

READ THE ALMANAC Study each section of the almanac page carefully.

The World's Longest Rivers

River	Length	Location
Nile	4,132 miles (6,650 km)	Africa
Amazon	4,000 miles (6,400 km)	South America
Chang Jiang (Yangtze)	3,915 miles (6,300 km)	China
Mississippi-Missouri-Red Rock	3,902 miles (6,275 km)	United States
Ob	3,364 miles (5,410 km)	Russia

Fast Facts

- The Nile River passes through 9 countries: Burundi, Democratic Republic of Congo, Egypt, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda.
- The Amazon is second in length but first in amount of water carried and area of land drained.
- The Missouri and Red Rock Rivers are considered tributaries of the Mississippi.
- The Mississippi river system goes through only one country: the United States.

River Terms

Drainage Basin: the area of land from which a river system collects water

Hydrology: the scientific study of water on Earth and in the atmosphere

Main Stem: the principal channel of a drainage basin, sometimes called a *parent river*

River System: the connected streams and channels that carry water from a region

Tributary: a stream or river that flows into a main stem

SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

1. How are the rivers listed in the chart?

- (A) in alphabetical order
- (B) from widest to narrowest
- (C) from longest to shortest
- (D) by greatest to least volume

2. Why are the Mississippi, Missouri, and Red Rock Rivers grouped together in the chart?

- (A) All three are the same length.
- (B) They are all rivers in North America.
- (C) All three are tributaries of the Amazon.
- (D) They are part of the same river system.

3. Which river has the largest drainage basin?

- (A) Nile
- (B) Amazon
- (C) Ob
- (D) Chang Jiang (Yangtze)

4. What is a *parent river*?

- (A) the main stem of a river
- (B) a tributary of a river
- (C) the area of land that collects water
- (D) a geographic region

STRATEGY PRACTICE

Describe a situation when the information from the "Fast Facts" section would be important or useful.

READ THE PASSAGE Pause after each paragraph and think about the main idea.

Dog Smarts

All dog owners think their dog is the smartest. But researchers have determined the most intelligent dog breeds based on more objective measures—a dog's abilities to learn, solve problems, and obey commands. According to scientists, the 10 most intelligent breeds of dog obey a command 95 percent of the time and require fewer than five repetitions of a new command to learn it.

A dog's intelligence is not necessarily affected by what the dog is bred to do. The tenth-smartest dog is the Australian cattle dog, which, as its name suggests, is used to herd cattle. In ninth place is the Rottweiler, originally used in Germany to pull carts. Today, it makes an excellent guard dog. The golden retriever, fourth, is very popular around the world as a hunting dog and a companion.

The most intelligent breed of dog is the border collie, which excels at doing jobs and following commands. This dog, like the Australian cattle dog, was bred to herd sheep. Border collies must be able to listen closely and pay attention to their owners' commands. One border collie named Betsy understands more than 300 words. She is able to learn a new command as fast as a human toddler and is more intelligent than most of the great apes.

At the other end of the scale, the Afghan hound is considered the least intelligent dog. However, it's very likely that Afghan owners would disagree with this ranking.

SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

- | | |
|---|---|
| 1. What is paragraph 1 mostly about? | 3. What are paragraphs 2 and 3 mostly about? |
| (A) why dog owners think their dog is smart | (A) the most popular dogs |
| (B) the ten smartest dog breeds | (B) how dogs are trained |
| (C) how dog intelligence is determined | (C) differences between dog breeds |
| (D) how dogs rank in popularity | (D) dogs that herd sheep |
| 2. When researchers measure dog intelligence, they look for the abilities to _____. | 4. Which dog breed mentioned in the passage is a popular hunting dog? |
| (A) herd and do work | (A) the German shepherd |
| (B) learn and solve problems | (B) the golden retriever |
| (C) protect and defend | (C) the Rottweiler |
| (D) be loyal and show affection | (D) the border collie |

STRATEGY PRACTICE In your own words, explain the main ideas of paragraphs 2 and 3.

READ THE PASSAGE Look for important details that support each paragraph's main idea.

Tulip-mania

For thousands of years, people have placed a high value on gold. But did you know that tulips were once valued just as highly as gold? Tulips came to Holland, a region that is now part of the Netherlands, in 1593 from Central Asia. At first, tulips were very rare and were grown only by wealthy people. This made the flowers a status symbol, and within ten years, tulip-mania had taken over Holland and spread to other regions and countries.

People sold tulip bulbs by weight, using the same measure as they did for gold. By 1624, a tulip bulb could cost as much as 3,000 guilders, or \$1,500 in today's dollars. In months when tulips did not grow, traders would sign contracts to receive certain numbers of bulbs in the future, intending to sell them for still higher prices.

