UNIT 3

ENVIRONMENTAL SCIENCE

FOREST FIRES

Unit Description

**Content:** This course is designed to familiarize the student with concepts in forest management.

**Skills:** Coherence and Cohesion

- Using sentence structure to create coherence
- Creating cohesion in a paragraph
- Recognizing speech markers
- Recognizing cohesion in a text
- Creating special emphasis by starting a sentence with a negative expression
- Persuading your reader
- Using pronoun agreement

Unit Requirements

- **Lecture:** “The Benefits of Forest Fires”
- **Readings:** “Out of Control” (from *Maclean’s*, K. McQueen)
  “Question of the Week” (from *Maclean’s*)
- **Integrated Writing Task:** Writing a persuasive essay about allowing people to live near forested areas
- **Assignments:** www.MyAcademicConnectionsLab.com
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GRAMMAR CHARTS: Gerunds and Infinitives

UNIT 3 ANSWER KEY
1 PREVIEW

Go to www.MyAcademicConnectionsLab.com for Vocabulary Check.

Previewing the Academic Content, page 48

As significant environmental changes become a reality worldwide, the field of environmental science has become more important and more popular than ever before. Scientists in this field of study not only have a strong interest in science, but are also concerned about the effects that humans, industry, and a variety of other sources have on nature and the environment. A graduate with a degree in environmental science has a broad range of careers from which to choose, working as a specialist in fields, such as agriculture, horticulture, marine biology, or resource management. The focus of this unit is the field of forest management—the science of balancing human need with the natural forest cycles. In this unit, students will examine:

- the benefits and detriments of forest fires
- the controversy associated with allowing people to live in or near forested areas

Activating Background Knowledge

- Before students begin their study about forest fires, find out how many of them have personally lived near or know someone who has lived near the site of a forest fire.
  - Where was the fire, and for how long did it last?
  - What efforts were made to contain the fire? Who was involved in these efforts?
  - What effects did the fire have on the people who lived in the immediate area?
- Examine the Key Words on page 49. This vocabulary will be helpful for comprehension of the text and useful for the Integrated Writing Task.

Go to www.MyAcademicConnectionsLab.com for Key Words and Key Words: Practice.
Previewing the Academic Skills Focus, page 50

Highlight the purpose of this section, stated on the left. This unit focuses on strategies for:

- using sentence structure to create coherence
- creating cohesion in a paragraph
- recognizing speech markers
- recognizing cohesion in a text
- creating emphasis with negative expressions
- persuading a reader
- using pronoun agreement effectively

Review the academic skills focus: Coherence and Cohesion.

- Before you review the information about coherence and cohesion in the skills section on page 50, you may want to ask the class what they know about coherence and cohesion and how the students think coherence and cohesion might be similar and/or different. Record their responses on the board.
- After students have examined the explanation on page 50, have them discuss how accurate their comments were when compared to the explanation. You may notice that students thought coherence and cohesion were synonymous.
- Point out that coherence refers to how a whole text or lecture is constructed so that it makes sense. Cohesion focuses more on how the smaller parts of a text make sense: the connection among parts of sentences and whole sentences within a paragraph.
Summary of the Text

“The Beneficial Effects of Forest Fires,” pages 50–51

Until the mid-twentieth century, forest fires were considered undesirable and an unwelcome menace to all forms of life on the planet. Consequently, at great expense and risk, firefighters fought any forest fire whether or not it occurred close to human habitation. More recently, forest managers have realized that forest fires have benefits for both plant and animal life.

A. Benefits to trees
   1. Naturally occurring forest fires burn the understory without damaging the overstory and eliminate smaller trees that might inhibit the growth of larger trees.
   2. Naturally occurring forest fires are generally surface fires. They make high-temperature fires that damage many layers of the forest less likely.
   3. Burns are a natural form of control for tree disease and insect pests.
   4. Heat from a fire can stimulate seed growth.

B. Creation of improved soil conditions
   1. Fires convert dead leaves, twigs, and branches on the forest floor to soil rich in phosphorus and potassium.
   2. This rich soil encourages seed growth.
   3. The heat from a fire stimulates soil microorganisms that promote growth.

C. Benefits to animal life
   1. Burns can thin out a forest, making it more hospitable for larger animals such as deer and moose to live.
   2. Enriched soil allows new plant growth that feeds a diversity of animal species.

D. Change in forest management practices
   It is now known that forest fires are a natural part of forest ecosystems, and as long as they do not threaten homes and communities, foresters often choose to let them burn.

This section is arranged so that students complete the exercises first and then examine the information about each of the skills.

Have students complete Exercise 2, pages 51–52. Then have them compare answers in five small groups. After this discussion, have each of the groups report to the whole class about their answers to one of the five questions. Resolve any differences of opinion by checking the answer key.
Review the academic skills focus: Using Sentence Structure to Create Coherence, page 52.

Examine the information in the skills section on page 52 and elicit from students the connection between the information in the skills section and their specific answers to the five questions in Exercise 2.

