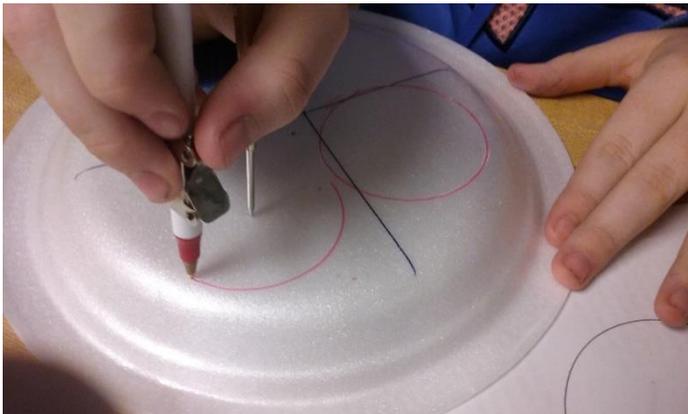


# Do-It-Yourself

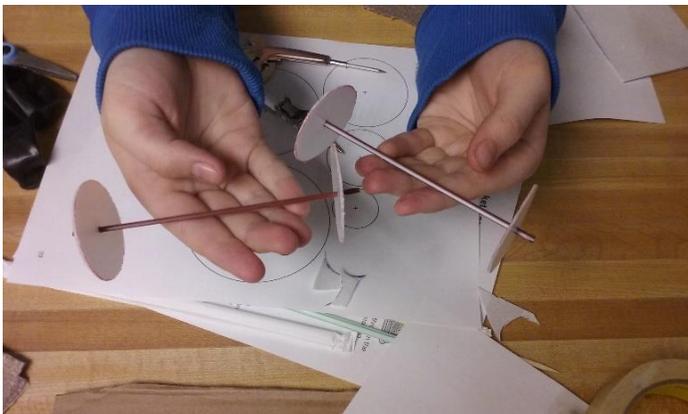
## Rocket Car Design Challenge



**Step 1.** Make a rectangle to use as the main body on the bottom of a Styrofoam plate, and cut it out.

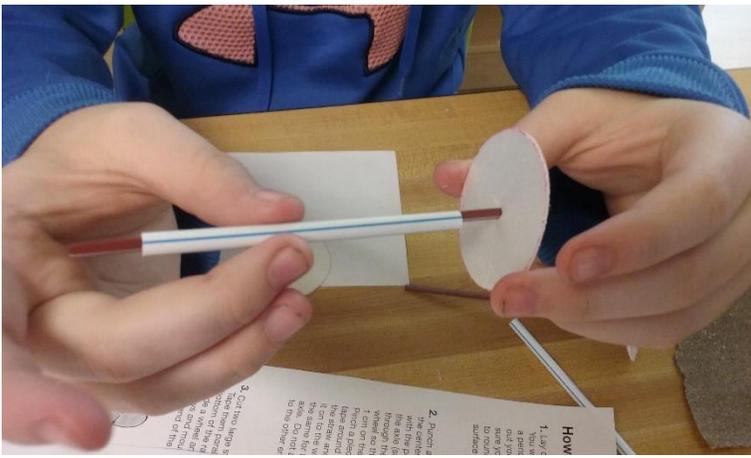


**Step 2.** Choose which wheel size you want. Then, measure it with a compass, draw it on your Styrofoam plate. Next, cut them out, and smooth the edges out with sandpaper.



**Step 3.** Poke a hole with your pencil in the middle of all of the wheels. Get 2 stirrers for the axle. Put 1 stirrer through 1 wheel's center. Make sure that the stirrer sticks out on the other side of the wheel by about 1 cm. Then use masking tape to tape the axle and the wheel together. Do this to another wheel and axle too. **DIRECTIONS CONTINUE ON BACK**

***“The rocket car is propelled along the floor according to the principle stated in Isaac Newton’s third law of motion. ‘For every action there is an opposite and equal reaction.’ The balloon pushes on the air and the air pushes back on the balloon. Because the balloon is attached to the car, the car is pulled along by the balloon.”***



**Step 4.** Get a large straw and cut it how you want it. You'll need to cut 2 pieces of the same size. Poke the side without the wheel of one stirrer through the straw, and do the same thing with the other stirrer stick and straw piece.



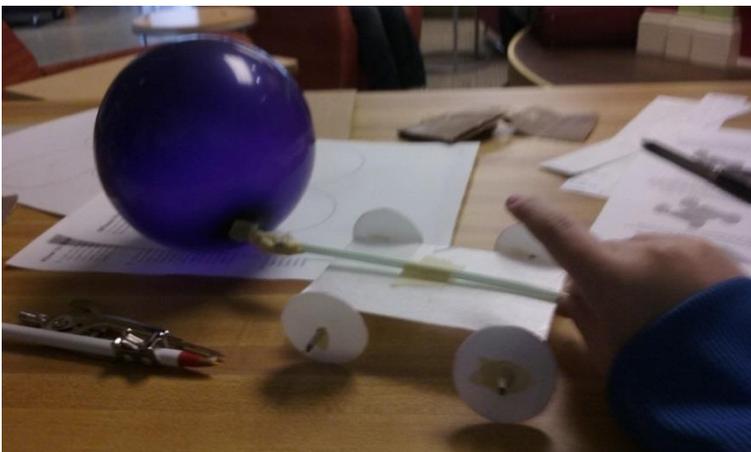
**Step 5.** Get your 2 remaining wheels and poke the stirrer through 1 wheel so about 1 cm. is on the other side. Then use masking tape to tape it together.

**Step 6.** Use masking tape to tape the big straws to either side of the main body.



**Step 7.** Blow up a balloon. DO NOT TIE OFF THE END OF THE BALLOON.

**Step 8.** Get another big straw and put the drinking end of the straw into the balloon. Use masking tape to tape the balloon to the straw. Tape it very well to make sure no air can get out. Keep hold of the other end of the straw so no air can escape that way either.



**Step 9.** Use masking tape to tape the straw to the top of the main body.

**Step 10.** Set your rocket racer behind the starting line and let it go!

**Redesign as needed to improve performance and solve any "mechanical" problems.**