

# 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.

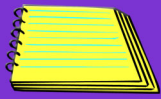
**Objectives:**

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.

## Horizontal Alignment

Core-Subject Area	Foundation Concept	Basic Understanding
Language Arts	<i>Application of Writing Skills</i>	<ul style="list-style-type: none"><li>• Descriptive and informative writing</li><li>• Organizing logical arguments</li><li>• Utilizing reference materials</li><li>• Enhancing grammatical mechanics</li><li>• Vocabulary enhancement</li></ul>
	<i>Analysis of Text &amp; Information</i>	<ul style="list-style-type: none"><li>• Critical thinking</li><li>• Communication skills</li><li>• Correlating text events with personal experiences</li><li>• Developing listening and comprehension skills</li><li>• Creating visual representations</li></ul>
	<i>Technology Applications in Literature</i>	<ul style="list-style-type: none"><li>• Utilizing presentation processing software</li><li>• Internet-based research</li></ul>
Math	<i>Mathematical Figures &amp; Concepts</i>	<ul style="list-style-type: none"><li>• Measurements</li><li>• Fractions</li><li>• Addition</li><li>• Subtraction</li><li>• Computation</li></ul>
	<i>Geometrical Figures, Principles &amp; Applications</i>	<ul style="list-style-type: none"><li>• Spatial relationships</li><li>• Space dimensions</li></ul>

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## Lesson Plan

**Class 1:** Begin class by distributing the *Installation: Foundation & Subflooring Vocabulary Handout, 3-4-5 Method Student 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*.

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## 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.

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## 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.