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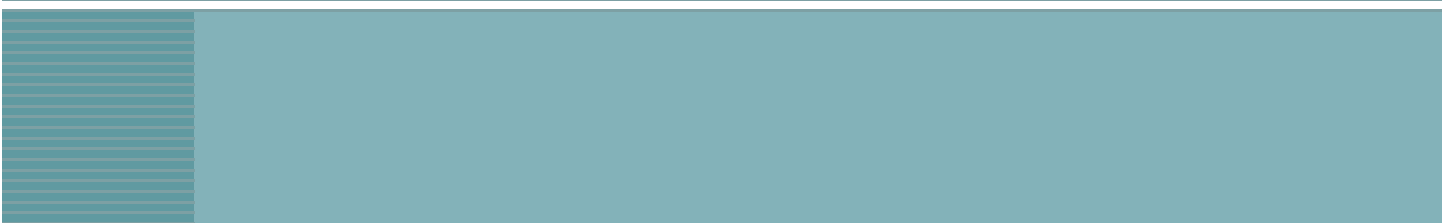
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**SPECTRUM**

# TEXAS Test Prep



**TAKS**  
Grade  
**5**



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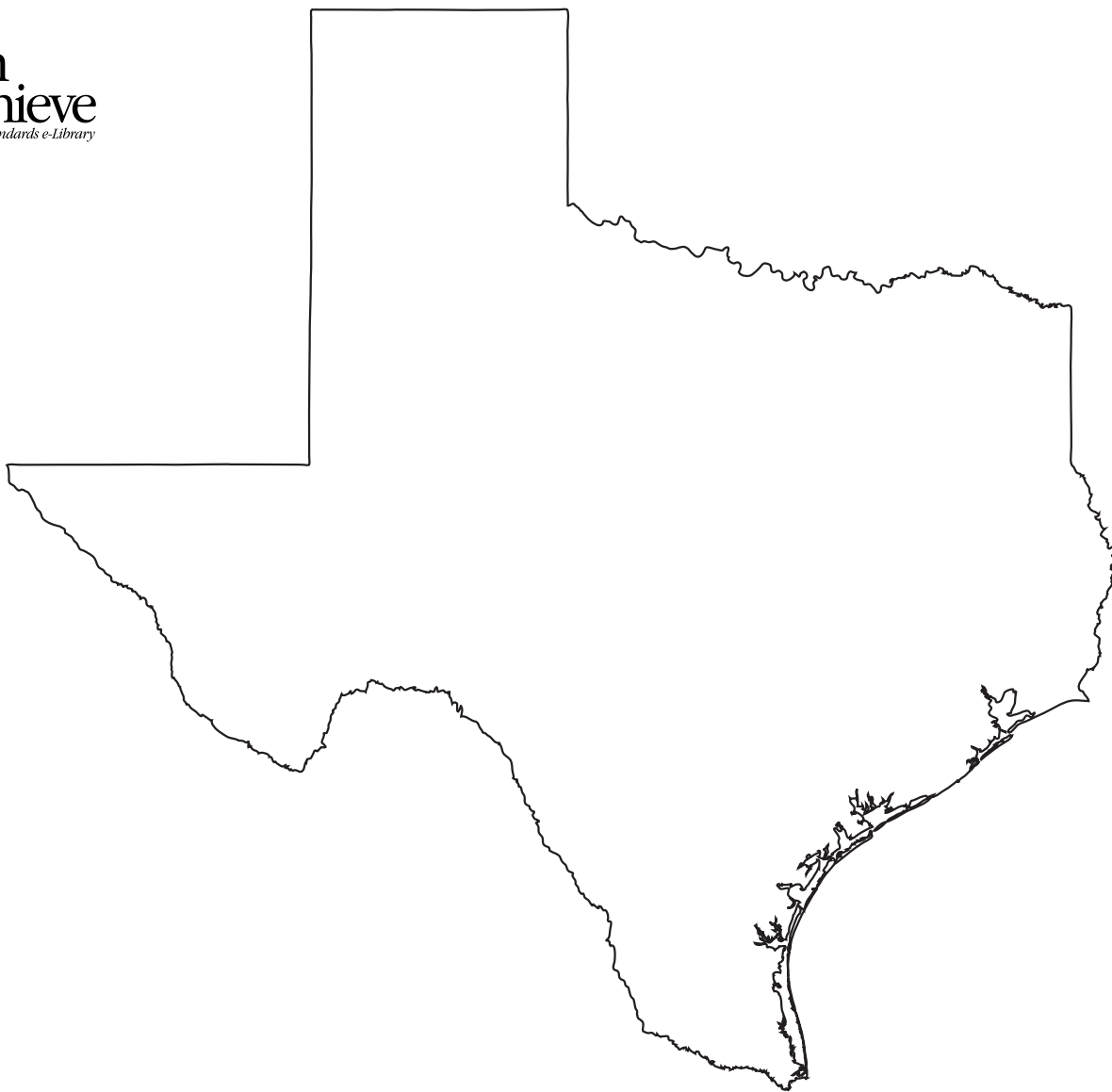
# SPECTRUM

Grade

# 5

# TEXAS

# Test Prep



# SPECTRUM

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# What's Inside?

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This workbook is designed to help you and your fifth-grader understand what he or she will be expected to know on the Texas fifth-grade state tests. The testing program, called the Texas Assessment of Knowledge and Skills (TAKS), measures student learning in different subject areas,

## **Practice Pages**

The workbook is divided into a Language Arts section, a Mathematics section, and a Science section. Each section has practice activities that have questions similar to those that will appear on the state tests. Students should use a pencil to fill in the correct answers and to complete any writing on these activities.

## **Texas Content Standards**

Before each practice section is a list of the state standards covered by that section. The shaded “What it means” sections will help to explain any information in the standards that might be unfamiliar.

## **Mini-Tests and Final Tests**

Practice activities are grouped by state standard. When each group is completed the student can move on to a *Mini-Test* that covers the material presented on those practice activities. After an entire set of standards and accompanying activities are completed, the student should take the *Final Tests*, which incorporate materials from all the practice activities in that section.

## **Final Test Answer Sheet**

The Final Tests have a separate answer sheet that mimics the style of the answer sheet the students will use on the state tests. The answer sheet appears at the end of each Final Test.

## **How Am I Doing?**

The *How Am I Doing?* pages are designed to help students identify areas where they are proficient and areas where they still need more practice. Students can keep track of each of their Mini-Test scores on these pages.

## **Answer Key**

Answers to all the practice activities, mini-tests, and final tests are listed by page number and appear at the end of the book.

## **What kinds of information does my child have to know to pass the test?**

The Texas Education Agency provides a list of the knowledge and skills that students are expected to master at each grade level. The practice activities in this workbook provide students with practice in each of these areas.

## **Are there special strategies or tips that will help my child do well?**

The workbook provides sample questions that have content similar to that on the state tests. Test-taking tips are offered throughout the book.

## **How do I know what areas my child needs help in?**

A special *How Am I Doing?* section will help you and your fifth-grader evaluate progress. It will pinpoint areas where more work is needed as well as areas where your student excels.

# TAKS Content Standards

---

The reading section of the state test measures knowledge in four different areas.

## Reading

1) *Objective 1: Basic understanding of written texts*

*Reading/vocabulary development*

*Reading/comprehension*

2) *Objective 2: Applying knowledge of literary elements to understand written texts*

*Reading/text structures/literary concepts*

3) *Objective 3: Using a variety of strategies to analyze written texts*

*Reading/comprehension*

*Reading/text structures/literary concepts*

4) *Objective 4: Applying critical-thinking skills to analyze written texts*

*Reading/comprehension*

*Reading/literary response*

*Reading/text structures/literary concepts*

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**Final Reading Test . . . . . 52**

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# TAKS Reading—Objective 1

The TEKS and corresponding student expectations listed under Objective 1 will help students as they learn to read for the basic meaning of a text. In order to develop an initial understanding of what they read, students must be able to do three things: (1) use context and other word-identification strategies to help them understand the words they read, (2) recognize important supporting details, and (3) understand what a selection or a portion of a selection is mainly about. These skills are the building blocks that students need in order to develop a deeper understanding of what they read.

The student will demonstrate a basic understanding of culturally diverse written texts.

## (5.9) Reading/vocabulary development

The student acquires an extensive vocabulary through reading and systematic word study. The student is expected to

- (B) draw on experiences to bring meanings to words in context such as interpreting figurative language and multiple-meaning words (4–5) (See page 8.)

### What it means:

- Figurative language is language used for descriptive effect. It describes or implies meaning, rather than directly stating it. Examples of figurative language include:
  - similes** - using *like* or *as* to compare things that may seem unlike each other. Example: Her smile was as dazzling as the sun.
  - metaphors** - comparing unlike things but without using *like* or *as*. Example: His body was a well-oiled machine.
  - hyperbole** - using exaggeration to convey strong emotion, express humor, or emphasize a point. Example: I felt like we walked a million miles!
  - personification** - assigning human qualities, feelings, or actions to an animal, an object, or an idea. Example: The mother bear cried for her cub.
- Multiple-meaning words are spelled the same but have different meanings. Example: *bill* can mean the “beak of a bird” or “a monthly expense.”

- (D) determine meanings of derivatives by applying knowledge of the meanings of root words such as *like*, *pay*, or *happy* and affixes such as *dis-*, *pre-*, and *un-* (4–8). (See page 9.)

## (5.10) Reading/comprehension

The student comprehends selections using a variety of strategies. The student is expected to

- (F) determine a text’s main (or major) ideas and how those ideas are supported with details (4–8) (See pages 8–10.)
- (G) paraphrase and summarize text to recall, inform, or organize ideas (4–8). (See pages 12–13.)

# Reading/Vocabulary Development

**Objective**  
**1**

**Expectation:** draw on experiences to bring meanings to words in context such as interpreting figurative language and multiple-meaning words

**DIRECTIONS:** Read the passage and answer the questions that follow.

## Autumn Dance

Every October, autumn bullies summer into letting go of the skies. The wind breathes a chill into the air. The sun gets tired and goes to bed earlier each night, and night sleeps in later each day. The trees dress in bright gowns for the last celebration of the season, and the leaves are skipping and dancing down the sidewalk. This is autumn, standing firm with hands on her hips, until winter peers over the edge of the world.

1. This passage tells about \_\_\_\_\_ .

- (A) winter turning into spring
- (B) fall turning into winter
- (C) spring turning into summer
- (D) summer turning into fall

2. How does the sun change during autumn?

- (F) It rises and sets earlier than in the summer.
- (G) It rises and sets later than in the summer.
- (H) It rises later but sets earlier than in the summer.
- (J) It rises earlier but sets later than in the summer.

3. What is the author referring to when she describes the trees dressed in “bright gowns”?

- (A) leaves that have changed color but have not yet fallen from the trees
- (B) green leaves
- (C) formal dresses
- (D) the trees’ empty branches

4. Personification means giving human qualities to animals or objects. Which sentence is not an example of personification?

- (F) Every October, autumn bullies summer into letting go of the skies.
- (G) A cold wind blows.
- (H) The leaves skipped and danced down the sidewalk.
- (J) The sun gets tired and goes to bed.



# Reading/Vocabulary Development

**Objective**  
**1**

**Expectation:** determine meanings of derivatives by applying knowledge of the meanings of root words such as like, pay, or happy and affixes such as dis-, pre-, and un-

**DIRECTIONS:** Choose the answer that means the same as the underlined part of the words.

**1. careless thoughtless**

- (A) less than one
- (B) full of
- (C) without
- (D) forward

**2. subway submarine**

- (F) under
- (G) over
- (H) apart
- (J) backward

**3. prearrange predestined**

- (A) before
- (B) after
- (C) apart
- (D) within

**4. unhappy unnatural**

- (F) full of
- (G) across
- (H) false
- (J) not

**5. cooperate coworker**

- (A) opposite of
- (B) one
- (C) together
- (D) before

**6. misspell mistreat**

- (F) wrong
- (G) beside
- (H) correct
- (J) not

**7. overeat overspend**

- (A) without
- (B) excessive
- (C) into
- (D) before

**8. defrost degrease**

- (F) give up
- (G) enter
- (H) remove
- (J) half

**DIRECTIONS:** Fill in the blanks with a word or phrase that explains the meaning of the underlined parts of the words.

**9. Replay means to play \_\_\_\_\_ .**

**10. A dishonest person is one who is \_\_\_\_\_ honest.**

**11. Something that is treatable \_\_\_\_\_ treated.**

**12. An inventor is \_\_\_\_\_ invents.**

**13. Someone who is foolish is \_\_\_\_\_ a fool.**

**14. A postgame party is a party \_\_\_\_\_ the game.**



# Reading/Comprehension

## Objective 1

**Expectation:** determine a text's main (or major) ideas and how those ideas are supported with details

### The World Series

Baseball is an important part of American culture and history. The World Series is the most exciting and important sporting event of the year because it names the national champion in America's favorite pastime.

In spite of what the title says, the World Series is actually not a championship open to the world. The World Series matches the American League champion team against the National League champion team. The first team to win four games out of seven wins the World Series.

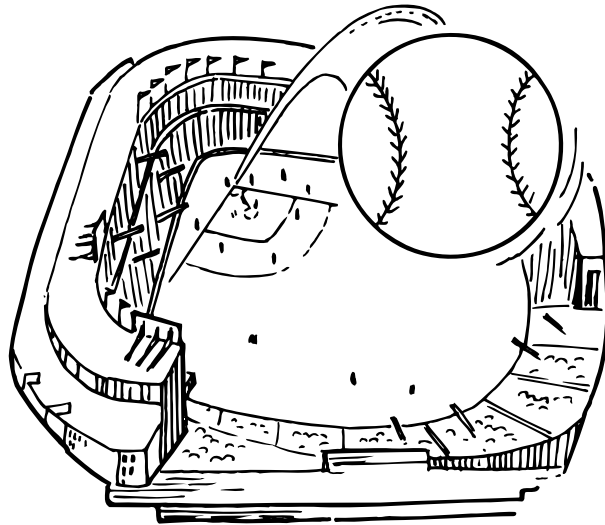
The World Series was first played in 1903. The American League champions, the Boston Pilgrims, played the National League champions, the Pittsburgh Pirates. The Boston Pilgrims, now named the Boston Red Sox, won this first World Series.

Although the World Series seemed to be off to a great start in 1903, the next year was a different story. In 1904, the New York Giants refused to play the Boston Pilgrims in the World Series. To this day, no one is sure why they refused, but 1904 was the only year in World Series history that did not have a world championship series.

For a team to make it to the World Series takes months of hard work and a lot of talent. Most teams play more than 150 games between April and October of each year. Many great baseball players, such as Babe Ruth, Jackie Robinson, Joe DiMaggio and Lou Gehrig, have played in the World Series.

Many World Series records have been broken over the years. But in 1956, a little-known player named Don Larsen pitched a no-hitter game for the New York Yankees. His record has never been broken.

The New York Yankees have won more World Series championships than any team in history. No matter who wins the title, the World Series remains one of the most popular events each year for sports fans. In fact, there is even a World Series for the youngest players. Unlike the adult World Series, the Little League World Series includes teams from other countries. Taiwan has won more of the series than any other country.



# Reading/Comprehension

**Objective**  
**1**

*Expectation: determine a text's main (or major) ideas and how those ideas are supported with details*

**DIRECTIONS:** Answer the following questions based on the passage.

1. Which of the following statements best represents the author's purpose in writing about the World Series?

- (A) The teams that play in the World Series should both be from the National League.
- (B) The New York Giants did not have a good reason for refusing to play in 1904.
- (C) Teams that get to the World Series have worked hard for months.
- (D) A World Series is not complete without a good snack to eat.

2. If the headline "World Series Deemed Unnecessary" appeared in a local paper, how might the author of the story on the previous page respond?

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3. If you were looking at the following titles in a local bookstore, which would you guess was written by the author of this piece?

- (F) *Baseball Foul-Ups Through the Ages*
- (G) *A Comprehensive History of Sports*
- (H) *The Most Exciting Games of the World Series*
- (J) *Reasons to Abolish Baseball Leagues*

4. What is your opinion about the World Series? Do you think it is the most exciting and important sporting event of the year? Write a few sentences in which you support your opinion.

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# Reading/Comprehension

## Objective 1

**Expectation:** paraphrase and summarize text to recall, inform, or organize ideas

### The Panama Canal

When the Panama Canal was completed in 1914, it became one of the greatest engineering wonders in the world. Built by the United States, the canal is a waterway that cuts across the Isthmus of Panama. It links the Atlantic Ocean and the Pacific Ocean. Prior to the opening of the Panama Canal, ships traveling from one ocean to the other had to sail around South America. With the canal, ships sailed approximately 6,000 miles traveling from New York to San Francisco. Before the canal opened, ships sailed more than 15,000 miles to make the same voyage.

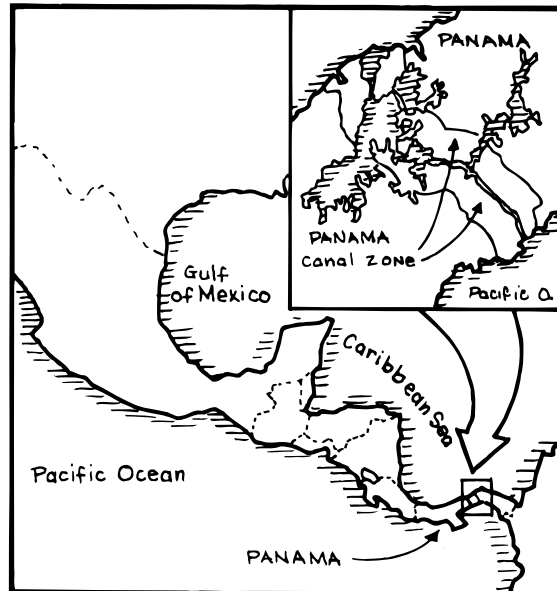
For hundreds of years, people knew the importance of a waterway across Central America. In 1903, the United States signed a treaty with Panama, which allowed the United States to build and operate a canal.

One of the first obstacles to overcome in building the canal was disease, which plagued the Isthmus of Panama. Special medical teams went to the area to improve sanitary conditions. Efforts were made to rid the area of mosquitoes, which carried malaria and yellow fever.

In 1906, it was decided that the canal would be built as a series of locks. The locks would be cheaper and quicker to build. In 1907, an army engineer named Colonel George Goethals was put in charge of the project. Construction began with three main tasks: excavate earth to clear passages, build a dam across the Chagres River, and build the series of locks. Thousands of workers used steam shovels and dredges to cut passages through hills, swamps, and jungles.

The completed canal cost \$380 million. It runs 50 miles across the Isthmus of Panama from Limon Bay in the Atlantic to the Bay of Panama in the Pacific. The water in the canal is controlled by three sets of locks, or water-filled chambers. Each lock is 110 feet wide and 70 feet deep. All but the very largest of today's ships can pass through the canal.

In 1977, the Panama Canal Treaty was signed. In this treaty, the United States transferred the responsibility for administration, upkeep, and maintenance of the canal to the Republic of Panama. On December 31, 1999, the transfer of authority was completed.



# Reading/Comprehension

**Objective**  
**1**

*Expectation: paraphrase and summarize text to recall, inform, or organize ideas*

**DIRECTIONS:** Fill in the correct answers to complete the summary paragraph below.

The Panama Canal was completed in  
(1) \_\_\_\_\_ .  
It became one of the greatest engineering wonders in the world. The canal was built by  
(2) \_\_\_\_\_ .  
and cuts across the  
(3) \_\_\_\_\_ of (4) \_\_\_\_\_ .  
The Panama Canal links the  
(5) \_\_\_\_\_ Ocean  
and the (6) \_\_\_\_\_ Ocean.

**DIRECTIONS:** Complete the statements below.

7. The main reason for building the canal was

\_\_\_\_\_  
\_\_\_\_\_

8. One of the first major obstacles to overcome in building the canal was

\_\_\_\_\_

Construction of the canal began with three major tasks:

- 9. \_\_\_\_\_
- 10. \_\_\_\_\_
- 11. \_\_\_\_\_

**Three facts about the completed canal:**

- 12. \_\_\_\_\_
- 13. \_\_\_\_\_
- 14. \_\_\_\_\_

**Summarize the role of each country with the canal in the past and in the present.**

15. The Republic of Panama

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

16. United States

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Summarize the two major treaties between the United States and the Republic of Panama.**

- 17. 1903 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 18. 1977 \_\_\_\_\_  
\_\_\_\_\_



## Objective

For pages 8–13

1

## Mini-Test

**DIRECTIONS:** Choose the best answer.

1. **Unemployment is running high here since the factory closed. In which sentence does the word *running* mean the same thing as in the sentence above?**
- (A) Tracy saw the horse running through the field.
  - (B) Beth was running the lawn mower.
  - (C) Club attendance was running low due to heavy snow.
  - (D) Peter is running for class president.
2. **Groaning, he rolled over and planted his feet firmly on the floor. In which sentence does the word *planted* mean the same thing as in the sentence above?**
- (F) Jean planted four rows of cucumbers.
  - (G) The lawyer claimed that the evidence had been planted.
  - (H) The settlers planted new crops.
  - (J) Jo planted her feet in the dirt before swinging the bat.

**DIRECTIONS:** Read the passage, then answer the questions.**The Brooklyn Bridge**

When the Brooklyn Bridge was opened on May 24, 1883, it was declared to be the “Eighth Wonder of the World.” The Brooklyn Bridge joins the boroughs of Brooklyn and Manhattan and spans the East River of New York City. At its opening, it was the longest suspension bridge on Earth. The bridge has a span of 1,595 feet and cost a total of \$15 million to build.

The Brooklyn Bridge is suspended from huge steel cables that are approximately 16 inches thick. The cables are fastened to two gothic-style towers, which stand 275 feet high at each end of the bridge. The bridge holds six lanes of traffic in addition to a unique walkway down the center.

The building of the Brooklyn Bridge was one of the greatest architectural achievements ever. The credit belonged to a father and son, John A. Roebling and Colonel Washington A. Roebling. The Roeblings were

pioneer builders of big suspension bridges. Prior to the Brooklyn Bridge, wrought iron had been used to support bridges. The Roeblings’ plan called for their new bridge to be built with steel-wire cables. To hold the cables, the Roeblings had to first construct two large towers. These towers were built on foundations sunk in the riverbed and filled with concrete.

By 1877, the towers were completed and work had begun on “spinning the cables.” This involved bunching steel wires together in bundles to form four, 16-inch cables. These cables were used to hold more than 1,500 smaller cables. By the time the bridge opened in 1883, 20 workers had died in accidents. John A. Roebling had also died as the result of an injury he had received at the site. His son continued the project, but developed the bends from working deep inside the bridge towers’ bases. He was confined to bed but still managed to supervise the completion of the bridge with the help of his wife.

**3. Which sentence best states the main idea of this passage?**

- (A) The Brooklyn Bridge is considered to be among the greatest engineering feats of all time.
- (B) The Roeblings were pioneer builders of suspension bridges.
- (C) Twenty workers died in accidents while building the bridge.
- (D) Construction of the Brooklyn Bridge began with two large towers.

**4. Which detail supports the main idea?**

- (F) With the help of his wife, he still managed to supervise the completion of the bridge.
- (G) The credit belonged to a father and son, John A. Roebling and Colonel Washington A. Roebling.
- (H) By 1877, the towers were completed and work had begun on the cables.
- (J) When it opened, it was the longest suspension bridge on Earth.





# TAKS Reading—Objective 2

---

Developing an understanding of literary elements makes stories both more accessible and more meaningful to young readers. Learning to make connections between events, characters, and other elements of a story helps students relate what they have read to their own lives and experiences. At the same time, knowing about a story's characters, setting, and problem gives students an opportunity to relate to the story in concrete terms while learning about emotions and events that are beyond their own personal experiences.

The student will apply knowledge of literary elements to understand culturally diverse written texts.

## **(5.12) Reading/text structures/literary concepts**

The student analyzes the characteristics of various types of texts (genres).  
The student is expected to

- (H)** analyze characters, including their traits, motivations, conflicts, points of view, relationships, and changes they undergo (4–8); (See *pages 16–17.*)
- (I)** recognize and analyze story plot, setting, and problem resolution (4–8). (See *pages 18–19.*)

### **What it means:**

- *Genre* is a type, or category, of literature. Some examples of genre include fiction, biographies, poetry, and fables. Each genre is characterized by various differences in form. For example, a fable differs from the broader category of fiction in that it has a moral or character lesson.

