Unit 8 Innovations

WARM-UP	Students talk about inventions and discoveries, complete a survey about new inventions, and read an illustrated conversation about buying a new product.	
LESSON 1 **Describe new kinds of products**	***Grammar***	The unreal conditional (review and expansion)
	Vocabulary	Adjectives for describing products, processes, or ideas
LESSON 2 **Imagine a different past outcome**	***Grammar***	The past unreal conditional
	Pronunciation	Contractions with *'d* in spoken English
LESSON 3 **Describe inventors and their inventions**	***Reading skills***	Understand from context; Find supporting details
LESSON 4 **Consider the impact of historical inventions**	***Vocabulary***	Archaeology
	Listening skills	Listen for main idea; Listen for details; Summarize
	Writing	Describe the advantages, disadvantages, and historical impact of an invention
INTERACTIVE COOL DOWN	*"7 Oops!"*	

Choose a warm-up activity from the Warm-Up Activity Bank on pages xxii–xxiii.

Warm-Up

PRONUNCIATION

Suggested time: 10 minutes | Your time:

- Give Ss a minute to look at the photos and captions. Play the audio and have Ss listen and repeat. If appropriate, remind Ss about the meaning of *BCE* in the captions.
- Point to each photo. Ask what each innovation is or was used for. (penicillin: to treat illness caused by bacteria; the printing press: to print words and make books; the wheel: to move things; the digital computer: to do math calculations) Say, *These inventions have changed a lot over the years. What can they do today?* Elicit ideas from Ss.
- Read the questions in the directions, pointing to each of the four photos. To model the activity, read the man's statement.
- In pairs, have Ss share their ideas. Then bring the class together and go over the answers.
- Ask, *Who discovered or invented these innovations?* If Ss don't know, you can have them use their phones to research the answers.

LANGUAGE AND CULTURE

- BCE (*Before Common Era*) and CE (*Common Era*) are year notations in the Gregorian calendar, which is used in most of the world today.
- Alexander Fleming discovered penicillin and created the first antibiotic.
- Johannes Gutenberg invented the printing press in Germany.
- No one knows who invented the wheel, but the oldest wooden wheel is believed to be more than 5,500 years old.
- Charles Babbage designed the first computer but was never able to build it. The photo shows the first programmable, digital computer, called ENIAC.

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UNIT 8

Innovations

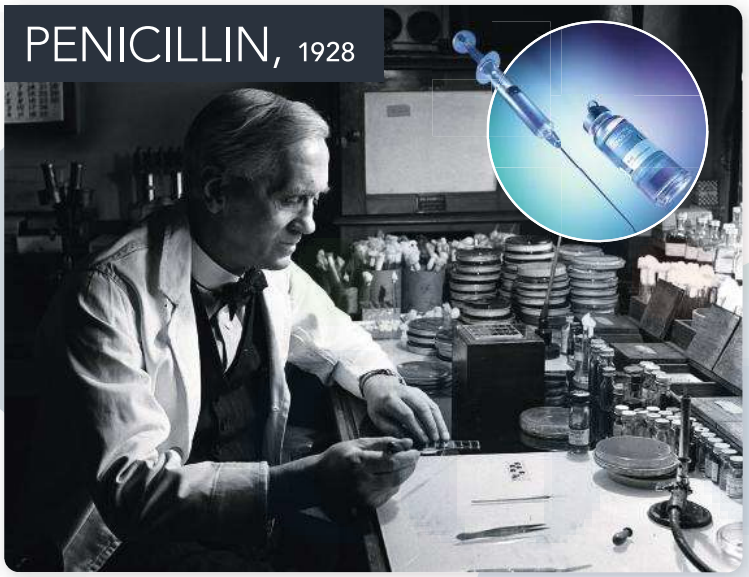
Warm-Up

Look at four historical innovations. Which are inventions? Which are discoveries? What's the difference?

PRONUNCIATION | Listen and repeat.



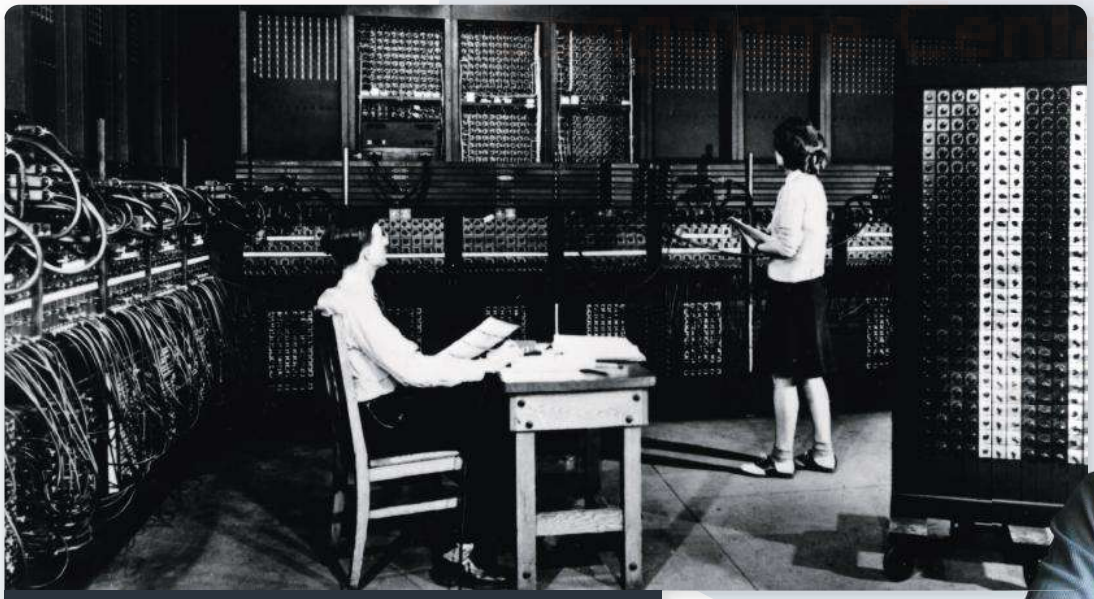
THE PRINTING PRESS, 1440



PENICILLIN, 1928



THE WHEEL, 3500 BCE



THE DIGITAL COMPUTER, 1946



UNIT 8 COMMUNICATION GOALS

Lesson 1 Describe new kinds of products

Lesson 2 Imagine a different past outcome

Lesson 3 Describe inventors and their inventions

Lesson 4 Consider the impact of historical inventions

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Topic Warm-Up

A INVENTIONS | Take the survey.



NEW INVENTIONS?

Check the activities for which you'd like to see some new inventions.

- ☐ making cars safer
- ☐ improving home safety
- ☐ organizing things at home
- ☐ cooking and preparing food
- ☐ eating or snacking
- ☐ getting into shape
- ☐ raising children
- ☐ caring for pets
- ☐ relaxing at home
- ☐ learning or reading faster
- ☐ learning a new language
- ☐ preparing for a natural disaster
- ☐ preparing for tests
- ☐ planning and scheduling
- ☐ other activities:



B PAIR WORK | Choose one of the activities you checked and describe an invention you'd like to see.



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Topic Warm-Up

A INVENTIONS

Suggested time: 10 minutes | Your time:

- Point to the picture at the top of the survey. Ask, *What do you think about this invention? What problems would it solve? Is it a useful invention?*
- Have Ss read the instructions and the list of activities. Clarify any new vocabulary in the list. Point to *making cars safer* and ask, *What inventions can you think of that have made cars safer?* (For example: seat belts) Point to *raising children.* Say, *What inventions can you think of that have made raising children easier for the parents?* (For example: baby monitors)
- Have Ss look at the pictures below the activities. Encourage Ss to say what they think each picture is and which activity in the list the picture might help people do. For example, point to the picture of the cup and cookie. Ask Ss to guess what it is. (an invention that dips a cookie into a cup of coffee or tea and then takes it out again) Then ask what activity it might help people do. (eating or snacking)
- Have Ss work individually to check the boxes and complete the survey. Point out the box at the end of the survey and encourage Ss to complete it with their own ideas for other activities.

EXTENSION (+10 minutes) Write these questions on the board:
Is this invention useful? Why / why not?
Would you use it yourself? Why / why not?
How could it be improved?
In pairs, have Ss choose one of the inventions in the photos and answer the questions on the board. Monitor and listen for good ideas for improvements. Ask the Ss who have these ideas to share them with the class.

B PAIR WORK

Suggested time: 10 minutes | Your time:

- Have Ss read the directions and the woman's statement. Give them a few minutes to write down the type of invention they would like to see, using the statement as a model.
- In pairs, have Ss share their ideas. Monitor and listen for good ideas.
- Write the best ideas you hear on the board. Encourage the Ss who thought of these ideas to tell the class more about the inventions they'd like to see.
- Ask, *Which of these inventions do you think you might use?* Have Ss raise their hands as you point to each one on the board. Count the votes and see which invention is the most popular.

EXTENSION (+10 minutes) Have Ss work with a different partner, choose another activity from the list in Exercise A, and think of another invention they would like to see. If appropriate, have them draw a prototype for a new invention in the area they chose.

