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Wire 101

With Emily Miller on FB Live
Episode Notes by Drea Carbone
Photography by Baranduin Briggs

We see so many questions about wire work…we really needed a good "101" class to get all the info out there! Emily does a great job covering the basics and answering common questions. This is a great primer for all wire working, and especially for making those pesky, tricky loops! Kate may not have been with us today, but I think we can all hear her, can't we?
"Who's the boss of that wire?"

We had Emily flying solo today, so we got right to the wiring fast! But you can skip right to **Minute Marker 3:30** if you'd like to bypass the little bit of chitchat we had.

Minute Marker 3:30

Using a handout she's created (which is included at the end of these Notes) Emily goes over sizing of wires and bead holes. We normally use American Standard Gauges. Sizing by mm can also be helpful. We often are asked why sizes of beads and beading materials aren't commonly done in inches, a unit of measurement we're used to here in the US…well, refer to the chart to the right and you'll see how inches being used for something so very tiny is not very practical!

| Wire Gauge	Diameter in mm	Diameter in Inches
16	1.29	0.0508
18	1.02	0.0403
20	0.812	0.032
22	0.644	0.0253
24	0.511	0.0201
26	0.405	0.0159
28	0.321	0.0126

Minute Marker 6:20

Emily shows a simple wire loop, also known as Rosary Loops. We have this skill builder on how to make these, but Emily goes over them in detail here. These loops are open, and can be opened and closed much like a jump ring. This example was done in 16G wire…remember, the bigger the number, the smaller the wire. So this 16G example is "pretty beefy," as Emily says! A 26G loop would be much thinner.

Minute Marker 8:40

Emily shows wrapped loops, this time working with slightly skinnier 18G wire. These kind of wire loops are wrapped and cannot open. Once the loop is completed it uses the tail of wire to wrap around and really secure the loop, which is now permanently closed.
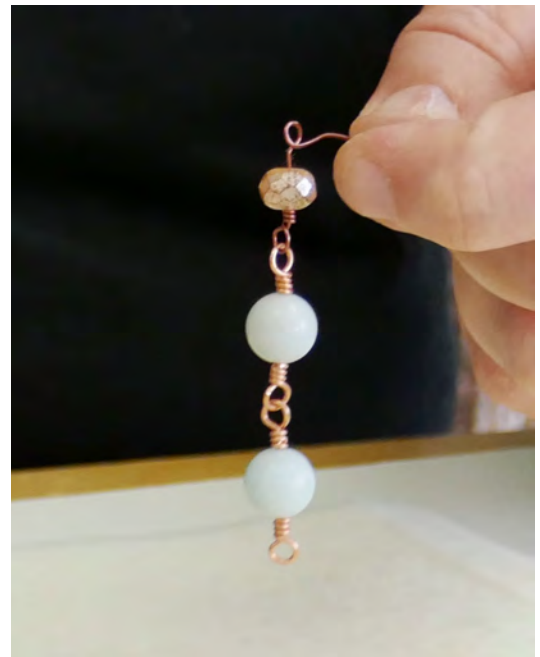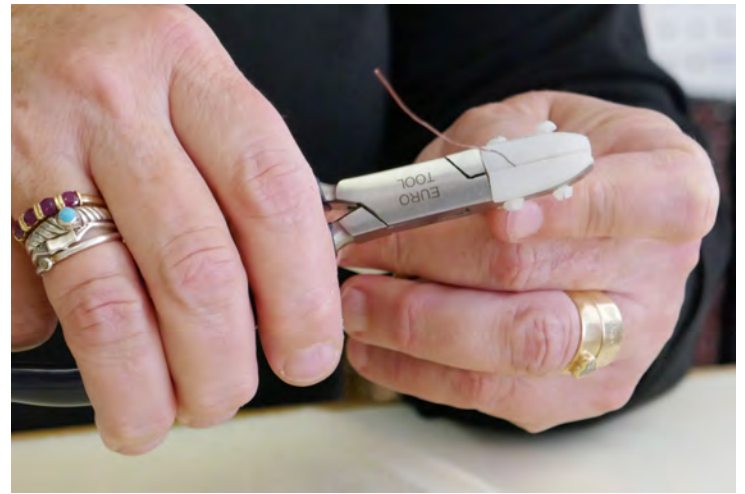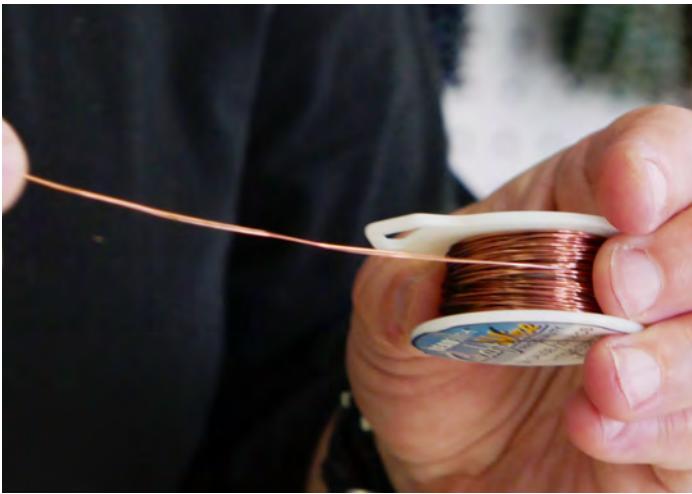
Minute Marker 10:20

