GEORGIA | PEACH STATE PATHWAYS

Career, Technical, & Agricultural Education

ACCT—ARCHITECTURAL DRAWING

PATHWAY: Architectural Drawing & Design

COURSE: Architectural Drawing & Design I

UNIT 7: Floor Plans

INTRODUCTION

Annotation:

Students will draw dimensioned floor plans using appropriate symbols.

Grade(s):

x	9th
x	10th
x	11th
x	12th

Time:

5 hrs

Author:

Connie Highnote

Additional Author(s):

Students with Disabilities:

For students with disabilities, the instructor should refer to the student's IEP to be sure that the accommodations specified are being provided. Instructors should also familiarize themselves with the provisions of Behavior Intervention Plans that may be part of a student's IEP. Frequent consultation with a student's special education instructor will be beneficial in providing appropriate differentiation.

FOCUS STANDARDS

GPS Focus Standards:

ACT-ADDI-2 Students will prepare residential floor plans.

a. Draw dimensioned floor plans using appropriate symbols.

GPS Academic Standards:

SCSh4. Students will use tools and instruments for observing, measuring and manipulating scientific equipment and materials.

MMIP4. Students will make connections among mathematical ideas and to those in other disciplines.

ELA9RL5. The student understands and acquires new vocabulary and uses it correctly in reading and writing.

National / Local Standards / Industry / ISTE:

UNDERSTANDINGS & GOALS

Enduring Understandings:

Students should understand the concept of multi-view drawing and understand that a floor plan is not a top view but a section view taken halfway between the floor and ceiling.

Essential Questions:

What is the most important information when building a home? How do you prepare a floor plan? How accurate should a floor plan be?

Knowledge from this Unit:

Students will learn to prepare a floor plan using the appropriate symbols, lines and scale.

Skills from this Unit:

Students will be able to interpret a floor plan in order to duplicate it. Students will be able to apply the appropriate symbols and line weights to the floor plan. Students will be able to measure accurately. Students will be able to use CAD software to create a floor plan.

ASSESSMENT(S)

Assessment Method Type:

x Pre-test
_____ Objective assessment - multiple-choice, true- false, etc.
__ Quizzes/Tests
_x_ Unit test
_____ Group project
x Individual project
x Self-assessment - May include practice quizzes, games, simulations, checklists, etc.
_x_ Self-check rubrics
__ Self-check during writing/planning process
__ Journal reflections on concepts, personal experiences and impact on one's life
__ Reflect on evaluations of work from teachers, business partners, and competition judges
__ Academic prompts
__ Practice quizzes/tests
_____ Subjective assessment/Informal observations
__ Essay tests
__ Observe students working with partners
__ Observe students role playing
_____ Peer-assessment
__ Peer editing & commentary of products/projects/presentations using rubrics
__ Peer editing and/or critiquing
_____ Dialogue and Discussion
__ Student/teacher conferences
__ Partner and small group discussions
__ Whole group discussions
__ Interaction with/feedback from community members/speakers and business partners
_____ Constructed Responses
__ Chart good reading/writing/listening/speaking habits
__ Application of skills to real-life situations/scenarios
x Post-test

Assessment(s) Title:

Drafting a floor plan.

Assessment(s) Description/Directions:

After reviewing the process of creating a floor plan as a group, students will obtain the proper tools and check-list to draft a floor plan.

Attachments for Assessment(s):

Floor plan as-built checklist CAD.doc
Floor Plan checklist board.doc
Floor Plan Checklist CAD.doc
Floor plan test.doc
As-built letter.doc
Floor plan timeline.doc
Floor plan as-built timeline.doc
Window identification.doc
Door identification.doc

LEARNING EXPERIENCES

Sequence of Instruction

1. **Identify the Standards. Standards should be posted in the classroom for each lesson.**
   ACT-ADDI-2 Students will prepare residential floor plans.
   a. Draw dimensioned floor plans using appropriate symbols.

2. **Review Essential Questions.**
   What is the most important information when building a home? How do you prepare a floor plan? How accurate should a floor plan be?

3. **Identify and review the unit vocabulary.**

Construction lines	Brick veneer	Appliances
Center lines	Guardrail	Fixtures
Schedules	Door symbols	Stairs
Wall symbols	Window symbols	Fireplace
Interior wall	Schedules	Poche
Exterior wall	Cabinets	
Knee wall	Millwork	

4. **Interest approach – Mental set**
   The same principles are used when drafting a floor plan whether the student is using the traditional method or CAD. It is most important that the students understand what they are drafting. It is also important that the student understands the appropriate symbols, how to measure and the concept of scale. Have the student start with drafting a simple floor plan and after some experience design one of his or her own. It is best to check off each step as the student completes it. This makes assigning a grade easier and it is best to correct mistakes early.

