

GENETIC JEWELRY

Construction of DNA Earrings



Step One

- **Measure out 34 inches / 86 centimeters of 28 gauge wire. Find the mid-point and place the beads in the following manner at the halfway point.**
- **During this and all following operations, be careful not to put "kinks" in the wire because that will weaken the wire and make it difficult to thread the wire through the narrow openings in the tubular bugle beads.**



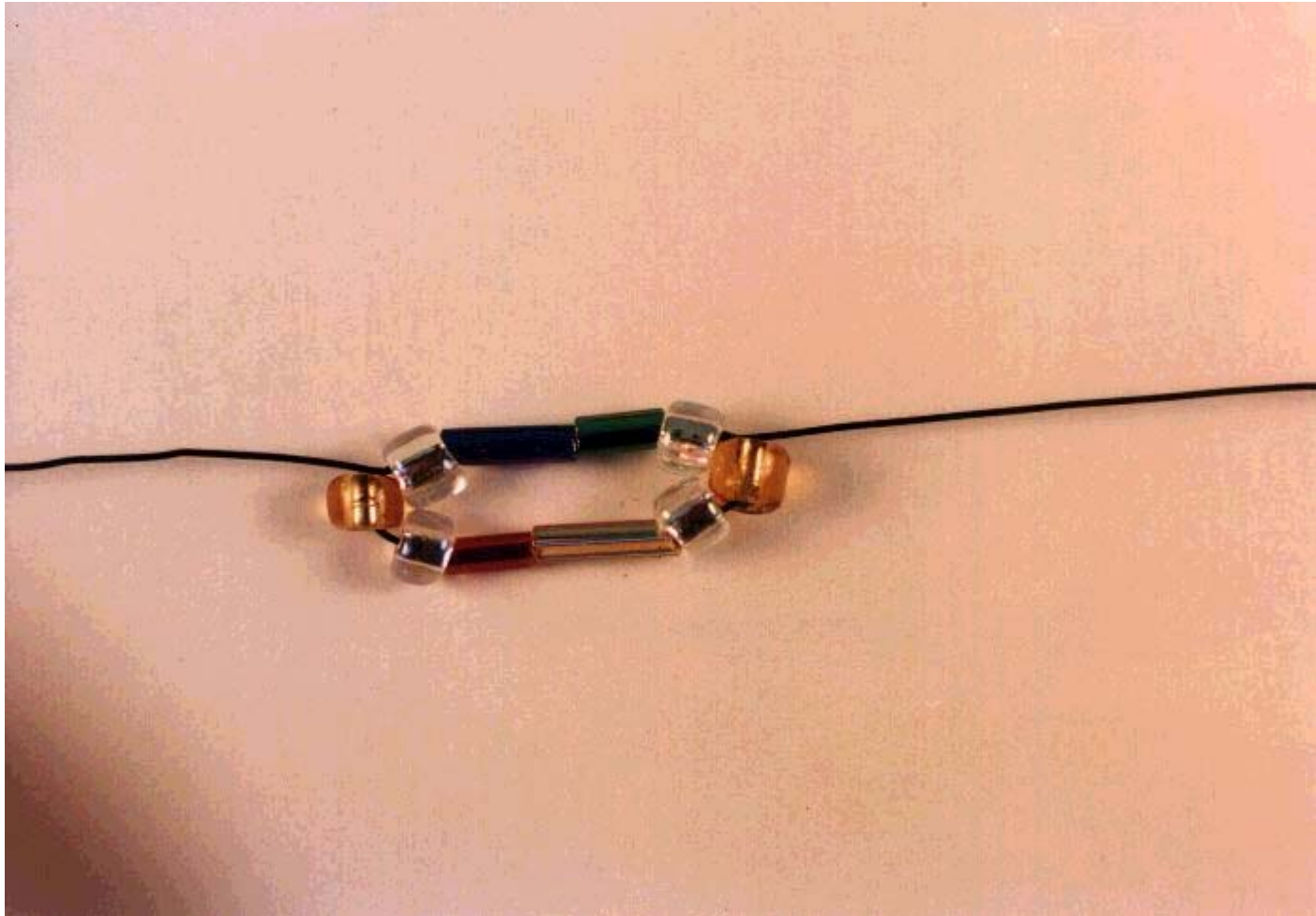
Step Two

- Run the end of the wire on the right, in the previous frame, through the green and silver bead on the left. Run the end of the wire on the left through the blue and silver bead on the right.



