

3 Frontiers

UNIT SNAPSHOT

Who first got to the top of Mount Everest?	30
Who secretly traveled the world as a man?	32
What came first: lenses or printing presses?	38



Why do people go to new places?

Which areas have humans explored? How?

How do people feel when they cross a frontier?



BEHIND THE PHOTO

REAL-WORLD GOAL

Visit somewhere you have never been before

1 Answer the questions.

- 1 If you were going to explore an area of the world, where would you go and why?
*I would go to New Zealand or somewhere else with lots of beautiful scenery.
I love wild places and love going hiking in the mountains.*
- 2 What are the benefits of exploring? Who benefits most?
- 3 What are the problems? Who faces them?

2 Discuss your answers with a partner. Do you have similar views?

3.1 End of the Road?



mountains



ice



underwater



underground

- 1 ACTIVATE** What kind of people make good explorers? What are they like? What do they do?

- 2 WHAT'S YOUR ANGLE?** Imagine that you are on an exploration team. What skills do you have that would be useful?

- 3 VOCABULARY** Complete the description of successful explorers with the words in the box.

independent explore quit
survive set off keep going practical
flexible

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Successful explorers...

- ¹ _____ to ² _____ with hope, energy, and positive feelings.
- know how to ³ _____ when things get tough.
- ⁴ _____ even when other people go back.
- don't like to ⁵ _____ but know that sometimes it is necessary.
- are ⁶ _____ and are not afraid of changing their plans.
- are ⁷ _____—they listen to others, but they make their own decisions.
- are ⁸ _____—they know how to take care of themselves and others.

- 4 INTERACT** Discuss the questions with a partner.

- 1 Which ideas from the description in Exercise 3 did you mention in Exercises 1 and 2?
- 2 Which three ideas about explorers do you most agree with?

- 5 INTEGRATE** Listen to the first part of a talk about modern-day exploration. Which skills and qualities from Exercise 3 are mentioned?



LISTENING SKILL

Recognizing rephrasing in a talk

Speakers often use specific topic words and ideas that may not be familiar to the audience. They usually rephrase these to help the listener understand. Sometimes they do this immediately.

Would you make a good explorer? Do you want to find out about the world, push back frontiers, discover new places?

Sometimes they use signals to show they are rephrasing. Listen for these, for example:

*in other words that is by that I mean
to put it another way...*

- 6 IDENTIFY** The speaker rephrases the three key points in the first part of his presentation. Can you remember how he did this? Match the original phrases to the rephrasing signals and to the rephrasing. Then listen again and check.

	Rephrasing signal	Rephrasing words
1 make a commitment	to put it another way	take in everything... going on around you...rather than just...looking ahead
2 be aware of your surroundings	by that I mean	the person to turn to...
3 be in control	in other words	make a decision...stick to it...get through the really bad times

- 7** **INTEGRATE** Review the key facts and predict the answers. Then listen to the rest of the talk and check.

! Key facts

- Caves discovered in the world: about ¹ ___ %
- Earth's surface covered by ocean: about ² ___ %
- Unexplored ocean: about ³ ___ %
- Life under Antarctic ice: up to ⁴ ___ million years old
- Money spent on brain research in Europe per year: over € ⁵ ___



GRAMMAR IN CONTEXT

Verbs + *to* infinitive or *-ing* form

Some verbs can take the *-ing* form or the *to* infinitive with little or no change in meaning. For example: *attempt, begin, can't stand, continue, hate, like, love, prefer, start*.

Do you like to be in control? / Do you like being in control?

Other verbs can take both the *-ing* form or the *to* infinitive but with a clear difference in meaning. For example: *stop, forget, remember*.

Do you stop to look? (Do you stop doing something because you want to look?)

Do you stop looking? (Do you no longer look at what you were looking at before?)

See Grammar focus on page 000.

- 8 IDENTIFY** Work in pairs. Is there a difference in meaning in the sentences in each pair? What is it?

- 1 He stopped to talk to me. / He stopped talking to me.
- 2 She forgot meeting them. / She forgot to meet them.
- 3 I prefer traveling alone. / I prefer to travel alone.
- 4 He remembered visiting the place. / He remembered to visit the place.
- 5 She began to explain. / She began explaining.

