An applied science is one in which people use science to do something practical. Architecture is often considered an applied science because it involves using science to construct something that people use, such as buildings. Architects must think about design so the building looks nice, while also considering technical aspects to make the building safe and functional. This unit explores architecture as an art and as a science.
Part 1: Architecture as an Art and a Science

**Pre-Listening Activities**

Writing a definition for the word *architecture* can be difficult because it involves both art (or design) and science (or engineering). Some architects like the blend because they have a chance to be both creative and practical. Even for the earliest works of architecture, the blend of art and science was a part of the field. Answer these questions with a partner.

1. Which part of architecture do you think you would like better—art or science? Why?
   
   _____________________________________________________________________
   _____________________________________________________________________
   _____________________________________________________________________

2. What types of buildings would you want to develop?
   
   _____________________________________________________________________
   _____________________________________________________________________
   _____________________________________________________________________

3. What kinds of things do you think an architect needs to think about for the design? For the science?
   
   _____________________________________________________________________
   _____________________________________________________________________
Strategy: Listening for and Giving Encouragement in Discussion

In English, it is important to notice when a speaker is encouraging you to participate. There are several strategies a speaker may use to ask you to participate. These strategies are good to use when you are the speaker too.

Ask Questions

- when you can’t hear the speaker
  Excuse me. I could not hear what you said about that building. Will you say it again?
- when you can’t understand the speaker
  Excuse me. I don’t know what kind of architecture that is. Can you explain it?
- when you want to make sure you understood (especially with names and numbers)
  When did you say that happened? 1988?
- when you need more information
  I have not heard of that architect. How do you spell that name?
- when you want more information
  Where is that building?

Make Requests

- for more information
  This type of architecture is new for me. It’s interesting. I’d like to learn more.
  Can you spell that?
- for something to be repeated
  Would you repeat the question, please?
  Will you say that again?
- for an example
  What is an example?
Paraphrase

• when you want to make sure you understand
  So he’s excluding bridges as a work of art, right?
  Did you say _____________?

Use Voice Fillers

Hmmm.  Go on.  Really?
Oh.  Yes. Yeah.  Tell me more?
That’s interesting.  Right.

Pronunciation Note: **Intonation** is the pitch—or the rising and falling of the voice when someone is speaking. In English, sometimes a person’s pitch goes up. Other times, a person’s pitch falls. When asking questions that that have a yes or no answer, use rising intonation. When asking *wh*- questions, use falling intonation. If you use the opposite intonation, the speaker might think you are being rude, misunderstanding the information, or expressing a different emotion.

<table>
<thead>
<tr>
<th>Yes-No Questions</th>
<th><em>Wh</em>- Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you live near here?</td>
<td>Where do you live?</td>
</tr>
<tr>
<td>Is tomorrow’s test on both chapters?</td>
<td>What is tomorrow’s test on?</td>
</tr>
<tr>
<td>Have you visited the Eiffel Tower?</td>
<td>Which famous sites have you visited?</td>
</tr>
</tbody>
</table>

Pronunciation Note: Some voice fillers can use rising intonation as well, making them sound like a question and encouraging the speaker to repeat or give more information. Review the list of fillers given.
Listening for and Giving Encouragement in Discussion

Work with a small group. Divide the reading on pages 5–6 into equal parts. Imagine you are the instructor discussing your research with students. Read your part of the reading to the other members of your group, and be prepared for them to be encouraging in the discussion by using the strategies in the box on pages 3–4. Take turns being the instructor and the student. Use this space to take notes while your classmates are the instructors.

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Reading about Architectural Achievements

Read about the Historic American Building Survey (HABS), the Historic American Engineering Record (HAER), and some architectural achievements. Then look for photos of each online.

