spin your gears (by hand or powering your motor (3-6 volts).

STEP #11

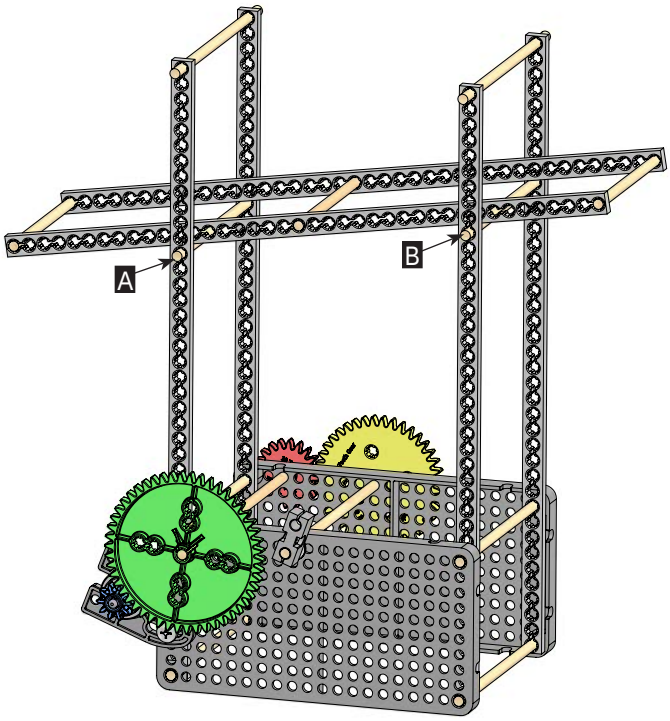
It is now time to make the frames for the sorting screens. Make two of the frames shown below.



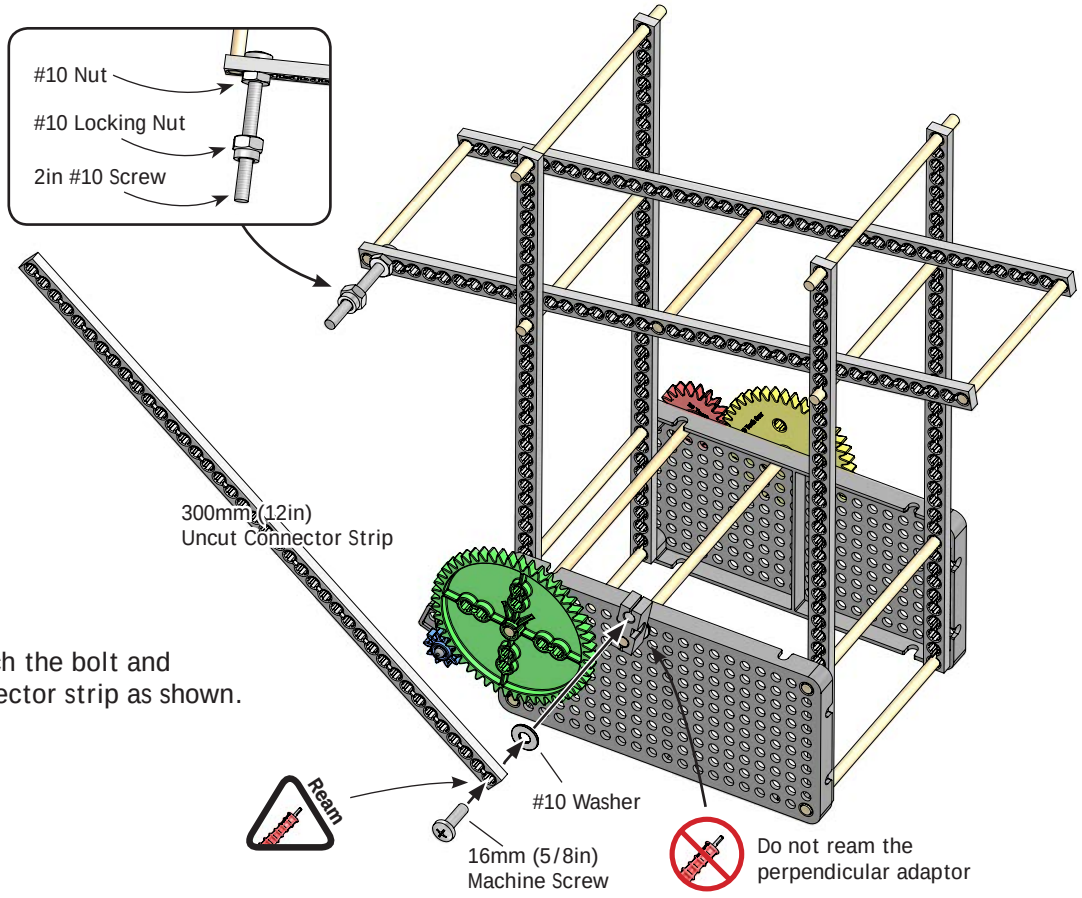
Don't forget to make two.

