Course: *Advanced Construction and Carpentry* **Unit #2:** *Framing*	**Year of Implementation:** 2024-2025
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Stage One - Desired Results

Link(s) to New Jersey Student Learning Standards for this course:
{provide all applicable links to standards here}
https://www.state.nj.us/education/cccs/2020/

- **Unit Standards:** *(keep each of the following headings in place)*
  - ***21st Century Life & Career Standards***
    - 9.3.MN.6 Demonstrate workplace knowledge and skills common to manufacturing.
    - 9.3.MN-PRO.2 Manage safe and healthy production working conditions and environmental risks
    - 9.3.MN-PPD.3 Monitor, promote and maintain a safe and productive workplace using techniques and solutions that ensure safe production of products.
    - 9.3.12.AC-DES.1 Justify design solutions through the use of research documentation and analysis of data.
    - 9.3.12.AC-DES.2 Use effective communication skills and strategies (listening, speaking, reading, writing and graphic communications) to work with clients and colleagues.
    - 9.3.12.AC-DES.3 Describe the requirements of the integral systems that impact the design of buildings.
    - 9.3.12.AC-DES.4 Apply building codes, laws and rules in the project design.
    - 9.3.12.AC-DES.5 Identify the diversity of needs, values and social patterns in project design, including accessibility standards.
    - 9.3.12.AC-DES.6 Apply the techniques and skills of modern drafting, design, engineering and construction to projects.
    - 9.3.12.AC-DES.8 Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.
    - 9.3.12.AC.6 Read, interpret and use technical drawings, documents and specifications to plan a project.
    - 9.3.12.AC-CST.8 Demonstrate the construction crafts required for each phase of a construction project.
  - ***English Companion Standards***
    - Grade 9-10 Companion Standards:

        - RST.9-10.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.
    - Grade 11-12 Companion Standards:
        - RST.11-12.3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
- ***Interdisciplinary Content Standards***
    - NJSLSA.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content
- ***NJ Statutes:*** NJ State law mandates the inclusion of the following topics in lesson design and instruction as aligned to elementary and secondary curriculum.

Amistad Law: N.J.S.A. 18A 52:16A-88 Every board of education shall incorporate the information regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of elementary and secondary school students.

Holocaust Law: N.J.S.A. 18A:35-28 Every board of education shall include instruction on the Holocaust and genocides in an appropriate place in the curriculum of all elementary and secondary school pupils. The instruction shall further emphasize the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

LGBT and Disabilities Law: N.J.S.A. 18A:35-4.35 A board of education shall include instruction on the political, economic, and social contributions of persons with disabilities and lesbian, gay, bisexual, and transgender people, in an appropriate place in the curriculum of middle school and high school students as part of the district's implementation of the New Jersey Student Learning Standards (N.J.S.A.18A:35-4.36) A board of education shall have policies and procedures in place pertaining to the selection of instructional materials to implement the requirements of N.J.S.A. 18A:35-4.35.

Diversity and Inclusion (N.J.S.A. 18A:35-4.36a) A board of education shall incorporate instruction on diversity and inclusion in an appropriate place in the curriculum of students in grades kindergarten through 12 as

part of the district's implementation of the New Jersey Student Learning Standards.

Asian American and Pacific Islanders (AAPI) P.L.2021, c.410 Ensures that the contributions, history, and heritage of Asian Americans and Pacific Islanders (AAPI) are included in the New Jersey Student Learning Standards (NJSLS) for Social Studies in kindergarten through Grade 12 (P.L.2021, c.416)

For additional information, see

NJ Amistad Curriculum: ***https://www.nj.gov/education/amistad/about/***

Diversity and Inclusion: ***https://www.nj.gov/education/standards/dei/index.shtml***

- *(Sample Activities/ Lessons):* ***https://www.nj.gov/education/standards/dei/samples/index.shtml***

Asian American and Pacific Islanders:

- ***Asian American and Pacific Islander Heritage and History in the U.S.***
  A Teacher's Guide from EDSITEment offering a collection of lessons and resources for K-12 social studies, literature and arts classrooms that center around the experiences, achievements and perspectives of Asian Americans and Pacific Islanders across U.S. history.

Transfer Goal: Students will be able to independently use modern framing techniques to erect various structures.

As aligned with LRHSD Long Term Learning Goal(s):https://www.lrhsd.org/Page/6163

- communicate and collaborate using appropriate technical terms to describe, analyze, interpret, and judge their work and the work of others
- acquire, integrate, and apply design processes and essential technical skills to solve problems, create products, and improve the quality of life for our local and global community

Enduring Understandings {use Arial 11 font] Students will understand that. . .	*Essential Questions* {use Arial 11 font]
EU 1 ● common practices and universal standards dictate how a structure is built. *EU 2* ● *structures must be built to withstand various loads both static and dynamic.* *EU 3* ● *regional conditions, material costs, and product availability determine the standard practices used in framing.*	● *What factors lead to similar and different home designs?* ● *How are builders able to determine if the structure they are building will be safe to occupy?*
Knowledge *Students will know . . .* *EU 1* ● that common practices exist to promote safety and efficiency (9.3.MN.6) ● different parts of the wall. (9.3.MN.6) ● that building codes exist and how to find them. (9.3.MN.6) *EU 2* ● how to determine the kinds of loads expected in a structure. (9.3.12.AC-DES.3) ● how to go through the permit approval process (9.3.12.AC-DES.2)	*Skills* *Students will be able to. . .* *EU 1* ● locate framing standards provided by a local governing body. (9.3.12.AC-DES.4, 9.3.12.AC.6) ● frame different structures based on project specifications. (9.3.12.AC-CST.8, 9.3.12.AC-DES.4) ● follow safe and efficient building practices. (9.3.MN-PRO.2, 9.3.MN-PPD.3) *EU 2* ● identify potential loads that exist within a given structure. (9.3.12.AC-DES.3)