# Reading/Text Structures/Literary Concepts

## Objective 2

**Expectation:** analyze characters, including their traits, motivations, conflicts, points of view, relationships, and changes they undergo

### Save the Day

Tate raced toward the baseball diamond. He greeted his teammates, jumping up and down. "Are you ready to win the championship?" he asked excitedly.

His two best friends, Jeffrey and Alyssa, smiled at his excitement. "It looks like our star batter is ready," Jeffrey said. Jeffrey didn't want to admit that he was pretty nervous. Lately, he'd been in a slump. His average had declined late in the season. He hoped he could pull it back up today when it counted most.

Alyssa was calm, as usual. She never seemed to get butterflies in her stomach, even under pressure. She was the team's pitcher and had a mean fastball.

The players warmed up and took the field. The game was a close one, but Tate and his team were victorious in the end. Afterward, the three buddies went to a nearby ice-cream shop to celebrate.

"Great job today, Alyssa!" Tate complimented his friend. "You kept your cool even when we were behind 2 to 0."

"Thanks." Alyssa said modestly. She licked her black raspberry cone neatly. Not a drip escaped off the cone.

"You were pretty great yourself," Jeffrey said to Tate. "I jumped off the bench, almost knocking it over, when you hit that ball over the fence in the fifth inning!" The two boys gave each other high fives. In their enthusiasm, the boys knocked Tate's ice cream off its cone.

"Oh, no," Tate said, disappointedly.

"Sorry, Tate," Jeffrey said. But Jeffrey couldn't stop smiling. He was in too good a mood. He'd hit the winning run today, and he felt great. He hadn't let his team down. Now, he wouldn't let his friend down.

"I have some money left," he said to Tate. "Let's go back up to the counter so I can save the day again!"



# Reading/Text Structures/Literary Concepts

**Objective**  
**2**

**Expectation:** analyze characters, including their traits, motivations, conflicts, points of view, relationships, and changes they undergo

**DIRECTIONS:** Fill in the character webs with words that describe the characters in the story on page 16.

**Tate**

How he feels before the game  
\_\_\_\_\_  
Why? \_\_\_\_\_  
\_\_\_\_\_

What he does during the game  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What he probably does next  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Jeffrey**

How he feels before the game  
\_\_\_\_\_  
Why? \_\_\_\_\_  
\_\_\_\_\_

What he does during the game  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What he probably does next  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Alyssa**

How she feels before the game  
\_\_\_\_\_  
Why? \_\_\_\_\_  
\_\_\_\_\_

What she does during the game  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What she probably does next  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# Reading/Text Structures/Literary Concepts

## Objective 2

*Expectation: recognize and analyze story plot, setting, and problem resolution*

### I'll Save You

It was just Dollar Lake, the size of five or six backyards filled with water. "Not much bigger than a kiddie pool," my mom always said. But it was deep and cold. Springs fed the small lake, and it was such a dark green that you couldn't see the bottom. Plus, weeds grew thick around the far end of the lake. "Stay away from that end of the lake," my mom always said. "Those weeds are so thick you could drown."

My older brother Jimmy told me a swamp monster lived in those weeds that would come out from the lake at night to hunt little boys. I'd pull my covers over my head and worry that my screen was not solid enough to hold the swamp monster back. Some nights when I got the courage, I'd leap out of bed, run to the window, and slam it shut. When I awakened in the morning, it would be open, and I would be alive. But it never stopped me from worrying that one night, Mom and Dad would find me gone with my screen ripped open. A trail of lake weeds would be the only thing left of me. I was just a little kid. I didn't know any better.

One night, just after my eighth birthday, I heard someone shouting.

"Help!" I heard.

Then, "Help!" again.

I pulled my covers over my head thinking it was the swamp monster, and he had finally gotten some unfortunate little boy. I thought of Billy. I imagined him being pulled from his bed and dragged across his back lawn, kicking and screaming.

"Help!" I heard it again. It didn't sound like Billy. More like a girl. More like Mom. "Jim? Steven? Help!" It was Mom. The swamp monster had Mom.

In a burst of courage, I leaped from my bed and ran down the stairs. I rushed to the back door shouting, "I'll save you! I'll save you!" I quickly unlocked the door and bounded headfirst into Mom, knocking her over.

"Mom," I said, "What are you doing here? I thought—" but I caught myself before I spilled out, "I thought the swamp monster had you."

"I forgot my keys, and Jim locked the door when he went to bed," she said as she picked herself up from the porch. "I just went to the Watsons to help Mrs. Watson hem a dress. Did I frighten you?"

"No! No!" I stuttered. "I just thought you were hurt. I'm glad you're okay, Mom," I said with a smile. As I looked out into the dark, I thought about the swamp monster. It didn't seem so scary any more. You never knew when one thing might turn out to be something else—something much less scary!



# Reading/Text Structures/Literary Concepts

**Objective**  
**2**

*Expectation: recognize and analyze story plot, setting, and problem resolution*

**DIRECTIONS:** Answer the following questions about the story.

1. What is the setting of the story?

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2. Although the setting is the same, the time shifts. How many time periods are there in the story? Name them.

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3. Who tells the story? How old is the narrator?

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4. What is the conflict in the story?

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5. Why does he tell us this story?

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6. Does the narrator still believe in swamp monsters? How do you know?

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7. Some stories do not have a theme about people or life, but all stories have a purpose: to inform, entertain, expose, or illustrate. What is the purpose of this story?

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**Objective****2****Mini-Test**

For pages 16–19

**Black-Eyed Rebel***A poem by Will Carleton*

A boy drove into the city, his wagon loaded down  
With food to feed the people of the British-governed town;  
And the little black-eyed rebel, so innocent and sly,  
Was watching for his coming from the corner of her eye. . . .

He drove up to the market, he waited in the line;  
His apples and potatoes were fresh and fair and fine;  
But long and long he waited, and no one came to buy,  
Save the black-eyed rebel, watching from the corner of her eye.

“Now who will buy my apples?” he shouted, long and loud;  
And “Who wants my potatoes?” he repeated to the crowd;  
But from all the people round him came no word of reply,  
Save the black-eyed rebel, answering from the corner of her eye.

For she knew that 'neath the lining of the coat he wore that day,  
Were long letters from the husbands and the fathers far away,  
Who were fighting for the freedom that they meant to gain or die;  
And a tear like silver glistened in the corner of her eye.

But the treasures—how to get them? crept the questions through her mind,  
Since keen enemies were watching for what prizes they might find;  
And she paused a while and pondered, with a pretty little sigh;  
Then resolve crept through her features, and a shrewdness fired her eye.

So she resolutely walked up to the wagon old and red;  
“May I have a dozen apples for a kiss?” she sweetly said:  
And the brown face flushed to scarlet; for the boy was somewhat shy,  
And he saw her laughing at him from the corner of her eye. . . .

Clinging round his brawny neck, she clasped her fingers white and small,  
And then whispered, “Quick! the letters! thrust them underneath my shawl!  
Carry back again this package, and be sure that you are spry!”  
And she sweetly smiled upon him from the corner of her eye. . . .

With the news of loved ones absent to the dear friends they would greet,  
Searching them who hungered for them, swift she glided through the street.  
“There is nothing worth the doing that it does not pay to try,”  
Thought the little black-eyed rebel, with a twinkle in her eye.



**DIRECTIONS:** In the poem on page 20, the heroine's name was Mary Redmond. She lived in Philadelphia. During the occupation of that town by the British, she was ever ready to aid in the secret delivery of the letters written home by the husbands and fathers fighting in the Continental Army. After reading the poem, complete each portion of the story map below.

**Setting** □

1. \_\_\_\_\_  
\_\_\_\_\_

**Main** □  
**Characters**

2. \_\_\_\_\_  
\_\_\_\_\_

**Plot** □

3. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Episodes** □

4. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Climax** □

5. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Resolution** □

6. \_\_\_\_\_  
\_\_\_\_\_  
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# TAKS Reading—Objective 3

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All texts are not equally challenging. For young readers, reading a story may be much easier than reading a text that is based on science or social studies. However, to make academic progress, students must develop the ability to comprehend and process material from a wide range of texts. That is why it is important for students to develop the ability to know the purpose of the written text they are reading—how the author has organized information, how this organization affects the way the reader reads the text, and what distinctive features characterize a particular type of text. These are the skills students must learn if they are to become independent readers who can move beyond the literal meaning of a text and who have the ability to develop the deeper understandings needed in order to think critically about what they read, to connect what they know to new information, and to become independent learners.

The student will use a variety of strategies to analyze culturally diverse written texts.

## **(5.10) Reading/comprehension**

The student comprehends selections using a variety of strategies. The student is expected to

- (E)** use the text’s structure or progression of ideas such as cause and effect or chronology to locate and recall information (4–8); *(See pages 23–24.)*
- (I)** find similarities and differences across texts such as in treatment, scope, or organization (4–8); *(See pages 25–26.)*
- (L)** represent text information in different ways such as in outline, timeline, or graphic organizer (4–8). *(See pages 27–28.)*

## **(5.12) Reading/text structures/literary concepts**

The student analyzes the characteristics of various types of texts (genres). The student is expected to

- (A)** judge the internal consistency or logic of stories and texts such as “Would this character do this?”; “Does this make sense here?” (4–5); *(See pages 29–30.)*
- (C)** identify the purposes of different types of texts such as to inform, influence, express, or entertain (4–8); *(See pages 31–32.)*
- (E)** compare communication in different forms such as [contrasting a dramatic performance with a print version of the same story or] comparing story variants (2–8); *(See pages 33–34.)*
- (J)** describe how the author’s perspective or point of view affects the text (4–8). *(See pages 35–36.)*



# Reading/Comprehension

## Objective 3

**Expectation:** use the text's structure or progression of ideas such as cause and effect or chronology to locate and recall information

### Niagara Falls

Niagara Falls is one of the most spectacular natural wonders of the world. Part of the Falls is in Ontario, Canada, and part is in New York State.

The Falls are supplied by the Niagara River, which connects Lake Ontario and Lake Erie. The Niagara Falls are located midway in the river. They pour 500,000 tons of water a minute into a deep gorge.

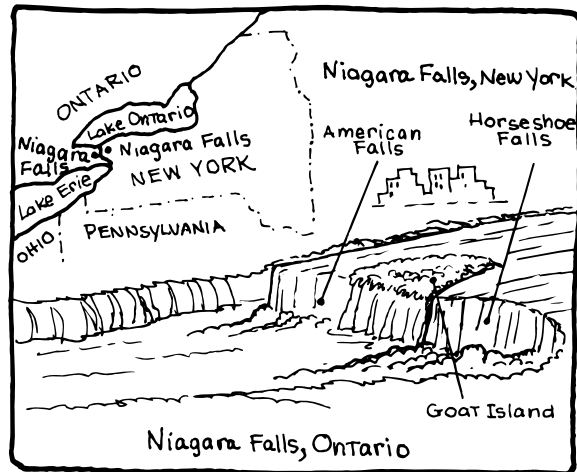
Scientists believe that Niagara Falls was formed after the last ice sheet from the Ice Age withdrew from the area. The surface of the land was changed by the ice. This caused waterways and streams to develop new paths. The result was an overflow of Lake Erie, which produced Niagara Falls. Scientists believe that the Falls are approximately 20,000 years old.

The Falls are formed over an outer layer of hard dolomitic limestone. This covers a softer layer of shale. The shale is more easily worn away, which causes the harder limestone to form an overhanging edge. This allows the Falls to drop straight down at a sharp angle, which produces a spectacular sight.

Over the years, the outer layer has broken off at times. This is causing the Falls to gradually move back up the river. This erosion is happening to the American Falls at the rate of three to seven inches a year. But the edge of the Horseshoe Falls is being worn back at the rate of approximately three feet a year.

Over the years, Niagara Falls has been a spectacular attraction for sightseers. Observation towers and a special area, Cave of the Winds, behind the Falls, have allowed remarkable views. At night, the Falls are flooded with lights. A steamer, called the *Maid of the Mist*, takes visitors for a ride around the base of the Falls.

Niagara Falls has also irresistibly drawn daredevils who have wanted to test their courage. One such man, Charles Blondin, crossed the Falls on a tightrope in 1859. Four days later, he crossed again, only this time with a blindfold. A month later, he crossed for the third time carrying a man on his shoulders. And as if that weren't daring enough, he returned to cross the Falls once again—on stilts!



# Reading/Comprehension

**Objective**  
**3**

**Expectation:** use the text's structure or progression of ideas such as cause and effect or chronology to locate and recall information

**DIRECTIONS:** Answer the following questions about Niagara Falls.

1. What was the effect of the Ice Age on the region of Niagara Falls?

\_\_\_\_\_

2. How have the attractions at Niagara Falls been changed to make them even more attractive for tourists?

\_\_\_\_\_

\_\_\_\_\_

3. The Falls are formed over a layer of dolomitic limestone and shale. What effect has the Falls had on these two surfaces?

\_\_\_\_\_

\_\_\_\_\_

4. What might be the effect of so many daredevils trying to cross over the Falls?

\_\_\_\_\_

\_\_\_\_\_

**DIRECTIONS:** Match each effect to its correct cause.

**Effect**

**Cause**

5. remarkable views of the Falls from above

erosion

6. Niagara Falls was created

limestone overhanging edge

7. Niagara Falls drops down at a sharp angle

*Maid of the Mist*

8. waterways and streams developed new paths

overflow of Lake Erie

9. Horseshoe Falls is worn back three feet a year

ice sheets changed the land

10. visitors ride near base of the Falls

observation towers



# Reading/Comprehension

**Objective**  
**3**

**Expectation:** find similarities and differences across texts such as in treatment, scope, or organization

**DIRECTIONS:** Read both stories, then answer the questions.

## One Afternoon in March

One afternoon in March, I went for a walk. After being cooped up all winter, it felt good to wander around outside. It was still cold, but some of the snow was beginning to melt.

I was walking down the street when something caught my eye. I leaned down and found two silver dollars shining in a half-melted snow bank. *Buried treasure!* was my first thought. So, I dug through the snow looking for more. Of course, I just ended up with really cold hands. I slipped the two coins into my pocket and went home colder but richer.

I began to think about how to spend the money. I could add it to my skateboard fund. Or I could use it to buy a soda and hot pretzel, my favorite snack. The possibilities were exciting.

Two days later, Mary Ann and her little sister were searching the snow banks. *Finders keepers*, was my first thought. I didn't need to get to the losers weepers part since Suzy was already crying for real.

"I dropped them right here," she said between tears. Her hands were cold and red from digging in the snow. "

Maybe they got shoved down the street with the snow plow. Let's dig over here." Mary Ann's voice sounded optimistic.

They'll never know, was my second thought, and I walked past them toward Wisser's house.

"Phil, have you seen two silver dollars?" asked Mary Ann. Suzy looked up from digging. Her eyes were hopeful.

"Coins?" Look innocent, was my third thought.

"Yeah, Suzy dropped two silver dollars along here last week."

"Silver dollars?"

"Yeah," said Suzy. "They're thick and big." She brushed the snow off her red hands and wiped the tears from her face. Her eyes were as red as her hands.

Lie, was my fourth thought. "As a matter of fact," I hesitated, "I dug two coins out of that snow bank just a few days ago. I wondered who might have lost them."

Suzy leaped on me, hugging me. "Oh, thank you, thank you."



# Reading/Comprehension

**Objective**  
**3**

**Expectation:** find similarities and differences across texts such as in treatment, scope, or organization

## It's Not My Fault

Almost every day at school, I eat lunch with Heather. Tracy is my friend, too, but she usually eats with Melody and Jordan. Every now and then, I eat lunch at their table, but not this time. Tracy was angry at me. I needed Heather's advice.

"You be the judge. I need an objective opinion. Tracy says I'm a liar," I said as I took a bite of my ham sandwich.

"About what?" Heather asked.

"It doesn't matter. I'm honest, right?"

"Honest about what?" Heather took a sip of milk.

"Honest. You know, trustworthy, direct, truthful," I smiled.

Heather hesitated and then nodded. "Yeah, you're pretty honest. Except the time you lied to your folks about your math grade. And then the time you . . ."

"Math grades don't count, and the time I went shopping with Tracy doesn't count either."

"Shopping? What about the time you went shopping with Tracy?" Heather looked confused.

"It's not my fault that Tracy didn't want you to come. I didn't want to hurt your feelings. So, she told me to tell you I was sick."

"So you lied to me," Heather accused, raising her voice. I could tell she was really upset. She was usually very quiet.

"I didn't lie. Tracy made up the lie."

"Don't blame Tracy because you lied to me," Heather said as she ripped the cellophane covering off her brownie.

"It's not my fault. Plus, you're way too sensitive," I said. Then I gulped my milk.

"Cheryl, the point is simple. You lie to your friends and then blame them for your mistakes," Heather said. "So, no, you're not really honest."

"Forget it," I said. I could see that Heather was still hurt about Tracy. She wouldn't understand my problem. "I gotta go. I'll see you tomorrow."

1. Explain in a few words what theme both of these stories have in common.

\_\_\_\_\_  
\_\_\_\_\_

2. Who is probably the better friend, Phil or Cheryl? Why?

\_\_\_\_\_  
\_\_\_\_\_

3. The moral of *It's Not My Fault* should be

\_\_\_\_\_  
\_\_\_\_\_

4. The moral of *One Afternoon in March* should be

\_\_\_\_\_  
\_\_\_\_\_



# Reading/Comprehension

**Objective**  
**3**

**Expectation:** represent text information in different ways such as in outline, timeline, or graphic organizer

A sixth-grade social studies instructor presented to her class a unit called Megalopolis: Chief Cities of the Twentieth Century. One of her students, Betsy Moss, frantically took notes. Read Betsy's notes and complete the chart on the next page.

London has a population of 11,800,000.

Buenos Aires is city number 11 in population order. It has 200,000 fewer people than Manila.

Mexico City has the fourth greatest population.

Karachi has 200,000 fewer people than Jakarta. Jakarta's population is 12,300,000.

Bombay has the same number of people as Osaka, number 7, and São Paolo.

Shanghai has the same number of people as London, which is city number 17, but follows London in the list.

13,500,000 is the population of Manila.

Number 16 has 12,100,000 people.

The third largest city has a population of 19,900,000 people.

Osaka has a population of 17,900,000.

The fourth largest city has a population of 19,800,000.

Calcutta has 12,900,000 people.

The three largest population centers have 34,800,000, 20,200,000, and 19,900,000 people, respectively.

Tokyo is number 1 on the list.

Los Angeles' population of 16,200,000 is 4,000,000 less than New York's.

Cairo's population of 14,400,000 places it in the ninth spot.

The eighth city has a population of 16,200,000.

Jakarta is city number 15.

Moscow's population is 13,200,000.

The twentieth city has 10,700,000 people.

Lagos immediately follows Moscow and has 100,000 fewer people.

Manila, city number 10, has 2,700,000 fewer people than Los Angeles.

India's cities of Bombay and Calcutta are sixth and fourteenth, respectively.

São Paolo is the fifth largest city.

Rio de Janeiro's population of 10,700,000 has 2,800,000 fewer people than number 10.

Seoul has 19,900,000 people.

Delhi has 300,000 fewer people than Shanghai, which is eighteenth on the list.



# Reading/Comprehension

**Objective**  
**3**

*Expectation: represent text information in different ways such as in outline, timeline, or graphic organizer*

**DIRECTIONS:** Betsy made less of a muddle with her notes when she completed the following chart. Use the clues from the previous page to organize the city information according to size.



Order	City	Population
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____
17	_____	_____
18	_____	_____
19	_____	_____
20	_____	_____



# Reading/Text Structures/Literary Concepts

**Objective**  
**3**

*Expectation: judge the internal consistency or logic of stories and texts such as "Would this character do this?"; "Does this make sense here?"*

**DIRECTIONS:** Read Ben's journal entries below and answer the questions on the next page.

## February 9

Tomorrow is the big day. I've studied so hard for the past three weeks that I think I could spell these words in my sleep.

But what if I get nervous and mess up? What if someone else knows more words than I know? Rebecca always wins when we practice at school. I just want to do the best that I can.

Mom has helped me every night after supper. She says that studying and learning are more important, in the long run, than winning. I guess she's right. But I still really hope I win.



## February 10

I did it! Well, I didn't win first place, but I came in second. And I'm really proud of that.

At first, I was scared when I looked out and saw all those people in the audience. I was afraid I'd forget everything. But then I told myself, "You studied hard. You know all those words. Come on, you can do it!"

My first word was indicate: i-n-d-i-c-a-t-e. It was easy. Then I knew I could do the rest of them, too. The only word that really stumped me was cannibal. I spelled it c-a-n-n-i-b-l-e—oops. Rebecca spelled it right, along with her last word: hydraulics.

Oh well, I won a dictionary and had my picture taken for the newspaper. When I came home, my family had a party to celebrate! Tomorrow, I start studying for next year's contest.



# Reading/Text Structures/Literary Concepts

**Objective**  
**3**

*Expectation: judge the internal consistency or logic of stories and texts such as "Would this character do this?"; "Does this make sense here?"*

**DIRECTIONS:** Answer the following questions about Ben's journal entries.

1. What big event was Ben writing about in his journal?

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2. Circle the words that best describe how Ben was feeling the day before the event.

- confident
- anxious
- tired
- happy

3. Circle the phrase that best describes how Ben felt about winning second place.

- (A) upset because he didn't win first place
- (B) angry at the person who beat him
- (C) happy because he did his best
- (D) shocked that he was given such a difficult word

4. Write a different journal entry for February 10 reacting the opposite of the way Ben actually handled winning second place. Begin with the sentence, "I am so angry!"

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5. Explain why the journal entry you wrote for February 10 does not fit with what we know about Ben's character from his journal.

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# Reading/Text Structures/Literary Concepts

## Objective 3

**Expectation:** identify the purposes of different types of texts such as to inform, influence, express, or entertain

**DIRECTIONS:** Read the passage and answer the questions on the next page.

### The Sequoia

One natural wonder of the world is among the oldest and largest living things on Earth. It is the sequoia, a tree that once grew in forests over much of the world. Today, sequoias are found mainly in California. California is the only place where the two kinds of true sequoias—the redwood and the giant sequoia—still grow.

The redwood is the tallest living tree. It is found in the coastal mountains of northern California and southern Oregon. Growing in this warm, moist climate, the redwoods reach over 300 feet high. That's as tall as a 30-story building! The trunks

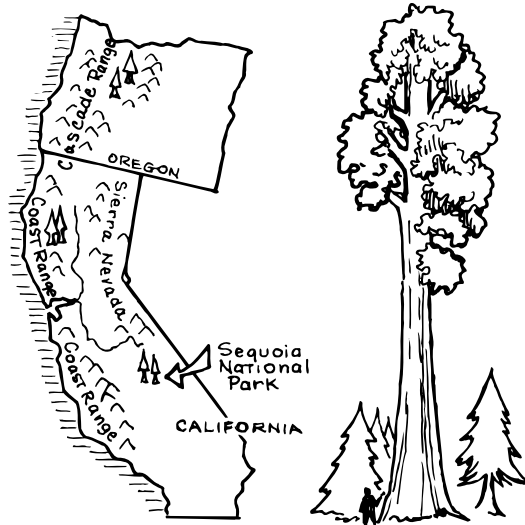
of redwood trees are often more than 10 feet in diameter. The bark can be as thick as 12 inches. The redwood gets its name from the color of its wood, which turns from light to dark red as it weathers. Redwoods are sometimes called "California redwoods" or "coasts" since they grow along the Pacific Coast of California.

The other true sequoia is the giant sequoia, which grows only on the western slopes of the Sierra Nevada Mountains in California. Once, the giant sequoias grew in many parts of the Northern Hemisphere. Today, they are found in only 70 groves. These giant sequoia groves are high in the mountains at elevations of 5,000 to 7,800 feet. Although giant sequoias do not grow as tall as redwoods, their trunks are much larger. Some trunks are as large as 100 feet around the base.

The largest tree in the world is found in Sequoia National Park. Named the General Sherman Tree, it stands 272.4 feet high and measures 101.6 feet around its base. Scientists believe that this single tree could produce over 600,000 board feet of lumber!