Overview

(1) The Historic American Buildings Survey (HABS) and the Historic American Engineering Record (HAER) collections are among the largest and most heavily used in the Prints and Photographs Division of the Library of Congress. Since 2000, documentation from the Historic American Landscapes Survey (HALS) has been added to the holdings. The collections document achievements in architecture, engineering, and design in the United States and its territories through a comprehensive range of building types and engineering technologies, including examples as diverse as the Pueblo of Acoma, houses, windmills, one-room schools, the Golden Gate Bridge, and buildings designed by Frank Lloyd Wright. Administered since 1933 through cooperative agreements with the National Park Service, the Library of Congress, and the private sector, ongoing programs of the National Park Service have recorded America’s man-made environment in multiformat surveys comprising more than 556,900 measured drawings, large-format photographs, and written histories for more than 38,600 historic structures and sites dating from Pre-Columbian times to the twentieth century.
Golden Gate Bridge,  
San Francisco, California

(2) An international icon of American engineering  
genius, the Golden Gate Bridge opened in 1937 and  
remains one of the longest suspension bridges in the  
world. The main span of 4,200 feet crosses the turbulent  
waters at the entrance to San Francisco Bay. Chief  
engineer Joseph B. Strauss started the construction  
project in 1933.

Ritter Ranch barn, Dolores vicinity, Colorado

(3) This wooden dairy barn, built in 1918, is the largest outbuilding on the Ritter  
Ranch, once the most technologically advanced ranch in the Lower Dolores Valley of  
Colorado. Divided crosswise by a central breezeway on the first floor and lengthwise by  
two rows of wooden poles supporting the roof, the barn has an airy and peaceful hayloft  
that contrasts sharply with the complicated machinery of the work area below.

First Church of Christ, Congregational (Meetinghouse),  
Farmington, Connecticut

(4) The First Church of Christ is Connecticut’s best surviving example of a colonial-  
era meeting house. Built in 1771 by Captain Judah Woodruff, who also built many of the  
houses in Farmington, the church has undergone only minor alterations and still retains  
its side entrance; graceful, tall steeple; and plain, boxy styling. The church has played an  
important role in the town since it was built. In 1841, for instance, the African captives  
from the Spanish slave ship Amistad lived in Farmington and attended the First Church  
of Christ for several months while awaiting passage back to Africa.

The Arsenal, New Castle, Delaware

(5) The U.S. government built this arsenal in 1809 under threat of war with Britain.  
Originally a one-story building with a wagon entrance at each end to help with the  
storage and distribution of arms, the Old Arsenal played an important role in both the  
War of 1812 and the Mexican War of 1846–48. It also housed the garrison from nearby  
Fort Delaware when that fort burned in 1831. The second story and cupola date from the  
1850s, when the building was converted into a public school.

Adapted from Library of Congress, American Memory, “Built in America.”
Listening 1: Getting the Information You Need

Listening for Information

The listening passage is a conversation between a student and a teaching assistant. They are discussing the definition of architecture. The student needs more information about the content and uses several strategies to learn the information. As you listen to the conversation, write answers to the questions.

Listening for Information

1. What questions does the student ask the TA to encourage discussion?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

2. What is the purpose of each of his questions? In other words, what is he trying to accomplish with each question?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

3. What requests does he make?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

4. List any voice fillers you hear.
   __________________________________________________________
   __________________________________________________________
Speaking
Greetings

Before starting a conversation or discussion, most people begin with a greeting. This sometimes breaks the ice and helps the interaction seem friendly and open.

There are many greetings in English, and some are more formal than others.

**GREETINGS**

<table>
<thead>
<tr>
<th>Formal</th>
<th>Informal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hello.</td>
<td>Hi.</td>
</tr>
<tr>
<td>Good morning/afternoon/evening.</td>
<td>Hey.</td>
</tr>
<tr>
<td>How are you?</td>
<td>How you doing?</td>
</tr>
<tr>
<td>It's nice to see you.</td>
<td>What's up?</td>
</tr>
<tr>
<td>It's been a long time.</td>
<td>Long time, no see.</td>
</tr>
<tr>
<td>How have you been?</td>
<td>How's it going?</td>
</tr>
<tr>
<td>How are things going?</td>
<td>What's new?</td>
</tr>
</tbody>
</table>

**Using Greetings**

Think about greetings, and answer these questions with a partner. Then share your ideas with the class.

