

UNIT 1 FOOD AND HEALTH

WARM UP

Possible answer(s):

1. I like healthy foods such as nuts, fruits, and vegetables. I really like unhealthy foods like cake and chocolate, too!
2. I think people ate healthier in the past because less sugar was used. It might have been too expensive for people to buy processed foods in the past, but now processed foods are often cheaper than organic foods.

READING 1A SWEET LOVE

Before You Read

A. 1. c; 2. b; 3. d; 4. e; 5. a

B. Possible answer(s): Sugar tastes great and people have gotten used to its taste. The first paragraph of the reading text states that it is because sugar is an addictive drug.

Reading Comprehension

A. 1. a; 2. c; 3. c; 4. b (Para D); 5. c (Para C)

B. 1. High blood pressure (Para B); 2. To replace taste (Para D); 3. Healthier options; fruit (Para E)

Reading Skill

A. 1. a; 2. a; 3. b

B. 1. avoid sugar because it's in so many foods; 2. are fighting back against sugar with healthier options.

Critical Thinking

- Possible answer(s): juice, water, pizza, hamburgers, pasta, rice, vegetables, fruit, eggs, fries, steak, chicken, bread, ice cream
- Possible answer(s): I should probably cut down on juice and ice cream. I learned that some foods like bread can actually have a lot of sugar, too.

Vocabulary Practice

A. 1. drug; 2. recommended; 3. addiction

B. 1. buy; 2. wasting time or energy; 3. angry at; 4. classrooms; 5. easy; 6. keep it; 7. less

C. 1. off; 2. up; 3. in

READING 1B FOOD FOR THE FUTURE

Before You Read

A. 1. b; 2. a; 3. c

B. Possible answer(s): People are worried that certain plant species will disappear. Maybe they want to protect the seeds of vegetables so there will always be food.

Reading Comprehension

A. 1. b; 2. a; 3. a (Para D); 4. b (Para E); 5. b

B. 1. b; 2. c; 3. a; 4. d; 5. e

Reading Skill

A. 1. a; 2. b; 3. b; 4. b; 5. b

B. Possible answer(s): 1. to describe a situation or problem; 2. to report data as figures or statistics; 3. to provide background information; 4. to describe a situation or problem; 5. to offer or describe a solution / to present a conclusion

Vocabulary Practice

A. 1. varieties; 2. continents; 3. scale; 4. historic; 5. crop

B. 1. j; 2. g; 3. h; 4. f; 5. b; 6. e; 7. c; 8. d; 9. i; 10. a

C. 1. wide; 2. strong; 3. high

VIDEO SPACE FOOD

Before You Watch

A. 1. many; **2.** long it lasts; **3.** do not fall

B. Possible answer(s): Space food needs to be easy to hold. It can't have too many parts to it, like a sandwich; otherwise, the different parts will all float in different directions! The food also needs to be nutritious so that they can still have a balanced diet on the limited variety of food they can carry to the space station.

While You Watch

B. 1. It's lighter. It doesn't need to be stored in a fridge. **2.** Very rarely. **3.** An Italian astronaut said he missed his favorite food.

UNIT 2 CALL OF THE WILD

WARM UP

Possible answer(s):

1. The wolf is howling as a way to communicate. This wolf could be howling to show its location, to warn other wolves about danger, or to say that prey is nearby.
2. Animals communicate with sounds, body language, and movements.

READING 2A SONG OF THE HUMPBACK

Before You Read

- A.** 1. often; 2. small fish; 3. making sounds
B. Students should scan the article to check answers to activity A.

Reading Comprehension

- A.** 1. b; 2. a (Para D); 3. a; 4. c (Para E); 5. b
B. 1. c; 2. a; 3. b; 4. d

Reading Skill

- A.** 1. a; 2. a; 3. b
B. 1. the whale's voice; 2. Douglas Chadwick; 3. the humpback; 4. the humpback (a different whale from 3)

Critical Thinking

In paragraph D, the author says that the reasons are unknown. However, one theory is that males want to let other males know they are in the area.

Possible answer(s): Whales might communicate to be social, to point out food or danger, or to ask for help.

Vocabulary Practice

- A.** 1. single; 2. aware; 3. Apparently; 4. experience; 5. record
B. 1. complex; 2. season; 3. unknown; 4. interact; 5. curious
C. 1. view; 2. national; 3. action

READING 2B THE 1,000-YEAR BIRD SONG

Before You Read

- A.** The great horned owl and the lyrebird communicate in interesting ways. The owl uses a great variety of different calls to communicate very specific things. The lyrebird can copy other birds' sounds and even mimic man-made sounds like car alarms!
B. The bird in the passage is the swamp sparrow. Its call is very special because it has been passed down between generations for possibly 1,000 years.

Reading Comprehension

- A.** 1. c; 2. a; 3. a (Para E); 4. b (Para E); 5. c
B. 1. T (Para B); 2. T (Para C); 3. F (Para D); 4. NG; 5. T (Para G)

Reading Skill

- A.** 1. place: North America's wetlands (Para A); 2. name: Robert Lachlan (Para B), Andrew Farnsworth (Para G); 3. date: 2008–2009 (Para D); 4. number: 615 (Para D); 5. reason: to break each song up into syllables (Para D)
B. 1. F (cities, roads, plantations); 2. E (allows the birds to create traditions that last for centuries, the song-types in the marshes of North America today may well have been there 1,000 years ago); 3. G (scientists may be able to identify how other animals are able to preserve their cultural traditions); 4. B (like humans, baby swamp sparrows learn to communicate by copying adults.)

Critical Thinking

Possible answer(s): A celebrity might change his or her hairstyle, and suddenly everyone wants the same style. A new smartphone is released, and everyone wants to have it. A new word to mean "very good" becomes popular, and soon it is part of everyone's vocabulary.

