

Japan's Nuclear Crisis

- Nuclear power is often used to generate electricity for twenty-first century needs. It is produced for this purpose by commercial nuclear reactors in nuclear power plants. In general, these reactors are reliable and efficient. Still, dangerous accidents or other serious problems can occur, so nuclear reactors must be built to withstand everything from hurricanes to terrorist attacks. Unfortunately, these safety measures are not always adequate. Shortly after an earthquake hit Japan on March 11, 2011, a chain of events led to explosions at the Fukushima Daiichi nuclear plant. To understand how the accident at Fukushima happened, it is necessary to understand how a nuclear reactor is constructed and operates.
- A nuclear reactor produces energy through a nuclear reaction called fission, or the splitting of atoms. Reactors generally use uranium atoms for the fission process. First, small pieces of uranium are combined in metal tubes known as fuel rods. Many bundles of fuel rods form the reactor's core. As fission occurs, the uranium atoms in the fuel rods are split, and energy in the form of heat is generated.
- 3 However, too much heat can be dangerous. To regulate the heat generated by a reactor, fuel rods are interspersed with control rods. These are made of materials such as boron, which slow nuclear reactions. When the control rods are pushed into the reactor core, fission slows, and the reactor cools. When the control rods are pulled out, fission speeds up, and the reactor produces more heat.
- 4 The heat from the reactor is then channeled to a container of water called a steam generator. In a steam generator, heat is used to boil water and produce steam. Next, the steam turns a turbine, which powers a generator that creates electricity. Finally, the water is recirculated through the system with electric pumps to cool the reactor core. This cooling process is important because, if the fuel rods get too hot, the fuel can melt. A "meltdown" can destroy the walls of the reactor. It can allow nuclear radiation to escape and poison the surrounding area.
- When the earthquake hit the Fukushima Daiichi nuclear power plant in Japan, there were many systems in place to prevent this kind of disaster. First, the reactor's control rods were fully inserted into the reactor core. This procedure automatically shut down the reactor. The shutdown helped to cool the reactor core, but of course it also made the nuclear power plant stop producing power. With no power, the electric pumps in the cooling system could not function. As a result, the core soon heated up again.

(continued on next page)

- Once the plant itself stopped producing power, it began to draw power from the nation's power grid¹ to run the pumps. Other power plants around the country, nuclear and nonnuclear, were still producing electricity. Unfortunately, the earthquake had also damaged the power grid. It, too, soon stopped providing power to the Fukushima Daiichi pumps. At this point, there was still one more safety system that could prevent meltdown: backup diesel generators. These machines use diesel fuel, instead of nuclear power, to make electricity. The diesel generators had started to make electricity to run the plant's cooling pumps when another disaster occurred. Fukushima Daiichi was hit with a tsunami, or giant wave, caused by the earthquake. The tsunami flooded the generators. This left only batteries to operate the pumps. They lasted for just a few hours before they ran out of power.
- After the batteries died, the pumps failed once and for all. They could no longer circulate water to cool the reactor. As a result, the water started boiling away, exposing the tops of the fuel rods. Then the metal tubes holding the uranium fuel overheated and split. The cracks allowed the remaining water to enter the tubes and interact with the fuel. This interaction began generating hydrogen gas. The hydrogen accumulated so quickly that it exploded inside the reactor building. To prevent disaster, operators decided to destroy the reactor in a flood of seawater mixed with boron. The seawater reduced the reactor's temperature while the boron stopped the process of nuclear fission. A meltdown was prevented.
- As these events show, nuclear power is a resource with great potential, but in some circumstances it still can have serious risks. Prior to the earthquake and tsunami, Japan had planned to increase its use of nuclear power. It is now unlikely that a large increase can happen. It is also unclear how much of the country's nuclear infrastructure² will be rebuilt, and it is still unknown whether the Japanese people are open to continued reliance on nuclear fuel.

Sources:

- 1. Brain, Marshall and Robert Lamb. "How Nuclear Power Works."
- 2. "Explaining Nuclear Energy for Kids." The Washington Post.
- 3. "Japan to Scrap Nuclear Energy in Favor of Renewables." The Guardian.
- 4. Timmer, John. "Understanding Japan's Nuclear Crisis."
- 5. "Uranium." Energy Kids. U.S. Energy Information Administration.

Questions about the Model

- 1. What is the thesis statement? How does it indicate that at least part of this essay will use chronological organization?
- 2. What two processes are explained?
- 3. Which paragraphs explain the first process? Which paragraphs explain the second process?
- 4. What kind of introduction does this essay have—"funnel" or attention-getting?
- 5. What kind of conclusion does it have? Does it summarize the main points or paraphrase the thesis or is it a different kind? Does it give a final comment?

¹ power grid: the system for carrying electrical power around the country

infrastructure: the basic systems and structures that a country or organization needs in order to work properly, for example roads, railways, and banks



Creating Thesis Statements for Process Essays

Check (/) the thesis statements that suggest the essay will describe a process or a procedure. Then, in the checked statements, circle the words that indicate chronological order.

