

TBTE407 –Documentation for Lesson Plan #1
Dr. Bishop

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Changes to Lesson Plan

Page 2 Removed Objective regarding measuring teamwork.

Page 4 Removed from Instructional Plan "...to recognized trends in traditional and classical
Architectural design"

Page 11 Teacher's Page is now written more specific to the Webquest Lesson.

General Lesson Plan Format Nine Event Model

Lesson Name: Symbols Library Lesson #1 ID: Mary Jo Brown

Grade/Subject: 12th Grade / Drafting and Design

Lesson Objectives:

#1 After completing the Webquest searching specific Websites for ideas for the senior project, the twelfth grade design and drafting student demonstrate knowledge about trends in architectural residential design by recognizing classic and modern design in architecture.

#5 After completing a Webquest searching Websites for architectural drawing symbols, the twelfth grade design and drafting student will demonstrate his/her understanding of the basic symbols that represent furniture used in a residential floor plan layouts by using AutoCAD software to draw a symbols library using a prepared handout.

State Standards Addressed by Lesson:

Academic Standards for Science and Technology

Technology Education 22 Pa.Code, Ch. 4, Appendix B

3.6.12. Grade 12

- Apply knowledge of construction technology by designing, planning and applying all the necessary resources to successfully solve a construction problem.

This lesson provides instruction to assist him/her in the application of construction principles to successfully begin to develop and design a residential floor plan using the AutoCAD program.

Instructional Strategy:

The instructional strategy for the majority of this lesson follows a student-centered cooperative learning approach. Students learn by having meaningful activities with more experienced individuals, the team, their peers and the teacher. Scaffolded instruction is applied by giving the students lots of group work and practice followed by working alone.

Media Selection:

The media selected for this lesson are a PowerPoint presentation, a Webquest, the AutoCAD program, and handouts created in AutoCAD and MS Word.

Beginning by displaying a list of learning objectives, the PowerPoint guides the class through the lesson. I choose a PowerPoint for this lesson because it organizes the learning material and structures the classroom environment. The PowerPoint also allows me to use colorful graphics to gain all of the student's attention. The Webquest will allow the students time to conduct research and collect ideas regarding the project. The Webquest is designed as a group collaboration in order to take advantage of the strengths and weaknesses that the students bring with them. The students will use the AutoCAD program to draft their symbols. AutoCAD is the industry standard software for drafting. Each student will draft a symbol and add it to the symbols library folder for the group to use in their floorplans.

Instructional Materials (List items here, then append actual artifacts to lesson plan):

PowerPoint – designed in PowerPoint and saved as a PowerPoint file & SWF file for viewing.

(Artifact #1 is included as a MS Word document included in the lesson plan.)

Webquest – design in Dreamweaver and saved as files for preview on Internet Explorer.

(Artifact #2 is included as a MS Word document included in the lesson plan.)

All documents are saved in my public space H:\home12.ad.lehigh.edu\M-Z\mjbg\public\Unit

Assessments (List items here, then append actual documents to lesson plan):

Pretest

For class discussion – an informal formative by observing student's verbal responses to questions.

For writing answers on the chalkboard – an informal formative by observation.

Posttest

For team Webquest – a formal summative using a criterion rubric. (rubric included with lesson plan.)

For team chart "Symbols Library" in AutoCAD – a formal summative using a criterion rubric. (rubric included with lesson plan.)

Instructional Plan:

Event (E1-E9)	Instructional Activity Group 1	Group 2 Students requiring a little more assistance	Group 3 Students requiring a little less assistance
E1 Gaining Attention	The beginning of class will start off with a motivation segment by engaging students in a class discussion about necessities they would include in each room of their condo	Encourage quiet students to participate.	Remind more aggressive students to give others a try.
E2 Inform Learner of Objectives	A PowerPoint presentation starts by informing the learner of lesson objectives. Make relevant	Write objectives on the board.	
E3 Stimulate Recall of Prerequisite Learning	Students verbally answer questions such as what elements do they think is important to include in a living space.	Ask students about rooms in their own homes.	Ask students how the rooms in their own homes would work better.
E7 Provide Feedback on Performance	Verbally acknowledge students answers.	Invite students who have not verbally participated to help write the "necessities" on the board	Ask students to help with the spelling of the words on the board.
E1 Gaining Attention	Students write the necessities they have decided are important on the chalkboard	Students take turns writing their own "necessity" or ones from the class.	Students help with spelling of the words on the board
E7 Provide Feedback on Performance	Verbally acknowledge students answers by thanking students for their work.	Thank students for their work.	Thank students for their work.
E3 Stimulate Recall of Prerequisite Learning	The PowerPoint continues by recalling the purpose of architectural drafting.		
E3 Stimulate Recall of Prerequisite Learning	The PowerPoint continues by identifying the AutoCAD commands needed to draw the symbols library.		
E6 Elicit Performance (formative)	Students verbally recall drafting procedures by answering questions.		

Event (E1-E9)	Instructional Activity Group 1	Group 2 Students requiring a little more assistance	Group 3 Students requiring a little less assistance
E7 Provide Feedback on Performance	Verbally acknowledge students answers.		
E4 Present Stimulus Material	All students receive the symbols library handouts.		
E5 Provide Learning Guidance	The PowerPoint continues by explaining the importance of the architectural symbols library.		
E4 Present Stimulus Material	All students receive the Team Webquest handouts		
E5 Provide Learning Guidance	The PowerPoint continues by explaining the process of the Team Webquest.		
E1 Gaining Attention	Students are grouped together in teams that will be beneficial to each student's strengths and weaknesses.	Six students to a team during the Internet search.	Three students to a team during the drafting part of the lesson.
E4 Present Stimulus Material	Teams receive handouts that list reliable Websites to find information for the senior project.		
E6 Elicit Performance (formative)	Teams search the Internet for about 20 minutes looking at Websites about architectural drafting symbols. Students circle on the handout any symbols they find.		
E8 Assess Performance (summative)	Teacher walks around the classroom observing student's behavior and progress. Teacher offers help.	Make sure all students stay on task.	
E5 Provide Learning Guidance	Teams must start preparing a symbols library chart that matches the handout. Each student will be assigned a symbol to draft in AutoCAD. At this point in the lesson, smaller teams would be more beneficial to allow each student computer time to draft their own symbol.	Easier to draw symbols will be given to slower students	Harder to draw symbols will be given to faster students.

Event (E1-E9)	Instructional Activity Group 1	Group 2 Students requiring a little more assistance	Group 3 Students requiring a little less assistance
E7 Provide Feedback on Performance	Teacher continues to walk around the classroom observing student's behavior and progress. Teacher offers help.		Students who are finished their drawing offer help to the other students, but allow the student to complete her/his own symbol.
E6 Elicit Performance (formative)	Each student names his/her symbol according to the handout and saves the work in a team folder on the computer.		
E8 Assess Performance (summative)	Teacher checks student's work to make sure each student is progressing. Teacher assigns a team grade for the day's activity.		
E9 Enhance Retention and Transfer	Students can continue researching the Web with optional Websites to explore. This lesson will continue for another class period to give students time to finish the symbols library.		

Documentation for Artifact #1 Webquest

Hello and Welcome to the Webquest "Design a Condo - Symbols Library"

This is a Webquest designed for the 12th grade Drafting and Design student.

To **navigate** the Website double-click on the menu items to the left.

- The **introduction** section tells you all about the project.
- The **task** section lets you know what is expected of you
- The **process** section show the way to perform the tasks.
- The **evaluation** section provides the rubric for scoring.
- The **conclusion** section tells you what you learned.
- The **teacher page** section presents a teachers view of the project.
- The **credits** section presents a supply of resources used for this project.

Introduction to the Webquest

"Symbols Library"

You have just started your first job in your new career as an Architectural Draftsperson. The boss has informed you that you will be part of a design team that is building vacation Condos for a resort area. You think, "Wow, what luck! I designed my dream condo in high school for my senior project!" You find your new work area and meet your new team members. Are you ready for the challenge?

In a real-life construction project, drafters create their own symbols library from company standard libraries or from other reliable sources. You know having a library of reusable drafting symbols handy is an efficient way to begin drafting a floor plan.