● how to identify load bearing structures. (9.3.12.AC-DES.3) *EU3* ● builders from different parts of the country and world need to build differently based on local weather conditions. (9.3.MN-PRO.2) ● that building materials often change based on what is available domestically. (9.3.12.AC-DES.8) ● global events (war, droughts, etc.) can alter building standards and practices. (9.3.12.AC-DES.5, 9.3.12.AC-DES.8)	● gather and/or produce all the necessary plans to gain a building permit (9.3.12.AC-DES.6) ● analyze an existing structure to identify load bearing components (9.3.12.AC-DES.3) *EU 3* ● design structures based on potential weather conditions (9.3.12.AC-DES.1, 9.3.12.AC-DES.8) ● select the proper materials for a project based on factors such as cost, durability, and availability (9.3.12.AC-DES.1)
Stage Two - Assessment	
●	
Stage Three - Instruction	

Learning Plan: **Suggested Learning Activities to Include Differentiated Instruction and Interdisciplinary Connections: Each learning activity listed must be accompanied by a learning goal of A= Acquiring basic knowledge and skills, M= Making meaning and/or a T= Transfer.** *{place A, M and/or T along with the applicable EU number in parentheses after each statement} All knowledge and skills must be addressed in this section with a corresponding lesson/activity which teaches each concept. The following color codes are used to notate activities that correspond with interdisciplinary connections and 21st Century Life & Career Connections (which involves Technology Literacy): Red = Interdisciplinary Connection; Purple = 21st Century Life & Career Connection*

- Teacher led discussions on framing codes and standard practices (A EU1, 2, 3)
- Demonstrations with job specific tools and tasks. (A,M, EU1)
- Student note taking to describe the framing process and procedure(A, EU1, 2, 3)
- Practice new skill sets in specific rough carpentry categories including but not limited to framing, roofing, flooring (M, EU1,2)
- Practice new skill sets in specific finish carpentry categories including but not limited to trimwork, scrollwork, cabinetmaking (M, EU1,2,3)
- Demonstrate proper usage of job specific tools. (M,T EU1,2,3)
- Student presentations describing framing and rough carpentry skills, techniques, and regional impact(M,T, EU1,2,3)
- Student journaling (M,T EU1,2,3)
- Demonstrate setting up a mobile work site for framing.(M,T, EU1,2)
- Design and construct a flooring system with all necessary components(M,T, EU1,2,3)
- Design and construct a wall system with all necessary components(M,T, EU1,2,3)
- Design and construct a roofing system with all necessary components(M,T, EU1,2,3)
- Student reflection,(improving the design, improving workflow, improving site set up, dividing tasks for workers.)(MT, EU1,2,3)
- Install and trim out a window in a wall system (M,T, EU1,2,3)
- Install and trim out a door in a wall system (M,T, EU1,2,3)
- Install crown and chair rail molding on a wall/ceiling (M,T, EU1,2,3)
- Construct and hang a complete cabinet assembly (M,T, EU1,2,3)
- Construct and install stairs. (M,T,EU1,2,3)
- Demonstrate knowledge of local building codes(M,T,EU1,2,3)

Pacing Guide

{This chart will be identical in all of the units for this course.}

Unit #	*Title of Unit*	*Approximate # of teaching days*
1	Jobsite Safety	20
2	Framing	55
3	Construction Specializations	45
4	Material Selection & Interactions	15

Instructional Materials

A fully equipped shop including but not limited to:

Hand Tools (Hammers, Pliers, Screwdrivers, Nutdrivers, Wrenches, Squares, Tin Snips, Chisels, Cross Cut Saws, Mallets, Putty Knives, Measuring Tapes, Utility Knives, Wire Strippers, Rulers, Caulk Guns, Paint Brushes, Chalk Line)

Power Tools (Cordless Drills, Impact Drivers, Cordless Circular Saws, Cordless Jig Saws, Cordless Reciprocating Saws, Cordless Routers, Cordless Framing Nailers, Cordless Finishing Nailers, Cordless Stapler)

Materials (Framing Supplies, Roofing Supplies, Mechanical Fasteners, Electrical Supplies, Plumbing Supplies, Paint, Masonry Supplies, Sealing & Insulation Materials)

PPE (Hardhats, Fall Protection, Safety Glasses, Respirators, Gloves, Knee Pads, Coveralls, Face Shields)

Equipment (Ladders, Scaffolding, Fall Arrest Points, Moving Equipment)

Accommodations

Special Education: The curriculum will be modified as per the Individualized Education Plan (IEP). Students will be accommodated based on specific accommodations listed in the IEP.
Students with 504 Plans: Students will be accommodated based on specific accommodations listed in the 504 Plan.
English Language Learners: Students will be accommodated based on individual need and in consultation with the ELL teacher.
Students at Risk of School Failure: Students will be accommodated based on individual need and provided various structural supports through their school.
Gifted and Talented Students: Students will be challenged to enhance their knowledge and skills through acceleration and additional independent research on the subject matter.