

Language of Architecture & Construction (Construction Careers Exploration)

Course Description

Language of Architecture and Construction (Construction Careers Exploration) is a 10.0 credit seminar-style course that exposes students to many career industries and fields. The course is split into two sections, in which students are actively taking two of the eight topics/units covered during one academic year. These topics include: Graphic Design, Construction, Drafting-General, Woodworking, C-ROM, Printing, Safety, and Automotive.

Students acquire introductory-level knowledge and skills of these disciplines, and allows them to make an informed decision about their continued program of study in a given career field.

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Pacing Guide		
Unit	Topic	Suggested Timing
<i>COHORT A – 35 weeks of instruction</i>		
Unit 1	Introduction and Overview of Graphic Design	approx. 9 weeks
Unit 2	Introduction and Overview of Construction	approx. 9 weeks
Unit 3	Introduction and Overview of Drafting - General	approx. 9 weeks
Unit 4	Introduction and Overview of Woodworking	approx. 8 weeks
<i>COHORT B – 35 weeks of instruction</i>		
Unit 5	Introduction and Overview of C-ROM	approx. 9 weeks
Unit 6	Introduction and Overview of Printing	approx. 9 weeks
Unit 7	Introduction and Overview of Safety	approx. 9 weeks
Unit 8	Introduction and Overview of Automotive	approx. 8 weeks

Educational Technology Standards

8.1.12.A.1, 8.1.12.B.2, 8.1.12.C.1, 8.1.12.D.1, 8.1.12.E.1, 8.1.12.F.1

- **Technology Operations and Concepts**
 - Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.
- **Creativity and Innovation**
 - Apply previous content knowledge by creating and piloting a digital learning game or tutorial.
- **Communication and Collaboration**
 - Develop an innovative solution to a real world problem or issue in collaboration with peers and experts, and present ideas for feedback through social media or in an online community.
- **Digital Citizenship**
 - Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work.
- **Research and Information Literacy**
 - Produce a position statement about a real world problem by developing a systematic plan of investigation with peers and experts synthesizing information from multiple sources.
- **Critical Thinking, Problem Solving, Decision Making**
 - Evaluate the strengths and limitations of emerging technologies and their impact on educational, career, personal and or social needs.

Career Ready Practices

Career Ready Practices describe the career-ready skills that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

CRP1. Act as a responsible and contributing citizen and employee

Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.

CRP2. Apply appropriate academic and technical skills.

Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.

CRP3. Attend to personal health and financial well-being.

Career-ready individuals understand the relationship between personal health, workplace performance and personal well-being; they act on that understanding to regularly practice healthy diet, exercise and mental health activities. Career-ready individuals also take regular action to contribute to their personal financial well-being, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.

CRP4. Communicate clearly and effectively and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP5. Consider the environmental, social and economic impacts of decisions.

Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.

CRP6. Demonstrate creativity and innovation.

Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

CRP7. Employ valid and reliable research strategies.

Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies. They use reliable research process to search for new information. They evaluate the validity of sources when considering the use and adoption of external information or practices in their workplace situation.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.

CRP9. Model integrity, ethical leadership and effective management.

Career-ready individuals consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.

CRP10. Plan education and career paths aligned to personal goals.

Career-ready individuals take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.

CRP11. Use technology to enhance productivity.

Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.

CRP12. Work productively in teams while using cultural global competence.

Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.

Differentiated Instruction

Strategies to Accommodate Students Based on Individual Needs

<u>Time/General</u>	<u>Processing</u>	<u>Comprehension</u>	<u>Recall</u>
<ul style="list-style-type: none"> • Extra time for assigned tasks • Adjust length of assignment • Timeline with due dates for reports and projects • Communication system between home and school • Provide lecture notes/outline 	<ul style="list-style-type: none"> • Extra Response time • Have students verbalize steps • Repeat, clarify or reword directions • Mini-breaks between tasks • Provide a warning for transitions • Reading partners 	<ul style="list-style-type: none"> • Precise step-by-step directions • Short manageable tasks • Brief and concrete directions • Provide immediate feedback • Small group instruction • Emphasize multi-sensory learning 	<ul style="list-style-type: none"> • Teacher-made checklist • Use visual graphic organizers • Reference resources to promote independence • Visual and verbal reminders • Graphic organizers
<u>Assistive Technology</u>	<u>Tests/Quizzes/Grading</u>	<u>Behavior/Attention</u>	<u>Organization</u>
<ul style="list-style-type: none"> • Computer/whiteboard • Tape recorder • Spell-checker • Audio-taped books 	<ul style="list-style-type: none"> • Extended time • Study guides • Shortened tests • Read directions aloud 	<ul style="list-style-type: none"> • Consistent daily structured routine • Simple and clear classroom rules • Frequent feedback 	<ul style="list-style-type: none"> • Individual daily planner • Display a written agenda • Note-taking assistance • Color code materials