Lesson 1

Discussion

1. Distribute the handout, Window identification.doc and Door identification.doc.
2. Discuss the importance of the use of symbols on floor plans.
3. Have students use the text or other resource materials to locate the proper symbol for doors and windows.
4. Ask students to draft the symbol on the worksheet using a floor plan template or triangle.

Lesson 2

Discussion

1. Given a simple floor plan, proper tools and a checklist, demonstrate to students how to draft a floor plan. Demonstrate each step allowing students to repeat the demonstration.
2. Tape the vellum to a clean drafting table making sure it is aligned with the parallel bar.
3. Layout the exterior walls using construction lines, making sure they are centered in the drawing area.
4. Layout the interior walls using construction lines.
5. Place doors using a template and locate windows.
6. Draw the stairs if interior stairs are included in the floor plan.
7. Locate and draw the fireplace if included in the floor plan.
8. Locate and draw walks, patios and/or decks.
9. Draw the kitchen cabinets, appliances and bathroom fixtures. Use an architectural template for drawing plumbing fixtures and standard appliances.
10. Add dimensions, notes and room names. (Text should be 1/8" high and **ALWAYS USE GUIDELINES**!) Be sure to use proper dimension techniques.

11. Add material and identification symbols. Darken lines and remember all lines should be dark and only vary in thickness with the exception of construction and guide lines. Keep hidden and center lines thin.
12. Draw the border, title block and add the scale. (1/4"=1'-0)
13. Check the entire drawing. Then have a peer check the drawing.

Lesson 3

Discussion

1. Set-up units and layers. Lay out the exterior walls on the wall layer.
2. Locate and draw the interior walls. Make sure room sizes meet standards.
3. Load lisp routines or blocks. Determine the location and size of doors and windows and draw on plan.
4. Draw the stairs if interior stairs are included in the floor plan.
5. Locate and draw the fireplace if included in the floor plan.
6. Locate and draw walks, patios and/or decks.
7. Insert blocks for appliances and bathroom fixtures. Draw cabinets (24" deep) where needed.
8. Use the solid command or hatch to shade walls.
9. Add dimensions, notes and room names. Be sure to use continued dimension.
10. Change to layout 1 and insert title block in paper space. Use the viewport toolbar to zoom the drawing to ¼"=1'-0
11. Print a check plot and make any corrections. Final drawing should be printed on C or D size paper.

Lesson 4

Discussion

1. Have students sketch a floor plan of their homes and take field measurements for homework.
2. Students will follow the same steps listed in Lesson 2 to draft the floor plan.
3. Have students take prints home to have parents evaluate and verify field measurements.
4. Students will revise as needed.

Lesson 5

Discussion

1. Show Kitchen Design power point.
2. Explain to students how to take two-column notes.
3. Have students take two-column notes on Kitchens using the text.
4. Given graph paper, have students measure and sketch the layout of their kitchen in their home.
5. Have students redesign the kitchen using traditional drawing method or Cad.
6. Have students present their existing plan and new design to the class.

Attachments for Learning Experiences:

Asbuiltletter.doc
Client summary and rubric.doc
Floor Plan.pdf
Floor plan as-built checklist CAD.doc
Floor plan as-built timeline.doc
Floor Plan checklist board.doc
Floor Plan Checklist CAD.doc
Floor plan timeline.doc
Kitchen assignments.doc
Kitchen Design.ppt
Kitchenrating.doc

Notes & Reflections: Notes & Reflections:

Students may demonstrate mastery of this standard through the use of many tools. You may have the student draft the plan by hand or by using 2d or 3d cad software. It is the instructor's decision based on the availability of tools.

CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

Design a floor plan

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Given the client summary and rubric.doc, have students design a home based on the scenario.
Have students use the rubric as a checklist.

Attachments for Culminating Performance Task:

Client summary and rubric.doc

UNIT RESOURCES

Web Resources:

http://www.autodesk.com/edcommunity
http://www.youtube.com/ and type Autodesk Revit in the search

Attachment(s):

Materials & Equipment:

What 21st Century Technology was used in this unit?

x	Slide Show Software	x	Graphing Software		Audio File(s)
	Interactive Whiteboard		Calculator		Graphic Organizer
	Student Response System		Desktop Publishing		Image File(s)
	Web Design Software		Blog		Video
	Animation Software		Wiki		Electronic Game or Puzzle Maker
	Email	x	Website		