Design Thinking

CONNECT to the topic

Design is the process of planning how to create something new—what materials to use, how to put it together, and what it can do. There are many different areas of design, including architecture (the design of houses and buildings), fashion design (the design of clothing and shoes), user interface design (the design of websites, computer software, and apps), and industrial design (the design of consumer products made in factories). Design Thinking is a process used to create solutions to design problems.

A THINK ABOUT IT Look at the pictures of telephones over the years. How did the phones change from one design to the next? What do you think caused the changes? Compare answers with a partner.

Changes in ...

- Shape
- Size
- Material
- Technology
- Other

B TUNE IN Listen to an interview with Marc Latham, who answers the question “What do designers do?” Then choose the best answers, based on the interview.

1 Designers turn ideas into ____________
   a physical things  b interesting questions  c popular products

2 Designers focus on ____________
   a how much a product will cost  b how simple an idea is  c how a design will look and work

3 Good design ________________
   a creates a lot of sales  b is usually expensive  c meets the needs of the user

C DISCUSS Discuss these questions in a small group: Think of a product or item that is an example of “good design.” What makes it a good design? Think of another product or item that is not well designed. What are the problems with it?
BUILD your vocabulary

**A LISTEN** The boldfaced words are from the unit lecture on Design Thinking. Listen to each passage. Read along. Guess the meanings of the boldfaced words. Then match the words with their definitions.

The Apple iPad, released in 2010, was an innovative new product that changed the market for tablet computers. However, development was not easy and the designers faced many challenges when they implemented the ideas for the design. They had to focus on technical issues, such as software development and battery life, as well as the look and feel of the new tablet. Participants on the design team worked long hours for many months to create the final design.

___ 1 innovative  
___ 2 implemented  
___ 3 focus  
___ 4 participants

| a | give attention to something  
| b | made changes according to a plan  
| c | new and better  
| d | people taking part in an activity

The design team created many different prototypes to see how the iPad looked and to test how well it worked. During this phase of the process, the designers tried different designs and identified problems with the prototypes. Early prototypes were large and heavy, so they revised the design to make the tablet thinner and lighter.

___ 5 prototypes  
___ 6 phase  
___ 7 identified  
___ 8 revised

| e | a stage of development  
| f | changed to make corrections and improvements  
| g | discovered  
| h | models used to test a design
The designers had a user-centered design process, trying to create a tablet that was easy to use without any instructions. Apple hoped that the iPad could be used by a diverse market—from businesspeople to artists. An especially large potential market was education. This meant that the tablet had to be simple for inexperienced users—children and teens who had never used a tablet before. Today, the story of the development of the iPad is used as a case study to teach designers about a successful design process.

___ 9  centered
___ 10 diverse
___ 11 teens
___ 12 case study

i focused on a particular person or group
j people between 13 and 19 years old
k a detailed examination of a process or situation over time
l very different from each other

PAIR WORK Work with a partner. Student A: Read aloud sentences 1–6 in Column 1. Student B: Cover Column 1. Listen and complete the sentences in Column 2. Notice the boldfaced words. Switch roles for 7–12.

COLUMN 1
1 The design team has a diverse group of designers.
2 The goal is to think of innovative ideas.
3 They are focused on creating a great design.
4 They made prototypes of the new design.
5 This is an important phase of the design process.
6 Participants in the design process work very long hours.
7 They wanted to make a product for children and teens.
8 They tested the product with users.
9 They asked users about their experience.
10 They gathered data about the problem.
11 They found a solution for the problem.
12 They revised the design by making it smaller.

COLUMN 2
1 The design team has a diverse group _______ designers.
2 The goal is to think _______ innovative ideas.
3 They are focused _______ creating a great design.
4 They made prototypes _______ the new design.
5 This is an important phase _______ the design process.
6 Participants _______ the design process work very long hours.
7 They wanted to make a product _______ children and teens.
8 They tested the product _______ users.
9 They asked users _______ their experience.
10 They gathered data _______ the problem.
11 They found a solution _______ the problem.
12 They revised the design _______ making it smaller.
Description of a Process

When speakers describe a process, they explain the phases in which something is done. Listen for expressions that introduce the different phases in a process. Also listen for an explanation of what happens in each phase.