Enrichment

Strategies Used to Accommodate Based on Students Individual Needs:

- Adaption of Material and Requirements
- Evaluate Vocabulary
- Elevated Text Complexity
- Additional Projects
- Independent Student Options
- Projects completed individual or with Partners
- Self Selection of Research
- Tiered/Multilevel Activities
- Learning Centers
- Individual Response Board
- Independent Book Studies
- Open-ended activities
- Community/Subject expert mentorships

Assessments

Suggested Formative/Summative Classroom Assessments

- Timelines, Maps, Charts, Graphic Organizers
- Teacher-created Unit Assessments, Chapter Assessments, Quizzes
- Teacher-created DBQs, Essays, Short Answer
- Accountable Talk, Debate, Oral Report, Role Playing, Think Pair, and Share
- Projects, Portfolio, Presentations, Prezi, Gallery Walks
- Homework
- Concept Mapping
- Primary and Secondary Source analysis
- Photo, Video, Political Cartoon, Radio, Song Analysis
- Create an Original Song, Film, or Poem
- Glogster to make Electronic Posters
- Tumblr to create a Blog

Interdisciplinary Connections

English Language Arts

- Journal writing
- Close reading of industry-related content
- Create a brochure for a specific industry
- Keep a running word wall of industry vocabulary

Social Studies

- Research the history of a given industry/profession
- Research prominent historical individuals in a given industry/profession
- Use historical references to solve problems

World Language

- Translate industry-content
- Create a translated index of industry vocabulary
- Generate a translated list of words and phrases related to workplace safety

Math

- Research industry salaries for a geographic area and juxtapose against local cost of living
- Go on a geometry scavenger hunt
- Track and track various data, such as industry's impact on the GDP, career opportunities or among of individuals currently occupying careers

Fine & Performing Arts

- Create a poster recruiting young people to focus their studies on a specific career or industry
- Design a flag or logo to represent a given career field

Science

- Research the environmental impact of a given career or industry
- Research latest developments in industry technology
- Investigate applicable-careers in STEM fields

New Jersey Student Learning Standards

9.3 – Career Cluster: Architecture and Construction

Career Cluster: Architecture and Construction (AC)

- 9.3.12.AC 1 Use vocabulary, symbols and formulas commonly used in design and construction.
- 9.3.12.AC 3 Comply with regulations and applicable codes to establish and manage a legal and safe workplace/jobsite.

Career Pathway: Construction (CST)

- 9.3.12.AC-CST 5 Understand and apply practices and procedures required to maintain jobsite safety.
- 9.3.12.AC-CST 7 Compare and contrast the building systems and components for a given project.
- 9.3.12.AC-CST 8 Demonstrate the construction crafts required for each phase of a given project.
- 9.3.12.AC-CST 9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.

Career Pathway: Design/Pre-Construction (DES)

- 9.3.12.AC-DES 8 Apply principles, conventions, standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies for project design.

Career Pathway: Maintenance/Operations (MO)

- 9.3.12.AC-MO 1 Recognize and employ universal construction signs and symbols to function safely in the workplace.

NJSLS - English-Language Arts – Anchor Standards for Reading

Craft and Structure:

- NJSLSA.R4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

Integration of Knowledge and Ideas:

- NJSLSA.R7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
- NJSLSA.R10. Read and comprehend complex literary and informational texts independently and proficiently with scaffolding as needed.

NJSLS - English-Language Arts – Anchor Standards for Writing

Text Types and Purposes:

- 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.