Have students complete Exercise 3, pages 52–53.

Review the academic skills focus: Creating Cohesion in a Paragraph, page 53.

Examine the information in the skills focus on page 53. Then go over students’ answers to the four questions in Exercise 3, eliciting from them how these answers are connected to the information in the skills section.

- Go to www.MyAcademicConnectionsLab.com for Comprehension.
- Go to www.MyAcademicConnectionsLab.com for Discussion Board.

2 BUILDING ACADEMIC LISTENING SKILLS

- Go to www.MyAcademicConnectionsLab.com for Vocabulary Check.

This section provides strategies and activities designed to help students recognize common speech markers that show relationships among ideas in a lecture.

Before You Listen, page 53

Highlight the purpose of this section, stated on the left. Tell students that in this section, they will examine a list of some significant wildfires worldwide and work in small groups to identify the benefits and detriments of wildfires or forest fires that they have known or heard about. This section sets the context for the lecture.
Global Listening, page 54

Students listen to a lecture about the benefits of forest fires and identify words the speaker uses to create coherence.

Play the lecture and have students complete Exercises 1, 2, and 3, pages 54–55.

After students have compared their answers to Exercise 3, you may want to have them work in small groups to compare their answers to Exercise 2. Then have groups record on the board the words they think the professor used to create coherence. Later you can compare the words in these lists to the speech markers that are listed in the Focused Listening section on page 55.

Go over the answers for Exercise 3 as a class to ensure that students have a clear understanding of the content of the lecture.

Summary of the Lecture

“The Benefits of Forest Fires,” page 55 (For the complete audioscript, see Academic Connections 4, pages 187–188.)

Introduction
1. Forest fires have many damaging effects: they destroy land, plants, and animals, and cause loss of human life.
2. Their effects can also be complex: they help some plants and animals while destroying others.
3. In the early 1980s, research showed that there were some benefits to forest fires. Fires are a natural event in the forest life cycle. They help maintain a healthy forest, which is good for the ecosystem. They are important to maintaining the diversity of woodlands and bushlands.

Body: Ecological benefits of forest fires
1. Naturally occurring fires (usually from lightning strikes) don’t burn much forest and don’t get too hot.
   a. Smaller fires that burn away organic matter on the forest floor without damaging the taller trees
b. Protect forests from large-scale fires
   c. Can actually strengthen the bigger trees by burning away the smaller ones, resulting in less competition for water and soil nutrients

2. Fires improve soil quality.
   a. Release nutrients that promote tree growth into the soil right away
   b. The richer soil also encourages seed growth
   c. Released nutrients stimulate microorganisms that also promote growth

3. Fires reduce diseases and pests.
   - Trees that burn at low temperatures are more likely to have diseases or be infected with pests. Fires eliminate these weakened trees, thereby protecting healthy trees from the spread of disease.

4. Fires encourage seed growth.
   - The heat from a fire opens pine cones, releasing their seeds. These seeds benefit from the improved soil quality.

5. Fires open up the forest canopy.
   - This allows the sun’s energy to reach the forest floor, creating more room for bigger animals, which means more diversity of animal life.

Conclusion
The benefits of forest fires, combined with an increased understanding that fires are part of the ecosystem, have changed forest management practices. Foresters currently let fires burn as long as homes, communities, and stands of valuable trees are far away.


Focused Listening, page 55

Students listen to the lecture again and learn some common speech markers used to build coherence in a lecture.

Review the academic skills focus: Recognizing Speech Markers.

Examine the information in the skills section on page 55. Have students compare the speech markers discussed here with the ones they noted in Exercise 2 on page 54. How many were they able to identify in their first listening?

For Exercises 1 and 2, pages 55–56:
   • Before students listen to the lecture a second time, review the chart on pages 55–56.
• Remind students that in this listening they should focus on the speech markers the professor uses.
• Allow ample time for students to practice using the speech markers orally in Exercise 2, page 56. You may want to have students change partners one more time to provide additional practice.

Go to www.MyAcademicConnectionsLab.com for Listening Activity 5.

Go to www.MyAcademicConnectionsLab.com for Checkpoint 1.

3 BUILDING ACADEMIC READING SKILLS

Go to www.MyAcademicConnectionsLab.com for Vocabulary Check.

Highlight the purpose of this section, stated on the left. Tell students that they will learn about the tools writers use to create coherence and cohesion in their texts.

Before You Read, page 57

Students work in pairs to examine data relevant to the practice of fire exclusion and discuss the practice of fire exclusion and its dangers.

• Examine the Key Words on page 57. This vocabulary will be useful for completion of the exercises in this section and comprehension of the main text in the Global Reading section.

Go to www.MyAcademicConnectionsLab.com for Key Words and Key Words: Practice.
Global Reading, page 57

Students learn about extreme vocabulary, words that express strong feeling, prior to reading the main text, an article about forest fires in British Colombia.

