Answer Key
Think about It box answers can be found at the end of the key, page 30.

Chapter 1 (pages 1–47)

Canvas the Topic (pages 2–3)

A. Answers will vary.
B. Possible answers:
   1. emerging technologies—new technologies that are currently developing or will be developed over the next five to ten years
   2. a digital trail—the trail or path of data created through activities on the Internet and computer networks
   3. a security breach—when data or information is stolen from a computer
   4. a letter of reprimand—an administrative measure used to identify and correct conduct or behavior which fails to comply with established company standards
   5. blogging—the act of creating or writing a blog or weblog
   6. googling—the act of using the Google search engine to find information on the Internet

Reading 1

Focus In (page 4)
Possible Answers:
   1. a. Employees don’t finish their work.
      b. They don’t work thoroughly or are distracted.
      c. Company information might be leaked by accident.
   2. Blogging is more opinionated and often written by one person rather than an agency.
   3. Answers will vary.
   4. Workers could be fired, suspended or demoted.

Zoom In (pages 6–7)
   1. Employees can be fired for websurfing at work.
   2. employees
   3. 25 percent (one quarter of them)
   4. a. blogging
Answer Key

b. When technologies emerge, people start using them.
5. a. 75 percent
   b. 65 percent
   c. 89 percent
6. Possible answers:
   a. behavior that can be judged as illegal
   b. electronic documents that are saved
   c. in trouble

Sorting Sources (page 9)
A sample is provided online for this one. For all others, answers will vary.

Reading 2

Focus In (page 10)
Possible answers:

Zoom In (page 14)
1. T
2. F (The First Amendment does not protect jobs.)
3. T
4. F (Blogging dwarfs e-mail and IM when it comes to risks.)
5. F (Only nine percent have policy.)
6. T

Vocabulary Check (pages 14–15)
Par. 2: violate computer privileges
Par. 3: blog parlance
     keep a lid on
     ranks of dooced employee bloggers to swell
Par. 4: private employers in employment-at-will states
Par. 5: maximize employee compliance
     e-mail retention/deletion policies in place
     insignificant messages that may be purged
Par. 6: coupled with ill-advised content
Par. 7: unmanaged blogging dwarfs e-mail
copyright infringement
security breaches
Par. 8: merely
Par. 9: potentially costly oversight
Par. 9: review employees’ entries and third parties’ comments prior to posting
Par. 9: a business-critical best practice
Par. 10: to block employee access to external blog URLs
Par. 10: blog monitoring and blocking lag behind Internet and e-mail surveillance

Zoom In: Synthesizing (page 17)
Answers will vary. A sample response for each is:
A: 3 out of 5 employees
admit to personal websurfing at work.
B. The first amendment protects against
government regulation of speech, but it doesn’t protect jobs.
C: Employers are
firing workers for violating web privileges and e-mail misuse.

Vocabulary Check (page 19)
Answers will vary.

Reading 3
Focus In (page 19)

a. (Introductory Anecdote)
Answers will vary. These are the words that appeared in the original article.
1. highly
2. curiously
3. immediately
4. personally
5. professionally
6. virtually
7. easily
8. seemingly

b. Thesis statement: Logging on for personal use at work, even for seemingly
innocent activities, could get you into big trouble.

Possible answers:
1. Michael Foster
2. Websense
3. 60 percent of American businesses have disciplined . . . , 30 percent have
   fired workers, 82.6 percent of U.S. companies have IAPs.
4. See list Paragraph 10.
Zoom In (pages 23–24)

1. The audience is job seekers (Monster.com is a job search web site) and employees who might be tempted to surf the Internet at work. The purpose of the article is to warn employees of the potential dangers of surfing in the workplace.

2. Answers will vary.

3. Answers will vary.

4. The tone is serious. The word *beware* in the title indicates a warning.

5. a. 1
   b. 2
   c. 1

6. Answers will vary

7. a. CEO—chief executive officer
   b. IAP—Internet access policy
   c. URL—uniform resource locator
   d. PhD—Doctor of Philosophy

Reading 4

Focus In (page 25)

Possible answers:

1. cigarette breaks, chatting in the halls, personal phone calls
2. surfing the Internet for competitors websites, learning to use software
3. It might promote friendships among employees, a relaxed atmosphere, or creativity.
4. Par. 2—according to a study by Advertising Age
   Par. 3—A survey by . . .
   Par. 4—according to a 2005 study from . . .
   Par. 10—says Robert Cenek, a . . .
   Par. 11—he says
   Par. 12—according to a study by University of Maryland’s Smith . . . , a market research firm
   Par. 19—says Michael Newman
   Par. 20—says Kit Murphy
   Par. 21—Murphy notes that
   Par. 22—says Gartner analyst David Smith
   Par. 28—As HR expert Cenek puts it
**Zoom In (page 30)**

1. c
2. a
3. a
4. Possible answers: Websurfing promotes creativity. It promotes higher levels of job satisfaction.