Research to Build and Present Knowledge:

- NJSLSA.W7. Conduct short as well as more sustained research projects, utilizing an inquiry-based research process, based on focused questions, demonstrating understanding of the subject under investigation.
- NJSLSA.W8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

NJSLS - English-Language Arts – Anchor Standards for Speaking and Listening

Comprehension and Collaboration:

- NJSLSA.SL1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
- NJSLSA.SL2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

Presentation of Knowledge and Ideas:

- NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

NJSLS – Mathematics Standards 2016

Number and Quantity:

- N.Q.A.1. Use units as a way to understand problems and to guide the solution of multi-step problems; Choose and interpret units consistently in formulas; Choose and interpret the scale and the origin in graphs and data displays.
- N.Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.

Functions:

- F.BF.A.1. Write a function that describes a relationship between two quantities.

Common Career Technical Core (CCTC)

Career Cluster: Architecture and Construction

Career Cluster: Architecture and Construction (AC)

- AC 1 Use vocabulary, symbols and formulas commonly used in design and construction.
- AC 3 Comply with regulations and applicable codes to establish and manage a legal and safe workplace/jobsite.

Career Pathway: Construction (CST)

- AC-CST 5 Understand and apply practices and procedures required to maintain jobsite safety.
- AC-CST 7 Compare and contrast the building systems and components for a given project.
- AC-CST 8 Demonstrate the construction crafts required for each phase of a given project.
- AC-CST 9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.

Career Pathway: Design/Pre-Construction (DES)

- AC-DES 8 Apply principles, conventions, standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies for project design.

Career Pathway: Maintenance/Operations (MO)

- AC-MO 1 Recognize and employ universal construction signs and symbols to function safely in the workplace.

<p>Course: Language of Architecture & Construction (Construction Careers Exploration)</p> <p>Unit: 4- Woodworking</p> <p>Grade Level: 9-12</p>	<p>Unit Overview: In this unit, students will learn to follow safety procedures and use personal protective equipment to reduce the risk of injury. The class will explore the benefits of teamwork and practice working as a team. Finally, students will explore the different characteristics of various types of building material.</p>
<p>New Jersey Student Learning Standards (NJSLS): 9.3.12.AC 1, 9.3.12.AC 3, 9.3.12.AC-CST 5, 9.3.12.AC-CST 7, 9.3.12.AC-CST 8, 9.3.12.AC-CST 9, 9.3.12.AC-DES 8, 9.3.12.AC-MO 1, NJSLSA.R4, NJSLSA.R7, NJSLSA.R10, NJSLSA.W2, NJSLSA.W7, NJSLSA.W8, NJSLSA.SL1, NJSLSA.SL2, NJSLSA.SL4, N.Q.A.1, N.Q.A.2, F.BF.A.1.</p>	
<p>Common Career Technical Core (CCTC): AC 1, AC 3, AC-CST 5, AC-CST 7, AC-CST 8, AC-CST 9, AC-DES 8, AC-MO 1</p>	

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
<p>Workshop Safety Understand and apply practices and procedures required to maintain jobsite safety.</p> <p>NJSLS 9.3.12.AC 1 9.3.12.AC 3 9.3.12.AC-CST 5 9.3.12.AC-CST 9</p>	<p>What are the safety concerns to be considered when working in a workshop in school or on the job?</p> <p>What personal protection can be used in a workshop?</p> <p>What should be part of</p>	<ul style="list-style-type: none"> ▪ Identify safety signs and symbols. ▪ Demonstrate proper use of personal protection equipment. ▪ Identify guards and safety equipment on tools. ▪ Demonstrate the ability to follow instructions. 	<p>Safety Checklist Create a safety checklist for the workshop.</p> <p>PowerPoint Groups of students create a PowerPoint outlining safety procedures in the workshop.</p>	<p>Wood Shop Safety Inspection Checklist http://safety4schools.org/site/wp-content/uploads/2013/11/Wood-Shop-Safety-Inspection-January-2013.pdf</p> <p>Importance of Health and Safety Activity</p>

