GEORGIA | PEACH STATE PATHWAYS

Career, Technical, & Agricultural Education

ACCT—ARCHITECTURAL DRAWING

PATHWAY: Architectural Drawing & Design

COURSE: Architectural Drawing & Design I

UNIT 11: Foundations

INTRODUCTION

Annotation:

Students will prepare foundation plans.

Grade(s):

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

Time: 2 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-6 Students will prepare foundation plans.

a. Explain the purpose of foundation plans.
b. Identify different foundation systems and terminology.
c. Draw and dimension foundation plans.

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 of other disciplines.

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

National / Local Standards / Industry / ISTE:

ADDA, Advanced CADD skills

UNDERSTANDINGS & GOALS

Enduring Understandings:

Students should understand the importance of a foundation plan. A house is only as good as its foundation.

Essential Questions:

- How do you design a good foundation?
- What are the different types of foundations?
- What determines the type of foundation used?

Knowledge from this Unit:

- Students will be able to define a foundation plan.
- Students will know the types of foundations and how the type selected is based on several factors.

Skills from this Unit:

Students will be able to draft and dimension a foundation plan given a floor plan.

ASSESSMENT(S)

Assessment Method Type:

_____ Pre-test
_____ Objective assessment - multiple-choice, true- false, etc.
__ Quizzes/Tests
__ Unit test
_____ Group project
x 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
x Dialogue and Discussion
__ Student/teacher conferences
_ _ Partner and small group discussions
_x_ 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:

Foundation Test

Assessment(s) Description/Directions:

Attachments for Assessment(s):

Foundation test.doc

LEARNING EXPERIENCES

Sequence of Instruction

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

ACT-ADDI-6 Students will prepare foundation plans.

a. Explain the purpose of foundation plans.
b. Identify different foundation systems and terminology.
c. Draw and dimension foundation plans.

2. Review Essential Questions.

- How do you design a good foundation?
- What are the different types of foundations?
- How much does a house weigh?

3. Identify and review the unit vocabulary.

Masonry	Seismic drainage	Drain tile
Slab	Brick ledge	Bituminous
C.M.U.	Stem wall	waterproofing
Piers	Grade	Mastic
Footing	Crawl space	Vapor barrier
Foundation wall	Retaining wall	Keyway
Pilings	Rebar	Beam pockets

4. Interest approach – Mental set

The same principles are used when drafting a foundation plan whether the student is using the traditional method or CAD. It is most important that the student understands what he/she is 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 creating a foundation plan using a simple floor plan.

Lesson 1 Foundation Types

Discussion

1. Present Foundation Systems.ppt to students.
2. Have students take notes and sketch details during the presentation.

Lesson 2 Foundation Terms

Discussion

Explain the importance of understanding vocabulary and how it is used in communicating to various trades.

1. List the vocabulary terms for the unit on the board.

2. Have students locate the definition and write a sentence using the word in context.
3. Have students create a concept map using all of the vocabulary words.
4. Create a concept map as a group using input from the class.

Lesson 3 Draft a foundation plan

Discussion

1. Distribute a foundation plan checklist to students. This handout lists the steps used for creating a foundation plan.
2. Locate examples of foundation plans in the text or sets of floor plans to share with students.
3. Given a simple floor plan have students create two foundation plans, slab and continuous.

Attachments for Learning Experiences:

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. This is the instructor's decision based on the availability of tools.

CULMINATING PERFORMANCE TASK

Culminating Unit Performance Task Title:

Design a Home. (This culminating activity was introduced in unit 7)

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

- Have students draft a foundation plan for the home they designed 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.delmarlearning.com/companions/content/1401867154/links/chapter31.asp

American Concrete Institute International- www.aci-int.org

Eco-Block- www.eco-block.com

Portland Cement Association - www.cement.org

Soil Science Society of America- www.soils.org

Attachment(s):

Materials & Equipment:

Computer and cad or word processing software

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		