1. Would you greet each of these people formally or informally?
   a. your English teacher _______________________
   b. an instructor in your department _______________________
   c. the department chairperson _______________________
   d. your roommate _______________________
   e. a relative _______________________
   f. a cashier at the bookstore _______________________
   g. a new classmate who sits next to you in class _______________________
2. What greetings do you frequently use every day? Add other greetings to the list on page 8.

___________________________________________________________________
___________________________________________________________________

3. What things affect the greeting and/or the response? Does the place or time of the interaction matter? Does the formality of the greeting affect the response?

___________________________________________________________________
___________________________________________________________________

Making Contact

Choose three greetings from the list on page 8, and greet three different English speakers. Take notes on the greeting you used, the response you received, and the details of the interaction (person’s status, age, and gender, the time of day, and the location). Follow the example. Be prepared to discuss your data with the class.

<table>
<thead>
<tr>
<th>Your Greeting</th>
<th>The Person’s Response</th>
<th>Details of the Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hi.</td>
<td>Hi.</td>
<td>classmates, same age, male, morning, hallway</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Part 2: Architecture as an Art

Pre-Listening Activities

What do you know about architecture? Although schools and universities offer classes about architecture, most people do not know much about it. They do not realize the science and engineering that goes into making a building. However, many buildings are recognizable and remembered for their unique appearance. The design is the creative side of architecture. Answer these questions with a partner.

1. Do you recognize these buildings? What are they? What city or country are they in?

2. What do you like and dislike about each building?

3. What is one of your favorite buildings—either one you have seen or one you have visited? Why do you like it?
Strategy: Listening for and Determining the Speaker’s Feelings

In English, speakers use different ways to express their feelings.

*Language*

Sometimes you can tell how someone feels by the words they choose to use or by extra words they add before a descriptive word.

- I'm **so happy** we got to see the Sydney Opera House.
- The Guggenheim Museum is **incredibly beautiful**.
- The airport was **huge**.

*Tone*

You can also tell how a person feels by the particular tone of voice he or she uses. A person can sound happy, confused, or upset, or convey any other emotion.

*Nonverbal Communication*

Sometimes speakers convey feelings without saying anything at all.

- **Facial expressions** (smiling, frowning, open or closed eyes, open or closed mouth, raised eyebrows)
- **Eye contact** (direct or indirect)
- **Posture** (leaning forward, sliding down in the chair, standing or sitting straight)
- **Head movement** (nodding, shaking, tipping)
- **Gestures** (hand movements, symbols)

Notice how many speakers combine language, tone, and nonverbal communication to make their communication more powerful. Recognizing these things will help you understand others and help you better convey how you feel.

*Pronunciation Note:* **Tone** can also be conveyed through emphasis on certain words or saying vowel sounds longer than other sounds in the word.

- I just **lo-oove** the design of the Beijing National Stadium.
- I simply **can-not** understand what that architect was thinking when he designed that museum!
- The airport was **so-ooo** big that it was **very** overwhelming.
Listening for and Expressing Feelings

Write three sentences about buildings you can think of or are familiar with. Say them to a partner, expressing yourself clearly in English. Use a strategy or combination of strategies from the box on page 11. Can your partner tell how you feel about the buildings?

Your Sentences
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Speaking

I’m Sorry and Excuse Me

Two common phrases in English are I’m sorry and Excuse me. They are used often but for different reasons. Recognizing the differences will help you understand what other people mean and will make your own purpose clear when you are the speaker.

USE I’M SORRY TO . . .