**Outlining (page 31)**

1: hook and thesis
2–3: statistics about how much time is spent “goofing off” on the Web
4: percentage of companies attempting to monitor Web use
5–8: redefining productivity in the Internet Age
9–12: at-work and off-work boundaries becoming unclear
13: a few personal activities at work can make an employee more productive overall
14–16: web surfing can be mentally stimulating and revitalizing and promote creativity
17–18: tools and limits for restricting websurfing
20–22: Internet control could be bad for morale and recruitment
23–25: situations that justify Web control and solutions
26–29: management’s role: identifying problems and motivating employees

**Summarizing (page 32)**

Answers will vary.

**Reading 5**

**Focus In (page 33)**

Answers will vary.

**Zoom In (page 34)**

a. Reference 1 is cited once in Paragraph 8.
   Reference 2 is cited in Paragraphs 5 and 6.
   Reference 3 is cited in Paragraph 7.

b. Possible answers:
   Annotation 1 refers to “playful use.”
   Annotation 2 refers to “apply knowledge.”
   Annotation 3 refers to the bulleted list.
   Annotation 4 is a summary of Paragraph 8.
   Annotation 5 is a summary of Paragraph 9.
   Annotation 6 refers to “transferred to a work-related task.”
   Annotation 7 refers to “thesis.”
Answer Key

Zoom In (pages 38–41)

1. c
2. True
3. c
4. However, our position is that
5. b
6. a
7. a
8. b
9. a
10. d

Practice (page 44)

Answers will vary.

Synthesizing Information (pages 45–46)

A. 2, 4, 5
B. Answers will vary

Chapter 2 (pages 49–105)

Canvas the Topic (page 50)

A. Answers will vary.
B. Possible answers:
   1. steroids—complex hormones that affect growth and development (synthetic or naturally occurring)
   2. anabolic steroids—performance enhancing drugs that mimic naturally occurring processes
   3. precursor steroids—supplements that can be purchased “over the counter” and are usually used to increase testosterone
   4. cycling (of drugs)—alternating periods of anabolic steroid use with nonuse
   5. THG—tetrahydrogestrinone, a designer steroid
   6. HGH—Human Growth Hormone
Reading 1

Focus In (page 51)

1. Designer
2. Stealth Steroids
3. The Scope
4. Over-the-Counter
5. Proactive

Zoom In (pages 57–58)

Possible answers:
1. anabolic drug that acts like testosterone but doesn’t show up in test results
2. undetectable steroids
3. has existed since 1930s, increased in scope, more kids are using, athletes and everyday people
4. pro-steroids, precursors
5. more testing, stricter penalties, more regulation, better education

B. a. T
   b. F (THG is used in many sports.)
   c. F (Cycling does not lessen the side effects.)
   d. F (Potentially harmful ingredients were not yet known.)
   e. T

C. Answers will vary.
D. Answers will vary.

Reading 2

Focus In (page 59)

See Zoom In exercise for answers.

Zoom In (page 63)

Testosterone

Definition: a male sex hormone, an androgen
Any other names: n/a
Benefits to human body: masculine characteristics, anabolic, or building, effects that can increase bone density and muscle mass
Potential risks involved: n/a
How taken: produced naturally
Available drug testing: urine test, positive (failed drug test) if the T-E ratio (testosterone to epitestosterone) is greater than 4 to 1.
Anabolic Steroids

Definition: synthetic derivatives of testosterone
Any other names: ‘roids
Benefits to human body: anabolic or muscle-building power
Potential risks involved: Illegal; androgenic or increased male sexual characteristics (e.g., violent temper)
How taken: rubbed on), injected, or ingested
Available drug testing: not stated; presumably a urine test; same as testosterone

Human Growth Hormone

Definition: secreted by the pituitary gland at the base of the brain
Any other names: HGH, somatropin
Benefits to human body: maintenance of bone development, can treat growth disorders, counteract aging
Potential risks involved: not stated
How taken: injected
Available drug testing: blood test in development to check weight of molecules

Paraphrasing Definitions (pages 64–66)

PARAPHRASE 1
A. Possible answers:

According to Mannie (2004), a designer steroid is an anabolic drug that produces muscle-building effects in the same way testosterone does. These kinds of steroids cannot be detected in drug tests.

According to Mannie (5): cited the original source is (4): maintained present tense of verb to be
in the same way (2): simplified to mimic.
. (3): divided complex original sentence

PARAPHRASE 2

Mannie (2004) explains that a designer steroid is one that helps build muscle strength in the body similar to the natural effects of increased testosterone. Athletes who take designer steroids will have negative, or clean, test results.

(5) (4) (2) (1)
PARAPHRASE 3
Designer steroids are designed to be undetected in drug tests. They produce the muscle-building effects of increased testosterone in an athlete’s body (Mannie, 2004).

B. Possible answers:

PARAPHRASE 1
Human growth hormone (HGH) is secreted by the pituitary gland and helps the body develop strong bones and lean muscle. Synthetic HGH is used by athletes who want to increase their workout capacity. Sports Illustrated (2008) points out to its readers that HGH must be injected and that it cannot be absorbed into the bloodstream if taken orally or rubbed on the skin like other performance-enhancing drugs, for example.

