How to manufacture a yo-yo

Here are the directions you are going to need to create your very own yo-yo in technology education.

Please remember that there are 5 steps involved in manufacturing a project from wood. Even though the projects may vary as far as design and purpose, the process will be the same.

The steps you need to manufacture a woodworking project are: Layout, Shaping, Smoothing, Assembly and Finishing.

So let’s build a yo-yo. **The 1st step** you need to do is the layout process. This is the most important of the 5 steps. This is where you create the design for your yo-yo. From your design you develop a pattern of the exact size of your yo-yo. You will need to first mark on your wood where the center of the yo-yo will be. Using that mark take a compass and make a circle that is between 2 ½ and 3 inches in diameter on your wood. Since a yo-yo has two halves you will need to make another circle the same way as before.

**The 2nd step** is the shaping process. This is where you cut and drill your wood up into individual project pieces. To accomplish this you will use the radial-arm saw, drill press, jigsaw and or the bandsaw. First you need to drill a hole in the center of your circles. Use the drill press to drill a hole using the 3/8” drill bit on the mark you made in the center of each circle. Once you have drilled the holes in each circle you need to cut it on jigsaw. Remember to cut roughly a 1/8” away from your layout line.

Once your pieces are cut, **the 3rd step** is smoothing. Remember this process involves two steps. Filing and sanding. The 1st thing you need to do is file your individual project pieces. The files you could be using are the flat, ½ round, round and square. The purpose of filing is to make all the cut edges even. After all your pieces are filed – your next step is to sand all you pieces. Please remember that you must sand with the grain, never across it. While you are sanding you could use the finish sander, combo-sander, spindle sander or hand sand. Make sure that you do not file or sand the inside of the hole that is in the center of each yo-yo half.

**The 4th step** is assembly. This is where the individual project piece are put together the form your actual project. For the yo-yo no nails or screws are required to assemble it. Before you can start assembling you need to first get the dowel rod and cut it so that it is 1 ¾ inch long. This is the center of your yo-yo and will be going in the center holes of each half. If the rod does not fit snugly in the holes you drilled then you will need to place some glue in the holes so that the rod stays in place. Before you do any gluing make sure you get a length first and tie it to the rod. Then glue the sides of the yo-yo to the rod if you need to. If you plan to apply finish do not glue the yo-yo halves to the rod until your project in finished.

**The 5th** and last step is finishing. This process can involve many different types of wood finish. The 1st is to paint your project. I have some colors – but not the entire rainbow of colors. You will need a paint brush to apply and scrap wood to protect your project. Remember not to paint the bottom of your project. You need to put it down to dry. The next is to stain your project. The color I have is walnut. Stain is applied with a rag and once again you need scrap wood to protect your project. The last is lacquer. This is a clear – protective coating. Lacquer is applied with a brush and is the last finish you can apply to your project. Once wood is lacquered it is sealed. It is applied with a brush and do not forget the scrap wood. If you are applying finish you may want to separate the sides of the yo-yo from the rod just make sure to not get any finish in the center because the rod will no longer fit.