OPTION (+5 minutes) Write these questions on the board:
Did you find it easy to think of new inventions?
What personal qualities do you think an inventor should have to make him or her successful?
What problems do you think many inventors encounter?
In pairs, have Ss discuss their answers. Have some Ss share their ideas with the class.

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Language Warm-Up

A ZOOM-IN

Suggested time: 10 minutes | Your time:

- Have Ss look at the pictures. Have Ss describe what they see. (two friends in a coffee shop)
- Point to the note about accents and say, *Both of the men have American accents, but Rob has a southern accent and Dan has a standard accent. When you listen, see if you can hear the difference in their accents.*
- Have Ss read and listen to the conversation. To check comprehension, ask:
  What did Rob buy? (a juicer)
  Is he happy he bought it? (no)
  What is Dan surprised about? (that you have to buy the vegetables from the company that makes the juicer)

LANGUAGE AND CULTURE Products like the Veg-Me-Up are often advertised and sold online in ads on websites or at the beginning of videos. A *pop-up ad* is an advertisement that may appear in a separate window when you visit a website. Many people who upload videos to YouTube make money from doing so by allowing advertisers to embed their ads into their videos.

B UNDERSTAND FROM CONTEXT

Suggested time: 10 minutes | Your time:

- Do item 1 with the class as an example. Have Ss find the expression *wasted a lot of money* in the conversation and read the context. Ask, *Does Rob think he needs the product?* (no) *So what does* I wasted a lot of money *mean?* (I spent a lot of money for a bad purpose.)
- Have Ss work individually to find the remaining expressions, read them in context, and answer the questions.
- In pairs, have Ss compare their answers and give reasons why they chose the answer they did.
- Bring the class together and go over the answers.

OPTION Draw Ss' attention to Rob's final turn in the conversation. Ask, *How is Rob playing with words here?* (He uses the name of the machine as a verb, meaning to fill him up with vegetables.)

EXTENSION (+5 minutes) Have Ss skim the conversation to find other new vocabulary that wasn't addressed in Exercise B. Encourage them to deduce the meaning from context and / or use a dictionary to find out the meaning. Have them note the words and their meanings in their notebooks. For example: *dumb* = silly or stupid; *blender* = a kitchen device with sharp blades and a glass jar for making smoothies or sauces; *gullible* = believing things too easily without questioning; *air* = *tight*-not allowing air to get in so food stays fresh.

SPEAKING | PAIR WORK

Suggested time: 10 minutes | Your time:

- Write the scale *1–3* on the board. Tell Ss that *1* means the invention is very useful and *3* means it is completely useless. Do a quick poll to find the class rating for the Veg-Me-Up from Exercise A.
- Have Ss look at the pictures and elicit a few ideas about what the inventions are for.
- Have Ss read the directions and the man's statement.
- In pairs, have Ss rate and name each gadget. Monitor and encourage Ss to give reasons for their ratings.
- Do a poll to see which inventions the class thinks are useful or useless. Have some Ss share the names that they thought of for the inventions.

OPTION Write all the names Ss thought of for each invention on the board. Poll the class to see which names Ss like best.

CHALLENGE (+15 minutes) Have Ss make up their own online ad for one of the products in this exercise. In pairs, have Ss think about how they would demonstrate the product and how they would persuade people to buy it. Have each pair present their ad to another pair and see how many pairs can persuade their listeners to buy the product.

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Language Warm-Up

A ZOOM-IN | Read and listen to a conversation about a new product. Notice the featured words and phrases.

UNDERSTAND A VARIETY OF ACCENTS
Rob = American English (regional)
Dan = American English (standard)





Rob: So I've just done something dumb. I wasted a lot of money on something I didn't need.

Dan: What was it?

Rob: This special system for making juice—the Veg-Me-Up. Have you heard of it? They advertise the heck out of it.

Dan: Actually, I saw it online, but I didn't really see the point. Can't you just throw some fruits and veggies into a blender and get juice without a system?

Rob: Well, if I'd given it two seconds' thought, I would have figured that out. But I've been promising myself I was going to start eating better, and when I saw the ad, I just fell for it. I didn't realize how ridiculous the whole thing was.

Dan: So what's the big deal? It's only money. You can afford it.

Rob: I could just kick myself for being so gullible.

Dan: Aside from all that, how's the juice?

Rob: It's actually pretty good. You order everything online and they ship you the vegetables, already cleaned and cut up in this special air-tight packet. You just stick the packet into the machine, press the button, and out comes the fresh juice in a second.

Dan: Wait, what? You can't use your own veggies?

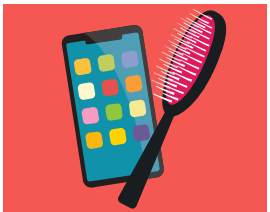
Rob: That's the kicker. If I don't buy the veggies from them, the Veg-Me-Up won't veg me up anymore!

B UNDERSTAND FROM CONTEXT | Read the statements with a partner. Write T (true) or F (false). If a statement is false, explain what you think it really means, based on the conversation.

F 1 "I wasted a lot of money on something" means "I spent a lot of money for a good purpose."
T 2 "They advertise the heck out of it" means "They advertise it a lot."
T 3 "I didn't really see the point" means "I didn't understand what was so good about it."
F 4 "I just fell for it" means "I believed the Veg-Me-Up was ridiculous."
F 5 "That's the kicker" means "That's the good thing."

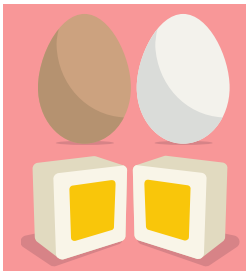
1. It means, "I didn't spend my money in a good way."
4. It means, "I believed the things that were being said about it."
5. It means, "There is a surprise or unexpected element to it."

SPEAKING PAIR WORK | Rate the usefulness of these gadgets from 1 (very useful) to 3 (entirely useless). Explain. Then name each gadget.



A smart hairbrush: tells you how much you've brushed and how much more brushing you need. Takes the guesswork out of brushing.

Rating .....
Name .....



Makes square eggs for neater sandwiches. A great conversation starter!

Rating .....
Name .....



Helps even the shortest pets get up on the beds and sofas they love. Kind. Humane.

Rating .....
Name .....



This smart water bottle keeps you hydrated. Doesn't let you forget to drink water and records your consumption all day, all week, or all month.

Rating .....
Name .....



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1 COMMUNICATION GOAL Describe new kinds of products

A GRAMMAR | The unreal conditional (review and expansion)

Remember: Unreal conditional sentences describe unreal conditions or actions—ones that don't exist—and their results. Use the simple past tense or were in the if clause. Use would in the result clause if the result is certain.

if clause (unreal action or condition)	result clause
If you **took** the high-speed train,	you**'d arrive** there in an hour.
If this **were** the best fitness tracker,	**I'd buy** it for my husband.

Use could or might in the result clause if the result is not certain.
If they **wanted** to use less fuel, they **could buy** a plug-in vehicle.
If a water bottle **were** truly "smart," I **might get** it.

The if clause can occur first or last. When the if clause comes first, end it with a comma.
If the car were less expensive, they might buy it. OR They might buy the car if it were less expensive.

Questions
If the car rental company **had** self-driving cars, **would** you **rent** one? (Yes, I would. / No, I wouldn't.)
Where **would** they **go** if someone **offered** them a free air ticket?
Who **would** you **call** if you **had** an accident?

Contractions
would → **'d**

Be careful!
Never use would in an if clause.
Don't say: If she ~~would be~~ here, . . .



GRAMMAR EXPANDER p. 138
- Real and unreal conditionals (review)
- Unless in conditional sentences

B UNDERSTAND THE GRAMMAR | Check the statements that describe unreal conditions.

- ☐ 1 If they have high performance tires at the tire store, I'll buy them.
- ☑ 2 If they gave you penicillin for that infection, it would cure it.
- ☐ 3 If you get a wireless keyboard, you won't have to sit at your desk to work.
- ☑ 4 She would buy those new earring speakers if they didn't cost an arm and a leg.

C GRAMMAR PRACTICE | Circle the correct words.

1 If we (had / would have) a self-driving car, we (can / could) take a nap on the way to work.
2 If someone (invented / would invent) an improved app to take a picture of food and tell you the calorie count, a lot of people (will / would) buy it.
3 If there (would be / were) a portable gadget to freeze water, I (might / would) definitely get it for my camping trip.
4 (Will / Would) you buy one of those heavy blankets if they (wouldn't be / weren't) so expensive?

D PAIR WORK | Complete the statements. Then share your statements with the class.