Vocabulary Practice

- A.** 1. humans; 2. aspect; 3. standard; 4. exchange; 5. evolved
B. 1. b; 2. a; 3. e; 4. c; 5. d
C. 1. combine; creation; evolution 2. a. combination; b. evolution; c. create; d. evolves

VIDEO THE LION'S ROAR

Before You Watch

A. 1. a; 2. c; 3. b

B. 1. tiger; 2. a pride; 3. female; 4. Africa, Asia

While You Watch

B. 1. when they are one year old; 2. females; 3. 10,000; 4. Asiatic

Critical Thinking

- Possible answer(s): Humpback whales don't always sing the same song. A lyrebird can mimic man-made noises. A swamp sparrow learns its song from adults. A parrot can change its call to match a new tune. A lion's roar is about as loud as a clap of thunder.
- Possible answer(s): I would like to study how crickets communicate. I often hear them chirping outside in the summer, and I think they might rub their back legs together to make that noise. I wonder if they do that to communicate with one another.

UNIT 3 HISTORY DETECTIVES

WARM UP

Possible answer(s):

1. Scientists learn about the past from written records and physical remains such as the ruins of buildings, equipment, or personal possessions that have survived.
2. I've visited Machu Picchu in Peru and saw the ancient city. I've also visited Pompeii in Italy and saw old buildings, roads, and even paintings on the walls!

READING 3A WAS KING TUT MURDERED?

Before You Read

- A.** 1. d; 2. b; 3. c; 4. a
B. Theories include murder, an injury from war or a hunting accident, and an infection from a leg fracture.

Reading Comprehension

- A.** 1. c (Para E); 2. c (Para D); 3. c; 4. b (Para B); 5. a (Para E)
B. 1. King Tut's tomb; 2. the mummy; 3. the hole in the skull; 4. King Tut; 5. King Tut's parents; 6. Hawass and his team

Reading Skill

- A.** a. Para E; b. Para A; c. Para A; d. Para B; e. page 41 (in the caption); f. Para A; g. Para D; h. Para C
B. f, b, c, e, d, h, g, a

Critical Thinking

Possible answer(s): I don't think it is important that we find out how King Tut died because it happened thousands of years ago. I suppose some people are interested in the mystery, but I think archeologists should use their time now to make new discoveries instead.

Vocabulary Practice

- A.** 1. offer; 2. infection; 3. analyze; 4. effective; 5. murder; 6. attached
B. 1. injury; 2. conducted; 3. took control of; 4. cause
C. 1. Possible answer(s): The offer of \$500 was too low. I could not offer any help. 2. Possible answer(s): The murder took place over 300 years ago. She wanted to murder her husband for revenge.

READING 3B WHO KILLED THE ICEMAN?

Before You Read

- A.** 1. He was not young, and he was probably an important and wealthy man. 2. He was killed in the Ötztal Alps over 5,300 years ago. He was killed by an injury from a stone arrow that hit him from behind.

Reading Comprehension

- A.** 1. c (Para G); 2. a (Para B); 3. b (Para E); 4. c (Para F); 5. a
B. e, a, b, d, c

Reading Skill

- A.** 1. Para A; 2. Para A; 3. Para B; 4. Para F; 5. Para F; 6. Para F; 7. Para G; 8. Para G; 9. Para G; 10. Para G
B. 1. F; 2. F; 3. S (*believe*); 4. F; 5. F; 6. S (*probably*); 7. S (*Perhaps*); 8. F; 9. S (*More likely*); 10. S (*He may have thought*)

Critical Thinking

- 3. He carried a copper ax, which was valuable. He may have been a local leader. 6. He had injuries on this hand and head. There was blood of four other people on his clothes. 7. Because his injuries had started to heal, the fight probably happened some time before his death. 9. He had eaten a big meal, so he must have been resting. 10. He wouldn't have stopped to eat unless he thought he was safe.
- Possible answer(s): Each claim is supported with details and evidence, so I think these are very possible explanations.

Vocabulary Practice

- A.** 1. likely; 2. indicate; 3. frozen; 4. enable
B. 1. attacked; 2. leader; 3. beneath; 4. chased; 5. fled; 6. cruel
C. 1. act; 2. death; 3. trick; 4. comment

VIDEO WALKING WITH GIANTS

Before You Watch

A. 1. c; 2. b; 3. a

B. Possible answer(s): The Rapa Nui could have used tree trunks and ropes to drag the statues.

While You Watch

A. 1. d; 2. c; 3. b; 4. a; 5. e

B. 1. b; 2. a; 3. b

Critical Thinking

Possible answer(s): The 2011 theory is supported by the fact that the bottoms of the statues were not flat. The approach was also tested by a team and was successful. However, in my opinion there is not enough evidence to fully prove the theory.

UNIT 4 TRADITIONS AND RITUALS

WARM UP

Possible answer(s):

1. Thanksgiving, Independence Day, St. Patrick's Day
2. My favorite tradition is Thanksgiving because my extended family comes over and we all eat together.

READING 4A LIVING TREASURES

Before You Read

A. 1. Possible answer(s): Great Barrier Reef in Australia, Angkor Wat in Cambodia, Rapa Nui National Park on Easter Island, Great Wall of China, Statue of Liberty in the United States; **2.** Possible answer(s): These places are rich in culture or history. They are natural environments that must be protected.