PARAPHRASE 2
Natural human growth hormone (HGH) is produced in the pituitary gland. Its main function is to promote healthy bone development. Another role of growth hormone is to maintain or increase the muscle to fat ratio. As noted by to Sports Illustrated (2008), HGH is injected by some athletes to help them work out harder.

C. Answers will vary.

Vocabulary Check (pages 67–68)
A. kilo—thousand
dec—ten
en—put into
im—not
im—in
in—in, into
dis—negation, removal
under—below
Answer Key

B. Column 1

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<th>ance</th>
</tr>
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<td>ness</td>
</tr>
<tr>
<td>verb</td>
<td>ate</td>
</tr>
</tbody>
</table>

Reading 3

Focus In (page 69)

1. Possible answers: vitamins, energy drinks.
2. Answers will vary.
3. Answers will vary.

Zoom In (page 70)

Title: Performance Enhancing Drugs in Sport

   Number of paragraphs: 31
   Source (Publication): Facts On File World News Digest

2. The Media is the longest section. The Introduction is the second longest section.

3. Possible answers:
   a. Floyd Landis, winner of the 2006 Tour de France, tested positive for synthetic testosterone and was waiting to hear if he would be stripped of his title and be banned from competing for two years.
   b. Barry Bonds, a Major League Baseball player, was about to break a long-standing home run record, but he had been implicated in the BALCO scandal.

4. Answers will vary

Paragraphs 7–10

1. First passed in 1988, the act made it illegal to use or distribute nonprescription anabolic steroids, and in 1990, it classified anabolic steroids as a controlled substance.
2. Use of steroids had increased among professional and student athletes in the 1980s, and research was beginning to show major health risks posed by steroids.
3. In 2004, the focus was on synthetic testosterone THG, a designer steroid, and andro, a steroid hormone-precursor.
4. Elite athletes were questioned about the use of PEDs in front of a Congressional committee. They were under oath to tell the truth.

Paragraphs 11–15
1. The FDA is the Food and Drug Agency. Its main function is monitoring food and drug safety through research and declaring what is allowed or banned for consumption in the United States.
2. The FDA did not have the power to demand that manufacturers of dietary supplements prove their safety and efficacy in the same way they would have if these supplements had been considered drugs.
3. ephedra: banned
andro: banned
creatine: still legal

Paragraphs 16–19
1. Trevor Graham, a track and field coach, tipped off investigators, alleging that BALCO had supplied PEDs to elite athletes that he trained.
2. Conte and Anderson were able to reduce their sentences (time in prison) by pleading guilty to the alleged crimes of illegal production and distribution of steroids.

Paragraphs 20–23
1. No, there is no consistency.
2. Each league imposed regulations in different years, and the rules about testing and consequences differ widely from sport to sport.

Paragraphs 24–31
1. Major League Baseball and professional cycling
2. The “complex array” of athletes and organizations and drugs makes it very difficult to understand or even imagine all that is involved in sports doping.

Zoom In (pages 83–84)
B. 1. T
2. T
3. T
4. F (The agency revisited DSHEA in 2004, proving it was not powerless.)
5. F (The long-term effects of creatine have not been proven.)
6. F (The department is concerned about both equally.)
7. F (They pled guilty to money laundering.)
8. F (MLB has had difficulty because the policy is lenient.)
9. F (They have to pursue their own efforts.)
10. F (They were about to go to jail.)

Fact or Opinion? (page 85)
1. F
2. F
3. O
4. O
5. F

Reading 4

Focus In (page 87–88)
Possible answers:
1. They seem highly knowledgeable about the topic.
2. They are passionate about sports and want to get a good story.
3. They want sports to remain clean and to expose any wrong doing.
4. They seem to be well-known sports writers.
5. Answers will vary.

Zoom In (page 88)
A. Possible answers
   Paragraph 2 — – “seemingly,” his confession
   Paragraph 3 — ✓
   Paragraph 4 — – “allegedly,” his honesty
   Paragraph 5 — ✓
   Paragraph 6 — ✓
   Paragraph 7 — ✓
   Paragraph 8 — ✓
   Paragraph 10 — ✓
   Paragraph 12 — ✓
   Paragraph 13 — ✓
   Paragraph 16 — ✓
B. Answers will vary.

Zoom In (pages 91–92)
A. Wording of answers will vary. Possible answers are:
   1. The journalists seem to withhold their opinions for the most part and mainly inform readers of Conte’s television interview.
2. Holley is Conte’s lawyer. The reporters want to show that they tried to contact Holley for a statement but that he refused to give them any information. The implication is that he is not happy with the outcome of Conte’s interview; he needs to think carefully before he speaks about it in public.

3. Answers will vary, but the details in Conte’s purported eye-witness account make it seem credible indeed.

B.