1 If I were an inventor, . . . 2 People would get robots if . . . 3 I wouldn't buy a self-driving car if . . .

E VOCABULARY | Adjectives for describing products, processes, or ideas | Read and listen. Then listen again and repeat.

high-tech	using advanced technology *A smart refrigerator is a high-tech appliance that is connected to your smart phone.*
low-tech	using simple traditional or mechanical technology *A solar bottle light bulb is a low-tech light made with a plastic water bottle and a solar panel.*
cutting-edge	using the very newest stage in the development of a product or process *3D printing is a cutting-edge process that allows you to create objects using a digital design.*
innovative	using a new method or idea *A hamburger made with "meat" created from plants instead of animals is an innovative way to satisfy people's love of meat without killing animals.*
revolutionary	bringing about a major change *The Internet was a revolutionary invention that forever changed the way we get information.*
novel	new and unlike other products, processes, or ideas *A jacket with built-in reflectors is a novel way to keep pedestrians safe at night.*

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LESSON 1 Describe new kinds of products

A GRAMMAR

Suggested time: 10 minutes | Your time:

- If appropriate, first review real conditionals. Write on the board:
  If I need a car, I'll buy one.
  Ask, *Is there a possibility I need a new car?* (yes) *What is the verb form in the* if *clause?* (simple present) *And in the results clause?* (*will* + base form) Say, *A real conditional describes a real or likely situation.*
- Have Ss read the **Remember** rule and the first two examples in the chart. Write on the board:
  If I needed a new car, I'd buy an electric one.
  Ask, *Do I need a new car?* (no) *Am I going to buy an electric car right now?* (no)
- Explain that the unreal conditional expresses an imagined condition and its result. In the first example on the board, there is a possibility that the speaker will buy a new car. In the second, it is an imagined situation.
- Ask, *What is the verb form in the* if *clause?* (simple past) *And in the results clause?* (*would* + base form) Make sure Ss understand that *I'd* means *I would*, not *I had*.
- Point to the woman's statement. Ask, *What is the verb form in the* if *clause?* (simple past: *were*) Say, *For the verb* be, *we use* were *with all subjects in the* if *clause*.
- Read the **Be careful!** box. Tell Ss, *We say* If she <u>were</u> here, *not* if she <u>would be</u> here.
- Have Ss read the *could / might* rule and examples. Say, *If we are not sure of the imagined result, we use* could *or* might *instead of* would. Write on the board:
  If I needed a new car, I might buy an SUV.
  Say, *I'm not sure about which car I would buy if I needed one.*
- Have Ss read the *if* clause rule and example. Point to the *might* example you wrote on the board. Ask, *How could we rewrite this without a comma?* (I might buy an SUV if I needed a new car.)
- Have Ss read the example questions. Point out that *who* can be either the subject or object of the sentence. Remind Ss how word order changes when *who* is the subject. For example: *Who would call you if they needed a ride?*
- Point to this sentence already on the board: *If I needed a new car, I'd buy an electric one*. Ask, *How could we change this to a question with* you? (If you needed a new car, would you buy an electric one? *or* What kind of car would you buy if you needed a new one?)

GRAMMAR EXPANDER (optional, page T138)

LANGUAGE AND CULTURE Many native speakers now use *was* or *were* interchangeably in the *if* clause. The common mistake in the **Be careful!** box is also sometimes made by native speakers and could become common usage in the future.

B UNDERSTAND THE GRAMMAR

Suggested time: 5 minutes | Your time:

- Do item 1 with the class as an example. Ask, *Is this sentence an unreal conditional?* (no) *Why?* (because there is a possibility the tires will be in the store)
- Have Ss work individually to complete the exercise.
- Go over the answers with the class.

C GRAMMAR PRACTICE

Suggested time: 10 minutes | Your time:

- Ask, *What verb form do we need in the* if *clause?* (simple past or *were*) *And in the result clause?* (*would, could, or might* + base form)
- Have Ss work individually to complete the exercise.
- Go over the answers with the class.

D PAIR WORK

Suggested time: 5 minutes | Your time:

- To model the activity, brainstorm different ways to complete item 1. For example: *If I were an inventor, I would invent a machine that does homework.*
- In pairs, have Ss write down their ideas. Encourage them to check their sentences by underlining the verb forms in each clause.
- Monitor and assist as needed.

E VOCABULARY

Suggested time: 4 minutes | Your time:

- Play the audio. Have Ss read and listen, and then listen and repeat.
- Point out that the first three adjectives are sometimes not hyphenated, especially if they follow the noun. For example: *This solution is very high tech.*
- Remind Ss that the word *novel* in its noun form means *book*, but that here, *novel* is an adjective.

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F ACTIVATE VOCABULARY

Suggested time: 4 minutes | Your time:

- Have Ss read the directions and the example. Ask, *Which adjective from Exercise E does this sentence use?* (innovative) *Does anyone know what RFID technology is?* If appropriate, give Ss the information in the Language and Culture box below.
- Have Ss copy the list of adjectives from page 88. In pairs, have them say a sentence for each one. Lower-level Ss can write their sentences first.
- Bring the class together and have each pair give one example. Write some good examples on the board.

LANGUAGE AND CULTURE RFID stands for Radio Frequency Identification. It is the wireless non-contact use of radio frequency waves to transfer data. This technology is used in access cards and product tags. A newer technology, NFC, is used for contactless payments. Some wallets have aluminum plates that block the signal to protect a credit card owner from unauthorized access.

Communication Activator

A CONVERSATION MODEL

Suggested time: 7 minutes | Your time:

These conversation strategies are implicit in the model

- Change an opinion after giving it more thought with *Now that I think about it, . . .*
- Admit you're having a change of heart about a decision with *I guess not.*
- Introduce a new possibility or idea with *So what about this?*
- Introduce an interesting fact with a question beginning with *You know what . . . ?*

- Have Ss look at the picture next to the two men. Ask them what they think this invention does.
- Have Ss read and listen to the Conversation Model. To check comprehension, ask:
  - *Why wouldn't the man buy the Get-U-Up?* (because he could use the alarm on his phone and put it far away from his bed)
  - *What does he like about the water purifier?* (It doesn't have complicated technology, so it's not easy to break.)
- Have Ss identify examples of the unreal conditional in the conversation.
- Call Ss' attention to the **Social language** box and have Ss repeat the expression after you. Ask, *Why does the man in the Conversation Model use this expression?* (because at first he thought the Get-U-Up alarm clock was a good idea but then changed his mind)

B PRONUNCIATION PRACTICE

Suggested time: 3 minutes | Your time:

- Have Ss listen and repeat each line.
- Monitor as Ss practice the conversation in pairs.

C CONVERSATION PAIR WORK

Suggested time: 8 minutes | Your time:

- Direct Ss' attention to the pictures and information about different innovative products. Tell Ss to discuss these or other products in their conversation.
- Ask Ss to identify language from the unit that they will need to use in this conversation. (vocabulary for products on page 88, language from Exercise A on this page)
- Direct Ss' attention to the **Reasons not to buy something** box. Encourage Ss to use the sentences in their conversations.
- Model the exchange with a higher-level S.
- In pairs, have Ss personalize their conversations and then switch roles. Monitor and assist as needed.
- Go over the ideas in the **Keep Talking!** box and show the video to support Ss as they extend the conversation.

D CHANGE PARTNERS

Suggested time: 4 minutes | Your time:

- Have Ss role-play a different version of the conversation with new partners. Make sure they switch roles.

LOOK FOR While Ss are doing Exercises C and D, monitor their conversations to determine if they are

- ✓ using phrases for giving reasons not to buy something
- ✓ using *Now that I think about it . . .* to change their opinion after giving it more thought
- ✓ using vocabulary to describe new products

OPTION For all Communication Activator sections in this unit, use the ORAL PROGRESS ASSESSMENT CHARTS to provide feedback to Ss on their speaking (see Teacher Resources in the Pearson English Portal).

CLOSURE ACTIVITY (+10 minutes) On a blank card, have each S write an unreal conditional sentence about what they could do if a product existed. For example: *If someone invented a chocolate bar with no calories, I could eat lots of chocolate!* Have Ss write their name on the card and exchange cards with a partner. Ask Ss to respond to their partner's idea by writing whether or not they would buy the product and why. For example: *If someone invented that, I wouldn't buy it. I don't like chocolate!* Collect the cards and read them to identify areas for review and extra practice.

Remind Ss of additional vocabulary, grammar, and speaking practice in their digital resources.

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F ACTIVATE VOCABULARY | With a partner, identify one product, process, or idea that can be described by each adjective.

> "I have an innovative wallet that protects my credit cards with RFID-blocking technology."

COMMUNICATION ACTIVATOR

Now let's describe new kinds of products.



A CONVERSATION MODEL | Read and listen.

A: Now here's a novel idea. Look at this pressure-sensitive alarm clock.

B: The Get-U-Up? That's so cool. If I had one of those, I'd never oversleep.

A: Would you actually buy one?

B: Well, now that I think about it, I guess not. It's kind of silly. I could just set the alarm on my phone and put it on the other side of the room.

A: So what about this? The portable water purifier. It would be great on a camping trip, wouldn't it?

B: And you know what I like about it? It's low-tech. There's nothing to break.

Social language
To change an opinion after giving it more thought, say:
Now that I think about it . . .

B PRONUNCIATION PRACTICE | Listen again and repeat. Then practice the Conversation Model with a partner.

C CONVERSATION PAIR WORK | Change the conversation, using one of the products, or other ones you've seen. Then change roles.