Ø	1. A child learns to handle responsibility in a series of small steps.
	2. Both heredity ¹ and environment contribute to a person's intelligence.
	There are two main reasons that governments should provide free higher education for their citizens.
	4. The procedure for submitting expense reports has recently changed.
	The tensions that led to last year's student riots had been developing for several years.
	Some cultures have very direct interaction styles, while other cultures are more indirect.
	Two of the busiest travel days in the United States are the Wednesday before and the Sunday after Thanksgiving.
	8. Cultures celebrate the end of winter and the arrival of spring in different ways
	The preparation of the poisonous puffer fish for eating is a delicate process that is not for amateur chefs.

TRY IT OUT!

Choose five topics that you think would be interesting for a process essay. Write thesis statements for the five topics you choose on a separate sheet of paper. Remember to use words that suggest time order.

□ 10. The life cycle of the monarch butterfly is an interesting phenomenon.

Topics

- · How to take a good photograph
- · How to research a topic for an essay
- How diamonds are processed from a diamond mine to a diamond ring
- How to perform a particular chemistry or physics experiment
- How to transplant a tree
- How a hybrid automobile works
- How to overcome a fear
- How to celebrate a special occasion (such as a favorite holiday, a birthday, a wedding, an anniversary)

PRACTICE 5

Using Chronological Order Signals

Read "How to Make a Model Volcano." Complete the paragraph using chronological order signals from the box. Add commas where necessary.

after it erupts once the paint has dried
after the outside of the
volcano is complete then
finally when the vinegar meets
the baking soda
next

How to Make a Model Volcano

When a volcano erupts, gas from under the earth bubbles up to the surface and forces hot lava above the ground. It is an impressive sight, and there is much that volcanoes can teach us about physics and earth science.



WRITING ASSIGNMENT

Your assignment for this chapter is to write an essay on a topic related to earth science. Choose one of the topics from the list. Use the writing model on pages 103–104 to help you. To complete the assignment, follow the steps in the writing process.

TOPICS

- What to do in case of an earthquake (or hurricane or other natural disaster)
- · How to perform a particular science laboratory experiment
- · How to conserve energy in your daily life



STEP 1: Prewrite to get ideas.

- Use a prewriting strategy to generate ideas about your topic.
 One technique you can use is called freewriting. Freewriting is a brainstorming technique in which you write down all of your ideas without stopping.
 - · Write your topic at the top of your page.
 - Place your pen on the first line of your paper and begin writing.
 - Do not pick up your pen or stop writing, even if you are having trouble thinking of new ideas.
 - Sometimes, it may help to write the same idea several times until you think of a new one.
 - Do not worry about grammar, the quality of your ideas, or anything else—just write as much as you can on the topic of your essay!

Omar did some freewriting to prepare for his essay about a science laboratory experiment. Here is the beginning of his freewriting.

In chem class we sometimes did lot of experiment and I like
them although sometime it is hard but you try and you do it ok
so I need to write about how to do this so it is first you are reading
the lab manual to understand then maybe I should think of an
experiment to describe an experiment to describe an experiment
to describe oh ok I will do the one from last week where we had
to decide what is acid and what is base, so first we had to get
some materials



STEP 2: Organize your ideas.

- Choose one main idea from the prewriting that you think will be a strong focus for your essay. This should be your thesis statement. Remember to use a thesis statement that indicates a process essay.
- Look for related ideas in the freewriting from Step 1. If you find anything that is completely off topic, or repeated, cross it out.
 Then rewrite your ideas so that they are grouped with similar ideas. These groups will become your body paragraphs.
- Next, make an outline as you learned to do in Chapter 4. Put your thesis statement at the top. Then, for letters A, B, and C, write the sentences that will form the topic sentences of your body paragraphs.



STEP 3: Write the first draft.

- Using your list, begin writing your first draft. Remember to use chronological order transitions in your body paragraphs.
- Describe the steps in your process or procedure in your body paragraphs.
- Don't worry if you think of new ideas as you write. You can add or delete ideas later. Just be sure that your new ideas support your thesis.



STEP 4: Revise the draft.

- Review the content and organization of your draft. Do not try to correct errors in format, mechanics (capitalization, punctuation, and spelling), grammar, and sentence structure at this stage. You will do this in Step 5.
- Begin by reading over your essay to get a general overview. As you read, make sure that
 - your essay has a thesis statement that is appropriate for a process essay;
 - o you have organized the steps in the process clearly;
 - you have used appropriate chronological order transition signals.
- Make notes in the margin about anything you want to improve.
- Ask a classmate to read and give you feedback on your first draft using the Chapter 5 Peer Review on page 329.
- Discuss your classmate's suggestions and decide which ones to take.



STEP 5: Edit and proofread the draft.

- Make sure that you have identified all of the changes you want to make in content and organization. Then review your essay for errors in format, mechanics, grammar, and sentence structure.
 Use the Chapter 5 Writer's Self-Check on page 330 to help you.
- When you find an error, make a note on your paper using the correction symbols from Appendix D on pages 309–311.



STEP 6: Write a new draft.