Review the information about extreme vocabulary on page 57.

Before students complete the exercises on pages 58–59, elicit from them the value of understanding and using synonyms: It is one significant way that they can build vocabulary. Mastering vocabulary not only contributes to their abilities to understand what they read and hear but also to their ability to communicate effectively.

After students have completed Exercises 1–3, examine the Key Words on page 60. This vocabulary will be helpful for comprehension of the article.

Once students have read the article and answered the questions on page 61, review their answers as a class to ensure that they understand the content of the article.

Summary of the Article

“Out of Control,” by Ken MacQueen, pages 60–61

A. Dina and Mel Kotler were drawn to the stunning forest setting at the edge of Gallagher’s Canyon near the town of Kelowna, British Columbia.
   1. This place of beauty quickly turned into a place to escape as it went up in flames.
   2. Like many other places in British Columbia, the wildfires in Okanagan Mountain Provincial Park devoured massive forest areas and forced 10,000 residents to evacuate their homes.
   3. Mel, alone while his wife was away, had to gather valuable items and flee. Luckily, their home was untouched.

B. In the province of British Columbia, there have been 825 fires and thousands of people displaced by fires that have destroyed thousands of acres of forest.
   1. It has been the most devastating and expensive fire year in the history of British Columbia.
   2. Nowhere in the province is more at risk than the Okanagan region in the southeast. It is a populous region with many homes, orchards, wineries, and plenty of tourists.

C. There is enormous risk in fighting the fires.
1. Three pilots died in the attempt to fight these devastating fires. More than 3,500 foresters, soldiers, and firefighters have been fighting the fires against difficult odds.

2. Ground risk is tremendous. Flames rose more than 60 meters and spread at more than 90 meters per minute.

3. Dropping water does nothing to slow these fires down. One fire, started by lightning, was carried by winds in two directions.

D. Some people wonder whether the government could have reduced the risk.

1. A report two years earlier warned of the risk of interface fires, or fires in areas where homes and communities are built close to the forest. Interface fires have caused the loss of whole communities and many lives in California, New Mexico, and Australia.

2. Building communities close to wooded areas is very popular. As a result, removing dead and bug-riddled trees and using prescribed burns to clear forest underbrush have become controversial.

3. Decades of fire suppression has contributed to the accumulation of forest fuel that feeds these fires.

E. Mike de Jong, Forests Minister, now seems willing to use corrective measures to limit the devastation of these threatening forest fires.

1. He is considering reinstating controlled burns.

2. The province has created a special fire department with equipment and firefighters. Forester Gary Barber has a crew of 75 firefighters who are fighting the worst conditions in 23 years.

Go to www.MyAcademicConnectionsLab.com for Reading Activities 1–4.

Focused Reading, page 62

Students learn to recognize tools writers use to create cohesion in a text and provide appropriate elements of cohesion in a paragraph.

Review the academic skills focus: Recognizing Cohesion in a Text.

As you examine the information in the skills focus on page 62, remind students that many of these tools will not be unfamiliar to them and that they most recently examined connecting words, such as however, therefore, and as a result in Unit 2.

Review the academic skills focus: Creating Special Emphasis by Starting a Sentence with a Negative Expression, page 64.
• After you have examined the information in the skills focus section on page 64 and students have completed Exercise 4, you may want to have them rewrite their sentences with a normal subject–verb order and without the initial negative expression. Have partners read their pairs of sentences to each other. Which ones are more dramatic?
    - Never before have so many fires threatened those living on the wilderness fringe of B.C.
    - So many fires have never threatened those living on the wilderness fringe of B.C.

• Alternatively, you may want to ask students to write four or five sentences with typical subject–verb word order. Then ask them to recreate the sentences using a negative expression at the beginning of each sentence and inverting the word order. Have them share their pairs of sentences in pairs or small groups. Then have each pair or group share one or two of their sentence pairs with the class.

  Go to www.MyAcademicConnectionsLab.com for Reading Activity 5.

  Go to www.MyAcademicConnectionsLab.com for Checkpoint 2.

4 BUILDING ACADEMIC WRITING SKILLS

Make sure that students are familiar with the grammar point covered in MyAcademicConnectionsLab for this unit (gerunds and infinitives) before they begin this section. Go to pages 16–21 in these Teacher’s Notes for the grammar charts.

  Go to www.MyAcademicConnectionsLab.com for Grammar Check.

Highlight the purpose of this section, stated on the left. In this section, students learn the importance of knowing their audience and write a persuasive essay about whether people should be allowed to live in or near forested areas.

Before You Write, page 65

In this section, students examine a variety of opinions about the topic of prohibiting building near open forests, form an opinion of their own, and examine methods of persuasion in preparation for the Integrated Writing Task.
Summary of the Internet Opinion Page

“Should laws be passed to discourage people from building homes adjacent to open forests?” pages 65–66

• From David, Sherwood Park, Alberta
  It is especially risky to build next to forested areas today. Because of changes in climate, places such as B.C. and Alberta will become increasingly drier, so the risk of destruction to homes close to forests will also increase. Also, building homes close to forests upsets wildlife and the ecosystem. It would be better to have some distance between houses and forests.