A: Now here's ..... idea. Look at this ..... .

B: The ..... ? That's ..... . If I had one of those, I ..... .

A: Would you actually buy one?

B: Well, now that I think about it, I guess not. ..... .

A: So what about this? The ....

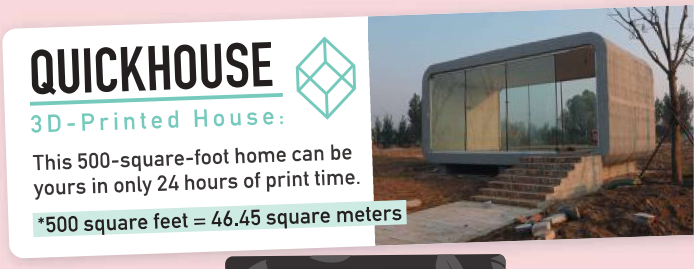
B: ..... .

Reasons not to buy something
- I don't really need that.
- I'll bet it's pretty expensive.
- I already have something like it.
- It sounds like [a waste of money / a scam].

KEEP TALKING! ●●●
- Express a fuller opinion of the products in the pictures.
- Talk about products you have or would like to have.
- Explain what they're good for.

Watch the video for ideas!











D CHANGE PARTNERS | Change the conversation again, using other products and ideas.

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2 COMMUNICATION GOAL Imagine a different past outcome



A GRAMMAR | The past unreal conditional

The past unreal conditional describes unreal conditions or actions—ones that didn't exist—and their results. Use the past perfect in the if clause. Use would have in the result clause for a result that was certain.

If she'd seen the weather forecast, she wouldn't have gone to the beach.
(But she didn't see the forecast.)
If there hadn't been a late flight, he would have had to wait until the next day.
(But there was a late flight.)

Use could have or might have in the result clause for a result that wasn't certain.

If they'd wanted a high-tech car, they could have bought the Z900.
If I hadn't decided to be a veterinarian, I might have chosen to be an inventor.

Questions

Could they have avoided catching the virus if they'd worn respirator masks?
(Yes, they could have. / No, they couldn't have.)
What would you have done if you'd lost your wallet?

GRAMMAR EXPANDER p. 139
• The unreal conditional: variety of forms

Be careful!
In short answers, use have after would, could, or might.
Yes, I would have.
NOT: Yes, ~~I would~~.

B PRONOUNCE THE GRAMMAR | Listen and repeat the grammar examples.

C UNDERSTAND THE GRAMMAR | Circle the correct meaning of each past unreal conditional sentence.

1 They would have taken the high-speed train if a ticket had been available.
a They took the train. (b) They didn't take the train.

2 They might have had enough room for their friends if they'd rented the SUV.
a They rented the SUV. (b) They didn't rent the SUV.

3 If she hadn't gotten an X-ray, she wouldn't have realized that her wrist was broken.
(a) She got an X-ray. b She didn't get an X-ray.

4 If the authorities had known there would be a flood, they could have evacuated the city.
a They evacuated the city. (b) They didn't evacuate the city.

D GRAMMAR PRACTICE | Complete the sentences with the past unreal conditional. Use would.

1 If we ..had had.. (have) an opportunity to fly on a supersonic helicopter, we ..would have taken.. (take) it.
2 If Ben ..hadn't told.. (not / tell) Dr. Bell that his brother had the flu, she ..wouldn't have given.. (not / give) Ben a flu shot.
3 Who ..would.. you ..have called.. (call) if you ..had gotten.. (get) a flat tire?
4 If you ..had bought.. (buy) the Wi-Fi-enabled pressure cooker, you ..would have loved.. (love) it.
5 Mark ..wouldn't have had.. (not / have) that interview at QuickStart if he ..hadn't taken.. (not / take) a course in 3D printing.

E PRONUNCIATION | Contractions with 'd in spoken English | Notice the pronunciation of the spoken contractions of did, would, and had. Read and listen. Then listen again and repeat.

1 /wɛrd/ "Where'd you go?"
2 /hud/ "Who'd you see?"
3 /ɪt̬əd/ "It'd be OK."
4 /wid/ /ɪt̬əd/ /wid/ "If we'd known it'd be so late, we'd have called."

Note: Where'd, When'd, Who'd, Why'd and It'd are contracted in speech, but not in writing.

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LESSON 2 Imagine a different past outcome

A GRAMMAR

Suggested time: 10 minutes | Your time:

- Have Ss read the first rule and examples in the chart. To clarify, write this formula on the board:

  If CLAUSE — *RESULT CLAUSE*

  past perfect — *would + have + past participle*
- Read the two examples in the chart and the man's statement, pointing out how they follow the formula.
- Say, *We use the past unreal conditional to talk about an unreal condition and the result.* Write the man's statement on the board under the formula. Ask, *What is the unreal condition in this example?* (If I'd known the car was so small) *Why is it unreal?* (because he didn't know) *What is the result?* (I wouldn't have rented it.)
- Have Ss read the *could have / might have* rule and examples. Point to the sentence on the board and ask, *Can we change* wouldn't *to* might not have? (yes) *How does it change the meaning?* (There is a possibility he would have rented the car even if he had known how small it was.)
- If appropriate, point out that we can't use *couldn't* in this example because *couldn't* doesn't have the same meaning as *might not*. *Couldn't* implies inability. *Could* and *might* can only be used interchangeably in the affirmative form.
- Have Ss read the example questions. Point out the contractions in the *if* clause. Have Ss restate each question in the full form to confirm they understand that the *if* clause uses *had*, not *would*. (if they had worn, if you had lost)
- Draw Ss' attention to the **Be careful!** box and read it. To confirm understanding, write these exchanges on the board:

  1. *A: If you had failed an important exam, would you have told your parents?*
     B: (Yes, I would. / Yes, I would have).
  2. *A: If you had left at 10 A.M., could you have gotten to the interview on time?*
     B: (No, I couldn't. / No, I couldn't have.)

  Elicit the correct short answers from the class. (1. Yes, I would have; 2. No, I couldn't have.)

GRAMMAR EXPANDER (optional, page T139)

B PRONOUNCE THE GRAMMAR

Suggested time: 3 minutes | Your time:

- Play the audio and have Ss listen and repeat the examples from the chart.

C UNDERSTAND THE GRAMMAR

Suggested time: 4 minutes | Your time:

- Do item 1 with the class as an example. Elicit the answer and ask, *Why didn't they take the train?* (because there were no tickets available)
- Have Ss work individually to complete the sentences.
- In pairs, have Ss compare their answers. Then go over the answers with the class.

D GRAMMAR PRACTICE

Suggested time: 5 minutes | Your time:

- Do item 1 with the class as an example. Ask, *Which clause do we use the past perfect in?* (the *if* clause) *Which clause do we use* would have *in?* (the result clause) Point out that the past perfect of *have* is *had had*. Remind Ss to use the contraction: *we'd had.*
- Have Ss work individually to complete the sentences.
- In pairs, have Ss compare their answers. Then go over the answers with the class.

EXTENSION (+5 minutes) For more practice, write these prompts on the board:
If I (go) to another school, I (not / take) this class.
I (not / meet) my teacher if I (go) to another school.
My English (not / be) so good if I (not / meet) my teacher.
If my English (not / be) so good, I (not / get) a job in the U.S.
Ask pairs to use the verbs in parentheses to imagine past unreal conditions and say how their lives would have been different without their English class.

E PRONUNCIATION

Suggested time: 4 minutes | Your time:

- Have Ss read the directions and the note. Tell Ss we use these contractions in spoken English only.
- Play the audio. Have Ss read and listen. Point out that *where'd, who'd,* and *we'd* are pronounced as one syllable (/wɛrd/, /hud/, /wid/), whereas there is an additional syllable in *it'd* (/ɪtəd/).
- Play the audio again. Have Ss listen and repeat.

OPTION (+5 minutes) Have Ss write the four sentences without contractions to be sure they understand the full forms. (1. Where did; 2. Who did; 3. It would; 4. we had / it would / we would)

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F LISTENING AND PRONUNCIATION PRACTICE

Suggested time: 5 minutes | Your time:

- Have Ss read the directions. Ask, *Should you write what you hear, or the full form?* (full form) Tell Ss that they will hear contracted forms of *did*, *had*, and *would*.
- To model the task, play the audio, pause after item 1, and have Ss repeat what they heard. (Who'd you invite?) Ask, *What verb is the 'd a contraction of?* (did) Have a volunteer write the full question on the board. (Who did you invite?)
- Play the rest of the audio and have Ss listen and repeat the contracted forms and then write the full forms. Go over the full forms with the class.

Communication Activator

A CONVERSATION MODEL

Suggested time: 7 minutes | Your time:

These conversation strategies are implicit in the model

- Ask for confirmation of someone's shocking information with *Are you kidding?*
- Introduce a probable cause with *Apparently, . . .*

- Ask, *What do you think the women in the photo are talking about?* (something surprising)
- Have Ss read and listen to the conversation. To check understanding, ask, *Why did Jack go to his boss's house on the wrong day?* (He didn't put it in the calendar on his phone.)
- If appropriate, tell Ss that when we talk about someone else like this, it's called gossip.
- Have Ss identify the past unreal conditional statement in the conversation.
- Call Ss' attention to the **Social language** box and read it. Read the example and have Ss repeat.