STEP #12

Cut dowels A and B (we are not telling your how long) to hold the one frame from Step #11 at an angle. These dowels can me moved later to change how your the screen moves material.



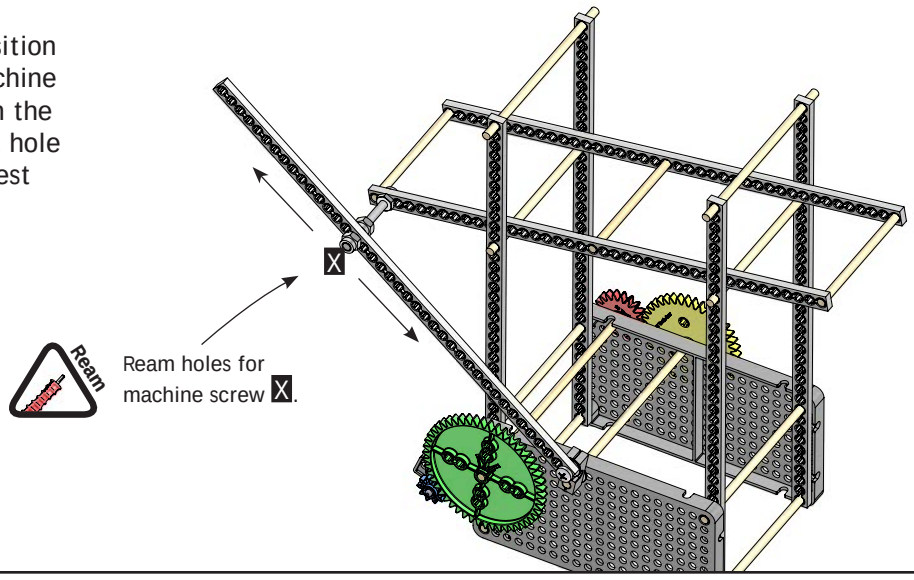
STEP #13



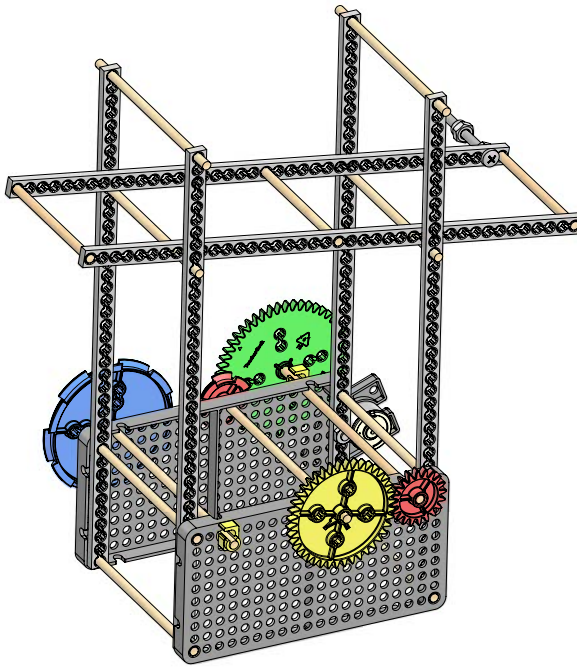
Attach the bolt and connector strip as shown.

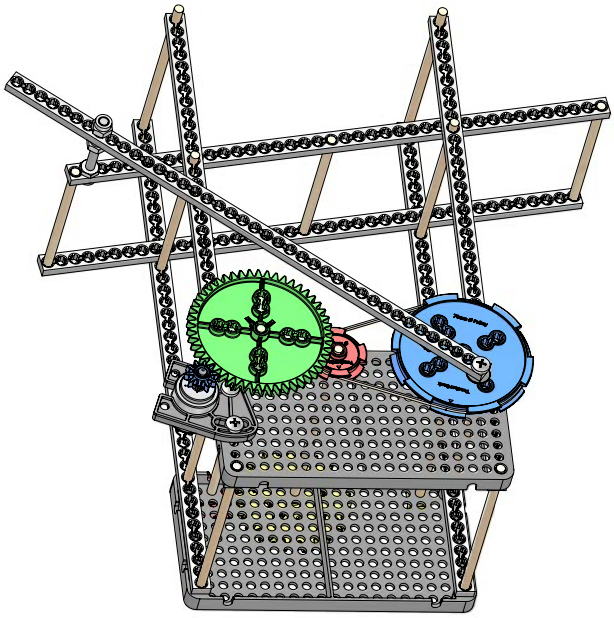
STEP #14

Experiment with the hole position of the connector strip on machine screw X. Turn the gears (with the motor or by hand). Find what hole placement will provide the best movement for your screen.



Step #14





Linkage movement can be further slowed and power increased using pulleys.
Above is a sample configuration.

Step #14

Screen material can now be attached to your frames and placed on your sorter.