• From Peter Duchesne, Ottawa, Ontario
  Not building near a forest is silly, especially in Canada. Fires such as the ones in B.C. are a natural fact of life. There is loss, and that’s too bad, but life is risky. Homes built on riverbanks can be flooded, homes built on ravines can be lost because of erosion, and homes in cities can suffer loss due to crime. People still build in all these places anyway.

• From Jennifer, Calgary, Alberta
  Firefighters’ lives shouldn’t be risked because people want a good view or clean air. Human lives can’t ever be replaced, but property can. It’s not worth it.

• From Tracy, St Adolphe, Manitoba
  There are a lot of homes built next to forests that not are causing problems. Should we not allow people to have homes in earthquake areas or places where there are tornadoes? Where will it end?

• From L. Lalonde, Cornwall, Ontario
  Leave forests alone. We lose trees and wildlife by building close to the forest. We don’t have to destroy natural resources. There’s enough land.

• From John Fertile
  Losing expensive homes close to the forests will cost taxpayers lots of money. Ignoring nature and wanting a grand lifestyle has caused unnecessary tragedy.

• From D. Deyo, London, Ontario
  Where will the laws stop? Will there be laws against building near lakes, mountains, or roads? People have lost homes from fires, but people can’t be protected from nature. Soon there will be laws against planting trees. Ridiculous!

• From Joanne Parsons, Newmarket, Ontario
  Fires are natural in ecosystems. Some trees need fire to regerminate. Without fires, these species will become extinct, but there shouldn’t be houses in these areas. You shouldn’t be surprised if fires get out of control.
After students have read the opinions on pages 65–66, point out that none of the writers used expressions, such as *In my opinion, I think that,* or *My opinion is.* Remind students that the thesis statement of the essay they are going to write will not include statements such as these either. An effective thesis statement will express the writer’s opinion clearly without these expressions.

Review the academic skills focus: Persuading Your Reader, page 67.

Examine the information in the skills focus section on page 67. Remind students that the purpose of a persuasive essay is to convince the reader that a particular opinion or point of view is true. You may want to point out that this purpose is distinct from other purposes they read about in Unit 2 (see page 26). Have them look again at the magazine article on pages 60–61. What is the author’s purpose? How do they know?

Go to www.MyAcademicConnectionsLab.com for Comprehension.

**Focused Writing, page 68**

Students practice using pronoun agreement to make their writing more cohesive.

Review the academic skills focus: Using Pronoun Agreement—Part 1.

The information in the skills section on page 68 may be familiar to most students at this level. Point out that the challenge is often not knowing which pronoun is singular, plural, masculine, or neutral, but rather in deciding to which noun the pronoun refers, especially as the structure of a sentence becomes more complex. The ability to determine a pronoun’s referent (the noun that the pronoun replaces) is helpful in reading as well as in writing.

*Susan has won a number of awards for her work.*

*Susan is one of several researchers who have won awards for their work.*

Review the academic skills focus: Using Pronoun Agreement—Part 2, page 69.

After reviewing the information in the skills section on page 69, point out to students that native speakers of English also make the mistake of using a plural pronoun to refer to a singular noun. It is not uncommon to see this type of error in written English and just as common to hear the error in spoken English. The ability to use pronouns correctly shows an audience that the writer or speaker has achieved a significant level of mastery of the language.
Integrated Writing Task, page 70

The Integrated Writing Task requires students to apply the knowledge they have acquired in this unit in order to write a persuasive essay.

- Go over the Integrated Writing Task assignment on page 70.
- Point out that this essay will be four to five paragraphs. Review the three basic parts of an essay: introduction, body, and conclusion, and the function of each part.
- Elicit from students the elements of an effective thesis statement: essay topic, opinion, and main points. For review, you may want to refer them to Unit 1, pages 17–19.
- Go over the 7 steps on page 70.
- You may want to have students complete Steps 1–4 in class and complete Steps 5 and 6 for homework.
- Once students have completed the essay, have partners exchange essays and complete the checklist on page 71.
- If time allows, have students complete Step 8 in class. Alternatively, you may want to have them revise the essay for homework.

Go to www.MyAcademicConnectionsLab.com for Internet Activity and Academic Words Puzzle.
# GRAMMAR CHARTS: Gerunds and Infinitives

<table>
<thead>
<tr>
<th>Gerunds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. A gerund</strong> is a form of a verb used as a noun. It is formed by adding <strong>-ing</strong> to the base form of the verb.</td>
</tr>
</tbody>
</table>

Gerunds perform the same functions as nouns. They can be used as:  
- subjects  
- objects  
- complements (phrases that explain or describe the subject or object of the sentence)

To form a negative statement, add **not** before a gerund.  