The giant sequoia is classified as an evergreen tree. It grows scale-like needles up to one-half inch long and produces woody, oval-shaped cones about two to three inches long. Although lightning has destroyed the tops of many of the trees, they are considered to be among the hardiest of living things.

Scientists have dated many giant sequoias to be several thousand years old. The age is determined by counting the growth rings on a tree's trunk. Each growth ring stands for one year. Scientists have estimated that the General Sherman Tree is at least 3,500 years old, and so it becomes not only the world's largest tree, but also one of the oldest living things on Earth.



# Reading/Text Structures/Literary Concepts

**Objective**  
**3**

*Expectation: identify the purposes of different types of texts such as to inform, influence, express, or entertain*

**DIRECTIONS:** Fill in the blanks with information from the passage. See if you can guess how the author feels about the sequoia tree from these facts.

1. The giant sequoia once grew in many parts of the \_\_\_\_\_ Hemisphere.
2. Today, the giant sequoia is found in only \_\_\_\_\_ groves high in the mountains at elevations of \_\_\_\_\_ to \_\_\_\_\_ feet.
3. Sequoias are found mainly in \_\_\_\_\_ where only \_\_\_\_\_ kinds still grow: \_\_\_\_\_ and \_\_\_\_\_ .
4. The author of this passage is most likely to support which of the following?
  - (A) producing 600,000 board feet of lumber from the General Sherman Tree
  - (B) studying redwood trees instead of sequoias
  - (C) encouraging people to visit Sequoia National Park
  - (D) allowing lightning to burn down the tops of trees

5. Summarize in two or three sentences the author's purpose in writing about sequoia trees in this passage.

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# Reading/Text Structures/Literary Concepts

**Objective**  
**3**

**Expectation:** compare communication in different forms such as [contrasting a dramatic performance with a print version of the same story or] comparing story variants

**DIRECTIONS:** Read the following excerpt from a famous play and the modern version of the same play. Then, answer the questions on the next page.

**From *Romeo and Juliet* by  
William Shakespeare**

**Act 2, Scene 2**  
**JULIET**

O Romeo, Romeo! wherefore art thou Romeo?  
Deny thy father and refuse thy name;  
Or, if thou wilt not, be but sworn my love,  
And I'll no longer be a Capulet. . .  
'Tis but thy name that is my enemy;  
Thou art thyself, though not a Montague.  
What's Montague? it is nor hand, nor foot,  
Nor arm, nor face, nor any other part  
Belonging to a man. O, be some other name!  
What's in a name? that which we call a rose  
By any other name would smell as sweet;  
So Romeo would, were he not Romeo call'd,  
Retain that dear perfection which he owes  
Without that title. Romeo, doff thy name,  
And for that name which is no part of thee  
Take all myself.

**From a modern version of *Romeo and Juliet***

**Juliet:** (Sighs). Oh, why do you have to be Romeo Montague? You're the perfect guy, except you are the son of my father's worst enemy! You could always change your name. Or, I could change mine and no longer be Juliet Capulet. Hmm, Juliet Montague?

It's just the name that is my enemy, not you. And, you are NOT your name. I mean, what part of a person is their name anyway? It's not a hand, or foot, or arm, or face, or any other part or a person.

Oh! Why couldn't you be someone else? If we called a rose some other name, like a turnip or a potato, it would still smell just as sweet, right? It's the same with Romeo. If he were called Romeo Smith or Romeo Ramirez he would still be the same perfect person—the man I love! Please Romeo, just take off that name that's no part of who you are and take all of me instead.



# Reading/Text Structures/Literary Concepts

**Objective**  
**3**

*Expectation: compare communication in different forms such as [contrasting a dramatic performance with a print version of the same story or] comparing story variants*

1. Compare the language used in each version of the play. What words are not in common use today? What words or phrases were used to replace these words in the modern version of the play?

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2. Which of the two versions of this story would you prefer to see acted out on stage? Why?

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3. Write your own version of this scene.

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# Reading/Text Structures/Literary Concepts

**Objective**  
**3**

**Expectation:** describe how the author's perspective or point of view affects the text

**DIRECTIONS:** Read the passage and answer the questions on the next page.

## Easter Island

Few places in the world are more intriguing and mystifying than Easter Island, located in the Pacific Ocean 2,300 miles from the coast of Chile. Easter Island has 64 square miles of rugged coastline and steep hills. Scientists believe the island began as a volcano. Three extinct volcanoes remain on the island. The largest one rises 1,400 feet high.

On Easter Sunday of 1722, Dutch Admiral Jacob Roggeveen and his crew landed on Easter Island aboard the

Dutch ship *Arena*. The astonished crew found dozens of huge stone figures standing on long stone platforms. The statues, some measuring 40 feet tall, were similar in appearance. Their expressionless faces were without eyes. Huge red stone cylinders were placed on their heads. Since that time, the island has been a source of mystery and intrigue to scientists and explorers.

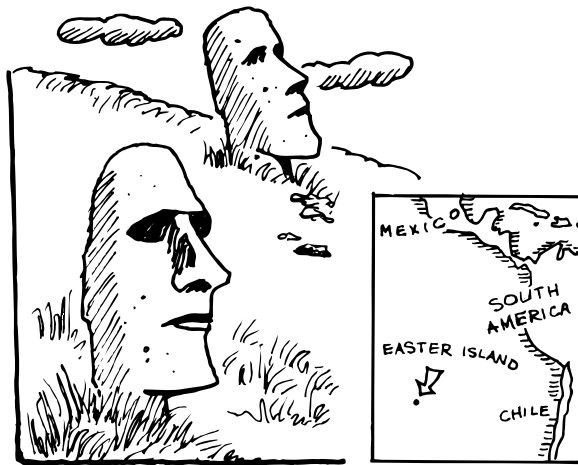
Archaeologists believe that three different cultures lived on Easter Island. Around A.D. 400, the island was inhabited by a group of people who specialized in making small stone statues.

Years later, another civilization tore down these statues and used them to build long temple platforms called *ahus*. These people carved more than 600 enormous stone busts of human forms and placed them on the *ahus*. Some *ahus* still hold up to 15 statues.

Scientists believe that the statues were carved from hard volcanic rock in the crater walls of the volcano called Rana Raraku. The statues were chiseled with stone picks made of basalt. Although the statues weigh many tons each, it is believed that they were moved with ropes and rollers across the island and placed on the *ahus*. This may be the reason for one island legend about the statues "walking" to their site.

About 1670, another group of people invaded the island. These invaders practiced cannibalism. During this time, many people began living in underground caves where they hid their treasures.

Today, Easter Island is governed by Chile, a country of South America. Almost the entire population of 2,000 people lives in the small village of Hanga Roa on the west coast of the island.



# Reading/Text Structures/Literary Concepts

**Objective**  
**3**

**Expectation:** describe how the author's perspective or point of view affects the text

**DIRECTIONS:** Answer the questions about the passage.

1. The author believes that Easter Island \_\_\_\_\_ .

- (A) is fascinating to study
- (B) is not worth scientific study
- (C) is not a real place
- (D) is the result of cannibalism

2. The author's purpose in writing this passage is most likely \_\_\_\_\_ .

- (F) to convince readers to visit Easter Island
- (G) to tell about a trip to Easter Island
- (H) to explain why Easter Island is a source of mystery
- (J) to report the latest scientific findings about Easter Island

3. Which words most clearly reveal the author's feelings about the subject of Easter Island?

- (A) intriguing and mystifying
- (B) it is believed
- (C) rugged coastline
- (D) enormous stone

4. According to the author, which of the following is true about *ahus*?

- (F) People who lived in underground caves built the *ahus*.
- (G) *Ahus* were chiseled with stone picks.
- (H) There is no such thing as *ahus*.
- (J) It is likely that ropes and rollers moved the statues to the *ahus*.

5. Is the author successful in explaining why Easter Island is mysterious and intriguing? Why or why not?

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**Objective**

For pages 28–36

**3****Mini-Test****The Hot-Air Balloon**

For thousands of years, people have been fascinated with the idea of flying. The idea was especially appealing to two French brothers, Jacques and Joseph Montgolfier. In the late 1700s, they began experimenting with the idea of a hot-air balloon.

Their first experiment was to fill small paper bags with smoke. They found that the bags would rise in the air. The Montgolfiers first believed that the smoke made the bags rise. But later, they realized it was the hot air, and not the smoke itself, that caused the bags to rise.

The Montgolfier brothers continued to experiment. In 1783, they put a hot-air balloon in the air for eight minutes. The balloon carried a rooster, a sheep, and a duck! They landed safely after history's first real balloon flight.

Later that year, French scientist Jean de Rozier and French nobleman Marquis d'Arlandes became the first people to make a free flight in a hot-air balloon. The balloon was made by the Montgolfier brothers. It rose over 300 feet into the air. The flight lasted 25 minutes as de Rozier floated over Paris, France.

About the same time that the Montgolfier brothers were making their hot-air balloons, another Frenchman, named Jacques Charles, was making a balloon that was filled with hydrogen, a gas that is lighter than air. In December of 1783, Charles made the first flight in a hydrogen balloon. His balloon rose over 2,000 feet into the air. He flew 25 miles from where he started.

In 1784, ballooning became very popular in France. People traveled for miles to see balloons take off and land. Many of the balloonists became heroes. On January 7, 1785, two men made the first balloon flight across the English Channel. The flight from England to France took two hours.

Through the years, balloons have been used for sport. But since their invention, balloons have been used for more serious purposes, too. In the 1700s and 1800s, balloons were used in wars to observe the enemy troops. In 1863, an American balloonist named Thaddeus Lowe directed a balloon corps that flew for the Union Army. Balloons were also used in World War I and World War II.

Today, hot-air balloons are made of nylon or polyester. To fly a balloon, the pilot burns fuel to produce hot air, which inflates the balloon. The balloon rises into the air as more hot air is produced. To lower the balloon, hot air is released.

**DIRECTIONS:** Answer the following questions based on the passage.

1. Through the years, balloons have been used \_\_\_\_\_ .

- (A) to carry animals
- (B) to observe enemy troops
- (C) for sport
- (D) all of the above

2. The main purpose of the article is \_\_\_\_\_ .

- (F) to examine the contributions of the Montgolfier brothers
- (G) to explore the differences between hot-air balloons and hydrogen balloons
- (H) to review the early history of hot-air ballooning in France
- (J) to compare hot-air balloons of the past and present



# TAKS Reading—Objective 4

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To be successful in school, students must have the ability to bring different levels of understanding to the texts they read. Good readers can do more than “read the lines.” They ask themselves questions, create meanings, and make initial predictions as they move through a text. Good readers also know that as they read, they will likely change their minds about some of their early ideas and assumptions. Why? Because as they read and acquire a more complete “picture” of the text, their understanding deepens and grows. They are able to answer their own questions, think critically about what they’ve read, develop their own interpretations, and use relevant parts of the text to support these interpretations. In essence, reading is a complex process that requires students not only to read “between the lines” but also to read “beyond the lines,” relating what they’ve read to what they already know. In this way reading becomes an important tool for thinking and learning, both in school and in real life.

The student will apply critical-thinking skills to analyze culturally diverse written texts.

## **(5.10) Reading/comprehension**

The student comprehends selections using a variety of strategies. The student is expected to

- (H) draw inferences such as conclusions or generalizations and support them with text evidence [and experience ] (4–8); (See pages 39–40.)
- (J) distinguish fact and opinion in various texts (4–8). (See pages 41–42.)

## **(5.11) Reading/literary response**

The student expresses and supports responses to various types of texts. The student is expected to

- (C) support responses by referring to relevant aspects of text [and his/her own experiences] (4–8); (See pages 43–44.)
- (D) connect, compare, and contrast ideas, themes, and issues across text (4–8). (See pages 45–46.)

## **(5.12) Reading/text structures/literary concepts**

The student analyzes the characteristics of various types of texts (genres). The student is expected to

- (B) recognize that authors organize information in specific ways (4–5). (See pages 47–48.)



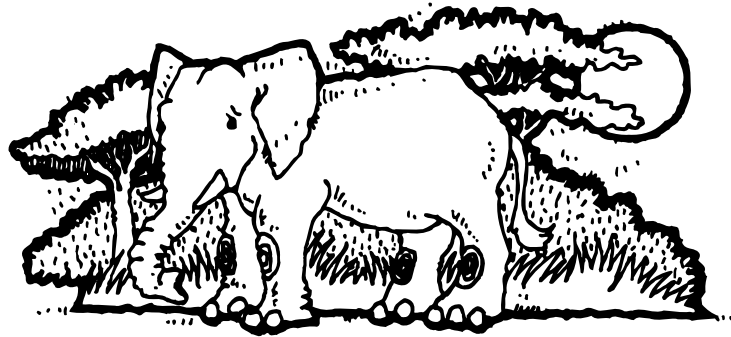
# Reading/Comprehension

**Objective**  
**4**

**Expectation:** draw inferences such as conclusions or generalizations and support them with text evidence [and experience]

**DIRECTIONS:** Read the passage and answer the questions on the next page.

## Save the Elephants



Elephants are peaceful and magnificent animals. They live in social groups similar to families, with one female elephant, called a “matriarch,” leading the herd. As one of the largest land mammals in the world, African elephants have few predators. In fact, one of the greatest dangers to elephants in past years has not been from another animal, but from humans. The value of the ivory tusks on the elephants was irresistible to greedy hunters.

African elephants that live on the grassy savannah have long, curved tusks. Some African elephants live in forest areas. They have shorter tusks, allowing them to move more freely through the crowded forest. Both male and female elephants have tusks, which they use as a tool. Elephants tend to prefer either a right or left tusk, just as we favor our right or left hand. The tusk they use most often becomes shorter.

During the 1980s, the African elephant population was a casualty of human desires. The number of elephants declined from well over 1 million to about 600,000. It is estimated that more than 270 elephants were killed each day! Thousands of baby elephants, called calves, were left to take care of themselves. The African elephant was in a dangerous situation.

What was happening to the elephants? They were being killed by poachers who wanted their ivory tusks. In many poor countries, poaching was one of the few ways to earn money. The ivory was valued around the world. It has been used for jewelry, statues, knife handles, billiard balls, piano keys, and other products.

Organizations that protect animals and look out for their welfare were outraged. They devised a plan to alleviate the situation. They began a publicity campaign to spread awareness of the problem. Some large companies helped by refusing to buy ivory and asking their customers to do the same.

International laws were eventually passed to help make the killing of elephants less appealing. The sale of ivory was made illegal all around the world.

In recent days, “paintings” made by elephants have been used to raise money for elephant protection. Elephants use their trunks to hold the paintbrush. The paintings are then sold, with the money going toward conservation efforts.



# Reading/Comprehension

**Objective**  
**4**

*Expectation: draw inferences such as conclusions or generalizations and support them with text evidence [and experience]*

**DIRECTIONS:** Complete the following questions.

1. What could you learn about elephants by looking at their tusks?

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2. What do you think would have happened to the African elephant if no one had made any changes?

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3. What is a poacher?

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4. How do you think poachers were affected when ivory trade became illegal?

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5. What might happen to elephants if ivory trade was made legal again?

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6. What is the best way to continue to protect the elephants?

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# Reading/Comprehension

**Objective**  
**4***Expectation: distinguish fact and opinion in various texts***DIRECTIONS:** Read the passage and answer the questions on the next page.

## Wolfways

Wolves are often pictured in fairy tales as ferocious animals, always ready to attack and kill anything they can catch. The Three Little Pigs flee from the “big, bad wolf.” Little Red Riding Hood must beware of the wolf that dresses up like Grandma and wants to eat her. But are wolves really that vicious?

Wolves are social animals and live together in packs of anywhere from two to twenty wolves. Each pack has a male and a female leader called the alpha wolves. The leaders are usually the strongest and healthiest animals. Usually, only the alpha female has cubs. The members of a pack generally cooperate and get along with one another.

Wolves are often pictured howling at the moon. Scientists have discovered that the howl is actually a way of locating other wolves, assembling the pack, sounding an alarm, or announcing a kill. Besides their howl, wolves use body language to communicate. The position of their back, neck, ears, and tail send distinct messages that other wolves understand. A wolf with its ears and tail up is high-ranking. A wolf with its tail down is showing submission.

Because they are hunters, wolves have a strong sense of smell, much greater than a human’s sense of smell. That means they can smell their prey while it’s still far away, and they also know where their enemies are. Wolves use smell to mark the edges of their territory. This tells other wolves to stay away.

Wolves usually feed on large animals such as deer and elk, with the pack working together to bring down their prey. They kill only when they are hungry and need to eat.

Who are the worst enemies of wolves? Humans! Wolves are more likely to run from a person than to attack, but because of their ferocious reputation, they have been hunted and killed for years. Wolves were once common across much of North America, but they are now rare and can be found only in remote wooded regions.



# Reading/Comprehension

**Objective**  
**4**

*Expectation: distinguish fact and opinion in various texts*

**DIRECTIONS:** The following sentences are either facts stating that something is true or opinions stating how someone may feel about something. Write *F* beside a statement if it is a fact and *O* if it is an opinion.

- 1. \_\_\_\_\_ **Wolves are big, bad, and ferocious.**
- 2. \_\_\_\_\_ **Wolves live in packs.**
- 3. \_\_\_\_\_ **I'd like to find a wolf in my yard.**
- 4. \_\_\_\_\_ **Groups of wolves are called packs.**
- 5. \_\_\_\_\_ **Members of wolf packs usually cooperate with one another.**
- 6. \_\_\_\_\_ **Wolves like to howl at the moon.**
- 7. \_\_\_\_\_ **A wolf's howl communicates a message to other wolves.**
- 8. \_\_\_\_\_ **Wolves have a strong sense of smell.**
- 9. \_\_\_\_\_ **Wolves hunt large animals.**
- 10. \_\_\_\_\_ **Elk tastes better to a wolf than other animals.**
- 11. \_\_\_\_\_ **When a wolf has its tail down, it is communicating a message to other wolves.**
- 12. \_\_\_\_\_ **Wolves are scary animals.**

**DIRECTIONS:** What is your opinion about the following statement:

**13. Wolves are ferocious animals that should be hunted and killed.**

Defend your opinion with facts from the article.

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# Reading/Literary Response

## Objective 4

*Expectation: support responses by referring to relevant aspects of text [and his/her own experiences]*

**DIRECTIONS:** Read the passage and answer the questions on the next page.

### Abraham Lincoln

Most people think of Illinois when they think of Abraham Lincoln, but young Abe was born in Kentucky and grew up in Indiana. When he was seven, the Lincoln family of four shared two horses and rode from Kentucky to the deep woods of Indiana.

It was a hard life. Abe's mother, Nancy Hanks Lincoln, died after her second year on the farm. Abe's father, Thomas, built a windowless cabin with a dirt floor. Abe's sister did the cooking. Abe's job was to keep the fire going. This was an important task because matches were not yet used on the frontier. Re-lighting the fire was a difficult task. It was important not to let a fire go out.

When Thomas Lincoln remarried, Abe's stepmother made improvements. She brought furniture, pots, and pans to the cabin. Abe's father made a wooden floor for the house. The new Mrs. Lincoln tried to make sure Abe had time to go to school and to read. Whenever he could, Abe would borrow books from his neighbors. He also walked to Boonville, a nearby town, to listen to trials in the courthouse. Abraham Lincoln and his family later moved to Illinois.

Abraham Lincoln had many jobs as an adult. He was postmaster of New Salem. He won a seat in the state legislature before completing his study of law. He rode the circuit on horseback, trying cases locally.

As a representative to Congress, Lincoln was against slavery in the new territory. In 1856, he joined the Republican Party, an antislavery coalition. He ran against Stephen Douglas for the Senate. Although he lost, Lincoln became well known through his debates with Douglas.

Lincoln inherited a tense situation when he became president. The Civil War soon broke out. Lincoln's leadership held the country together during this time of great division. In 1863, Lincoln issued the Emancipation Proclamation, his statement "that all persons held as slaves" within the rebellious states "are, and henceforward shall be, free." He also gave his famous Gettysburg Address at the site of a bloody battle. This speech began with the words that are still famous today: "Four score and seven years ago, our fathers brought forth, upon this continent, a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal."

Lincoln was shot a few weeks after the start of his second term. He is remembered for leading the country through one of its most difficult times and paving the way for the end of slavery in America.



# Reading/Literary Response

**Objective**  
**4**

*Expectation: support responses by referring to relevant aspects of text [and his/her own experiences]*

**DIRECTIONS:** Answer the following questions about the life of Abraham Lincoln.

1. How would you characterize Abraham Lincoln's early life in Indiana? Give specific details to support your statement.

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2. When his father remarried, Abraham Lincoln acquired a new stepmother. How did she influence Abe's early education?

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3. How did Abraham Lincoln's early jobs prepare him for the challenges he would face as president?

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4. Explain how the Emancipation Proclamation and the Gettysburg Address paved the way for the end of slavery.

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5. List three character qualities that are evident in Abraham Lincoln based on this summary of his life. Give an example of a time he demonstrated each.

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# Reading/Literary Response

**Objective**  
**4**

*Expectation: connect, compare, and contrast ideas, themes, and issues across text*

**DIRECTIONS:** Read each pen pal letter and fill in the webs on the next page.

Dear Yena,

My name is Li Lui. I am 10 years old. I live in Beijing, China. My parents and I live in a tall apartment building. Our city has more than 10 million people. It is a busy city with crowded sidewalks and lots to do.

I like school. I attend from 7:00 A.M. until 4:30 P.M. My favorite subjects are art and Chinese. I don't like math at all, but I have to study it every day! I wear a blue school uniform that looks like a warm-up suit.

I love drawing, watching TV, and eating. My favorite shows are cartoons. My favorite food is shrimp chips. We eat a lot of rice, fish, and vegetables. We eat fish for breakfast to start the day with protein for strength. I like to drink soda.

When I grow up, I'd like to be a fashion designer. I want to design beautiful clothes for famous people to wear. Then, when I go to the movies, I can say, "I created that outfit!"

I'm glad to have a pen pal from another country. I hope you are having a nice day! Please write soon.

Sincerely,

Li Lui

Dear Li Lui,

Thank you for writing! I am excited to have a pen pal from China. Your country seems exotic to me. I live in Accra, the capital of Ghana. My home is a one-floor house on a quiet street. I live with my parents and grandmother.

I enjoy school most of the time. My favorite subject is science. I want to be a pediatrician when I grow up so I can help heal sick children. I'm not so good at French. I need to practice more, but I find it so dull! I wear a uniform to school, too. It's a brown dress with a yellow shirt.

My favorite television programs are cartoons, too. Maybe we watch the same shows. I love to eat plantains. They're similar to bananas. I could eat them all day! I eat a lot of rice, also. I like fruit juice better than soda, though.

We have lots in common! I hope you are doing well, and I look forward to your reply.