Let's talk temper…no we aren't angry! We're referring to wire hardness…but what does that even mean?? We see this question a lot. There are different levels of flexibility, or hardness, of wires…half-hard, dead soft…what the what?
Let's explain…

Dead Soft- The most flexible wire, not hardened at all. It doesn't keep it's shape under pressure, but can be hardened through annealing or work-hardening. The Craft Wire we sell is Dead Soft.
Half Hard- The middle ground…not entirely hardened but worked just enough that it's great at keeping it's form after you've created it. It's a commonly used jewelry wire.
Full Hard- Emily covers the above two types, but there are several other levels of hardness, including Full Hard, and you may see it and want to buy it to try…but! There's lots of resistance to this one, it's the hardest jewelry wire you'll find. It's not ideal…it's quite brittle and not at all forgiving. If you're still getting used to working with wire, definitely start with a softer wire!

Work Hardening is any technique used to stiffen your wire…you often see us hammering wire or pulling it through Nylon Jaw Pliers…both are ways to harden our wire. Overworking wire can harden it to a brittle and breakable point.

Annealing is a way of returning wire to a softer form. When heated to red-hot, the wire softens and can be work hardened all over again. You may see Dead Soft wires referred to as "Fully Annealed."
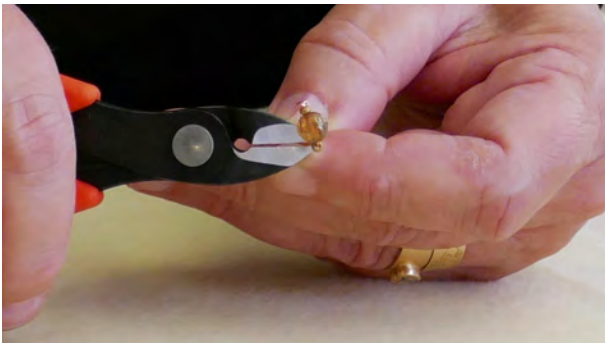
Minute Marker 13:40

Emily briefly touches on color…there's a bit more explained in her chart, but the wire we sell is Craft Wire, and it's a plated metal over copper base with a non-tarnish finish.

Minute Marker 16:50

Let's go over the main tools you'll use for your wire working:

A *Flush Cutter* is a must for wire work. The blades come together in such a way that the wire can be cut bluntly and flat from the bottom edge of the cutter

Chain Nose Pliers have a tapered tip that are flat and flush together inside, but rounded on the outer edge. The flat inside is perfect for grasping wire without marring it.

Round Nose Pliers are also tapered, but each jaw is a completely rounded cone. You can use the tapered tip to make small loops, or move further down the thickness of the jaws to create larger loops. Using these to grip your wire can dent the wire…so use a light touch, and use your chain nose pliers to open and close loops or grip wire you're not making a loop out of.