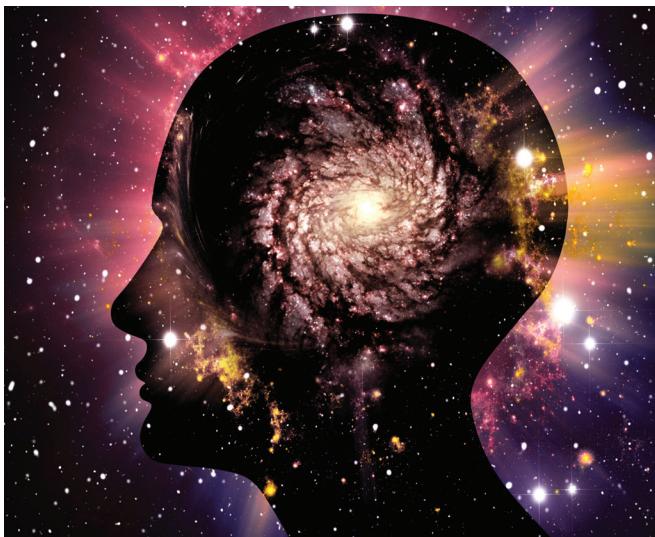
- 9** **INTEGRATE** Read the extracts from the talk. Choose the verb form the speaker used. Then listen and check.

- 1 ...we need to stop *to worry / worrying* about being the first to go somewhere.
- 2 ...they forgot *to look / looking* and *learn / learning* about where they were.
- 3 ...people will continue *to explore / exploring* forever, inward and outward...
- 4 ...we should remember *to leave / leaving* the place as we find it...

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- WHAT'S YOUR ANGLE?** Look at the areas for exploration in the pictures in this lesson and answer the questions.

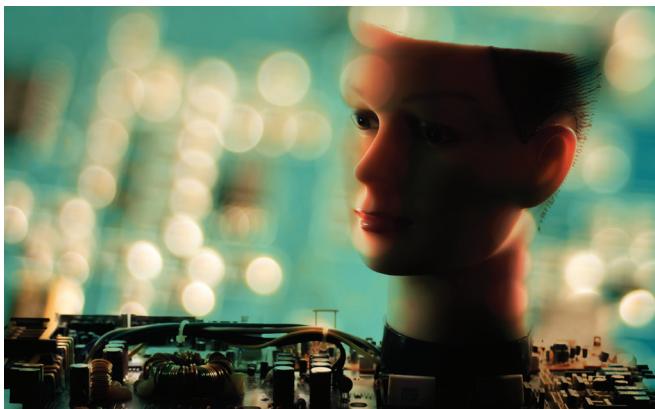
- 1 Which areas should we continue exploring? Why?
- 2 Which should we definitely stop exploring? Why?
- 3 What other areas should we start to explore? Why?



the human mind



DNA



artificial intelligence

- 11 INTERACT** Share your answers to the questions in Exercise 10 in a group. Try to agree on the top two areas for each answer.

3.2 Who Went Where?

1 ACTIVATE Match the dates, nationalities, and areas of exploration to the people shown in the pictures.

1934–1968	1903–1941	1910–1997
1868–1926	1866–1955	1914–1986
Soviet American desert air	British British the Arctic sea	French Nepalese space mountains

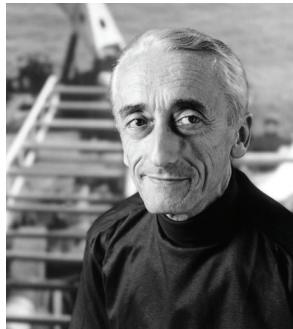


1 Amy Johnson

1903–1941

British

air



2 Jacques Cousteau



3 Matthew Henson



4 Yuri Gagarin



5 Tenzing Norgay



6 Gertrude Bell

2 IDENTIFY Work in pairs. Match the sentences (a–f) to the people in Exercise 1 (1–6). Then discuss the meaning of the highlighted words.

- a He was a **pioneer** in marine exploration and filmmaking, making the first French underwater film and helping to develop modern diving techniques.
- b She was a brilliant **aviator**, being the first woman to fly solo from Britain to Australia.
- c He was the first human to go into outer space and around the Earth, completing an **orbit** on April 12, 1961.
- d She explored many areas of the Middle East, making friends and developing strong **bonds** with many leaders there.
- e He made several **voyages** to the Arctic and was part of one of the first teams to reach the Geographic North Pole.
- f He is one of the most famous climbers in history and the first person to reach the **summit** of Mount Everest.



READING SKILL Working out meaning from context

Knowing how to use context to deal with new words will help your reading become faster as you will need to look up words less often.

