

Hardwood Flooring Grades

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February 10, 2019

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Course Description



This course assists architect and design professionals in understanding how wood flooring is graded in an effort to properly specify the product for their client projects.

Learning Objectives



- Understand the history of hardwood floors
- Discuss the advantages of hardwood floors
- Describe the types of hardwood floors
- Identify different species of hardwood floors
- Recognize how hardwood floors react to moisture
- Explain the sustainability of hardwood floors
- Examine maintenance of hardwood floors

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History



Pre 1900s

- Made by hand
- Harvested
- Cut into lumber
- Installed
- Hand scraped
- Finish applied



Pre 1900s



- Hardwood floors were only enjoyed by royals, upper class individuals
- Intense labor done by expert craftsmen
- A craftsman would work on 1 floor for years

Turn of the Century



- Side matcher appears in 1885; leads to development of tongue & groove
- End matcher appears in 1898
- Until the end matcher arrived, ends of each flooring board were on joists; subfloors not common

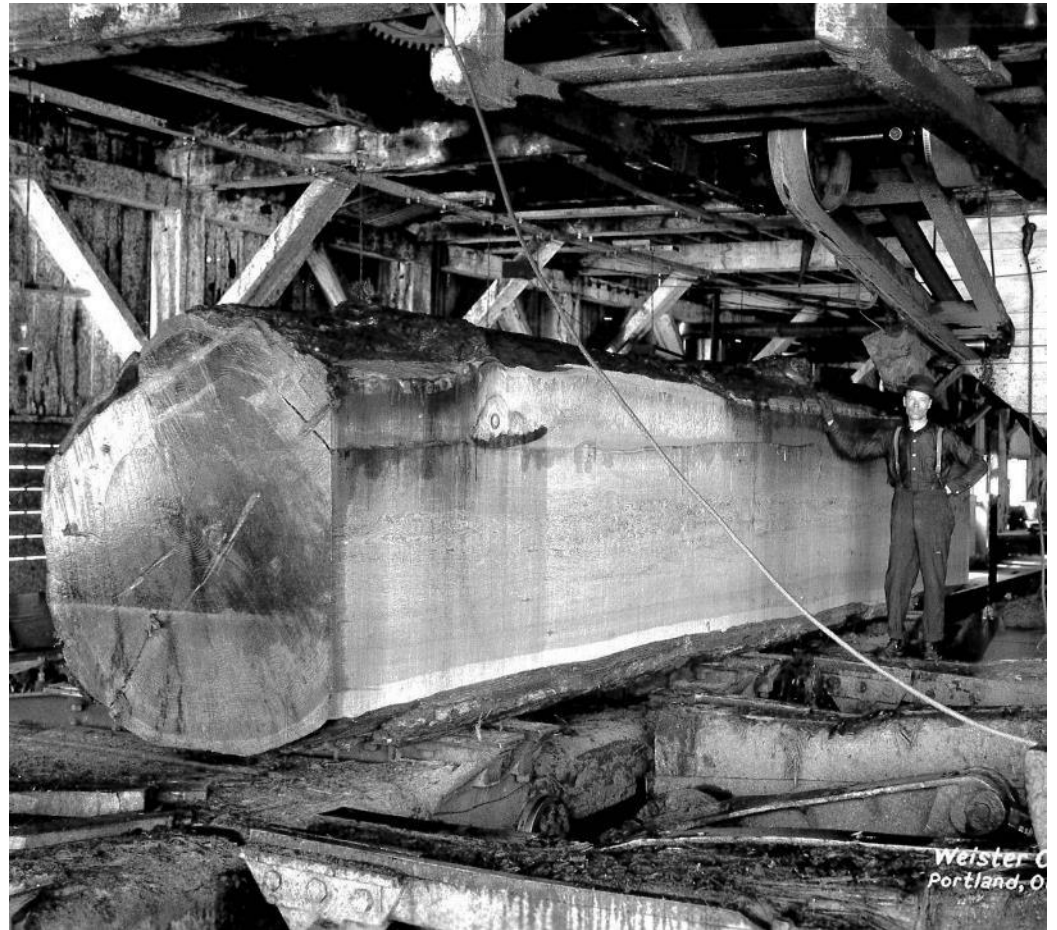


1900s

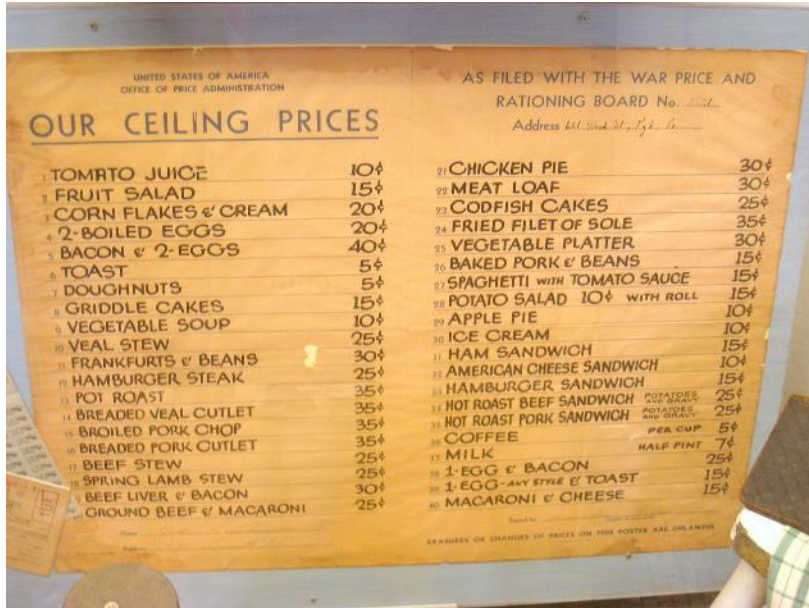


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- Mills established
- Eliminate manual labor
- Rapid expansion of industry
- Need for standards



World War II