B. b

Reading Comprehension

A. 1. c; 2. c; 3. b (Para B); **4. b** (Para E); **5. b** (Para F)

B. 1. c; 2. a; 3. d; 4. b; 5. a; 6. d; 7. c

Reading Skill

A. cuisine (Para D); martial art (Para C); ritual (Para E); roots (Para G); veil (Para E)

B. 1. e; 2. d; 3. a; 4. b; 5. c

Critical Thinking

- Possible answer(s): **Cuisine:** rice and beans; **Performing Arts:** dance contest; **Crafts:** handwoven baskets; **Cultural Events:** mask ceremony
- Possible answer(s): Handwoven baskets from my country should be included on UNESCO's list because my people have been making them for generations. We use local materials to make the baskets, and it takes years to learn the skill.

Vocabulary Practice

A. 1. ceremony; 2. wrap; 3. symbols; 4. approves; 5. wedding

B. 1. site; 2. diverse; crafts; 3. identity; 4. promote

C. 1. make a start on it; 2. rise to a higher level; 3. have success with it

READING 4B THE CHANGING FACE OF KUNG FU

Before You Read

A. 1. monk; 2. Acrobatics; 3. temple; 4. master

B. 1. b; 2. a; 3. c

Reading Comprehension

A. 1. b (Para C); **2. a** (Para B); **3. c; 4. a; 5. c**

B. 1. F; 2. NG; 3. NG; 4. F; 5. NG; 6. T

Reading Skill

A. Paragraph A: a. S, b. M; Paragraph B: a. M, b. S; Paragraph C: a. S, b. M; Paragraph D: a. S, b. M;

Paragraph F: a. S, b. M

Critical Thinking

- Possible answer(s): In the past, children used to wear traditional clothing for their 15th birthday party.
- Possible answer(s): Children today wear the latest fashion from a department store. I don't think this change is for the better because young people don't experience the cultural aspect of dressing in a traditional way.

Vocabulary Practice

A. 1. inspired; 2. basis; 3. series; 4. convinced; 5. ensured

B. 1. don't forget; 2. "Yes, please."; 3. hurt or kill; 4. attract; 5. high

C. 1. rich; 2. able; 3. large

VIDEO DRAGON BOAT FESTIVAL

Before You Watch

A. 1. move; 2. regularly; 3. very

While You Watch

A. a, b, e

B. 1. F (the longest dragon boats can be 35 meters); 2. T; 3. NG; 4. NG; 5. T

Critical Thinking

Possible answer(s): **Festival name:** Machu Picchu Day; **Purpose:** the discovery of the ancient city; **When:** July 24;

Activities: dress up in traditional clothing and eat traditional food; **Reason:** to recognize the ancient people who lived in our country

UNIT 5 FINDING WONDERS

WARM UP

Possible answer(s):

1. Objects that are buried underground are interesting because they may have been there for hundreds or even thousands of years. These objects can tell us a lot about the past.
2. The land might have been covered in forests. It may even have been submerged underwater.

READING 5A THE SECRETS IN THE SAND

Before You Read

A. 1. extinct; 2. creatures; 3. beach; 4. skeleton; 5. museums

B. Possible answer(s): Mary Anning is remembered today because her findings taught people more about extinct animals and what life on Earth was like millions of years ago.

Reading Comprehension

A. 1. b; 2. a (Para B); 3. b (Para C); 4. c (Para C); 5. b

B. 1810: 5; 1811: 3; 1823: 2; 1828: 1; 1839: 4

Reading Skill

A. a, d; B. 1. a, b, c, e; 2. c

Critical Thinking

Possible answer(s): She discovered the first extinct animal known to science (Para B); She discovered one of the first examples of a flying creature that disappeared millions of years ago (Para C); Her finds are displayed in museums in London and Paris (Para E).

Vocabulary Practice

A. 1. extraordinary; 2. credit; 3. noticed; 4. continue; 5. displayed; 6. major

B. 1. needs to pay back; 2. help with it; 3. is able; 4. particular position

C. Possible answer(s): The rescue of the small boy was difficult. / They were able to rescue the baby bird as it fell from the tree.; Put the valuables in a hidden spot. / She's easy to spot because of her red hair.; It was a miraculous find. / I can't find my shoes!

READING 5B THE STORIES IN THE ROCKS

Before You Read

A. 1. expedition; 2. predators; 3. paleontologists

B. Possible answer(s): Jørn Hurum and Mary Anning both look(ed) for fossils. They both made new discoveries. They both work(ed) near the sea.

Reading Comprehension

A. 1. a; 2. a (Para B); 3. c (Para C); 4. c (Para D); 5. c (Para F)

B. 1. by hand (Para E); 2. in his bedroom (Para A); 3. the "dig season" (Para C); 4. food, jackhammers, water (Para D)

Reading Skill

A. 1. prehistoric, Possible answer(s): before recent history; 2. collection, Possible answer(s): process of collecting; 3. scientists, Possible answer(s): people who study science; 4. soften, Possible answer(s): cause to be soft

B. 1. unlike, Possible answer(s): Unlike Hurum, Anning lived in England.; 2. unusual, Possible answer(s): It's unusual to have warm weather in the winter; 3. hunter, Possible answer(s): The wolf is an expert hunter.; 4. visitors, Possible answer(s): There are many visitors to the Jurassic Coast.

Vocabulary Practice

A. 1. entire; 2. eventually; 3. productive; 4. collection; 5. individual; 6. access

B. 1. preparation; 2. remote; 3. remove; 4. softens

C. 1. provide; 2. gain; 3. denied

VIDEO DIGGING INTO THE PAST

Before You Watch

A. 1. in the sea; 2. like; 3. a lot of

B. Paleontologist; bones; dig out; dinosaurs

While You Watch

B. 1. b; 2. a; 3. a; 4. b

Critical Thinking

Possible answer(s): a map of Svalbard, a medical kit, a jackhammer, a small radio, a magnifying glass; I think a map of Svalbard would be the most important thing because without it, we won't know where to find the best fossils.