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
<p>9.3.12.AC-MO 1 NJLSA.R4. NJLSA.R7. NJLSA.R10. NJLSA.W2. NJLSA.W7. NJLSA.W8. NJLSA.SL1. NJLSA.SL2. NJLSA.SL4.</p> <p>CCTC AC 1 AC 3 AC-CST 5 AC-CST 9 AC-MO 1</p>	<p>an effective safety program?</p> <p>What are the guidelines of fire and chemical safety?</p> <p>What are the governing bodies that set safety laws?</p>	<ul style="list-style-type: none"> ▪ Identify guidelines for fire safety. ▪ Identify the guidelines for chemical safety. ▪ Explain the importance of following procedures in order. <p>Explain the importance of proper workshop safety precautions.</p>	<p>Poster Create a poster about fire and chemical safety to be displayed in the shop.</p> <p>Research Paper Research the governing bodies that set safety laws. Write an essay about them and how the safety laws are enforced.</p>	<p>Sheet 13.1 http://www.pearsonschoolsandfcolleges.co.uk/FEAndVocational/Engineering/BTEC/WorldofWorkEngineering/Resources/SupportMaterialsforWOWEngineering-ColourVersionsofWorksheets.pdf</p> <p>Free Printable Safety & Caution Signs http://www.freesignage.com/osh_a_caution_signs.php</p> <p>A Guide for Protecting Workers from Woodworking Hazards https://www.osha.gov/Publications/osh3157.pdf</p>
<p>Teamwork Analyze the benefits of teamwork and the characteristics that make</p>	<p>What are the characteristics of a functional team?</p>	<ul style="list-style-type: none"> ▪ Identify roles for each team member in a given project. ▪ Identify goals for your 	<p>Role-play Role-play various situations where teamwork would be</p>	<p>Effective Teamwork in Construction http://smallbusiness.chron.com/effective-</p>

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<p>the team effective.</p> <p>NJSLS 9.3.12.AC 1 9.3.12.AC 3 9.3.12.AC-CST 5 9.3.12.AC-CST 9 9.3.12.AC-MO 1 NJLSA.R4. NJLSA.R7. NJLSA.R10. NJLSA.W2. NJLSA.W7. NJLSA.W8. NJLSA.SL1. NJLSA.SL2. NJLSA.SL4.</p> <p>CCTC AC 1 AC 3 AC-CST 5 AC-CST 9 AC-MO 1</p>	<p>What are the benefits of working in a team environment as opposed to individually?</p> <p>Which types of projects are best suited to teamwork?</p>	<p>team to complete.</p> <ul style="list-style-type: none"> ▪ Identify the characteristics of teamwork. ▪ Identify the benefits of teamwork. ▪ Identify various projects that are well suited to using teamwork. ▪ Communication ▪ Cooperation <p style="text-align: center;">Teamwork</p>	<p>applicable in a shop.</p> <p>Teamwork Roles Create a list of roles that workers can play while on a team and working on a given project.</p> <p>PowerPoint Create a PowerPoint presentation that shares the characteristics of an efficient and safe team.</p>	<p>teamwork-construction-12170.html</p> <p>10 Quick and Easy Team Building Activities [Part 1] https://www.huddle.com/blog/team-building-activities/</p> <p>Teamwork - Over the Work Bench w/ A.J. Hamler http://blog.woodshopnews.com/workbench/teamwork/</p>
<p>Softwood Analyze and explore the uses, characteristics and sources of Softwoods.</p>	<p>What are forest materials and how are they produced? What are coniferous</p>	<ul style="list-style-type: none"> ▪ Define SPF. ▪ Define Softwood. ▪ Define coniferous. ▪ Identify what types of 	<p>Softwood Characteristics Chart Given various softwoods, evaluate their toughness,</p>	<p>The Wood Database - Softwood Anatomy http://www.wood-database.com/wood-</p>

