Trash to Tree Armatures Model Trees from Old Electrical Cord

Presented by SANTRAK santrak.org March 8, 2025 @ 10:00AM Texas Transportation Museum, Zucht Exhibit Building

WHY THIN WIRE TREE ARMATURES?

• Harder to break

• You determine the size and shape

• Without foliage can be winter tree, dead tree, or forest fire aftermath

TOOLS

• Wire Cutters

• Wire Strippers

•2 x Needle-nosed Pliers

• Soldering Iron

MATERIALS

- Waste Electrical Cord
- Electrical Solder
- PVA Glue/Matt Medium
- Fine Sand/Sawdust
- Gray Paint
- Raw Umber, Burnt Umber, or Burnt Sienna Stain

GROW YOUR TREE

• These trees are built from the outside in and from the top down

- A basic medium sized tree will require
 - 1 x spire/top
 - 3 x small branches (9 twigs/tips)
 - 3 x medium branches (9 x small branches; 27 twigs/tips)
 - 3 x large branches (27 x small branches; 81 twigs/tips)

GROW YOUR TREE Raw Materials

• Cut the insulated wire to a little longer than the desired tree height and strip off the insulation.

GROW YOUR TREE Spire/Top Construction

- Firmly pinch 4 wire tips of the bare copper wire with the needlenosed pliers leaving enough wire for the desired twig length; tightly twist to the desired length
- Remove 1 or 2 strands (leaving 2 strands) of the remaining untwisted wire and give one final twist to hide the wire stubs
- Lightly solder the twisted portion of the spire/top
- Set aside



GROW YOUR TREE Spire/Top Construction



GROW YOUR TREE Spire/Top Construction



- Firmly pinch 3 wire tips of the bare copper wire with the needlenosed pliers leaving enough wire for the desired twig length; tightly twist to the desired small branch length
- Remove 1 strand (1/3) of the remaining untwisted wire and give one final twist to hide the wire stub
- Bend the "twigs" away from each other so they are not in a single plane
- Lightly solder the twisted portion of each small branch









GROW YOUR TREE Medium Branch Construction

- Take 3 small branches and firmly pinch with the needle-nosed pliers; tightly twist the 6 wire strands to the desired length of the medium branch
- Remove 2 strands (1/3) of the remaining untwisted wire strands and give one final twist to hide the wire stubs
- Bend the small branches away from each other so they are not in a single plane
- Lightly solder the twisted portion of each medium branch

GROW YOUR TREE Medium Branch Construction



GROW YOUR TREE Medium Branch Construction



GROW YOUR TREE Large Branch Construction

- Take 3 medium branches and firmly pinch with the needle-nosed pliers; tightly twist the 6 wire strands to the desired length of the large branch
- Remove 4 strands (1/3) of the remaining untwisted wire strands and give one final twist to hide the wire stubs
- Bend the medium branches away from each other so they are not in a single plane
- Lightly solder the twisted portion of each large branch

GROW YOUR TREE Large Branch Construction





GROW YOUR TREE Tree Construction

- Take the tree top and 3 small branches and firmly pinch the wire strands with the needle-nosed pliers; tightly twist the wire strands to the desired length of the trunk section
- Remove 1/3 of the remaining untwisted wire strands and give one final twist to hide the wire stubs
- Lightly solder the twisted portion of the trunk section
- Repeat for as many branches as you wish, smaller branches then larger branches

GROW YOUR TREE Tree Construction

- Once you've attached all the branches you want, twist and solder the remainder of the trunk
- Roots may be created by pulling 2 or 3 strands out perpendicular to the trunk and twisting them together; trim and solder
- Larger/fuller trees can be constructed by doubling or tripling up on the various branch sub-assemblies

TEXTURE & COLOR

- Most trees are not smooth, major branches and the trunk frequently have very rough bark which can be simulated with fine sand or sawdust
- Paint the trunk and larger branches with thinned PVA glue and sprinkle with the sand or sawdust
- Once dry paint the entire tree with gray paint
- Once the gray paint is dry apply umber or sienna stain to the entire tree armature

VARIATIONS ON A THEME

Taller Trees - Thicker Trunks

- Taller tree with a thicker trunk with branches only in the high canopy
- Splice addition wire strands into the trunk, adding more strands the further down the trunk

Conifer Trees

• Construct like the basic tree, but keep the branches in a single plane and perpendicular to the trunk

VARIATIONS ON A THEME

- Lombardy Poplar
 - A narrow tree with upward reaching branches
 - Limit the armature to small and medium branches
 - Angle branches and twigs steeply close to the trunk

