

### Lesson #1: Blue Print Reading/Bill of Materials

#### Objectives

**Students will be able to...**

- Obtain the information they need from a working drawing.
- Develop a bill-of-materials.

#### Common Core Standards

LS 11-12.6

RSIT 11-12.2

RLST 11-12.2

Health and Safety 6.2, 6.3, 6.4, 6.5, 6.6

Leadership and Teamwork 9.1, 9.7

Technical Knowledge and Skills 10.1, 10.5

Demonstration and Application 11.1

Cabinetmaking and Wood Products Pathway A1.4, A1.7, A3.1, A4.1, A4.3, A4.4, A4.7A4.1, A4.4, A6.1

Residential and Commercial Pathway D2.1, D3.1, D3.2, D3.3, D3.4, D3.5, D3.6, D3.7

#### Materials

Tool Box Working Drawing

Tool Box Instructions

Bill of Materials

#### Lesson Sequence

- Introduce a working drawing to the class. Explain that a working drawing is also considered a text. Show that the working drawing connections and represents the finished project.
- Pass out copies of the *Toolbox Working Drawing, Toolbox Instructions, And The Bill-Of-Materials*.
- Have students identify all the parts of the project so they have an idea of how many items will be listed on their bill of materials list. Work together to complete the bill of materials. (50 minutes)

