

Agriculture Shop Class

Reading Benches Project

Project Objective: The purpose of this project is for you and your team members to work in a collaborative situation to plan and create a children's sized reading bench that shows quality of workmanship while demonstrating safe use of tools and equipment.

1. Materials List and procedures:

- a. Will need 1 – 1" x 12" x 12' long boards
- b. Rip all boards to 2 3/8 inches, will have a 1.5 inch piece left over for seat slats.
- c. Once boards are ripped, lay out so that you can cut out the following – **IMPORTANT TO LAY OUT FIRST TO MAKE SURE YOU MOST EFFICIENTLY USE THE LUMBER:**
 - i. 30 inch long boards – 7 are needed
 - ii. 16 inch long boards – 7 are needed
 - iii. 20 inch long boards – 2 are needed
 - iv. 19 inch long boards – 2 are needed
 - v. 18 ¼ inch long boards – 2 are needed
 - vi. 16 ¾ inch long boards – 4 are needed
 - vii. 10 inch long boards – 4 are needed
 - viii. **ON BOARDS REMAINING – KEEP AS WE USE THEM FOR SEAT SLATS – these are boards that are 31 ½ inches or longer.**
- d. Sand all boards beginning with 150 grit paper, then sand all board with 220 grit paper.

Assembly Procedures

Step 1 Cut dado into horizontal back slat – dado is ¼ inch wide and 1 ¼ inches high – this is done by running board through saw twice (1/8 inch blade) – 30 inch board

Step 2 – Cut tendons on the 7 boards that are 16 inches long – tendons will need to fit into the groove of horizontal back slat... remove 3/16 inch from both sides of tendons going up 1 ¼ inches.

Step 3 – cut rounded edge on both (2) back legs. – 30 inch boards

Step 4 – Attach 10 inch long leg supports to inside of each front and back leg. Use all four.

Step 5 – cut out all four seat supports from the 16 ¾ inch long pieces.

Step 6 – attach outside (use 2 of them) seat supports to legs.

Step 7 – attach front and back (2) frame members – 30 inch long pieces

Step 8 – attach both (2) arm supports – 18 ¼ inch long pieces

Step 9 – attach 1 back seat slat (sits behind upright back slats). 30 inch long

Step 10 – assemble back – back – space, drill for pegs, cut pegs, and glue into holes.

Step 11 – Attach back to bench – up 15 inches from back (behind) seat slat and in ¼ inch (at top)

Step 12 – Counter sink and attach bottoms of back slats to back seat (behind) slat.

Step 13 – Attach front (wide) seat slat

Step 14 – Cut out notches for arms (using bandsaw) and attach to arm supports.

Step 15 – Space and attach inner 2 seat supports.

Step 16 – Fabricate remaining 7 seat slats – 31 ½ inches long by 1.5 inches wide. Need to be rounded over on all four edges. Then sand and attach to bench.

Roland-Story Agriculture Shop Class

Reading Bench Project

Name _____

Evaluation Criteria	4—Excellent	3 –Above Average	2 – Average	1 –Below Average
Length & Width	Correct length & width	1/2 to 1 inch off	1 to 1.5 inches off	More than 1.5 inches off
** Painting	Correctly applied – even and equal coverage	Correctly applied – even, but unequal coverage	Incorrectly applied – uneven and unequal coverage	Not painted.
Finish	Very smooth and free of defects	Smooth with some defects	Rough with defects	Rough with splits
** Appearance	Even with correctly applied paint and stain	Slightly uneven with correctly applied paint and stain	Uneven with correctly applied paint and stain	Uneven with paint and stain applied incorrectly
Frame	Equal with no splits	Equal with less than 1 splits	2 to 3 splits	More than 4 splits

Safety used in project..... 5 points possible _____

Questions on backside 5 points possible _____

Total points earned _____

Respond to the following using full sentences.

1. What was the most difficult task of this project for you? Explain why.
2. What was the easiest task of this project for you? Explain why.
3. What did you learn by doing this reading bench project? Explain your answer.
4. If you were to re-do this bench, what would you do differently and explain why?