Nylon Jaw Pliers help to straighten wire, but also will work harden your wire. When you first unspool your wire you'll notice a curve to it from being spooled…you may also have a dent or kink in there…Nylon Jaws to the rescue! Simply pull your wire through a couple times and presto! Straight wire!

Minute Marker 23:50

Headpins and eye pins are pre-made pieces of wire we can use. Headpins have a flattened end that act like a stopper that will hold a bead on…perfect for making earrings, pendants, and drops.

Eyepins will also stop a bead from falling off the one end…but it's a simple rosary loop at the end and not a flattened stopper.

Emily creates some simple earrings with Czech glass and spacer beads strung onto headpins and eyepins. She shows how to make a simple rosary loop: At the top of the wired stack of beads, she bends her headpin at a 90 degree angle. Snipping the wire short, she lines up the very tip of the wire inside her round nose pliers, then slowly and carefully rolls the wire back onto itself to form a loop. The length of wire you leave will determine how big of a loop you're making. Emily's rule of thumb: half and inch of wire or less, you'll need a loop that's made from halfway down the jaw of your round nose pliers or smaller…half an inch or longer and your loop will be made from the halfway point or wider, creating a lager loop. Watch Emily carefully! This is a technique that is better shown rather than explained!
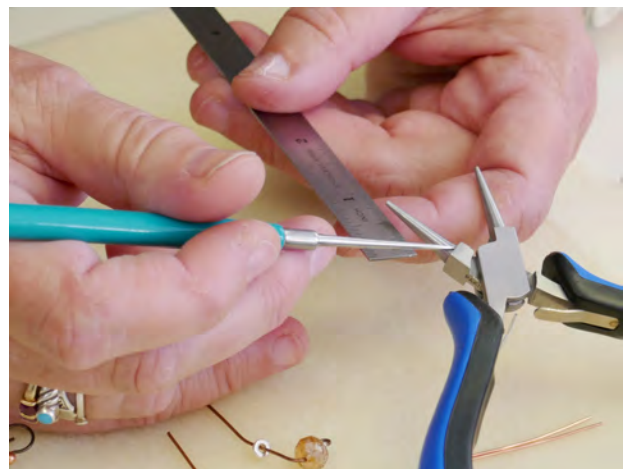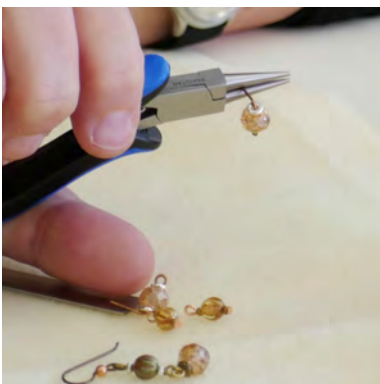
You've seen us lay out our beads on headpins and eye pins before, as Kate calls it "auditioning" her beads. You've also seen us use eye pins on projects like Kate's Off The Cuff and Treasure Chest. It's nice, because one of the simple loops has already been made for you, saving you time when you're creating a rosary chain or need a simply loop on both ends of your wire.

Auditioning beads on eye pins

Off The Cuff

Treasure Chest is a wrap bracelet using weaving, leather, and a beaded chain made with eye pins and rosary loops.

Left, Leatherbound
Right, Lost & Found

Emily gives a refresher on opening and closing simple loops…the same way we open jump rings, swinging to the side and swinging it closed. Remember, if it's not closed, it's open!

Wrapping loops for security and style is something we do very often. Emily shows a few applications, like making a chain of beads using a thin wire. She cuts a length of 22G wire about a foot long and straightens it with her Nylon Jaw Pliers.

