

PROGRAM CONCENTRATION: Architecture, Construction, Communications, & Transportation

COURSE TITLE: Introduction to Architecture and Construction – Sixth Grade

COURSE DESCRIPTION:

Introduction to Architecture and Construction is a course intended to give students a general knowledge of the architecture and construction industry, career options, and essential skills for these areas. Emphasis is placed on safety, measuring practices, basic drafting and construction skills, and terminology. Competencies for the co-curricular student organization, SkillsUSA, are integral components of this class.

CRITICAL COMPONENTS:

MSACCT-IAC6-1: Students will identify the disciplines related to architectural drawing and construction professions.

- a) Identify careers in the architecture and construction fields.
- b) Identify the apprenticeship needed for a specified career.
- c) Identify the professional organizations related to the architecture and construction fields.

ACADEMIC STANDARDS:

ELA6R2: The student understands and acquires new vocabulary and uses it correctly in reading and writing.

ELA6W3: The student uses research and technology to support writing.

SAMPLE TASKS:

- Have students write a report on a specific career in the architecture or construction field.
- List and define the professional organizations associated with the architectural and construction fields.
- Show PowerPoint on architecture and construction careers.
- Complete word search on architecture and construction careers.
- Research apprenticeship programs in Georgia.

MSACCT-IAC6-2: Students will identify safety practices in the architectural and construction fields.

- a) Demonstrate ergonomics needed in computer-aided drafting.
- b) Demonstrate knowledge of use and care of personal protective equipment.
- c) Maintain workstation and storage areas.
- d) Understand the meaning and purpose of OSHA.
- e) Follow all class and lab rules.

ACADEMIC STANDARDS:

S6CS2: Students will use standard safety practices for all classroom laboratory and field investigations.

SAMPLE TASKS:

- Research ergonomics needed in drafting.
- List personal protective equipment and its usage.
- Research the history of OSHA (Occupational Safety and Health Administration).

MSACCT-IAC6-3: Students will understand and apply basic drafting and construction skills.

- a) Demonstrate knowledge of reading a ruler.
- b) Demonstrate knowledge of blueprint terms, components, and symbols.
- c) Identify line types (Alphabet of Lines).

ACADEMIC STANDARDS:

M6M1: Students will convert from one unit to another within one system of measurement (customary or metric) by using proportional relationships.

M6M2: Students will use appropriate units of measure for finding length, perimeter, area and volume and will express each quantity using the appropriate unit.

M6G1: Students will further develop their understanding of plane figures.

SAMPLE TASKS:

- Have student's measure objects in the classroom.
- Draw basic blueprint symbols for doors and windows.
- Identify symbols and lines on a blueprint.
- Match the different line types with their proper usage.

MSACCT-IAC6-4: Students will prepare architectural sections and details.

- a) Explain the purpose of a wall section.
- b) Identify parts of a basic wall section.
- c) Sketch a wall section.
- d) Construct a scale model of a wall section.

ACADEMIC STANDARDS:

M6A2: Students will consider relationships between varying quantities.

M6P1: Students will solve problems (using appropriate technology).

ELA6LSV2: The student listens to and views various forms of text and media in order to gather and share information, persuade others, and express and understand ideas. The student will select and critically analyze messages using rubrics as assessment tools.

SAMPLE TASKS:

- Students will label parts on a given wall section.
- Students will sketch a wall section, using appropriate symbols and scales.
- A classroom demonstration will be given on building scale models.
- Students will construct a scale model of a wall section using balsa wood.

MSACCT-IAC6-5: Students will understand the purpose of SkillsUSA.

- a) Explain the history and purpose of SkillsUSA.
- b) Describe the SkillsUSA emblem.
- c) Establish a SkillsUSA chapter.

ACADEMIC STANDARDS:

ELA6LSV2: The student listens to and views various forms of text and media in order to gather and share information, persuade others, and express and understand ideas. The student will select and critically analyze messages using rubrics as assessment tools.

ELA6R: The student understands and acquires new vocabulary and uses it correctly in reading and writing.

ELA6W3: The student uses research and technology to support writing.

SAMPLE TASKS:

- Draw and label the SkillsUSA emblem.
- Visit the SkillsUSA web site: www.skillusa.org.
- Visit the SkillsUSA-Georgia web site www.skillsusageorgia.org
- Show a SkillsUSA video.
- Invite a guest speaker from a local SkillsUSA high school chapter.
- Conduct a SkillsUSA chapter meeting.

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.