**Note:** Be careful not to confuse gerunds with other forms of verbs with -ing:  
- a present participle used as a part of the present progressive tense  
- a present participle used as an adjective

**Building** houses close to a forested area is risky. (subject)  
Many people enjoy **living** close to nature. (object)  
The tourists’ favorite activity is **walking** in the woods and **fishing**. (subject complement)  
The firefighters had trouble **putting** out the fire. (object complement)  
Many foresters complain about not **letting** fires burn.  

**The residents are leaving** their homes. (present progressive)  
People used to think all fires had **damaging** effects. (adjective)

**2. Many verbs in English take gerunds as objects.** Some common examples include: **appreciate, avoid, consider, enjoy, finish, keep, mention, mind.**  

Gerunds are often used with the verb **go** in expressions that describe recreational activities: **go skiing, go camping, go hiking.**

**The authorities considered reinstituting** controlled burns.  
Many tourists **go camping** in the woods in the summer.
3. Gerunds are often used as objects of prepositions. Common preposition combinations followed by gerunds include:

- verb + preposition; common combinations include: *believe in*, *complain about / of*, *have a reason for*, *insist on*, *object to*, *talk about / of*, *take advantage of*, *take care of*, *think about / of*.
- verb + noun / pronoun + preposition; common combinations: *blame . . . for*, *discourage . . . from*, *forgive . . . for*, *keep . . . from*, *prevent . . . from*, *prohibit . . . from*, *protect . . . from*, *stop . . . from*, *thank . . . for*.
- adjective + preposition; common combinations include: *capable of*, *excited about*, *good at*, *happy about*, *interested in*, *opposed to*, *responsible for*, *tired of*, *worried about*.
- expressions; common combinations include: *feel like*, *in addition to*, *instead of*, *look forward to*, *used to*.
- *by* + a gerund can be used to express how something is done.

Note: The word *to* can be a preposition or part of an infinitive.

<table>
<thead>
<tr>
<th>Example</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many foresters <em>complain about not letting</em> fires burn.</td>
<td></td>
</tr>
<tr>
<td>You can’t <em>stop people from</em> building their homes near forested areas.</td>
<td></td>
</tr>
<tr>
<td>Some people are <em>opposed to building</em> homes near forested areas.</td>
<td></td>
</tr>
<tr>
<td><em>Instead of letting</em> fires burn, foresters used to suppress all fires because they weren’t aware of the beneficial effects of forest fires.</td>
<td></td>
</tr>
<tr>
<td>Foresters can improve the condition of the forests <em>by letting</em> the fires burn.</td>
<td></td>
</tr>
<tr>
<td>Authorities often object <em>to allowing</em> prescribed burns. (preposition)</td>
<td></td>
</tr>
<tr>
<td>Fires encourage seeds <em>to grow</em>. (part of an infinitive)</td>
<td></td>
</tr>
</tbody>
</table>

4. A possessive pronoun (e.g., *my, our*) or noun (e.g., *Tom’s*) can be used to modify a gerund. This is common in formal English.

In informal English, a noun or an object pronoun (e.g., *him, us*) is used.

<table>
<thead>
<tr>
<th>Example</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Their objecting</em> to prescribed burns is foolish.</td>
<td></td>
</tr>
<tr>
<td><em>The commissioner’s objecting</em> to prescribed burns is foolish.</td>
<td></td>
</tr>
<tr>
<td>I don’t like <em>them objecting</em> to prescribed burns.</td>
<td></td>
</tr>
<tr>
<td>I don’t like <em>the commissioner objecting</em> to prescribed burns.</td>
<td></td>
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</tbody>
</table>
5. Gerunds can occur in simple or past form. A **simple gerund** can be used to make generalizations.

A **past gerund** (*having* + past participle) can be used to show an action that took place before the action of the main verb in the sentence. The past gerund is used to stress the time difference between two actions. The simple gerund is also correct in many situations.

| Building houses close to a forested area is risky. |
| Having let the fire burn was the best thing we have done to this forest. |
| Letting the fire burn was the best thing we have done to this forest. |

6. Gerunds can be used in passive form. They are formed by:

- **being** + past participle (in the present tense)
- **having been** + past participle (in the past tense)

| Residents hate **being evacuated**, but there’s nothing they can do. |
| Residents hated **having been evacuated**, but there had been nothing they could do. |
### Infinitives

1. An **infinitive** is the word *to* + the base from of a verb. Infinitives often perform the same functions as nouns.
   - They can be used as subjects.

   **Note:** An infinitive used as a subject is formal. It is more common to use *it* + an infinitive phrase. You can also add *for* + a noun / pronoun to express who or what does the action.

   - Infinitives can be used as objects.

   - Infinitives can be used as complements.

   To form a negative statement, add *not* before *to*.