B PRONUNCIATION PRACTICE

Suggested time: 3 minutes | Your time:

- Have Ss listen and repeat each line.
- Monitor as Ss practice the conversation in pairs. Encourage them to contract *had* in the unreal conditional sentence (. . . *if he'd put it in the calendar* . . .) and show surprise and disbelief as they respond to the story with *Are you kidding?*

C TALKING POINTS

Suggested time: 7 minutes | Your time:

- Have Ss read the directions and sample answer. Say, *My brother got a speeding ticket. If . . .* and encourage Ss to brainstorm more ideas about how the situation could have been avoided. For example: *If he had driven more slowly, he wouldn't have gotten a ticket.*
- Have Ss read the other prompts and clarify any questions they have. If appropriate, explain the contexts of item 3 (working on a computer) and item 5 (in a car).
- Have Ss work individually to complete the other sentences. Monitor and assist as needed.

D CONVERSATION PAIR WORK

Suggested time: 8 minutes | Your time:

- Form pairs. Have Ss choose a situation from their Talking Points list to use in their role plays. Tell them to use one partner's situation in the first role play and the other partner's situation when they switch roles.
- Refer Ss to the **Recycle This Language** box for ideas on how they can respond to what their partner is telling them. Point out that *Believe it or not* should be used by Speaker B, and it can replace *Apparently* in the Conversation Model.
- In pairs, have Ss personalize their conversations. Remind Ss to switch roles halfway through and to role-play both conversations.
- Go over the suggestions and phrases in the **Keep Talking!** box and play the video to support Ss as they extend the conversation.

E CHANGE PARTNERS

Suggested time: 4 minutes | Your time:

- Have Ss role-play a different version of the conversation with new partners. Make sure they switch roles.

LOOK FOR While Ss are doing Exercises D and E, monitor their conversations to determine if they are

- ✓ using the past unreal conditional
- ✓ using contractions in past unreal conditional sentences
- ✓ using conversation strategies to keep the conversation going

CLOSURE ACTIVITY (+5 minutes) Tell Ss to write on a blank sheet of paper two sentences: one about something bad that happened to them or someone they know, and another about how the situation could have been avoided. Ss should model their sentences after the ones in Exercise C above. Tell Ss to use the past unreal conditional. Collect the sentences and read them to identify areas for review and extra practice.

Remind Ss of additional vocabulary, grammar, pronunciation, and speaking practice in their digital resources.

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F LISTENING AND PRONUNCIATION PRACTICE | Listen and repeat the sentences you hear. Then listen again and write the full, not contracted, forms.

1 *Who did you invite?*
2 *Where did he buy that suit?*
3 *If it had been cheaper, we would have gotten it.*
4 *If I had known it would rain, I would not have gone out.*
5 *Why did you tell him?*

COMMUNICATION ACTIVATOR

Now let's imagine a different past outcome.



A CONVERSATION MODEL | Read and listen.

A: You're not going to believe what happened.
B: What?
A: Jack showed up at his boss's house for dinner on the wrong day.
B: Are you kidding? How did that happen?
A: Apparently, he thought the invitation said Tuesday.
B: That's so embarrassing!
A: Right. I told him if he'd put it in the calendar on his phone, this wouldn't have happened.
B: Good point.

Social language
To introduce a probable cause, say:
Apparently, . . .

B PRONUNCIATION PRACTICE | Listen again and repeat. Then practice the Conversation Model with a partner.

C TALKING POINTS | Read each situation. On a separate sheet of paper, complete the sentence about how the situation could have been avoided. Use the past unreal conditional.

My brother got a speeding ticket. If he'd seen the speed limit sign, he would have slowed down.

1 Your sister lost her job. If she ....., ...
2 Someone stole your mother's phone on the bus. If ....., ...
3 You closed an important file without saving. If I ....., ...
4 Your father got the flu. If he ....., ...
5 Your friend's brakes failed and he rear-ended another car. If he ....., ...

D CONVERSATION PAIR WORK | Use your Talking Points to role-play the conversation. Then change roles.

A: You're not going to believe what happened.
B: What?
A: ..... .
B: Are you kidding? How did that happen?
A: Apparently, ...
B: That's .....!
A: Right. I told ..... if ....., ...
B: Good point. . . .

KEEP TALKING!

Ask more questions about what happened.
Could [he] have ___ ?
What happened next?
Provide an excuse for the person who made the mistake.
Maybe [he] ___ .

Watch the video for ideas!

RECYCLE THIS LANGUAGE
That could happen to anyone.
It's not the end of the world.
No harm done.
These things happen.
Don't be so hard on [yourself].
Better safe than sorry.
Believe it or not, ...

E CHANGE PARTNERS | Role-play the conversation again.

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3 COMMUNICATION GOAL

Describe inventors and their inventions

A READING | Read about a famous inventor. How did his invention lead to the sunglasses we wear today?

Answers will vary. Possible answers include:
Edwin Land invented a plastic sheet polarizer which changes the direction of light waves, eliminating glares. It is used on sunglasses today to screen out glare.



A LENS ON Edwin Land

Do you wear polarized sunglasses—glasses that make it possible to see even through the glare of the brightest sunlight? Did you know polarized sunglasses came from a teenager's invention?

One dark summer night in 1922, 13-year-old Edwin Land was riding in a car that almost hit a team of horses because the car's headlights weren't bright enough. Headlights were dim in those days because of the concern that their glare would shine in other drivers' eyes, blinding them. Edwin thought that if the car he was in had had brighter headlights, the driver would have seen the horses while they were still far away.

At about the same time, at summer camp, a counselor showed Edwin and his friends a kind of trick. He told them to look at the blinding glare of the sun on a shiny tabletop, and he then put a special crystal in front of the boys' eyes. The crystal, known as Iceland spar, magically eliminated the glare, and the boys could see the tabletop clearly through the crystal. The Iceland spar was able to "polarize" the bright light by changing the direction of the light waves that caused the glare. Edwin immediately remembered the incident with the horses, wondering if there was a material such as this crystal that could polarize light coming from bright headlights.



Tenth-century Viking sailors used Iceland spar to help them navigate by the sun, even when it was hidden behind thick clouds.

Edwin would spend the next six years of his life experimenting with polarization, hoping to invent a practical material that could be used to polarize light. If he were successful, he thought, his first goal would be to convince automobile manufacturers to use his invention to make brighter headlights that didn't cause glare. He believed such an invention would make him rich and famous.

At the age of 19, Edwin's invention—a plastic sheet polarizer—was finally ready. He presented it to the automobile industry and tried for many years to convince them of its value. But that goal was never achieved. Other newer technologies permitted drivers to lower the direction of headlights so they wouldn't shine into other drivers' eyes. And the growth of highways with two lanes of traffic in each direction made the glare problem less serious.

But Edwin's work took him in other directions. He knew his plastic sheet polarizer had other uses as well. One was to revolutionize sunglasses, which at that time were made from ordinary dark glass that could reduce bright light but couldn't screen out glare. Edwin took his invention to American Optical, an eyeglass manufacturer, and the company began making polarized sunglasses with Edwin Land's polarized sheet.

In the end, Land achieved many successes with his inventions and did become rich and famous. He is best known for the Polaroid camera, which made and instantly printed paper photographs long before there were digital cameras and the Internet. Land's plastic polarizer is used in camera lenses today and is found in everything from car windshields to LCD screens.



Edwin Land, 1909–1991
Seen here with Polaroid camera photo samples.

B UNDERSTAND FROM CONTEXT | Write T (true) or F (false), based on the article.

F 1 A dim light is very bright.
T 2 Glare can make it hard to see both during the daytime and at night.
F 3 Something that blinds you makes it easier to see.
F 4 Headlights are the lights inside a car.
F 5 Land didn't believe the sheet polarizer would have other uses.
T 6 A goal is something you hope to achieve.

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LESSON 3 Describe inventors and their inventions

A READING

Suggested time: 15 minutes | Your time:

- Ask, *Who was Edwin Land? What did he do?* In pairs, have Ss preview the title, photos, and captions and try to guess the answers to these questions. Have a few volunteers share their ideas.
- Direct Ss' attention to the title. Draw a pair of glasses on the board and elicit the meaning of *lens*. (the pieces of glass in glasses that people look through so they can see better) Tell Ss they will find out the connection between lens and Edwin Land when they read the article. Explain that a lens on also has another meaning: When we have *a lens on* someone or something, we are focusing on that person or thing.
- *Glare* is an important word in this Reading. (See Teaching Tip below.) To clarify the meaning of this word, on the board, draw a car with headlights, adding several lines before them to symbolize the "glare" of light going out. Point to the headlights and elicit the term *glare*. Ask, *What happens when headlights shine right in our eyes?* (We can't see.) *What other bright light is hard to look at and can blind us?* (the sun) Explain that headlights and the sun have a bright *glare* that can be harmful to the eyes.
- Read the directions. Ask, *Do you need to understand every word of the article to answer this question?* (no) If appropriate, remind Ss they should just read to get the main idea and not worry about unknown vocabulary they may encounter along the way.
- Have Ss read the article and note down their answer to the question in the directions. They should also check their guesses to the preview questions. Go over the answers with the class.