UNIT 6 REEF ENCOUNTERS

WARM UP

Possible answer(s):

1. Coral reefs are endangered. About 25 percent of the ocean's animals live in coral reefs. They can be very colorful. Some famous reefs include the Great Barrier Reef in Australia.
2. Damage has been caused by numerous kinds of pollution, by overfishing, and by physically hurting coral reefs and the ocean floor. In addition, global warming is having a negative effect on marine habitats.

READING 6A CITIES BENEATH THE SEA

Before You Read

- A.** 1. T; 2. F (Coral polyps are a type of animal.); 3. F (A coral reef usually gets larger over time.); 4. T
B. how coral reefs are formed; coral reef wildlife; problems affecting reefs

Reading Comprehension

- A.** 1. c; 2. a (Para B); 3. b (Para E); 4. a; 5. c
B. 1. not counted; 2. full of color; 3. build again

Reading Skill

A. Not all reefs begin naturally. For example, an ocean current may encounter a man-made object, like a sunken ship. As a result, the water around the ship may become rich with tiny animals called plankton. A lot of small fish gather there to feed on the plankton. Consequently, larger animals are attracted to the ship. Because the ship has many little openings, many creatures also have a place to hide. In time, the ship becomes covered in polyps. As a result, soon, it no longer looks like a ship at all.

B. 1. **Effects:** Water becomes rich in plankton. 2. **Effects:** Larger animals are attracted to the ship. 3. **Causes:** The ship has many little openings. 4. **Causes:** The ship becomes covered in polyps. **Effects:** It no longer looks like a ship.

Critical Thinking

Possible answer(s):

- I think there should be a ban on all fishing near coral reefs so that there isn't overfishing and the populations can rise. But then the fish population might get too big, and the local people won't be able to sell fish.
- I think tourists shouldn't be allowed to dive near reefs. But tourism brings in a lot of money and people should have the opportunity to see all the sea creatures in their natural habitat.
- People should be banned from selling coral products because they shouldn't remove coral from the reefs. But the local people make money by selling coral.
- People should start a campaign to raise awareness by printing leaflets and handing them out locally. That will cost a lot of money. Plus, there are plenty of campaigns that already exist, and the reefs still aren't protected.

Vocabulary Practice

- A.** 1. negative; 2. shallow; 3. remarkable; 4. conservation
B. 1. don't keep; 2. build; 3. stay; 4. dirty; 5. bright; 6. science lab
C. 1. meaning; 2. response; 3. effect; 4. thoughts

READING 6B THE TRUTH ABOUT GREAT WHITES

Before You Read

- A.** 1. F (Only one-third of shark attacks are said to be from great white sharks.); 2. F (Great whites rarely kill their victims.); 3. T; 4. T

Reading Comprehension

- A.** 1. c; 2. a (Para A); 3. c; 4. a; 5. c
B. 1. c; 2. d; 3. a

Reading Skill

- A.** 1. despite; 2. though; 3. However; 4. Even though
B. 1. Even though great white sharks are dangerous, they rarely kill humans. 2. Great white sharks are often seen off the coast of Australia. However, surfing is popular there.

Critical Thinking

- Possible answer(s): Great white sharks don't see well and they think humans are seals or sea lions. Great white sharks might just be curious and are using their mouths to investigate.
- Possible answer(s): I think the author thinks that the most likely explanation is that great whites are curious and are using their mouths to investigate. The author thinks this because the reading passage ends with this idea.

Vocabulary Practice

- A. 1. victims; 2. confusion; 3. horror; 4. inaccurate; 5. bite
B. 1. flow; 2. frightening; 3. tempting; 4. force; 5. gather
C. 1. complete; 2. correct; 3. expensive

VIDEO OCEAN MEGABUILDERS

Before You Watch

- A. 1. b; 2. d; 3. a; 4. c
B. 1. warm; 2. polyps; 3. limestone

While You Watch

- B. 1. basketball; 2. largest; 3. 20,000; 4. 25; 5. climate; 6. 500; 7. the end of the 21st century

Critical Thinking

Possible answer(s):

how coral reefs are formed: The video was a better source for this because I could see a clear visual example in the video footage.

the threats facing coral reefs: The reading passage was better because it contained more details like illegal fishing and water pollution.

UNIT 7 DOLLARS AND SCENTS

WARM UP

Possible answer(s):

1. rose, daisy, lily, tulip, sunflower, iris, pansy, orchid, daffodil, morning glory, lilac, jasmine, hydrangea
2. I think roses are the most beautiful flower. I also think they have the most beautiful scent.

READING 7A THE FLOWER TRADE

Before You Read

- A. 1. d; 2. b; 3. a; 4. c
B. the Netherlands, Ecuador, Colombia, the United States

Reading Comprehension

- A. 1. c; 2. c (Para B); 3. b; 4. a, 5. a
B. 1. high-tech cooling systems; 2. vase life; 3. 20 million; 4. independent rose grower

Reading Skill

- A. **the Netherlands:** b, d; **Both:** a; **Ecuador:** c, e, f
B. **hybrid tea:** large, single flower on stem; can grow to more than 2 meters tall; **Both:** sell in large numbers; common garden plant; **floribunda:** groups of flowers on stem, short, less than 1 meter tall

Vocabulary Practice

- A. 1. industry; 2. considerable; 3. prevents; 4. exported; 5. handle
B. 1. a; 2. a; 3. b; 4. b; 5. a
C. 1. valuable; 2. enjoyable; 3. likeable/likable; 4. noticeable

READING 7B THE POWER OF PERFUME

Before You Read

- A. 1. b; 2. a; 3. c
B. Possible answer(s): They show celebrities in their advertisements to make people want to buy the perfume. They design bottles that have attractive colors and evoke certain moods.