- apologize for forgetting or not knowing a person’s name
- apologize for hurting a person’s feelings
- apologize for interrupting
- ask for repetition
- correct something said incorrectly
- express sadness for hurting a person physically
- express sympathy for someone’s situation
- regret being late, saying the wrong thing, losing something
- show you are sincere and accept responsibility for your actions
- turn down an invitation
USE EXCUSE ME TO...

<table>
<thead>
<tr>
<th>ask someone for a favor</th>
</tr>
</thead>
<tbody>
<tr>
<td>be formal in academic or professional places</td>
</tr>
<tr>
<td>be polite after coughing, clearing your throat, sneezing, etc.</td>
</tr>
<tr>
<td>be polite with people you do not know well</td>
</tr>
<tr>
<td>get someone’s attention</td>
</tr>
<tr>
<td>interrupt a speaker nicely</td>
</tr>
<tr>
<td>leave a room, conversation, group, etc.</td>
</tr>
</tbody>
</table>

Analyzing the Situation

Work with a partner. Read each situation, and decide what you would say or do in each situation. Include I’m sorry or Excuse me. Choose two situations, and write a dialogue for each on a separate sheet of paper.

1. You’re at the library, and you need to know what time it is so you won’t miss your architecture class. You want to ask the student sitting at the next table.

___________________________________________________________________

2. The teacher is collecting the design homework assignment, but you are not finished with it. You want to explain to the teacher.

___________________________________________________________________

3. Your pen ran out of ink during an office hour with your English teacher. You need to borrow a pen to finish taking notes about the advice for your building design.

___________________________________________________________________

You’re at a party talking with a friend when you see a classmate from your architecture class come into the room. You want to go say hello.

___________________________________________________________________

5. You are unable to attend a party for your friend who won the school’s design contest. You need to tell your friend you will not be there.

___________________________________________________________________

6. You dropped water on your roommate’s model building. You want to tell your roommate what happened.

___________________________________________________________________
Listening 2: Managing Group Dynamics

Listening in Groups (Video)

Listen to the students work together to decide on the type of building to report on for their architecture class. Discuss the questions in a small group.

Focus on Language

1. What greetings do the students use? Refer to those given on page 8.

2. What can you guess about their relationships based on their greetings?

3. Make a list of when you hear the phrases I'm sorry and Excuse me. What does each one mean? Do you think there are other times students could use the phrases?

4. Write any phrases or idioms that you are not familiar with. Discuss what they mean and in what type of interactions they are appropriate.

Focus on Tone

1. Describe the tone and emotion used by each member of the group.

2. How can you tell how each person is feeling?
3. Is each person’s tone appropriate for the situation? Why or why not?

___________________________________________________________________
___________________________________________________________________

Focus on Nonverbal Communication

1. What nonverbal cues are used to show how each member of the group feels about ideas from other group members?
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

2. Were any of these inappropriate? Why or why not?
___________________________________________________________________
___________________________________________________________________

3. Which student do you think is the best at nonverbal communication? Is this good or bad for the interaction?
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

Summary

1. What strategies do the students use to encourage communication?
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

Which student uses the best combination of words, tone, and nonverbal communication? Support your answer.
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
3. Who would you most want to work with? Why? Who would you rather not work with? Why?

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

**Information Gap**

One interesting feature of architectural design is its height—how many floors and how many feet high. Because designs vary, it is not always the buildings with the most stories that are the highest in feet.