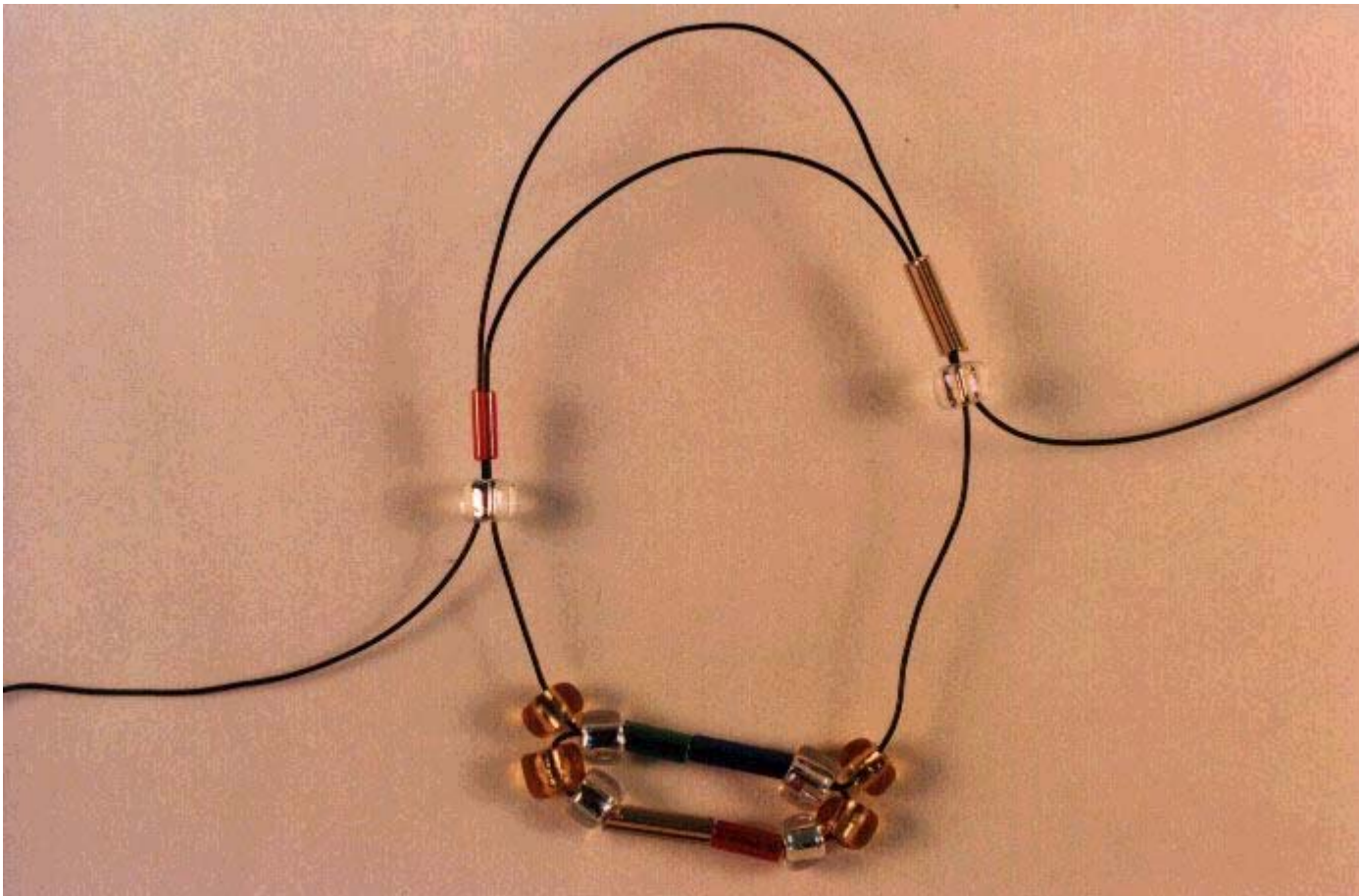
Step Three

• **Double check that the beads are in the center of the wire. Pull the wires gently to snug up the beads against each other. They should look like the photo below.**