Reading Comprehension

- A. 1. a; 2. c (Para C); 3. a; 4. b (Para E); 5. a (Para G)
B. 1. emotions; 2. memories; 3. smartly; 4. bottles; 5. celebrities

Reading Skill

- A. aroma, scent
B. negative
C. 1. display; 2. popular; 3. cost

Critical Thinking

Possible answer(s): **Target customer:** female, aged 20–30; **Name of perfume or cologne:** Success; **Bottle shape / color:** slim light-blue bottle; **Celebrity:** Keira Knightley; **Other marketing ideas:** ads show female professional at the office and relaxing at home with friends, to focus on the fact that she is successful at work and at home.

Vocabulary Practice

- A. 1. obtain; 2. distinctive; 3. budget; 4. profits; 5. derived
B. 1. a; 2. b; 3. b; 4. a; 5. a
C. 1. smell; 2. pattern; 3. feature

VIDEO FLOWERS FROM ECUADOR

Before You Watch

A. 1. a; **2.** c; **3.** b

B. 1. Possible answer(s): The climate is almost perfect for growing flowers. (Para D) **2.** The roses have large heads and long, straight stems.

While You Watch

A. 1. c; **2.** b; **3.** a

B. 1. 100; **2.** 25; **3.** 60,000; **4.** 50

Critical Thinking

Possible answer(s): Buying from a small company helps support local businesses, but it would be more expensive than buying from an international company. Buying from a medium-size company based overseas means that you may not be able to see the flowers in person before buying them. However, they are cheap, and the company operates by fair trade rules. Buying from a large company may be cheaper buying from a local one, but the flower quality is not as good.

UNIT 8 GREAT EXPLORERS

WARM UP

Possible answer(s):

1. Marco Polo (traveling from Italy to China, visiting Kublai Khan); Christopher Columbus (sailing to the Americas); Ferdinand Magellan (expedition to the East Indies and journeyed around the Earth); Zheng He (establishing Chinese trade).
2. They might explore the ocean floor, remote jungles where few humans live (such as parts of the Amazon rain forest and Indonesian jungles), and even outer space.

READING 8A AN INCREDIBLE JOURNEY

Before You Read

A. 1. Marco Polo started and finished his trip in Venice. They took three and a half years to travel to China and stayed there for 17 years. They took roughly another three and a half years to journey to Venice, so they travelled for 24 years. **2.** Singapore, Suzhou, Beijing, Hangzhou; **3.** He visited the Middle East, Pakistan, India, and many parts of China. Students' knowledge of the places will vary.

B. Possible answer(s): The Polos might have been trying to earn money or valuable materials to sell. The passage tells us that Marco Polo traveled to China to meet and work for the powerful Mongol leader Kublai Khan.

Reading Comprehension

A. 1. b; **2.** b (Para A); **3.** c (Para D); **4.** c (Para D); **5.** a

B. f, e, d, b, c, a

Reading Skill

A. 1. teenager; **2.** 9,000; **3.** 17; **4.** Kublai Khan; **5.** Europeans; **6.** Beijing; **7.** messaging; **8.** paper; **9.** book

Critical Thinking

Possible answer(s): I think Marco Polo gained more from the visit to Kublai Khan because he learned so much about technology and different ways of doing things.

Vocabulary Practice

A. 1. objective; **2.** perceive; **3.** observations; **4.** permission; **5.** informal

B. 1. voyage; **2.** journal; **3.** undertake; **4.** admire; **5.** considered

C. 1. admirable; **2.** observe; **3.** observations; **4.** admirer

READING 8B THE TRAVELS OF IBN BATTUTA

Before You Read

A. Guesses will vary. Actual answers are: **1.** Ibn Battuta; **2.** He traveled through 44 modern countries; **3.** 29–30 years

Reading Comprehension

A. 1. b; **2.** a (Para D); **3.** a; **4.** c (Para E); **5.** c (Para B)

B. 1. Paris; **2.** a square, hotel, café; **3.** several years; **4.** a sudden storm

Reading Skill

A. 1. Mecca; **2.** some parts of the world; **3.** 29–30; **4.** 44; **5.** India; **6.** Delhi; **7.** ships; **8.** belongings

Critical Thinking

Possible answer(s): Mahatma Gandhi (1869–1948); Christopher Columbus (1451–1506); Confucius (551–479 BC)

Vocabulary Practice

A. 1. regarded; **2.** intention; **3.** misfortunes; **4.** prior

B. 1. translated; **2.** financed; **3.** consented; **4.** wisdom; **5.** abandoned; **6.** belongings

C. 1. spelled; **2.** placed; **3.** behaved; **4.** heard

VIDEO THE LEGEND OF MARCO POLO

Before You Watch

A. 1. d; 2. c; 3. b; 4. a

B. Possible answer(s): One of the reasons historians don't believe Polo actually visited China is that already-existing timelines don't match Marco Polo's records, and that puts the information he provided in doubt.

While You Watch

A. b (fellow prisoner); c (1271 AD); e (vast halls)

B. a. A (1268); b. A (fish with fur); c. F (coal); d. F (summer palace)

Critical Thinking

- Possible answer(s): I think that the argument is stronger that Marco Polo did visit China. His book has a lot of specific details that could not have been made up. Also, when writing his record of the battle, it's possible that he didn't know exactly what year it was, especially if he had been traveling for such a long time.
- Possible answer(s): I think the reading is written as fact, so the author must believe that Marco Polo really did visit China.

UNIT 9 IDENTITY

WARM UP

Possible answer(s):

1. I am similar to my mother because we have the same color hair and we are both short. I'm like my dad because we both have blue eyes.
2. When I was young, I had blond hair and was very skinny. Now my hair is dark, and I've put on a lot of weight! I used to love sports, and now I don't really do much anymore. My interests have changed a lot over the years.