A historical price ceiling poster from the Office of Price Administration during World War II. The poster is yellowed and has a grid of food items and their prices. The title is 'OUR CEILING PRICES'. The items are listed in two columns, with prices in cents. The items include various meats, breads, fruits, and dairy products. The prices range from 5 cents to 40 cents. The poster is held up by a person's hand, and a portion of another poster is visible to the left.

UNITED STATES OF AMERICA OFFICE OF PRICE ADMINISTRATION		AS FILED WITH THE WAR PRICE AND RATIONING BOARD No. 1111	
OUR CEILING PRICES		Address 611 Third St., Ft. St. La.	
1 TOMRTO JUICE	10¢	21 CHICKEN PIE	30¢
2 FRUIT SALAD	15¢	22 MEAT LOAF	30¢
3 CORN FLAKES & CREAM	20¢	23 CODFISH CAKES	25¢
4 2-BOILED EGGS	20¢	24 FRIED FILET OF SOLE	35¢
5 BACON & 2-EGGS	40¢	25 VEGETABLE PLATTER	30¢
6 TOAST	5¢	26 BAKED PORK & BEANS	15¢
7 DOUGHNUTS	5¢	27 SPAGHETTI WITH TOMATO SAUCE	15¢
8 GRIDDLE CAKES	15¢	28 POTATO SALAD 10¢ WITH ROLL	15¢
9 VEGETABLE SOUP	10¢	29 APPLE PIE	10¢
10 VEAL STEW	25¢	30 ICE CREAM	10¢
11 FRANKFURTS & BEANS	30¢	31 HAM SANDWICH	15¢
12 HAMBURGER STEAK	25¢	32 AMERICAN CHEESE SANDWICH	10¢
13 POT ROAST	35¢	33 HAMBURGER SANDWICH	15¢
14 BREADED VEAL CUTLET	35¢	34 HOT ROAST BEEF SANDWICH POTATOES	25¢
15 BROILED PORK CHOP	35¢	35 HOT ROAST PORK SANDWICH POTATOES	25¢
16 BREADED PORK CUTLET	35¢	36 COFFEE	PER CUP 5¢
17 BEEF STEW	25¢	37 MILK	HALF PINT 7¢
18 SPRING LAMB STEW	25¢	38 1-EGG & BACON	25¢
19 BEEF LIVER & BACON	30¢	39 1-EGG - ANY STYLE & TOAST	15¢
20 GROUND BEEF & MACARONI	25¢	40 MACARONI & CHEESE	15¢