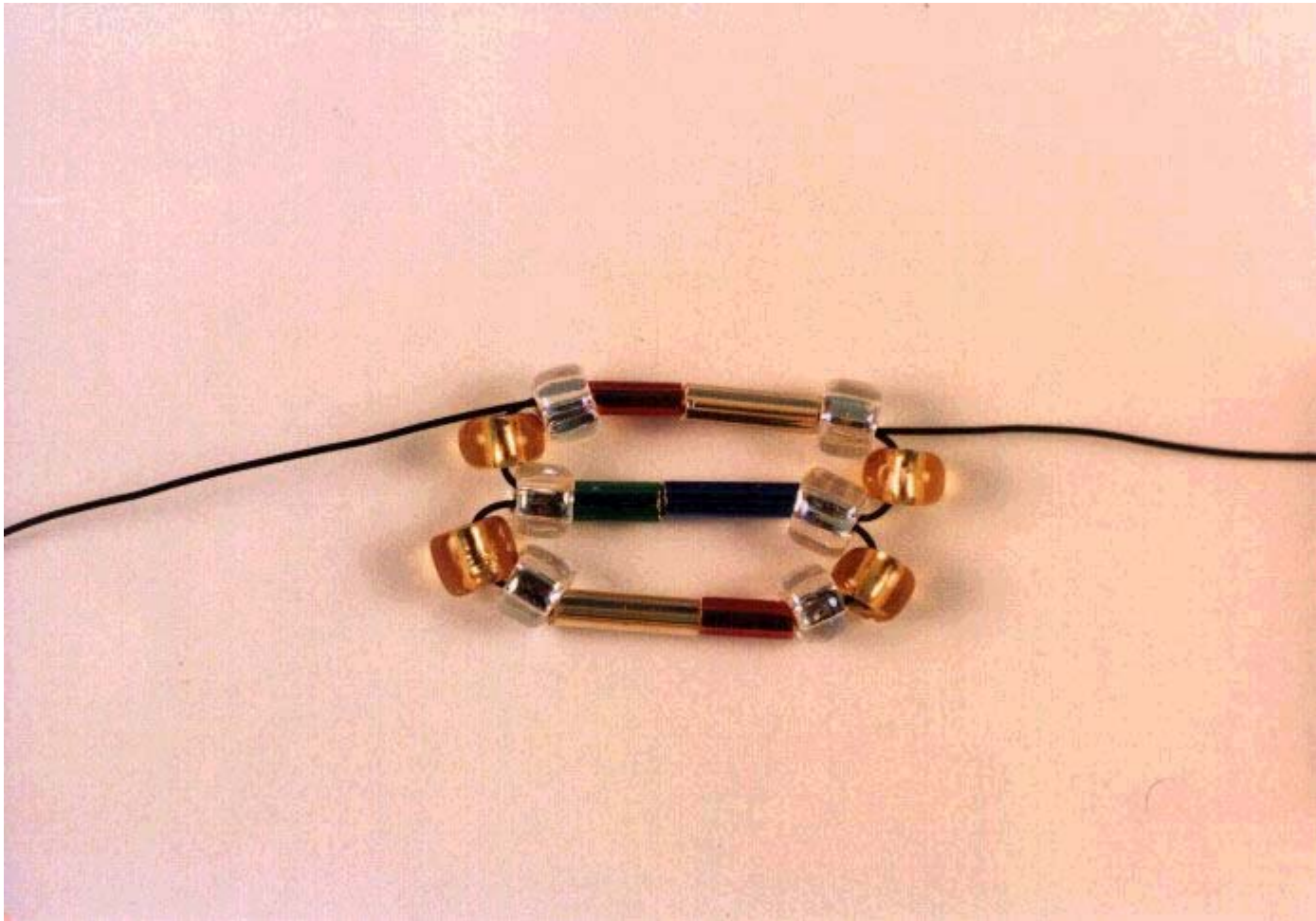
Step Four

•Add a gold (phosphate) and a silver (deoxyribose) to the right and left wires. Add your choice of one of the matching nitrogen bases to each wire. Remember that the purine adenine pairs with the pyrimidine thymine and the purine guanine pairs with the pyrimidine cytosine. Cross the wires, and gently remove the slack in the wire as you did before.



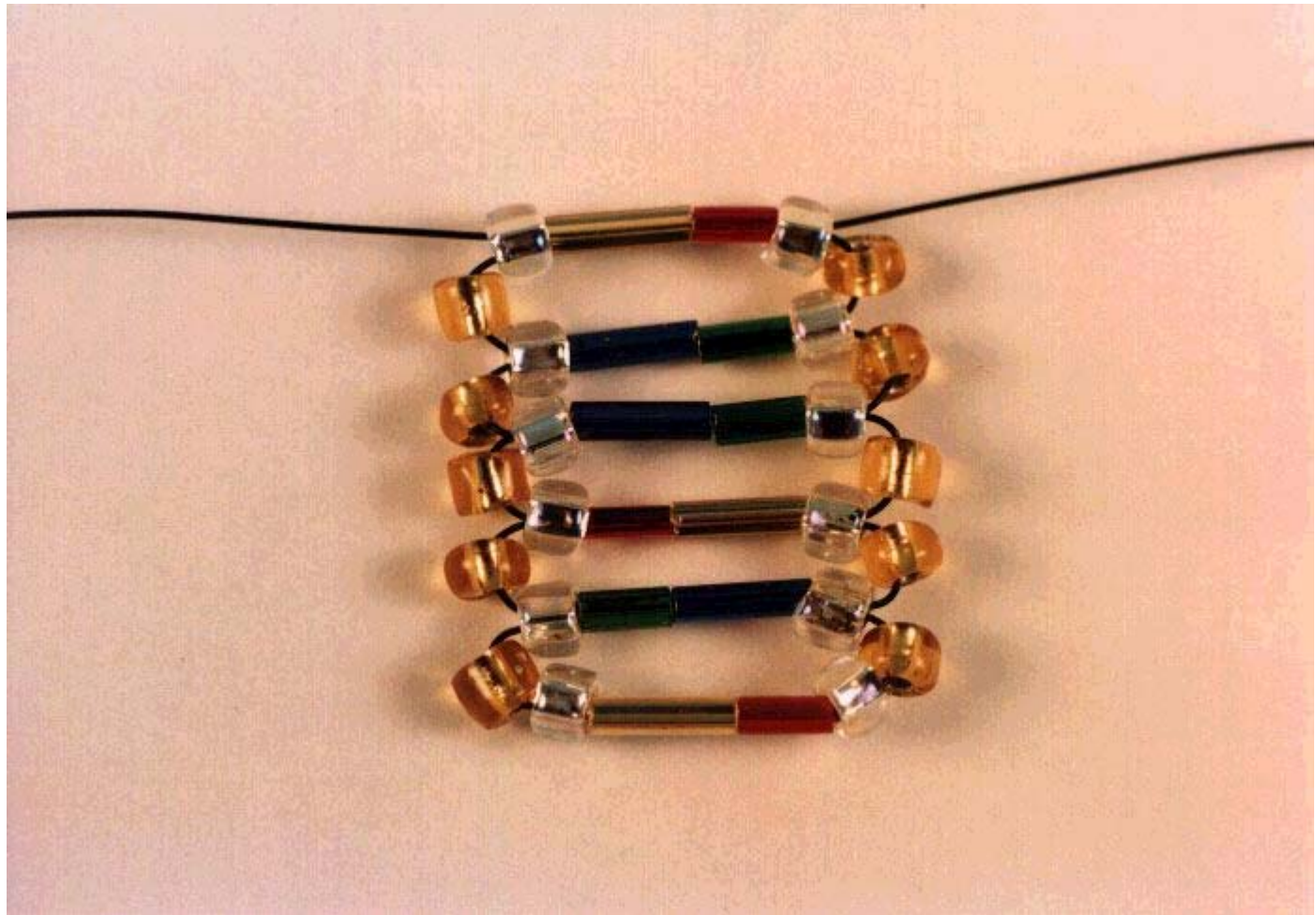
Step Five

- Repeat the previous steps as many times as you wish. The sequences are up to you--DNA has an infinity of possible combinations of base pairs.



