

Fidget Spinner

Due Monday 2/28/22 all classes

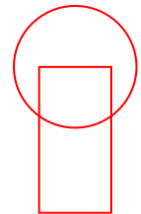
We're going to make a fidget spinner. You can make one that has four knobs or three knobs, it's your choice. The four knob version gets 8/10 and the three knob version gets 10/10. It's your choice.

Insert images of each

Here's how to make it:

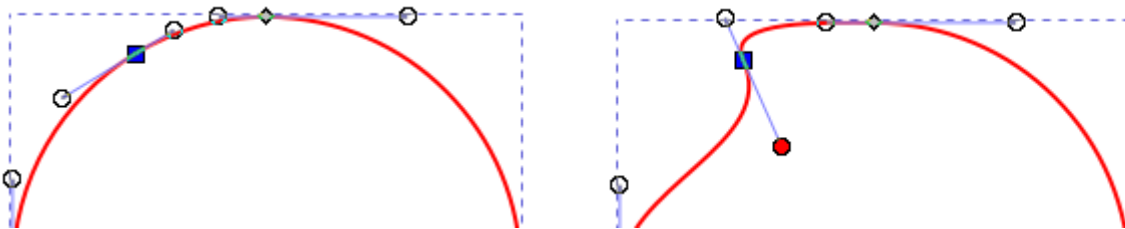
1. Launch Inkscape. In a new document, create a circle that is 25 mm across.

2. Create a rectangle that is 15 by 30 mm. Line them up like this using the Align and distribute commands to get them centered left-right. Select them both, make sure they are about 42 mm tall together. If the height of them together is more than 42mm, click off, select the rectangle, and use the up arrows to move it up. Test it again, when it is about 42mm, move on.



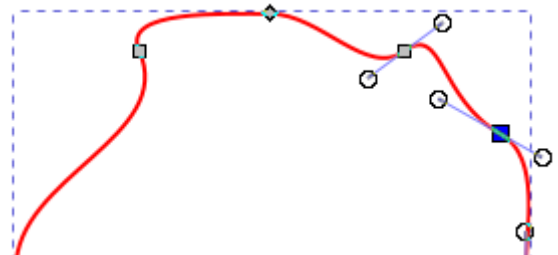
3. Select both and choose Path>Union.

4. Double click on the circle part to create a new node, then drag the nodes to bend your circle slightly so that it's not a perfect circle anymore. You have to select the new node that you created and then grab one of those handles (the hollow circles). Play with it a bit. Don't be afraid to move something, then do Control-Z to undo if you don't like what happened.



Don't make a sharp point, we're not making ninja stars, we're making fidget spinners.

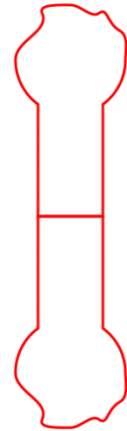
5. Add a node on the other side of the circle and bend that side a bit. If you feel inspired, do more warping of the circle part. Leave the rectangle part alone.



Yours will look different. I'm just showing you what I did here (I put on three nodes).

Continued on next page

6. Duplicate your creation, then flip it vertically. Drag the copy down so they are like the image to the right.



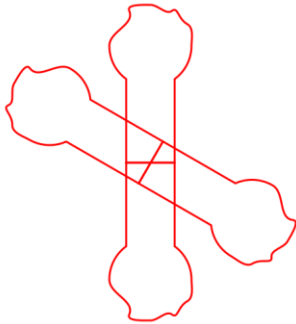
7. Select both parts and do Control-G to group them.

Now you have to decide: are you going to do a four knob version (slightly easier but receives a high score of 8/10 if done correctly) or a three knob version (slightly harder to do, but receives a 10/10 score if done correctly.)

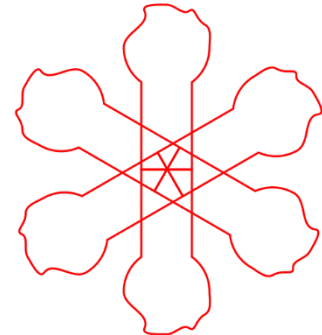
Here are the three knob instructions.

Go to page 4 if you want to do the four knob version.