Sincerely,

Yena

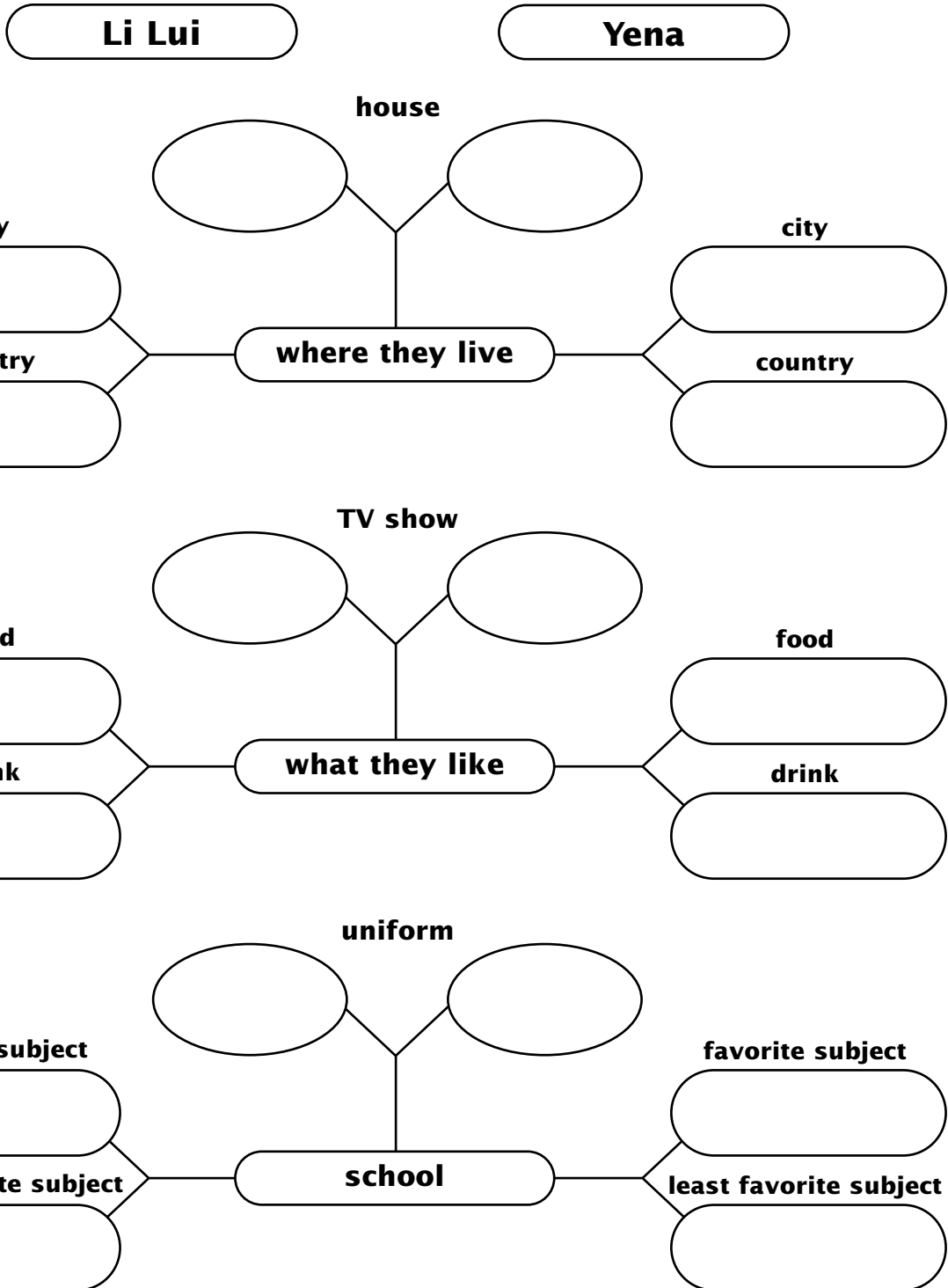


# Reading/Literary Response

**Objective**  
**4**

*Expectation: connect, compare, and contrast ideas, themes, and issues across text*

**DIRECTIONS:** Fill in the webs with information from the pen-pal letters. Write Li Lui's information on the left and Yena's information on the right. Draw stars next to the information they have in common.





# Reading/Text Structures/Literary Concepts

**Objective***Expectation: recognize that authors organize information in specific ways***4****DIRECTIONS:** Read the passage and answer the questions on the next page.

## Cross-Country or Downhill?

The answer to this question makes a big difference if you are a skier. Both forms of skiing are popular and can be done by people of all ages. Both require snow, and both can be done for relaxation or competition. So what is it that makes the two methods of skiing so different?

Cross-country skiing means just that—you ski across the country. You do not need tall hills or ski lifts to ski cross-country. You simply need snow and equipment. Cross-country skiers can go skiing right outside their back door. Even land that is completely flat can be enjoyable for the cross-country skier. Cross-country races can be 50 minutes long or two hours long. These long races require strength and endurance. Races vary in length from 9 miles to 30 miles.

Downhill skiing is also named for the activity. A downhill skier skis down hills. That means the skier needs tall hills and a way to get up to the top. Downhill skiing takes place at ski resorts. Downhill races are short. The goal is to get down the hill the fastest without falling. Speed is the goal, and downhill racers can go faster than 80 miles per hour.

Both types of skiing require special equipment. Downhill skis are wider and shorter than cross-country skis. The boots are also different. Downhill boots are larger and protect the ankles from injury. They are connected to the ski at the heel and toe with a binding. Cross-country boots are flexible, like shoes, and usually fit below the ankle. They are attached to the ski at the toe only. Both types of skiing require ski poles. A downhill skier uses poles for balance and direction, whereas a cross-country skier uses poles as part of the glide-step technique.

Both forms of skiing are great exercise, but cross-country skiing has the potential to burn more calories. Cross-country skiing at a pace of 5 to 8 miles an hour can burn 9 to 13 calories per minute. Downhill skiing at a moderate pace burns 6 calories per minute. No matter which form of skiing you choose, you will be doing something good for your body.

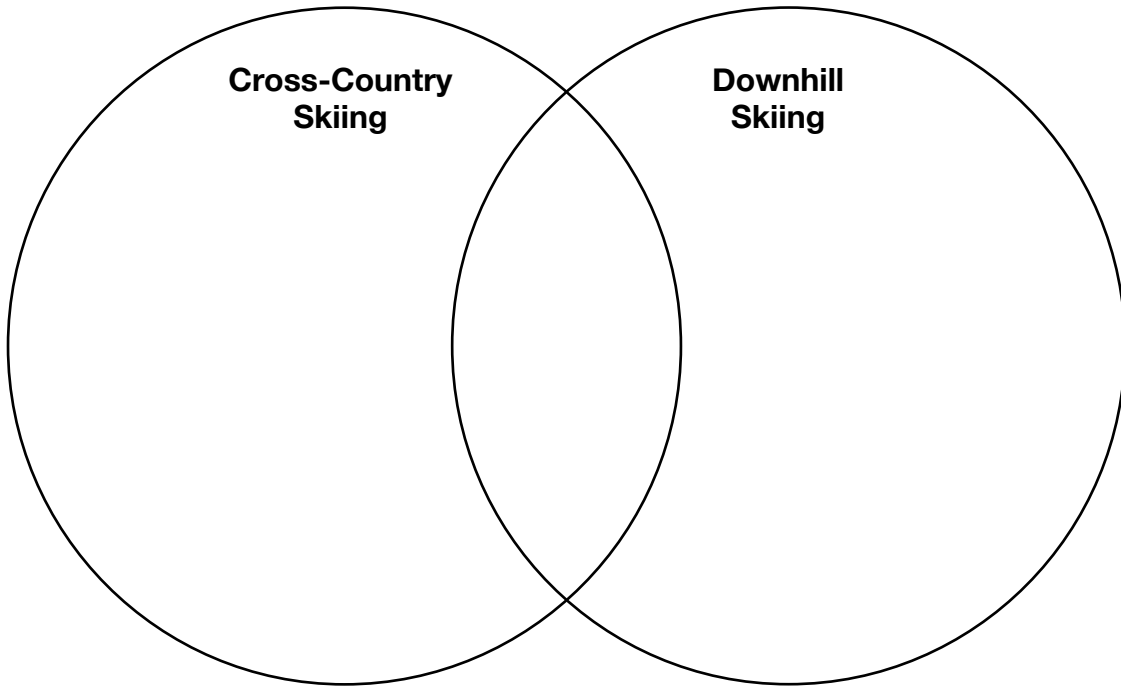


# Reading/Text Structures/Literary Concepts

**Objective 4**      *Expectation: recognize that authors organize information in specific ways*

**DIRECTIONS:** Complete the Venn diagram and answer the questions about the story.

1. Complete the Venn diagram below, listing the similarities and differences between cross-country and downhill skiing.



2. Which type of skiing is easiest to do? Explain your answer. Use facts from the diagram to support your opinion.

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3. Which type of skiing is the most expensive? Explain your answer. Use facts from the diagram to support your opinion.

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**Objective**

**4**

**Mini-Test**

**The Eiffel Tower**

The Eiffel Tower in Paris, France, is considered to be one of the Seven Wonders of the Modern World. The Eiffel Tower stands 984 feet high. It is made of a wrought-iron framework that rests on a four-legged base. The tower is made of 18,038 pieces of metal and 2.5 million rivets. Elevators and 1,665 steps lead to the top of the tower.

Among other things, the Eiffel Tower contains restaurants and weather stations. Since 1953, it has been used as the main television transmitter for Paris. Before that, it was used to transmit radio signals and as a weather monitoring station.

Today, everyone agrees that the Eiffel Tower is a true wonder. But in 1887, many people believed that Alexander Gustave Eiffel was crazy when he began building his metal tower. Gustave Eiffel designed his tower to be the centerpiece of the World's Fair Exposition of 1889 in Paris. He was chosen for the project because he was, at age fifty-three, France's master builder. Eiffel was already famous for his work with iron, which included the framework for the Statue of Liberty

On January 26, 1887, workers began digging the foundation for the Eiffel Tower. Everyone but Gustave Eiffel believed that it would be impossible to finish the tallest structure in the world in just two years. After all, it had taken 4 years to build the Washington Monument. The French government would grant the project only one-fifth of the money needed. Eiffel himself agreed to provide \$1,300,000, which he could recover if the tower was a financial success.

In March of 1889, after over two years of continuous work, the Eiffel Tower was completed. Eiffel not only met his deadline, but also built the tower for less money than he thought it would cost. The final cost was exactly \$1,505,675.90.

**DIRECTIONS:** Answer the following questions about the Eiffel Tower.

**1. What was Gustave Eiffel's opinion about whether the Eiffel Tower could be completed in two years? How did his opinion differ from other opinions around him?**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2. If you were an accountant simply looking at the money facts about the Eiffel Tower, would you judge it to be a success? Why or why not?**

\_\_\_\_\_  
\_\_\_\_\_

**3. In your opinion, what is the best use of the Eiffel Tower—a shopping mall, a weather station, a communication transmitter, or a restaurant center? Why?**

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# How Am I Doing?

<b>Objective 1 Mini-Test</b>  Page 14 <b>Number Correct</b>  <input type="text"/>	<b>4</b> answers correct	<b>Great Job!</b> Move on to the section test on page 52.
	<b>3</b> answers correct	<b>You're almost there!</b> But you still need a little practice. Review practice pages 8–13 before moving on to the section test on page 52.
	<b>0–2</b> answers correct	<b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 8–13. Then retake the test on page 14. Now move on to the section test on page 52.
<b>Objective 2 Mini-Test</b>  Pages 20–21 <b>Number Correct</b>  <input type="text"/>	<b>6</b> answers correct	<b>Awesome!</b> Move on to the section test on page 52.
	<b>4–5</b> answers correct	<b>You're almost there!</b> But you still need a little practice. Review practice pages 16–19 before moving on to the section test on page 52.
	<b>0–3</b> answers correct	<b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 16–19. Then retake the test on pages 20–21. Now move on to the section test on page 52.

# How Am I Doing?

<b>Objective 3 Mini-Test</b>  Page 37 <b>Number Correct</b>  <input type="text"/>	<b>2</b> answers correct	<b>Great Job!</b> Move on to the section test on page 52.
	<b>1</b> answers correct	<b>You're almost there!</b> But you still need a little practice. Review practice pages 28–36 before moving on to the section test on page 52.
	<b>0</b> answers correct	<b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 28–36. Then retake the test on page 37. Now move on to the section test on page 52.
<b>Objective 4 Mini-Test</b>  Page 49 <b>Number Correct</b>  <input type="text"/>	<b>3</b> answers correct	<b>Awesome!</b> Move on to the section test on page 52.
	<b>2</b> answers correct	<b>You're almost there!</b> But you still need a little practice. Review practice pages 39–48 before moving on to the section test on page 52.
	<b>0–1</b> answers correct	<b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 39–48. Then retake the test on page 49. Now move on to the section test on page 52.

# Final Test for Reading

for pages 8–49

**DIRECTIONS:** Choose the word that best completes both sentences.

1. Throw the \_\_\_\_\_ to me.

Sheila wore a formal dress to the \_\_\_\_\_ .

- (A) party
- (B) ball
- (C) coat
- (D) dance

2. Please \_\_\_\_\_ my coat to the bus.

An actor's voice must \_\_\_\_\_ to the last row of seats.

- (F) deliver
- (G) reach
- (H) take
- (J) carry

3. The class visited a \_\_\_\_\_ art museum.

He had to pay a \_\_\_\_\_ for speeding.

- (A) modern
- (B) charge
- (C) quality
- (D) fine

4. Reach out with your \_\_\_\_\_ .

The soldiers gathered \_\_\_\_\_ for the battle.

- (F) arms
- (G) legs
- (H) supplies
- (J) muskets

**DIRECTIONS:** Choose the best answer.

5. I opened a savings account at the bank.

In which sentence does the word *bank* mean the same thing as in the sentence above?

- (A) The pilot flew through a bank of clouds.
- (B) My mom is a bank manager.
- (C) My house sits on the bank of a river.
- (D) Bank to the left at the intersection.

6. I tied the key on a string.

In which sentence does the word *key* mean the same thing as in the sentence above?

- (F) The key to a riddle provides the answer.
- (G) I sailed around the key.
- (H) I opened the door with my key.
- (J) The choir sang in key.

**DIRECTIONS:** Choose the answer that best defines the underlined part of each word.

7. hopeless ageless

- (A) less than one
- (B) full of
- (C) without
- (D) forward

8. resubmit replay

- (F) under
- (G) over
- (H) again
- (J) not



**9. teacher waiter**

- (A) the study of
- (B) small
- (C) art or skill of
- (D) one who

**10. triathlon triangle**

- (F) two
- (G) three
- (H) four
- (J) five

**DIRECTIONS:** Read the passage, then answer the questions.

An urban habitat is home to many animals. Birds like pigeons and starlings nest on tall buildings. Mice and rats build their nests in or near buildings. Squirrels, rabbits, and opossums make their homes in the wide-open spaces of city parks. Timid animals like foxes and raccoons search for food in neighborhood garbage cans at night. Perhaps the favorite city animals, though, are the ones that live in the homes of people—cats, dogs, and other animal friends we call pets.

**11. What would be a good title for this passage?**

- (A) *Pests Among Us*
- (B) *City Critters*
- (C) *A Nocturnal Nuisance*
- (D) *An Urban Legend*

**12. What is the main idea of this passage?**

- (F) People should protect city animals.
- (G) Urban animals cause many problems.
- (H) Many animals live in the city.
- (J) People who live in cities should not have pets.

**13. If the author wanted to continue describing urban habitats, what would be a good topic for the next paragraph?**

- (A) career opportunities in cities
- (B) urban crime
- (C) city schools
- (D) plants that can be found in cities

**14. What is the author's purpose for writing this passage?**

- (F) to tell people about animals that live in urban habitats
- (G) to warn people about urban animals
- (H) to present a plan to city officials about protecting animals
- (J) to explain how people and animals work together

**DIRECTIONS:** Read the story, then answer the questions.

**Rip Van Winkle**

One day, just as the leaves were beginning to change color, Rip Van Winkle walked through the woods and up the mountains. By early afternoon he found himself on one of the highest points of the Catskill Mountains. By late afternoon Rip was tired and panting, so he found a spot with a beautiful view where he could lay down and rest. Through an opening in the trees, Rip could see miles and miles of lower country and rich woodland. In the distance he could view the mighty Hudson River. It was moving calmly along its course, showing reflections of the soft white clouds in the sky.

**15. What part of a story does this passage tell about?**

- (A) the setting
- (B) the plot
- (C) the conflict
- (D) the characters



**16. How do you think Rip feels about where he is?**

- (F) He thinks it is exciting.
- (G) He thinks it is annoying.
- (H) He thinks it is peaceful.
- (J) He thinks it is dangerous.

**17. Where in a story would you most likely find this passage?**

- (A) near the beginning
- (B) in the middle
- (C) near the end
- (D) in the table of contents

**18. At what time of year does this passage take place?**

- (F) winter
- (G) spring
- (H) summer
- (J) fall

**DIRECTIONS:** Read the story, then answer the questions.

**Bonkers for Baseball**

I remember a special Mother’s Day back in 1939. My mom was a big baseball fan so my father treated us to tickets for the Brainford Bisons game. We sat in box seats owned by my father’s company. It was an exciting day.

Before the game began, we started talking to a woman sitting in a nearby box seat. We learned that she was the mother of the Beulah Blaze’s pitcher. Her son, Brian Falls, had been pitching in the minor leagues for three years. This was the first time she had ever seen him pitch in a professional game. For the special event, Brian Falls had treated his mother to a box seat. He had the box decorated in flowers. Mrs. Falls was so excited. She told us that she had always encouraged Brian to become a baseball player. Her dream for her son had come true.

My team wasn’t doing very well in the early innings. With Brian Falls pitching, the Brainford Bisons’ batters kept striking out. Then, Falls threw a fastball to the plate. The batter swung at it. He caught a piece of it and fouled it off. The foul ball flew into the crowd. It came straight toward us! My dad and I reached into the air to catch it, but the ball veered left and hit Mrs. Falls in the head. She was knocked

unconscious. We couldn’t believe it—out of all the people in the stands, the ball hit the pitcher’s mother!

Mrs. Falls was rushed to the hospital. For the rest of the game we wondered what had happened to her. Later we learned the rest of the story. Brian Falls left the game to accompany his mom to the hospital. He was so upset that he told her he would quit the game. His mother, who was recovering nicely, convinced him to stay in baseball. It’s a good thing, because 3 years later he joined the major leagues.

**19. What would be another good title for this story?**

- (A) *Mother’s Day at the Ballpark*
- (B) *Making It in the Majors*
- (C) *Brian Falls: His Career in Baseball*
- (D) *The Brainford Bisons Steal Home*

**20. Here is a time line of what happens in the story.**

The family goes to the baseball game for Mother’s Day.

A foul ball is hit into the stands.

Brian Falls joins the major leagues.

**Which of these events should go in the empty box?**

- (F) Mrs. Falls convinces Brian not to quit baseball.
- (G) Mrs. Falls is taken to the hospital.
- (H) The family discovers that the woman they’ve been talking with is the mother of the Beulah Blaze’s pitcher.
- (J) The ball is almost caught by the narrator.





**21. Why do you suppose Brian Falls had his mother's box seat decorated with flowers?**

- (A) because he wanted to impress his friends
- (B) because it was the first time she had seen him pitch professionally
- (C) because he was in the major leagues
- (D) because she told him not to quit

**22. Why was Mrs. Falls taken to the hospital?**

- (F) because she needed to tell Brian to stay in the game
- (G) because she was a nurse
- (H) because she was sick
- (J) because she was hit by a foul ball

**23. Mrs. Falls probably taught Brian to \_\_\_\_\_ .**

- (A) follow his dreams
- (B) give up when things got too hard
- (C) play baseball
- (D) fight against his opponents

**24. From reading the passage, how do you suppose the narrator feels about baseball?**

- (F) He thinks it's a silly game.
- (G) He despises it.
- (H) He is bored with it.
- (J) He enjoys it.



# Final Reading Test

## Answer Sheet

---

- 1 (A) (B) (C) (D)  
2 (F) (G) (H) (J)  
3 (A) (B) (C) (D)  
4 (F) (G) (H) (J)  
5 (A) (B) (C) (D)  
6 (F) (G) (H) (J)  
7 (A) (B) (C) (D)  
8 (F) (G) (H) (J)  
9 (A) (B) (C) (D)  
10 (F) (G) (H) (J)
- 11 (A) (B) (C) (D)  
12 (F) (G) (H) (J)  
13 (A) (B) (C) (D)  
14 (F) (G) (H) (J)  
15 (A) (B) (C) (D)  
16 (F) (G) (H) (J)  
17 (A) (B) (C) (D)  
18 (F) (G) (H) (J)  
19 (A) (B) (C) (D)  
20 (F) (G) (H) (J)
- 21 (A) (B) (C) (D)  
22 (F) (G) (H) (J)  
23 (A) (B) (C) (D)  
24 (F) (G) (H) (J)

# TAKS Mathematics Content Standards

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The mathematics section of the state test measures knowledge in six different areas.

- 1) *Objective 1: Number, operation, and quantitative reasoning*
- 2) *Objective 2: Patterns, relationships, and algebraic thinking*
- 3) *Objective 3: Geometry and spatial reasoning*
- 4) *Objective 4: Measurement*
- 5) *Objective 5: Probability and Statistics*
- 6) *Objective 6: Underlying processes and mathematical tools*

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# Mathematics Chart

## Grade 5

### Perimeter

square  $P = 4s$

rectangle  $P = 2(l + w)$

### Area

square  $A = s^2$

rectangle  $A = lw$  or  $A = bh$

triangle  $A = \frac{1}{2}bh$  or  $A = \frac{bh}{2}$

### Length

#### Metric

- 1 kilometer = 1000 meters
- 1 meter = 100 centimeters
- 1 centimeter = 10 millimeters

#### Customary

- 1 mile = 1760 yards
- 1 mile = 5280 feet
- 1 yard = 3 feet
- 1 foot = 12 inches

### Weight and Mass

#### Metric

- 1 kilogram = 1000 grams
- 1 gram = 1000 milligrams

#### Customary

- 1 ton = 2000 pounds
- 1 pound = 16 ounces

### Volume and Capacity

#### Metric

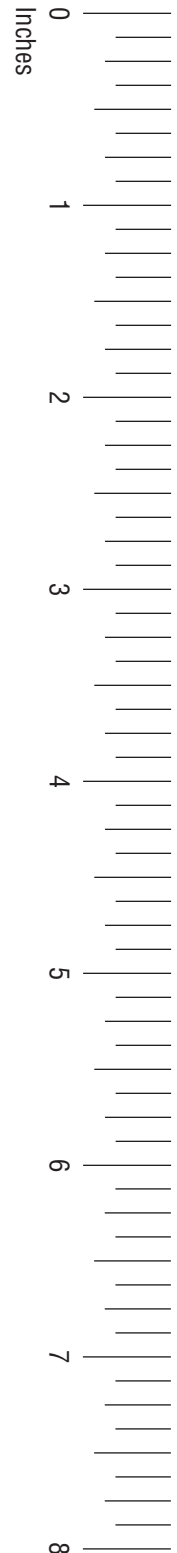
- 1 liter = 1000 milliliters

#### Customary

- 1 gallon = 4 quarts
- 1 gallon = 128 ounces
- 1 quart = 2 pints
- 1 pint = 2 cups
- 1 cup = 8 ounces

#### Time

- 1 year = 12 months
- 1 year = 52 weeks
- 1 year = 365 days
- 1 week = 7 days
- 1 day = 24 hours
- 1 hour = 60 minutes
- 1 minute = 60 seconds



# TAKS Mathematics—Objective 1

The student will demonstrate an understanding of numbers, operations, and quantitative reasoning.

## **(5.1) Number, operation, and quantitative reasoning**

The student uses place value to represent whole numbers and decimals. The student is expected to

- (A) use place value to read, write, compare, and order whole numbers through the billions place; and (See page 60.)
- (B) use place value to read, write, compare, and order decimals through the thousandths place. (See page 61.)

## **(5.2) Number, operation, and quantitative reasoning**


The student uses fractions in problem-solving situations. The student is expected to

- (A) generate equivalent fractions; (See page 62.)
- (B) compare two fractional quantities in problem-solving situations using a variety of methods, including common denominators; and (See page 63.)
- (C) use models to relate decimals to fractions that name tenths, hundredths, and thousandths. (See page 64.)

## **(5.3) Number, operation, and quantitative reasoning**

The student adds, subtracts, multiplies, and divides to solve meaningful problems. The student is expected to


- (A) use addition and subtraction to solve problems involving whole numbers and decimals; (See page 65.)
- (B) use multiplication to solve problems involving whole numbers (no more than three digits times two digits without technology); (See page 66.)
- (C) use division to solve problems involving whole numbers (no more than two-digit divisors and three-digit dividends without technology); (See page 67.)
- (D) identify prime factors of a whole number and common factors of a set of whole numbers; and (See page 68.)



### **What it means:**

A prime factor is a number that is divisible only by itself and one. Common factors are numbers that are factors for more than one number. For example, the factors of 12 are 1, 2, 3, 4, 6, and 12. The factors of 15 are 1, 3, 5, and 15. The common factors for 12 and 15 would be 1 and 3.

- (E) model and record addition and subtraction of fractions with like denominators in problem-solving situations. (See page 69.)



### **What it means:**

Like denominators means that the fractions have the same denominator.

## **(5.4) Number, operation, and quantitative reasoning**

The student estimates to determine reasonable results. The student is expected to

- (A) round whole numbers and decimals through tenths to approximate reasonable results in problem situations; and (See page 70.)
- (B) estimate to solve problems where exact answers are not required. (See page 71.)