READING 9A THE TEENAGE BRAIN

Before You Read

A. 1. c; 2. a; 3. b

B. Possible answer(s): I think a person's brain probably finishes developing by the time they are 17 or 18. (Actual answer: Our brains continue to change until age 25.)

Reading Comprehension

A. 1. b; 2. b (Para B); 3. b; 4. a; 5. a

B. 1. brain-imaging; 2. six; 3. computer system; 4. 25; 5. adult; 6. wide circle; 7. parents' care

Reading Skill

A. 1. Recently, scientists discovered that though our brains are almost at their full size by the age of six, they are far from fully developed. (Para B) 2. Now, scientists have concluded that our brains continue to change until age 25. (Para B) 3. However, a still-developing brain does this clumsily. The result, scientists claim, is the unpredictable behavior seen in teenagers. (Para B) 4. The studies confirm that teens are more likely to take risks and behave in extreme ways. (Para C) 5. Researchers believe this makes the rewards seem more important than the risks, and makes teens feel the excitement of new experiences more keenly than adults do. (Para D) 6. The scientists' findings suggest that in the long run, the impulses of the teen brain are what help teens leave their parents' care and live their own lives successfully. (Para F)

B. 1. *discovered*, H; 2. *concluded*, H; 3. *claim*, L; 4. *confirm*, H; 5. *believe*, L; 6. *suggest*, L

Critical Thinking

Possible answer(s): Someone in their 30s will probably take fewer risks because they will be more aware of their responsibilities. For example, someone with children might be less likely to go skydiving or travel to a dangerous place than a teenager because they feel responsible for their children. They would feel like they need to be safe so that they can continue to provide for their children.

Vocabulary Practice

A. 1. risk; 2. realize; 3. rewards; 4. deal with; 5. concluded

B. 1. b; 2. b; 3. a; 4. a; 5. a

C. go over = review; go on = continue; go for = choose; go ahead = start

READING 9B SEEING DOUBLE

Before You Read

A. 1. in common; 2. IQ; 3. identical; 4. genes

B. They looked alike. They were both the same height and weight. They had the same smile and voice. Also, they both had named their dogs Toy, both had married and divorced women named Linda, both had had the same job (sheriff), "enjoyed making things with wood," both got bad headaches, and both liked to leave love notes for their wives.

Reading Comprehension

A. 1. b; 2. a (Para A); 3. c; 4. a (Para D); 5. c

B. 1. d; 2. e; 3. c; 4. b; 5. a

Reading Skill

A. 1. Yes; 2. No; 3. Yes; 4. No; 5. Yes

B. Possible answer(s): 1. probably not; 2. probably; 3. probably; 4. probably

Critical Thinking

Possible answer(s): **1.** Studies like this are not very common because there probably aren't many sets of older twins that have been separated. **2.** They probably grew up in different environments because the article makes a point to say that environment might not play such a big role in similarities after all. **3.** Geneticists probably often study identical twins because their DNA is the same. **4.** The similarities were probably coincidences because things like the dogs' name and the wives' name do not have anything to do with genetics.

Vocabulary Practice

- A.** **1.** adopted; **2.** admitted; **3.** apart; **4.** coincidences; **5.** Raised
B. **1.** others in your family; **2.** a lot; **3.** edges; **4.** married; **5.** work
C. **1.** problem; **2.** injuries; **3.** weather; **4.** headache

VIDEO THE GLOBAL VILLAGE

Before You Watch

A. 1. Possible answer(s): People in my country might have originally come from Africa. **2.** Possible answer(s): Some benefits could be learning more about genetic diseases and making more medical discoveries to improve our quality of life.

While You Watch

- A. 1.** their ancestors came from; **2.** back; **3.** Africa
B. 1. the Americas; **2.** Europe; **3.** East & South Asia; **4.** the Middle East; **5.** Africa

Critical Thinking

Possible answer(s): I learned that the human race is genetically one big family, and so the problems humans have with getting along are similar to the problems any family experiences. It is surprising to think that we all have the same genetic roots.

UNIT 10 FACING CHANGE

WARM UP

Possible answer(s):

1. I think areas near the Arctic Circle are the most affected by climate change because the ice is melting at an increasingly faster rate.
2. I've noticed that the summers are hotter and the winters are colder where I live. Storms are getting stronger, too.

READING 10A THE BIG THAW

Before You Read

- A.** 1. 1960, 2014; 2. 1.5 degrees Fahrenheit (0.83 degrees Celsius); 3. Antarctica, 15 degrees Fahrenheit
B. Chacaltaya (Bolivia), North and South Poles, Arctic Ocean, Greenland, Jakobshavn Isbræ, Antarctica, the Himalayas, the Andes, India, Bangladesh, Peru; The Arctic Ocean and Greenland have seen the greatest rise in temperature.

Reading Comprehension

- A.** 1. b; 2. b; 3. a (Para D); 4. b (Para F); 5. a
B. b > c > a > d > e

Reading Skill

- A.** 1. Ten years ago, scientists warned that the Arctic Ocean could lose all its ice in about a hundred years. Now, they think it could happen much sooner. 2. In fact, the glacier is moving twice as fast as it was in 1995. 3. For instance, water from melting ice runs down cracks in the surface and gets between the ice and rock below. 4. If the ice sheet of Antarctica continues to melt at its current rate, the next few centuries could see at least a two meter rise in sea levels, forcing tens of millions of people out of their homes. 5. An increasing number of heat waves and droughts worldwide also suggests global warming is having an impact on humans right now, and that it could change the face of the world in the future. 6. "We need to vote for leaders who understand the serious issues impacting our climate," he says. "There is no issue this important—because the future of the planet is at stake."
B. Possible answer(s): I don't think the author provided enough supporting information in Question 1. The author mentioned "human activity" but did not give any concrete examples of what humans have done to cause the problem.

