GeorgiaStandards.Org
GATEWAY TO EDUCATION & PROFESSIONAL RESOURCES
One Stop Shop For Educators

PROGRAM CONCENTRATION: Architecture, Construction, Communications, &
Transportation
COURSE TITLE: Exploring Architecture and Construction – Eighth Grade

COURSE DESCRIPTION:

Exploring Architecture and Construction is a course designed to give students an understanding
of the basic knowledge needed to pursue a pathway in architecture or construction at the high
school level. This, in turn, could enable a student to seek employment upon graduation from high
school, attend postsecondary options for additional certification, or complete apprenticeship
training.

Upon completion of this course, the student will have an understanding of safety and architectural
symbols and scales related to the architecture and construction fields. Students will also have
hands-on experience with the different areas of architecture and construction: electrical,
plumbing, masonry, carpentry, and architectural drawing. Competencies of the co-curricular
student organization, SkillsUSA, are integral components of the class.

CRITICAL COMPONENTS:

**MSACCT-EAC8-1: The student will identify education and training required for a specific
field in the architectural drawing and construction professions.**

   a) Research a specific field in the architectural or construction profession.
   b) Identify the educational and training required for the field.
   c) Identify the different level from apprenticeship to master level.

ACADEMIC STANDARDS:

ELA8RC2: *The student participates in discussions related to curricular learning in all subject
areas.*
ELA8RC3: *The student acquires new vocabulary in each content area and uses it correctly.*
ELA8RC4: *The student establishes a context for information acquired by reading across subject
areas.*

SAMPLE TASKS:

   • Research a specific field in architecture or construction to identify different careers
     with high wage, high demand and high skill in Georgia. (www.occsupplydemand.org)
   • Research the different levels of training and related responsibilities needed in a
     specific area of architecture or construction.
   • List the educational and training requirements for the area of study chosen by the
     student.
   • Write a report on information obtained on a specific field chosen by the student.

MSACCT-EAC8-2: Students will use safety practices in the classroom and lab.

      a) Practice safety standards in the classroom at all times.
      b) Wear personal protective equipment required in the lab.
      c) Understand basic OSHA standards.

ACADEMIC STANDARDS:

S8CS2:   *Students will use standard safety practices for all classroom laboratory and field investigations.*
S8CS4:   *Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities utilizing safe laboratory procedures.*

SAMPLE TASKS:

- Make a chart listing safety standards that must be followed in the classroom.
- Assign students different jobs connected to safety practices.
- Identify when to use personal protective equipment.
- Research basic OSHA standards.

MSACCT-EAC8-3: Students will be able to recognize the specific terminology and symbols used in the different areas of architecture and construction.

      a) Identify terminology used in each of the following areas: architecture, plumbing, electrical, masonry and carpentry.
      b) Identify symbols used in each of the following areas: architecture, plumbing, electrical, masonry and carpentry.
      c) Understand the usage of symbols in the architecture and construction areas.

ACADEMIC STANDARDS:

ELA8RC3: The student acquires new vocabulary in each content area and uses it correctly.
S8CS4:   *Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities utilizing safe laboratory procedures.*
M8P4:   *Students will make connections among mathematical ideas and to other disciplines.*

SAMPLE TASKS:

- Classroom discussion on architecture and construction terminology
- Worksheet matching terminology with definitions
- Locate symbols on a blueprint.
- Draw basic symbols for each area of architecture and construction.
- Use symbols to create a sample floor plan in preparation of creating a blueprint, and include plumbing, electrical, masonry, carpentry, and architectural symbols.

MSACCT-EAC8-4: Students will demonstrate knowledge of tools and their usage as related to the architecture and construction field.

    a) Identify tools used in board drafting and CAD.
    b) Identify tools specific to each area of construction.
    c) Understand the usage of each tool.
    d) Use electrical and hand tools appropriately as they relate to tasks in electrical, construction, masonry, and plumbing.

ACADEMIC STANDARDS:

ELA8RC3: The student acquires new vocabulary in each content area and uses it correctly.
S8CS4:   Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities utilizing safe laboratory procedures.
S8CS5:   Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.
M8P1:   Students will solve problems (using appropriate technology).