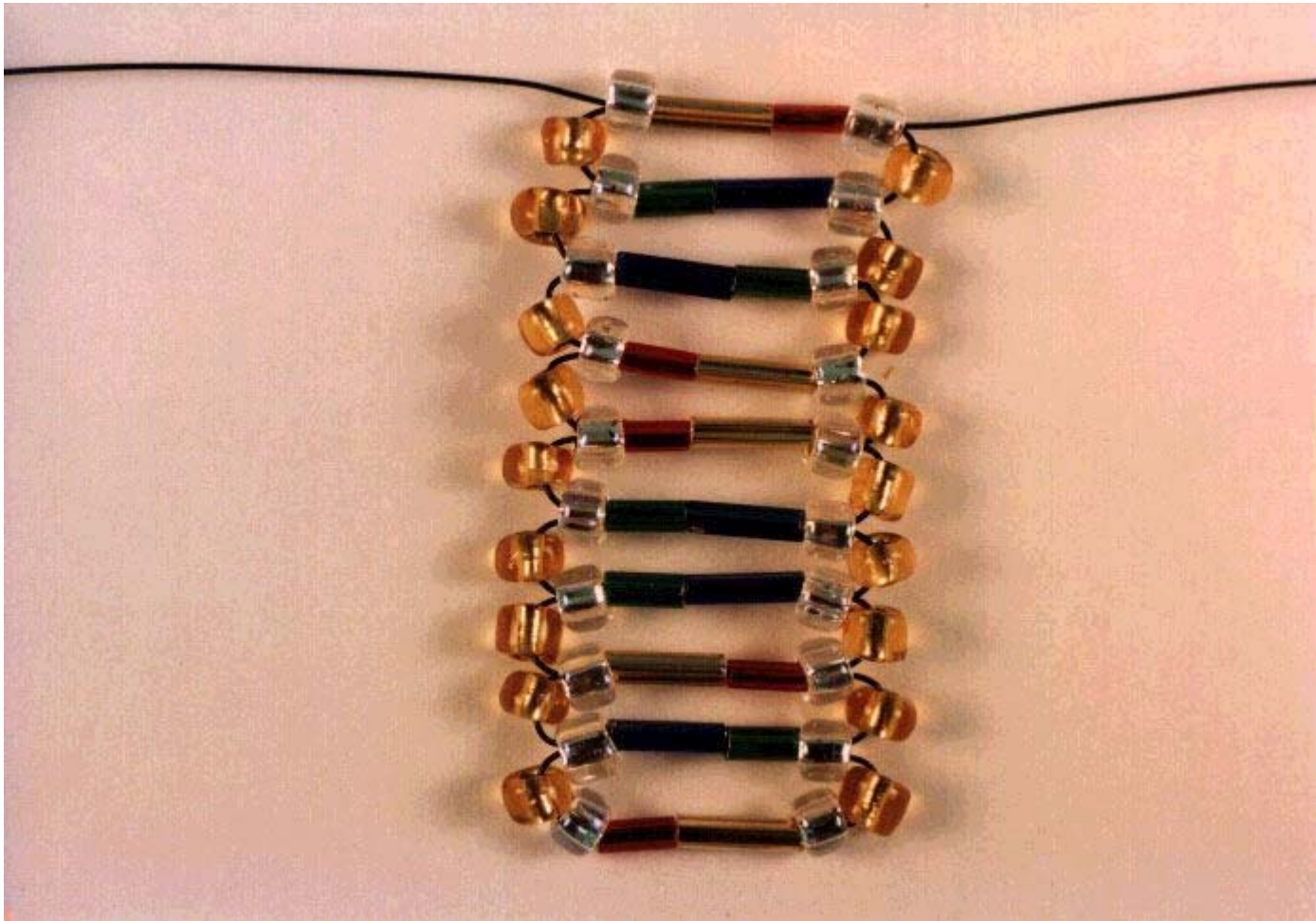
Step Six

- Keep the wire rather taut when you pull the gold colored phosphate seed beads out to the sides of the molecule. This is shown in the following photo.