Use the text around the new word to figure out its meaning. What is the topic of the sentence and the paragraph? What other words are linked to the new one?

*He was a **pioneer** in marine exploration and filmmaking, making the first French underwater film and helping to develop modern diving techniques.*

Use the word form and the grammar of the sentence to understand the function of the word. Does it have a prefix or suffix? Is it a verb, a noun, etc.?

*She was a brilliant **aviator**. (-or = noun suffix often indicating the noun is a person)*

Avoid using a dictionary to check the meaning of lots of words, especially the first time you read. Use the context and improve your deduction skills. Check in a dictionary later to get a more precise definition.

3 EXPAND Review your answers to Exercise 2. Then check the precise meaning of the highlighted words in a dictionary.

4 WHAT'S YOUR ANGLE? From the facts in Exercise 2 and any information you know about the people in Exercise 1, which person would you most like to have been?

5 INTEGRATE Skim the topic sentences to help.

- 1 What kind of explorers is the article about?
- 2 What kinds of difficulties did these explorers face?

6 APPLY Work in pairs. Find the words in the box in the article. Then use the steps to figure out the meaning of each word.

fascinating (line 12) obligations (line 28)
confront (line 13) self-educated (line 36)
repressive (line 17)

- 1 Read the sentences around the word and decide on the topic and key words.
- 2 Identify the part of speech of the word and its use in the sentence.
- 3 Discuss the possible meaning of the word.
- 4 Check the precise meaning in a dictionary.

7 EXPAND Find three more words you do not know in the article. Use the steps in Exercise 6 to figure out their meaning.

8 INTEGRATE Read the article in detail and write short answers to the questions.

- 1 What change has happened over the past 40 years?
- 2 What did the women's movement do?
- 3 What did the female explorers' journals show?
- 4 What were some practical ways in which women explorers were ignored?
- 5 What factors did many female explorers share?
- 6 What does the writer conclude about male and female explorers?



Discovering explorers



What do Christopher Columbus, Captain Cook, and Marco Polo have in common? Yes, they were all famous explorers—and they were all male explorers, as are most of the well-known ones. However, women have a significant place in the history 5 of **exploration**, and interest in female explorers has been rising since the 1980s. The very real achievements of female explorers like Mary Kingsley are finally getting the **recognition** they deserve.

Why have attitudes changed? One **explanation** is that 10 the women's **movement** of the 20th and 21st centuries has increased interest in women's **accomplishments**. Also, their journals provide fascinating stories; these women appeared to enjoy facing danger, showing a **willingness** to confront wild animals, extreme weather, hostile natives, injury, and **illness**. 15 Their **confidence** and **commitment** are an **inspiration** to today's women. It is often shocking to read about the attitudes they faced, especially in repressive Victorian Britain. For example, women were constantly denied recognition for their achievements. When the Liverpool Geographical Society wanted 20 to learn about Mary Kingsley's explorations in West Africa, her paper was read aloud by a man while she sat in the background, as the **organization** would not allow women to speak. Equally shocking is the fact that **membership** of the New York Explorers' Club was male-only until 1981.

So, what were these women explorers like? Apart from having strong **personalities** and being intelligent and practical, they were usually middle-aged or beyond, having gained their **independence** after fulfilling family **obligations** such as looking after elderly parents. In fact, one **attraction** for many women was the **possibility** of escape from a lifetime of service. They were usually unmarried, as few husbands would consider giving permission for their wives to pursue such a profession. They were also rich enough to afford to pay for their trips (**sponsorship** was usually not possible for women) and sufficiently educated and experienced to deal with the inevitable **complications** that arose. Mary Kingsley fits this profile. Unmarried, smart, and self-educated, Mary took care of her family while her father went on explorations. Only when both her parents died and her brother moved away was Mary finally able to begin her own explorations.

Now that the **contributions** of these women are finally revealed, in the context of their gender their **achievements** appear to be even more remarkable than those of their more famous male counterparts. While they didn't discover America, they made significant discoveries, but above all they showed that women can overcome impossible challenges to achieve **greatness**.

—adapted from *The Oxford Companion to World Exploration*, edited by David Buisseret

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VOCABULARY DEVELOPMENT Suffixes for nouns

Recognizing suffixes can help you identify nouns and understand their meaning.