Work with a partner to complete the chart. Person A has Chart 1 on page 17, and Person B has Chart 2 on page 18. Work back to back to complete the information. Ask for information and for clarification if you need to.
<table>
<thead>
<tr>
<th>Ranking</th>
<th>Building</th>
<th>Stories</th>
<th>Height (in feet)</th>
<th>Year Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Burj Khalifa (Dubai, United Arab Emirates)</td>
<td>162</td>
<td></td>
<td>2010</td>
</tr>
<tr>
<td>2</td>
<td>Taipei 101 Tower (Taiwan)</td>
<td>101</td>
<td>1,671</td>
<td>2004</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>101</td>
<td>1,614</td>
<td>2008</td>
</tr>
<tr>
<td>4</td>
<td>International Commerce Centre (Hong Kong)</td>
<td></td>
<td>1588</td>
<td>2010</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>88</td>
<td>1,483</td>
<td>1998</td>
</tr>
<tr>
<td>6</td>
<td>Nanjing Greenland Financial Center</td>
<td>66</td>
<td>1,476</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Willis Tower (Chicago, United States)</td>
<td>108</td>
<td>1,451</td>
<td>1974</td>
</tr>
<tr>
<td>8</td>
<td>Guangzhou West Tower (Guangzhou, China)</td>
<td></td>
<td>1,435</td>
<td>2010</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>88</td>
<td>1,380</td>
<td>1999</td>
</tr>
<tr>
<td>10</td>
<td>Two International Finance Centre (Hong Kong)</td>
<td>88</td>
<td></td>
<td>2003</td>
</tr>
<tr>
<td>11</td>
<td>Trump International Hotel (Chicago, United States)</td>
<td>96</td>
<td>1,362</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>CITIC Plaza (Guangzhou, China)</td>
<td></td>
<td>1,283</td>
<td>1997</td>
</tr>
<tr>
<td>13</td>
<td>Shun Hing Square (Shenzhen, China)</td>
<td>69</td>
<td>1,260</td>
<td>1996</td>
</tr>
<tr>
<td>14</td>
<td>Empire State Building (New York, United States)</td>
<td>102</td>
<td>1,250</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Central Plaza (Hong Kong)</td>
<td>78</td>
<td></td>
<td>1992</td>
</tr>
</tbody>
</table>

### CHART 2

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Building</th>
<th>Stories</th>
<th>Height (in feet)</th>
<th>Year Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Khalifa (Dubai, United Arab Emirates)</td>
<td>162</td>
<td>2,717</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Taipei 101 Tower (Taiwan)</td>
<td>101</td>
<td>1,671</td>
<td>2004</td>
</tr>
<tr>
<td>3</td>
<td>Shanghai World Financial Center (China)</td>
<td></td>
<td>1,614</td>
<td>2008</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>108</td>
<td>1,588</td>
<td>2010</td>
</tr>
<tr>
<td>5</td>
<td>Petronas Towers 1 and 2 (Kuala Lumpur, Malaysia)</td>
<td>88</td>
<td>1,483</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>66</td>
<td></td>
<td>2010</td>
</tr>
<tr>
<td>7</td>
<td>Willis Tower (Chicago, United States)</td>
<td></td>
<td>1,451</td>
<td>1974</td>
</tr>
<tr>
<td>8</td>
<td>Guangzhou West Tower (Guangzhou, China)</td>
<td>103</td>
<td>1,435</td>
<td>2010</td>
</tr>
<tr>
<td>9</td>
<td>Jin Mao Building (Shanghai, China)</td>
<td>88</td>
<td>1,380</td>
<td>1999</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>88</td>
<td>1,362</td>
<td>2003</td>
</tr>
<tr>
<td>11</td>
<td>Trump International Hotel (Chicago, United States)</td>
<td>96</td>
<td>1,362</td>
<td>2009</td>
</tr>
<tr>
<td>12</td>
<td>CITIC Plaza (Guanzhou, China)</td>
<td>80</td>
<td>1,283</td>
<td>1997</td>
</tr>
<tr>
<td>13</td>
<td>Shun Hing Square (Shenzhen, China)</td>
<td></td>
<td>1,260</td>
<td>1996</td>
</tr>
<tr>
<td>14</td>
<td>Empire State Building (New York, United States)</td>
<td>102</td>
<td></td>
<td>1931</td>
</tr>
<tr>
<td>15</td>
<td>Central Plaza (Hong Kong)</td>
<td>78</td>
<td>1,227</td>
<td></td>
</tr>
</tbody>
</table>

Part 3: Architecture as a Science

Pre-Listening Activities

Most people notice what a building looks like when it is built. Not everyone thinks about the technical work that goes into constructing a building. Architecture includes aspects of science that not only make the building visually appealing but also functional to the people who will later use the building. Answer these questions with a partner.