SAMPLE TASKS:

- Classroom demonstration on electrical and hand tools and their proper uses.
- Wire a simple circuit (electrical) for a light switch and wall outlet.
- Cut and glue PVC pipe (plumbing) for a typical kitchen or bathroom drain.
- Build a form for a stepping stone (construction).
- Work concrete into a form (masonry) and finish using trowel, float, and broom for texture.
- Draw a floor plan with electrical symbols using CAD or board drafting (architecture).
- Create a class project that allows students to use architectural electrical, masonry, plumbing, and carpentry skills. Allow students to supervise, manage, and work on different aspects of the potential service learning project.

MSACCT-EAC8-5: Students will participate in all areas of SkillsUSA.

    a) Establish and maintain a SkillsUSA chapter.
    b) Research SkillsUSA competitions on both a state and national level.
    c) Participate in SkillsUSA competitions.

ACADEMIC STANDARDS:

ELA8RC3: The student acquires new vocabulary in each content area and uses it correctly.
ELA8RC2: The student participates in discussions related to curricular learning in all subject areas.

SAMPLE TASKS:

- Attend SkillsUSA meetings.
- Compete in a SkillsUSA competition.
- Attend a regional or state SkillsUSA competition.

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READING STANDARD COMMENT

After the elementary years, students are seriously engaged in reading for learning. This process sweeps across all disciplinary domains, extending even to the area of personal learning. Students encounter a variety of informational as well as fictional texts, and they experience text in all genres and modes of discourse. In the study of various disciplines of learning (language arts, mathematics, science, social studies), students must learn through reading the communities of discourse of each of those disciplines. Each subject has its own specific vocabulary, and for students to excel in all subjects, they must learn the specific vocabulary of those subject areas *in context*.

Beginning with the middle grade years, students begin to self-select reading materials based on personal interests established through classroom learning. Students become curious about science, mathematics, history, and literature as they form contexts for those subjects related to their personal and classroom experiences. As students explore academic areas through reading, they develop favorite subjects and become confident in their verbal discourse about those subjects.

Reading across curriculum content develops both academic and personal interests in students. As students read, they develop both content and contextual vocabulary. They also build good habits for reading, researching, and learning. The Reading Across the Curriculum standard focuses on the academic and personal skills students acquire as they read in all areas of learning.

MRC. Students will enhance reading in all curriculum areas by:
    a. Reading in all curriculum areas.
        • Read a minimum of 25 grade-level appropriate books per year from a variety of subject disciplines and participate in discussions related to curricular learning in all areas.
        • Read both informational and fictional texts in a variety of genres and modes of discourse.
        • Read technical texts related to various subject areas.
    b. Discussing books.
        • Discuss messages and themes from books in all subject areas.
        • Respond to a variety of texts in multiple modes of discourse.
        • Relate messages and themes from one subject area to messages and themes in another area.
        • Evaluate the merit of texts in every subject discipline.
        • Examine author's purpose in writing.
        • Recognize the features of disciplinary texts.
    c. Building vocabulary knowledge.
        • Demonstrate an understanding of contextual vocabulary in various subjects.
        • Use content vocabulary in writing and speaking.
        • Explore understanding of new words found in subject area texts.
    d. Establishing context.
        • Explore life experiences related to subject area content.
        • Discuss in both writing and speaking how certain words are subject area related.
        • Determine strategies for finding content and contextual meaning for unknown words.

WRITING

The student writes clear, coherent text. The writing shows consideration of the audience and purpose. The student progresses through the stages of the writing process (e.g., prewriting, drafting, revising, and editing successive versions).

CTAEW1: The student demonstrates competence in a variety of genres.
The student produces technical writing (business correspondence: memoranda, emails, letters of inquiry, letters of complaint, instructions and procedures, lab reports, slide presentations) that:
   a. Creates or follows an organizing structure appropriate to purpose, audience, and context.
   b. Excludes extraneous and inappropriate information.
   c. Follows an organizational pattern appropriate to the type of composition.
   d. Applies rules of Standard English.

CTAEW2: The student uses research and technology to support writing. The student:
   a. Identifies topics, asks and evaluates questions, and develops ideas leading to inquiry, investigation, and research.
   b. Uses organizational features of electronic text (e.g., bulletin boards, databases, keyword searches, e-mail addresses) to locate relevant information.
   c. Includes researched information in different types of products (e.g., compositions, multimedia presentations, graphic organizers, projects, etc.).
   d. Uses appropriate structures to ensure coherence (e.g., transition elements).
   e. Supports statements and claims with anecdotes, descriptions, facts and statistics, and specific examples.
   f. Gives credit for both quoted and paraphrased information in a bibliography by using a consistent and sanctioned format and methodology for citations.

