

CCSD CAREER AND TECHNICAL STANDARDS AND BENCHMARKS INDUSTRIAL TECHNOLOGY

Scope and Sequence of Objectives (CTE/IT, CS.T, B.2)

Industrial Technology Standard (Technical): Students will acquire and apply technical processes, concepts and strategies to solve workplace and personal scenarios.

Benchmark 2: Understand the basic sequence of procedures, methods and processes used in industry.

Basic Man.	Metal Proc.	Advanced Man.	Voc. Man.
Cut material to specified dimensions and shapes.	Cut material to specified dimensions and shapes.	Use basic drafting equipment.	Install and remove fasteners properly.
Install and remove fasteners properly.	Install and remove fasteners properly.	Cut material to specified dimensions and shapes.	Design and use jigs and fixtures for machine operations.
Cut threads with various processes.	Cut threads with various processes.	Install and remove fasteners properly.	Set up and use precision machining equipment.
Design and use jigs and fixtures for machine operations.	Design and use jigs and fixtures for machine operations.	Design and use jigs and fixtures for machine operations.	Explain and use destructive and nondestructive methods of testing.
Set up and use precision machining equipment.	Set up and use precision machining equipment.	Set up and use precision machining equipment.	
Explain and use destructive and nondestructive methods of testing.	Explain and use destructive and nondestructive methods of testing.	Explain and use destructive and nondestructive methods of testing.	
Demonstrate material forming and casting processes.	Demonstrate material forming and casting processes.	Demonstrate material forming and casting processes.	

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Construction Tech	Building Trades I	Building Trades II	Tech Drafting	Intro to Engineering
1. Describe how walls are joined together, outside corners and interior to exterior.	Explain differences between HVAC systems.	Explain differences between HVAC systems.	Use basic drafting equipment.	1. Measure and fabricate parts for a functional prototype from the CAD multi view drawings.
2. Identify and describe different types of electrical components found in residential wiring, read an electrical print and properly wire an outlet, a light, a ceiling fan, a 3-way switch and a dimmer switch.	Cut material to specified dimensions and shapes.	Cut material to specified dimensions and shapes.	Identify and draw basic line types.	2. Explain the rules that are associated with the application of dimensions to multi view drawings.
3. Identify and describe different types of plumbing components found in residential plumbing. wiring, read a blueprint electrical print and properly sweat a copper joint, construct a p-trap.	Install and remove fasteners properly.	Install and remove fasteners properly.	Demonstrate correct lettering techniques.	3. How the design of a consumer product different then the design of a product used to help a manufacturing process.
4. Identify and describe different types of insulation and interior wall coverings and their components.				

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Wood I	Wood II	Building Trades I	Building Trades II	Drafting I	Drafting II	Machine Drafting I	Machine Drafting II	Arch. Drafting I	Arch. Drafting II
		Understand the processes and activities needed to prepare a site for construction.	Understand the processes and activities needed to prepare a site for construction.	Perform basic geometric construction.	Construct fastener, schematic and simplified thread drawings.			Construct footing and foundation plans.	Develop and construct a residential floor plan.
		Demonstrate correct handling and placing techniques for concrete.	Demonstrate correct handling and placing techniques for concrete.	Perform basic geometric construction.	Construct sheet metal drawing.			Prepare door and window schedule.	Construct footing and foundation plans.
		Measure, cut and install siding.	Measure, cut and install siding.	Freehand sketch orthographic and pictorial. View.	Construct exploded and assembly drawings.			Prepare a building material list.	Prepare door/win schedule.
		Rough frame a house.	Rough frame a house.	Apply basic dimensional techniques.				Construct HVAC drawings.	Prepare a building material list.

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Wood I	Wood II	Building Trades I	Building Trades II	Drafting I	Drafting II	Machine Drafting I	Machine Drafting II	Arch. Drafting I	Arch. Drafting II
		Install cabinetry and trim work.	Install cabinetry and trim work.	Construct basic sectional views.				Understand the processes/activities needed to prepare a site for construction.	Construct HVAC drawings.
		Install insulation, vapor barriers and correct ventilation.	Install insulation, vapor barriers and correct ventilation.	Construct axonometric, oblique, one and two point perspective drawings.				Identify types of roofing and waterproofing systems.	Explain the principles of safety grounding systems.
		Identify types of roofing and waterproofing systems.	Identify types of roofing and waterproofing systems.	Construct exploded and assembly drawings.				Apply basic electrical technique.	
		Install doors and windows.	Install doors and windows.					Demonstrate an understanding of the principles and operation of batteries.	

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Wood I	Wood II	Building Trades I	Building Trades II	Drafting I	Drafting II	Machine Drafting I	Machine Drafting II	Arch. Drafting I	Arch. Draft II
		Demonstrate correct sheetrock installation procedures.	Demonstrate correct sheetrock installation procedures.						
		Apply basic electrical technique.	Apply basic electrical technique.						
		Demonstrate correct wire splicing and fastening techniques.	Demonstrate correct wire splicing and fastening techniques.						
		Wire and diagram single pole, 3-way and 4-way switching circuits.	Wire and diagram single pole, 3-way and 4-way switching circuits.						
		Identify types of circuit protection.	Identify types of circuit protection.						
		Explain the principles of safety grounding system.	Explain the principles of safety grounding system.						

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8th Woods	8th Electricity	8th Metals	8th Drafting	8th Small Engines	7th Ind. Tech.	6th Ind. Tech.
1. Use basic drafting equipment to draw a project.	1. Solder electrical components on a printed circuit board.	1. Use basic drafting equipment.	1. Perform basic geometric constructions.	3. Disassemble, evaluate and reassemble a 1 cyl. Engine,	1. Draw orthographic views.	1. Use basic drafting equipment.
2. Cut material to specified shapes and dimensions.	2. Explain the principles of safety grounding systems.	2. Construct sheet metal drawings.	2. Construct orthographic views.		2. Construct isometric views.	2. Cut material to specified shape and dimensions.
3. Install and remove fasteners correctly.	3. Demonstrate correct wire fastening and splicing techniques.	3. Demonstrate metal forming and casting processes.	3. Apply basic dimensioning techniques.		3. Use basic electrical hand tools.	3. Install and remove fasteners correctly.
	4. Diagram and wire S.P., 3-way and 4-way switching circuits.	4. Cut materials to specified shape and dimensions.	4. Construct a basic sectional view drawing.		4. Cut material to specified shape and dimensions.	
		5. Install and remove fasteners correctly.	5. Construct isometric views.		5. Demonstrate basic wiring technique.	
			6. Construct exploded view drawings.			
			7. Construct a residential floor plan.			