1. What kinds of technical details do you think are involved in constructing a new building?

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

2. What are some jobs that involve the science of building?

___________________________________________________________________
___________________________________________________________________

3. Do you think you would like working on the scientific aspects of a building? Why or why not?

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

4. What types of practical things might conflict with designing the most beautiful building in the world?

___________________________________________________________________
___________________________________________________________________
Strategy: Listening for and Using Time Signal Words and Phrases

Speakers often use signal words to let you know the time something happened or will happen. It is a good idea to notice these because it helps you organize the content.

Time Signal Words and Phrases

- **first, second, third, another, next**
  - To major in architecture, **first**, talk to your advisor.
  - The **second** thing you should do is enroll in the Introduction to Architecture course.
  - **Third**, talk to a professional architect to learn more about the job.
  - **Another** thing to do is look at Architecture 161.

- **before, during, after/afterward, later**
  - **Before** changing your major, you should talk to your advisor.
  - The instructor will talk about the history of architecture **during** the lecture.
  - There will be an examination **after** the course.
  - We'll have a review session **later**.

- **in the past, in the future, used to be, currently, now**
  - **In the past**, architects were responsible for all aspects of a building.
  - No one knows how the study of architecture will change **in the future**.
  - **It used to be** that one architect managed the whole project.
  - **Currently**, some architects specialize on one aspect.

- **meanwhile**
  - One architect is working on the design. **Meanwhile**, his partner is working on the measurements.

- **yesterday, today, tomorrow**
  - The material we covered **yesterday** will be covered on the test.
  - There is a study session **today**.
  - Be prepared for the test **tomorrow**.

What others can you think of to add to the lists?
Using Time Signal Words and Phrases in a Story

Write a story, and add a few details about one of your classes. Add time signal words so your classmates can tell when things happen. Read your story in a small group.

_____________________________________________________________________
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Note-Taking

Strategy: Using an Abbreviation Log

Each student should have his or her own log of abbreviations. The abbreviations you choose should be used consistently for all your notes in all your classes. This will save you time. There are some common abbreviations used by native English speakers that you can use, or you can use your own. Use whatever will be easy for you to remember and use. A copy of your log should be in each of your notebooks or with you whenever you take notes. It can be handwritten or typed so you can add to it.

A sample log for the time signal words may look like this:

<table>
<thead>
<tr>
<th>first = 1st</th>
<th>second = 2nd</th>
<th>third = 3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td>before = b/f</td>
<td>during = d-ing</td>
<td>after = aft</td>
</tr>
<tr>
<td>afterward = a/w</td>
<td></td>
<td></td>
</tr>
<tr>
<td>past = ←</td>
<td>present = ↑</td>
<td>future = →</td>
</tr>
<tr>
<td>meanwhile = m/w</td>
<td></td>
<td></td>
</tr>
<tr>
<td>yesterday = ydy</td>
<td>today = tdy</td>
<td>tomorrow = tom</td>
</tr>
</tbody>
</table>

You'll have a chance to practice abbreviations for time signal words and phrase in the lecture. Thinking about them before will help you to use them and miss less of what the instructor is saying.
Developing an Abbreviation Log

Write an abbreviation for some of these commonly used words in English, and share them with a partner.

because ______________________________________________________________
falling _______________________________________________________________
hour ________________________________________________________________
large ________________________________________________________________
medium ______________________________________________________________
minute ______________________________________________________________
rising ______________________________________________________________
small ________________________________________________________________
without ______________________________________________________________

Make a list of words you commonly use in your own area of study. Then create an abbreviation for each, and add them to your log.
Vocabulary Power

There are a number of terms and phrases in this lecture that you may encounter in other academic settings. Add at least five vocabulary items to your vocabulary notebook or log.