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<p>NJSLS 9.3.12.AC 1 9.3.12.AC-CST 7 9.3.12.AC-CST 8 9.3.12.AC-DES 8 NJLSA.R4. NJLSA.R7. NJLSA.R10. NJLSA.W2. NJLSA.W7. NJLSA.W8. NJLSA.SL1. NJLSA.SL2. NJLSA.SL4.</p> <p>CCTC AC 1 AC-CST 7 AC-CST 8 AC-DES 8</p>	<p>trees?</p> <p>What types of trees produce softwoods?</p> <p>What is the definition of SPF materials?</p> <p>What are the characteristics of softwoods?</p> <p>What types of projects are ideal for softwoods?</p>	<p>trees produce Softwoods.</p> <ul style="list-style-type: none"> ▪ Identify the advantageous characteristics of softwoods. ▪ Identify the disadvantages of using softwoods. ▪ Explain how the growing characteristics of softwood trees relate to the characteristics of softwoods. <p>Identify ideal projects to create with softwoods.</p>	<p>tendency to shrink and warp and cost.</p> <p>Project Planning Research Research, identify and create plans for projects that are well suited for softwoods.</p> <p>PowerPoint Create and present a PowerPoint presentation about the characteristics and origin of softwoods.</p>	<p>articles/softwood-anatomy/</p> <p>Identify the Most Common North American Conifers http://forestry.about.com/cs/treeid/a/con_tree_id.htm</p> <p>The Difference Between Hardwoods and Softwoods (I Swear, More Interesting Than It Sounds) https://www.youtube.com/watch?v=-REVw7qjSoQ</p>
<p>Hardwood Analyze and explore the characteristics, uses and sources of hardwoods.</p> <p>NJSLS 9.3.12.AC 1</p>	<p>What are forest materials and how are they produced?</p> <p>What are deciduous trees?</p>	<ul style="list-style-type: none"> ▪ Define hardwood. ▪ Define deciduous. ▪ Identify what types of trees produce hardwoods. ▪ Identify the advantageous 	<p>Hardwood Characteristics Chart Given various hardwoods, evaluate their toughness, tendency to shrink and warp and cost.</p>	<p>The Wood Database – Hardwood Anatomy http://www.wood-database.com/wood-articles/hardwood-anatomy/</p>

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<p>9.3.12.AC-CST 7 9.3.12.AC-CST 8 9.3.12.AC-DES 8 NJLSA.R4. NJLSA.R7. NJLSA.R10. NJLSA.W2. NJLSA.W7. NJLSA.W8. NJLSA.SL1. NJLSA.SL2. NJLSA.SL4.</p> <p>CCTC AC 1 AC-CST 7 AC-CST 8 AC-DES 8</p>	<p>What types of trees produce hardwoods?</p> <p>What are the characteristics of hardwoods?</p> <p>What types of projects are ideal for hardwoods?</p> <p>What are the different properties of Hardwoods and Softwoods in construction?</p>	<p>characteristics of hardwoods.</p> <ul style="list-style-type: none"> ▪ Identify the disadvantages of using Hardwoods. ▪ Explain how the growing characteristics of hardwood trees relate to the characteristics of hardwood. <ul style="list-style-type: none"> • Identify ideal projects to create with hardwoods. 	<p>Project Planning Research Research, identify and create plans for projects that are well suited for hardwoods.</p> <p>PowerPoint Create and present a PowerPoint presentation about the characteristics and origin of hardwoods.</p>	<p>Identification of the Most Common Hardwoods http://forestry.about.com/cs/treeid/a/hard_tree_id.htm</p> <p>The Difference Between Hardwoods and Softwoods (I Swear, More Interesting Than It Sounds) https://www.youtube.com/watch?v=-REVw7qjSoQ</p>
<p>Engineered Lumber Analyze the construction process and uses for engineered lumber.</p> <p>NJSLS 9.3.12.AC 1 9.3.12.AC-CST 7 9.3.12.AC-CST 8 9.3.12.AC-DES 8</p>	<p>What are engineered lumber products?</p> <p>How are engineered lumber products created?</p> <p>What are plywood, medium-density fiberboard, particleboard,</p>	<ul style="list-style-type: none"> ▪ Define Plywood. ▪ Define MDF. ▪ Identify the materials used in engineered lumber. ▪ Explain how engineered lumber is created. ▪ Identify the characteristics of 	<p>Engineered Lumber Characteristics Chart Given various engineered lumber, evaluate their toughness, tendency to shrink and warp and cost.</p> <p>Project Planning Research</p>	<p>Engineered Wood Products for Superior Performance http://www.apawood.org/products</p> <p>Overview: Engineered Wood Products in Structural Systems for Residential</p>