# Number, Operation, and Quantitative Reasoning

## Objective 1

**Expectation:** use place value to read, write, compare, and order whole numbers through the billions place

**DIRECTIONS:** Choose the best answer.

1. **597,346 =**

- (A) five million, ninety-seven thousand, three hundred forty-six
- (B) five hundred ninety-seven million, three hundred forty-six
- (C) five hundred ninety-seven, three hundred forty-six
- (D) five hundred ninety-seven thousand, three hundred forty-six

2. **Which of these is 7,207,354?**

- (F) seven million, two hundred thousand, three hundred fifty-four
- (G) seven hundred twenty-seven thousand, three hundred fifty-four
- (H) seven million, two hundred seven thousand, three hundred fifty-four
- (J) seven million, twenty-seven thousand, three hundred fifty-four

3. **Which is the numeral for six million, three hundred seventy-nine thousand, five hundred forty-one?**

- (A) 637,541
- (B) 6,379,541
- (C) 6,397,541
- (D) 637,941

4. **What is 455,398 rounded to the nearest thousand?**

- (F) 455,390
- (G) 455,400
- (H) 450,000
- (J) 455,000

5. **What is 385,001 rounded to the nearest hundred thousand?**

- (A) 100,000
- (B) 350,000
- (C) 390,000
- (D) 400,000

6. **Which of these is between 558,390 and 585,093?**

- (F) 593,085
- (G) 553,855
- (H) 590,390
- (J) 580,935

7. **In which numeral is there a 5 in both the tens and the ten thousands place?**

- (A) 1,505,925
- (B) 5,501,658
- (C) 7,356,259
- (D) 2,459,519

8. **Which of these lists shows the numbers in order from smallest to largest?**

- (F) 562,423 85,264 9,156
- (G) 56 891 3,210
- (H) 653 74 89
- (J) 9,547 5,632 3,527



# Number, Operation, and Quantitative Reasoning

## Objective 1

**Expectation:** use place value to read, write, compare, and order decimals through the thousandths place

### Example:

Which of these numbers is between 1.05 and 1.5 in value?

- (A) 0.95
- (B) 1.55
- (C) 1.72
- (D) 1.27

Answer: (D)

**DIRECTIONS:** Choose the best answer.

1. Which of these has a 4 in the hundreds place?

- (A) 4.523
- (B) 8.634
- (C) 3.844
- (D) 7.498

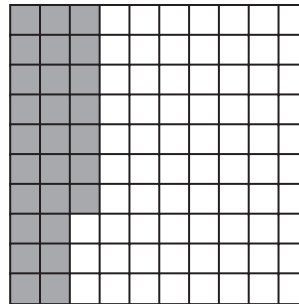
2. Which of these is 56.84?

- (F) fifty-six and eighty-four hundredths
- (G) fifty-six hundred and eighty-four
- (H) fifty-six and eighty-four tenths
- (J) fifty-six and eighty-four

3. Which group of decimals is ordered from least to greatest?

- (A) 4.482, 4.483, 4.481, 4.408
- (B) 4.576, 4.432, 4.678, 4.104
- (C) 4.978, 4.652, 4.331, 4.320
- (D) 4.269, 4.692, 4.699, 4.732

4. Which decimal shows how much of the shape is shaded?



- (F) 0.23
- (G) 0.27
- (H) 0.49
- (J) 0.72

5. What is the value of 6 in 89.634?

- (A) 6 tens
- (B) 6 hundreds
- (C) 6 tenths
- (D) 6 hundredths



# Number, Operation, and Quantitative Reasoning

## Objective 1

*Expectation: generate equivalent fractions*

### Example:

If 0.87 represents how many students passed the test, how many passed if there were 100 students?

- (A) 13
- (B) 87
- (C) 100
- (D) 43

Answer: (B)

**DIRECTIONS:** Choose the best answer.

1. 30 people at the concert left early. There were a total of 100 people there at the beginning of the concert. Which decimal shows how many left early?

- (A) 1.00
- (B) 0.70
- (C) 0.30
- (D) 0.00

2. The puzzle had 100 pieces. 8 of the pieces were solid white. Which decimal shows how many of the pieces were solid white?

- (F) 0.08
- (G) 0.80
- (H) 0.82
- (J) 1.00

3. Which of the following is not equivalent to  $\frac{1}{2}$ ?

- (A)  $\frac{50}{100}$
- (B) 0.5
- (C)  $\frac{25}{100}$
- (D)  $\frac{5}{10}$

4. Which of the following is not equivalent to  $\frac{3}{4}$ ?

- (F)  $\frac{9}{12}$
- (G)  $\frac{75}{100}$
- (H) 0.75
- (J) 0.34

5. Which of the following fractions is equivalent to 0.25?

- (A)  $\frac{1}{8}$
- (B)  $\frac{1}{4}$
- (C)  $\frac{1}{2}$
- (D)  $\frac{3}{4}$





# Number, Operation, and Quantitative Reasoning

## Objective 1

**Expectation:** compare two fractional quantities in problem-solving situations using a variety of methods, including common denominators

### Example:

Jenny and Brian ran a race in gym class. Jenny ran the distance in  $12\frac{2}{5}$  seconds. Brian ran the distance in  $12\frac{3}{8}$  seconds. Who won the race?

- (A) Jenny  
(B) Brian  
(C) Neither, they tied.

Answer: (B)

**DIRECTIONS:** Choose the best answer.

1. Maria baked a pie and cut it into 6 equal pieces. Pedro baked the same size pie and cut it into 8 equal pieces. Both children ate one piece of their own pie. Who ate a bigger piece?

- (A) You can't cut a pie into 8 equal pieces.  
(B) Both pieces are the same size.  
(C) Maria  
(D) Pedro

2. Alex ate  $\frac{2}{7}$  of a candy bar and Lizzie ate  $\frac{5}{7}$  of the candy bar. Who ate more?

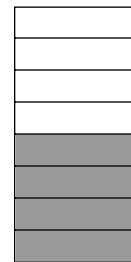
- (F) They both ate the same amount  
(G) Alex  
(H) Lizzie  
(J) Not Here

3. Mary had a pie that was cut into 7 equal pieces and she ate 5 of them. Frank had a pie that was cut into 9 equal pieces and he ate 7 of them. Which of the following is true?

- (A) Mary ate more than Frank  
(B) Mary ate less than Frank  
(C) Frank ate less than Mary  
(D) Frank and Mary ate the same amount

4. This fraction picture shows that  $\frac{1}{2}$  means the same as which other fraction?

- (F)  $\frac{1}{4}$   
(G)  $\frac{1}{8}$   
(H)  $\frac{2}{8}$   
(J)  $\frac{4}{8}$



# Number, Operation, and Quantitative Reasoning

## Objective 1

**Expectation:** use models to relate decimals to fractions that name tenths, hundredths, and thousandths

**DIRECTIONS:** Choose the best answer.

1. Which of the following is not a fraction equivalent of 0.422?

(A)  $\frac{2}{10}$   
(B)  $\frac{211}{500}$   
(C)  $\frac{422}{1000}$   
(D)  $\frac{844}{2000}$

2. Which of the following is not a fraction equivalent of 0.264?

(F)  $\frac{132}{500}$   
(G)  $\frac{66}{250}$   
(H)  $\frac{44}{200}$   
(J)  $\frac{33}{125}$

3. What is the fraction equivalent of 0.421?

(A)  $\frac{421}{100}$   
(B)  $\frac{421}{1000}$   
(C)  $\frac{210}{500}$   
(D) Not Here

4. If we have a pizza divided into 8 equal slices and you remove two slices, what fraction of the pizza have you removed? What decimal portion of the pizza have you removed?

(F)  $\frac{1}{4}$ , 0.25  
(G)  $\frac{1}{8}$ , 0.125  
(H)  $\frac{2}{8}$ , 0.28  
(J)  $\frac{1}{4}$ , 0.40

5. Jeff used  $\frac{3}{8}$  of a meter of string to tie a package. What is the decimal portion of the string he used?

(A) 0.385  
(B) 0.255  
(C) 0.375  
(D) 0.245

6. Stuart bought  $\frac{3}{4}$  pound of cheese. What is the decimal portion of the cheese that Stuart bought?

(F) 0.75  
(G) 0.50  
(H) 1.00  
(J) 0.25



# Number, Operation, and Quantitative Reasoning

## Objective 1

*Expectation: use addition and subtraction to solve problems involving whole numbers and decimals*

**DIRECTION:** Choose the best answer.

- Seventy-six people live in Harold's apartment building. In Mike's apartment building, there are 85 people. How many more people live in Mike's building than in Harold's building?
  - 161
  - 9
  - 76
  - 85
- In the previous exercise, how many people live in both Harold's and Mike's apartment buildings?
  - 161
  - 9
  - 76
  - 85
- There are 103 pages in Vera's new book. She has read 35 pages. How many pages does she have left to read?
  - 138
  - 75
  - 68
  - 70
- Paula lives 53 kilometers from Darton. Ann lives 85 kilometers from Darton. How many kilometers closer to Darton does Paula live than Ann?
  - 85
  - 53
  - 138
  - 32
- A book 0.75 inch thick is placed on a book 0.813 inch thick. What is the combined thickness of the books?
  - 1.563
  - 0.063
  - 1.0
  - 0.50
- Yesterday 0.333 inch of rain fell. Today 0.68 inch of rain fell. How much rain fell during the two days?
  - 0.347 inch
  - 0.50 inch
  - 1.013 inch
  - 1 inch
- A rock weighs 0.563 pound. Suppose 0.25 pound is chipped away. How much would the remaining rock weigh?
  - 0.313 pound
  - 0.813 pound
  - 0.538 pound
  - 0.588 pound
- Mr. Anthony and Mr. Androtti completed 0.75 of a job. Mr. Androtti completed 0.222 of the job. What part of the job did Mr. Anthony complete?
  - 0.972
  - 0.147
  - 0.528
  - 0.297



# Number, Operation, and Quantitative Reasoning

## Objective 1

*Expectation: use multiplication to solve problems involving whole numbers*

### Example:

The airline distance between two cities is 597 miles. What is the least number of miles a plane would travel in making 45 one-way trips?

- (A) 1,194
- (B) 642
- (C) 26,865
- (D) 13

Answer: (C)

**DIRECTIONS:** Choose the best answer.

1. A machine can produce 98 parts in one hour. How many parts could it produce in 72 hours?

- (A) 7,056
- (B) 170
- (C) 26
- (D) 756

2. Each new bus can carry 66 passengers. How many passengers can ride on 85 new buses?

- (F) 561
- (G) 151
- (H) 19
- (J) 5,610

3. Mrs. Robins drives 19 miles every working day. How many miles does she drive in a five-day workweek?

- (A) 24
- (B) 95
- (C) 14
- (D) 4

4. There were 708 employees at work today. Each employee worked 8 hours. How many hours did these employees work?

- (F) 716
- (G) 700
- (H) 5,664
- (J) 88

5. Each box weighs 121 kilograms. There are 4 boxes. What is the total weight of the 4 boxes?

- (A) 484
- (B) 30
- (C) 48
- (D) 125



# Number, Operation, and Quantitative Reasoning

## Objective 1

*Expectation: use division to solve problems involving whole numbers*

**DIRECTIONS:** Choose the best answer.

1. Jim has a wire that is 42 inches long. He cuts the wire into 7-inch lengths. How many pieces of wire will he have?

(A) 6  
(B) 35  
(C) 49  
(D) 294

2. There are 84 scouts in all. Six will be assigned to each tent. How many tents are there?

(F) 90  
(G) 78  
(H) 14  
(J) 504

3. A factory shipped 848 cars to 4 cities. Each city received the same number of cars. How many cars were shipped to each city?

(A) 3,392  
(B) 852  
(C) 844  
(D) 212

4. There are 336 cases on a truck. The truck will make 12 stops and leave the same number of cases at each stop. How many cases will be left at each stop?

(F) 4,032  
(G) 324  
(H) 28  
(J) 48

5. There are 160 packages on 4 large carts. Each cart holds the same number of packages. How many packages are on each cart?

(A) 640  
(B) 40  
(C) 156  
(D) 164

6. How many bags of 7 oranges each can be filled from a shipment of 341 oranges? Are there any left over?

(F) 48, yes  
(G) 48, no  
(H) 2,387, yes  
(J) 2,387, no

7. Daphne had 958 pennies. She exchanged them for nickels. How many nickels did she get?

(A) 479  
(B) 38  
(C) 95  
(D) 191

8. There are 448 reams of paper in the supply room. Fourteen reams are used each day. At that rate, how many days will the supply of paper last?

(F) 14  
(G) 32  
(H) 24  
(J) 18



# Number, Operation, and Quantitative Reasoning

## Objective 1

*Expectation: identify prime factors of a whole number and common factors of a set of whole numbers*

### Example:

How would you write 24 as the product of its prime factors by using exponents?

- (A)  $6 \times 4$
- (B)  $2^3 \times 3$
- (C)  $8 \times 3$
- (D)  $2 \times 12$

Answer: (B)

**DIRECTIONS:** Choose the best answer.

1. How would you write 45 as the product of its prime factors by using exponents?

- (A)  $3^2 \times 5$
- (B)  $9 \times 5$
- (C)  $3 \times 3 \times 5$
- (D)  $3 \times 15$

2. How would you write 12 as the product of its prime factors by using exponents?

- (F)  $2 \times 2 \times 3$
- (G)  $4 \times 3$
- (H)  $2 \times 6$
- (J)  $2^2 \times 3$

3. How would you write 36 as the product of its prime factors by using exponents?

- (A)  $6^2$
- (B)  $2^2 \times 9$
- (C)  $2^2 \times 3^2$
- (D)  $4 \times 9$

4. How would you write 40 as the product of its prime factors by using exponents?

- (F)  $2^3 \times 5$
- (G)  $2 \times 2 \times 2 \times 5$
- (H)  $8 \times 5$
- (J)  $4 \times 10$

5. How would you write 27 as the product of its prime factors by using exponents?

- (A)  $3 \times 3 \times 3$
- (B)  $9 \times 3$
- (C)  $3^3$
- (D)  $3^2 \times 3$

6. How would you write 15 as the product of its prime factors by using exponents?

- (F)  $3 \times 5$
- (G)  $15 \times 1$
- (H)  $3^2 \times 5$
- (J)  $3 \times 5^2$



# Number, Operation, and Quantitative Reasoning

## Objective 1

*Expectation: model and record addition and subtraction of fractions with like denominators in problem-solving situations*

**DIRECTIONS:** Choose the best answer.

- Nicolas painted  $\frac{1}{3}$  of a fence. Christopher painted  $\frac{2}{3}$  of the fence. How much of the fence did they paint?
  - $\frac{3}{6}$
  - $\frac{1}{1}$
  - $\frac{1}{3}$
  - $\frac{1}{7}$
- Jennifer spent  $1\frac{2}{4}$  hours working on Ms. Thomkin's car on Monday. She spent  $2\frac{3}{4}$  more hours on Tuesday to finish the tune-up. How many hours in all did she work on Ms. Thomkin's car?
  - $3\frac{4}{6}$
  - $1\frac{2}{2}$
  - 4
  - $4\frac{1}{4}$
- The auto repair shop is  $1\frac{3}{10}$  miles from the bank. The bank is  $3\frac{6}{10}$  miles from Melodie's home. After she left her car at the shop, Melodie walked to the bank. Then she walked home. How many miles did Melodie walk in all?
  - $4\frac{9}{10}$
  - $4\frac{6}{15}$
  - 5
  - $5\frac{1}{2}$
- A board is 8 feet long. Hank said that this board is  $2\frac{1}{2}$  feet too long for the job. How long does Hank need the board?
  - $6\frac{1}{2}$  feet
  - $5\frac{1}{2}$  feet
  - $7\frac{1}{2}$  feet
  - $2\frac{1}{2}$  feet
- Lizzie says it will take  $6\frac{1}{6}$  hours to travel to her grandparents' home. She has been traveling  $3\frac{5}{6}$  hours. How much longer will it be before she gets there?
  - $9\frac{6}{12}$  hours
  - 10 hours
  - $3\frac{2}{4}$  hours
  - $2\frac{1}{3}$  hours
- The stakes in Jack's croquet set are 2 feet long. He drove one stake  $\frac{3}{4}$  foot into the ground. How much of the stake is above ground?
  - $1\frac{1}{4}$  feet
  - 2 feet
  - $\frac{3}{4}$  foot
  - 1 foot



# Underlying Processes and Mathematical Tools

## Objective 1

*Expectation: round whole numbers and decimals through tenths to approximate reasonable results in problem situations*

**DIRECTIONS:** Choose the best answer by rounding.

- 1. I am a number. If you round the number of days in October to the nearest ten and round the number of days in February to the nearest ten, I am half of the product of those two numbers. What number am I?**
  - (A) 30
  - (B) 900
  - (C) 450
  - (D) 50
- 2. I am an amount of U.S. money. I am the cost of five \$0.88 hamburgers rounded to the nearest dollar. How much money am I?**
  - (F) \$4
  - (G) \$5
  - (H) \$3
  - (J) \$6
- 3. I am a number. I am the difference between 800 rounded to the nearest 10 and 800 rounded to the nearest 100. How much am I?**
  - (A) 90
  - (B) 800
  - (C) 0
  - (D) 710
- 4. I am a number. I am the largest whole number that must equal two thousand when rounded to the nearest thousand. What number am I?**
  - (F) 1,999
  - (G) 2,999
  - (H) 2,499
  - (J) 1,499
- 5. I am a number. I am the smallest number that can become 500 when it's rounded to the nearest 10. What number am I?**
  - (A) 495
  - (B) 501
  - (C) 450
  - (D) 549
- 6. I am a number. I am the missing number from each of two of the equations below. I am also the sum of 237 and 240 rounded to the nearest 10. Which two equations do I complete?**
  - a.  $1,782 - 800 =$
  - b.  $8 \times 60 =$
  - c.  $480 + 20 =$
  - d.  $5,322 - 4,842 =$
  - (F) a and d
  - (G) b and d
  - (H) b and c
  - (J) c and d
- 7. I am a number. I am the sum of 1,270 rounded to the nearest 10, 1,270 rounded to the nearest 100, and 1,270 rounded to the nearest 1,000. What number am I?**
  - (A) 3,470
  - (B) 2,400
  - (C) 3,570
  - (D) 4,000





# Underlying Processes and Mathematical Tools

## Objective 1

**Expectation:** estimate to solve problems where exact answers are not required

### Example:

Nadia sailed 3.8 hours a day for 5 days. About how many hours did Nadia sail all together?

- (A) 25 hours
- (B) 20 hours
- (C) 18 hours
- (D) 15.5 hours

Answer: (B)

**DIRECTIONS:** Choose the best answer by estimating.

1. It costs \$15.75 per student to take a field trip to the aquarium. If 10 students go on the trip, what is the estimated total cost?

- (A) \$255
- (B) \$260
- (C) \$190
- (D) \$160

2. Mrs. Hammersmith's fifth-grade class wants to collect 2,848 pennies for a homeless shelter. There are 32 students in the class. About how many pennies will each student need to collect?

- (F) 50
- (G) 40
- (H) 100
- (J) 75

3. Stacey spent \$14.83 at the store. Harry spent \$35.32 at the store. Approximately how much more did Harry spend than Stacey?

- (A) \$21
- (B) \$20
- (C) \$50
- (D) \$44

4. Golden lion tamarins are an endangered species. Only about 416 still live in the wild. They live in groups of 8. About how many groups still live in the wild if there are 416 golden lion tamarins?

- (F) 50
- (G) 55
- (H) 40
- (J) 35

5. The length of one side of a rectangle is 82 inches. The area of the rectangle is 6,028 inches. What is the approximate length of the other side of the rectangle?

- (A) 75 inches
- (B) 65 inches
- (C) 55 inches
- (D) 45 inches

6. A Tasmanian devil weighs 12,025 grams. A mole weighs about  $\frac{1}{200}$  of what a Tasmanian devil weighs. About how much does a mole weigh?

- (F) 60 grams
- (G) 600 grams
- (H) 240,000 grams
- (J) 2,400,000 grams



## Objective

For pages 60–71

1

## Mini-Test

**DIRECTIONS:** Choose the best answer.

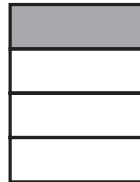
1. What is the place value of the underlined number?

5.7123

- (A) tenths  
(B) hundredths  
(C) thousandths  
(D) tens

2. Which of the following is not equivalent to the shaded portion of the figure?

- (F)  $\frac{25}{100}$   
(G)  $\frac{12}{46}$   
(H)  $\frac{35}{140}$   
(J)  $\frac{8}{32}$



3. Jojo ate  $\frac{3}{5}$  of a box of raisins. Alejandra ate  $\frac{2}{3}$  of another box of raisins. Who ate more raisins? Did the two students eat more than a whole box of raisins between the two of them?

- (A) Jojo, yes  
(B) Alejandra, yes  
(C) Jojo, no  
(D) Alejandra, no

4. A board is  $\frac{5}{8}$  inch thick. What is the decimal equivalent of  $\frac{5}{8}$ ?

- (F) 0.58  
(G) 0.625  
(H) 1.6  
(J) 0.6

5. The mileage reading on Mr. Lee's car is 142. On Mr. Cook's car, it is 319. How many more miles does Mr. Cook have on his car than Mr. Lee?

- (A) 177  
(B) 461  
(C) 180  
(D) 460

6. A gross is twelve dozen or 144. The school ordered 21 gross of pencils. How many pencils were ordered?

- (F) 123  
(G) 165  
(H) 144  
(J) 3,024

7. A machine operated 38 hours and produced 988 parts. The same number of parts was produced each hour. How many parts were produced each hour?

- (A) 26  
(B) 950  
(C) 1,026  
(D) 37,544

8. How would you write 26 as the product of its prime factors by using exponents?

- (F)  $2 \times 6$   
(G)  $2 \times 13$   
(H)  $2^2 \times 1^3$   
(J)  $4 \times 9$



# TAKS Mathematics—Objective 2

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The student will demonstrate an understanding of patterns, relationships, and algebraic reasoning.

## **(5.5) Patterns, relationships, and algebraic thinking**

The student makes generalizations based on observed patterns and relationships. The student is expected to

- (A) use [concrete objects or] pictures to make generalizations about determining all possible combinations; (See page 74.)
- (B) use lists, tables, charts, and diagrams to find patterns and make generalizations such as a procedure for determining equivalent fractions; and (See page 75.)
- (C) identify prime and composite numbers using [concrete] models and patterns in factor pairs. (See page 76.)



### **What it means:**

A prime number is divisible only by itself and one. For example, 11 is prime. A composite number is divisible by other numbers. For example, 24 is composite.

## **(5.6) Patterns, relationships, and algebraic thinking**

The student describes relationships mathematically. The student is expected to

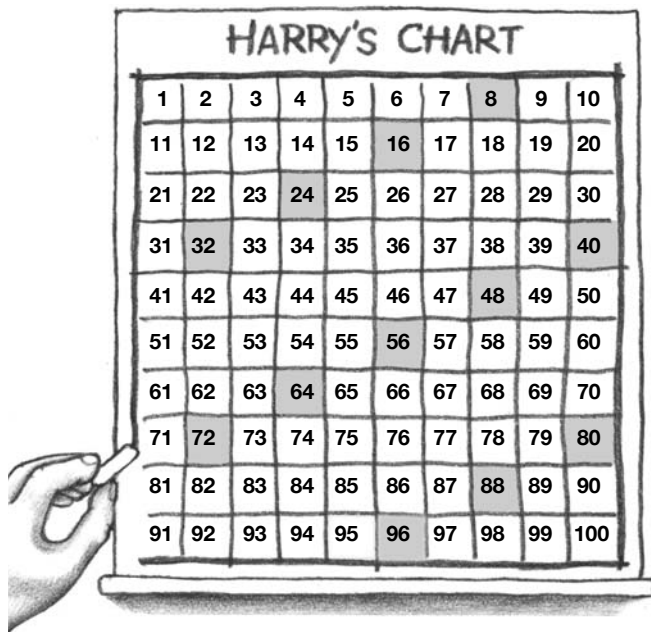
- (A) select from and use diagrams and number sentences to represent real-life situations. (See page 77.)