8. Select your object, duplicate it, and then rotate it 120 degrees. Click on the Rotate tab. Type in 120 for degrees, and type Enter. You should have this:

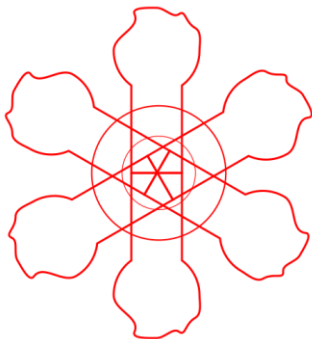


9. Select the new slanted one, duplicate it, and then rotate it 120 more degrees. You now should have this.



10. Select all and again do Control-G to group the objects.

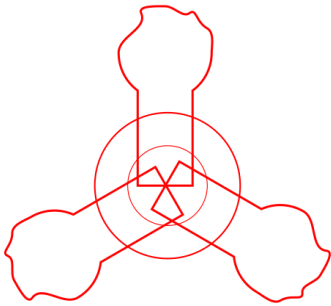
11. Add a 40 mm circle, and then a 22 mm circle. Select the circles and the weird object you created, and center everything. You should have this:



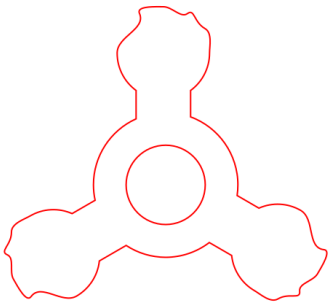
12. Now, select all and choose Ungroup twice (shift-control-G or Ungroup from the Object menu).

(Continued on next page)

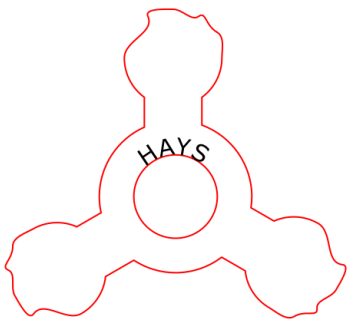
13. Click on every other knob and delete it. You should now have this:



14. Almost done! Click on one knob, then shift click on the next and the next. Also shift click on the big circle. Choose Path>Union from the Path menu. You should have this:



15. On the side, write your name in all caps. Select your name and the small circle and choose "Put on Path" from the Text menu. Click off of everything, then click on the small circle, then rotate it so that your name is lined up somewhere that pleases you.



16. Finally, select all, turn off all fill, set the fill to 255 red, and the stroke to .1 mm. Click somewhere to deselect everything, then click on your name, and make it black.

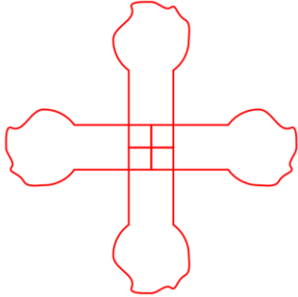
You should have no fill, all .1 pixels width, text black, circle and outer curve red.

Turn it in to the Google Classroom and email it to the laser cutter.

Instructions for doing a four knob version are on the next page (this is only if you did not do the three knob version, it's one or the other.)

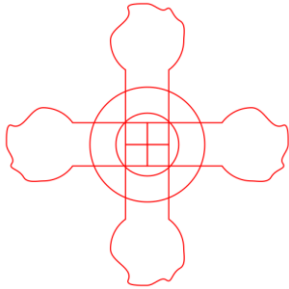
Here are the four knob instructions.

8. Select your object, duplicate it. Rotate the copy 90 degrees using the rotate 90 degree button:



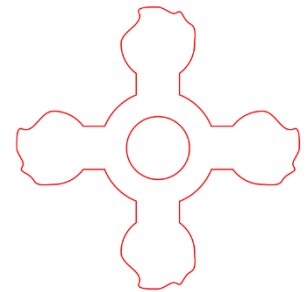
9. Select all do Control-G to group the objects.

10. Add a 40 mm circle, and then a 21.9mm circle. Select the circles and the weird object you created, and center everything. You should have this:



11. Now, select all and choose Ungroup twice (shift-control-G or Ungroup from the Object menu).

12. Almost done! Click on one knob, then shift click on the next and the next and next (all four of them are now selected). Also shift click on the big circle. Choose Path>Union from the Path menu. You should have this (image to the right).



13. On the side, write your name in all caps. Select your name and the small circle and choose "Put on Path" from the Text menu. Click off of everything, then click on the small circle, then rotate it so that your name is lined up somewhere that pleases you.

13. Finally, select all, turn off all fill, set the fill to 255 red, and the stroke to .1 mm. Click somewhere to deselect everything, then click on your name, and make it black.

You should have no fill, all .1 pixels width, text black, circle and outer curve red.

Turn it in to the Google Classroom and email it to the laser cutter.