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<p>NJLSA.R4. NJLSA.R7. NJLSA.R10. NJLSA.W2. NJLSA.W7. NJLSA.W8. NJLSA.SL1. NJLSA.SL2. NJLSA.SL4.</p> <p>CCTC AC 1 AC-CST 7 AC-CST 8 AC-DES 8</p>	<p>and homasote?</p> <p>What characteristics of engineered lumber products are superior to natural woods?</p>	<p>engineered lumber.</p> <ul style="list-style-type: none"> ▪ Identify the advantages and disadvantages of e engineered lumber. • Identify projects that are well suited for engineered lumber. 	<p>Research, identify and create plans for projects that are well suited for engineered lumber.</p> <p>PowerPoint Create and present a PowerPoint presentation about the characteristics and origin of engineered lumber.</p>	<p>Construction https://www.youtube.com/watch?v=37FBUNvegHQ</p> <p>How It's Made Engineered Wood Siding https://www.youtube.com/watch?v=-U8xy7oHa-I</p> <p>MDF and HDF https://www.youtube.com/watch?v=qitenYvpSx4</p>
<p><u>Lumber Grading and Measurement</u> Evaluate important specification when selecting lumber for a project.</p> <p>NJSLS 9.3.12.AC 1 9.3.12.AC-CST 7 9.3.12.AC-CST 8 9.3.12.AC-DES 8 NJLSA.R4.</p>	<p>What is the difference between nominal and actual size specifications?</p> <p>Why are there nominal and actual sizes for lumber?</p> <p>What are the distinguishing factors between various grades of lumber?</p>	<ul style="list-style-type: none"> ▪ Define Nominal Size. ▪ Explain the difference between actual and nominal size. ▪ Explain the reasons for the differences between nominal and actual sizes. ▪ Identify the actual sizes for 1", 1 ½", 2", 2 ½", 3, 3 ½", 4", 4 ½" and 5". ▪ List and describe the 	<p><u>Lumber Size Chart</u> Create a chart that displays nominal and actual lumber sizes.</p> <p><u>Lumber Grading Competition</u> Provide the students pieces of wood with different grades. Challenge them to figure out which grade each piece is.</p>	<p><u>Lumber Size Chart</u> http://mistupid.com/homeimpr/lumber.htm</p> <p><u>The Basic Hardwood Lumber Grades</u> https://www.woodworker-source.com/shop/grad.html</p> <p><u>Soft Lumber Grading</u> http://www.woodbin.com/ref/softwood-grades/</p>

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
<p>NJSLSA.R7. NJSLSA.R10. NJSLSA.W2. NJSLSA.W7. NJSLSA.W8. NJSLSA.SL1. NJSLSA.SL2. NJSLSA.SL4. N.Q.A.1. N.Q.A.2. F.BF.A.1.</p> <p>CCTC AC 1 AC-CST 7 AC-CST 8 AC-DES 8</p>	<p>What are the appropriate projects for each grade of lumber?</p> <p>How do we identify different types of lumber?</p> <p>What is the process of creating usable lumber from logs?</p>	<p>many grades of lumber.</p> <ul style="list-style-type: none"> ▪ Identify, by sight, the grades of various types of lumber. <ul style="list-style-type: none"> • Identify the different grades of lumber used for a project and explain why each specific grade is used. 	<p><u>Lumber Grading for Projects</u></p> <p>Given a number or projects, decide which grade lumber would be most suited to each project.</p>	

Unit Vocabulary

coniferous
construction
deciduous
engineered lumber
hardwood
homastoe
lumber grades
masonite
medium-density fiberboard
No. 1 common
No. 2 common

oriented strand board
particle board
personal protection equipment
plywood
procedures
select
shrinking
softwood
SPF
splitting
warping

Suggested Unit Projects

Choose At Least One

<p><u>Safety Video</u></p> <p>Create a shop safety video to be presented for the other students. During the video include...</p> <ol style="list-style-type: none"> 1) the importance of following instruction in order. 2) the uses and specific types of personal protection available. 3) the procedures for fire and chemical safety. 	<p><u>Woodworking Project Materials</u></p> <p>Create a materials list for a given or researched project. In the materials list include...</p> <ol style="list-style-type: none"> 1) What type of lumber to purchase? 2) What grade of lumber to purchase? 3) How much lumber to purchase? <p>Explain each of these decisions.</p>
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Suggested Structured Learning Experiences

<p>Greenbaum Interiors (Request Workshop Tour) 101 Washington Street Paterson, NJ 07505 Phone: 973-279-3000</p> <p>Advantage Building Supply 923 Market St Paterson, NJ 07513 Phone Number: (973) 345-3900</p>	<p>Feldman Lumber 100 Dale Ave Paterson, NJ 07501 Phone Number: (973) 910-2600</p> <p>The Home Depot 75 McLean Blvd, Paterson, NJ 07514 Phone Number: (973) 357-1305</p>
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