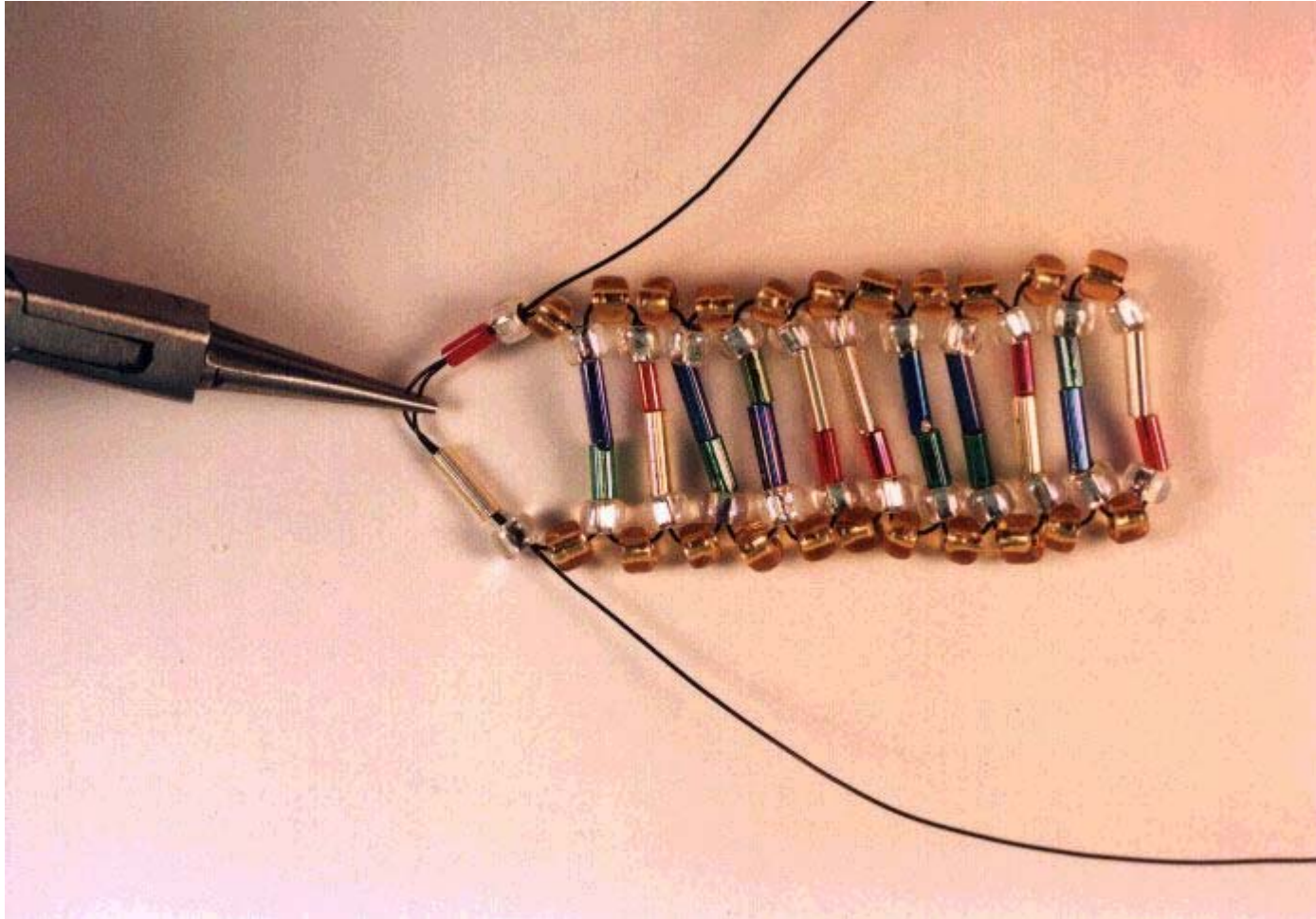
Step Seven

•Earrings can be made any length-- twelve base pairs makes a nice single twist of the double helix. You can, of course, make other ornaments with this technique-- like Christmas tree decorations.