<table>
<thead>
<tr>
<th>Athletes and the Drugs Conte Accused Them of Using</th>
<th>HGH</th>
<th>EPO</th>
<th>THG “The clear”</th>
<th>Insulin</th>
<th>“The cream”</th>
<th>Adrenline</th>
<th>Modafinil</th>
<th>T-3</th>
</tr>
</thead>
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</tr>
</tbody>
</table>

Reading 5

Focus In (pages 93–94)

1. Answers will vary.

2. Possible answers:
   a. dealing with right and wrong / making good choices
   b. there are laws to regulate sports doping and ban substances
   c. side effects can be dangerous
   d. creation of synthetic drugs and drug testing
   e. involves a combination of federal and other agencies

Zoom In (page 94)

Examples:
   a. Paragraph 8—“I’m awestruck and inspired to see a clean athlete . . . ”
   b. Paragraph 19—“15% of elite athletes are doping”
**Zoom In (pages 99–100)**

A. 1. F  
   2. F  
   3. T  
   4. T  
   5. T  
   6. F  
   7. F  
   8. T

B. Possible answers:  
   Clear topic sentences: first sentence in Paragraph 9  
   Academic vocabulary: first sentence in Paragraph 3 (analysis, rigorous)  
   Logical transitions: first sentence in Paragraph 14 “Still . . . ”; second sentence in Paragraph 21 “In fact . . . ”  
   Supporting details: third sentence of Paragraph 15; second and third sentences in Paragraph 17

**Vocabulary Check (page 101)**

1. analysis  
2. similarity  
3. reluctance  
4. deterrent  
5. validity

**Outlining (page 102)**

A. Possible answer:  
   Athletes need to come forward and speak out about sports doping in order for the competition to remain clean and meaningful.

B. Paragraph 2–3: shallowness of the media’s coverage  
   4–6: weaknesses in the health risk argument  
   7–9: worthlessness of fraudulent victory  
   10–11: refutations for the ‘make it legal’ argument  
   12–14: questioning the silence  
   15: extensive scope of doping scandal  
   16–17: reluctance by Olympic athletes to discuss the problem  
   18–20: need for clean athletes’ voices  
   21: open analysis needed to save sports

**Summarizing (page 103)**

Answers will vary.
Chapter 3 (pages 107–53)

Canvas the Topic (pages 108–9)

A. Answers will vary.
B. Possible answers:
   1. biotechnology—technology based on biology, often used in agriculture, food science, and medicine
   2. genetically modified—an adjective to describe an organism whose genes have been directly manipulated
   3. crop yields—agricultural output
   4. environmental activists—groups and individuals involved in protecting the environment (i.e., Greenpeace)
   5. herbicide—weed killer
   6. Monsanto—an American-based multinational agricultural biotechnology corporation

Reading 1

Focus In (pages 110–11)

A. 6 paragraphs; the key names are Monsanto and Center for Food Safety
B. GE: genetically engineered
   GM: genetically modified
   GMO: genetically modified organism
   USDA: United States Department of Agriculture
   CFS: Center for Food Safety
   B2B: business-to-business
C. 1. a biotech company
   2. The company earned $689,000,000 in 2006 and is doing well in the stock market.
   3. Activists allegedly damaged 65 percent of Monsanto’s test fields. Very few crops have been submitted to regulatory agencies for clearance, few are in the marketplace, and practically nothing is being developed according to the U.S.D.A. in 200
   4. The CFS factsheet also indicated a high level of market rejection.

Practice (page 115)

Answers will vary.
Zoom In (page 116)

1. F (GM crops don’t have to be labeled in the United States.)
2. T
3. T
4. F (The statement means consumers do not willingly buy GM produce.)
5. T
6. T
7. T
8. T

Note to the teacher: Point out to students how information can be restated or paraphrased in simpler terms.

Reading 2

Focus In (page 117)

A. Monsanto, Judge Charles Breyer, Roundup Ready, 220,000 acres, Center for Food Safety, USDA, Animal and Plant Health Inspection Service, Forage Genetics, 76 farmers, Canada, Japan, 87 cents, 1.48 percent, $59.50, New York Stock Exchange. It seems to be about government regulations of Roundup Ready and the status of the biotech company Monsanto.

B. Possible answers:
   1. against Monsanto
   2. Overturned means reversed. Upheld means supported.
   3. Federal

Zoom In (page 120)

A. Possible answers:
   1. They claimed there was low risk of contamination or “genetic flow” from the biotech alfalfa to traditional crops; the two types can coexist. Some farmers want genetically engineered seeds and to grow Roundup Ready alfalfa. It is accepted in other countries such as Japan and Canada.
   2. Breyer wrote that the potential harm to farmers and consumers who do not want genetically engineered alfalfa was of more importance than lost business for Monsanto or Forage Genetics.
   3. About 220,000 acres have already been planted and can still be sold. Its genetic trait was developed by Monsanto and licensed to Forage Genetics International, which produces and markets the seeds.
4. It is an interesting fact to consumers/readers. The ban was not lifted so Monsanto has lost the case, but the company still seems healthy. This information seems similar since shares are up.