- Factory finished flooring became prominent
- Office of Price Administration fixed prices on products so individuals could not profiteer during war; factory finished floors considered different product, so installers able to get better price
- Housing for shipyard workers, factory workers flourished; wood flooring installations increased significantly

Current Day



- Diversified market
- Install on wood subfloor, concrete slab
- Numerous species, both domestic, imported
- Finishes impacted by EPA VOC regulations
- GreenGuard, FSC certifications increase environmental awareness

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Grades



Grades



- Surface characteristics
- Required lengths
- Milling tolerances



Surface Characteristics



- Knots



Surface Characteristics



- Knots
- Mineral streaks



Surface Characteristics



- Knots
- Mineral streaks
- Burls



Surface Characteristics



- Knots
- Mineral streaks
- Burls
- Worm holes



Surface Characteristics



- Knots
- Mineral streaks
- Burls
- Worm holes
- Sapwood



Surface Characteristics



- Knots
- Mineral streaks
- Burls
- Worm holes
- Sapwood
- Checks

Required Lengths



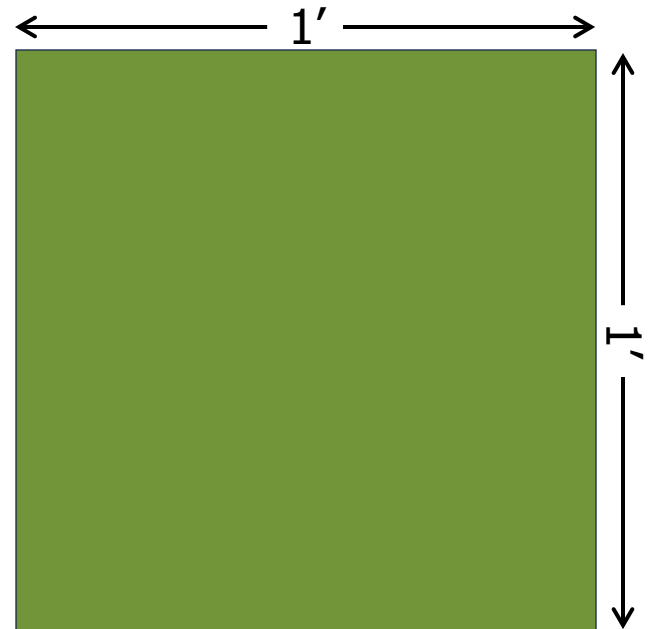
- Square feet
- Board feet
- Lineal feet
- Equal lineal feet
- Cubic feet
- Square meter



Square Feet



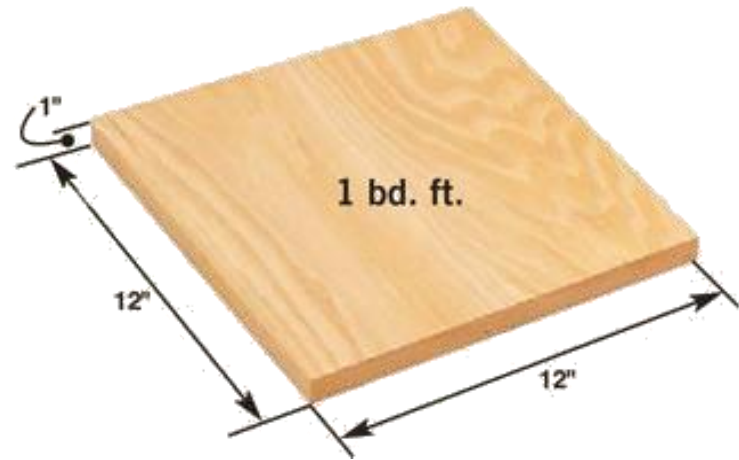
- Wood flooring standard
- 1' x 1' area
- Floor covering area