Tulips eventually became even more overpriced. Finally, in 1637, people realized that the flowers were not worth what they cost. The market for tulips crashed, and many tulip traders lost all their money. After that, the government set a maximum price that could be charged for a tulip bulb.

Today, the Dutch still love their tulips. The Netherlands produces three billion tulip bulbs each year, selling nearly one billion of them to the United States. The Netherlands is also the home of the world's largest flower garden, Keukenhof, where seven million tulips bloom each spring.

SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

1. What is the passage mostly about?
 - (A) the real value of tulips
 - (B) the tulip craze in Holland
 - (C) how tulips are grown
 - (D) the biggest tulip garden
2. Which sentence could best be added at the end of the passage as a summary of the main ideas?
 - (A) "Tulips are grown in many other parts of the world besides the Netherlands."
 - (B) "The tulip fields at Keukenhof stretch for many acres."
 - (C) "The Dutch also grow other bulb flowers, such as irises, lilies, and hyacinths."
 - (D) "The tulip is still important in the Netherlands, but now it is a more sensible passion."
3. Which detail best supports the idea that tulips were overvalued in the 1600s?
 - (A) The government set a maximum price that could be charged for tulip bulbs.
 - (B) The Dutch still love tulips and grow billions of them.
 - (C) The United States imports nearly one billion tulip bulbs each year.
 - (D) Many tulip traders lost all their money.
4. Where did tulips come from originally?
 - (A) Holland
 - (B) the Netherlands
 - (C) Central Asia
 - (D) the United States

STRATEGY PRACTICE List words or phrases from the passage that were easy for you to visualize.

READ THE TABLE OF CONTENTS Study the content and organization of this book about weather.**The Wild World of
Extreme Weather****Table of Contents****Introduction: Extreme Weather** 3**Part One: From One Extreme to Another**

Chapter 1: The World's Hottest Weather 15

Chapter 2: The World's Coldest Weather...43

Chapter 3: The World's Wettest Weather....69

Chapter 4: The World's Driest Weather.....95

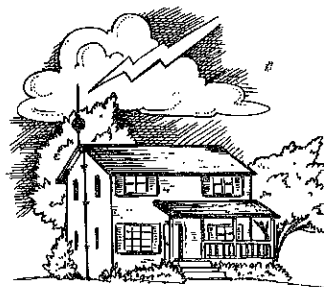
Part Two: Severe Weather Events

Chapter 5: Hurricanes and Tornadoes..... 123

Chapter 6: Blizzards and Other Storms 147

Chapter 7: Floods..... 179

Chapter 8: Lightning201

Part Three: Weird WeatherChapter 9: Pink Snow and Other
Colorful Weather 225Chapter 10: It's Raining Fish and
Frogs—Really! 253**Glossary of Weather Terms** 281**SKILL PRACTICE** Read each question. Fill in the bubble next to the correct answer.

- All the chapters in Part One describe _____.
 - record-breaking weather events
 - hot and cold weather
 - dangerous weather events
 - the difference between weather and climate
- On which of the following pages would you be most likely to find a definition of *dust storm*?
 - page 3
 - page 15
 - page 123
 - page 281
- Tornado hunters are people who try to find tornadoes just as the storms form. In which section would you be most likely to find a description of how they find storms?
 - Introduction
 - Chapter 5
 - Chapter 6
 - Glossary
- Which of the following text features is most likely to be on page 50?
 - a photograph of a flooded city
 - a graph comparing winter temperatures
 - a map showing desert regions on Earth
 - a diagram of the characteristics of lightning

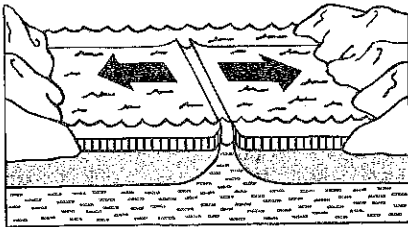
STRATEGY PRACTICE Explain what the topics in Part Three have in common.

READ THE DIAGRAM

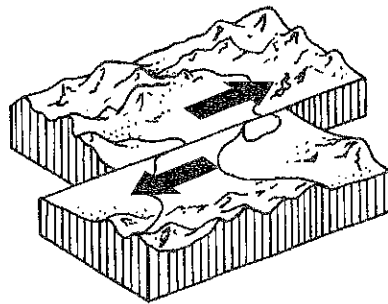
Study the illustrations and the captions to help you visualize tectonic movement.