# Patterns, Relationships, and Algebraic Thinking

## Objective 2

**Expectation:** use pictures to make generalizations about determining all possible combinations

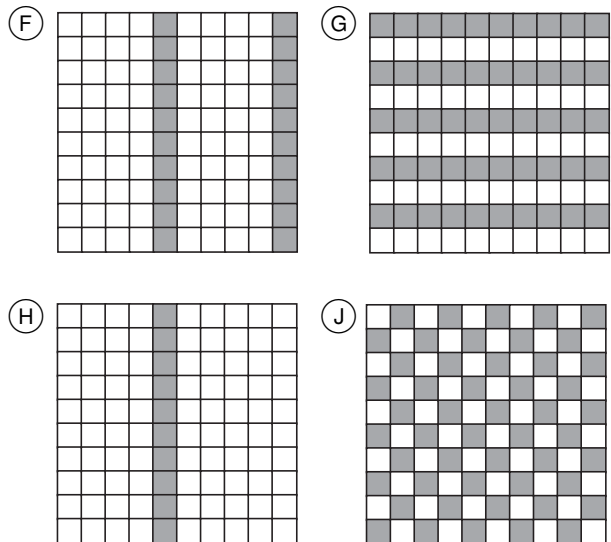
**DIRECTIONS:** Choose the best answer. Mr. Pontario's students are making number charts and labeling the squares from 1 to 100.



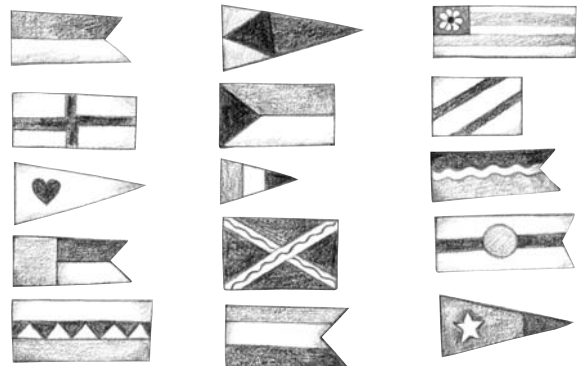
1. Liza is making a number chart. If she shades only the multiples of 4, her chart will have \_\_\_\_\_.

- (A) about three-fourths as many shaded numbers as Harry's
- (B) about two-thirds as many shaded numbers as Harry's
- (C) about one-half as many shaded numbers as Harry's
- (D) about twice as many shaded numbers as Harry's

2. Tenisha just made a number chart on which she shaded all the multiples of 5. Which pattern shows the shading on her number chart?



3. Which of these number sentences would help you find the total number of flags?



- (A)  $5 + 3 = \blacksquare$
- (B)  $5 - 3 = \blacksquare$
- (C)  $5 \times 3 = \blacksquare$
- (D)  $5 \div 3 = \blacksquare$

# Patterns, Relationships, and Algebraic Thinking

## Objective 2

**Expectation:** use lists, tables, charts, and diagrams to find patterns and make generalizations such as a procedure for determining equivalent fractions

### Example:

Which of the following rules would give this pattern:  
1, 2, 3, 5, 8, 13?

- (A) Add the previous two numbers to get the next number.
- (B) Subtract by decreasing consecutive integers.
- (C) Add by increasing consecutive integers.
- (D) Add 2 and subtract 1.

Answer: (A)

**DIRECTIONS:** Choose the best answer.

	C1	C2	C3	C4	C5
R1	20	40	60	80	100
R2	18	36	54	72	90
R3	15	30	45	60	75
R4	11	22	33	44	55
R5	6	12	18	24	30

1. Which column has the rule of: Subtract by increasing consecutive integers?

- (A) C1
- (B) C2
- (C) C3
- (D) C4

2. Which column has the rule of: Subtract by integers increasing by threes?

- (F) C1
- (G) C2
- (H) C3
- (J) C4

3. Which column has the rule of: Subtract by integers increasing by fives?

- (A) C1
- (B) C2
- (C) C3
- (D) C5

4. Which column has the rule of: Subtract by integers increasing by twos?

- (F) C1
- (G) C2
- (H) C3
- (J) C4

5. What is the rule for the rows?

- (A) The numbers increase across by a factor of two.
- (B) The numbers increase across by the first number in the row.
- (C) The numbers increase across by a factor of three.
- (D) The numbers increase across by the sum of the first two numbers.



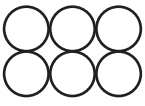
# Patterns, Relationships, and Algebraic Thinking

## Objective 2

*Expectation: identify prime and composite numbers using models and patterns in factor pairs*

**Example:**

Does this figure represent a prime number?

(A) yes      

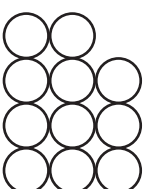
(B) no

Answer: (B)

**DIRECTIONS:** Choose the best answer.

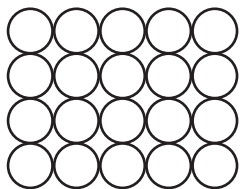
1. Does this figure represent a prime number?

- (A) yes
- (B) no

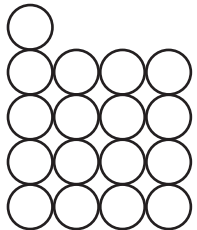


2. Which factors are not represented by the figure?

- (F)  $4 \times 5$
- (G)  $2 \times 2 \times 5$
- (H)  $2 \times 10$
- (J)  $3 \times 5$

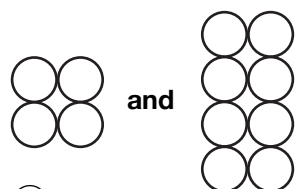


3. Does this figure represent a prime number?



- (A) yes
- (B) no

4. Which number is a factor of both of the numbers represented by the figures?



- (F) 3
- (G) 4
- (H) 5
- (J) 6

5. Does this figure represent a prime number?



- (A) yes
- (B) no

6. A prime number has exactly two factors, itself and \_\_\_\_\_.

- (F) 2
- (G) 4
- (H) 0
- (J) 1



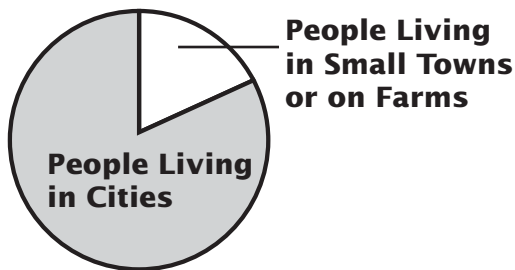
# Patterns, Relationships, and Algebraic Thinking

## Objective 2

**Expectation:** select from and use diagrams and number sentences to represent real-life situations

**DIRECTIONS:** Choose the best answer.

1. About 21 million people live in Texas. About how many of them live in cities? Use the graph to answer the question.



- (A) 18 million  
(B) 10 million  
(C) 5 million  
(D) 1 million
2. The human heart pumps about 24 liters of blood in 5 minutes. You want to know about how many liters of blood are pumped in 1 minute. Which math problem will help you find the answer?
- (F)  $24 \div 5 = \blacksquare$   
(G)  $24 \times 5 = \blacksquare$   
(H)  $24 + 5 = \blacksquare$   
(J)  $24 - 5 = \blacksquare$
3. A flea can jump 130 times its own height. If you could do the same thing, and your height is 54 inches, how high could you jump? Which math problem would you use?
- (A)  $130 + 54 = \blacksquare$   
(B)  $130 - 54 = \blacksquare$   
(C)  $130 \div 54 = \blacksquare$   
(D)  $130 \times 54 = \blacksquare$

4. Mavis works at the hardware store. Her hourly wage is \$4.50. How much money is Mavis paid for one week's work? Which piece of information will help you solve this problem?

- (F) The number of hours she works each day.  
(G) The number of days she works each week.  
(H) The number of hours she works each week.  
(J) The address of the hardware store.

5. At the school store, Jose bought 2 pencils for \$0.10 each, a notebook for \$0.65, and a candy bar for \$0.40. To find out how much change he will get, you need to know \_\_\_\_\_.

- (A) how much 2 notebooks cost  
(B) how much money he gave the salesperson  
(C) how much he saved by buying one notebook  
(D) how much money he has

6. Joyce collects football cards. She puts them into stacks of 9 cards each. She has 36 stacks of cards. She wants to know how many cards she has in all. Which computation shows how to find the correct answer?

- (F)  $36 + 9 = 45$   
(G)  $36 \times 9 = 324$   
(H)  $36 \div 9 = 4$   
(J)  $36 - 9 = 27$



## Objective

For pages 74–77

2

## Mini-Test

**DIRECTIONS:** Choose the best answer.

Shape	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
Number of triangles	2	4	6	

1. What is the pattern for the number of triangles?
- (A) The number of triangles increases by three each time.
- (B) The number of triangles increases by two each time.
- (C) The number of triangles increases by one each time.
- (D) The number of triangles increases by four each time.
2. How many triangles will be in the 4th shape?
- (F) 6
- (G) 8
- (H) 10
- (J) 12
3. How many triangles will be in the 15th shape?
- (A) 15
- (B) 20
- (C) 30
- (D) 35

4. Look for a pattern. Which numbers are missing?

- (F) 14, 19
- (G) 3, 11
- (H) 18, 13
- (J) 20, 15

A	B
2	10
5	13
8	16
11	?
?	22

5. Which of the following figures represents a prime number?

Figure A

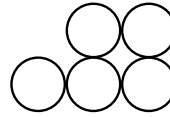


Figure B



- (A) They are both prime.
- (B) Figure A
- (C) Figure B
- (D) Neither is prime.
6. The scoreboard for Kennedy vs. Clark is shown. Which of the following equations would show how many points have been scored by both teams?

Kennedy	33	Clark	24
Time		3:01	
QTR		3	

- (F)  $33 + 24 = \blacksquare$
- (G)  $33 - 24 = \blacksquare$
- (H)  $33 \times 24 = \blacksquare$
- (J) Not Here





# TAKS Mathematics—Objective 3

The student will demonstrate an understanding of geometry and spatial reasoning.

## (5.7) Geometry and spatial reasoning

The student generates geometric definitions using critical attributes. The student is expected to

- (A) identify critical attributes including parallel, perpendicular, and congruent parts of geometric shapes and solids; and (See page 80.)
- (B) use critical attributes to define geometric shapes or solids. (See page 81.)

### What it means:

Critical attributes are the features of a shape or solid that can be clearly identified and used to classify the shape or solid. Examples of critical attributes are: parallel parts never cross; perpendicular parts form a right angle; two parts are congruent if they are the same size and shape and can be mirror images of each other, or turned in any direction relative to each other.

## (5.8) Geometry and spatial reasoning

The student models transformations. The student is expected to

- (A) sketch the results of translations, rotations, and reflections; and (See page 82.)

### What it means:

A translation is a move from one place to another. A rotation is the action or process of rotating on or as if on an axis or center. A reflection is the production of an image by or as if by a mirror.

- (B) describe the transformation that generates one figure from the other when given two congruent figures. (See page 83.)

### What it means:

A transformation is any move of an object without changing its shape or size. Transformations include translations, rotations, and reflections.

## (5.9) Geometry and spatial reasoning

The student recognizes the connection between ordered pairs of numbers and locations of points on a plane. The student is expected to

- (A) locate and name points on a coordinate grid using ordered pairs of whole numbers. (See page 84.)

# Geometry and Spatial Reasoning

**Objective 3**

*Expectation: identify critical attributes including parallel, perpendicular, and congruent parts of geometric shapes and solids*

**Example:**

**Which of these line segments are parallel?**

- (A) Two adjacent sides of a triangle
- (B) Two adjacent sides of a pentagon
- (C) Two opposite sides of a rectangle
- (D) Two radii of a circle

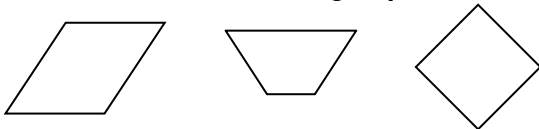
Answer: (C)

**DIRECTIONS:** Choose the best answer.

1. A triangle with one 90 degree angle is always \_\_\_\_\_ .

- (A) an equilateral triangle
- (B) an acute triangle
- (C) an obtuse triangle
- (D) a right triangle

2. Look at the group of figures. Which figure could be included in this group?

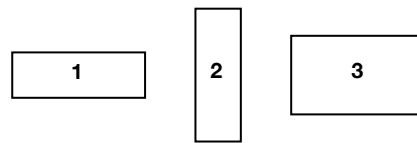


- (F)
- (G)
- (H)
- (J)

3. Which letter is formed with perpendicular lines?

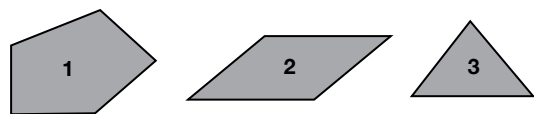
- (A) T
- (B) M
- (C) Z
- (D) V

4. Which of the following sentences is true?



- (F) Only Figures 1 and 2 are congruent.
- (G) Only Figures 2 and 3 are congruent.
- (H) Only Figures 1 and 3 are congruent.
- (J) None of the three shapes are congruent.

5. Which figure has a pair of parallel sides?



- (A) 1
- (B) 2
- (C) 3
- (D) Not Here



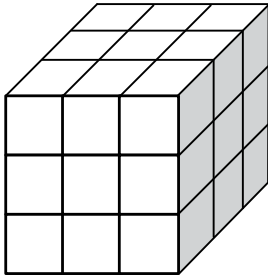
# Underlying Processes and Mathematical Tools

## Objective 3

**Expectation:** use critical attributes to define geometric shapes or solids

**DIRECTIONS:** Choose the best answer.

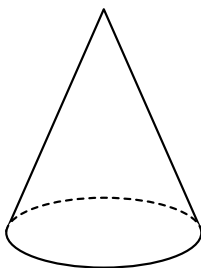
1. Which is true about the figure?



- (A) It has 3 bases.
- (B) All its faces are congruent.
- (C) It is a sphere.
- (D) It has 7 vertices.

2. Which is true about the figure?

- (F) It has 1 base.
- (G) It is a pyramid.
- (H) It has 2 circular faces.
- (J) It is a parallelogram.



3. Which of these solids has no base?

- (A) square pyramid
- (B) triangular prism
- (C) rectangular prism
- (D) sphere

4. Which solid best describes the shape of a can of soup?

- (F) cylinder
- (G) cone
- (H) sphere
- (J) rectangular prism

5. Which solid best describes a shoe box?

- (A) square pyramid
- (B) cube
- (C) cylinder
- (D) rectangular prism

6. Which shape describes a stop sign?

- (F) pentagon
- (G) trapezoid
- (H) rhombus
- (J) octagon

7. Which is true about a parallelogram?

- (A) It has 5 or more sides.
- (B) One pair of sides is congruent, and the other pair of sides is parallel.
- (C) Only one pair of sides is parallel.
- (D) It is not a quadrilateral.

8. Which is true about a triangle?

- (F) It has 3 angles.
- (G) All sides are equal.
- (H) It is a quadrilateral.
- (J) The sum of the measures of the angles is  $360^\circ$ .



# Geometry and Spatial Reasoning

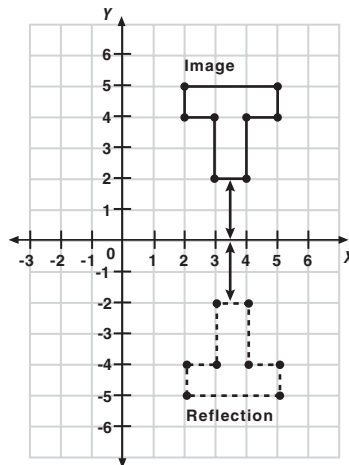
## Objective 3

*Expectation: sketch the results of translations, rotations, and reflections*

### Example:

Reflect the image across the x-axis.

Image	Reflection
(2, 5)	(2, -5)
(2, 4)	(2, -4)
(3, 4)	(-3, 4)
(3, 2)	(3, -2)
(4, 2)	(4, -2)
(4, 4)	(4, -4)
(5, 4)	(5, -4)
(5, 5)	(5, -5)



Corresponding points are the same distance from the x-axis

The x-axis acts as a "mirror"

**DIRECTIONS:** Using graph paper, plot each of the following sets of points on a separate grid. Connect the points to create a closed figure (the last segment should end at the first point plotted). Then, draw the image transformed as directed. Write the coordinate pairs for each transformation image in the tables below.

**1. Reflect the image across the x-axis.**

Image	Reflection
(1, 1)	
(3, 4)	
(2, 7)	

**2. Reflect the image across the x-axis.**

Image	Reflection
(-1, -3)	
(-5, -3)	
(-5, -6)	
(-1, -6)	

**3. Reflect the image across the y-axis.**

Image	Reflection
(-1, -3)	
(-5, -3)	
(-5, -6)	
(-1, -6)	

**4. Reflect the image across the y-axis.**

Image	Reflection
(-2, 0)	
(0, 2)	
(2, 0)	
(0, -2)	

**5. Translate six units down.**

Image	Reflection
(1, 2)	
(3, 4)	
(2, 7)	



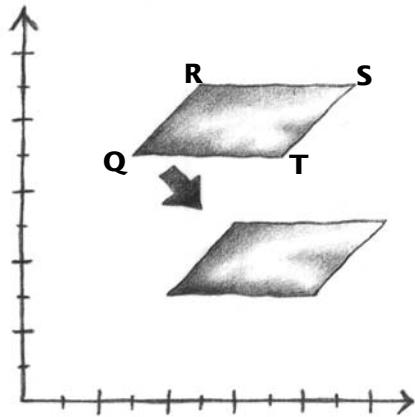
# Geometry and Spatial Reasoning

**Objective**  
**3**

*Expectation: describe the transformation that generates one figure from the other when given two congruent figures*

**DIRECTIONS:** Choose the best answer.

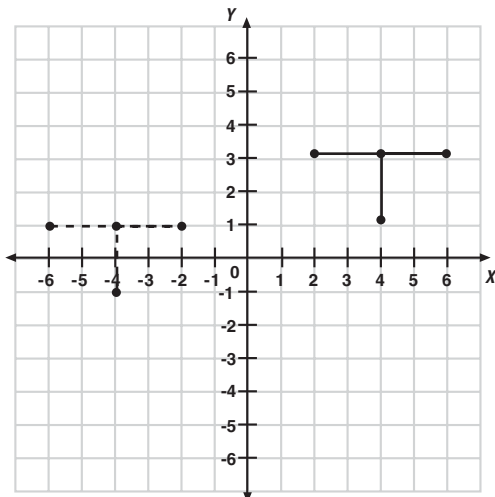
1. Parallelogram *QRST* slid to a new position on the grid as shown. Which moves describe the slide?



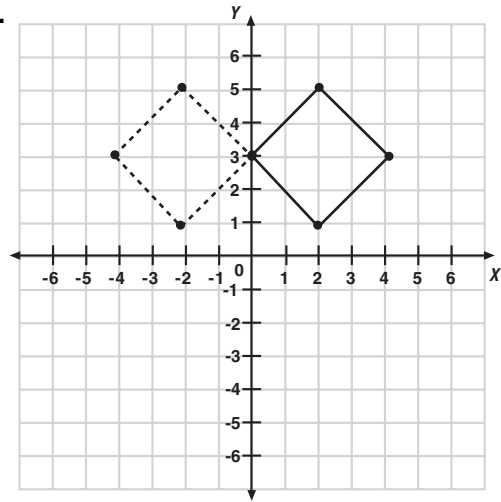
- (A) 1 right, 4 down
- (B) 1 right, 5 down
- (C) 2 right, 4 down
- (D) 1 right, 3 down

**DIRECTIONS:** Compare the following images to their transformation images. What type of transformation was performed? Be as specific as possible.

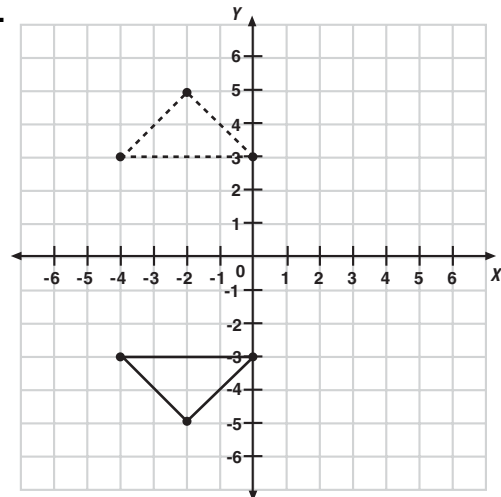
2.



3.



4.



# Underlying Processes and Mathematical Tools

**Objective**  
**3**

*Expectation: locate and name points on a coordinate grid using ordered pairs of whole numbers*

**DIRECTIONS:** Plot the points to create four figures on the graph. Connect points with line segments in the order given (go down the columns).

**Figure 1**

- (-7, 1)
- (-5, 1)
- (-5, 3)
- (-3, 3)
- (-3, 1)
- (-1, 1)
- (-1, 7)
- (-3, 7)
- (-3, 5)
- (-5, 5)
- (-5, 7)
- (-7, 7)
- (-7, 1)

**Figure 2**

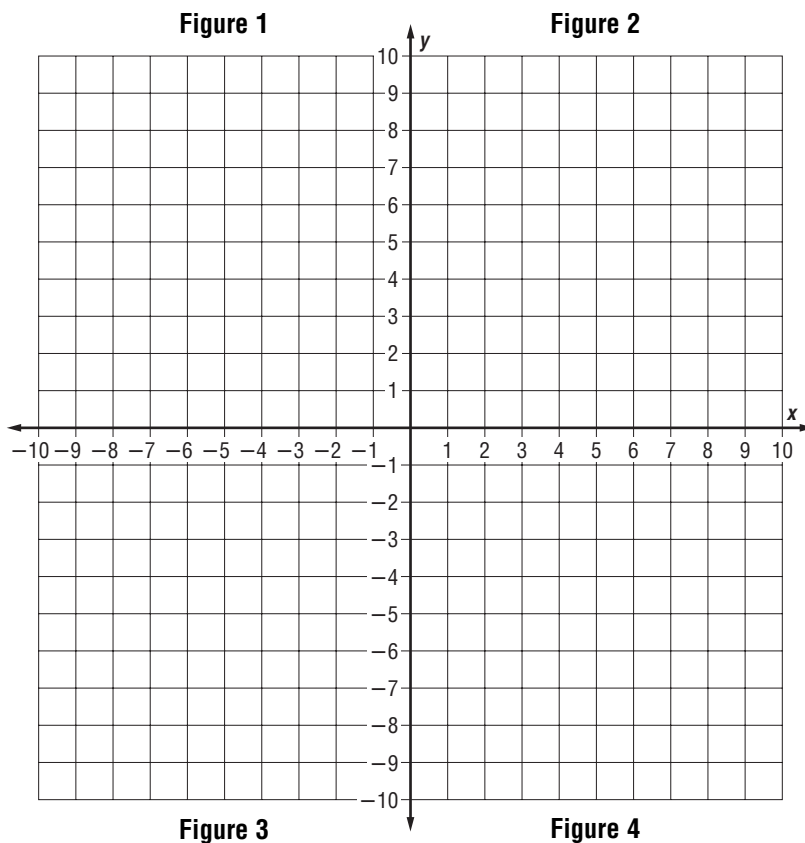
- (7, 1)
- (7, 3)
- (5, 3)
- (5, 5)
- (7, 5)
- (7, 7)
- (1, 7)
- (1, 5)
- (3, 5)
- (3, 3)
- (1, 3)
- (1, 1)
- (7, 1)

**Figure 3**

- (-7, -2)
- (-7, -5)
- (-6, -5)
- (-6, -4)
- (-5, -4)
- (-5, -5)
- (-4, -5)
- (-4, -2)
- (-5, -2)
- (-5, -3)
- (-6, -3)
- (-6, -2)
- (-7, -2)

**Figure 4**

- (5, -5)
- (5, -4)
- (4, -4)
- (4, -3)
- (5, -3)
- (5, -2)
- (2, -2)
- (2, -3)
- (3, -3)
- (3, -4)
- (2, -4)
- (2, -5)
- (5, -5)



1. What shape is Figure 1? \_\_\_\_\_
2. What shape is Figure 2? \_\_\_\_\_
3. What shape is Figure 3? \_\_\_\_\_
4. What shape is Figure 4? \_\_\_\_\_



## Objective

For pages 80-84

3

## Mini-Test

**DIRECTIONS:** Choose the best answer.

1. Which letter is formed with two parallel lines?

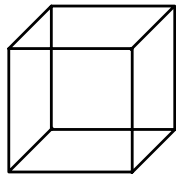
- (A) W  
 (B) M  
 (C) D  
 (D) L

2. Which letter is formed with perpendicular lines?

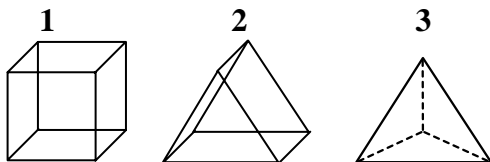
- (F) W  
 (G) M  
 (H) D  
 (J) L

3. How many faces does this box have?

- (A) 2  
 (B) 4  
 (C) 6  
 (D) 8



4. Which figure has 4 faces with 6 edges?



- (F) Figure 1  
 (G) Figure 2  
 (H) Figure 3  
 (J) Not Here

**DIRECTIONS:** Using graph paper, plot each of the following sets of points on a separate grid. Connect the points to create a closed figure (the last segment should end at the first point plotted). Then, draw the image transformed as directed. Write the coordinate pairs for each transformation image in the tables below.