CTAEW3: The student consistently uses the writing process to develop, revise, and evaluate writing. The student:
   a. Plans and drafts independently and resourcefully.
   b. Uses strategies of note taking, outlining, and summarizing to impose structure on composition drafts.
   c. Edits writing to improve word choice after checking the precision of the vocabulary.

ENTREPRENEURSHIP

MKT-EN-1: Understands concepts and processes associated with successful entrepreneurial performance.

   a. Define entrepreneurship.
   b. Identify and analyze characteristics of a successful entrepreneur.
   c. Identify the reasons for planning in entrepreneurial businesses.
   d. Discuss the entrepreneurial discovery processes.
   e. Assess global trends and opportunities.
   f. Determine opportunities for business creation.

g. Generate ideas for business.
h. Determine feasibility of ideas.
i. Determine the major reasons for business failure.

ACADEMIC STANDARDS

ELA8W1:   *The student produces writing that establishes an appropriate organizational structure, sets a context and engages the reader, maintains a coherent focus throughout, and signals a satisfying closure.*
ELA8W3:   *The student uses research and technology to support writing.*
SSEF6:   *The student will explain how productivity, economic growth and future standards of living are influenced by investment in factories, machinery, new technology and the health, education and training of people.*
SSEIN1:   *The student will explain why individuals, businesses and governments trade goods and services.*

MKT-EN-2: Explain the fundamental concepts of business ownership.

a. Determine the relationship of competition to our private, free enterprise system.
b. Explain the effects of competition on buyers and sellers.
c. Identify the common types of business ownership.
d. Compare and contrast the advantages and disadvantages of each type of ownership.
e. Explain relevant government regulations relating to the operation of a business.
f. Discuss the types of risks that businesses encounter.
g. Explain how businesses deal with the various types of risks.
h. Identify the market segment for the business.
i. Formulate a marketing mix designed to reach a specific market segment.
j. Utilize the marketing functions to determine the competitive advantage of the proposed business.

ACADEMIC STANDARDS

ELA8W1:   *The student produces writing that establishes an appropriate organizational structure, sets a context and engages the reader, maintains a coherent focus throughout, and signals a satisfying closure.*
ELA8W3:   *The student uses research and technology to support writing.*
SSEF5:   *The student will describe the roles of government in a market economy.*

CTAE FOUNDATION SKILLS

The Foundation Skills for Career, Technical and Agricultural Education (CTAE) are critical competencies that students pursuing any career pathway should exhibit to be successful. As core standards for all career pathways in all program concentrations, these skills link career, technical and agricultural education to the state's academic performance standards.

The CTAE Foundation Skills are aligned to the foundation of the U.S. Department of Education's 16 Career Clusters. Endorsed by the National Career Technical Education Foundation (NCTEF) and the National Association of State Directors of Career Technical Education Consortium

(NASDCTEc), the foundation skills were developed from an analysis of all pathways in the sixteen occupational areas. These standards were identified and validated by a national advisory group of employers, secondary and postsecondary educators, labor associations, and other stakeholders. The Knowledge and Skills provide learners a broad foundation for managing lifelong learning and career transitions in a rapidly changing economy.

CTAE-FS-1 Technical Skills: Learners achieve technical content skills necessary to pursue the full range of careers for all pathways in the program concentration.

CTAE-FS-2 Academic Foundations: Learners achieve state academic standards at or above grade level.

CTAE-FS-3 Communications: Learners use various communication skills in expressing and interpreting information.

CTAE-FS-4 Problem Solving and Critical Thinking: Learners define and solve problems, and use problem-solving and improvement methods and tools.

CTAE-FS-5 Information Technology Applications: Learners use multiple information technology devices to access, organize, process, transmit, and communicate information.

CTAE-FS-6 Systems: Learners understand a variety of organizational structures and functions.

CTAE-FS-7 Safety, Health and Environment: Learners employ safety, health and environmental management systems in corporations and comprehend their importance to organizational performance and regulatory compliance.

CTAE-FS-8 Leadership and Teamwork: Learners apply leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.

CTAE-FS-9 Ethics and Legal Responsibilities: Learners commit to work ethics, behavior, and legal responsibilities in the workplace.

CTAE-FS-10 Career Development: Learners plan and manage academic-career plans and employment relations.

CTAE-FS-11 Entrepreneurship: Learners demonstrate understanding of concepts, processes, and behaviors associated with successful entrepreneurial performance.