<i>exploration</i>	<i>personality</i>	<i>achievement</i>
<i>confidence</i>	<i>membership</i>	<i>willingness</i>

Using suffixes to make nouns will increase your vocabulary by allowing you to create new words from the basic ones you know (such as verbs and adjectives).

However, women have a significant place in the history of **exploration**, and interest in female **explorers** has been rising since the 1980s.

- 9 IDENTIFY** Find all the examples of nouns with these suffixes in the article. Which suffixes are mainly added to verbs? Which to adjectives? Which to other nouns?

- 1 -tion: _____
mainly added to _____
- 2 -ment: _____
mainly added to _____
- 3 -ness: _____
mainly added to _____
- 4 -ence: _____
mainly added to _____
- 5 -ity: _____
mainly added to _____
- 6 -ship: _____
mainly added to _____

- 10 BUILD** Add suffixes to the words in the box and complete the sentences with the best word.

contribute different encourage

- 1 With _____, everyone can achieve their goals.
- 2 We all want to be recognized for our _____ to the world.
- 3 The ways we are the same are more important than our _____.

happy friend secure

- 4 We should focus on safety and _____, not adventure and exploration.
- 5 Family and _____ are more important than money and fame.
- 6 To have _____ we must have freedom.

- 11 WHAT'S YOUR ANGLE?** Which sentences from Exercise 10 do you agree with? Why?



GRAMMAR IN CONTEXT

Verbs + -ing form and verbs + to infinitive

We use the *-ing* form only after certain verbs, for example:

admit, avoid, consider, deny, finish, practice, suggest

Few husbands would **consider giving** permission for their wives to do this.

We use the *-ing* form after verbs that talk about likes and dislikes, for example:

can't stand, enjoy, hate, like, (don't / doesn't) mind, prefer
These women appeared to **enjoy facing** danger.

We can also use the *to infinitive* with some of these verbs, for example:

like, hate, love

She liked to travel to new places.

We use the *to infinitive* after other verbs, for example:

afford, agree, aim, allow, choose, decide, demand, expect, hope, manage, need, offer, plan, want

They were also rich enough to afford to pay for their trips.

See Grammar focus on page 161.

- 12 INTEGRATE** Complete the article about a female explorer with the correct forms of the verbs in parentheses.

Jeanne Baret (1740–1807)

Jeanne Baret managed ¹ _____ (do) something no woman had done before: she completed a voyage around the world. However, she did this dressed as a man, as no women were allowed ² _____ (travel) on French Navy ships in those days. So, to avoid ³ _____ (be) thrown off the ship, Baret put on men's clothes and became Jean instead of Jeanne.

It is not clear when Baret's true identity was discovered and whether she admitted ⁴ _____ (be) a woman or others on the ship had become suspicious and demanded ⁵ _____ (know). However, it is clear that she chose ⁶ _____ (live) life on her own terms and will forever have a place in the history books.

- 13 IDENTIFY** Find the sentences with incorrect verb forms and correct them.

- 1 I really enjoy to visit new countries.
- 2 I can't stand traveling to places I have been before.
- 3 I hope visiting every continent in my lifetime.
- 4 I avoid to go to crowded travel destinations.
- 5 I have a list of travel destinations that I aim to visit in the next few years.
- 6 I'm planning going on an unusual trip soon.

- 14 WHAT'S YOUR ANGLE?** Which sentences in Exercise 13 are true for you? Compare with a partner and explain your answers.

3.3 Inner or Outer Space?



- 1 ACTIVATE** Work in pairs. Write a list of pros and cons of exploring space.

Pros	Cons

- 2 WHAT'S YOUR ANGLE?** Decide whether you are for or against space exploration. Explain your view to your group. Who has the most similar view to yours?

- 3 INTEGRATE** Read the essay. Are any of your ideas from Exercise 1 included?



WRITING SKILL Writing paragraphs and topic sentences

Paragraphs with strong topic sentences help the reader to understand the organization of the text and the main ideas. This means the reader can:

- get a clear overview quickly.
- find the information they want more easily.
- understand the progression of the ideas.

Paragraphs should have one main idea, and the topic sentence usually presents this. Examples and more detailed information in the rest of the paragraph should support the main idea.

Although it has been more than four decades since the last manned moon landing, humankind has not stopped exploring space. Almost daily we read reports of new rocket launches and landings on Mars, each costing millions of dollars. Many people do not agree with this; they say we need the money for solutions to problems on our own planet. In this essay, I will discuss the benefits and drawbacks of space exploration.