- In your new draft, include the changes you identified in Steps 4 and 5.
- Proofread your new draft again carefully. Make sure it is neat and error free.
- Hand in your essay to your teacher.

SELF-ASSESSMENT

In this chapter, you learned to:

- Analyze a process essay
- O Organize steps in a process
- O Construct a thesis statement for a process essay
- Use transition signals to show chronological order
- O Write, revise, and edit a process essay about earth science

Which ones can you do well? Mark them of

Which ones do you need to practice more? Mark them 3

EXPANSION



TIMED WRITING

In this expansion, you will write an essay in class. As you write, focus on using the techniques of process writing that you learned in this chapter. You will have 50 minutes. To complete the expansion in time, you will need to budget your time accordingly. Follow this procedure.

- Read the writing prompt (or the prompt your teacher assigns) carefully. Choose
 one of the topics to write about. Make sure you understand the question or task.
 You may want to underline the key words in the prompt. (5 minutes)
- Brainstorm to get ideas, choose a thesis and make a rough outline to organize your ideas. (10 minutes)

Cause Effect Essay

S. P.

Another common type of essay examines cause and effect relationships. In a cause / effect essay, you discuss the causes (reasons) for something, the effects (results), or both causes and effects. You might use cause / effect organization to answer typical test questions such as these:

EDUCATION Explain reasons for the decline in reading ability among schoolchildren.

ENVIRONMENTAL STUDIES Discuss the effects of global warming on the environment.

BUSINESS, ECONOMICS Discuss the housing market and its effects on the U.S. economy.

HISTORY Discuss the causes of the U.S. Civil War.

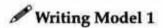
PSYCHOLOGY Explain the causes and effects of depression.

At the end of this chapter, you will write a cause / effect essay on a topic related to psychology.

ANALYZING THE MODELS

In this chapter, you will read two cause / effect essays that look at psychological topics. Each model is organized differently: Writing Model 1 uses block organization, and Writing Model 2 uses chain organization.

Read the models. Then answer the questions.



The Biological and Environmental Causes of Shyness

- If you suffer from shyness, you are not alone, for shyness is a universal phenomenon. According to recent research, "close to 50 percent of the general population report that they currently experience some degree of shyness in their lives. In addition, close to 80 percent report having felt shy at some point in their lives" (Payne). As shyness is so common, it is not surprising that social scientists are learning more about its causes. They have found that shyness can result from both biological and environmental factors.
- Recent research shows that some individuals are born shy. Indeed, researchers say that between 15 and 20 percent of newborn babies have signs of shyness. These babies are quieter and more watchful. In fact, researchers have found differences between sociable and shy babies that show up as early as two months. In one study, two-month-olds later identified as shy reacted with signs of stress to moving mobiles² and tape recordings of human voices. These shy babies had increased heart rates as well as jumpy movements of arms and legs, and they cried

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^{*}phenomenon: something that happens or exists in society, science, or nature, especially something that is studied because it is difficult to understand (plural: phenomena)

² mobiles: a decoration made of small objects tied to wire or string which is hung up so that the objects move when air blows around them



To sum up, shyness has both environmental and genetic causes. Some people come into the world shy. Others become shy as a result of their experiences in life. It appears that most people have experienced shyness at some time in their lives, and research indicates that the number of shy people is increasing. Therefore, if you are shy, you have lots of company.

Sources

- 1. Benton, Thomas H. "Shyness and Academe."
- 2. Henderson, Lynne and Philip Zimbardo. "Shyness."
- 3. Payne, Karen S. "Understanding and Overcoming Shyness."
- 4. Wikipedia. "Shyness."

Questions about the Model

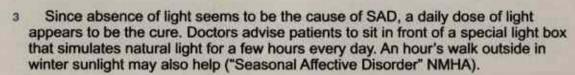
- 1. Is the topic of this essay primarily the causes or the effects of shyness?
- 2. Which paragraphs discuss the causes?
- 3. Which paragraph discusses the effects?
- 4. What two subtopics are named in the thesis statement?
- 5. Which paragraph discusses the first subtopic?
- 6. Which paragraphs discuss the second subtopic?

Writing Model 2

SAD

- Years ago, medical researchers identified a psychological disorder that they named Seasonal Affective Disorder, or SAD. People who suffer from SAD become very depressed during the winter months. Doctors now understand the causes of this condition, which affects millions of people. It is particularly common in areas of the far north where winter nights are long, and the hours of daylight are few.
- SAD results from a decrease in the amount of sunlight sufferers receive. There are several reasons why decreased sunlight may have this impact on some people. Doctors know that decreased sunlight increases the production of melatonin. This sleep-related hormone is generated at increased levels in the dark. Therefore, when the days are shorter and darker, the level of melatonin rises. Shorter, darker days also decrease production of serotonin, a chemical that helps transmit nerve impulses. Lack of serotonin plays a role in causing depression in some people ("Seasonal Affective Disorder" HH). In others, who may not usually suffer from depression, winter depression may result from an imbalance of melatonin and serotonin in the body. Also, doctors believe that decreased sunlight may cause a disturbance in the body's natural clock ("Seasonal Affective Disorder" NMHA). The combination of chemical imbalance and biological clock disturbance, doctors say, results in characteristic symptoms. These can include lack of energy, oversleeping, weight gain, and anxiety. They are all signs of depression.