5. biotech companies

B. 2, 4, 3, 1, 5

Vocabulary Check (pages 121–22)

A. mal—bad
bio—life
non—not
micro—very small
agri—related to agriculture
un—not, the opposite
bene—good
tans—across, beyond

B. ist—noun
icide—noun
ally—adverb
ism—noun
ium—noun
ized—adjective
fy—verb
ers—noun
ic—adjective

Reading 3

Focus In (page 123)

Possible answers:
a. Evidence in favor of GMF (+)
   From Paragraph 8: increased yields, lower prices for food, reduced need for pesticides and herbicides
b. Points against GMF (–)
   From Paragraph 10: poor farmers won’t be able to afford the GM seeds, big corporations seeking to control the world’s food supply
**Zoom In (pages 131–32)**

Possible answers:

1. The audience consists of consumers and the general public. The article gives an overview of the debate by comparing and contrasting arguments both in favor and against GMF. The article doesn’t use complicated scientific language or data.
2. Although there still many questions and possible risks, research and discussion about GM foods should continue due to the potential health and environmental benefits.
3. The writer is probably biased towards GMF for these two reasons. The story used as a hook in the introduction catches the reader’s attention and emotions. The thought of starving people will most likely make the reader at least consider the benefits of genetically modified foods. In the conclusion, the author indicates that more research and caution is needed; however, he states that the “debate should only be beginning, not ending” due to the potential of this technology.
4. Farmers and biotech companies will benefit financially.
5. Answers will vary.
6. Answers will vary.

**Synthesizing (page 132)**

A. Possible answers:
   1. GM foods could help alleviate world hunger.
   2. According to supporters, there is no evidence that GM foods are dangerous.
   3. Farmers could save money on pesticides and avoid exposure to dangerous chemicals.

B. Possible answers:
   1. According to opponents, the results of using GM foods are unpredictable and not enough research has been done.
   2. There are concerns about allergies and other potential health risks.
   3. Pollen drift can cause gene transfer between crops.

**Outlining (page 133)**

Paragraphs:

1–2: introduction to the genetically modified debate
3–4: the Zambian food crisis
5–6: starving people caught in the middle
7–9: history and future of GM crop technology
10–11: resistance to suspicious science
12–13: European moratorium affects U.S. exports
14: benefits of GM crops for farmers
15: lack of evidence that biotech crops are unsafe
16–19: concerns due to lack of testing and possible gene transfer
20–21: accountability versus possibility—the debate is just beginning

Reporting Verbs in Summary Writing (page 135)
2. presents, begins, explains, indicates, reports, points out, says, contrasts, concludes

Practice (page 136)
Answers will vary.

Zoom In (page 137)
Answers will vary.

Reading 4

Focus In (page 139)
A. Possible answers:
   1. The title states that GM crops could “be worse for the environment,” which suggests that the author may be against genetic modification.
   2. GM crops could contaminate traditional crops or affect the wildlife that lives in or around the fields.
B. Possible answers:
   a. “Critically, all our results are explained by the application and timing of different herbicides, not by virtue of the plants being GM or not,” said Les Firbank...
   b. 1. worse impact on farmland wildlife than traditional crops
      2. acceptable grounds under world trade rules to ban the commercialization of the two crops
C. Possible answers (pages 140–45):
   1. Herbicides are weedkillers; they can be harmful to other plants and are not generally good for wildlife.
   2. No, they do not seem happy. They may have conducted the experiments to prove that GM crops do not harm surrounding wildlife, but found otherwise.
3. GMF critics are happy because the findings of this study add to research showing negative environmental impacts of GM crops.

4. No, opponents of GMF say the findings are invalid since the herbicide used on the conventional maize is known to be harmful and is going to be banned.

5. Crop yields refer to how much is produced by plants that are cultivated.

6. The present study only looked at the environmental impact of GM versus conventional crops; the researchers in this case were not interested in the amount of productivity from each type of plant.

7. No, Chris Pollack says the results of this study should “feed into the wider debate” over GM crops and food in Britain, meaning nothing is certain.

8. They consider this study a success because the trials were done before the government made a decision to adopt a technology (whereas often these studies are done after the fact).

9. They examined the number of weeds, weed seeds left in the soil, beetles, and other insects collected in traps.

10. Weeds are seen as good; when they are plentiful it shows less harm to the environment.

11. Seeds in the ground are good for wildlife; birds eat them. Comparing seeds left in the ground by GM crops and conventional crops is one way to show the environmental impact of each type of plant.

12. This implies that there were 40 percent fewer butterflies recorded around the GM crops.

13. While the results for the oilseed rape and sugar beet plants showed more weeds and seeds in the conventional plots, for maize, more weeds and seeds were observed in the GM plots.

14. He is referring to GM crops, since they have not been grown for the past ten years.

15. Their reaction is positive because they are against genetically modified crops and food production.

16. They feel the study was not designed well, that researchers tried to “fix” the experiment so that results would favor GM crops.

17. The GM herbicides are engineered within the plants, but atrazine needs to be sprayed on/add to plants and soil; it has already been known to cause environmental harm.
18. No, Monsanto announced it would close its “European cereal seed business” but remains committed to research and development (R&D). It is implied that this R&D takes place elsewhere (such as in North America, as learned in previous readings).

19. Answers will vary.

**Zoom In (page 146)**

1. the first sentence
2. four (Firbank, Pollock, Squire, Kronick)
3. United Kingdom, 2003
4. Possible answer: Par. 10—“A quarter fewer butterflies . . .”
5. Possible answer: Par. 12—[the Maize situation] was totally reversed.