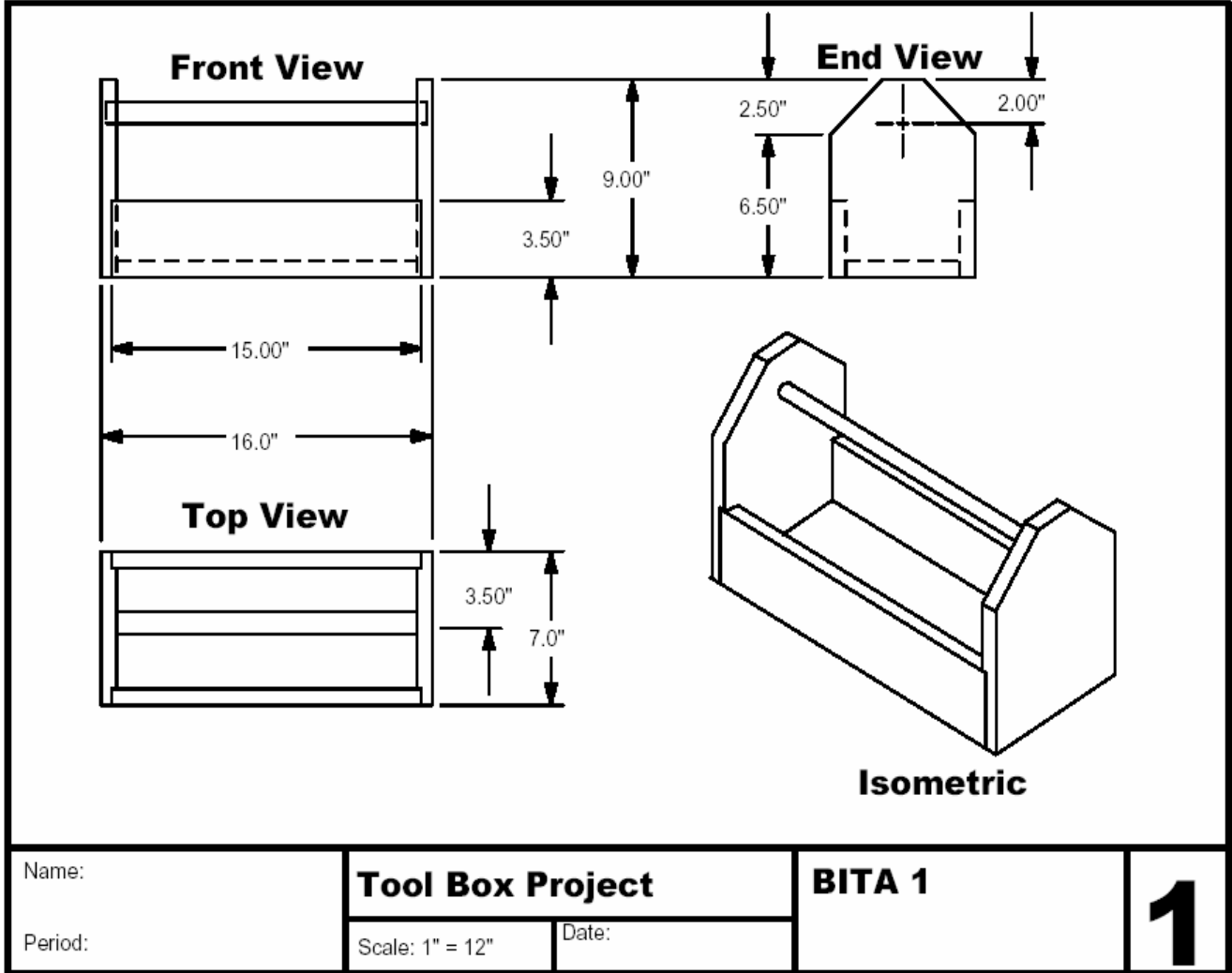
**Assessment**

Check for understanding. Monitor Student learning through questioning.

**Accommodations/Modifications**

Check for Understanding  
Additional Visuals  
Support One on One

**Toolbox Working Drawing**



## Toolbox Instructions

### Layout

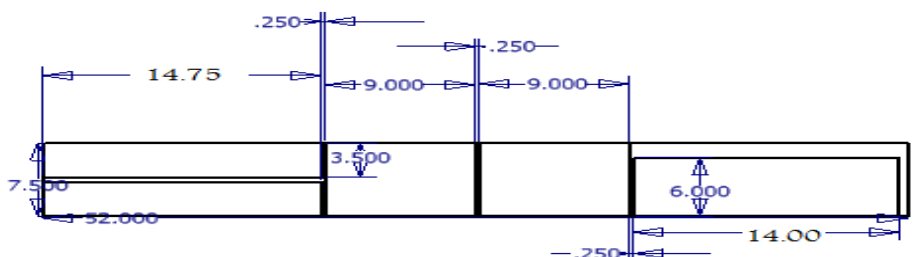
1. Layout angled lines by measuring up 3 ½ inches on each side of the end pieces and make a mark, measure across the top 2 5/8 inches on both sides. Draw a diagonal line connecting the marks on each side. This will make the angled lines on the ends of the tools box.
2. Place the first end piece into a vice, or clamp to a workbench.
3. Using a handsaw cut along the lines you just marked.
4. Using a sharp hand plane, straighten and smooth the newly cut sides.
5. Repeat steps 1 – 4 for the other end piece of the toolbox.
6. Measure ¾ of an inch in on each side of the end piece; draw a straight line up into the angled cut.
7. Using a handsaw, make a shoulder cut for the rabbit on the line you just made, 3/8" deep. This will be the edge of the rabbit. Do this on both edges of the end piece.
8. Using a chisel, chisel out a groove 3/8" deep next to the saw kerf that was just made.
9. Repeat steps 6 – 8 on the other end piece of the toolbox.
10. Measure down 1 ½" from the top of the edge piece and make a mark, now find the centerline of the edge piece and make a line. Where the two lines intersect is where the hole for the handle will be drilled.
11. Using a brace and 3/4" bit, drill a hole at the intersection of the two marks that where just made.
12. Repeat steps 10 and 11 on the other end piece of the toolbox.

### Assembly

1. Receive two (2) side pieces and one bottom piece from your instructor.
2. Without glue, dry assemble all pieces to insure a proper fit, adjust non-fitting pieces now.
3. Assemble all five (5) pieces at once using glue, clamps and nails.
4. Drive two finish nails into each joint.
5. Receive ¾" dowel from instructor, insert into holes at the top of the toolbox with approximately ¼" protruding from each end, secure with glue.

### Bill of Materials per Student

- (1) 1" x 8" x 48" cut as shown
- (1) ¾" dia. Dowel 18" long





### Bill of Materials

Part #	Description	Material Type	Dimensions (calculate footage)		Footage (bd/ft, lin/ft, sq/ft)	Quantity Of Parts	Unit Cost	Total Cost
				=				\$-
				=				-
				=				-
				=				-
				=				-
				=				-
				=				-
				=				-
				=				-
				=				-
							Cost:	\$-