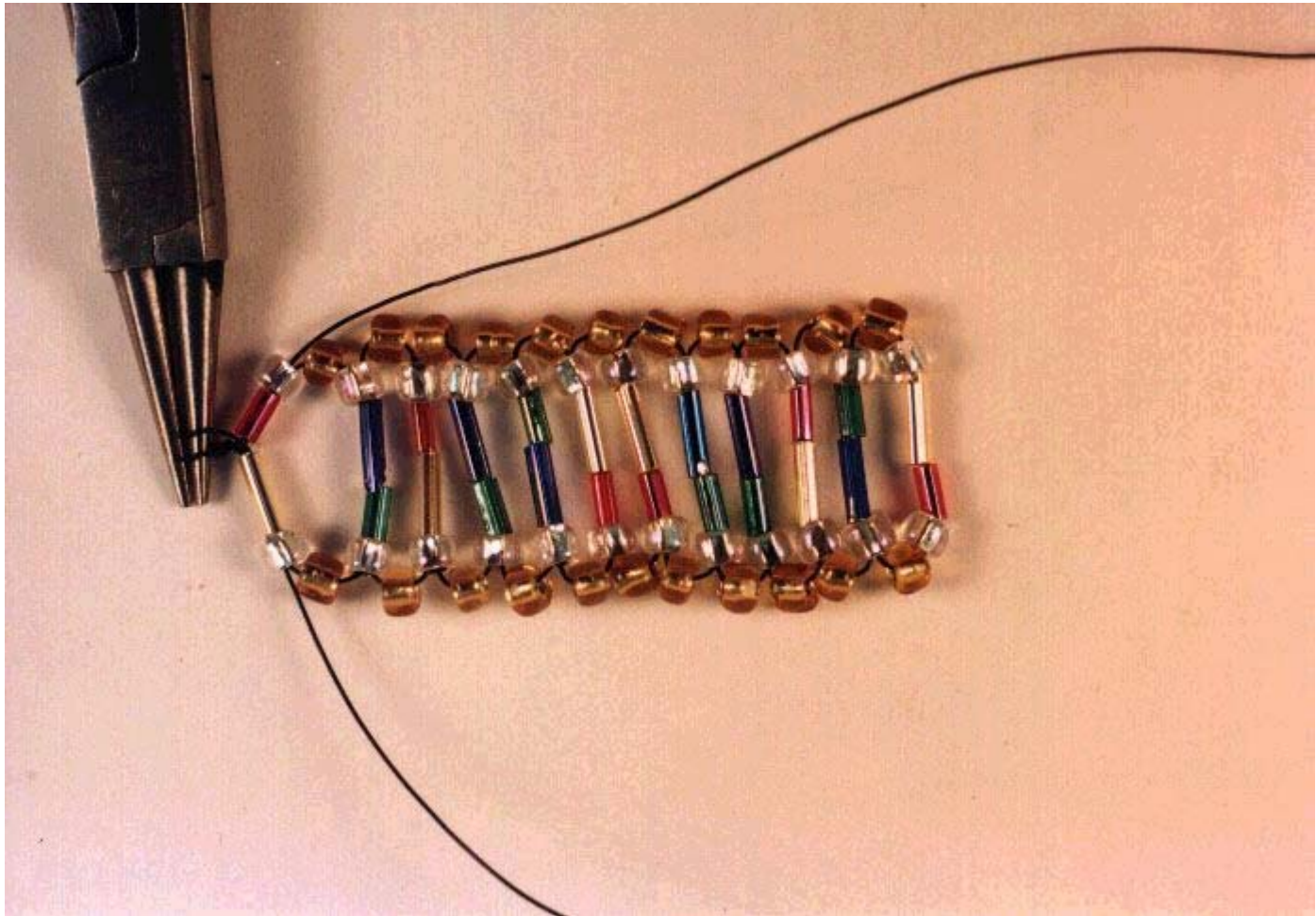
Step Eight

- When you place your last base pair onto your DNA molecule, allow a bit of wire to extend from between the last two base pairs. With a pair of pliers, or even a paperclip, form a small loop so you can later attach the ear hook.



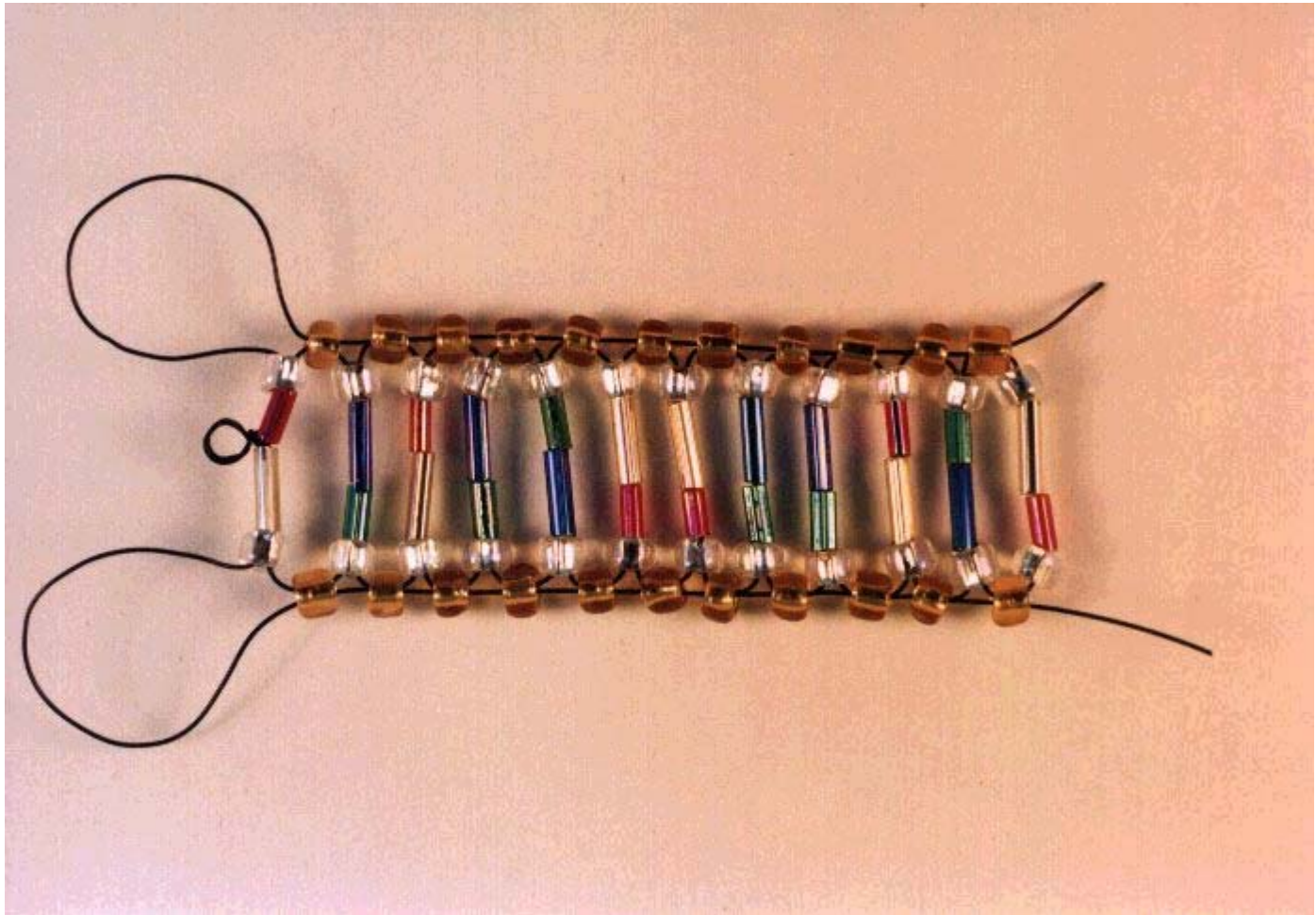
Step Nine

- Give the wire a little twist.



