

The Puzzle Project

We will use a scroll saw/band saw to make a puzzle. Design and planning are important.



Materials required:

- 3/4" plywood, measuring 8.5x11"
- 1/8" plywood, measuring at least 8.5x11" (2 of these)
- Carbon Paper
- Glue
- Sandpaper
- Acrylic Paint

Step 1 - Choose your design

Google a simple logo or image that would be appropriate for a puzzle. Sports team logos or images of superheroes would be good examples.

- Email the image to your teacher so s/he can print it to fit a 8.5x11" sheet of paper.
- Using carbon paper, trace the image onto your piece of 3/4" plywood. Remember to use a ruler to trace all the straight edges.



TIP: Once you have traced your image onto your wood, go over the lines with a pen to create an indentation. This will help you with the painting that will come later.

Step #2

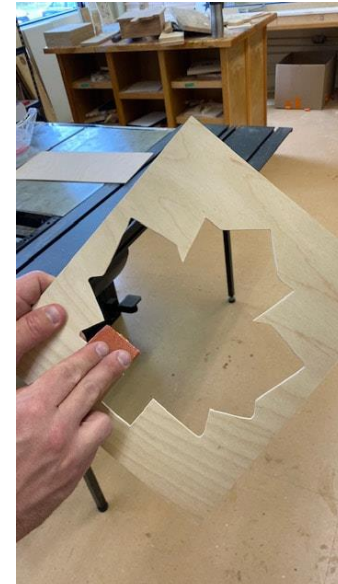
Using a scroll saw or a bandsaw, cut the outside of the logo.

(Do you need to make relief cuts?)



Step #3

- Give the edges a light sanding to get rid of any splinters using a 120-grit sandpaper.
- Trace the outside of the logo onto the 1/8" plywood (see photo). Make sure that your cutout is centered on your plywood. **Show your instructor!**
- Drill a hole somewhere in the center of the 1/8" plywood for your blade and cut out the hole using the scroll saw. (Test: Does your logo on thick plywood fit inside the whole you made in the 1/8" plywood?)
- Use sandpaper on the edges to get rid of any splinters.



Step #4

- Using wood glue to laminate the 1/8" cutout onto the other sheet of 1/8" plywood.
- Clamp the two pieces together and leave them to set. Be careful that you laminate your project with the correct face down. My design is symmetrical, so it didn't matter which face was down. However, if your design is asymmetrical, you'll need to ensure the proper orientation.



Step #5

Using a pencil, lightly draw out some cut lines that will represent your puzzle pieces.

- Remember to avoid making the pieces too small. **Show your instructor!**
- Once you have drawn out your plan, cut your design apart using the scroll saw. Remember that this job will have no "waste" so cut carefully.



Step # 6

Once the glue has set on your 1/8" pieces of plywood, trim the corners.

- I generally use a roll of tape or a paint can to design the curved corners
- After you've traced the curves, cut them out using a **band saw** (do you need relief cuts?).
- Sand the edges smooth with 120-grit sandpaper.



Step #7

Choose appropriate paint colours, and paint your project.

- Plan your painting! What should be painted first? Where can you use painter's tape to keep nice clean lines?
- Let paint dry before painting the next color
- Remember to use thin coats of paint and use multiple coats.
- Once all painting is done, apply clear coat finish to get a nice shiny look.



Quiz:

1. Which of the following items is NOT needed in order to complete this project?

(1 Point)

- Mitre Saw
- Drill
- Bandsaw
- Spindle sander

2. What kind of wood will be used in creating this project?

(1 Point)

- clear pine
- cedar
- MDF
- plywood

3. According to the instructions, how many steps are involved in this project?

(1 Point)

- 5
- 7
- 8
- 9

4. According to step #3, a scroll saw is used to cut out the hole for the puzzle backer. Why could you not use the bandsaw?

(1 Point)

- The bandsaw is not as accurate
- The bandsaw cuts too quickly
- The bandsaw blade is too thick
- The bandsaw cannot cut out "holes"

5. Why is it recommended in step #1 that you go over your tracing/drawing with a pen?

(1 Point)

- The ink shows up better
- The clearly defined, indented lines will help with accurate painting
- The carbon paper lines will fade and become invisible

6. Which grit of sandpaper do the instructions recommend that you use when hand-sanding?

(1 Point)

- 120-grit
- 150-grit

- 220-grit
- 400-grit

7. When you come up with your design idea, how big should it be?

(1 Point)

- 3" x 5"
- 4" x 6"
- 8.5" x 11"
- 9.5" x 16"

8. According to step #5, it is important to plan and lightly draw your cut plan on your work before proceeding. Why is this important?

(1 Point)

- So that I can use the appropriate blade thickness.
- There will be no "waste" pieces. I want to make sure that my plan is good so that I don't ruin all of the hard work that I've put in so far.
- Because my teacher told me so.