

Installation: Foundation & Subflooring

Media Type: Video

Duration: 36 minutes

Goal: To demonstrate the process of installing foundation and subflooring.

Description: This presentation discusses tools and materials need to install foundation and subflooring, as well as safety precautions to be aware of during installation. The step-by-step process of installing foundation and subflooring is explored in detail. Lumber basics are also discussed.

Objectives:

1. To discuss tools and materials needed for foundation and subflooring installation.
2. To describe safety precautions relevant to foundation and subflooring installation.
3. To understand the basics of lumber.
4. To demonstrate the installation of foundation and subflooring.



College & Career Readiness Anchor Standards for Writing

Writing Standards	
Text Types & Purposes	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
	9-12.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
Production & Distribution of Writing	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
	9-10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
Research to Build & Present Knowledge	Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
	Draw evidence from literary or informational texts to support analysis, reflection, and research.
	9-10.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.
	11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
	9-12.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

Installation: Foundation & Subflooring



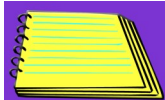
College & Career Readiness Anchor Standards for Speaking and Listening

Speaking & Listening Standards	
Comprehension & Collaboration	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.
	Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
	9-12.1 Initiate and participate effectively in a range of collaborative discussions with diverse partners on grades 9–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
	9-10.2 Integrate multiple sources of information presented in diverse media or formats evaluating the credibility and accuracy of each source.
	11-12.2 Integrate multiple sources of information presented in diverse formats and media in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.
Presentation of Knowledge & Ideas	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.
	Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
	9-10.4 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.
	11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.
	11-12.5 Make strategic use of digital media in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.

Architecture & Construction Career Cluster (AC)

Cluster	Standard
	Use vocabulary, symbols and formulas common to architecture and construction.
	Use architecture and construction skills to create and manage a project.
	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
Construction Career Pathway (AC-CST)	Apply practices and procedures required to maintain jobsite safety.
	Compare and contrast the building systems and components required for a construction project.
	Demonstrate the construction crafts required for each phase of a construction project.
	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.

Installation: Foundation & Subflooring



Lesson Plan

Class 1: Begin class by distributing the *Installation: Foundation & Subflooring Vocabulary Handout* and *Worksheet* for students to reference during the presentation. Show the *Introduction* segment and the *Lumber Basics* segment. Assign the *Wood Types & Grades Project*. Refer to the *Wood Types & Grades Teacher Instruction Sheet* for details.



Video
12 min.

Class 2: Allow students to complete their *Wood Types & Grades Project*.

Class 3: Remind students to continue using their *Vocabulary Handout* and *Worksheet* during the presentation. Show the *Tools and Materials* segment of the presentation. Assign the *Tool & Material ID Activity*.



Video
3 min.

Class 4: Remind students to continue using the *Worksheet* and *Vocabulary Handout* as resource materials. Show the *Model Demonstration* segment. Assign the *Using Span Tables Activity* and allow groups to work.



Video
10 min.

Class 5: Assign the *Installing Foundation & Subflooring Activity* and allow students to begin working. Follow the *Installing Foundation & Subflooring Teacher Instruction Sheet* for further detail.

Class 6: Allow students class time to work on the *Installing Foundation & Subflooring Activity*.

Class 7: Show the *Foundation Preparation* segment of the presentation. Allow students to continue working on the *Installing Foundation & Subflooring Activity*.



Video
2 min.

Class 8: Allow students class time to work on the *Installing Foundation & Subflooring Activity*.

Class 9: Show the *Installation: Headers and Joists* segment of the presentation. Allow students to continue working on the *Installing Foundation & Subflooring Activity*.



Video
6 min.

Class 10: Allow students class time to work on the *Installing Foundation & Subflooring Activity*.

Class 11: Show the *Installation: Bridging and Subflooring* segment of the presentation. Assign the *Bridging Activity*. Allow students to continue working on the *Installing Foundation & Subflooring Activity*.



Video
3 min.

Class 12: Assign the *Discuss Subflooring & Underlayment Activity*. Allow students class time to work on the *Installing Foundation & Subflooring Activity*.

Class 13: Allow students class time to work on the *Installing Foundation & Subflooring Activity*. Block off any additional days to complete the *Activity* if necessary.

Class 14: Assign the *Installation: Foundation & Subflooring Assessment*. Assign the *Flooring Brochure Project* and allow students to begin.

Class 15: Allow students to complete their *Flooring Brochure Project*.

Class 16: Assign the *Estimating Flooring Materials Activity* and allow students class time to work.

Class 17: Assign the *Cantilever Floor Project* and allow students to begin.

Class 18: Allow students to complete the *Cantilever Floor Project*.

Installation: Foundation & Subflooring

Lesson Links

Installation Guide For Floor And Roof Framing

- <http://www.woodbywy.com/document/tj-9001/>

Understanding House Framing

- <http://extremehowto.com/understanding-house-framing/>

Career & Technical Student Organizations

SkillsUSA

- Carpentry
- Job Skill Demonstration A
- Job Skill Demonstration Open

Career Connections

Using the *Career Connections Activity*, allow students to explore the various careers associated with this lesson. See the *Activity* for more details. *If student licenses have been purchased:* Students will select the interviews to watch based on your directions. *If only a teacher license is purchased:* Show students all the career interviews and instruct them to only complete the interview form for the required number of interviews.

- iCEV50412, Pamela Leonard, Architect, Canizaro Cawthon Davis
- iCEV50402, Michael Reyes, Architect, Good Fulton & Farrell

Lab Activities

Tool & Material ID

Directions:

Students will list the tools and materials needed when installing foundation and subflooring. They should provide the name of each, as well as the task or function for which it will be used. Students will include all tool and material variations. They should also include any safety concerns regarding use of the tool or material.

Using Span Tables

Directions:

Students will work in groups of three or four in order to create a detailed step-by-step guide on how to use span tables. Students will visit the given website in order to determine how to select the appropriate species, grade and size. After the guide has been created, students will come together as a class and discuss.

Installing Foundation & Subflooring

Directions:

Students will follow the foundation and subflooring installation process as outlined in the presentation. Depending on the school's resources, this may be done in an actual building, a full-size mock-up, or a miniature mock-up. Be sure students follow all steps and perform all work adequately. For more details, see the *Installing Foundation & Subflooring Teacher Instruction Sheet*.

Bridging

Directions:

Students will list different types of bridging, describe when each is used and list advantages and disadvantages of each.

Discuss Subflooring & Underlayment

Directions:

Students will hold a class discussion describing the purpose of subflooring and underlayment. Students will answer the provided questions.

Estimating Flooring Materials

Directions:

Students will read and interpret floor plans in order to estimate the amount of material needed for floor system requirements and layout.

Installation: Foundation & Subflooring



Projects

Wood Types & Grades

Directions:

Students will work in groups to identify and describe types of wood and wood grades used in flooring assembly. After students get into groups, assign each group a material listed on the *Wood Types & Grades Teacher Instruction Sheet*. Instruct each group to create a Microsoft® PowerPoint® presentation discussing use of woods, or how to identify grades and markings (according to the assignment) Students will present and answer questions.

Flooring Brochure

Directions:

Students will develop a brochure outlining the types of flooring. The brochure should have a creative name and a designed front and back cover.

Cantilever Floor

Directions:

Using all available resources, students will research the process for installing joists for a cantilever floor. Using all methods described in the video, as well as their research, students will install joist for a cantilever floor on a framing model.