Match the words in bold from the lecture on the left with a definition on the right.

1. _____ Yesterday we talked about what buildings look like from the outside and what we find appealing visually.
   a. size
   b. exact details
   c. methods
   d. continue
   e. shorten
   f. attractive
   g. repeat
   h. effect

2. _____ Today I want to talk about some concerns an architect or engineer has to think about during the construction of a building and also discuss two approaches to constructing a building.

3. _____ Many people want to know what impact the building will have on the environment.

4. _____ You could abbreviate this as D-B-B.

5. _____ It is his or her job to design, determine the specifications, produce drawings, hire the best contractors or builders, and manage the entire process from beginning to end.

6. _____ This new approach is less risky because rather than designing everything and then building and hoping for the best, the design and building phases overlap.

7. _____ Think on a small scale for a minute.

8. _____ Today, architects or engineers need to understand the theory of structures and know how they will endure through time.
Listening 3: Construction and Structural Engineering

Listening to a Lecture

The listening passage is a lecture from an introductory architecture class. The instructor is discussing some things an architect or engineer needs to think about. Throughout the lecture, the instructor uses several time signal words or phrases. Listen two times. The first time, write time signals in your notes using the abbreviations you developed. Make a list of other words you hear that might be good to abbreviate. The second time you listen, take notes on the details on the topic. Use a separate sheet of paper.

Checking Your Understanding: Main Ideas

Review your notes. Listen again to the lecture if necessary, and then put a check mark (✓) next to the statements that best reflect the main ideas.

1. _____ The way buildings look on the outside is the more “fun” part of the construction process.
2. _____ There are two approaches to constructing a building.
3. _____ The environment, planning, and structural theory are three things that need to be considered.
4. _____ The design-build approach is the better choice when constructing a big project.
5. _____ Several characteristics of columns are considered when using them in buildings.
Checking Your Understanding: Details

Use your notes, and put a check mark (✓) next to the best answer. Some questions have more than one answer.

1. When are environmental impact reports important?
   a. _____ in the past
   b. _____ in the present
   c. _____ in the future

2. What types of things are considered during the planning of a building?
   a. _____ materials
   b. _____ location
   c. _____ appearance

3. What are the two approaches to planning?
   a. _____ design-bid-build
   b. _____ design-build
   c. _____ structural theory
   d. _____ environmental impact

4. When did structural theory become important?
   a. _____ in the past
   b. _____ in the present
   c. _____ in the future

5. What factors are considered when determining the building capacity of columns?
   a. _____ dimension
   b. _____ shape
   c. _____ length
   d. _____ material
In-Depth Discussion

Work with a small group. Imagine your architectural firm has been offered the chance to develop a new hotel. Work together, and think about the art and science that is needed for your hotel. Prepare a presentation that addresses the questions.

1. What are the specifications? (how many floors and rooms, length, width?)

2. What is the schedule? (how long will it take, when do you expect to complete it)

3. What does it look like from the outside?

4. What materials are required for construction?

5. Where is it located?

6. How much will it cost? (budget considerations)

7. What are some of the challenges you expect during construction?

8. Does it serve any other functions other than housing (restaurants, gyms, apartments, shopping)?

9. What is the name of the hotel?
**Rapid Vocabulary Review**

From the three answers on the right, circle the one that best explains, is an example of, or combines with the vocabulary item on the left as it is used in this unit.