(continued on next page)



In conclusion, the depressive effect of low sunlight levels may help explain why some people suffer feelings of tiredness and sadness in winter. The 19th-century American poet Emily Dickinson even wrote about the feelings of sadness she experienced during winter afternoons. But if low sunlight can produce such feelings, there is nevertheless hope for sufferers. In fact, the problem itself may suggest its own remedy! When the days grow short, turn on the lights.



Sources:

- 1. The Healthy House Ltd. "Seasonal Affective Disorder."
- 2. National Mental Health America. "Seasonal Affective Disorder."

Questions about the Model

- 1. What is the cause of increased melatonin and decreased serotonin in winter?
- 2. What effect do these seasonal changes in melatonin and serotonin have on some people?
- 3. What advice do doctors give people who suffer from SAD?

Noticing Vocabulary: Collocations 1

Collocations are words that are commonly found together. For example, in the model, the phrase difficult relationship is a collocation because the word difficult is frequently used with the word relationship. The word hard, on the other hand, does not collocate well with relationship. Being aware of collocations will make you a better writer. Try to notice collocations as you read or listen to people speaking English. Some dictionaries also list collocations.

aspects (paragraph 7)

_causes (paragraph 8)

0	Complete	the	sentences	with	the	collocations	from	Part A.
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1. It is not clear why some p	eople are more likely to be optimistic than others, but it
	ne, or reasons related to eople inherit from their parents.
One of the of helping students learn.	of working as a teacher is the satisfaction
	on cell phones, most people do not vance; they assume that they will be able to get in touch
4. The or asbestos dust, and certa	of lung disease include exposure to smoke, coal in chemicals.
5. One of the physical activity.	of owning a car is decreased



Others	Examples			
to result from to be the result of	The bison's near extinction resulted from loss of habitat and overhunting.			
due to because of	Bison nearly became extinct because of loss of habitat and overhunting.			
the effect of the consequence of	One consequence of westward expansion was the destruction of habitat for the bison.			
as a result of as a consequence of	The areas in which bison could roam freely shrank as a result of the westward expansion of the 1800s.			

PRACTICE 4

Recognizing Cause Signal Words

- Output Description of the sentence that states a cause. Circle the word or phrase that introduces the cause.
 - 1. The computer is a learning tool(since) it helps children to master math and language skills. (After since, we must use a clause with a subject and a verb.)
 - Many department stores rely on computers due to their ability to keep records of sales and inventory.
 - 3. A medical computer system is an aid to physicians because of its ability to interpret data from a patient's history and provide a diagnosis. (How would you rewrite this sentence using because instead of because of?)
 - War, famine, and ethnic violence have caused a flood of refugees in the past 50 years.
 - Hollywood movies are known for their special effects because U.S. audiences seem to demand them.
 - 6. Since European audiences seem to prefer movies that explore psychological or philosophical issues, European movies are generally quieter and more thought-provoking.
 - 7. Smog results from chemical air pollutants being trapped under a layer of warm air.
 - 8. John's promotion is the result of his brilliant management skills and company loyalty.
 - Little is known about life on the ocean floor, for scientists have only recently developed the technology to explore it.
 - 10. Holes are created in the protective ozone layer of the stratosphere as a result of the burning of fossil fuels.

- However, electric cars are nonpolluting; therefore, the government offers cash incentives to people who purchase them.
- In addition, electric cars use relatively inexpensive electricity for power; thus, they cost less to operate than cars that use gasoline.
- 4. Unfortunately, the operating cost of electric cars only begins to make up for the higher purchase price if a car owner keeps the car for more than eight years; as a result, most people still prefer gasoline-powered vehicles.
- 5. His patient diplomacy resulted in the successful negotiation of a peace treaty.
- 6. It has been documented that lack of sleep affects a person's ability to think clearly.
- 7. Cold water is denser than warm water and will therefore sink.
- Freshwater is less dense than saltwater, so it tends to float on the surface of a body of saltwater.
- Air pollution creates holes in the protective ozone layer of the stratosphere, thereby allowing harmful ultraviolet radiation to reach Earth's surface.
- 10. The cause of the patient's rapid recovery was the excellent care he received from his doctor.
- Work with a partner or in a small group. Discuss the use of each word or phrase that you circled. What kind of grammatical structure follows each one? How is the sentence punctuated?

PRACTICE 6 Using Cause / Effect Signal Words

Label the sentences in each item as either C (cause) or E (effect). Then combine the sentences to show a cause / effect relationship using the signal words in parentheses. Add, delete, or change words as needed.

E	There are fewer hours of daylight.
C	In winter, the sun is lower in the sky.
(thus)	In winter, the sun is lower in the sky; thus, there are fewer hours
of da	ylight.
	Some breeds of dogs have a stronger desire to perform a service than other breeds.
	They are more suitable as search-and-rescue animals.

they are hunting for food
e working hours.
ith cool seawater.
power grid.
g.
fferent pattern.