Starting with the benefits, there are several general advantages. The first is that space exploration helps to improve technology. This improvement eventually reaches consumers on earth. Many people also believe that humans are designed to explore and expand our knowledge, and space is the ultimate place to do this. This is such a strong argument that many governments are happy to fund projects with little short-term benefit. There are also some practical benefits, for example, the discovery of new resources in space or the possible discovery of a new place for humans to live.

However, space travel also has significant disadvantages, especially financial. Each mission costs millions of dollars, and many people are unhappy with this. They say the money should be spent on problems we face, like climate change, poverty, and disease. All of these would benefit from the billions of dollars that are currently spent on space travel. There is also an environmental cost both on earth and in space, as we burn rocket fuel, use up expensive and rare materials, and leave behind litter in space.

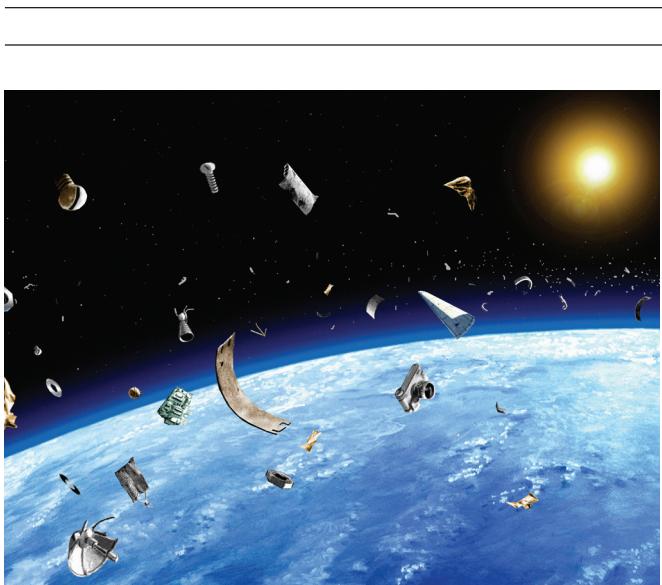
In conclusion, I feel there should be more discussion on the question of space exploration because it is so expensive and uses too many resources. In today's world, we need to make sure that our money and effort are directed where they are most needed.

4 IDENTIFY Read the essay again. Find the topic sentence in each paragraph.

5 EXPAND Take notes of the supporting ideas and examples in paragraphs 2 and 3.



Paragraph 2:



Paragraph 3:

6 WHAT'S YOUR ANGLE? Review the essay. Has it changed your mind about space exploration? Why or why not?

GRAMMAR IN CONTEXT *so and such*

We use *so* and *such* to emphasize what things are like.

so + adjective

so exciting

such (+ a / an) + adjective + noun

such a good idea

We don't need an adjective with *such* if the noun is something that is always good, bad, etc.

It was such a problem.

Also, we don't use *a / an* with *such* when the noun is uncountable.

It was such bad weather.

See Grammar focus on page 161.

7 IDENTIFY Find an example of *so* and *such* in the essay.

8 INTERACT Complete the sentences with *so*, *such*, or *such a / an*.

- 1 I understand why some people are _____ negative about space travel.
- 2 Space travel is _____ expensive activity. We should limit it.
- 3 We should focus on the problems on earth only because they are _____ serious.
- 4 Finding enough money for every issue is _____ challenge for most governments.
- 5 We shouldn't stop space exploration because it gives us _____ good knowledge.
- 6 Space travel is _____ opportunity for a country to show its scientific and technology skills.

9 INTEGRATE Rewrite the sentences to replace *so* with *such*, or *such* with *so*.

- 1 It is such an expensive program that some people think it should be shut down.
The program is so expensive that some people think it should be shut down.
- 2 The university was so interested in his research that they decided to hire him.
- 3 His discoveries were so valuable that many study his contributions today.
- 4 You have such a strong argument in favor of space exploration.
- 5 She has such a unique perspective on the issue.



10 WHAT'S YOUR ANGLE? Discuss the statements in Exercise 8. Which do you agree with?

11 PREPARE Choose one of the topics to write a for-and-against essay about. Should we spend money on the research into these areas nowadays? Write your notes in the table.

oceans	the human mind	underground
cures for diseases	the North or South Pole	
artificial intelligence	DNA	

Topic	
Arguments for / advantages	
Arguments against / disadvantages	
Conclusion	

12 WRITE Write a for and against essay of up to 300 words. Include an introduction, a paragraph "for," a paragraph "against," and a conclusion. Remember to use strong topic sentences and clear supporting details and examples.