The Task

The lesson "*Symbols Library*"

This is a two-part lesson.

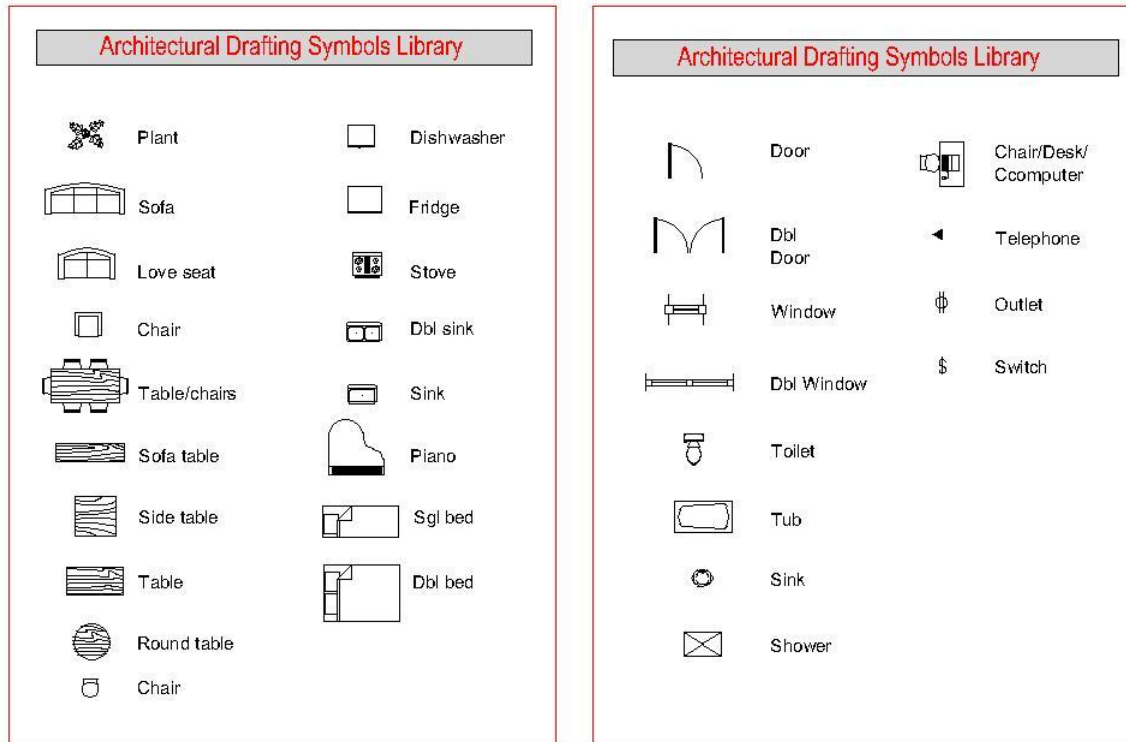
In the first part of the lesson (2a), students work in teams to complete a Webquest searching for architectural symbols used in residential floor plans. The students surf the Internet hunting for given objects provided in the handout *Architectural Drafting Symbols*.

In the second part of the lesson (2b) the students use the symbols found in the team's Webquest to complete a chart (symbols library) in AutoCAD formatted exactly like the handout, drawings of the symbols with descriptions.

Because of the amount of information the students must include in the chart, the lesson will continue to be a group collaborative project. Students will email and/or dropbox the AutoCAD file of the symbols library for and informal grade based on percentage of completion and accuracy.

The Process

All students receive the symbols library handouts.



Students are grouped together into teams that will be beneficial to each student's strengths and weaknesses. Six students to a team will enable the search to be completed faster. Each student takes a turn typing in a url from the handout.

Teams receive handouts that list reliable Websites to find information for the Webquest.

(Some Websites are listed below)

<http://www.woodworkersworkshop.com/cadfiles/cabinets.htm>

<http://www.woodworkersworkshop.com/cadfiles/tables.htm>

<http://www.woodworkersworkshop.com/cadfiles/chests.htm>

<http://www.cad-design-and-drafting-services.com/free-autocad-blocks.html>

Teams search the Internet for about 20 minutes looking at Websites about architectural drafting symbols. Students circle on the handout any symbols they find.

