

Lesson #3: Project #1 (10-12 Day project)

Objectives

Students will be able to...

- Build a three-dimensional object based on two-dimensional drawings.

Common Core Standards

LS 11-12.6
RSIT 11-12.2
RLST 11-12.2
Problem Solving and Critical Thinking 5.1
Leadership and Teamwork 9.1 & 9.7
Health and Safety 6.2 & 6.10
Responsibility and Flexibility 7.4
Technical Knowledge and Skills 10.0, 10.1, 10.2
Cabinetmaking and Wood Products Pathway A1.4, A1.7, A3.1, A4.1, A4.3, A4.4, A4.7,
& A6.1
Residential and Commercial Pathway D 2.1, D3.1 & D3.2 D 3.3

Materials

Box Working Drawing
Bill-of-Materials
Safety Glasses
Palm Sander, Orbit Sander, Belt Sander
Project Progress Self Evaluation (for Halfway through the project)

Lesson Sequence

Day 1

- Before you take your students into the shop, have them choose a “building buddy.” Building buddies are especially important on this first project, because of the student’s inexperience with the machines. Building buddies add an extra brain and set of eyes to each student. This helps reduce potential problems and/or accidents in the shop. (5 minutes)
- Remind your students of some of the shop and machine rules/safety rules. Reiterate

shop clean-up responsibilities and/or duties for the volunteers and the class in general. Have your students get out their bill of materials packets, grab a pair of safety glasses and meet at a designated workbench in the shop. At the workbench, have pre-cut slabs of pine waiting to be assigned to students. Using a large black marker, mark the back face of each board with the full name and period number of each student as you hand it to them. Once they have their board in their possession, they can begin the project. As you give your students their piece of pine, tell them where they will store their projects/project pieces. (10 minutes)

- Have a palm sander, random orbit sander, and belt sander on display. Discuss the proper operation and safety of each of the sanders.
- When done with the hand-held sanders, take your students over to the floor-mounted disc sander, and finish your discussion with this machine.
 - ✓ The highest injury rates for any of the machines in the shop belong to the disc sanders and the band saws, because the disc sander and the band saw are heavily used but not highly respected.
 - ✓ (The table saw for instance, is very powerful; it makes a lot of noise and is genuinely 'scary' to a beginning student. Out of respect (driven by fear) the table saw is not as widely used, and when students do use it, they show it a great deal of respect; i.e., they are very careful when using it. On the other hand, the disc sanders and the band saws are not as powerful, do not make all that much noise, and are generally not that 'scary.' This results in a lack of respect for the machines by students.) (10 minutes)
- Answer any questions students have and then release students to begin working on their projects. (20-25 minutes)

Day 2-7

- Students should work on project in the shop. Support students as needed

Day 8

- Pass out the *Project Progress Self Evaluation* worksheet to touch base on where students are in completing the project.

Day 8-10 or 12

- Continue working on project. Use Project progress self-evaluation worksheet to get a feeling for where students are in completing the project and adjust timing accordingly.

Assessment

Check for understanding. Monitor student progress on projects each day. Ask students clarifying questions and answer any questions students may have.

Accommodations/Modifications

Strategic Partnering
Check for Understanding
Provide Visual Examples of The Project
One on One Support

Project Progress Self Evaluation

1. What I have learned from this project so far is...

2. What I would still like to learn from this project is.

3. Safety practices that I have been observing...

4. What I have learned that I should be doing, from this point on, to ensure an excellent outcome of this project...