<table>
<thead>
<tr>
<th>To let fires burn is advisable.</th>
<th>It's advisable to let fires burn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>It's beneficial for the health of the forests to let the fires burn.</td>
<td>It was foolish for them to stay home while the forests burned.</td>
</tr>
<tr>
<td>Many people choose to live near forests despite the danger of fires.</td>
<td>A firefighter’s responsibility is to keep the fire away from people’s homes.</td>
</tr>
<tr>
<td>The media urged the authorities not to ignore the risk of fires.</td>
<td>The authorities ordered the residents to evacuate.</td>
</tr>
</tbody>
</table>

2. Some verbs are followed by infinitives (see point 9 for a list of common verbs followed by infinitives). Other verbs are commonly followed by a noun / pronoun + an infinitive. Some of these verbs include: *allow, cause, convince, encourage, force, instruct, order, permit, persuade, remind, require, teach, tell, urge, warn.*

   On the other hand, there are verbs that can be followed by an optional noun / pronoun + an infinitive, depending on the meaning. Some of these verbs include: *ask, expect, need, want, would like.*

   Many people choose to live near forests despite the danger of fires.

   The authorities ordered the residents to evacuate.

   We expect to come home as soon as possible. (= *We think we’ll come home as soon as possible.*)

   We expect the residents to come home as soon as possible. (= *We think the residents will come home as soon as possible.*)

3. Some adjectives can be followed by infinitives. In general, these activities describe a person (or persons), not a

   | The Kotlers were fortunate to have their home spared by the fire. | The authorities ordered the residents to evacuate. |

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thing. Many of these adjectives express feelings or attitudes about the action that is described by the infinitives.

Some common adjectives followed by infinitives include: 

| afraid, amazed, careful, certain, determined, difficult, excited, fortunate, glad, happy, important, likely, lucky, proud, relieved, reluctant, sorry, surprised, upset, willing. |

4. An infinitive can follow a noun. In such instances, the infinitive gives information about the noun.

Advisability or necessity is often expressed by a noun + infinitive.

| Low-temperature fires are a **good way to prevent** high-temperature fires. |
| Prescribed burns are the **thing to do**. |

5. The words **too** and **enough** can be used before infinitives:

| • **too** + adjective / adverb + infinitive (often implies a negative result) |
| • adjective / adverb + **enough** + infinitive |
| • **enough** + noun + infinitive |

The word **for** can be used with a noun / pronoun to show who performs the action expressed by the infinitive.

| The fire was **too large to contain**. |
| The fire was **small enough to contain**. |
| The fire department didn’t have **enough people to fight** the fire. |
| The fire was **small enough for the firefighters to contain**. |

6. Infinitives can occur in simple or past forms. A **simple infinitive** can be used to express an action in the same time frame as the action in the main verb.

| The authorities **ordered** the residents **to evacuate**. |
| The residents **seem to have forgotten** how devastating forest fires can be. |

A past infinitive (**to + have + past participle**) can be used to show an action that occurred before the action of the main verb in the sentence.

| The residents are **supposed to be evacuated** by the end of the day. |
| The residents were **supposed to** |

7. Infinitives can be used in passive form. They are formed by:

| • **to + be / get** + past participle (in the present) |
| • **to + have been** + past participle (in the past) |

| The residents are **supposed to be evacuated** by the end of the day. |
| The residents were **supposed to** |
past) | have been evacuated before now.
--- | ---
8. **To** and **in order to** can be used to express purpose. It answers the question “Why?” *In order* is often omitted.

| Many people build their homes close to forested areas **(in order) to enjoy** the peace and solitude that nature can provide.

9. Some verbs can be followed only by infinitives, others only by gerunds, and others by either infinitives or gerunds. There are four patterns:

- Some common verbs followed only by infinitives: afford, appear, ask, care, decide, expect, fail, hope, learn, manage, mean, need, offer, plan, prepare, promise, refuse, seem, threaten, wait, want, wish.
- Some common verbs followed only by gerunds: admit, appreciate, avoid, can’t help, complete, consider, discuss, dislike, enjoy, finish, keep, miss, practice, quit, recommend, risk, suggest, understand.
- Some common verbs can be followed by infinitives or gerunds, with no change in meaning: begin, can’t stand, continue, hate, like, love, prefer, start.
- Some common verbs can be followed by infinitives or gerunds, with change in meaning: forget, go on, quit, regret, remember, stop, try.

| Some families **refused to evacuate** even when the fires were threatening their homes.
| Many people enjoy **living** close to nature.
| Many residents **began to evacuate** / **began evacuating** even before the official announcement came. (no change in meaning)
| Firefighters **tried to keep** the fire away from the homes. (= *made an effort; worked hard to succeed*)
| Firefighters **tried dropping** water from a plane, but it didn’t slow the fire down. (= *experimented with a new or different approach*)
UNIT 3 ANSWER KEY

1 PREVIEW

Previewing the Academic Content

Exercise 1, page 48
Answers will vary. Suggested answers:

<table>
<thead>
<tr>
<th>Beneficial (positive) Effects</th>
<th>Detrimental (negative) Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cleans dead wood out of the forest</td>
<td>• Destroys forests</td>
</tr>
<tr>
<td>• Crops grow better after a fire</td>
<td>• Kills animals</td>
</tr>
<tr>
<td></td>
<td>• Destroys homes in forested areas</td>
</tr>
<tr>
<td></td>
<td>• Expensive to fight fires</td>
</tr>
<tr>
<td></td>
<td>• Can kill people</td>
</tr>
</tbody>
</table>

Exercise 3, page 49

1. crown  3. leaves  5. cone  7. shrub  9. soil
2. overstory  4. twig  6. branch  8. herb  10. understory

Previewing the Academic Skills Focus

Exercise 1, page 50
Thesis: Foresters saw that forest fires were beneficial for trees, soil, and animals.
Concluding statement: It is now recognized that forest fires are a natural part of forest ecosystems and are beneficial to the trees, soil, and animals.

Exercise 2, page 51
1. Yes, the main points are in parallel structure.
2. Each point in the thesis statement introduces a main point found in the topic sentence of each paragraph. Students should be able to mark up their essays with arrows that provide visual evidence that the topic sentences are linked to the thesis statement.
3. Each paragraph is about one main point—as stated in the thesis and repeated in the concluding sentences.
4. Words highlighted in yellow: Statement about the past
   Other words (not highlighted in yellow): Statement about the present
5. Yes. Each topic sentence starts with an expression that refers to the past and
either finishes with a clause that refers to the present time or is followed by a
sentence that refers to the present time. This parallel structure creates a link,
or coherence, amongst these paragraphs.

Exercise 3, page 52
1. All the words highlighted in pink are words to identify fires or the results of
   fires: forest fires, forest burns, wildfires. They all refer to the main topic of the
   paragraph. The author used this variety of words to avoid repetition.
2. The first they refers to forest fires and creates cohesion by linking the two
   sentences together. The second they also refers to forest fires and creates
   cohesion by linking the clauses together.
3. This / These + summary word is used to summarize a previous idea.
   These fires refers to “all forest burns in the mid-1990s.”
   This approach refers to the 100 percent response of firefighters to all forest
   fires.
4. However, the word highlighted in gray, is a connecting word. It shows the
   relationship between the ideas in the paragraphs. It makes a connection by
   showing a contrast between the ideas in the beginning and end of the
   paragraph.

2 BUILDING ACADEMIC LISTENING SKILLS

Before You Listen

Exercise 1, page 54
Greatest loss of life: Fire in Kursha-2, Soviet Union
Burned largest area of land: Fire in Yellowstone National Park, U.S.

Global Listening

Exercise 1, page 54
Correct order: 4, 5, 1, 2, 3
Exercise 2, page 54
Each main point is preceded by a number or sequence word: first, second, third, next, and finally. These words build coherence because they reveal the progression of the lecture to the listeners: Today we will talk about . . .; For example; Let’s discuss . . .; We must also consider . . .; To conclude. Students may also be able to hear these phrases, which also build coherence. (The focused listening section will look at these speech markers as well.)

Exercise 3, page 54
2. T
3. T
4. F Small forest fires decrease the chances of a large forest fire occurring later.
5. F Burning the litter on the forest floor releases phosphorus and potassium, which are beneficial to plants.
6. T
7. F Heat from forest fires can release seeds from pine cones and allow more trees to grow.
8. T
9. F Foresters try to prevent forest fires from burning if they are close to human habitation; otherwise, foresters let many fires burn.

Focused Listening

Exercise 1, page 55

<table>
<thead>
<tr>
<th>Speech Markers to Build Coherence in the Lecture Introduction</th>
<th>Speech Markers to Build Coherence in the Lecture Body</th>
<th>Speech Markers to Build Coherence in the Lecture Conclusion</th>
<th>Speech Markers to Build Coherence by Showing Examples</th>
<th>Speech Markers to Build Coherence by Signaling a Change in Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Today we’ll talk about . . .</td>
<td>First . . .</td>
<td>To conclude . . .</td>
<td>For example</td>
<td>However, we must also consider . . .</td>
</tr>
<tr>
<td>Let’s discuss . . .</td>
<td>Second . . .</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Third . . .</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Next . . .</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Finally . . .</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3 BUILDING ACADEMIC READING SKILLS

Before You Read

Exercise 1, page 57
According to the graph, over the last 300 years, the number of sites recording forest fires has decreased from a high of 40 in 1750 to a low of 0 in 2000.

Exercise 2, page 57
Answers may vary. Foresters practice fire exclusion because there are more people living in forested areas.

Exercise 3, page 57
If foresters practice fire exclusion, forests don’t have the benefits of forest fires, and bigger forest fires may result.

