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CTE Standards Unpacking
Introduction to Architecture and Construction

Course: Introduction to Architecture and Construction
Course Description: This course will prepare students to delve into the architecture and construction industry. It covers all three construction career pathways offered, including architecture/drafting along with cabinetry and building construction. Students will explore many different topics where they will be able to complete hands on activities to enhance the learning process.
Career Cluster: Architecture & Construction
Prerequisites: None
Program of Study Application: Intro to Architecture and Construction is the recommended prerequisite for the three career pathways in Architecture and Construction:

- Architectural Drafting Pathway
- Cabinetry Pathway
- Residential Construction Pathway

<table>
<tr><td colspan="3">INDICATOR #IAC 1: Explore the different career opportunities involved in the architecture and construction industries.</td></tr>
<tr><td colspan="3">SUB-INDICATOR 1.1 (Webb Level: 2 Apply): Compare career possibilities in the drafting industry.</td></tr>
<tr><td colspan="3">SUB-INDICATOR 1.2 (Webb Level: 2 Apply): Investigate and examine career opportunities in cabinetry industry</td></tr>
<tr><td colspan="3">SUB-INDICATOR 1.3 (Webb Level: 2 Apply): Research career opportunities in the architecture and construction fields.</td></tr>
<tr><td>Knowledge (Factual):
Career opportunities in the drafting, cabinetry, and architectural and construction fields.</td><td>Understand (Conceptual):
Knowledge of the various careers within A&C.

Knowledge of the education required to obtain various careers within A&C.</td><td>Skills (Application):
Explore, Investigate, Examine, and Research career opportunities</td></tr>
<tr><td colspan="3">Benchmarks
Students will be assessed on their ability to:
Explain in detail, both written and orally, their understanding of career opportunities in A&C.
Be 80% proficient in recognizing careers in the A&C field.
Provide an in-depth comparative analysis of personal career and related educational goals with at least one career opportunity in the architecture and construction industry.</td></tr>
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Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard): R.1 – Site strong evidence to support analysis to what the text says. W4 – Produce clear and coherent writing W.6 – Using technology to produce or publish a product. S.4 – Present information finding and supporting evidence to convey a prospective.	**Sample Performance Task Aligned to the Academic Standard(s):** Students will use SDMyLife or Occupational Outlook Handbook to create a presentation or report.

INDICATOR #IAC 2: **Introduce safety concepts in the architecture and construction industries.**		
SUB-INDICATOR 2.1 (Webb Level: 2 Apply): Apply general shop safety principles		
SUB-INDICATOR 2.2 (Webb Level: 1 Identify): Identify job site and career safety concepts		
SUB-INDICATOR 2.3 (Webb Level: 1 Define): Define OSHA (Occupational Safety Health Administration) and its role in the construction industries		
SUB-INDICATOR 2.4 (Webb Level: 2 Apply): Apply general hand and power tool safety procedures		
Knowledge (Factual): Knowledge of general shop safety principals. Know what OSHA is and does for A&C. Knowledge of hand and power tools	**Understand (Conceptual):** Practicing safety in A&C industries is essential.	**Skills (Application):** Identify improper shop safety practices and what precautions needs to be done to remedy those situations.

Benchmarks

Students will be assessed on their *ability* to:

- Pass a safety test with 100% proficiency.
- Demonstrate the proper use of protective clothing and safety equipment.
- Demonstrate basic first aid.
- Examine basic safety using Occupation Safety Health Administration (OSHA) standards or equivalents.
- Maintain a written portfolio record of written safety examinations and equipment examinations which the student passed.
- Explain the function of Safety Data Sheets.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard): RI.4 – Determine the meaning of technical writing RI.7 – Integrate and evaluate multiple sources to address a problem.	**Sample Performance Task Aligned to the Academic Standard(s):** Students will read and interpret in writing and speaking Safety Data Sheets to understand safety standards in shop and industry.

INDICATOR #IAC 3: **Apply basic math principles used in the architecture and construction industries.**

SUB-INDICATOR 3.1 (Webb Level: 2 Demonstrate): Demonstrate proper use of appropriate math skills

SUB-INDICATOR 3.2 (Webb Level: 2 Demonstrate): Demonstrate proper measuring and layout skills

Knowledge (Factual):	**Understand (Conceptual):**	**Skills (Application):**
Use of appropriate math skills Use of proper measurement and layout tools.	Basic math principals are applied in A&C industries.	Demonstrate basic math skills.

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Benchmarks
Students will be assessed on their *ability* to:

- Read a rule/tape to 16th inch with 100% proficiency.
- Calculate distance, area, and volume with 90% proficiency.
- Students will be able to use the metric system with 100% accuracy.

Academic Connections

ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**
G-MG.1 – Use geometric shapes, their measures, and their properties to describe objects. G-MG.2 – Apply concepts of density based on area and volume in modeling situation.	Students will be able to calculate the amount of drywall to cover an 8x10 wall.

INDICATOR #IAC 4: **Recognize the materials used in the architecture and construction industries.**

SUB-INDICATOR 4.1 (Webb Level: 1 Identify): Identify wood species and engineered building materials.