5. Reflect the image across the x-axis.

Image	Reflection
(2, 0)	
(3, 2)	
(4, 0)	
(3, -2)	

6. Reflect the image across the y-axis.

Image	Reflection
(1, 2)	
(3, 4)	
(2, 7)	



# TAKS Mathematics—Objective 4

---

The student will demonstrate an understanding of the concepts and uses of measurement.

## **(5.10) Measurement**

The student selects and uses appropriate units and procedures to measure volume. The student is expected to

- (A) measure volume using [concrete] models of cubic units. (See page 87.)

## **(5.11) Measurement**

The student applies measurement concepts. The student is expected to

- (A) measure to solve problems involving length (including perimeter), weight, capacity, time, temperature, and area; and (See page 88.)
- (B) describe numerical relationships between units of measure within the same measurement system such as an inch is one-twelfth of a foot. (See page 89.)



# Measurement

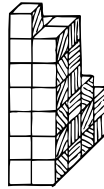
## Objective 4

*Expectation: measure volume using models of cubic units*

### Example:

Find the volume of the figure.

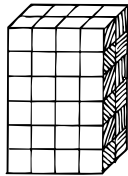
- (A) 35
- (B) 25
- (C) 38
- (D) 28



Answer: A

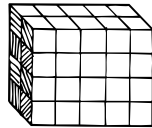
1. Find the volume of the figure.

- (A) 34
- (B) 48
- (C) 44
- (D) 38



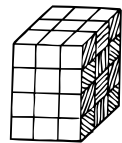
2. Find the volume of the figure.

- (F) 38
- (G) 20
- (H) 28
- (J) 40



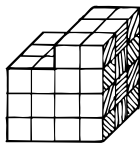
3. Find the volume of the figure.

- (A) 33
- (B) 36
- (C) 26
- (D) 23



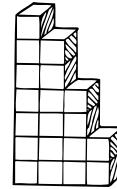
4. Find the volume of the figure.

- (F) 42
- (G) 36
- (H) 30
- (J) 28



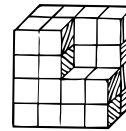
5. Find the volume of the figure.

- (A) 30
- (B) 19
- (C) 38
- (D) 22



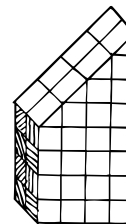
6. Find the volume of the figure.

- (F) 32
- (G) 36
- (H) 28
- (J) 24



7. Find the volume of the figure.

- (A) 48
- (B) 52
- (C) 26
- (D) 38



# Measurement

**Objective**  
**4**

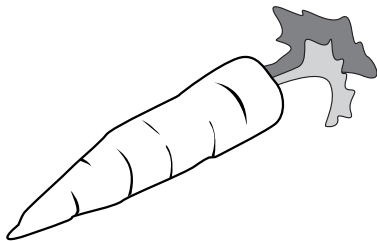
**Expectation:** measure to solve problems involving length (including perimeter), weight, capacity, time, temperature, and area

**DIRECTIONS:** Choose the best answer.

1. When Tony arrived at the zoo, it was 9:15. He spent 2 hours and 30 minutes at the zoo and then met some friends for lunch. They spent 20 minutes in the cafeteria and then went to see the dolphin show. What time did Tony meet his friends for lunch?

- (A) 11:15
- (B) 9:35
- (C) 12:05
- (D) 11:45

2. About how long is this drawing of a carrot?

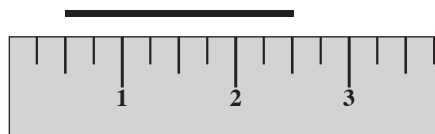


- (F) 0.5 feet
- (G) 0.5 yards
- (H) 5 centimeters
- (J) 5 inches

3. A broken pipe in a factory is leaking water at the rate of 2 pints per hour. It leaks for 2 days before it can be repaired. How many gallons of water were lost because of the leak?

- (A) 96 gallons
- (B) 12 gallons
- (C) 4 gallons
- (D) 24 gallons

4. Which number is closest to the length of the line above this ruler?



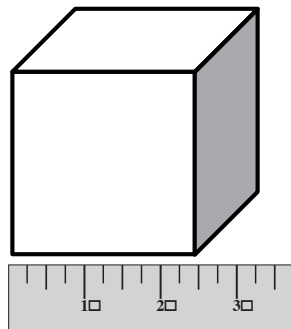
- (F)  $2\frac{1}{4}$  inches
- (G) 2 inches
- (H)  $1\frac{1}{2}$  inches
- (J) 1 inch

5. Which of these statements is true?

- (A) 16 days is more than 3 weeks
- (B) 2 days = 44 hours
- (C) 6 weeks = 42 days
- (D) 1 week is less than 100 hours

6. How long is one side of the cube shown below?

- (F) 1.5 in.
- (G) 2.5 in.
- (H) 4 in.
- (J) 3.5 in.



# Measurement

**Objective**  
**4**

**Expectation:** describe numerical relationships between units of measure within the same measurement system such as an inch is one-twelfth of a foot

**Example:**

**1 kilogram =**

- (A) 100 milligrams
- (B) 10 grams
- (C) 100 grams
- (D) 1,000 grams

(D) Answer

**DIRECTIONS:** Choose the best answer.

**1. A recipe calls for 6 quarts of water. How many gallons is that?**

- (A) 1 gallon
- (B)  $1\frac{1}{2}$  gallons
- (C) 2 gallons
- (D)  $2\frac{1}{2}$  gallons

**2. Kenny's book is 30 mm thick. How many centimeters thick is the book?**

- (F) 0.3 cm
- (G) 3 cm
- (H) 33 cm
- (J) 300 cm

**3. About how long is a city block?**

- (A) 120 meters
- (B) 55 centimeters
- (C) 48 kilometers
- (D) 100 millimeters

**4. A hair comb weighs about 35 grams. How many milligrams does that equal?**

- (F) 3.5
- (G) 35,000
- (H) 350
- (J) 3,500

**5. Which of these would be the best unit of measurement to measure the length of a ballpoint pen?**

- (A) miles
- (B) yards
- (C) inches
- (D) feet

**6. A football field is 100 yards long. About how many inches is that?**

- (F) 800
- (G) 3,600
- (H) 33
- (J) 400



## Objective

For pages 87–89

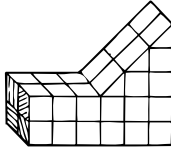
4

## Mini-Test

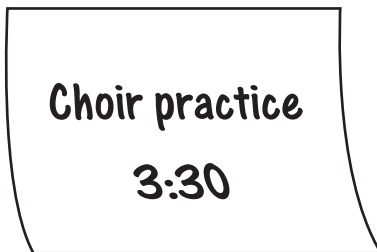
**DIRECTIONS:** Choose the best answer.

1. Find the volume of the figure.

- (A) 33  
 (B) 24  
 (C) 28  
 (D) 35



2. Which of these is the closest to the height of this sticky note? Use the ruler on page 58.



- (F) 1 cm  
 (G) 3.5 cm  
 (H) 6 cm  
 (J) 8 cm

3. Martin made a bowl of punch using 14 gallons of juice. How many quarts of punch did Martin make?

- (A) 112 quarts  
 (B) 56 quarts  
 (C) 28 quarts  
 (D) Not Here

4. Jaime read for 30 minutes on Monday, 47 minutes on Tuesday, 64 minutes on Wednesday, and 81 minutes on Thursday. Which statement describes Jaime's pattern for reading?

- (F) Add 15 minutes each day  
 (G) Subtract 17 minutes each day  
 (H) Add 12 minutes each day  
 (J) Add 17 minutes each day

5. Luca finished his homework at 8:37 P.M. If he started his homework 92 minutes earlier, at what time did Luca begin his homework?

- (A) 7:05 P.M.  
 (B) 7:09 P.M.  
 (C) 7:35 P.M.  
 (D) 11:09 P.M.

6. About how much paint is there in a 1-gallon bucket of paint?

- (F) 4 milliliters  
 (G) 4 liters  
 (H) 4 kiloliters  
 (J) 4 cups

7. A truck brings fuel oil to school, which is stored in a 12-kiloliter tank. How many liters does the tank hold when it is full?

- (A) 1,200 liters  
 (B) 12,000 liters  
 (C) 120 liters  
 (D) 120,000 liters

8. A faucet was leaking water at a rate of 3 cups per day. A total of 9 pints of water leaked from the faucet. How many days did the faucet leak before it was repaired?

- (F) 2 days  
 (G) 4 days  
 (H) 6 days  
 (J) 9 days



# TAKS Mathematics—Objective 5

---

The student will demonstrate an understanding of probability and statistics.

## **(5.12) Probability and statistics**

The student describes and predicts the results of a probability experiment. The student is expected to

- (A) use fractions to describe the results of an experiment; and (See page 92.)
- (B) use experimental results to make predictions. (See page 93.)

## **(5.13) Probability and statistics**

The student solves problems by collecting, organizing, displaying, and interpreting sets of data. The student is expected to

- (A) use tables of related number pairs to make line graphs; (See page 94.)
- (B) describe characteristics of data presented in tables and graphs including the shape and spread of the data and the middle number; and (See page 95.)
- (C) graph a given set of data using an appropriate graphical representation such as a picture or line. (See page 96.)

# Probability and Statistics

**Objective**  
**5**

*Expectation: use fractions to describe the results of an experiment*

**Example:**

There are 15 girls in a class and 10 boys.  
What is the ratio of girls to boys?

(A)  $\frac{1}{5}$

(B)  $\frac{2}{5}$

(C)  $\frac{2}{3}$

(D)  $1\frac{1}{2}$

(D) Answer

**DIRECTIONS:** Choose the best answer.

1. Half the students in a school are girls. One fourth of the girls play sports. If there are 720 students in the school, which of these would you use to find the number of girls who played sports?

- (A)  $720 \times \frac{1}{2} \times \frac{1}{4}$
- (B)  $720 \times \frac{1}{2} \times \frac{1}{2}$
- (C)  $720 \times \frac{4}{1} \times \frac{2}{1}$
- (D)  $720 \times \frac{1}{2} + \frac{1}{4}$

2. Colby surveyed 1,972 people and found that  $\frac{1}{4}$  of them enjoyed spending a sunny day at the beach. How many people enjoyed spending a sunny day at the beach?

- (F) 468 people
- (G) 479 people
- (H) 493 people
- (J) 498 people

3. If you wanted to use a pie graph to show that 4 out of 16 students wore jeans to school one day, about what fraction of the pie chart would you shade in to represent them?

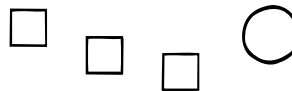
- (A)  $\frac{1}{5}$
- (B)  $\frac{1}{4}$
- (C)  $\frac{1}{2}$
- (D)  $\frac{1}{3}$

**DIRECTIONS:** Write each answer as a fraction.

4. What part of this set is a flower? \_\_\_\_\_



5. What part of this set is squares? \_\_\_\_\_



# Probability and Statistics

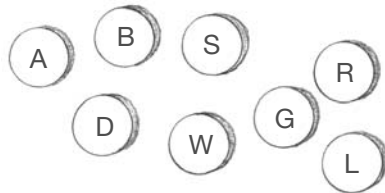
## Objective 5

*Expectation: use experimental results to make predictions*

**DIRECTIONS:** Choose the best answer.

1. If all these chips were put into a bag, what is the probability that you would pick a chip with a letter that comes before M in the alphabet?

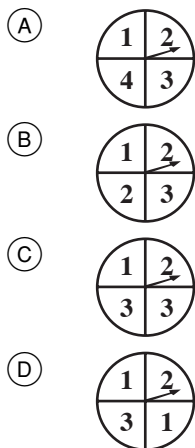
- (A)  $\frac{3}{5}$   
 (B)  $\frac{3}{8}$   
 (C)  $\frac{5}{3}$   
 (D)  $\frac{5}{8}$



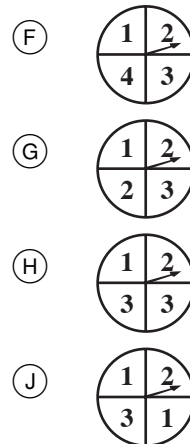
2. For the above chips, what is the probability what you would pick a chip with a vowel?

- (F)  $\frac{1}{7}$   
 (G)  $\frac{1}{8}$   
 (H)  $\frac{7}{1}$   
 (J)  $\frac{8}{1}$

3. Which spinner would give you the best chance of landing on the number 2?



4. Which spinner would give you the best chance of landing on the number 4?



5. A bag of jellybeans contains 5 cherry jellybeans, 3 licorice jellybeans, 6 lime jellybeans, and 6 lemon jellybeans. When randomly pulling a jellybean from the bag, which two colors are you equally likely to pick?

- (A) cherry and licorice  
 (B) licorice and lime  
 (C) lime and lemon  
 (D) cherry and lime

6. Carol wants a cherry jellybean. Without looking, she reaches into the bag and grabs a lime jellybean. She puts the jellybean back in the bag. Again, she randomly chooses a jellybean. How does her chance of getting a cherry jellybean on the second grab compare to her first grab?

- (F) better  
 (G) worse  
 (H) same  
 (J) Not Here

# Probability and Statistics

## Objective 5

**Expectation:** use tables of related number pairs to make line graphs

**Example:**

Rule:  $m = n + 3$

<b>IN (n)</b>	12	14	16	18	20	22
<b>OUT (m)</b>	15	17	19			

Answer: 21, 23, 25

**DIRECTIONS:** Complete the table for each function rule given below.

1. Rule:  $m = 3n$

<b>IN (n)</b>	0	1	2	3	4	5
<b>OUT (m)</b>						

2. Rule:  $m = 3n - 3$

<b>IN (n)</b>	2	4	6	8	10	12
<b>OUT (m)</b>						

**DIRECTIONS:** Find the function rule for each table below.

3.

<b>IN (x)</b>	6	7	9	11	14	16
<b>OUT (y)</b>	10	11	13	15	18	20

Rule:  $y = \underline{\hspace{2cm}}$

4.

<b>IN (x)</b>	1	3	6	8	10	13
<b>OUT (y)</b>	4	12	24	32	40	54

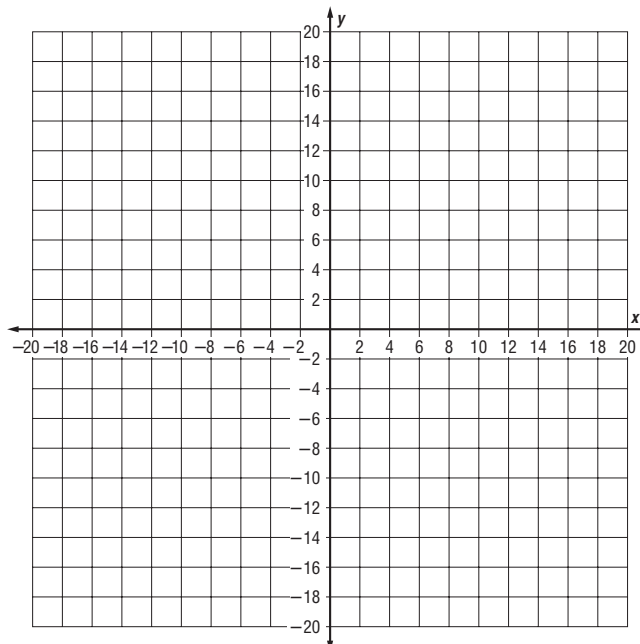
Rule:  $y = \underline{\hspace{2cm}}$

5.

<b>IN (x)</b>	5	8	11	14	17	20
<b>OUT (y)</b>	3	6	9	12	15	18

Rule:  $y = \underline{\hspace{2cm}}$

6. Graph the ordered pairs for exercises 1, 3, and 5. Label each line using the rule.



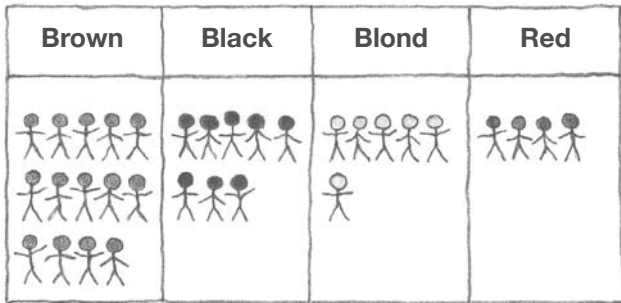


# Probability and Statistics

## Objective 5

**Expectation:** describe characteristics of data presented in tables and graphs including the shape and spread of the data and the middle number

**DIRECTIONS:** The tally chart shows the hair color of some fifth-grade students. Choose the best answer.

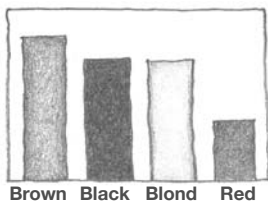


1. Which of these questions could you answer using the information on the tally chart?

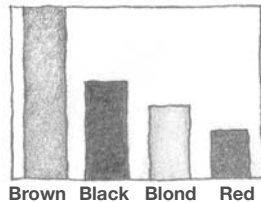
- (A) How often do the students get their hair cut?
- (B) How many students dye their hair?
- (C) Which students have long hair?
- (D) How many more brown-haired students are there than blond-haired students?

2. Which graph below shows the data on the tally chart?

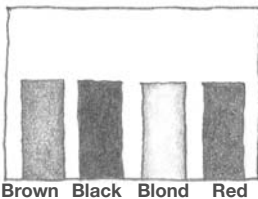
(F)



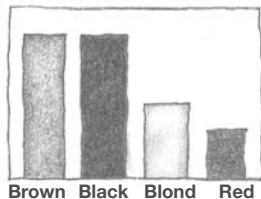
(G)



(H)

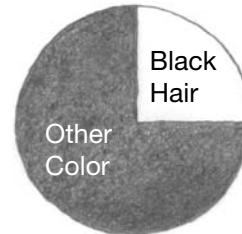


(J)

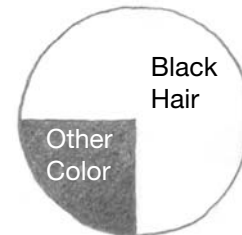


3. Which circle shows the fraction of the students on the tally chart that have black hair?

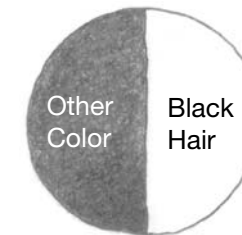
(A)



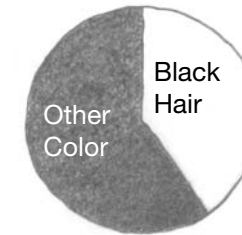
(B)



(C)



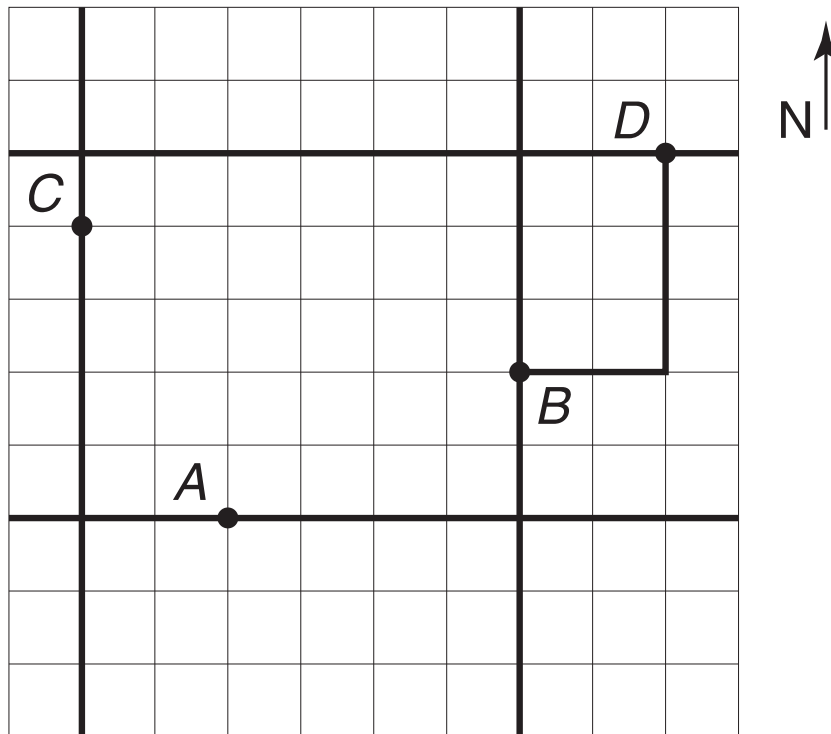
(D)



# Probability and Statistics

**Objective**  
**5**

*Expectation: graph a given set of data using an appropriate graphical representation such as a picture or line*



**DIRECTIONS:** The letters A, B, C, and D are placed in the grid in the very center of town. Each square in the grid represents a square mile. The heavy black lines on the grid represent roads. Use the grid to help you answer the following questions.

1. You travel four blocks east, two blocks north, two blocks east, three blocks north, eight blocks west, and one block south, ending at C. At which letter did you start?

\_\_\_\_\_

In order, which letters did you visit along the way?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Traveling the shortest distance along the roads without retracing your path, what is the distance in miles from A to B?

\_\_\_\_\_

3. Traveling the shortest distance along the roads without retracing your path, what is the distance in miles between A and D?

\_\_\_\_\_

4. Describe the shortest route, along the roads, to get from B to C.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Objective**

**5**

**Mini-Test**

**DIRECTIONS:** Choose the best answer.

1. Which fraction shows the ratio of  to  in Figure 1?

- (A)  $\frac{4}{5}$
- (B)  $\frac{5}{4}$
- (C)  $\frac{1}{2}$
- (D)  $\frac{4}{3}$

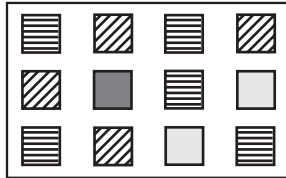



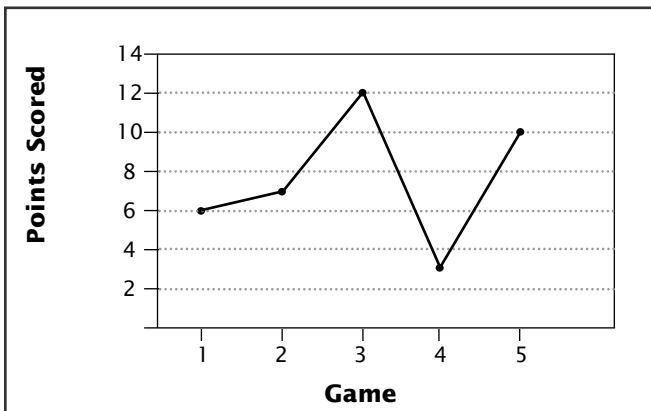
Figure 1

2. Which fraction shows the ratio of  to  in Figure 1?

- (F)  $\frac{2}{1}$
- (G)  $\frac{1}{3}$
- (H)  $\frac{3}{1}$
- (J)  $\frac{1}{2}$

3. The line graph shows the number of points Freda scored in her first five games. Which of the following tables could have been used to make this graph?

