



GEORGIA

PEACH STATE PATHWAYS

Career, Technical, & Agricultural Education

ACCT—ARCHITECTURAL DRAWING

PATHWAY: Architectural Drawing & Design

COURSE: Architectural Drawing & Design I

UNIT 5: Residential Construction Drawings and Print Reading



INTRODUCTION

Annotation:

Students will identify and read architectural the drawings required for residential construction.

Grade(s):

| | |
|---|------------------|
| x | 9 th |
| x | 10 th |
| x | 11 th |
| x | 12 th |

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-1 Students will identify components related to the design process.

- f. Students will identify the drawings required for residential construction.
- g. Students will read architectural blueprints.

GPS Academic Standards:

SCSh9. Students will enhance reading in all curriculum areas.

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

ELA11LSV1. The student participates in student-to-teacher, student-to-student, and group verbal interactions.

National / Local Standards / Industry / ISTE:

ADDA, Advanced CADD skills



UNDERSTANDINGS & GOALS

Enduring Understandings:

Builders and subcontractors require specific information called working drawings to construct a dwelling. Students should understand every element represented in a set of architectural blueprints. Every set of prints tells a unique story about the residence to be constructed. The ability to accurately understand the prints is the prerequisite to developing the skill of drawing a set of prints.

Essential Questions:

- What does a builder have to have in order to build a house?
- What drawings are necessary to build a house?
- What is the most important drawing when creating a set of house plans?
- How do you read house plans?
- What do the symbols within the house plans represent?

Knowledge from this Unit:

- That basic element of working drawings is the floor plan.
- elements required for construction (foundation plan, exterior elevations, building sections, millwork details, electrical and site plans)
- The symbols that represent typical elements that make up a home.
- Students will draw on prior knowledge of the alphabet of lines covered in Introduction to Engineering Drawing and Design. Each sheet in a set of architectural blueprints contains information that relates to other sheets in the set.

Skills from this Unit:

- Given a set of working drawings, students will be able to identify the required drawings.
- Students will be able to identify various symbols used in a set of prints.
- Given a set of working drawings, students will be able to describe the structure as it will be when it is constructed.



ASSESSMENT(S)

Assessment Method Type:

- ☐ Pre-test
- ☐ Objective assessment - multiple-choice, true- false, etc.
 - ☐ Quizzes/Tests
 - ☐ Unit test
- ☐ Group project
- ☒ Individual project
- ☒ Self-assessment - May include practice quizzes, games, simulations, checklists, etc.
 - ☒ 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
- ☐ Post-test

Assessment(s) Title:

Identifying the Symbols
Reading Architectural Blueprints

Assessment(s) Description/Directions:

Have students study an architectural template to become familiar with the symbols used in drafting floor plans. Use a set of working drawings and questions either included with the text or obtained by the instructor and have students identify the different elements in the drawing set. Have the students check their answers against the key provided by the instructor after completing each section. Instructor will record the grade as a pretest and use to compare with the post test given after the exercise. Using a set of working drawings either included with the text or obtained by the instructor, have students identify the different drawing types. Have the students write a brief reason this drawing is required for construction.

Attachments for Assessment(s):

Reading floor plans.doc

Testfloorplanelevations.doc

E__Unit 5 Residential Construction drawings and print
"reading_ELEVATIONS 5 FRNT ELEVATION (1).pdf"

E__Unit 5 Residential Construction drawings and print
"reading_ELEVATIONS 6 R ELEVATION (1).pdf"

E__Unit 5 Residential Construction drawings and print
"reading_ELEVATIONS 7 ELECT 1 (1).pdf"

E__Unit 5 Residential Construction drawings and print
"reading_ELEVATIONS 8 ELECT 2 (1).pdf"

E__Unit 5 Residential Construction drawings and print
"reading_ELEVATIONS 9 ELECT BASEMENT (1).pdf"

E__Unit 5 Residential Construction drawings and print
"reading_houseplans 1 FLOOR PLAN (1) (1).pdf"

E__Unit 5 Residential Construction drawings and print
"reading_houseplans 2 FLOOR PLAN (2) (1).pdf"

E__Unit 5 Residential Construction drawings and print
"reading_houseplans 3 BASEMENT PLAN (1).pdf"

E__Unit 5 Residential Construction drawings and print
"reading_houseplans 4 ROOF PLAN (1).pdf"



LEARNING EXPERIENCES

Sequence of Instruction

Introduction

1. Identify the Standards. Standards should be posted in the classroom for each lesson.

ACT-ADDI-1 Students will identify components related to the design process.