TEACHING TIP Deducing meaning of new vocabulary in a text is an important skill for Ss to learn. However, if there are a lot of new words in a text, it is helpful to pre-teach key vocabulary needed to understand the main ideas.

EXTENSION (+10 minutes) Individually or in pairs, have Ss write as many unreal conditional sentences about Edwin Land as they can. For example: *If the car had hit the horses, Land might have died.*

B UNDERSTAND FROM CONTEXT

Suggested time: 10 minutes | Your time:

- Write these words and expressions on the board: *glare, headlights, dim, blinding, goal.*
- Have Ss scan the text to find the words and expressions and underline the sentences where they find these words. (They may appear more than once.)
- If appropriate, do item 1 with a class as an example. Read it and ask a volunteer to read aloud the second paragraph and find *dim* in context. (Headlights were dim in those days . . .) Elicit the answer.
- Have Ss work individually to find the remaining expressions and write *T* or *F*.
- Bring the class together and go over the answers.

OPTION (+5 minutes) Have Ss rewrite the false sentences from the exercise to make them true. (Example answers: 1. A dim light isn't bright; 3. Something that blinds you makes it harder to see; 4. Headlights are the lights on the front of a car; 5. Land believed the sheet polarizer would have other uses.)

OPTION (+3 minutes) Ask Ss to note the new vocabulary from this exercise in any way they like to help them remember it. They could write each word or phrase with a definition or a translation, or draw a picture.

EXTENSION (+5 minutes) Have Ss choose three other new words or expressions from the text. Have them use the context to guess the meanings and then use a dictionary to confirm the meanings. Have them write one true and one false definition for each new word or expression. In pairs, have them read each other's definitions and guess which is the correct one. Make sure Ss write down the correct definitions at the end.

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C FIND SUPPORTING DETAILS

Suggested time: 10 minutes | Your time:

- Emphasize that Ss should write the answers in their own words. (See Teaching Tip below.)
- Have Ss work individually to try to answer the questions from memory.
- In pairs, have Ss compare answers and then check their answers in the article on page 92.

TEACHING TIP It is important for Ss to understand that copying things directly from texts—that is, plagiarism—is not OK because it means they are presenting someone else's work as their own. Ss often plagiarize accidentally because they don't know how to paraphrase. Paraphrasing involves changing a writer's words but accurately reporting their ideas and giving that writer credit. When Ss answer questions about texts, encourage them to change verbs, nouns, or structures to make their sentences different from the text.

EXTENSION (+10 minutes) Elicit the applications for Land's plastic polarizer (item 6) and write them on the board. Ask, *Which of these applications is the most useful? Why? Can you think of any other products that might use the plastic polarizer?* In pairs, have Ss discuss the questions.

Answers for Exercise C

1. *Edwin Land learned how to eliminate glare when he was at summer camp at around age 13. His camp counselor showed him how the crystal Iceland spar could eliminate the glare from a shiny tabletop.*
2. *The car almost hit a team of horses because the car's headlights were very dim and didn't allow the driver to see far enough ahead at night.*
3. *If the headlights had been brighter, the car Land was in could have avoided the near collision with the horses.*
4. *Land made the connection because one of the reasons why car manufacturers didn't make the headlights brighter was because they were concerned that the bright lights would create a glare in other drivers' eyes. Polarization could eliminate that problem.*
5. *Other sunglasses could reduce bright light, but they couldn't reduce glare.*
6. *The plastic polarizer is used in sunglasses, camera lenses, car windshields, and LCD screens.*

Communication Activator

A TALKING POINTS

Suggested time: 10 minutes | Your time:

- Have Ss close their books. Write the names of the inventors on the board. Ask, *Has anyone heard of any of these inventors?* (See Teaching Tip below.) Then have Ss open their books and look at the pictures to try to guess what each person invented.
- Read the directions. Have Ss work individually to choose one or more of the inventors and research them.
- Monitor and assist as needed. Encourage fast finishers to research another inventor.

TEACHING TIP When presenting material about celebrities or historical figures in class, first ask Ss to share any information they already know about the people. This can make Ss feel a personal connection to the material.

B PRESENTATION

Suggested time: 15 minutes | Your time:

- Encourage Ss to use phrases from the **Recycle This Language** box and the Reading on page 92 in their presentations.
- Say the name of each inventor and have Ss raise their hands if they researched him or her. Form small groups of Ss who researched the same inventor.
- Have groups plan and write their presentations. Tell them not to copy information directly from the Internet. Make sure each S plays a role in the group presentation.
- If your class is small, have the groups present to the class. If it is large, have one group present to another group that researched a different inventor. Encourage Ss to ask each other follow-up questions about the presentations.
- Invite four volunteers to present each inventor to the class so that everyone hears about each inventor. (If you plan to do the closure activity, have Ss take notes as they listen.)

LOOK FOR While Ss are doing Exercise B, monitor their presentations to determine if they are

✓ giving relevant information about their inventor
✓ using the language in the **Recycle This Language** box
✓ using their own words

CLOSURE ACTIVITY (+5 minutes) On a sheet of paper, have Ss write a few sentences about one of the inventors they heard about in Exercise B but didn't research themselves. Collect the summaries and read them to identify areas for review and extra practice.

Remind Ss of additional reading practice in their digital resources.

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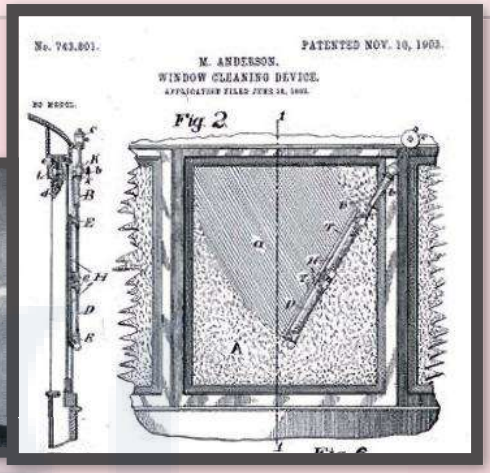
C **FIND SUPPORTING DETAILS** | **Answer the questions in your own words. Compare answers with a partner, explaining each answer with information from the Reading.**

1 How and when did Edwin Land understand that glare could be eliminated? *See page T93 for answers.*
2 Why did the car Land was in almost hit a team of horses?
3 What would have prevented the near collision with the horses?
4 Why did Land connect polarization with making better headlights?
5 Why did Land think polarization would improve sunglasses?
6 What are some of the applications of Land 's plastic polarizer?

COMMUNICATION ACTIVATOR

Now let's describe inventors and their inventions.

A **TALKING POINTS** | **Choose one or more of the inventors. Find information on the Internet. Then write about the inventor and the invention in 50 words or less.** *See possible answers below.*





Inventor / Birth date: Mary Anderson / *1866*
Nationality: *American*
Her invention: *She was visiting New York and riding on a trolley car when she noticed that the driver couldn't see because of sleet and rain. To solve this problem, she invented windshield wipers.*



Inventor / Birth date: Alfredo Moser / *1952*
Nationality: *Brazilian*
His invention: *He invented a way of lighting up houses when there is no electricity. The method uses plastic bottles filled with liquid and fitted to the roof of a house.*



Inventor / Birth date: Deepika Kurup / *April 12th, 1998*
Nationality: *American*
Her invention: *On a visit to India, she saw children drinking dirty water. To solve this problem, she invented a water purification system that is cheap enough to use anywhere in the world.*



Inventor / Birth date: Momofuku Ando / *March 5th, 1910*
Nationality: *Japanese*
His invention: *After World War II, there were serious food shortages in Japan. To provide cheap food that was easy to prepare, he invented instant noodles. They became popular all over the world.*

B **PRESENTATION** | **Sit with classmates who chose the same inventor. Put together your information from Talking Points and present your inventor, his or her life, and his or her invention to the class.**

OPTIONAL Underline new words or phrases in the Reading you can use in your Presentation. Example: "In the end, . . . "

RECYCLE THIS LANGUAGE

high-tech	innovative
low-tech	revolutionary
cutting-edge	novel

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4 COMMUNICATION GOAL Consider the impact of historical inventions

A VOCABULARY | Archaeology | Read and listen. Then listen again and repeat.

1 **an archaeologist** a person who studies human history and pre-history from what was left behind



Archaeologists dig in the ground to search for tools from long ago.