13 IMPROVE Review your partner's essay.

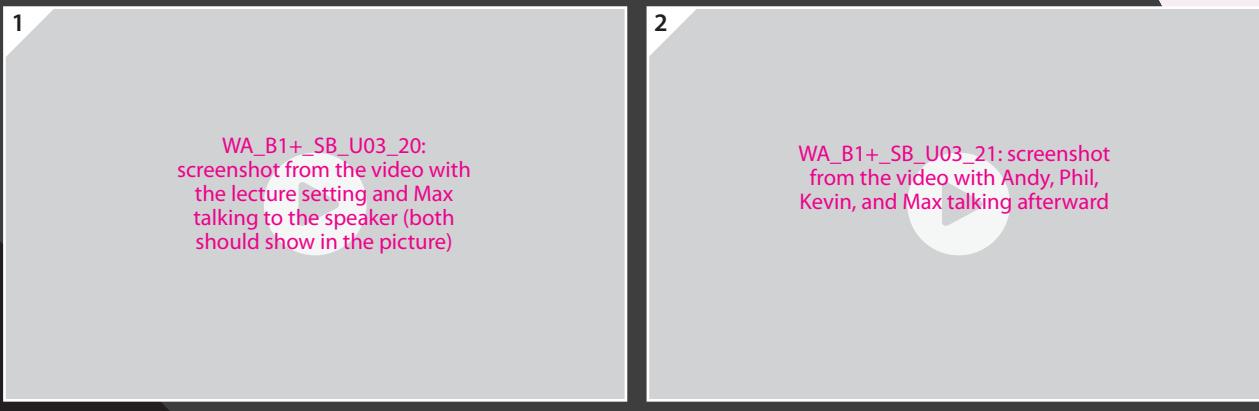
Does the essay...

- include four paragraphs with strong topic sentences?
- include clear supporting ideas and examples?
- use so and such correctly?

14 SHARE Read other classmates' essays. Which have arguments you hadn't thought of before?



3.4 Excuse Me...



- 1 ACTIVATE** Look at the pictures with a partner. What are the differences? Discuss the question in relation to the following.
location
situation
relationships between speakers
- 2 ► IDENTIFY** Watch a conversation between Max, Andy, and Kevin about a lecture they have just attended. What do they keep doing?
- 3 ASSESS** You are going to watch an extract of the lecture the friends were talking about in Exercise 2. Max wants to ask the speaker a question. What do you think Max's interruption will be like compared to the way the friends interrupted each other in their conversation? Why?
- 4 ► ANALYZE** Watch the video and check your answers to Exercise 3.

REAL-WORLD ENGLISH Interrupting and resuming

Interrupting appropriately for the situation will get a better response from the speaker.

Sometimes it is necessary to interrupt a formal presentation to check understanding. You can raise your hand and then say you want to interrupt and why.

Excuse me for interrupting. Could I ask...?

I'm sorry to interrupt. Do you mind if...?

Excuse me for saying so, but I don't think...

With people you know in informal situations, you can use just one word like *but*, *so*, or *sorry* to show you want to say something.

So, why does...?

But what about...?

Sorry, but...?

When starting to speak again after an interruption, the speaker can use phrases to show it is their turn again.

Anyway, as I was saying...

Going back to what I was talking about...

So, where was I?

- 5 ► IDENTIFY** Watch the complete video and take notes on the different ways of interrupting and resuming in each situation. Include phrases and actions. Compare your notes with a partner.

	In the lecture hall	Outside the lecture hall
Speakers	Max and lecturer	Max, Andy, Kevin, and Phil
To interrupt		
To resume		

- 6 ► INTEGRATE** Work in pairs. Rewrite the interruptions so that they can be used for a more formal situation (e.g., the lecture hall situation in the video). Then listen and compare your answers. Did you rewrite them in the same way as the sentences in the audio?

- 1 But what about the start time?
- 2 So, we can finish early?
- 3 Actually, that's not right.
- 4 Sorry, but I need to say something here.

- 7 INTERACT** Work in a group of three (A, B, and C) to do a role-play. Choose situation 1 or 2 and prepare what you will say. Then role-play the situation. Discuss what worked well in your role-play. Then swap roles and repeat.

Situation 1: You join two friends in a café. They are having a conversation about a documentary they both saw. You need to tell them about the plans for that evening.