Critical Thinking

Possible answer(s): 1. When we eat or drink sugary foods, the sugar enters our blood and affects the parts of our brain that make us feel good. 2. "Sugar, we believe, is one of the culprits, if not the major culprit," says Johnson. 3. From breakfast cereals to after-dinner desserts, our foods are increasingly filled with it. 4. Many schools are replacing sugary desserts with healthier options, like fruit.

Possible answer(s): 1. I think this is very well supported because the passage says the sugar affects parts of our brain that make us feel good, then the feeling goes away, which leaves us wanting more. That sounds like the science behind an addiction. 2. I don't think this is well supported because there is no evidence that sugar causes high blood pressure and diabetes. The passage simply states it as fact. 3. I think this is well supported because the passage says sugar is found in everything from breakfast cereals to after-dinner desserts. Sugar is also used to replace taste in foods with low fat. 4. I think this is well supported because the passage says schools are serving healthier options, growing their own food, and providing ways for students to exercise more.

Vocabulary Practice

- A.** 1. absorbs; 2. consequence; 3. terrifying; 4. critical
B. 1. thin line; 2. surprise; 3. changes; 4. smoothly; 5. provide the facilities; 6. more
C. 1. gradual; 2. sudden; 3. major; 4. slight

READING 10B LIFE ON THE EDGE

Before You Read

A. 1. in Greenland; Possible answer(s): It's a small town of about 1,000 people. **2.** It's an island in the summer. In the winter, the water freezes and it's no longer an island. **3.** Possible answer(s): One effect of climate change is that sea levels are rising because the ice is melting.

B. Possible answer(s): I read that ice loss has shortened the hunting season, so people in Uummannaq are losing money.

Reading Comprehension

A. 1. a; **2.** a (Para A); **3.** b; **4.** a; **5.** b

B. 1. b (Para B); **2.** e (Para D); **3.** c (Para E); **4.** a (Para E); **5.** d (Para B)

Reading Skill

A. D, E

B. 1. isolated; **2.** government; **3.** hunting; **4.** fishing; **5.** job opportunities; **6.** city; **7.** Inuit hunting culture; **8.** (sustainable) future

Critical Thinking

- Possible answer(s): I think the argument against is stronger because I think people need to change with the times. Greenland is very different today than it was before, and people need to find new ways to earn a living.
- Possible answer(s): If I were a young resident of Uummannaq, I would leave because I would not want to be so isolated from the rest of the world.

Vocabulary Practice

A. 1. government; **2.** appealed; **3.** economic; **4.** encouraged; **5.** lifestyle; **6.** give up

B. 1. d; **2.** a; **3.** b; **4.** c

C. 1. take; **2.** make; **3.** show; **4.** keep

VIDEO THE SLED DOGS OF GREENLAND

Before You Watch

A. 1. costs; **2.** need; **3.** family that lived in the past; **4.** mountains and rivers

While You Watch

A. 1. an old; **2.** More; **3.** only slightly; **4.** the dogs sometimes bite; **5.** making new laws

B. 1. fisherman, team, solid ice; **2.** veterinarian, need help, take better care

UNIT 11 FACT OR FAKE?

WARM UP

Possible answer(s):

1. I think people believed that fairies existed prior to the pictures, so they had an easy time believing the photos were real.
2. I once saw a photo of an alien that looked real.

READING 11A THE KNOWLEDGE ILLUSION

Before You Read

- A.** Possible answer(s): The ball costs 5 cents. (Correct) It costs 10 cents. (Incorrect)
B. Possible answer(s): I was not correct. The answer is 5 cents.
C. Possible answer(s): Most people say what I said: 10 cents. That is because most people will give an intuitive response.

Reading Comprehension

- A.** 1. b; 2. a; 3. c; 4. c (Para E); 5. c (Para G)
B. 1. F (Para D); 2. NG; 3. T (Para E); 4. NG

Reading Skill

- A.** 1. b; 2. b; 3. c
B. Possible answer(s): nature = (n) the basic characteristics of something; train = (v) to teach a skill or behavior; face = (n) the surface or the part you see

Vocabulary Practice

- A.** 1. rely on; 2. concept; 3. average; 4. norm; 5. encounter; 6. media
B. 1. b; 2. d; 3. a; 4. c
C. 1. salary; 2. day; 3. family; 4. size

READING 11B THE LIMITS OF LYING

Before You Read

A. Possible answer(s): I think it's OK to tell someone you like something about their appearance even if you really don't. I think it's OK to lie to make someone feel better.

B. b (Para C)

Reading Comprehension

- A.** 1. b (Para A); 2. c (Para C); 3. c; 4. a; 5. b
B. 1. E; 2. - ; 3. B; 4. A; 5. D; 6. C

Reading Skill

- A.** 1. conclusion; 2. results; 3. method; 4. purpose
B. Purpose: How do swamp sparrows learn their song? **Method:** Researchers recorded the calls of 615 male swamp sparrows and used computer software to break each song into notes. They measured the differences between the tunes. **Result:** Only 2 percent of male sparrows sang a different song from the standard tune. **Conclusion:** The song types have probably been there for 1,000 years.

Possible answer(s): The information in Reading 2B is presented in a different way. The conclusion comes first. In Reading 11B, the order is presented in a linear way.

Critical Thinking

- Possible answer(s): 1. The player might feel this is a tactic that all players use. 2. The worker might feel that he or she would use that stationery at the office anyway, so there's no harm in bringing it home. 3. The salesperson might feel that the customer would buy the product somewhere else.
- Possible answer(s): Another example of common dishonest behavior is a worker using the office printer for printing personal documents. I think this behavior can be justified because the worker may think it does not cost much.

