Connecticut CTE

Building Construction (Grades 9-12)

Building Construction

A Building Construction BC

1 Identify and appraise the impacts construction has on their future aspirations; both career based and/or as an educated consumer. BC.01

- a Develop career goals and objectives as part of a plan for future career direction. BC.01.01
- b Develop strategies to reach career objectives. BC.01.02
- c Compare the advantages and disadvantages of different types of home purchases, additions, renovations and repairs. BC.01.03

2 Describe and demonstrate the procedures related to workplace and job-site safety including personal protective equipment, machine safety, and material handling practices. BC.02

- a Demonstrate safe material handling practices. BC.02.01
- b Demonstrate and explain knowledge of workplace safety procedures.* (A2) BC.02.02
- c Demonstrate and explain knowledge of personal safety practices pertaining to eye wear, footwear, clothing, and personal protective equipment (PPE) used in wood technology.*(A3) BC.02.03
- d Describe safety practices for the following machines: table saw, drill press, stationary sander, router table, and miter saw.*(A4) BC.02.04
- e Demonstrate and explain knowledge of proper use and storage of basic hand tools.*(A5) BC.02.05
- f Demonstrate and explain knowledge of proper use and storage of portable power tools.*(A6) BC.02.06
- g Evaluate workplace/jobsite activities for compliance with governmental and other applicable safety regulations such as EPA and OSHA. BC.02.07
- h Read and discuss information on OSHA, EPA and other safety regulations. BC.02.08
- i Obtain, understand and follow MSDS (Material Safety Data Sheets) information. BC.02.09
- j Follow safe practices relating to environmental hazards. BC.02.10
- k Explain safe usage and storage of chemicals. BC.02.11

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3 Identify and describe the safe and appropriate use of various types of layout, hand and power tools and machinery used for building construction.BC.03 BC.03

a Identify, use, and maintain the following measuring, layout, and marking tools steel rule, tape measure, combination square, sliding “T” bevel, and compass.* (B8) BC.03.01

b Identify proper use and function of the following portable power tools: circular saw, drill, jig/saber saw, finishing sanders, and routers.*(B9) BC.03.02

c Identify proper use and function of the following fastening tools: hammer, Phillip head screw driver, and slotted/flat head screw driver.*(B10) BC.03.03

d Identify proper use and function of portable power tools. BC.03.04

e Identify proper use and function of the following hand tools: cross cut saw, rip saw, level, coping saw, nail set, hand plane, chisel, and file.*(B11) BC.03.05

f Identify proper use and function of the table and miter saws.*(B12) BC.03.06

g Identify the proper use and function specialty machinery (e.g., drill presses, jointers, surface planers, table saws, power miter saws, band saws, scroll saws, and stationary sanders. BC.03.07

h Explain correct use of planers. BC.03.08

i Explain use of molders. BC.03.09

j Identify functions and demonstrate us of wood lathes. BC.03.10

k Identify and demonstrate use and function of sanders. BC.03.11

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4 Understand and be able to demonstrate the methods involved in turning materials into useable structures and products. BC.04

- a Describe and identify fractional measurements from a basic plan and assembly drawings.*(C13) BC.04.01
- b Describe and prepare rough drawings and sketches.*(C14) BC.04.02
- c Explain and prepare a cut list or bill of material from a basic plan and assembly drawing.*(C15) BC.04.03
- d Interpret a design to facilitate replication BC.04.04
- e Measure accurately to a sixteenth of an inch.*(C16) BC.04.05
- f Identify the difference between both nominal and actual dimensions.*(C17) BC.04.06
- g Explain and use fractional dimensions. BC.04.07
- h Extrapolate information from a set of plans. BC.04.08
- i Consider the natural characteristics of grain, knots, and checks when laying out a board.*(C19) BC.04.09
- j Estimate materials quantities in both board feet and linear feet.*(C18) BC.04.10
- k Identify various types of joints. BC.04.11
- l Prepare stock for use.*(G28) BC.04.12
- m Identify and assemble the following types of joints: butt, miter, dado, rabbet, and lap.*(G27) BC.04.13
- n Identify and describe the purpose and use of the following woodworking fasteners: common nails, round head screws, flat head screws, and oval head screws. BC.04.14
- o Identify, describe purpose of and use woodworking adhesives. BC.04.15
- p Identify and describe the purpose of the following clamping devices: bar clamp, c clamp, parallel/hand screw clamp, and spring clamps.*(H30) BC.04.16
- q Identify and apply various wood finishes for interior and exterior, with brush or wipe on, for the following: paint, stain, and clear coat.*(I31) BC.04.17
- r Describe the abrasive grit numbering grading system.*(F26) BC.04.18
- s Differentiate among various abrasive materials. BC.04.19
- t Identify and select the proper cutting process based on grain direction.*(E23) BC.04.20
- u Identify how grain direction affects a material's strength.*(E24) BC.04.21
- v Understanding kerf and its application to cutting and layout operations.*(E25) BC.04.22

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5 Describe characteristics and determine appropriate applications for various building material selections. BC.05

- a Identify characteristics and applications of the following coniferous softwoods: pine, cedar, and fir.*(D20) BC.05.01
- b Identify characteristics and applications of the following deciduous hardwoods: oak, maple, and poplar.*(D21) BC.05.02
- c Identify characteristics and applications of the following engineered lumber: plywood and medium density fiberboard.*(D22) BC.05.03
- d Identify building systems needed to complete a construction project. BC.05.04
- e List all building systems involved in a project. BC.05.05
- f Identify and describe the function of the components of building systems needed to complete a construction project. BC.05.06
- g Incorporate appropriate building systems into a construction project. BC.05.07
- h Develop building plans and schedules by using processes common to residential and commercial construction. BC.05.08
- i Explain the sub-systems, (e.g., structural, electrical, mechanical, finish, foundations) appropriate to the architectural design and residential construction. BC.05.09
- j Explain and demonstrate site layout procedures. BC.05.10
- k Describe the phases of residential and commercial construction. BC.05.11

6 Develop an understanding of local, state and global building and construction issues using critical and creative thinking skills; logical reasoning; analytical thinking and problem solving techniques. BC.06

- a Describe the economic implications of using problem-solving and critical thinking skills to improve a situation or process. BC.06.01
- b Create ideas, proposals, and solutions to building construction problems. BC.06.02
- c Evaluate ideas, proposals, and solutions to building construction problems. BC.06.03
- d Generate new and creative building construction ideas to solve problems using a structured problem solving method. BC.06.04
- e Critically analyze environmental implications in building construction materials and processes. BC.06.05