**Vocabulary Check (page 147)**

1. challenge (verb)
2. vaccine (noun)
3. processed (verb—past participle)
4. infectious (adjective)
5. initiatives (plural noun)
6. previously (adverb)
7. potentially (adverb)

**Reading 5**

**Focus In (page 148)**

A. Possible answers:

1. The title suggests Coghlan is in favor of genetically modified tomatoes that can attack human disease.
2. Coghlan writes for a scientific journal and does tend to be objective and neutral when reporting.
3. Actually, in Coghlan’s 2003 article, his report is very neutral and objective. His view hasn’t really changed. He seems objective yet interested in genetic modification from the standpoint of a scientist who is curious about both the pros and cons.
4. a. Possible answers:
   “You wouldn’t have to refrigerate the vaccine . . . ” says Hammond.
   b. 1. challenge two of the world’s most lethal viruses
      2. affordable vaccines
      3. easily grown and processed
Zoom In (page 151)

A. 1. F (The scientist is awaiting permission to continue research.)
   2. F (Oral vaccines would be inexpensive.)
   3. T
   4. F (Potatoes have also been used.)
   5. F (The USDA Agricultural Research Service is collaborating with Russian researchers.)
   6. T
   7. T
   8. T

B. Possible answer:
   Genetically Modified foods can be used to create edible vaccines which could combat serious viruses.
   The thesis is stated directly.

Chapter 4 (pages 155–209)

Canvas the Topic (pages 156–157)

A. Answers will vary.
B. Possible answers:
   1. a bill (in Congress)—a statute in draft before it becomes law
   2. biofuel—fuel coming from a renewable biological source
   3. photovoltaics—technology which converts sunlight into energy
   4. wind farm—a power plant that uses wind turbines to generate electricity
   5. hydrogen cell—an energy conversion device that can capture and use hydrogen to generate power
   6. R & D—research and development

Reading 1

Focus In (page 158)

Possible answers:
   1. electricity and hydrogen
   2. “A tough sell” means that it will be difficult to get consumers to adopt alternative fuels.
   3. research and development is costly, consumers are dissatisfied, gas prices are high
Zoom In (page 159)
1. is not likely to happen; will only occur
2. Possible answer: Alternative fuels will not be widely used in cars in the future according to an MIT study.
3. This is an opinion because it is the researcher’s conclusion.
4. Money from the government to promote alternative fuel infrastructure.

Zoom In (page 161)
Possible answers:
1. You can’t get a job without experience, but you can’t get experience unless you have a job.
2. Policies such as tax subsidies will need to be in place to allow corporations to build the infrastructure (i.e., fuel stations).
3. a

Reading 2
Focus In (page 162)
1. To be a world leader, America must develop renewable energy.
2. President Carter wore sweaters in the White House . . . only to be followed by Former Pres. Reagan . . . ; Obama argued that kicking our foreign oil “addiction,” as ex-Pres. Bush called it . . . Louisiana Gov. Bobby Jindal, delivering the Republican response . . . ; efforts that former vice president Dick Cheney had derided as merely “political virtues.”

Zoom In (pages 166–67)
1. The author seems positive about Obama’s plans. For example, the author discusses the positive impact the stimulus package will have on alternative energy.
2. Carter, who was also a Democrat, was concerned about energy conservation.
3. a. objective
   b. subjective
   c. subjective
4. to persuade them to agree
5. Answers will vary.
Reading 3

Focus In (pages 168–69)

1. Possible answers:

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Benefits</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar</td>
<td>1. easy to use</td>
<td>cost of photovoltaics is high</td>
</tr>
<tr>
<td></td>
<td>2. sunshine is free</td>
<td>sun does not always shine</td>
</tr>
<tr>
<td>Wind</td>
<td>1. inexpensive</td>
<td>require a lot of space</td>
</tr>
<tr>
<td></td>
<td>2. environmentally friendly</td>
<td>noise, appearance</td>
</tr>
<tr>
<td>Biofuels</td>
<td>1. can be grown by farmers</td>
<td>could impact the food market</td>
</tr>
<tr>
<td></td>
<td>2. many alternatives</td>
<td>could affect food prices</td>
</tr>
</tbody>
</table>

2. Answers will vary.
3. Answers will vary.
4. Possible answers: affordability, accessibility

Zoom In (page 169)

A. Possible answers:

Paragraphs 1–3 (page 170)

1. to reduce reliance on fossil fuels from other nations
2. Improvements in performance and availability have made alternatives more attractive for both producers and consumers.
3. Kammen argues that we need a “long-term investment of scientific, economic and political resources” to make the transition to alternative energy sources.

Paragraphs 4–11 (page 171)

1. semiconductor materials (such as multicrystaline silicon wafers)
2. Photovoltaics are expensive to manufacture.
3. Solar-thermal systems use sunlight to generate heat and hot water. They can also produce electricity without solar cells by using a turbine.

Paragraphs 12–15 (page 175)

1. Germany, Spain, and Denmark
2. the Great Plain states, such as North Dakota
3. Kammen contends that arguments about the view have to be compared to the social costs of the alternatives.

