



Instructor Name: Tom Muir

Workshop Title: The Universally Useful Universal Joint

Workshop Date: March 23rd: 6:30 – 8:30pm

If you have any questions or concerns please feel free to reach out to Travis Winters at twinters@touchstonecrafts.org or (724)329-1370

Quantity Per Student	Item/Tool/Material	Supplier/Website
1	Jeweler's Saw Frame: 2 to 6" throat depth	Many styles available.
2 dozen	2/0 or 3/0 saw blades	Rio Grande – www.riogrande.com Item #: 110038
6"	Hard silver solder	Item #: 101704 Rio Grande
1pair	Pliers: Chain or Flat Nose	https://www.riogrande.com/searchresults?q=chain%20nose%20pliers&t=products&sort=relevant
1 sheet each	Silicon Carbide Wet/Dry Sandpaper: 400 and 600 grit	Local Hardware or Jeweler's Supply Co.
1	6 – 10" half- round or flat file, approx. 0, 1 or 2 cut	
1	6" flexible metal ruler: millimeters and inches	Rio Grande: Item #: 116086
1	Soldering pick	Many styles available
3	#52 High Speed Drill bit	https://www.riogrande.com/product/High-Speed-Steel-Twist-Drill-52-161mm/349411
1	14 gauge sheet, brass, nu-gold, or nickel silver:	Jewelry Supply Co.

1	Steel scribe	
1 ft.	1/8 dia. Round Brass Rod	Item #1162, K&S Precision Metals(https://www.ksmetals.com/brass) or local hobby/hardware store.
1 ft.	3/32 OD x .014 wall thickness, Round Brass Tube	Item #8126, K&S Precision Metals(https://www.ksmetals.com/brass) or local hobby/hardware store.
1 ft.	14 gauge straight round wire: brass nu-gold, nickel silver. (fits #52 drill)	Jewelry Supply
1	4-6" long x 3/4" wide x 1/2" thick wood block with V-shaped groove cut lengthwise down the middle of one side.	Custom made. Pine will work fine.
1	Flat or barrette needle file, approx. 2 cut	
1	Round, tapered needle file, approx. 2 cut	
1	Container of Sparex Pickle(PH down for pools and hot tubs)	Item #: 5010233 Rio Grande
1	Torch capable of soldering brooch or ring sized objects.	
1	Drill press/Flex Shaft capable of accommodating #52 drills.	Drill press preferred.
1/2 oz.	Handy Flux, paste	Item #: 504084 Rio Grande
1	Flux Brush: Small, natural hair: Approximately	

	1/2" x 1/8" or smaller	
1 min.	Soldering block(s): Charcoal, ceramic, etc.	
1	Ring mandrel or cylinder approx.. 3/4" diam.	
		OPTIONAL
1	Miter cutting vise and jig	Rio Grande: Item #: 113596 or comparable tool.
1	Hand held sawing jig	Otto Frei: Part # 126.448
1	3" Starrett Dividers	Rio Grande: Item #: 116171
1 Cup	Boric acid(fine powder form) and alcohol (Denatured or isopropyl) Mix 2 parts boric acid to 1 part alcohol.	Sold as roach killer in hardware store.
1	1" wide brush approximately inexpensive brush for boric acid mixture.	
1	Digital calipers	

Notes/Additional Information: Contact Tom Muir with questions at tmuir@bgsu.edu

to twinters@touchstonecrafts.org