Board Feet



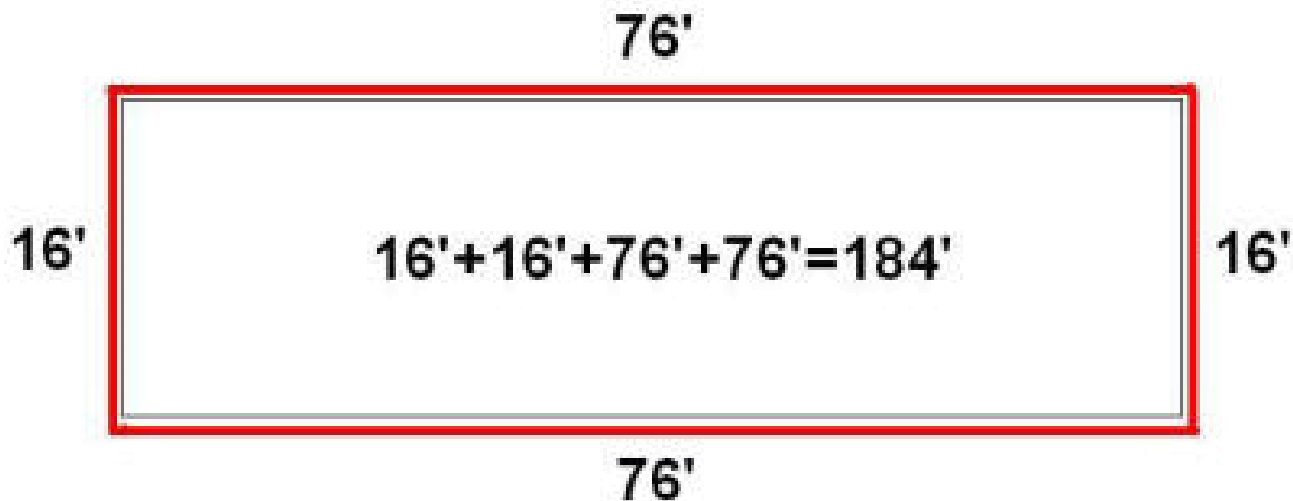
- Lumber standard
- Measures volume
- 12" x 12" x 1"
- Amount of lumber used to create flooring