Paragraphs 16–19 (page 177)

1. The government is providing some funding for research and development of ethanol in an effort to improve the product and promote it to consumers as a cost-efficient alternative to gasoline.
2. It takes energy to harvest the corn and refine the ethanol; the process produces greenhouse gases. Also, farmers who traditionally plant other needed crops may opt to grow only corn instead.

3. This type of ethanol is made from burning lignin to heat the natural sugar in the plants. It is a different form of sugar from corn and the process does not add greenhouse gases to the atmosphere since the green plants also absorb carbon dioxide.

Paragraphs 20–28 (page 179)

1. Private and government funding for research and development has decreased significantly; it is much less than that of pharmaceuticals and biotech companies, for example.

2. Innovations decrease as a result of inadequate funding, such as patents for new inventions and alternatives to fossil fuels.

3. Kammen suggests charging fees for carbon emissions and letting clean companies sell some of their allowed amount of emissions to other companies that produce too much. He calls for a whole new, clean-technology revolution to combat global warming.

B. fluctuating 1. changing
endeavor 1. attempt
to hasten 1. to speed up
resurgence 2. revival
rivaling 1. similar to
accelerated 2. progressed rapidly
spurred 2. stimulated
derail 2. put a stop to
reluctant 1. hesitant
relentlessly 2. persistently
ambiguous 1. unclear
bolster 1. support
withered 2. decreased
plummeted 2. drastically decreased
dwindles 2. decreases
boost 1. increase
curb 2. reduce
foster 2. promote
alleviate 2. lessen
Zoom In (page 183)
Answers will vary.

Reading 4

Focus In (page 184)

1. Biofuels are fuels made from relatively recently living biological materials. Bioethanol is a biofuel generally made from corn or sugar.

2. Answers will vary.

3. Advocates and opponents of biofuels look at studies and statistics differently. Proponents contend that biofuels are more economical and environmentally friendly than fossil fuels. They use Brazil as a prime example. However, opponents doubt whether the high hopes for worldwide production and use of biofuels can be realized; they cite various geographical and lifestyle differences that would prevent the successes in Brazil being scaled to global proportions.

4. This is a yellow/brass-colored mineral with a metallic look that is sometimes mistaken for gold. It can “fool” people, but only fools would truly mistake a worthless mineral for gold. The play on words in the title suggests that perhaps biofuels are not greatest discovery after all; they may have looked like “gold” initially but pose problems as well so are not as good as they seem.

Zoom In (pages 192–93)

A. 1. T
   2. F (Supporters claim greenhouse gas inputs will decrease.)
   3. F (The U.S is not able to match Brazil’s numbers.)
   4. F (People who don’t own automobiles will not benefit as much.)
   5. T
   6. F (Sugar requires a lot of water and is not a better option.)
   7. T

B. Possible answers:
   1. The land in Brazil is more fertile, and the climate is favorable for biofuel crops. The population density is also lower than that of the United States. Also, Brazilians drive less.
   2. Farrell assumes the leftover biomass would be used rather than discarded.
   3. The land that is being used to produce bioethanol is land that is normally used to supply food for the world. This is causing a rise in grain prices, which could impact people living on very little money.
4. The author discusses ways to produce ethanol from non-food crops such as switchgrass.

C. Possible answers:

<table>
<thead>
<tr>
<th>Corn-Based Ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pros</strong></td>
</tr>
<tr>
<td>could reduce greenhouse gas</td>
</tr>
<tr>
<td>would reduce dependency on fossil fuel imports</td>
</tr>
<tr>
<td><strong>Cons</strong></td>
</tr>
<tr>
<td>uses land normally for food supply</td>
</tr>
<tr>
<td>requires pesticides and fertilizers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sugar-Based Ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pros</strong></td>
</tr>
<tr>
<td>more fuel per hectare</td>
</tr>
<tr>
<td>process for sugar based is better for the environment than corn-based</td>
</tr>
<tr>
<td><strong>Cons</strong></td>
</tr>
<tr>
<td>often results in cutting down rain forests</td>
</tr>
<tr>
<td>could deplete water supplies</td>
</tr>
</tbody>
</table>

**Outlining (page 194)**

Possible answers:

Sample Thesis/Main Idea

The ongoing worldwide development of biofuels as an alternative to petroleum has resulted in both positive and negative consequences.

Paragraphs:

5: negative effects of biofuels as cited by the opposition (and refutations)
7–8: Worldwatch Institute's report/analysis of the Brazilian model
10–12: assessing the environmental benefits of bioethanol
13–14: corn based ethanol could negatively affect the world’s food supply
15: percentage of land needed to produce biofuels
16: refutations/arguments from biofuel supporters
22–26: biofuel solutions—non-food crops and waste biomass
27–28: R & D outlook for the next generation of biofuels
Vocabulary Check (pages 195–96)

Par. 2: economically viable
PR coup
Par 3: dramatically slash
Par 4: particularly excruciating quandary
  green community
  slam on the brakes
Par 5: trash
Par 7: add up
Par 8: stack up
Par 9: revitalize
  moribund
Par 10: ramp up
  clear-cut
Par 13: precipitate a rise in prices
Par 14: sharp decline
  commensurate rise
Par 16: slender climate benefits
Par 21: markedly worse
Par 22: usher in an era

Reading 5

Focus In (pages 196–97)
Answers will vary.