Situation 2: You and two friends meet outside the movie theater. They immediately start talking about the party last night. The movie is starting in ten minutes, and there is a line for tickets. You don't want to miss the start of the movie.

- 8 INTERACT** Now work in pairs (A and B). Review situations 3 and 4. How do they differ from situations 1 and 2 in Exercise 7? Choose situation 3 or 4. Decide on the details and prepare what you will say. Then role-play the situation.

Situation 3: The lecturer is talking to a large group about the assignment that is due next week. You have some questions about it. Decide on course name, type of assignment, and so on.

Situation 4: It is your first day at work. You and ten other new people are in a training session with the manager. She hasn't answered your questions about the new job. Decide on type of company, new job title, and so on.

- 9 ANALYZE** Discuss what worked well in your role-play in Exercise 8. How could you make your language more appropriate? Then swap roles and repeat.



- 10 WHAT'S YOUR ANGLE?** Have you ever wanted to interrupt but didn't? Why not?

MAX AND ANDY ILLUSTRATION



GO ONLINE

to create your own version
of the English For Real video.

3.5 Moving On

1 ACTIVATE

Discuss the questions.

- 1 Which of these things have you used or benefited from this week?
- 2 How important is each one in your life?

compass	printing press	airplane
the Internet	telephone	corrective eye lenses
paper money	mechanical clock	

2 ASSESS

Answer the questions.

- 1 In which century were the items in Exercise 1 probably invented?
- 2 Which have been the most important in the development of human knowledge? Choose your top three.

3 INTERACT

Discuss your answers in Exercise 2 in a group. Decide on the top three inventions.

4 IDENTIFY

Listen to the start of a presentation. Which of the items from Exercise 1 is the speaker going to talk about?



SPEAKING Giving a presentation

The audience listens and learns more when a presentation is well organized and presented.

Give a clear, engaging introduction that tells your audience what you are going to talk about.

Today I'm going to talk about...

First, I'll talk about...

Then I'll outline...

Finally, we will look at...

There will be time for questions at the end.

Then use signpost phrases to show the audience where you are in the presentation and to highlight changes of topic.

So, first of all,... Moving on to... In this final part,...

5 INTEGRATE

Listen to the introduction again. Write a possible outline for the rest of the presentation.

6 ASSESS

Listen to the opening parts for the other sections of the presentation and check your answers to Exercise 5.

7 IDENTIFY

Listen again and complete the phrases used to introduce or change the topic.

- 1 So, _____, the question is how...
- 2 _____ the history of...
- 3 In _____, I would like to look at...
- 4 _____ questions...



PRONUNCIATION SKILL

Shifting stress in suffix words

Correct word stress helps the listener understand key nouns.

When certain suffixes are added to adjectives or verbs to form nouns, the stress moves to a different syllable in the noun. For example, with the suffixes *-ity* and *-tion*, the stress moves to the syllable before the suffix.

personal—personality admire—admiration

Some suffixes don't affect the stress when they are added, for example: *-ment*, *-ness*, *-ship*, and *-ence*.

*achieve—achievement happy—happiness
member—membership confident—confidence*

8 IDENTIFY

Notice the stress in the first word. Then identify the suffix in the noun form and find the main stress. Listen and check.

- 1 disappoint—disappointment
- 2 available—availability
- 3 differ—difference
- 4 apply—application
- 5 relation—relationship
- 6 lazy—laziness

9 INTERACT

Complete the nouns in the extracts with a suffix and mark the stress on these nouns. Listen and check. Then listen again and repeat the extracts.

- 1 I would like to look at other develop_____s...
- 2 ...the simple lens gave us the possibil_____...
- 3 ...of raising the level of human intellig_____...
- 4 ...the recogni_____ of the importance of this item...
- 5 ...this will be an explora_____ of important inventions...

10 PREPARE

Choose an item you consider to be in the top three most important inventions for human knowledge. Write a list of reasons to support your view.

11 DEVELOP

Work in pairs. Review your partner's choice of invention and then together decide how to organize each presentation.

12 IMPROVE

Practice your presentation. Ask your partner for feedback on the organization and delivery.

13 SHARE

Give your presentation to a group. Answer questions from other students at the end of the presentation.

14 WHAT'S YOUR ANGLE?

After listening to the other speakers in your group, have you changed your choice of important invention? Why or why not?

Now go to page 149 for the Unit 3 Review.