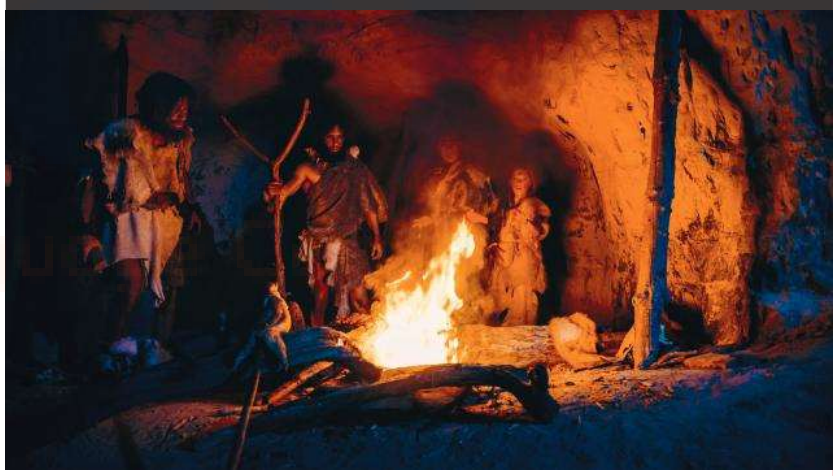
2 **a fossil** the preserved remains of something that lived long ago



This is a fossil of an animal that lived millions of years ago.

3 **a cave** a natural space, either underground or in rocks, where animals and people can find shelter

4 **a campfire** a fire built by humans for cooking, warmth, or light



Early humans lived in caves and stayed warm by the heat of the campfire.

B LISTEN FOR MAIN IDEA | Listen to a conversation with an archaeologist. Which statement expresses her main point?

a Neanderthals are an earlier human species than Homo sapiens.
b Neanderthals were able to capture fire from natural sources.
(c) Fire enabled modern humans to develop physically and culturally.

C LISTEN FOR DETAILS | Listen again. Answer the questions.

1 What are two kinds of "natural" fires?
(a) ones caused by lightning and volcanoes
b ones Neanderthals used for cooking and warmth

2 What is the earliest date Homo sapiens appeared in the "fossil record"?
(a) about 45,000 years ago b millions of years ago

3 What does it mean to "control" fire?
a prevent fire from burning caves
(b) capture fire from a natural source and use it

4 How did archaeologists determine that Neanderthals could control fire?
(a) They found evidence of fire inside Neanderthal caves.
b They found tools Neanderthals used to make fires.

5 Which group is also known as "modern humans"?
(a) Homo sapiens b Neanderthals

Possible answers for Exercise D

1. *Fire allowed people to be more productive because they could stay awake after the sun went down.*
2. *They could also use fire to cook food, which helped vary their diet and provide them with more nutrition.*
3. *Fire also helped create a sense of community, because people could gather around the fire and use it to find their way back home.*

D SUMMARIZE | With a partner, summarize three ways that fire helped create the life modern humans developed. Listen again if necessary.

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LESSON 4 Consider the impact of historical inventions

A VOCABULARY

Suggested time: 5 minutes | Your time:

- Write the four vocabulary words on the board. Have Ss look at the photos without reading the captions and try to guess what the words mean.
- Have Ss listen and read the words, definitions, and example sentences to see if they guessed right. Clarify meaning as needed. Then play the audio again as Ss listen and repeat.

LANGUAGE AND CULTURE The words *archaeology* and *archaeologist* are derived from the Greek word *arkhaios*, meaning *ancient*. For this reason, the pronunciation of the *ch* is /k/.

EXTENSION (+5 minutes) To help Ss personalize the vocabulary, write these questions on the board:
Would you like to be an archaeologist?
Have you ever seen a fossil? Where?
Have you ever explored a cave?
Have you ever cooked things on a campfire?
In pairs, have Ss discuss the questions. Have volunteers share their answers with the class.

CHALLENGE (+10 minutes) Lead the class in a dictogloss activity:
STEP ONE: Read the following text at normal speed. Tell Ss to take notes on what they hear. Say:
I started working as an archaeologist ten years ago. I recently did some work in a cave in France. In the cave, I saw paintings that early humans made more than 17,000 years ago. The paintings helped me imagine how early humans lived. They used to sit in caves and warm themselves by campfires. I've also seen lots of fossils. The best one was a dinosaur fossil.
STEP TWO: Read the text again and have Ss add to their notes.
STEP THREE: Form pairs and have Ss rewrite the text, using their notes. Tell them to make their texts as similar as possible to the original. If appropriate, read the text a third time.
STEP FOUR: Write the original text on the board or print copies for the Ss. Have Ss compare their version with the original.
Dictogloss activities allow Ss to see vocabulary in context and use their grammatical knowledge to reconstruct texts from notes. They also reinforce the idea that Ss don't need to understand every word in order to take in the main idea of a listening.

B LISTEN FOR MAIN IDEA

Suggested time: 5 minutes | Your time:

- Have Ss read the directions and the three statements. If appropriate, remind Ss that all these points could be mentioned in the audio, but only one of them is the main idea.
- Play the audio all the way through. Then, in pairs, have Ss discuss which statement they think is the main point and why.
- If appropriate, play the audio again so that Ss can check their answer. Then go over the answer with the class.

C LISTEN FOR DETAILS

Suggested time: 10 minutes | Your time:

- Have Ss read the questions. In pairs, have them discuss if they already know any of the answers or if they can predict the right ones.
- Play the audio again. Then, in pairs, have Ss compare their answers. If appropriate, play the audio once more.

OPTION Have Ss look at the audio script (pages 163-177) to check their answers. You can make copies or access it using the Pearson English Portal and then show it to Ss.

D SUMMARIZE

Suggested time: 7 minutes | Your time:

- Tell Ss that the archaeologist mentions more than three ways that fire helped create modern human life. They should focus on what they consider to be the three most important ways in their summaries.
- In pairs, have Ss write their summaries. Monitor and assist as needed. If appropriate, play the audio again, starting from *What are some ways fire altered the course of our development?*
- When Ss have finished, elicit all the ways that fire has helped create modern human life. Write them on the board. (It helped us create light and heat, which made humans more productive; it enabled us to cook animals and plants; it killed bacteria, making food safer to eat; it allowed us to bake ceramics; it helped keep dangerous animals away; it helped us to create social history; it helped group members who were away from camp to find their way back home.) Say, *It's OK to include any three of these in your summaries.*
- Have 1–2 volunteers share their summaries with the class.

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Communication Activator

A TALKING POINTS

Suggested time: 8 minutes | Your time:

- Have Ss preview the pictures and try to identify the inventions. Then have them read the headings, captions, and chart, clarifying anything they do not understand. Model the pronunciation of *anesthesia* /ˌænəsˈθiʒə/, *anesthetizing* /əˈnesθəˌtaɪzɪŋ/, and *pasteurization* /ˈpæstʃəˌraɪzeɪʃ(ə)n/.
- Read the directions. To model the activity, write on the board:

  Before [road maps] were invented, people couldn't . . .

  After [paper money] was invented, people could . . .
- In pairs, have Ss choose one discovery or invention from each of the three categories. Have them write notes about all three innovations. Monitor and assist as needed.

EXTENSION (+5 minutes) Point to each invention and ask: *Have any of you used this, or do you have personal experience with it?* Then ask, *Which of these inventions do you think is the most useful? Why?*

Possible answers for Exercise A

Before GPS, people had to use maps and compasses. They got lost all the time. It was very bad. If the GPS hadn't been invented, people would have continued to get lost frequently. Before pasteurization, people got sick from food. If the pasteurization process hadn't been developed, more people would have gotten sick and possibly died from food poisoning. Before paper money, people had to pay for things with large quantities of coins. They were very heavy. People could steal them because everyone could see the coins people were carrying if they had a large quantity of them. If paper money hadn't been invented, more people would have had money stolen from them. Before general anesthesia, people were in a lot of pain when they got operations. It really hurt! If anesthesia hadn't been invented, many people would have chosen to die instead of having an operation.

B DISCUSSION

Suggested time: 10 minutes | Your time:

SOFT SKILLS BOOSTER (optional, pages T153A–B)

- Have Ss read the directions and the example. Ask, *Which grammatical form is used in this example?* (past unreal conditional)
- In pairs, have Ss discuss some of the inventions or discoveries they learned about in this unit. Monitor to make sure they are using past conditional statements.
- To prepare for the writing task, encourage lower-level Ss to write down sentences from the discussion.

OPTION To make the discussion more dynamic, write inventions and discoveries from the unit on slips of paper. Have Ss take turns choosing a slip of paper, read aloud the invention or discovery, and then describe it to the class.

LANGUAGE AND CULTURE Three men (Roger Easton, Ivan Getting, and Bradford Parkinson) are often credited with developing the modern GPS system. More recently, Gladys West has come to light as one of the people whose work was instrumental in developing the mathematics behind GPS. She worked at a naval base in the U.S. state of Virginia, where she was only the second African-American female programmer to be employed at the base. No one had heard of her or knew about her role in developing GPS until a student at the university she had attended told people about her achievements.