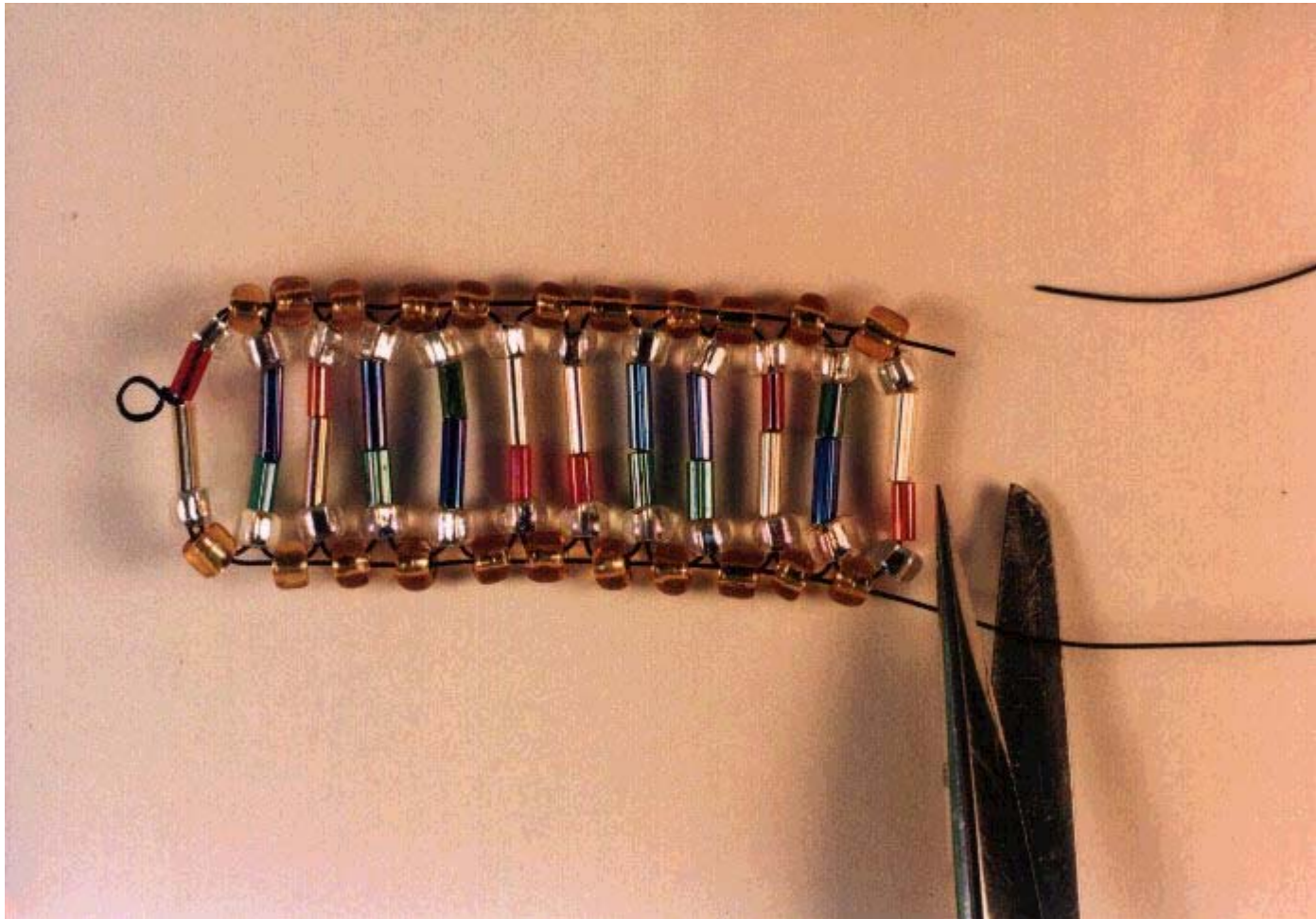
Step Ten

- The remaining wire should be threaded down through the gold phosphate seed beads... again be careful not to put "kinks" into the wire. The loops tend to kink as you pull the wire through at this point.