Zoom In (page 197)
Possible answers:
  a. it can separate hydrogen from oxygen
  b. it combines with aluminum to make alumina
  c. it prevents the formation of an oxide skin

Zoom In (pages 200–1)
A. 1. a
  2. Answers will vary.
  3. Possible answer: The author seems positive about hydrogen. The author seems pleased that hydrogen is “back in the race.”
4. Hydrogen is a highly flammable gas. The Hindenburg was a hydrogen filled blimp (airship) that burst into flames in 1937 killing many people.

5. Energy from power stations is used to convert the alumina back into aluminum, and power stations are a source of greenhouse gasses.

B. Possible answers:
   Pros—low impact on environment, little waste
   Cons—storage and transportation can be dangerous

Paraphrasing (page 202)

Possible answers:
1. a large number of people remember something
2. repeating something done before
3. aluminum wants to bond with oxygen molecules
4. using aluminum to aid in the release of hydrogen
5. be put back without much trouble
6. well-named new business

Integrating Sources (pages 203–5)

Answers will vary. See Appendix D for a sample paragraph.

Supporting the Thesis (pages 206–8)

b, d, e, f, g, i
Sample Responses for Think about It Boxes

Chapter 1

page 5
They could be texting, talking, tweeting, or checking e-mail and personal websites and social networks online. It seems that it would be very difficult to monitor their cell phone usage at work.

page 6
Some companies have a lot more information to keep secure; some are very large while others are small or family-owned and easier to manage; some have had bad experiences with employees’ wasting time or leaking information online and have reacted with stricter policies.

page 11
The First Amendment provides for freedom of speech, the press, and religion. Writing and posting words online might seem different from speaking spontaneously, but when it comes to interpreting the First Amendment (the law), both speech and print are ways in which people express themselves.

page 13
The broadcast mentioned Websense, which allows companies to block categories of websites and Internet access at certain times.

page 21
Websense would be happy if survey results showed that companies are worried about their employees’ inappropriate use of the Internet at work.

page 22
These rules do not seem very clear. The company “has the right to” does not state whether or not it uses that right and monitor all web use, for example.

page 23, par. 13
“Open corporate culture” describes newer, progressive companies like Google and Apple, which encourage employee input, whereas “Old Economy” denotes firms with a hierarchy and little interaction between management and workers.
Chapter 2

page 54
Ordinary people might have injuries or diseases that require steroids as part of their medical treatment; amateur athletes also want to be faster, stronger, and more muscular in order to compete. This is the same for teens and college players; the shortcuts and incredible results of PEDs are tempting.

page 62
Yes, HGH testing was conducted at the 2008 Olympics, but it doesn’t seem to have been effective. Several websites can verify this. As of 2010, an athlete had been caught, but not in the Olympics; still, the test was considered more effective. Several websites can verify this. Students should offer opinions on the effectiveness of testing at the Olympics.

page 71
Yes, Barry Bonds broke Hank Aaron’s home run record that summer. Alberto Contador of Spain won the 2007 Tour de France.

page 79
Students can find the current policy online. They should be directed to also look for new articles about the credibility of the policy, especially as new athletes fail tests under the current policy. The opinions on whether the policy should change will vary and may be influenced by news stories about players who fail the test.

Chapter 3

page 113
In fact, it is very difficult for consumers to avoid eating GM foods, and most of us eat something containing GM crops everyday. Organic foods in general claim to be GMO free, but there is no guarantee anymore since GMOs can spread via pollen drift, machinery, etc.

page 119
Citing other policies and practices that have been successful and safe in other countries lends support to those in favor of this technology by indicating that the same regulations would make Roundup Ready alfalfa safe here.

page 124
The verbs in the first paragraph are in the present tense to arouse the audience’s interest. Introductory anecdotes are often written in the present tense to draw the reader into the story and capture his/her attention.
Farmers who produce GM crops and the companies investing in research and development of GM crops would be critics. They are the ones who will be most negatively affected by the moratorium.

Appell is relatively objective. He explores both sides of the debate. However, he gives some indication that he is in favor of continuing GMF research. For example, in Paragraph 18 he states, “The larger world can't afford to turn its back on the vast potential GM foods offer.”

There are several clues that indicate he generally disagrees with Jessica Hayes. Appell feels that we should be cautious, but that overall the potential benefits of GM foods should not be ignored.

Chapter 4

The author’s reference to Carter and Reagan suggests that Democratic President Carter was more concerned about energy conservation than Republican President Reagan.

Jindal and Obama agree that we need to pursue alternative and renewable fuels; however, Jindal is against using stimulus money for fuel efficient government cars.

Stirling Energy Systems has developed many large-scale projects and patented “the SunCather,” but it is difficult to ascertain whether the particular plants in the Mojave Desert that Kamen mention have been completed. According to one article, construction only began in 2009.

The same arguments that are made for and against genetic modification for food could be made for and against the production of GM crops for fuel. For example, those in favor would argue that using GM crops for fuel will be beneficial to the environment whereas those against GM might argue that the unknown effects of GM plant modification could prove harmful to the environment.