- f. Students will identify the drawings required for residential construction.
- g. Students will read architectural blueprints.

2. Review Essential Questions.

- What does a builder have to have in order to build a house?
- What drawings are necessary to build a house?
- What is the most important drawing when creating a set of house plans?

- How do you read house plans?
- What do the symbols represent?

3. Identify and review the unit vocabulary.

| | | |
|---------------|----------------|------------|
| Wall symbols | Guardrail | Millwork |
| Interior wall | Door symbols | Appliances |
| Exterior wall | Window symbols | Fixtures |
| Knee wall | Schedules | Stairs |
| Brick veneer | Cabinets | Fireplace |

4. Interest approach – Mental Set

Students interested in architecture enjoy looking at floor plans. Collect plans from builders in your area. Some students have access to plans through family and friends. Ask them to bring them in to donate or share with the class.

Lesson 1

Discussion

1. Ask students to make a list of components used to construct a house. Beside each component ask them to sketch the symbol that they think represents that component.
2. Give students an architectural template and ask them to compare their symbols to those given on the template.
3. Distribute an 8 ½ x 11 copy of a set of plans for a small house. Use the set included with this unit or obtain a set of drawings from a member of your advisory committee. Plans and questions are also available in *Architecture: Drafting and Design Teacher's Resource Binder* by Glencoe/McGraw-Hill.
4. Have students work in teacher assigned pairs or groups to answer the questions using the drawings to locate the answers.
5. Review the answers with the students.

Lesson 2

Discussion

1. Give students graph paper and ask them to sketch the floor plans of their homes from memory. Remind them to use the proper symbols for walls, doors, windows and appliances.
2. Have students take this home to revise and complete.
3. Discuss the sketches with the students individually to determine clarity of information.
4. Ask students to save the sketches to be used later for drafting their as-built plans.

Attachments for Learning Experiences:

Notes & Reflections:



CULMINATING PERFORMANCE TASK

Culminating Unit Performance Task Title:

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Attachments for Culminating Performance Task:



UNIT RESOURCES

Web Resources:

<http://www.buffaloah.com/a/DCTNRY/vocab.html>

<http://www.answers.com/library/Architecture+and+Construction>

<http://www.andersenwindows.com/servlet/Satellite/window-types.htm>

Attachment(s):

Materials & Equipment:

- Architecture: Drafting and Design Teacher's Resource Binder by Glencoe/McGraw-Hill.
- Floor plan templates

What 21st Century Technology was used in this unit:

| | | | | | |
|--------------------------|-------------------------|-------------------------------------|--------------------|--------------------------|---------------------------------|
| <input type="checkbox"/> | Slide Show Software | <input type="checkbox"/> | Graphing Software | <input type="checkbox"/> | Audio File(s) |
| <input type="checkbox"/> | Interactive Whiteboard | <input type="checkbox"/> | Calculator | <input type="checkbox"/> | Graphic Organizer |
| <input type="checkbox"/> | Student Response System | <input type="checkbox"/> | Desktop Publishing | <input type="checkbox"/> | Image File(s) |
| <input type="checkbox"/> | Web Design Software | <input type="checkbox"/> | Blog | <input type="checkbox"/> | Video |
| <input type="checkbox"/> | Animation Software | <input type="checkbox"/> | Wiki | <input type="checkbox"/> | Electronic Game or Puzzle Maker |
| <input type="checkbox"/> | Email | <input checked="" type="checkbox"/> | Website | | |