Lineal Feet



- Measures length
- Baseboards
- Feature strips
- Borders



Equal Lineal Feet

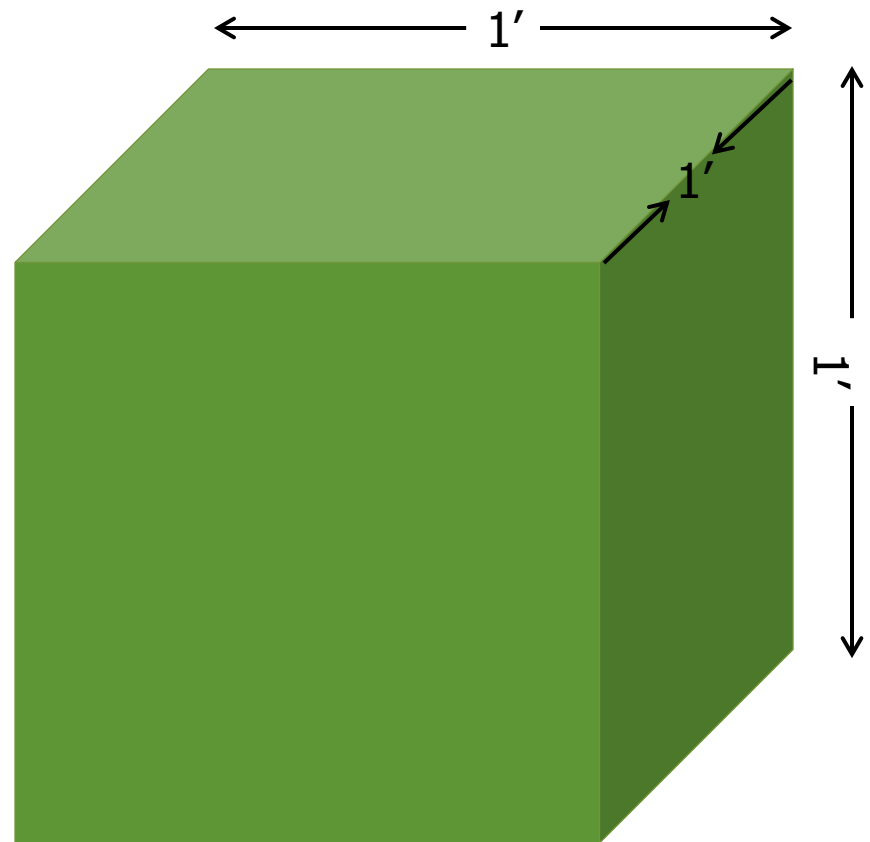


- Used for random width
- Ensures equal lengths of each board width

Cubic Feet



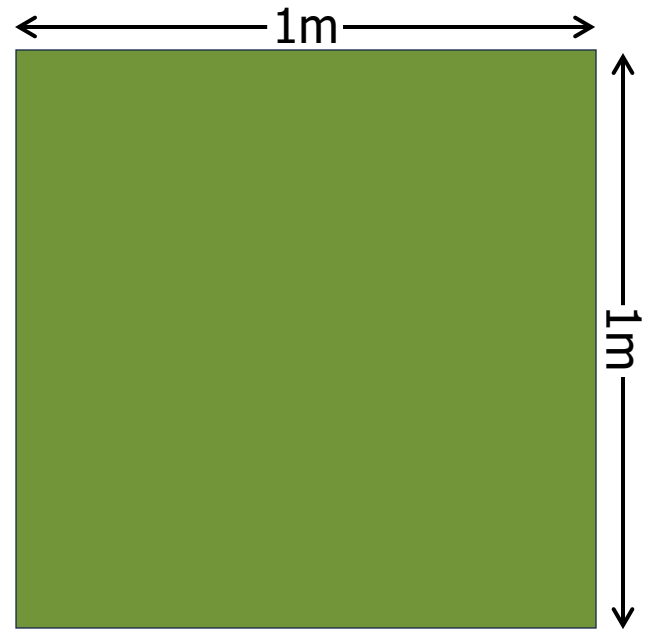
- Not used for wood flooring
- 1' x 1' x 1'
- Used for shipping containers



Square Meter



- Used outside the US
- 1 meter x 1 meter





- Wood flooring = square feet
- Cartons
 - Factory finished
 - Engineered
 - Parquet
- Bundles
 - Unfinished

- Milling tolerances
 - Width
 - Thickness
 - Length
 - Tongue, groove
 - End matching
 - Moisture content



Grades



- Board length, width
- Varies by grade
- Longer boards = higher grade



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Appearance: Solid



Appearance



Understand grades

- Affect appearance
- No. 1 grade doesn't mean "best"
- Manufactures may have proprietary grades
- Request samples
- Know what to expect



Solid Unfinished Oak



- Clear
- Select
- No. 1 common
- No. 2 common
- Shorts



Oak – Clear



- No knots
- Minimal mineral streaks
- Small burls
- Fine worm holes
- Minimal sapwood
- Small, tight checks
- Average length = 3'
- Uniform appearance



Oak – Select



- Small knots
- Some mineral streaks
- Small burls
- Small worm holes
- Some sapwood
- Slightly open checks
- Average length = 32"-33"



Oak – No. 1 Common



- Medium knots
- Heavy mineral streaks
- Large burls
- Large worm holes
- Colored sapwood
- Open checks
- Average length = 28"-30"



Oak – No. 2 Common



- Large open knots
- Heavy mineral streaks
- Numerous large burls
- Numerous large worm holes
- Prominent discoloration
- Open checks
- Average length = 2'



Oak – Shorts



- Clear, select, no. 1 common
- No. 2 common
- Average length = 9"-18"