**PHRASES THAT INTRODUCE A PHASE**
- The first phase of the ... process is to ...
- This second phase is ...
- The final phase is ...

**PHRASES THAT EXPLAIN WHAT HAPPENED DURING A PHASE**
- In this phase ...
- During this phase ...
- The goal of this phase is to ...

**TRY IT** Listen to an excerpt from a lecture on Design Thinking introducing a case study. What is the process for understanding a case study? Complete the notes.

<table>
<thead>
<tr>
<th>Case Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phases</td>
</tr>
<tr>
<td>1 story</td>
</tr>
<tr>
<td>- timeline</td>
</tr>
<tr>
<td>2 key issues</td>
</tr>
<tr>
<td>- actions / decisions</td>
</tr>
<tr>
<td>- yes / not</td>
</tr>
<tr>
<td>3 other possible actions</td>
</tr>
<tr>
<td>- mistakes</td>
</tr>
<tr>
<td>- do</td>
</tr>
</tbody>
</table>

**PAIR WORK** Compare notes with a partner.
A THINK ABOUT IT  You are about to watch the unit lecture featuring a case study in Design Thinking. The case study is about a design problem for a store at a shopping mall. Who would you want to help solve a design problem at a shopping mall? Why? Choose at least three people. Explain your choices to a partner.

architect salesclerk
fashion designer customer
store owner other: ______________________

B LISTEN FOR MAIN IDEAS Close your book. Watch the lecture and take notes.

C CHECK YOUR UNDERSTANDING Use your notes. Write the descriptions under each phase of the Design Thinking process, based on the lecture. Two descriptions are not used.

<table>
<thead>
<tr>
<th>Build a model</th>
<th>Collect information</th>
<th>Include many different points of view</th>
<th>Test the design with real customers</th>
<th>Visit stores owned by other companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collect model</td>
<td>Hold a “Grand Opening” party for customers</td>
<td>Observe customers</td>
<td>Think of as many ideas as possible</td>
<td></td>
</tr>
</tbody>
</table>

Design Thinking Process: Phases

1 Understand __________________________________________________________

2 Brainstorm __________________________________________________________

3 Prototype __________________________________________________________

D LISTEN FOR DETAILS Close your book. Watch the lecture again. Add details to your notes and correct any mistakes.

E CHECK YOUR UNDERSTANDING Use your notes. Complete the sentences, based on the lecture.

1 The Design Thinking case study is about a ______________________ called Sunflower.
   a children’s clothing store
   b women’s and teens’ clothing store
   c women’s shoe store

2 Sunflower had a problem with _______________________ their juniors department.
   a customers stealing from
   b finding good employees for
   c low sales in
3 The Design Thinking team asked customers questions about ________________.
   a how much money they planned to spend
   b the type of clothing they liked
   c their shopping experience

4 In addition to talking to customers, the Design Thinking team also talked to
   ________________.
   a employees who worked for the store in the past
   b people who didn’t go in the store
   c salespeople at other stores

5 Most teenagers did not know about Sunflower’s ________________.
   a fashion website
   b juniors clothing section
   c weekly sales on Juniors clothing

6 After the ________________ phase, the design question was revised.
   a Understand
   b Brainstorm
   c Prototype

7 The Brainstorming team included store employees and ________________.
   a fashion designers
   b high school students
   c the owner of the company

8 The new design focused on making the juniors department ________________ the
   rest of the store.
   a have lower prices than
   b look different from
   c seem bigger than

9 The new design included places for girls to ________________.
   a buy a snack while shopping
   b sit down and talk with friends
   c take pictures of themselves

10 The prototype design of the store was tested for ________________.
    a three days
    b three weeks
    c three months
Intonation for Finished and Unfinished Thoughts

As we saw in Unit 2, English speech has a pattern of **rising and falling intonation**. Intonation is the pitch (high and low) of the voice. The pitch can rise slightly (go up) or fall (go down). One use of intonation is to signal whether or not an idea is finished. Rising intonation shows that the speaker is not finished and plans to say more. Falling intonation shows that a speaker has completed an idea. Learning to notice intonation in sentences will help you become a better listener.