Vocabulary Practice

- A.** 1. participate; 2. excuse; 3. honest; 4. report/reported; 5. lie
B. 1. e; 2. d; 3. b; 4. c; 5. a
C. 1. dishonest; 2. honestly; 3. dishonesty; 4. honest

VIDEO SMILE TRIAL

Before You Watch

A. 1. d; 2. c; 3. b; 4. a

B. Possible answer(s): I think the smile on the right is the real one. She looks like she's laughing out loud here, whereas on the left she looks like she's just smiling for the camera.

While You Watch

B. 1. Real; 2. Real; 3. Fake; 4. Real; 5. Fake

Critical Thinking

- Possible answer(s): To show anger, people lower their eyebrows and frown. To show disappointment, people raise their eyebrows and frown. To show surprise, people open their mouth wide and raise their eyebrows. To show joy, people open their mouth wide and smile.
- Possible answer(s): People might fake surprise if, for example, they had found out about a surprise party but didn't want to ruin it. They might fake joy if they received a gift they don't like.

UNIT 12 GOING TO EXTREMES

WARM UP

Possible answer(s):

1. Extreme places a person might want to visit are high mountain peaks, deep caves, deep areas of the ocean.
2. Some adventurous sports include skydiving, BASE jumping, caving, rock climbing, mountain climbing, and backcountry skiing. I would like to try skydiving because I am not afraid of heights, and it would make me feel free.

READING 12A THE DREAM OF FLIGHT

Before You Read

- A.** Possible answer(s): airplane, skydiving, hang gliding, BASE jumping
B. flying machine, hang gliding, BASE jumping, wings with small engines

Reading Comprehension

- A.** 1. c; 2. b (Para D); 3. b; 4. b (Para F); 5. b (Para G)
B. 1. d; 2. b; 3. c; 4. f; 5. e

Reading Skill

- A.** 1. d; 2. a; 3. b; 4. f; 5. c; 6. e
B. 1. a hang glider; 2. tandem flight; 3. BASE jumpers; 4. free-falling

Critical Thinking

Possible answer(s): skydiving, flying with a jet-powered wing, BASE jumping, hang gliding, flying in a small airplane. I think that the higher a flyer goes, the more danger there is in getting injured badly or dying. Hang gliding might be considered the safest because gliders don't fly at great heights. BASE jumping might be considered the most dangerous because it's at a low height. Jumps happen from a height of less than 600 meters, which means that jumpers have very little time to open their parachutes.

Vocabulary Practice

- A.** 1. wings; 2. thrill; 3. fantastic; 4. cliffs; 5. Unlike
B. 1. difficult; 2. skydiving; 3. car; 4. hands; 5. want to do
C. Possible answer(s): great, amazing, cool, extraordinary, tremendous, terrific, huge, monumental, phenomenal

READING 12B DARK DESCENT

Before You Read

- A.** 1. b; 2. a; 3. c
B. squeeze = tight passage (Para C); sump = a passage filled with water (Para D); pit = an area of a cave that falls straight down (Para F)

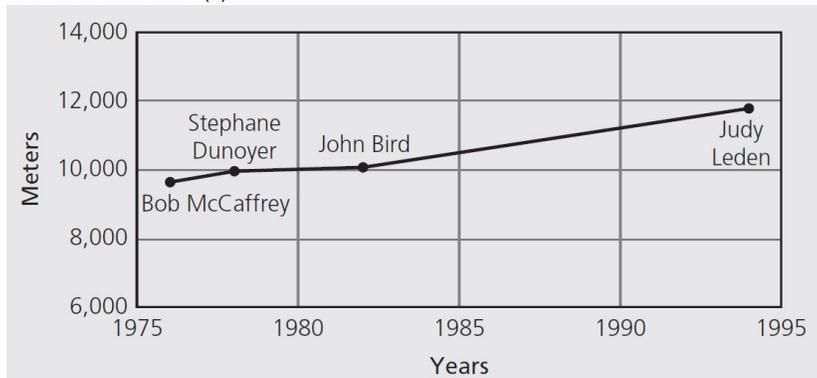
Reading Comprehension

- A.** 1. b; 2. c (Para E); 3. c; 4. b (Para E); 5. c
B. 1. a; 2. c; 3. b; 4. b; 5. c; 6. a

Reading Skill

- A.** 1. January 2001 2. sump; 3. supplies; 4. Millennium pit; 5. Game Over; 6. Gennady Samokhin
B. 1994, 11,800 meters; 1976, 9,631 meters; two years later; 9,973 meters; 1982, 85 meters; 12 years

Possible answer(s):



Vocabulary Practice

A. 1. blocks; 2. necessity; 3. supplies; 4. conquer; 5. out of time

B. 1. relatively; 2. depth; 3. ease; 4. disappointed; 5. blocking; 6. emerged

C. 1. gas; 2. necessity; 3. supplies; 4. choice

VIDEO SEA CAVES

Before You Watch

A. 1. a; 2. c; 3. b

B. Possible answer(s): I think Barth and his colleagues learned more about the geology of the area. They probably found many clues about the age of Maitainaka Cave, and the way in which it was formed.

While You Watch

A. Possible answer(s): My idea about Barth learning more about the geology of the area was mentioned in the video. I saw that he and his team found some impressive rock formations. The team is also studying the cave for evidence of past earthquakes and tsunamis. They also found out that the cave is about 80,000 years old and is getting 2 cm deeper every year.

B. 1. 1.5; 2. 70; 3. 6; 4. 80; 5. 2

Critical Thinking

Possible answer(s): Yves Rossy invented experimental jet packs and has the nickname of "Jetman." He even had to be registered as an airplane in Britain in order to fly with his jet pack. I think that his inventions are impressive because they may lead to faster and more innovative ways for an individual to travel.