WRITING ASSIGNMENT

Your assignment for this chapter is to write a cause / effect essay on a topic related to psychology. Choose one of the topics from the list to write about. You may notice that you read these topics previously in the Try It Out! on page 124. Use Writing Models 1 and 2 starting on page 117 to help you. To complete the assignment, follow the steps in the writing process.

Torics

- The psychological causes of Internet addiction
- The effect of job loss on mental health
- The psychological effects of violent video games and movies



STEP 1: Prewrite to get ideas.

 Use a prewriting strategy, such as freewriting (Chapter 5), clustering (Chapter 2), or listing (Chapter 1), to generate ideas about your topic.



STEP 2: Organize your ideas.

- Look for related points from the prewriting you did in Step 1.
 If you find anything that is completely off topic, or repeated, cross it out.
- Then decide whether you will use chain or block organization, and re-group your ideas so that they follow the kind of organization you chose. These groups will become your body paragraphs.
- Make an outline as you learned to do in Chapter 4. At the start
 of the outline, after Roman numeral I, put a thesis that indicates
 a cause / effect essay. For letters A, B, and C in section II,
 write the sentences that will form the topic sentences of your
 body paragraphs.



STEP 3: Write the first draft.

- Using your outline, begin writing your first draft. Remember to use cause / effect transitions in your body paragraphs.
- Don't worry if you think of new ideas that are not on your list as you write. You can add or delete ideas later. Just be sure that your new ideas support your thesis.



STEP 4: Revise the draft.

 Review the content and organization of your draft. Do not try to correct errors in format, mechanics (capitalization, punctuation, and spelling), grammar, and sentence structure at this stage. You will do this in Step 5.

Global Warming

The government of the island nation of Tuvalu in the south pacific wants to buy land in another country because it believes that rising ocean levels will force its ten thousand citizens to leave. The danger is very real, not just to Tuvalo and other Pacific island but also to river deltas in Bangladesh and cities such as Venice, London, New York, Boston, and Miami. Why is this happening? As it will be seen here, rising sea levels are the result of a long chain of events.

The earth has an insulating blanket of gases surrounding it. This blanket allows heat from the sun to enter the earth atmosphere. It also allows some heat to escape back into space, but it traps enough to keep our planet at an average temperature of 16 degrees Celsius (60 degrees Fahrenheit). However, growth in industry, agriculture, and transportation since the industrial Revolution has produced larger amounts of the gases that form the blanket. As a result, the blanket has become thicker, and because the blanket is thicker, it traps more heat under it. More trapped heat, in turn, causes higher air temperatures. In fact, the decade of the 1990s produced six of the hottest years ever recorded. Estimates for future temperature increases range from four to twenty degrees in the next one hundred years.

Because of higher temperatures, ice near the north and south poles has begun to melt at a faster rate. For example, the Arctic ice cap has shrunk 40 percent. The average thickness was ten feet in 1958-1976, but by 1993-1997, it was just six feet. Hundreds of glaciers in Alaska are melting, and the largest glacier in Europe has retreated five miles.

The water produced by the rapidly melting ice has resulted in a rise in sea level of several inches. Joseph Kono, a native of Chuuk, an island in Micronesia, said the rising water of the western Pacific Ocean has caused the disappearance of thirty feet of a beach

where he used to swim and fish as a boy. Scientists predict a rise of at least ten to eighteen inches as more glaciers and snow masses melt away. Consequently, the citizens of Tuvalu have good reason to worry.

Other effects of global warming include climate change, more frequent tropical storms, changes in agriculture, the spread of tropical diseases and the extinction of species due to the disappearance of their habitats. For example, coral reefs, which are sensitive to temperatures changes, are dying. The death of coral reefs, in turn threatens hundreds of species of fish.

In conclusion, it is clear that global warming is not just a threat; it is a reality. The nations of the world must take action soon, or the earth will suffer these and possibly other consequences that we have not yet noticed.

Why Are Cities Becoming Overcrowded?

The fact that the world cities are getting more and more crowded is well-known. Cities such as Tokyo, Sao Paolo, Bombay, and Shanghai are now considered 'mega-cities' because of their enormous size and huge populations. There are two main reasons why these and other cities are becoming so crowded; one is economic and the other is sociocultural.

First, the primary cause of cities becoming so crowded is economic. As a country develops, its cities become the engines of development, thus jobs are available in these areas. Frankfurt, Istanbul, Bombay and Sao Paolo are all the economic centers of their countries. For example, Tokyo was the motor for Japan's rapid economic development in the 1960's and 70's; as a result, its population increased rapidly. People moved to Tokyo because they could find employment and establish economic security for themselves and their families there.

Second, another factor of the huge increase in urban populations is the socio-cultural factor. Thousands of people migrate to the cities not only for jobs but also for educational and personal reasons. The better universities are always located in big cities and this attracts thousands of students every year, and these students stay on and work in the city after they graduate. Moreover, young people will move to the city as the village and rural areas are more custom and tradition oriented. Therefore, young people believe this is an obstacle to their personal freedom.