Earth's surface is shaped by the movement of tectonic plates that move into, against, or away from one another. Scientists study what happens to Earth's crust at the boundaries of these plates. There are three types of boundaries: **divergent** boundaries, **transform** boundaries, and **convergent** boundaries.

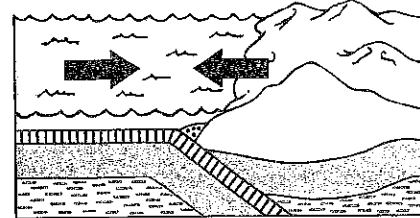
When the plates move, they cause earthquakes. The strongest earthquakes occur at convergent boundaries, while the weakest earthquakes occur at divergent boundaries. Earthquakes at transform boundaries are usually stronger than those at divergent boundaries, but weaker than those at convergent boundaries.



divergent boundary



transform boundary



convergent boundary

SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

- What do the illustrations show?
 - the way water moves
 - the way glaciers move
 - the way Earth's crust moves
 - the way mountains move
- Where might you find illustrations like the ones in the passage?
 - in a history textbook
 - in a science textbook
 - in a gardening magazine
 - in a sailing magazine
- In which direction do convergent boundaries move?
 - toward each other
 - away from each other
 - from north to south only
 - from east to west only
- What does the label below each illustration tell?
 - the scientific name for Earth's crust
 - the land features that are created
 - the direction that the boundary moves
 - the type of boundary that is illustrated

STRATEGY PRACTICE

What visual information from the illustrations was most important in helping you understand how the boundaries are different?

READ THE PASSAGE Pay attention to the number of steps involved in making maple syrup.

The Sweetest Tree

If you like the taste of maple syrup, you're not the only one! And you're not the first. Maple syrup has been around since Native Americans discovered that the sap of maple trees could be boiled down to create a sweet golden or amber syrup. According to legend, the discovery was accidental. A Native American woman was boiling meat in a kettle that contained maple sap. The resulting dish was sweet and delicious.

Native Americans tapped, or cut into, maple trees to collect the sap. Then, they filled hollowed-out logs with the sap and boiled it using heated stones. After a while, the sap became syrup, but the boiling was continued until at last the syrup turned into maple sugar. Native Americans used this sugar as their main sweetening agent and introduced early European settlers to it.

A lot of syrups sold today are made with corn syrup and are called *maple flavored*. This is because real maple syrup is more expensive. It is not unusual for a bottle of real maple syrup to cost three times as much as other syrups. Why is maple syrup more expensive? It is because the process that is used to make maple syrup today is difficult and takes a lot of time.

Today's process is not much different from what the Native Americans did. In early spring, maple trees are tapped and the sap flows out. Next, the sap runs into a tank and then to the sugaring house. There, the sap is boiled until it becomes syrup. Finally, the syrup is filtered. It takes 35 to 50 gallons of sap from a maple tree to make just one gallon of syrup. But most people think it's worth the time and effort!

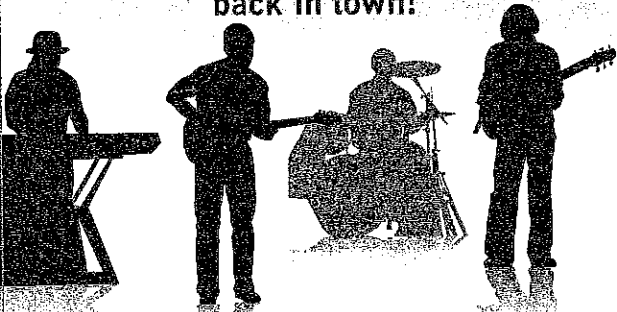
SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

1. When does the passage claim that maple syrup was first created?
 - (A) when European settlers first came to North America
 - (B) when a Native American woman boiled meat in sap
 - (C) when Native Americans tapped maple trees and boiled sap
 - (D) when people built sugaring houses to boil maple sap
2. What did the Native Americans do after they tapped the maple trees?
 - (A) They put the sap into hollowed-out logs.
 - (B) They ran the sap into sugaring houses.
 - (C) They cut the trees so the sap would run out.
 - (D) They boiled meat in the sap.
3. What was the final product when Native Americans boiled sap?
 - (A) maple sugar
 - (B) maple syrup
 - (C) boiled meat in syrup
 - (D) hollowed-out logs
4. When maple syrup is made today, what happens before the sap goes into a tank?
 - (A) It flows into the sugaring house.
 - (B) It is boiled for hours.
 - (C) It is filtered.
 - (D) The maple trees are tapped.

STRATEGY PRACTICE In the passage, number the steps for making maple syrup today.