Solid Factory Finished Oak



- Prime
- Standard
- Tavern



Oak – Prime



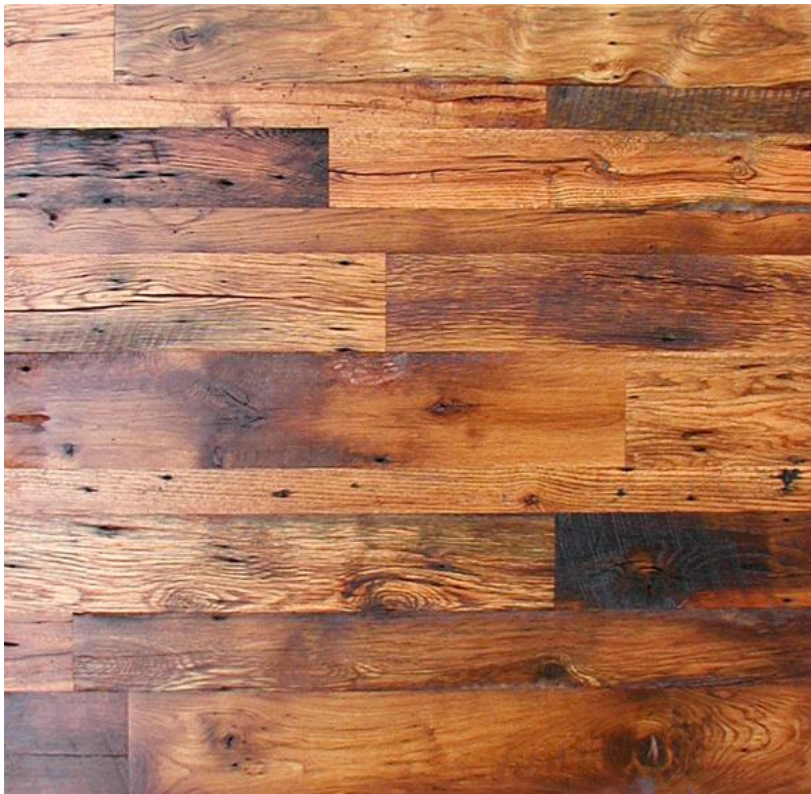
- Clear, select
- Open characters filled, finished
- Average length = 3¼'

Oak – Standard



- Select, No. 1 common, No. 2 common
- Large open characters filled, finished
- Small open characters unfilled, unfinished
- Average length = 2½'

Oak – Tavern



- Sound grade characteristics
- Unfilled, finished characters
- Finish, stain irregularities
- Average length = 2'

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Appearance:
Engineered



Appearance: Engineered



- Solid
 - Solid wood top to bottom



- Engineered
 - Several layers of wood veneer/slabs bonded together with an adhesive

Engineered Unfinished Oak



- Select, better
- No. 1 common
- No. 2 common

Engineered Factory Finished Oak



- Prime
- Character
- Cabin



Appearance: Engineered



Engineered Factory Finished Oak

- Prime
- Character
- Cabin

Solid Factory Finished Oak

- Prime
- Standard
- Tavern



Grading Programs



Grading Programs



- 1909: NOFMA founded
 - Establish industry standards for solid strip
- 1966: adopted by US Department of Commerce, FHA, VA
- 1999: engineered added
- 2008: NOFMA merges with NWFA



Grading Programs



- Voluntary participation
- High performance, quality standards
- 2 yearly inspections
- Strict grading standards
- Provides product consistency



Grading Programs



- 1897: MFMA founded
- Maple grades
- Sports floor systems
- Sports floor sealers, finishes
- Sports floor care



Grading Programs

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- 1907: CLA founded
- Maple, birch grades
- Red, white oak grades
- Parquet grades
- Primarily Canada



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Summary



- Introduction of manufacturing facilities created need for wood flooring grading standards
- Wood flooring grades are evaluated on surface characteristics, required lengths, milling tolerances
- Different grades affect appearance based on physical properties, characteristics of the wood
- Different grading standards for solid, engineered wood flooring
- Main grading programs for wood flooring are administered by NWFA/NOFMA, MFMA, CLA

Thank You

The logo for the Northwest Florida Area (nwfa) is located in the top right corner. It consists of the lowercase letters 'nwfa' in a white, sans-serif font, with a small green leaf icon integrated into the letter 'a'. The background of the top right corner of the slide features a photograph of a young child sitting on a couch and reading a book.

This concludes this course for:

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A photograph of a bedroom interior. The floor is made of dark wood planks arranged in a herringbone pattern. On the left, a bed with a white and grey plaid sheet is visible. In the background, there is a dark nightstand with a lamp and a white curtain. The text "Questions?" is overlaid in white on the floor.

Questions?