In conclusion, economic and cultural factors are the major causes of huge urban population. People will always move to the areas which provide opportunity and to the places which can give them the freedom they desire.

Compare Contrast Essay

POLITICAL SCIENCE Compare the forms of government of Great Britain and the United States.

AMERICAN LITERATURE Compare the characters of Uncle Melik and his nephew in William Saroyan's short story "The Pomegranate Trees."

BUSINESS Compare and contrast methods for promoting a new business, product, or service.

ANTHROPOLOGY Compare the methods of childrearing in two different societies.

At the end of this chapter, you will write a comparison / contrast essay about a topic related to culture.

ANALYZING THE MODEL

The writing model is a comparison / contrast essay that describes some of the similarities and differences between Russia and the United States.

Read the model. Then answer the questions.

Writing Model

Russia and the United States: Differences and Similarities

- In a shrinking world, it has become vitally important to know and understand countries and cultures that were once seen as distant. Improvements in technology and long-distance transportation, along with the rise of a global economy, have created a need to identify how the society and circumstances of one country may be similar to or different from another's. In fact, although countries may differ significantly, usually enough similarities exist to enable each culture's representatives to find common ground. The United States and Russia provide a good example of two countries that are geographically distant and have fundamental differences but that still find commonalities.
- As many people are aware, there are significant differences between Russia and the United States in their history and form of government. The United States is a young country with a long history of democratic government. Russia is a country with ancient roots that has experienced different kinds of government, including hundreds of years of monarchy, almost a century of communism, and, more recently, democracy. However, there are also many other areas in which the similarities and differences between these two countries can influence their relations.
- 3 A key difference between Russia and the United States is population growth. Russia's population has been shrinking because the birth rate is fairly low, although it has increased in recent years. In the United States, on the other hand, the fertility rate



L | T

has been consistently high: 2.06 children, compared to only 1.6 for Russia (CIA). There is comparatively little immigration to Russia, mostly from countries that were once part of the former Soviet Union. In the United States, on the other hand, immigration adds about 2.3 million people per year. The difference in population growth in Russia and the United States is also due in part to the fact that the death rate in Russia is second highest in the world. This is much higher than in the United States, which is 87th. The Russian population growth has increased with recent economic improvements, but the United States is likely to continue to grow at a faster pace.

- Another important difference is in energy production and consumption. The U.S. population is much more reliant on energy than Russia, but the United States also produces more energy. While residents of the United States consume roughly 12,000 kilowatt-hours of electricity per capita, Russia uses only half that amount (The World Bank). Russians use even less oil compared to Americans, at a rate of 15 barrels per day per capita. This is about one-third of the American rate of 62 barrels per day (Indexmundi). At the same time, U.S. energy production is about 1.5 times that of Russia. However, Russia has large reserves of natural gas and does surpass the United States in the production of this energy source (U.S. Energy).
- Despite the differences in population growth and energy use, there are still similarities between the two countries. One common factor is the relative diversity of the populations. The United States and Russia both have a majority racial group that constitutes about 80 percent of the population and several significant minority groups (CIA). Like the United States, Russia also has linguistic minorities, and there are parts of both countries in which it is common to see signs in two or more languages. The countries are also similar in their religious diversity. Although both countries' populations are largely Christian, they also both have significant numbers of religious minorities. Both countries have substantial populations of Muslims, Jews, and other small groups of religious minorities.
- Not only do Russia and the United States have similarly diverse populations, but they have also both faced economic challenges in the recent past. Russia had a financial crisis in the late 1990s, and the United States followed almost ten years later. In both cases, the crises led to high unemployment, reduced social spending, and increased poverty (Perry). In Russia's case, the crisis was preceded by confused government policies regarding currency and privatization of industry (Stiglitz). Similarly, in the United States, inadequate government policies for regulating the financial industry were partly responsible for the recession. In both cases, the economic downturns had far-reaching global consequences.
- In conclusion, there are many differences between Russia and the United States in areas as diverse as population growth and energy consumption. However, the similarities in other areas, such as diversity and recent economic challenges, cannot be ignored. Furthermore, their similarities and differences point to the need that these two countries have to cooperate in the international arena. It will be interesting to see how Russia and the United States work together in the future.

Sources:

- 1. CIA World Factbook.
- 2. Indexmundi.com.
- 3. Perry, Brian. Credit Crises: Historical Crises. Investopedia.com.
- 4. Stiglitz, Joseph. "The Ruin of Russia." The Guardian.
- 5. U.S. Energy Information Administration.
- 6. The World Bank.

Questions about the Model

- 1. What is the thesis statement of this article? Underline it.
- 2. What differences between the countries are discussed in paragraph 2?
- 3. What are two other differences between the countries? In which paragraphs are these differences discussed?
- 4. In which paragraph(s) are similarities discussed?
- 5. What is the function of the first sentence in paragraph 5?

Noticing Vocabulary: Antonyms

In Chapters 2 and 3, you learned about using synonyms, or words that mean the same thing. In this chapter, you will learn to enrich your vocabulary by using **antonyms**, or words that have opposite meanings. Just as synonyms can help connect similar ideas, antonyms are particularly useful when describing contrasting ideas. And just as a thesaurus is a useful tool for finding synonyms, it will also point you toward one or more antonyms for words you look up.