Teams start to prepare a symbols library chart that matches the handout. Each student is assigned a symbol to draft in AutoCAD. At this point, smaller groups would be more beneficial to allow each student computer time to draft their own symbol. Student who are finished their drawings first can offer

help to the other students, but they must allow the student to complete his/her own symbol. Each student names his/her symbol and saves the work in a team folder on the computer. The teacher checks student's work to make sure each student is progressing.

The teacher assigns a grade for the team for the day's lesson.

Students can continue researching the Web with optional Websites to explore.

This lesson will continue for another class period to give students time to finish putting together the symbols library.

The Rules

#1 Students are to work quietly in their group.

#2 Students are to be respectful of each other's ideas.

#3 Students are to be helpful to each other.

The Evaluation - RUBRICS

(Full rubrics are appended at the end of this document)

The Conclusion

After completing this lesson you should:

1. Be able to recognize the basic symbols that represent furnishings used in residential floor plan layouts.
 2. Be able to conduct a Webquest according to defined procedures.
 3. Understand the importance of teamwork in terms of a group project.
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The Teacher Page

Lesson Title: Webquest for Senior Project

Unit Title: Senior Project - Design a Condo

Target Audience: Twelfth grade high school students

Overall Goal of the Lesson: The overall goal of the Webquest lesson is provide the student with the necessary information to successfully search the Internet for architectural drafting symbols and apply the information to a larger project.

Rationale: The Webquest lesson is part of a Unit Plan for the senior project given to twelfth grade students in the drafting and design program in order to satisfy state standard requirements for the Information Technology program. The senior project “Condo Design” is intended to give the twelfth grade student the experience to solve construction problems through the application of field-specific tools, materials, processes, and systems. Students develop the ability to select and correctly use the field-specific elements to answer questions, understand explanations, and solve problems encountered in real life situations.

Description of the Lesson: The Webquest lesson is a challenging design and drafting problem providing occasion for creative stimulation, thoughtful reflection, guided practice, and purposeful judgment. The project was also planned to be relevant to the high school student’s interest.

Scope of the Lesson: The scope of the Webquest lesson includes brainstorming ideas, gathering data, and transforming data into useful artifacts. The content of the lesson is determined by the requirements normally followed in a real-life construction project.

Materials to be included in the Senior Project: Non-digital materials and media included in the lessons are handouts, chalkboard, chalk, tracing paper, pencils, erasers, scale rulers, and markers. Students also use trade magazines for reference articles and pictures and textbooks. Digital media used in the lessons are Blackboard, e-mail and blogs, Internet, Webquests, spreadsheets, word processing, concept maps, AutoCAD, iMovie, Powerpoint, interactive white board, and computer- projection video along with audio.

Documentation for Artifact #2 PowerPoint

Unit: "Design a Condo"

Lesson: "Symbols Library"

The PowerPoint provides the direction for the instruction of the lesson. It helps the teacher by guiding the lesson from the beginning to end. The teacher can refer back to slides to help students remember class's agenda.

Slide #1 starts the lesson by explaining the Lesson Objectives

1. To be able to recognize the basic symbols that represent furnishings used in residential floor plan layouts.
2. To be able to conduct a Webquest searching for architectural symbols.
3. To be able to work in teams to collaborate on a project.

Slide #2 starts the discussion. Students verbally respond to questions such as:

What do you think is important to include in your residential design?

What furnishings and/or appliances are necessary to make a space livable?

Slide #3 is to gain attention and continues the discussion by asking students to share their ideas. Students are asked to put ideas on the board

Lets put some ideas on the board.

Slide #4 continues the discussion and gives some answers to verify the student's responses.

Lets put some ideas on the board.

- Bathroom - tub, sink, toilet
- Kitchen- sink, refrigerator, stove
- Living room - sofa, tables, tv
- Bedroom- bed, dresser

Slide #5 continues by recalling the purpose of architectural drafting.

Purpose of architectural drafting:

- To document guidelines for builders.
- To provide a hardcopy of instructions.
- To specify dimensions, materials, and processes.
- To show how parts and objects work together or how they will be put together.