SUB-INDICATOR 4.2 (Webb Level: 1 Recognize): Recognize proper application of fasteners, adhesives, and hardware.

SUB-INDICATOR 4.3 (Webb Level: 1 Explore): Explore new upcoming materials used in building industry.

Knowledge (Factual):	**Understand (Conceptual):**	**Skills (Application):**
Knowledge of various building materials. Knowledge of fasteners, adhesives, and hardware.	Appropriate use of various building materials in A&C.	Identify the different types of woods used in A&C. When and where to use appropriate fasteners, adhesives, and hardware. Research new materials used in A&C industry.

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Benchmarks
Students will be assessed on their *ability* to:

- Identify with 80% accuracy the differences between hardwoods and softwoods.
- Determine with 90% proficiency the appropriate building materials used to construct a project.

Academic Connections

ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**
RI.4 – Determine the meaning of technical writing RI.7 – Integrate and evaluate multiple sources to address a problem. R.1 – Site strong evidence to support analysis to what the text says. W4 – Produce clear and coherent writing W.6 – Using technology to produce or publish a product. S.4 – Present information finding and supporting evidence to convey a prospective.	Reading the directions and being able to identify the proper application for that material. Students will give a presentation to the class about new and upcoming materials used in the building industry.

INDICATOR #IAC 5: **Examine Basic drafting skills used in architecture and construction.**
SUB-INDICATOR 5.1 (Webb Level: 1 Recognize): Recognize basic drafting terms and abbreviations
SUB-INDICATOR 5.2 (Webb Level: 2 Differentiate): Differentiate between different drafting styles
SUB-INDICATOR 5.3 (Webb Level: 2 Demonstrate): Identify different aspects of blueprints/project plans to show a working knowledge of specifications.
SUB-INDICATOR 5.4 (Webb Level: 2 Classify): Classify the different styles of residential architectural structures

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Knowledge (Factual):	**Understand (Conceptual):**	**Skills (Application):**
Drafting Equipment Drafting terminology Drafting terms and abbreviations Different drafting styles (residential, mechanical, civil) Types of blueprints	Various styles of drafting are used in A&C.	Define and explain basic drafting terms and abbreviations Read various types of blueprints. Compare and contrast various styles of drafting. Recognize different styles of residential structures.

Benchmarks

Students will be assessed on their *ability* to:

- Know 90% of drafting terms and abbreviations.
- Classify different styles of residential structures with 90% proficiency.
- Identify the proper drafting style to the appropriate application with 100% proficiency.
- Interpret blueprints for specifications with 90% accuracy.

Academic Connections

ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**
RI.4 – Determine the meaning of technical writing RI.7 – Integrate and evaluate multiple sources to address a problem. W4 – Produce clear and coherent writing W.6 – Using technology to produce or publish a product. S.4 – Present information finding and supporting evidence to convey a prospective.	Students will be given a specific blue print and identify specific styles of drafting and specifications. They will describe orally or in writing what is drafted, using appropriate terms and abbreviations.

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<table>
<tr><td colspan="3">INDICATOR #IAC 6: Display skills needed in architecture and construction industries.</td></tr>
<tr><td colspan="3">SUB-INDICATOR 6.1 (Webb Level: 2 Apply): Apply proper measuring and cutting techniques to perform job related tasks</td></tr>
<tr><td colspan="3">SUB-INDICATOR 6.2 (Webb Level: 2 Display): Display a working knowledge of tools and equipment used in the industry</td></tr>
<tr><td colspan="3">SUB-INDICATOR 6.3 (Webb Level: 2 Construct): Construct a project using the assigned design process</td></tr>
<tr><td colspan="3">SUB-INDICATOR 6.4 (Webb Level: 2 Demonstrate): Demonstrate necessary job skills needed in architecture and construction industries</td></tr>
<tr><td>Knowledge (Factual):
Proper techniques to perform job related tasks

Working knowledge of tools and equipment

Finished product

Job Skills</td><td>Understand (Conceptual):
Students need specific job and employability skills in A&C.</td><td>Skills (Application):
Measure and cut to perform job related tasks

Use tools and equipment in appropriate manor

Construct a project

Demonstrate job skills used in A&C</td></tr>
<tr><td colspan="3">Benchmarks
Students will be assessed on their ability to:
Describe 90% of the job skills needed for A&C industry.
Construct a project with the precise measurements using the correct tools 100% of the time.</td></tr>
<tr><td colspan="3">Academic Connections</td></tr>
<tr><td colspan="2">ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):

RI.4 – Determine the meaning of technical writing

RI.7 – Integrate and evaluate multiple sources to address a problem.

W4 – Produce clear and coherent writing</td><td>Sample Performance Task Aligned to the Academic Standard(s):

Students will construct a project using a specific design.

Students will describe in writing or orally the employability skills used in the construction of their project.</td></tr>
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Additional Resources

Please list any resources (e.g., websites, teaching guides, etc.) that would help teachers as they plan to teach these new standards.