

# Steampunk Table Top

## Intended Grade Level

9-12 Geometry

## Goal

By the end of this project, students will be able to use geometric methods to solve design problems.

## Summary

Students will be asked to design table tops. They will be given size constraints for the table tops, and the materials will vary in size. Students will be asked to calculate the cost of the materials they use.

## Common Core Standards

CCSS.MATH.CONTENT.HSG.MG.A.3

CCSS.ELA-LITERACY.WHST.9-10.10

CCSS.ELA-LITERACY.WHST.11-12.10

## Alternatives

This project can be made more challenging by adding a budget or factoring in the cost of welding the table top.

This project can also be altered for a science class with a focus on invention.

This project can also be altered for an art class.

## Steampunk Table Top

For this project, you will be designing a Steampunk themed table top. You will have the option to design a round table or a rectangular table from the materials below. If you choose a round table, your table top will need to have a diameter of 36". If you choose to have a rectangular table, your table top will need to be 26" x 20". You will also need to calculate the cost of your design, so **do not forget** about adding the tax. Below are some material you may use in your design with prices and dimensions. The materials can be found at Home Depot or Autozone. You may use other metal materials as well, but please provide proof of pricing and dimensions.

You will need to provide an image of your design. You may draw it, cut and paste it together, create a digital image of it, or use any other media. Your image **does not** need to be actual size, but you do need to provide a key of the ratios you use in your design. Afterwards, write a short response to this experience and what you learned. Would you do anything differently? Below are some example of Steampunk table tops.



Tool	Price	Length	Width	Height	Depth	Notes
Pinion Gear	\$6.40 ea.		3.3 in.	1.5 in.	4.8 in.	Notice this has about a 1 in. radius.
Concretor Nippers	\$20.55 ea.		0.31 in.	9.84 in.	1 in.	Handle: 8 in.
Horseshoe Set	\$29.56 ea.	16.75 in.	8.4 in.	4.75 in.		This set comes with a two stakes that 20 in. each.
Cutting Pliers	\$31.37 ea.		1.4 in.	0.4 in.	7 in.	Handle: 4 in.
Tow Chain with Grab Hooks	\$36.98 ea.	20 ft.	9.448824 in.	12.59843 2 in.	2.755907 in.	
Porch Swing Spring	\$9.27 ea.	9.75 in.	2.813 in.	9.75 in.	1.625 in.	
Extension Spring	\$3.98 ea.		0.8125 in.	4 in.	0.8125 in.	This is a 2-pack of springs.
Black Jack Chain	\$0.57/ft		0.08 in.		0.08 in.	
Slip Hook	\$6.30 ea.		4 in.	6 in.	1.18 in.	
Universal Nut Cracker	\$34.33 ea.		5.94 in.	1.36 in.	7.5 in.	
Reese Towpower hitch adapter	\$25.99 ea.	6 in.	2 in.	2 in.		
Idler Pulley	\$36.99 ea.		1.02362 in.			This has a diameter of 2.99213 inches.
Brake Rotor-Rear	\$27.99 ea.			0.389764 in.	1.874016 in.	This has a diameter of 10.031496 inches.
External Tooth Lock Washer	\$1.18 ea.		0.322 in.	0.322 in.	0.021 in.	This has an inside diameter of 3/16 in. and an outside diameter of 5/8 in.
Faucet Connector	\$6.46 each	20 in.	0.875 in.		0.875 in.	