Slide #6 continues by identifying AutoCAD commands needed to draw the symbols library.

Identify AutoCAD commands needed to draw the symbols library:

- Drawing and editing - lines, shapes and text,
- Layering protocol in AutoCAD
- Cartesian Coordinates

Slide #7 starts to introduce the Webquest by discussing the importance of the Team Webquest. In a real-life, construction projects are produced on a very large scale and drafters will work in teams to accomplish some tasks. The team may consist of other drafters, architects, or engineers.

Slide #8 continues to introduce the Webquest by discussing the task.

The task of the teams is to complete a Webquest searching the Internet for architectural symbols that represent furnishings and appliances used in residential floor plans.

Slide #9 continues by discussing the process of the Team Webquest.

The process of the Team Webquest includes:

- Students received the "symbols library" handouts.
- Students are placed in groups.
- Teams receive handouts of reliable Websites to search.
- Teams search the Internet for 20 minutes.
- Teams circle the symbols they are able to find.

Slide #10 continues discussing the rules of the Team Webquest.

The rules of the Team Webquest are:

- Students are to work quietly in their group.
- Students are to be respectful of each other's ideas.
- Students are to be helpful to each other.

Slide #11 continues by discussing the evaluation methods of the Team Webquest.

The evaluation method for the Team Webquest are rubrics that measure the quality of students' work in two areas: (Full rubrics are at the end of this document)

- Teamwork (ppt slide below)
- Websearch (ppt slide below)



Design a Condo WebQUEST

Evaluation

The Teamwork rubric measures:

Team members
cooperated with each
other

Team members
supported the teams'
success

Team members were
fair with each other.

How well did
your team do?

Excellent
10-9

Very Good
8-7

Average
6-5

Poor
4-3



Design a Condo WebQUEST

Evaluation

The Websearch rubric measures :

Data gathering skills by finding all
the symbols on the handout

Team followed the Webquest rules.

Team circled the symbols found.

Team searched the Internet for
20 minutes.

How well did
your team do?

Excellent
10-9

Very Good
8-7

Average
6-5

Poor
4-3

Slide #12 goes over the lesson learned to enhance retention and transfer of knowledge to long term memory.

1. How to conduct a Webquest
2. Able to recognize the basic symbols that represent furnishings and appliances used in a floor plan.
3. To understand the importance of teamwork and cooperation among team members.

Team work rubric**Team #** _____

Team work	Excellent 10 - 9	Very Good 8 - 7	Average 6 - 5	Poor 4 - 3	Score
Team members cooperated with each other	Team members worked exceptionally well together	Team members worked well together	Team members worked reasonable well together	Team members worked poorly together.	
Team members supported the team's success	Team members were very respectful of one another and provided extra help for each member to succeed.	Team members were respectful of one another and helped each member to succeed.	Team members were respectful of one another, but did not help each member to succeed.	Team members were not respectful of one another and did not help each member to succeed.	
Team members were fair with each other.	Students were exceptional at dividing work appropriately and fairly between group members.	Students divided work appropriately and fairly between group members.	Students tried to divide work appropriately and fairly between group members.	Students did not divide work appropriately and fairly between group members.	
TOTAL SCORE FOR TEAM					

Websearch Rubric**Team Name:** _____

WebQuest (WQ) search	Excellent 10 - 9	Very Good 8 - 7	Average 6 - 5	Poor 4 - 3	Score
Data Gathering Skills by finding all the symbols on the handout	The team exhibited excellent data gathering skills.	The team gathered most of the data that matched the handout	The team gathered some data that matched the handout	The team did not gather any data that matched the handout	
Team followed WQ Process by circle the symbols found	The team circled all the symbols on the handout	The team circled most of the symbols on the handout	The team circled some of the symbols on the handout	The team did not circle any of the symbols on the handout	
Team followed WQ rules	The team followed all the rules	The team followed most of the rules	The team followed some of the rules	The team did not follow any of the rules	
Team carried out the WQ task by search the web for 20 minutes	The team searched for 20 minutes	The team searched for 15 minutes	The team searched for 10 minutes	The team searched for 5 minutes	
Total Score for Team					