<table>
<thead>
<tr>
<th>Vocabulary</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synonyms</strong></td>
<td></td>
</tr>
<tr>
<td>1. comprising</td>
<td>creating</td>
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<tr>
<td>2. icon</td>
<td>symbol</td>
</tr>
<tr>
<td>3. span</td>
<td>width</td>
</tr>
<tr>
<td>4. contrasts</td>
<td>differs</td>
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<td>5. minor</td>
<td>large</td>
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<td>6. alterations</td>
<td>changes</td>
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<td>7. converted</td>
<td>figured</td>
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<tr>
<td>8. realize</td>
<td>understand</td>
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<td>9. floors</td>
<td>weights</td>
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<td>10. particular</td>
<td>specific</td>
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<tr>
<td>11. proposed</td>
<td>designed</td>
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<tr>
<td>12. required</td>
<td>necessary</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Combinations and Associations</strong></th>
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</thead>
<tbody>
<tr>
<td>13. conflict ___</td>
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<td>14. dating ___</td>
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<td>15. under ___</td>
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<tr>
<td>16. become a ___</td>
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<td>17. coordinator of a ___</td>
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<td>18. hope for ___</td>
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<tr>
<td>19. figure ___</td>
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<tr>
<td>20. tell me ___</td>
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</tbody>
</table>
### Synthesizing: Projects and Presentations

<table>
<thead>
<tr>
<th>Short In-Class Speaking Assignments</th>
<th>Longer Outside Assignments</th>
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</thead>
<tbody>
<tr>
<td><strong>My Dream Office/Workspace</strong></td>
<td><strong>Social Observation Report</strong></td>
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<tr>
<td>Describe your dream work environment. What kind of job do you have? Where is it located? What is special about your office or workspace? What factors influence the design of the space? Share your ideas with a small group.</td>
<td>Choose a place where a lot of students spend time. Sit in a place where you can observe different greetings and responses. Take notes on what you hear. Prepare a report that discusses the similarities and differences that you noticed.</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Giving Encouragement</strong></th>
<th><strong>Interesting Structure Reports</strong></th>
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<tbody>
<tr>
<td>Your instructor will set a timer for five minutes. Be prepared to state your field of study and talk about why you like it. If you haven’t chosen a field yet, choose one that you are interested in. Express opinions. As you are talking, other students will use language to encourage the discussion.</td>
<td>Choose a skyscraper, bridge, tower, or landmark you would like to learn more about. Prepare a presentation about your choice. Include information about its architect, specifications (height, length, or other measurements), materials, location, budget, and schedule (how long it took to build). Give a short presentation to your classmates with the details. Include the goal of the structure, an estimate about how many people use it today, and some other interesting facts.</td>
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</table>
# Vocabulary Log

To increase your vocabulary knowledge, write a definition or translation for each vocabulary item. Then write an original phrase, sentence, or note that will help you remember the vocabulary item.

<table>
<thead>
<tr>
<th>Vocabulary Item</th>
<th>Definition or Translation</th>
<th>Your Original Phrase, Sentence, or Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. produce (v.)</td>
<td>make, create</td>
<td>This factory produces candy.</td>
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<td>2. actual</td>
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<td>3. durable</td>
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<td>4. overall</td>
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<td>5. categorized</td>
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<td>6. natural</td>
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<td>7. capacity</td>
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<td>8. element</td>
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<td>9. utility</td>
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<td>10. favorite</td>
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<td>11. fulfill</td>
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<td>12. principles</td>
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<td>13. standard</td>
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<tr>
<td>Vocabulary Item</td>
<td>Definition or Translation</td>
<td>Your Original Phrase, Sentence, or Note</td>
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<td>14. visually</td>
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<td>15. applied</td>
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<td>16. construct (v.)</td>
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<td>17. aspects</td>
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<td>18. blend</td>
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<td>19. collections (n.)</td>
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<td>20. achievements</td>
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<td>21. comprehensive</td>
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<td>22. sector</td>
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<td>23. diverse</td>
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<td>24. agreements (n.)</td>
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<td>25. sites</td>
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