Using her Round Nose Pliers, Emily creates a loop. She starts again with a 90 degree bend, but rather than go from the end of her wire tip, she makes a loop right there at the bend…you don't want too short of a tail in this application, since you'll be using that tail to wrap around a coil around to secure the loop closed. Attaching the loop to her chain of Amazonite Beads before wrapping closed, she uses Chain Nose Pliers to hold her loop flat and closed, then coils that tail tightly around and around, making about 2-3 wraps and then cutting close with flush cutter to trim, and tucking the end down with Chain Nose Pliers to ensure the wire isn't sticking out at an odd angle.
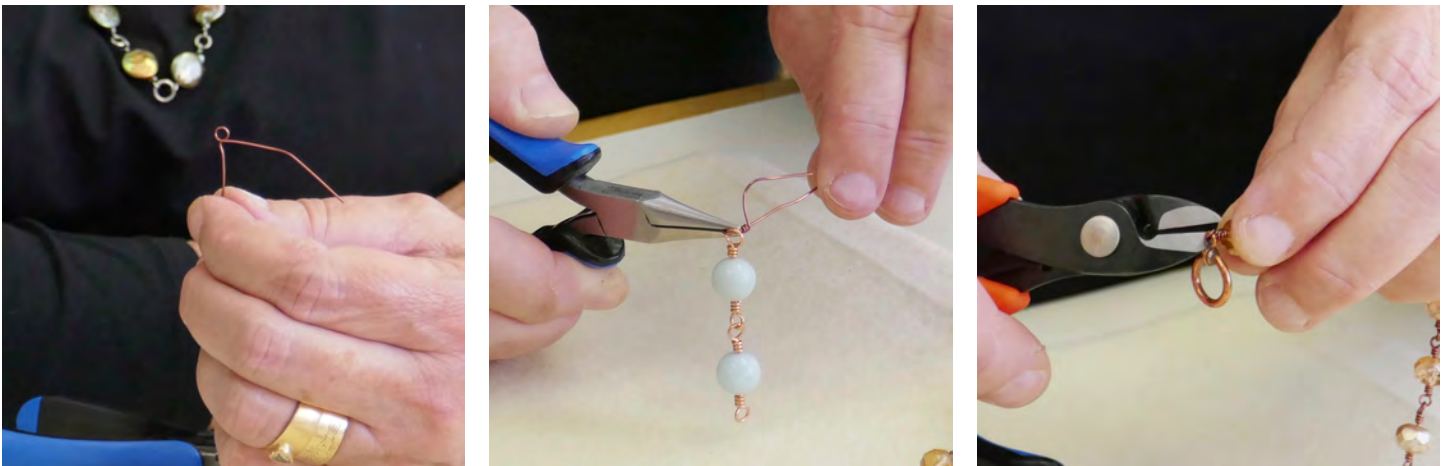
Add a bead, and make a wire-wrapped loop on the other side of the bead. Using the tips of your Chain Nose or Round Nose, make a 90 degree bend. The tips are used because they make for a small space and will keep your wire wraps to a minimum…2-3 wraps is ideal, but you may want more or less depending on the style you're going for! The larger the space between the bead and the 90 degree angle, the more wraps you'll need to cover that wire.
Loop the wire up and over the jaw of your Round Nose, and consider for a moment…do you need to attach this loop to something before you close it? At this point, no, we aren't…but it's good practice to pause here in case you are creating a piece of jewelry were you would need to connect to something…remember, once that wrapped loop has been wrapped it cannot be opened!

Emily mentions that she won't use her Round Nose to grip her loop while wrapping, but forgets to finish that thought! The reason why we don't use this method of holding on to the wire loop is because the Round Nose Pliers can mar and dent the wire, since it doesn't have a flat edge. If you're holding the loop in one of the jaws, as if you never took it off the plier, it can twist and turn the wire as you're holding the loop and wrapping below it. Its best practice to hold your loop flat with the chain nose pliers.

After many requests, Emily spends some time going over the jewelry she's been wearing during the show as well as some other pieces she brought to show. Using the skills Emily has just gone over, you can create jewelry just like this…using just beads and wire makes for a stunning piece, but adding soldered jump rings between your wire wrapped links can create some great visual interest. Adding several links of pre-made chain between your bead links also is a beautiful way to create a piece of jewelry. Emily also points out her use of bead caps, which can not only help to stabilize a bead but also adds a visual element of style, creating a smooth transition from bead to wire. All of the finished jewelry can be found by scrolling down to the "What Are You Wearing" page below!