READ THE AD Study the ad and pay attention to how the information is arranged.

The **SOWAT BROTHERS** are
back in town!



Last year's shows sold out in
SIX MINUTES! Don't miss this year's
Comet Comeback tour.

RICK, MATT, and EBENEZER
sing all your favorite hits:

Close But Nowhere Near
Remind Me Why You Love Me ★ Love Shakedown
★ Don't Devour My Heart

Special Opening Act:
FLUFFY PUPPY
singing their new single
"Close the Book on Love"

Just 3 shows!
June 3, 4, and 6
Center City Arena
8:00 PM

Tickets available exclusively by
phone through TicketBox
1-866-555-8269

SAVE THE DATE

The **SOWAT BROTHERS**
with special guest
FLUFFY PUPPY
NO REFUNDS

June 6
8:00 PM
Sec 3,
Row C,
Seat 52

SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

1. One technique that the ad uses to persuade people to buy tickets is to _____.
 - (A) compare the Sowat Brothers to other current bands
 - (B) suggest that the band is extremely popular
 - (C) offer a money-back guarantee
 - (D) promise that the concert will be a great value
2. The ad does *not* indicate _____.
 - (A) the date of the concert
 - (B) where the concert will take place
 - (C) how much tickets cost
 - (D) what time the concert begins
3. Based on the ad, you can conclude that _____.
 - (A) the concert will take place outdoors
 - (B) Fluffy Puppy will sing before the Sowat Brothers
 - (C) tickets for the concert can be purchased at several locations
 - (D) the Sowat Brothers are not as popular as they used to be
4. Which of the following is the name of one song that the Sowat Brothers sing?
 - (A) "Back in Town"
 - (B) "Comet Comeback"
 - (C) "Close the Book on Love"
 - (D) "Don't Devour My Heart"

STRATEGY PRACTICE Identify an important piece of information that is shown on the ticket but nowhere else in the ad.

READ THE PASSAGE Read slowly and pay attention to the sequence of events.**Explosion in the Night**

On the night of March 22, 2009, in the small town of Willow, Alaska, Megan Warren lay in bed tossing and turning. She was worried about the report that she had to give in science class the following day. It was an oral presentation about the nearby volcano, Mount Redoubt, and Megan didn't like speaking in front of people. She knew her facts, though. Mt. Redoubt was an active stratovolcano. The last time it had erupted had been over a stretch of four months in 1989–1990, and the volcano observatory had issued a warning this past January that another eruption was likely soon. For the past week, lots of smoke and ash could be seen pouring from the top of the volcano. Scientists thought the volcano would begin spewing lava at any time.

Just after 10:30 that night, a huge explosion shook the house, and Megan awoke in a panic, wondering what had happened. Her mother rushed into her room and pointed out the window. Mt. Redoubt glowed red in the night. "The volcano has erupted!" her mother exclaimed. "Luckily, the ash is blowing away from us, so we don't need to evacuate."

Megan quickly dressed and went to the living room with her mother. Another explosion boomed through the sky, and Megan's father and brother joined them to watch out the big window.

"Wow!" Megan said, gazing at what looked like the world's most incredible fireworks display. "I'm going to have to change my report, but I'll bet my teacher gives me a few extra days to work on it!"

SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

- | | |
|--|---|
| 1. Which event happens first in the passage? | 3. Which event occurs after the second explosion? |
| (A) The volcano erupts. | (A) Megan's mother finds Megan. |
| (B) Megan tries to sleep. | (B) Megan awakes in a panic. |
| (C) Megan's mother rushes into Megan's room. | (C) Megan's father and brother join Megan. |
| (D) Megan gets dressed. | (D) Megan tries to go to sleep. |
| 2. What happens after 10:30 PM? | 4. After the first explosion, Megan _____. |
| (A) Megan reviews the facts about Mt. Redoubt. | (A) sees the volcano in the distance |
| (B) The observatory issues a warning. | (B) falls back to sleep |
| (C) Megan decides to sleep in the living room. | (C) worries about her report |
| (D) Megan is awakened by an explosion. | (D) tosses and turns in bed |

STRATEGY PRACTICE Describe how you visualize Mt. Redoubt as it erupts.

READ THE PASSAGE Think about the main idea of each paragraph and the sequence of events described in the passage.

The Flavor Gurus

Imagine what an amazing job it would be to develop and name ice-cream flavors! That's what the "flavor gurus" of Ben & Jerry's ice-cream company do for a living. While all ice-cream companies have people who develop flavors and name their products, Ben & Jerry's is known for its unique approach. The gurus explain that to create a flavor, they first decide on a concept. Then they find the right chunks, candy swirls, and flavors to add in. Next they experiment, mixing and blending, and finally they taste, taste, taste until they are satisfied with their creation.