**EXAMPLES**

Unfinished: *Design Thinking is a way to identify problems* ...

Finished: *Design Thinking is a way to identify problems and find solutions.*

**A LISTEN** List to the statements from the lecture. Listen for falling or rising intonation at the end. Check (✓) if the statement is finished or unfinished.

<table>
<thead>
<tr>
<th></th>
<th>Finished (Falling intonation)</th>
<th>Unfinished (Rising intonation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sunflower has stores in a dozen large shopping malls around the country</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The owners of Sunflower had tried to solve the problem by lowering the prices</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Human-centered means understanding the experience of the users</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>We watched customers as they came in the store, observed where they went</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>So clearly, the store wasn't attracting teen customers</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>This second phase is the Brainstorm Phase</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>No judgment—just say your idea</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>It had bean bag chairs, an espresso bar, and a fridge stocked with juice</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Well, we wanted the participants to relax</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Specifically, we used splashy fun colors in the juniors section</td>
<td></td>
</tr>
</tbody>
</table>

**B PAIR WORK** Practice saying the sentences with a partner. Be sure to use the correct intonation for the finished and unfinished statements.
TALK about the topic

Interrupting Politely

A FOLLOW THE DISCUSSION Watch the students talk about Design Thinking. Read each opinion. Then check (✓) who agrees with it. More than one student may agree.

1. I like the idea of a human-centered process.
2. The brainstorm phase seemed like fun.
3. Having a diverse team was very important.

What are the students doing in their discussion of the lecture? Circle one or more.
- sharing opinions
- giving relevant examples
- reviewing important ideas

B LEARN THE STRATEGIES Watch the discussion again. Complete the comments with the words and phrases you hear. Check (✓) the discussion strategy that the student uses. More than one answer may be possible.

<table>
<thead>
<tr>
<th>good point</th>
<th>make a point</th>
<th>sorry</th>
<th>wow</th>
<th>add</th>
</tr>
</thead>
</table>

1. **Ben:** “__________ . This case study has some great examples of innovation.”

2. **Hugh:** “Can I __________ here? Can I __________ something?”

3. **Hugh:** “__________, what I mean is ... the important thing is the team was diverse.”

4. **Ben:** “__________, Hugh. Having a diverse team was really important.”

Discussion Strategy You may need to interrupt politely in order to participate in an online discussion. One approach is to use body language to show you want to speak, such as making eye contact with the person talking, leaning forward, or gesturing with your hand. Another approach is to say something, such as May I add something?, Can I make a point?, or Sorry, but I think ... .

C TRY IT In a small group, discuss one or more of these topics. Try to use the discussion strategies.

- When you have to solve a problem, how do you solve it? Have you ever used brainstorming or prototyping?
- What types of problems are best solved with Design Thinking? What problems would be difficult to solve that way?
- What are the advantages of using a diverse team of people to solve a problem? What are the disadvantages?
### REVIEW your notes

**REVIEW** Read your notes. Did you write down key words and their meanings? Can you explain the main ideas of the lecture? Work with a partner to discuss and complete these notes.