Emily did such a great job flying solo this week…just before flying to Tucson!
Be sure to watch this episode carefully and also check out the Skill Builders we have on wire working, all linked in the pages below.

We'll see you next week!

The two bracelets Emily created during the episode. On the left, she uses Glazed Peach Czech Rondelles and a Plain and Simple Toggle Clasp. On the right, she goes with Potato Pearls, a Faceted Crystal, and a Cuties Clasp. Both use 22G Antique Copper Wire.

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Links to Learning, Products, & More…

Class Handouts and Skill Builders
Main Projects Page
How to Open and Close Jump Rings Securely Skill Builder
How to Wire Wrap a Bead Unit Skill Builder
How To Make Rosary Loops With Beads Skill Builder
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Components
Craft Wire and Memory Wire
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Heishi Metal Beads
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Caps and Cones
Chain

Beads and Gems
Czech Glass Rondelles
Czech Glass Melons
Pearls
Semi-Precious Gem and Earth Stones
Ashanti Saucers

The first question asked each week on Facebook Live…

"What are you wearing?"

Wire 101

Simple Loops

Wrapped Loops

What do we mean when we say "wire wrapped" "wire work" or "wire" for jewelry making? Wire is metal, and is made of a solid piece of material. Wire wrapped jewelry is multiple links made from wire. It mixes well with chain, chain maille, and beads strung on stringing material. Wire differs from "stringing material" that is a cable made up of multiple wires twisted together covered with a nylon layer on the outside. Stringing material is often referred to by brand name like SoftFlex.

Flush Cutter

Round Nose Plier

Chain Nose Plier

Nylon Jaw Plier

What kind of metal is wire?

Gold3 Pure gold (24kt) is almost too flexible to use for wire wrapping, usually it is alloyed (mixed with) silver and copper to toughen and extend the amount of material.

Gold Filled- Brass wire covered in a layer of gold (usually 14kt) that is heat and pressure bonded to the brass. GF is an ideal way to get gold at an affordable price. The gold layer is durable and can even be soldered without loss of material.

Fine Silver- .999% Pure silver, is very flexible, but can be fused to itself and melts cleanly.

Sterling Silver- 92.5% pure silver, 7.5% copper, an international measurement for Sterling silver. The added copper stiffens the wire but does not impact the shine or color. Can be oxidized and polished to show detail.

Copper- the first metal used by mankind. Copper will tarnish and can be polished bright again. Good for practice wire since it feels and behaves like sterling wire.

Brass- a mix of 85% copper and 15% zinc, brass is more malleable than bronze.

Bronze- a mix of 92% copper and 8% tin in a darker color than brass.

Plated Wires- colored layers over a copper core provide the widest range of colors and the best price. Be gentle with the tools and avoid marring the surface for the longest lasting finishes.

Gauge	Loop Type	Bead Types	Other Uses
16	Simple	Tribal glass, bone and horn	Clasps, components, large jumprings
18	Simple or Wrapped	glass, tribal glass, bone, horn, stones with larger holes.	Clasps, components, large jumprings
20	Simple or Wrapped	Glass, tribal glass, bone, horn, stones with larger holes.	Ear wires, clasps, large jumprings, components
22	Simple or Wrapped	Pearls, tribal glass, bone, horn, stones with larger holes.	Links, headpins or eyepins
24	Wrapped	Pearls, stone, semi precious stone, glass beads	Embellish metal components, links, headpins.
26	Wrapped	Pearls, stone, semi precious stone, glass beads	Embellish metal components, links and headpins
28	could be used for wrapped loops, but may fail or deform under strain.	Pearls, semiprecious stone.	Embellish metal components, links,

Wire often comes in different premade hardnesses, if the wire is not labeled most of the time it is Dead Soft.

Dead Soft- wire at its most flexible state- allows for the most bending and manipulation.
Half Hard- wire made stiffer, less bendable to hold it's shape better.

Work hardening- as wire is bent, twisted or hammered it becomes less flexible, and holds its shape better. Extreme overwork can lead to breakage.

Annealing- heating wire to glowing red with a torch returns the wire to a flexible state, ready to be worked further.

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