PRACTICE 1 Noticing Antonyms

0	Find these	words and	their	antonyms	in the	model.	Write	the antor	nyms.

	1. differences (paragraph 1)
	2. low (paragraph 3)
	3. less (paragraph 4)
	4. minority (paragraph 5)
	5. reduced (paragraph 6)
0	These words are also in the model. Write one or two antonyms for each word. Use a dictionary or thesaurus as needed.
	1. distant (paragraph 1)
	2. rise (paragraph 1)
	3. adds (paragraph 3)
	4. preceded (paragraph 6)
	5. together (paragraph 7)

Outlining the Model

Look at the writing model on pages 134-135. Then complete the outline.

TL	asia statement. The United States and Pussia provide a good example
of	esis statement: The United States and Russia provide a good example two countries that are geographically distant and have fundamental ferences but still find commonalities.
I. Bo	dy
A.	One key difference between Russia and the United States is population growth.
	The United States has higher fertility.
	2
В.	
	1
	a
	b
	Americans produce more energy than Russians.
C.	There are similarities between the two countries.
	Diverse populations
	a
	b
	C
	2
	a. Russian economic crisis in 1990s
	b. U.S. recession 10 years later

COMPARISON AND CONTRAST SIGNAL WORDS

If the first key element in writing a successful comparison / contrast essay is organization, the second key is the appropriate use of comparison and contrast signal words. These are words that introduce points of comparison and points of contrast. It is not sufficient simply to describe each item that you are comparing. You must refer back and forth to—for example, Culture X and Culture Y—and use comparison and contrast signal words to show what is the same and what is different about them. Of course, you should also use transition signals, such as first, second, one. . . ., another. . . ., the final. . . . , for example, and in conclusion.

PRACTICE 3

Recognizing Signal Words

Look at the words in the chart on page 141 and then see how many of them you can find in the writing model on pages 134–135.

PRACTICE 4

Using Comparison Signal Words

Write one new sentence to combine the information in each item below. Use a different comparison signal word in each sentence.

The United States has a democratic form of government. Great Britain has a democratic form of government.
The United States has a democratic form of government, just as
Great Britain does.
The United States operates under a two-party system. Great Britain operates under a two-party system.
The British Parliament has two separate houses, the House of Commons and the House of Lords. The United States Congress has two separate houses, the Senate and the House of Representatives.
The members of the U.S. House of Representatives are elected by district. The members of the British House of Commons are elected by district.
The method of choosing cabinet members in the United States = the method of choosing cabinet members in Great Britain. (Use the comparison signal the same.)
In Great Britain, the prime minister appoints the cabinet. The U.S. president appoints the cabinet.
The British monarch has the right to veto any law passed by Parliament. The U.S. president has the right to veto any law passed by Congress.



Recognizing Direct Opposition Signal Words

Look at the words in the chart on page 144 and then see how many of them you can find in the writing model on pages 134-135.

PRACTICE 7

Using Contrast Signal Words

Write one new sentence to combine the information in each item. Use a different comparison signal word in each sentence.

 The chief executive in Great Britain is called the prime minister. The chief executive in the United States is called the president.

While the chief executive in Great Britain is called the prime minister,

the chief executive in the United States is called the president.

- In the United States, the president fulfills the functions of both political leader and head of state. These two functions are separate in Great Britain.
- In other words, Great Britain has both a monarch and a prime minister. The United States has only a president.

(continued on next page)





majority of Congress. The British prime minister is the head of the political party that has the most seats in Parliament.
5. The United States has a written constitution. Great Britain has no written constitution.
6. In the United States, elections are held on a regular schedule, no matter how popular or unpopular the government is. In Great Britain, elections are held whenever the prime minister loses a vote of confidence.
7. The members of the U.S. Senate are elected. The members of the British House of Lords are appointed or inherit their positions.
As you can see, the two systems of government differ in several major aspects. They are both democracies.

4. The president of the United States may be of a different political party than the

TRY IT OUT!

On a separate sheet of paper, write five sentences of your own, contrasting two cultures* you are familiar with. Use a different contrast signal in each sentence. Some possible topics include:

- The culture of a local high school compared to that of a large university
- · The culture of a small town compared to a big city
- · Aspects of culture in two different societies

^{*} Culture often refers to the values and customs of a country or society, but it can also describe small units, such as a school or a smaller community.



Applying Vocabulary: Using Antonyms

In your writing assignment for this chapter, you are going to write a paragraph about a topic related to culture. You will probably want to use antonyms to connect contrasting ideas.

PRACTICE 8 Using Antonyms

- Write antonyms for the words. You may want to use some of these words and their antonyms in your writing assignment. Use a dictionary or a thesaurus as needed.
 - 1. large _____
 - 2. rural _____
 - 3. respect _____
 - 4. closeness _____
 - 5. give _____
- On a separate sheet of paper, write four pairs of sentences. Use the words from Part A in your sentences. Include one of the words in the first sentence of each pair and then use an antonym in the second sentence.