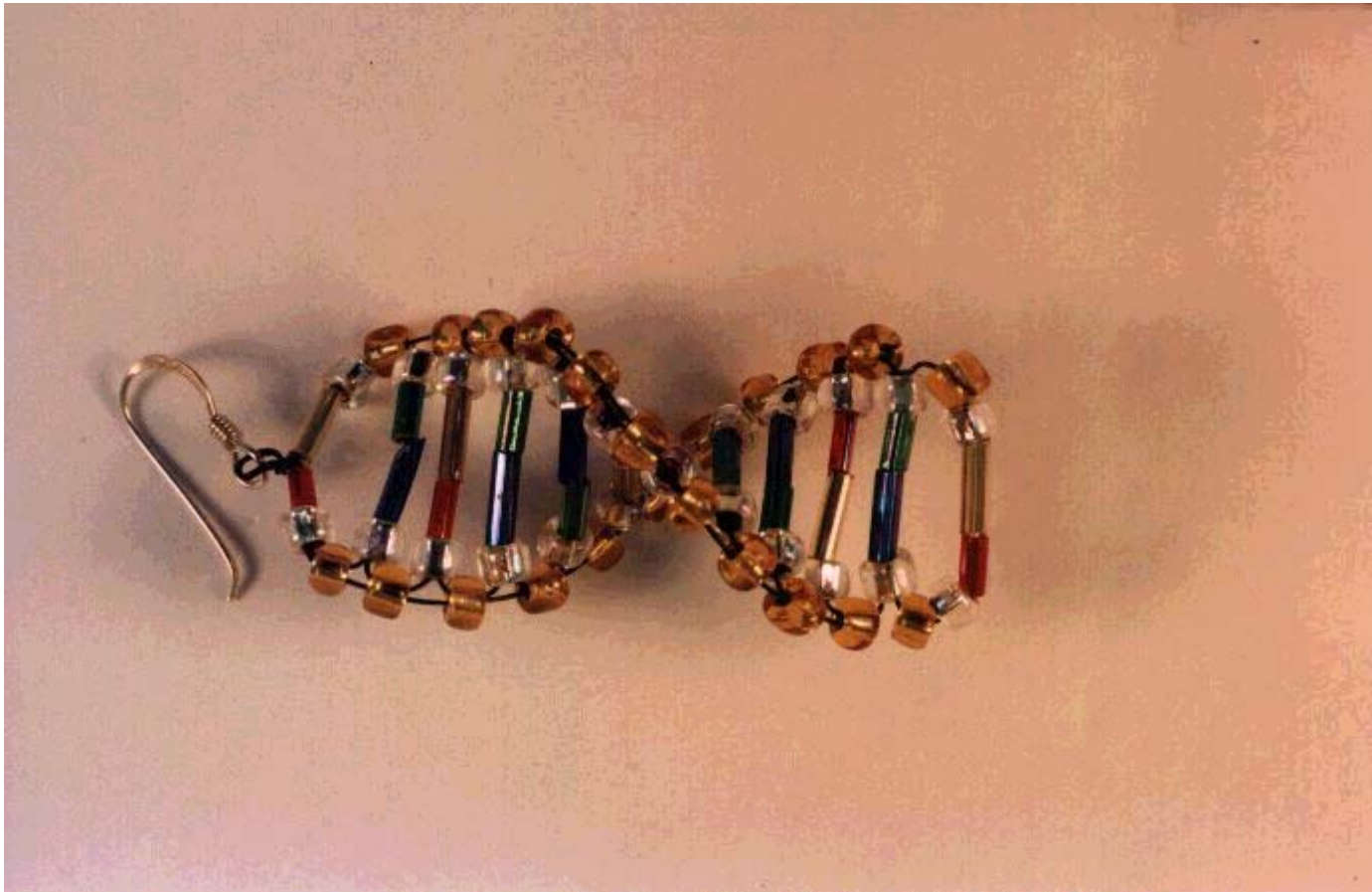
Step Eleven

- Cut the excess wire off at the bottom of the helix.
- If you want to make even more sturdy jewelry, you can cross the wires at the bottom and thread them up the opposite side. This technique makes a very strong helix, but the wire shows.



Step Twelve

- At this point, spend a few moments adjusting all of the beads in your helix. When all seem in their proper positions, give the "ladder" a little counter-clockwise twist.
- Add an ear attachment hook to the loop at the top and wear this beautiful symbol of life's main molecule.... or give it to someone who will!



Step Thirteen

•The final product is sturdy and attractive. The "molecules" can be worn on special days within our curriculum, or as everyday "Biowear". One year we actually used about 150 of these to decorate our class Christmas tree, it was impressive!



The real family treasures are not jewels at all they are the DNA molecules that have constructed each member your family. These immortal coils have carried your family's genetic information through vast reaches of time to the present. The digital information encoded within the molecule constructs and orchestrates perfectly formed protein bodies... you! Your protein body, if it is successful, lives, grows, matures and reproduces-- you help make a baby. Next comes the hard part. It takes total commitment to raise your new protein body, your baby. With love, encouragement, education and hard work, your "family treasures" may have the chance to leap into the future! You may see part of your DNA live in your grandchildren and great grandchildren.

DNA stands for DeoxyriboseNucleic Acid. The structure of DNA was unraveled in 1953 in Cambridge, England by two researchers, Francis Crick (English) and James Watson (American). These two men will be honored in the future for as many centuries as Aristotle and Plato have been in the past. Their contribution to our understanding of life and ourselves is vast and far-reaching. The molecule itself is elegant in its simplicity, and makes great jewelry!

The DNA molecule is composed of four different nucleotide bases. They are Adenine, Guanine, Thymine and Cytosine. The Adenine and Thymine are molecular mates as are the Guanine and Cytosine. These are held in a long helix shape by a backbone of phosphate and deoxyribose sugar. The data contained within the DNA molecule is digital and is processed and passed on from generation to generation with very few errors or changes. The DNA you inherited from your ancestors resides in almost every one of the hundreds of trillions of cells of your body. A "half set" resides in each of your reproductive cells, waiting for a complement, so they may "jump" into the future!

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