There are several very creative flavor gurus, and each has helped to develop and name many of the more than 60 current ice-cream and frozen yogurt flavors. Some flavors are named after famous musicians, celebrities, or places. These include "Cherry Garcia" (named after musician Jerry Garcia), "Phish Food" (named after the band Phish), "Stephen Colbert's Americone Dream" (named after the television personality), "Jamaican Me Crazy," and "Dublin Mudslide."

There are many other great names and flavors. "Imagine Whirled Peace" blends caramel with toffee cookie pieces and fudge peace symbols. "S'Mores" consists of chocolate ice cream with fudge chunks, marshmallows, and graham crackers. "Turtle Soup" combines vanilla ice cream, cashews covered with fudge and caramel, and more caramel swirls.

Not all flavors are successful. Some have been sent to the "flavor graveyard," such as "Peanut Butter and Jelly," which failed with the public, and "Sugar Plum," which the company decided was just icky.

SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

1. What is the passage mostly about?
 - (A) how ice cream is made
 - (B) creating and naming ice-cream flavors
 - (C) two men who started a unique ice-cream company
 - (D) the most popular ice-cream flavors
2. According to the passage, what do the flavor gurus do first when they develop a new flavor?
 - (A) They mix and blend.
 - (B) They discuss it with Ben and Jerry.
 - (C) They think of a concept.
 - (D) They find the right flavors to add.
3. According to the passage, what do the gurus do right after they mix and blend?
 - (A) taste the new flavor
 - (B) name the flavor
 - (C) retire the flavor
 - (D) discuss the new flavor
4. Which of these details supports the idea that flavor gurus are creative?
 - (A) Not all flavors are successful.
 - (B) They have developed many ice-cream and frozen yogurt flavors.
 - (C) They taste until they are satisfied.
 - (D) Peanut Butter and Jelly ice cream flopped.

STRATEGY PRACTICE List the most important details that helped you understand the job of a "flavor guru."

READ THE INSTRUCTIONS Read the steps and study the figures to learn how to make a shoebox guitar.

How to Build a Shoebox Guitar

Here's a simple way to build your own musical instrument.

What You Need: shoebox with lid, glue, 4 to 6 rubber bands, scissors

1. Draw an oval-shaped circle on the lid of the shoebox, as shown in **Figure A**. You may want to trace a jar lid or small plate. Cut out the circle.
2. Mark lines to divide the cut-out circle into thirds, as shown in **Figure B**. Fold on the lines.
3. Glue the center third of the folded circle next to the circular opening on the shoebox to create a support for the rubber-band strings. This will serve as a fret, which is the part on a regular guitar that raises the strings slightly above the neck. (See **Figure C**.)
4. Stretch the rubber bands across the hole and over the fret, as shown in **Figure C**. Use rubber bands of different thicknesses and lengths to create different notes. The tighter the band, the higher the pitch will be.

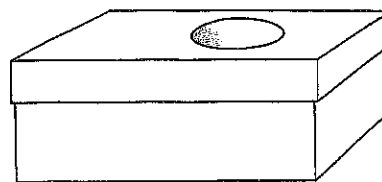


Figure A

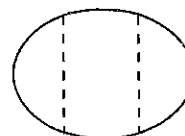


Figure B

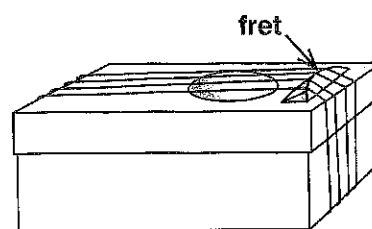


Figure C

SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

1. Which of the following steps should you complete first to build a shoebox guitar?
(A) Stretch rubber bands around the box.
(B) Glue the fret to the box top.
(C) Cut an oval-shaped circle from the box lid.
(D) Fold the cardboard circle into thirds.
2. Based on Figure A, where should you place the hole in the instrument?
(A) in one corner of the top
(B) closer to one end of the top than the other
(C) in the center of the top
(D) partly on one side of the box and partly on the top
3. What happens when you put a tighter rubber band around the instrument?
(A) It produces a higher pitch.
(B) It produces louder sounds.
(C) It produces a lower pitch.
(D) It produces quieter sounds.
4. Based on the instructions, what do the dashed lines in Figure B indicate?
(A) where to place glue
(B) where to fold the cardboard
(C) where to place the rubber bands
(D) where to cut the cardboard

STRATEGY PRACTICE Why do you think the author included figures with the instructions?