EXAMPLE

Classes at a university are often very large, with 100 or more students.

The classes at my high school were small, with only about 20 students.

WRITING ASSIGNMENT

Your assignment for this chapter is to write a comparison / contrast essay on a topic related to culture. Choose one of the topics from the list for your essay. (These are the same topics found in Try It Out! on pages 143 and 146. If you used one of these topics before, you may use the same topic again or choose a different one.) Use the writing model on pages 134-135 to help you. To complete the assignment, follow the steps in the writing process.

Topics

- The culture of a local high school compared to that of a large university
- The culture of a small town compared to a big city
- Aspects of culture in two different societies



STEP 1: Brainstorm about the topic.

- Collect information and generate ideas about your topic.
 One tool you can use is a Venn diagram. A Venn diagram is a brainstorming tool that uses overlapping circles to show the similarities and differences between two or more ideas.
 - o Draw two circles that are partly overlapping.
 - Write one thing that you are comparing in one circle and the other thing in the other circle.
 - Then write the similarities between the two things in the overlapping part of the circle, and the differences between them in the separate areas of the circle. Brainstorm as many ideas as you can. You can decide which ideas to include later.

United States

- Daily homework very important
- 2. Teacher called by first name sometimes
- Students expected to ask questions in class & contribute without being called on
- 4. Eating and drinking allowed

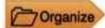
Both

- Attendance required
- 2. Students expected to answer teacher questions
- Professor available outside of class

Country X

- Only exam is important—it doesn't matter if you come to class with homework done
- Students stand when professor enters rooms
- Students wear more formal clothes
- Usually larger classes

This Venn diagram could help generate and organize ideas for an essay comparing university culture in the United States with that of another country.



STEP 2: Organize your ideas.

- Review the comparison / contrast chart on page 137. Create your own chart, using the most important points from your Venn diagram. Which points of comparison will you examine in your essay? Once you have listed them on your chart, note whether there are more similarities or differences.
- Use your chart to decide whether you will use point-by-point or block organization. Write a preliminary thesis statement that indicates a comparison / contrast essay.

Consuming Fresh Food instead of Canned Food

Eating is an activity that humans do regularly, at least two times a day. Today, people live in a world where the variety of food is immense and where they are responsible for what they choose to eat. Hence, one should carefully decide what he is about to eat and how it will affect his body. There are many differences between eating fresh foods and eating canned foods; among these differences, there are flavor, cost, and health benefit.

The most notable difference between fresh food and canned food is their flavor. Fresh foods have great flavor and taste because they keep all their natural conditions. However, canned foods lack a lot of its flavor characteristics because there are some other chemical products added to the natural foods. So, it is logical that the fresh foods will have greater taste and flavor when consumed just because of the time in which they have been prepared.

Another difference between these two types of foods is the cost. Canned foods are more expensive than fresh foods. One reason is that canned foods require less work to prepare than fresh food, one needs only to open and serve himself. On the other hand, fresh foods are cheaper because they are not ready made for the customer to immediately serve and eat.

Probably the most important difference between canned food and fresh food is health factor. Canned food lose some of the original fresh food nutrients when stored, and also it has to be tinned with many conservatives and chemical factors that prolong the shelf life and apparent freshness of the food. It could also become toxic if consumed too often. In contrast, fresh foods keep its original nutrients if stored appropriately and its constant consumption is not poisonous for people's health.

The three main differences between buying fresh foods and buying canned foods comes down to a personal choice, based on the time each person has, the money, and the importance he gives to his nutrition and health. Therefore, it is important to consider the current possibilities and to choose the type of foods for one's convenience and lifestyle.

Vacation at the Beach or in the Mountain

People are all the time looking forward to their vacation period. There are many options where to choose. Usually, the two most common places people choose for taking a vacation are the beach and the mountain. Both places offer a variety of fun activities that the other cannot do. The mountain and the beach are very different particularly with regard to the climate, their locations, and the types of activities practiced in the two places.

First, spending the period of vacation in the mountain is different because of the its climate, types of activities, and location. Climate is important in order to enjoy vacation. If a person dislikes cold weather, he/she might have a hard time in the mountains. The cold climate in the mountain is the first barrier to enjoying them. It is known that the climate and temperature of these zones are what determine the types of activities they offer. Snowboarding, mountain climbing, hiking, and skiing are some activities people can enjoy when going to the mountain. There are many regions that have mountains where people can go and have a great vacation. Canada, for example, is a country located in North America and full of mountain vacation sites; there are many interesting mountain places where people can go and have fun.

Second, vacation in the beach is also different because of the three aspects of climate, types of activities, and location. Warm climate is one of the most important features that the beach has. Sun and fun are two words that describe the beach. The temperature in those places is always hot. Hence, the sea and the warm climate determine the activities that are available at the beach. People can swim, play volleyball, play soccer, and ride water bikes. In most of the coastal sites, there are restaurants where people can have fun or party throughout the day. Mexico, for example, offers many amazing and famous coastal sites for people to visit.