<table>
<thead>
<tr>
<th>Design Problem:</th>
<th>Case Study: Sunflower clothing store</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jrs sales = not good</td>
<td></td>
</tr>
<tr>
<td>Tried lower prices, diff brand, ads</td>
<td></td>
</tr>
<tr>
<td>Q: How do we __________________?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 1: Understand</th>
<th>Gather data:</th>
</tr>
</thead>
<tbody>
<tr>
<td>human-centered = __________________</td>
<td></td>
</tr>
<tr>
<td>- observed / talked to _____________ &amp; _____________</td>
<td></td>
</tr>
</tbody>
</table>

| Data: | |
|-------| |
| 72% __________________ 28% __________________ | |
| teens thought | |
| Revise Q: How do we __________________? | |

<table>
<thead>
<tr>
<th>Phase 2: Brainstorm</th>
<th>Think of many ideas – strange, crazy OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>___________________</td>
<td>team</td>
</tr>
<tr>
<td>- customers - _____________ → _____________ ideas</td>
<td></td>
</tr>
<tr>
<td>- employees</td>
<td></td>
</tr>
<tr>
<td>Relaxing room</td>
<td></td>
</tr>
<tr>
<td>1 great idea - make jrs dept</td>
<td></td>
</tr>
<tr>
<td>- Jrs dept →</td>
<td></td>
</tr>
</tbody>
</table>

| Phase 3: Prototype | Build | |
|-------------------|------| |
| - test w/ _____________ | | |
| - | | |
| 3 wks - | | |
| - sold | | |

<table>
<thead>
<tr>
<th>Design Solution:</th>
<th>Implemented in all 12 stores</th>
</tr>
</thead>
<tbody>
<tr>
<td>→</td>
<td></td>
</tr>
</tbody>
</table>

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**TIPS!**

Listen for two things in the description of a process:
- the story of what happened during each phase
- an explanation of the results of each phase

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Now you are ready to take the Unit Test and the Proficiency Assessment.
Our Design Thinking Experience

In this unit, you have learned about the Design Thinking process. How would you solve a design problem?

**TASK** Give a short group presentation about solving a design problem using the Design Thinking process. Work with a group to prepare, practice, and present.

**Prepare**
1. Form a design team of 3 or 4 people. Try to create a diverse team with people who have different points of view. Give your team a name.
2. Use the Design Thinking process to solve a design problem.
3. Reflect on the experience. What went well? What was difficult? How happy are you with your design?
4. Make an outline, and assign one part to each person in the group.

**Presentation Strategy: Describing a process**
- Introduce the number of phases in the process: There are (three) phases in the process ...
- Introduce each phase: We started with the first phase ..., Then we began the next phase ..., Then we moved on to the final phase ...
- Describe what happened in each phase: In this phase, we ...; The goal of this phase was ...; During this phase, we ...
- Use other sequencing expressions to show the order of events within a phase: First, ..., Next, ..., After that, ..., Finally, ...

**Understand Phase**
- Think of a common activity that the group feels should be improved. Use a real activity that everyone in your group has experienced.
  - Shopping at ______
  - Riding the ______ (bus or train line)
  - Doing ______ (a kind of activity) in our classroom
- Ask your classmates and people outside your class about the activity. Take notes on what they think works well, and what causes problems. As a team, discuss the results.

**Brainstorm Phase**
- With your team, brainstorm ideas to solve the design problem.
- Look at all the ideas, and identify the best solutions to the design problem.

**Prototype Phase**
- Create a prototype of your design by making a drawing, map, or model. Show that your solution will work.

**Practice**
5. Practice with your group. Practice describing the steps in your group’s Design Thinking process.
6. Practice your section by yourself.

**Present**
7. Describe the steps in your group’s Design Thinking process.
8. As you listen to your classmates’ presentations note the best solution to a design problem.

**Evaluate**
9. After all of the presentations are finished, discuss the information, including: How were the Design Thinking processes similar or different? Which group came up with the best solution to their design problem?
10. Use the Unit 9 Presentation Evaluation Form (in Appendix C) to evaluate your classmates’ presentations.

**Outline: Our Design Thinking Experience**
- **I. Introduction:** Introduce your design team and explain your design question (1 person)
- **II. Your Design Thinking process** (1–2 people)
  - Explain the data you found from your research
  - Describe the possible solutions brainstormed by the group
- **III. Conclusion:** Show the prototype and explain your group’s solution (1 person)
- **IV. Interaction:** Answer audience questions (whole group)