Global Reading

Exercise 1, page 58
2. ominous 4. benign 6. spared by 8. sobering 10. mitigated
3. on the fringe of 5. naively 7. riveting 9. Waging a battle against

Exercise 2, page 59
1. waging a battle against 3. mitigated 5. riveting 7. benign 9. sobering
2. spared by 4. fringe 6. stunning 8. ominous 10. naive

Exercise 3, page 59
Answers will vary. Possible prediction: We will probably read about a couple who moved to a forested area to enjoy the stunning view of the forest and then were forced to evacuate their home during a forest fire. They were naïve about the danger. Fortunately, their home was spared by the fire. Three pilots have died and firefighters are waging a battle against the fire. Perhaps the government could have mitigated the risk.
Exercise 4, page 61
1. Magazine articles are often characterized by these features:
   - Use of direct quotes
   - Mention of the specific days the event took place—in this case, Thursday and Friday
   - More of a story-telling tone to the information. For example, the article begins with a story about a specific person involved in the event.
   - Not organized in the same way are textbook information. Textbooks present a larger concept and break it down. This story looks first at the human side of forest fires in a specific town, then at the impact of the forest fires in the region, then at the danger for firefighters, and finally at what the government has done in response.
2. The Kotlers were attracted by the stunning natural setting, which is now a danger to them. They were not prepared for that danger. We know this because Mel Kotler is quoted as saying he was naïve about the danger.
3. The detrimental effects were:
   - 825 fires burning in the area
   - More than 170,000 hectares (420,000 acres) burned
   - $156.7 million spent on fire suppression
   - 10,000 citizens evacuated
   - 3 pilots killed
4. Interface fires are fires that occur where human development is close to the natural forest. They are a threat in forested areas because the presence of human communities leads to practices that suppress the natural cycle of fires and causes a dangerous buildup of forest fuels.
5. When the author writes that the woods are being “killed by kindness,” he means that the prevention of logging of dead and diseased trees is harmful to the forests. Also, the clearing of brush through prescribed burns has also been prevented, so there is a buildup of litter that is a fire hazard.
6. The provincial government has considered reinstating controlled burns and has created a special fire department that can be ready to fight interface fires quickly.
7. We hear more about forest fires now than in the past because there are more homes in the forest now, so their detrimental effects are more obvious.

Focused Reading

Exercise 1, page 62
1. The words fire, wildfire, and flames appear in each paragraph the number of times shown below:
   - ¶ 1: 2
   - ¶ 2: 2
   - ¶ 3: 4
   - ¶ 4: 0
   - ¶ 5: 3
   - ¶ 6: 3
   - ¶ 7: 4 (includes flammable)
   - ¶ 8: 4
The author is using repetition and synonyms to focus the reader’s attention on the topic.

**Student A**

2. The expression *the very thing* (¶ 1, line 5) refers to the stunning natural setting.
3. *It* (¶ 1, line 8) refers to the treed view of canyon, lake and city. *It* is a pronoun.
4. *It* (¶ 1, line 14) in line 6 refers to nature. *It* is a pronoun.
5. *Who* (¶ 2, line 11) refers to “his wife and her father.” *Who* is a pronoun.

**Student B**

6. The words *these fires* (¶ 3, line 8) refer to the 825 fires burning across the province. The author is using *these* + summary word as a tool of cohesion.
7. *Consequently* (¶ 3, line 10) is a connecting word. It shows how the two sentences (the one before *consequently* and the one after) in that paragraph are related.
9. *Some* (¶ 4, line 9) and *others* (¶ 4, line 11) refer to “our citizens.” Both words are pronouns.

**Student C**

10. The words *these people* (¶ 5, line 7) refer to pilots. The author is using *these* + summary word as a tool of cohesion.
11. The words *the latter fire* (¶ 6, line 12) refer to the Okanagan Mountain park fire. The author is using *the former / the latter* to create cohesion.
12. The word *they* (¶ 7, line 12) refers to British Columbians. *They* is a pronoun.
13. The author wrote *as a result* (¶ 8, lines 4–5) to show how the first and the second sentences in that paragraph are related. *As a result* is a connecting expression.

**Exercise 2, pages 63–64**

1. wildfire  
2. your  
3. you  
4. Therefore  
5. In addition  
6. home  
7. meters  
8. trees  
9. Third  
10. former  
11. latter  
12. methods

**Exercise 3, page 64**

These sentences all have verb–subject order, and they all start with a negative word or expression: *never before, nowhere, and not only.*
4 BUILDING ACADEMIC WRITING SKILLS

Before You Write

Exercise 5, page 67
1. The essay question was probably “Do forest fires have any beneficial effects?”
   The author wrote the title by answering the question “Yes, forest fires have
   beneficial effects” and then shortening the answer to create the title “The
   beneficial effects of forest fires.”
2. Paragraph 1: state the opposing view and then contradict
   Paragraph 2: logical argument
   Paragraph 3: logical argument
   Paragraph 4: facts and statistics
   Paragraph 5: logical argument
3. Answers will vary.

Focused Writing

Exercise 1, page 68
1. They 2. it 3. He, he 4. She 5. These

Exercise 2, pages 69–70
1. their 2. his or her 3. his or her 4. their 5. their 6. his or her