LOOK FOR While Ss are doing Exercises A and B, monitor their conversations to determine if they are

✓ using language related to discoveries and inventions

✓ using the unreal past conditional to talk about how life might have been different without certain discoveries and inventions

WRITING

Suggested time: 15 minutes | Your time:

- Have Ss work individually to choose one invention or discovery and make notes about it. If appropriate, refer them to Exercise A, and remind them to use the discussion notes they made in Exercise B.
- In pairs, have Ss compare their notes and help each other think of more ideas.
- Have Ss work individually to write 2–3 short paragraphs. Monitor and assist as needed.
- Have Ss exchange essays with a partner and offer each other feedback. Then have them revise their work.
- Collect Ss' writing and review it to offer feedback.

WRITING HANDBOOK (optional, pages T150–151)

OPTION Ss can use the WRITING PROCESS WORKSHEETS during this activity. They offer step-by-step guides for completing the writing task (see Teacher Resources in the Pearson English Portal.)

OPTION Use Ss' essays to create a wall display or class booklet about inventions and discoveries.

CLOSURE ACTIVITY (+10 minutes) Form groups of 4 with Students A, B, C, and D. On a sheet of paper, have Student A write the beginning of an unreal past conditional sentence about anything from the unit. For example: *If early humans hadn't controlled fire, ...* Student B completes the sentence. For example: *. . . they might not have evolved.* Students C and D complete the same sentence in different ways. Collect the papers. Read them to identify areas for review and extra practice.

Remind Ss of additional vocabulary and listening practice in their digital resources.

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COMMUNICATION ACTIVATOR

Now let's consider the impact of historical inventions.

See page T95 for possible answers.

A TALKING POINTS | Look at some key discoveries and inventions in three categories. With a partner, choose one from each category. Write notes about: (1) what life was like before it or them and (2) what changes it or they caused.

Navigation



the 206 BCE: magnetic compass

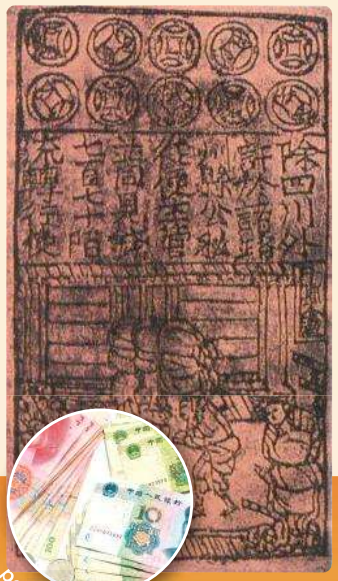


17th century: first commercially sold **road maps**



1973: first satellite-based **Global Positioning System** (or GPS)

Currency



paper money

11th century: **Paper money** enabled people to pay for goods and services with paper instead of large quantities of coins.

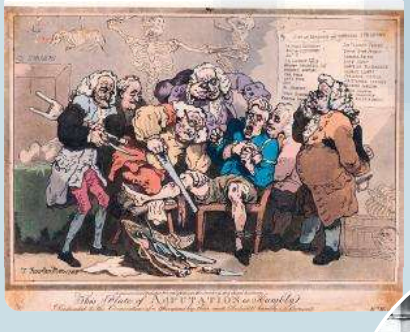


coins

Medicine and Science

General anesthesia makes surgery and dentistry painless.

before there was anesthesia



1840s: anesthetizing a surgical patient



modern anesthesia



1862: Louis Pasteur discovers that **pasteurization** with heat prevents growth of bacteria, making foods safe to eat.



Louis Pasteur



bacteria in raw, unpasteurized milk

products that can be pasteurized

Foods		Liquids
butter	nuts	milk
cheese	sauerkraut	honey
cream cheese	eggs	vinegar
sour cream	crabmeat	fruit juices
yogurt	ice cream	lemon juice

B DISCUSSION | Choose inventions and discoveries from Talking Points, or from any other part of Unit 8. Discuss their impact on history and people's lives. Be sure to make at least one statement with the past unreal conditional in your discussion.

> "After anesthesia was invented, patients could have surgery without pain. If anesthesia hadn't been invented, many people would have chosen to die instead of having an operation."

SOFT SKILLS BOOSTER p. 160

WRITING Choose one of the inventions or discoveries from Unit 8, or another invention or discovery. Describe its advantages, disadvantages, and historical impact.

WRITING HANDBOOK p. 150
- Summary statements
- Guidance for this writing exercise

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7 OOPS!

Form teams of two players. Play against another team.

With your partner, read about seven imaginary situations that had bad outcomes. Together, write a past unreal conditional statement of how you could have avoided each mistake. Check each one off as you go. When you have a statement for all seven, say "7 OOPS!" The first pair to say "7 OOPS!" wins. NOTE: Only grammatically correct answers count!

When all teams are finished, winners read their statements to the class.

"If I hadn't ..."

"If I had ..."

☐ **OOPS!**

You were making strawberry jam, but you weren't paying attention. Instead of sugar, you put in salt, because, hey, sugar and salt look almost the same. You had to throw away the jam.



☐ **OOPS!**

You were invited to a party for your friend, but you didn't know it was a surprise party and you said, "See you tomorrow at your party." The surprise was ruined and your friends were angry at you.



☐ **OOPS!**

You wanted to play a game on your dad's smartphone, but your brother grabbed it from you and accidentally dropped it into a swimming pool. Your dad said you have to pay to replace the phone.



☐ **OOPS!**

You bought a VEG-ME-UP juicer as a present for your sister. You didn't know she would have to buy all her vegetables from the VEG-ME-UP company. Your sister didn't like that idea.



☐ **OOPS!**

You had tickets to a concert, but you left them in the desk at your office. You couldn't go back to get them because the office was locked and you didn't have the key. You couldn't go to the concert.



☐ **OOPS!**

You bought a lot of groceries and left them in the trunk of the car for two hours. The weather was really hot, and when you opened the trunk, a few things didn't smell very good.



☐ **OOPS!**

Your boss asked you to drive her to the airport, and you felt good that she had asked you and not someone else. But you forgot to check how much gas you had, and on the way to the airport you ran out of gas.



PROGRESS SELF-CHECK

NOW I CAN

- ☐ Describe new kinds of products.
- ☐ Imagine a different past outcome.
- ☐ Describe inventors and their inventions.
- ☐ Consider the impact of historical inventions.

For more practice . . . Unit Review / *Connect TV* Test-Taking Skills Booster

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Interactive Cool Down

"7 OOPS!"

Suggested time: 30–45 minutes | Your time:

- Read the title. Say, *This game is all about mistakes. If we make a mistake, we usually say* Oops!
- Write this situation on the board:
  You made a cake for your friend and put nuts in it. However, you didn't know that your friend is allergic to nuts. She saw the nuts on top and couldn't eat the cake.
  Ask, *What sentences can we make about this situation using the past unreal conditional?* (For example: **If I** hadn't put nuts in the cake, she could have eaten it. If she had eaten the cake, it would have made her sick.)
- Have Ss read the directions. *Say, You need to make a sentence about each situation you read.* Point to the examples and say, *Use* **If I** hadn't . . . , **If I** had . . . , *or other past unreal conditionals. Your sentences need to be grammatically correct, so check them carefully before you move on to the next sentence!*
- Form pairs. Have each pair give themselves a team name to promote competition. Then have them join another pair to make a group of four. Encourage the different groups to sit as far away from other groups as possible and to keep their voices down when they play the game so that other groups cannot hear their sentences.
- Say, *Go!* and have Ss start to play. Monitor and assist as needed. Make sure that pairs write their own sentences and do not copy others' sentences.
- When you hear a pair shout *7 oops!*, encourage the other pair in their group to check their sentences. If the pairs cannot agree on whether the sentences are correct or not, go over and check the sentences yourself. If any of the sentences are grammatically incorrect, tell the pair they need to rewrite them. When a pair shouts *7 oops!* and have written all their sentences correctly, declare them the winner.
- Have each pair present one sentence to the class. Write one good example on the board for each situation and encourage Ss to copy them down.

OPTION (+5 minutes) If a team wins the game quickly and you want other Ss to continue playing, have the winners play the game again. However, this time have them write as many different unreal conditional sentences as they can about each situation.

EXTENSION When all Ss have finished playing, have pairs share their sentences with the class and have the class vote on the best or funniest sentences.

PROGRESS SELF-CHECK

- Have Ss complete the **Now I Can** checklist individually. Encourage them to look back at each lesson in the unit and consider the speaking objectives, vocabulary, pronunciation, grammar, and listening, reading, and writing skills.
- Have Ss compare checklists in pairs and talk about the things they need to study or practice more.
- Have Ss work individually to think about what might help them master these goals. Refer individual Ss to specific materials for more practice.

FOR MORE PRACTICE . . .

To review the unit content, go to Teacher Resources in the Pearson English Portal. Instructions for each resource are included in the resource's folder.

UNIT REVIEW Printable PDF offers two pages of workbook-style activities to review the unit content.

CONNECT TV Video presents language from the unit through fun and engaging situational comedy episodes.

TEST-TAKING SKILLS BOOSTER Practice tests featuring *Connectivity*-leveled content expose students to item types found on high-stakes tests.

ADDITIONAL PRINTABLE RESOURCES Abundant supplemental materials include extra practice worksheets, Assessments, Unit Study Guides, Audio and Video Scripts, Answer Keys, and much more.

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