**Freda's First Five Games**



(A)

Game	Points
1	10
2	3
3	12
4	7
5	6

(B)

Game	Points
1	1
2	2
3	3
4	4
5	5

(C)

Game	Points
1	6
2	7
3	12
4	3
5	10

(D)

Game	Points
1	8
2	9
3	14
4	6
5	10

4. In which game did Freda score the least points?

- (F) Game 1
- (G) Game 4
- (H) Game 3
- (J) Game 2

5. In how many games did Freda score at least 6 points?

- (A) 3
- (B) 5
- (C) 2
- (D) 4

6. What is the middle, or median, number in Freda's scores?

- (F) 3
- (G) 6
- (H) 7
- (J) 10



# TAKS Mathematics—Objective 6

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The student will demonstrate an understanding of the mathematical processes and tools used in problem solving.

## **(5.14) Underlying processes and mathematical tools**

The student applies Grade 5 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to

- (A)** identify the mathematics in everyday situations; (*See page 99.*)
- (B)** use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; and (*See page 100.*)
- (C)** select or develop an appropriate problem-solving strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem. (*See page 101.*)

## **(5.15) Underlying processes and mathematical tools**

The student communicates about Grade 5 mathematics using informal language. The student is expected to

- (B)** relate informal language to mathematical language and symbols. (*See page 102.*)

## **(5.16) Underlying processes and mathematical tools**

The student uses logical reasoning to make sense of his or her world. The student is expected to

- (A)** make generalizations from patterns or sets of examples and nonexamples. (*See page 103.*)

# Underlying Processes and Mathematical Tools

## Objective 6

*Expectation: identify the mathematics in everyday situations*

**DIRECTIONS:** Choose the best answer.

1. Monica ate  $\frac{1}{8}$  of her sandwich for lunch, Sam ate  $\frac{2}{3}$  of his apple, and Rick drank all of his milk. How much of her milk did Monica drink?
  - (A)  $\frac{1}{8}$  of the milk
  - (B)  $\frac{2}{3}$  of the milk
  - (C) all of the milk
  - (D) Not enough information
2. There were 258 cans of soup on the grocery store shelf in the morning. At 1:00 P.M., there were 156 cans of soup on the shelf. By the time the store closed at 7:00 P.M., several more cans of soup were on the shelf. How many cans of soup did the store sell in the entire day?
  - (F) 102 cans
  - (G) 288 cans
  - (H) 414 cans
  - (J) Not enough information
3. Sasha went to the park at 9:30 A.M. She played for 45 minutes and then started soccer practice. She had soccer practice for 90 minutes. At what time did soccer practice end?
  - (A) 10:45 A.M.
  - (B) 11:15 A.M.
  - (C) 11:45 A.M.
  - (D) Not enough information
4. Cora went to the park on Tuesday, Wednesday, and Saturday. She went to the library on Monday and Sunday. On Friday, she went to the museum. On what days did Cora not go to the park or library?
  - (F) Thursday and Sunday
  - (G) Thursday
  - (H) Tuesday and Friday
  - (J) Thursday and Friday
5. Jessica must find the area of a square with one side that is 12 inches long. How can Jessica figure it out?
  - (A) She can add all the sides together.
  - (B) She can multiply 2 sides together.
  - (C) She can divide 2 sides by each other.
  - (D) She cannot figure out the area with the information she has.
6. Lance and Heath collected cans for a school fundraiser. Lance collected 128 cans and Heath collected 95 cans. If each can is worth five cents, how much money did they raise for the school fundraiser all together?
  - (F) \$11.15
  - (G) \$6.40
  - (H) \$4.75
  - (J) \$2.23



# Underlying Processes and Mathematical Tools

## Objective 6

**Expectation:** use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness

### Example:

Five friends each had 36 prize tokens from the arcade. Two other friends each had 25 prize tokens. The 7 friends decided to combine their tokens and then divide them equally. How many tokens will each friend get?

- (A) 8 tokens
- (B) 25 tokens
- (C) 32 tokens
- (D) 33 tokens

Answer: (C)

**DIRECTIONS:** Choose the best answer.

1. James earned \$15.85 each week for his chores. If James saves all of his money for 8 weeks, how much money will he have?
  - (A) \$12.68
  - (B) \$120.00
  - (C) \$125.40
  - (D) \$126.80
2. Evan rode his bike for 20 minutes on Monday, 34 minutes on Tuesday, and 48 minutes on Wednesday. Which statement describes Evan's pattern for biking?
  - (F) Add 12 minutes each day
  - (G) Subtract 14 minutes each day
  - (H) Add 15 minutes each day
  - (J) Add 14 minutes each day
3. An aquarium has a collection of 148 fish. It is going to expand its collection to 500 fish. If 8 new fish are added each week, how long will it take to get to 500 fish?
  - (A) 15 weeks
  - (B) 19 weeks
  - (C) 43 weeks
  - (D) 44 weeks
4. Wes finished his homework at 9:35 P.M. If he started his homework 65 minutes earlier, at what time did Wes begin his homework?
  - (F) 8:30 P.M.
  - (G) 8:35 P.M.
  - (H) 9:00 P.M.
  - (J) 11:09 P.M.



# Underlying Processes and Mathematical Tools

## Objective 6

**Expectation:** select or develop an appropriate problem-solving strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem

**DIRECTIONS:** Choose the best answer.

1. Two numbers have a product of 108 and a quotient of 12. What are the two numbers?

(A) 9, 12  
(B) 7, 16  
(C) 36, 3  
(D) 54, 6

2. There are several uninvited ants at a picnic in the park. Among the 9 guests that are ants or people, there are 30 legs altogether. How many ants are at the picnic?

(F) 9 ants  
(G) 6 ants  
(H) 4 ants  
(J) 3 ants

3. Mr. Grace found three programs that he wanted to buy for the classroom. *Math Busters* was \$21.80. *Spelling Practice* was \$16.85. *Reading Classics* was \$13.65. He spent a total of \$35.45. What programs did he buy?

(A) *Math Busters* and *Spelling Practice*  
(B) *Math Busters* and *Reading Classics*  
(C) *Spelling Practice* and *Reading Classics*  
(D) Not Here

4. Carla has 6 hockey cards. Ed and Carla together have 16 hockey cards. Judith and Ed together have 25 hockey cards. How many hockey cards does Judith have?

(F) 6  
(G) 9  
(H) 15  
(J) 20

5. The number of people watching a hockey game is 900 when rounded to the nearest hundred and 850 when rounded to the nearest ten. Which of these could be the number of people watching the game?

(A) 847  
(B) 849  
(C) 856  
(D) 852

6. The Card Shop receives a shipment of trading cards each month. There are 8 hockey cards in a pack, 12 packs in a box, and 16 boxes in a shipping crate. Which is the total number of hockey cards in the shipping crate?

(F) 1,536  
(G) 672  
(H) 1,436  
(J) 662

7. After the hockey game, each of these players bought a can of soda from a machine that takes both coins and bills. The soda costs 70¢ per can.

Luke used only dimes.  
Jacques used only quarters.  
Pierre used only half-dollars.  
Roland used a dollar bill.

Which two players got the same amount of change?

(A) Luke and Jacques  
(B) Jacques and Pierre  
(C) Pierre and Roland  
(D) Roland and Luke



# Underlying Processes and Mathematical Tools

## Objective 6

**Expectation:** relate informal language to mathematical language and symbols



Some problems can be solved through estimation. When estimating, it is especially important to look for key words and numbers to help you solve the problem.

**DIRECTIONS:** Choose the best answer.

1. There are 324 students in the fifth grade. Each student pledged to read 50 books during the year. Which number sentence shows how to find the number of books the fifth graders pledged to read?

- (A)  $324 \div 50 = \blacksquare$   
 (B)  $324 \times 50 = \blacksquare$   
 (C)  $324 + 50 = \blacksquare$   
 (D)  $324 - 50 = \blacksquare$

2. The amounts below show how much a student earned during a six-week time period. What operations are necessary to find out the student's average weekly earnings?

\$41.87	\$36.23	\$25.90
\$42.36	\$34.21	\$27.83

- (F) subtraction and addition  
 (G) addition and multiplication  
 (H) addition and division  
 (J) multiplication and division

3. What is the number sentence for determining the volume of a rectangular prism that measures 3 units long, 5 units wide, and 8 units high?

- (A)  $3 \times 5 \times 8 = \blacksquare$   
 (B)  $3 + 5 + 8 = \blacksquare$   
 (C)  $(3 \times 5) + 8 = \blacksquare$   
 (D)  $(3 + 5) \times 8 = \blacksquare$

4. The art instructor is paid \$15 per hour. She works for 6 hours a day. Which number sentence shows how to find the amount she earns in one day?

- (F)  $15 + 6 = \blacksquare$   
 (G)  $15 - 6 = \blacksquare$   
 (H)  $15 \times 6 = \blacksquare$   
 (J)  $15 \div 6 = \blacksquare$

5. Suppose you wanted to double the number 8 and then add 10 to it. Which number sentence would you use?

- (A)  $(8 \times 2) + 10 = \blacksquare$   
 (B)  $8 + 2 + 10 = \blacksquare$   
 (C)  $8 \times 2 \times 10 = \blacksquare$   
 (D)  $(2 \times 10) + 8 = \blacksquare$

6. How do you find the perimeter of a rectangle?

- (F) square the length of one side  
 (G) subtract the length of the shortest side from the length of the longest side  
 (H) multiply the base times the height  
 (J) add the lengths of all sides





# Underlying Processes and Mathematical Tools

## Objective 6

**Expectation:** make generalizations from patterns or sets of examples and non-examples

**DIRECTIONS:** Choose the best answer.

- Marlo drove 350 miles in 7 hours and used 17.5 gallons of gas. What was her speed?**
  - 20 miles per hour
  - 35 miles per hour
  - 50 miles per hour
  - 2.5 miles per hour
- Tori typed 440 words in 8 minutes. What was her rate?**
  - 8 words per minute
  - 50 words per minute
  - 55 words per minute
  - 440 words per minute
- Brian ran 8 miles in 2 hours. What was his rate?**
  - 2 miles per hour
  - 4 miles per hour
  - 6 miles per hour
  - 8 miles per hour
- Bicycle speedometers are programmed based on the number of revolutions the wheel turns per second. A bike wheel spins 480 times in 1 minute. What is the rate per second?**
  - 1 revolutions per second
  - 8 revolutions per second
  - 60 revolutions per second
  - 480 revolutions per second
- Clarissa was paid \$204 for 3 days of work. She worked 8 hours each day. What was her rate?**
  - \$8.50 per hour
  - \$8.50 per day
  - \$25.50 per day
  - \$68 per hour
- Mr. Jones bought a 2.5 lb. package of ground chuck for \$6.25. What is the price per pound?**
  - \$0.25
  - \$2.50
  - \$0.63
  - \$6.25
- Alex ran out of cleaner. The 12 oz. cleaner costs \$1.02. What is the cost per ounce?**
  - \$0.09
  - \$0.85
  - \$0.01
  - \$0.12
- Hakim paid \$8.55 for a 4.5 yard carpet remnant. What was the cost per yard?**
  - \$0.52
  - \$5.20
  - \$0.19
  - \$1.90



## Objective

For pages 99–103

6

## Mini-Test

**DIRECTIONS:** Choose the best answer.

Animal	Weight
Dog	$4\frac{1}{2}$ lbs
Cat	$2\frac{2}{3}$ lbs
Rabbit	$1\frac{3}{4}$ lbs

1. How much more does the dog weigh than the cat?

- (A)  $1\frac{1}{12}$   
 (B)  $2\frac{3}{4}$   
 (C)  $1\frac{5}{6}$   
 (D)  $7\frac{1}{6}$

2. How much more does the dog weigh than the rabbit?

- (F)  $1\frac{1}{12}$   
 (G)  $2\frac{3}{4}$   
 (H)  $1\frac{5}{6}$   
 (J)  $7\frac{1}{6}$

3. How much more does the cat weigh than the rabbit?

- (A)  $\frac{11}{12}$   
 (B)  $2\frac{3}{4}$   
 (C)  $1\frac{5}{6}$   
 (D)  $7\frac{1}{6}$

4. How much do the dog and the cat weigh together?

- (F)  $1\frac{1}{12}$   
 (G)  $2\frac{3}{4}$   
 (H)  $1\frac{5}{6}$   
 (J)  $7\frac{1}{6}$

5. Scott and Wendie have 3 pounds 10 ounces of hamburger. How many ounces is that?

- (A) 31 ounces  
 (B) 310 ounces  
 (C) 48 ounces  
 (D) 58 ounces

6. What is the fastest way to add 7 to itself 4 times?

- (F) divide 7 by 4  
 (G) subtract 4 from 7  
 (H) multiply 7 times 4  
 (J) add 4 to 7

7. Two thirds of the students in a school are boys. One half of the boys play sports. If there are 700 students in the school, which of these would you use to find the number of boys who played sports?

- (A)  $700 \times \frac{2}{3} \times \frac{1}{2}$   
 (B)  $700 \times \frac{2}{3} \times \frac{2}{3}$   
 (C)  $700 \times \frac{3}{2} \times \frac{4}{1}$   
 (D)  $700 \times \frac{2}{3} + \frac{1}{4}$



# How Am I Doing?

<p><b>Objective 1 Mini-Test</b></p> <p>Page 72</p> <p><b>Number Correct</b></p> <div style="border: 2px solid gray; width: 100px; height: 40px; margin: 0 auto;"></div>	<p><b>7–8</b> answers correct</p>	<p><b>Great Job!</b> Move on to the section test on page 107.</p>
	<p><b>5–6</b> answers correct</p>	<p><b>You're almost there!</b> But you still need a little practice. Review practice pages 60–71 before moving on to the section test on page 107.</p>
	<p><b>0–4</b> answers correct</p>	<p><b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 60–71. Then retake the test on page 72. Now move on to the section test on page 107.</p>
<p><b>Objective 2 Mini-Test</b></p> <p>Page 78</p> <p><b>Number Correct</b></p> <div style="border: 2px solid gray; width: 100px; height: 40px; margin: 0 auto;"></div>	<p><b>6</b> answers correct</p>	<p><b>Awesome!</b> Move on to the section test on page 107.</p>
	<p><b>4–5</b> answers correct</p>	<p><b>You're almost there!</b> But you still need a little practice. Review practice pages 74–77 before moving on to the section test on page 107.</p>
	<p><b>0–3</b> answers correct</p>	<p><b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 74–77. Then retake the test on page 78. Now move on to the section test on page 107.</p>
<p><b>Objective 3 Mini-Test</b></p> <p>Page 85</p> <p><b>Number Correct</b></p> <div style="border: 2px solid gray; width: 100px; height: 40px; margin: 0 auto;"></div>	<p><b>6</b> answers correct</p>	<p><b>Great Job!</b> Move on to the section test on page 107.</p>
	<p><b>4–5</b> answers correct</p>	<p><b>You're almost there!</b> But you still need a little practice. Review practice pages 80–84 before moving on to the section test on page 107.</p>
	<p><b>0–3</b> answers correct</p>	<p><b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 80–84. Then retake the test on page 85. Now move on to the section test on page 107.</p>

# How Am I Doing?

<p><b>Objective 4 Mini-Test</b></p> <p>Page 90</p> <p><b>Number Correct</b></p> <div style="border: 2px solid gray; width: 100px; height: 40px; margin: 0 auto;"></div>	<p><b>7–8</b> answers correct</p>	<p><b>Great Job!</b> Move on to the section test on page 107.</p>
	<p><b>5–6</b> answers correct</p>	<p><b>You're almost there!</b> But you still need a little practice. Review practice pages 87–89 before moving on to the section test on page 107.</p>
	<p><b>0–4</b> answers correct</p>	<p><b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 87–89. Then retake the test on page 90. Now move on to the section test on page 107.</p>
<p><b>Objective 5 Mini-Test</b></p> <p>Page 97</p> <p><b>Number Correct</b></p> <div style="border: 2px solid gray; width: 100px; height: 40px; margin: 0 auto;"></div>	<p><b>6</b> answers correct</p>	<p><b>Awesome!</b> Move on to the section test on page 107.</p>
	<p><b>4–5</b> answers correct</p>	<p><b>You're almost there!</b> But you still need a little practice. Review practice pages 92–96 before moving on to the section test on page 107.</p>
	<p><b>0–3</b> answers correct</p>	<p><b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 92–96. Then retake the test on page 97. Now move on to the section test on page 107.</p>
<p><b>Objective 6 Mini-Test</b></p> <p>Page 104</p> <p><b>Number Correct</b></p> <div style="border: 2px solid gray; width: 100px; height: 40px; margin: 0 auto;"></div>	<p><b>7</b> answers correct</p>	<p><b>Great Job!</b> Move on to the section test on page 107.</p>
	<p><b>5–6</b> answers correct</p>	<p><b>You're almost there!</b> But you still need a little practice. Review practice pages 99–103 before moving on to the section test on page 107.</p>
	<p><b>0–4</b> answers correct</p>	<p><b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 99–103. Then retake the test on page 104. Now move on to the section test on page 107.</p>

# Final Test for Mathematics

for pages 60–104

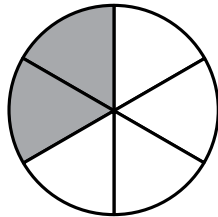
**DIRECTIONS:** Choose the best answer.

1. Which group of decimals is ordered from least to greatest?

(A) 3.332, 3.321, 3.295, 3.287, 3.111  
 (B) 3.424, 3.425, 3.339, 3.383, 3.214  
 (C) 3.109, 3.107, 3.278, 3.229, 3.344  
 (D) 3.132, 3.234, 3.262, 3.391, 3.406

2. Which of the following is not equivalent to the shaded portion of the figure?

(F)  $\frac{1}{3}$   
 (G)  $\frac{4}{8}$   
 (H)  $\frac{12}{36}$   
 (J)  $\frac{37}{111}$



3. Cole and Jenny split a candy bar. Cole ate  $\frac{3}{16}$  and Jenny ate  $\frac{11}{16}$ . Who ate more? Did they eat the whole candy bar?

(A) Cole, yes  
 (B) Jenny, yes  
 (C) Cole, no  
 (D) Jenny, no

4. It took Scott  $\frac{3}{6}$  of an hour to get home. What is the decimal equivalent of  $\frac{3}{6}$ ?

(F) 0.5  
 (G) 0.36  
 (H) 2.0  
 (J) Not Here

5. Myrtle and Doris collect stamps. Myrtle has 423 stamps and Doris has 519. How many stamps do both girls have?

(A) 96  
 (B) 942  
 (C) 1,000  
 (D) 100

6. A machine can produce 98 parts in one hour. How many parts could it produce in 72 hours?

(F) 170  
 (G) 26  
 (H) 196  
 (J) 7,056

7. Lucinda has 59 cents to buy pencils that cost 14 cents each. How many pencils can she buy?

(A) 826  
 (B) 45  
 (C) 73  
 (D) 4

8. Write 38 as the product of its prime factors by using exponents.

(F)  $2^2 \times 14$   
 (G)  $3^2 \times 8$   
 (H)  $2 \times 14$   
 (J)  $2 \times 19$

9. Which of these is a prime number?

(A) 5  
 (B) 9  
 (C) 15  
 (D) 21



10. Yesterday  $\frac{3}{8}$  inch of rain fell. Today  $\frac{5}{8}$  inch of rain fell. How much rain fell during the two days?

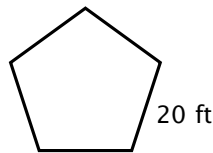
- (F) 1 inch
- (G)  $\frac{2}{8}$  inch
- (H) 8 inches
- (J)  $\frac{8}{16}$  inch

11. I am a number. I am the year of Columbus' famous voyage rounded to the nearest 1,000. What number am I?

- (A) 1000
- (B) 1400
- (C) 1492
- (D) 1500

12. The figure below is a sketch showing the cafeteria at Lincoln School. If you walked completely around the cafeteria, about how far would you go?

- (F) 100 ft
- (G) 80 ft
- (H) 120 ft
- (J) 400 ft



13. Each column in the number pattern below equals 21. What numbers are missing?

3	5	2	1	6
2	7	8	9	1
9	8	4	6	7
	1	7		7

- (A) 6 and 8
- (B) 7 and 5
- (C) 1 and 7
- (D) 4 and 3

14. Look at the chart. Which of the following is the most likely time of sunrise on March 4?

Date	Time of Sunrise
March 1	6:39 A.M.
March 2	6:36 A.M.
March 3	6:33 A.M.
March 4	

- (F) 6:33 A.M.
- (G) 6:30 A.M.
- (H) 6:27 A.M.
- (J) Not Here

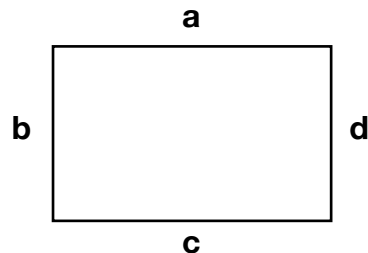
15. Which factors are represented by the figure?

- (A)  $3 \times 5$
- (B)  $6 \times 2$
- (C)  $5 \times 2$
- (D)  $3 \times 6$

16. The school district had 8,927 students. Which of these is the expanded numeral for 8,927?

- (F)  $89 + 27$
- (G)  $800 + 900 + 200 + 7$
- (H)  $9,000 + 800 + 20 + 7$
- (J)  $8,000 + 900 + 20 + 7$

17. If sides  $a$  and  $c$  are parallel, which of the following is not true about sides  $b$  and  $d$ ?

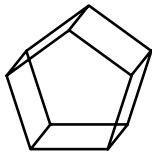


- (A) They are parallel.
- (B) They are equal in length.
- (C) They are perpendicular.
- (D) They are congruent.

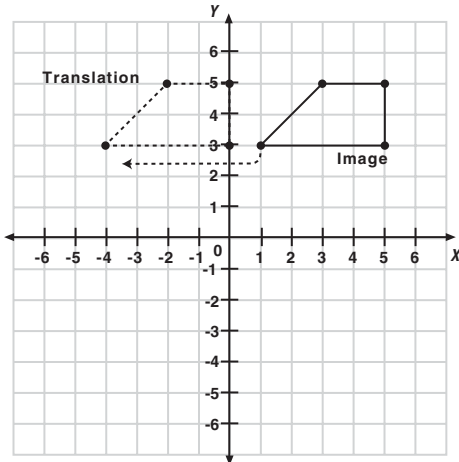


18. How many faces does the shape have?

- (F) 5
- (G) 6
- (H) 7
- (J) 8

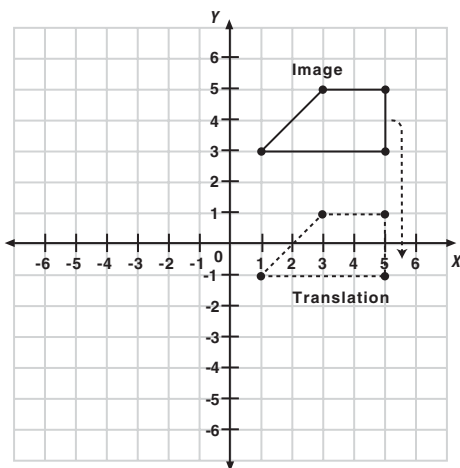


19. Compare the image to its transformation image. What type of transformation was performed?



- (A) slide and rotate the figure 5 units right
- (B) slide the figure 5 units left
- (C) slide the figure 4 units up
- (D) slide and rotate the figure 4 units down

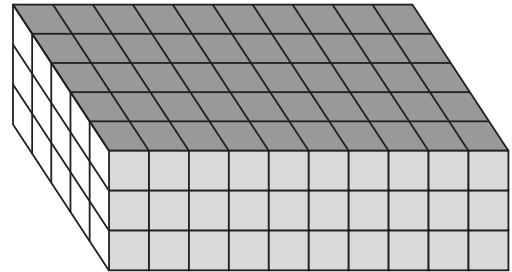
20. Compare the image to its transformation image. What type of transformation was performed?



- (F) slide the figure 3 units up
- (G) slide the figure 4 units up
- (H) slide the figure 3 units down
- (J) slide the figure 4 units down

21. What is the volume of this figure?

- (A) 150 cubic units
- (B) 100 cubic units
- (C) 53 cubic units
- (D) 50 cubic units



22. Jeremiah has a photograph that measures 5" × 7". He wants to frame the photograph using a 3-inch mat. What size picture frame will Jeremiah need to accommodate the photograph and mat?

- (F) 5" × 7"
- (G) 8" × 10"
- (H) 3" × 5"
- (J) 11" × 13"

23. A football is 11 inches in length. How many footballs would have to be placed end to end to equal more than 1 yard?

- (A) 1
- (B) 2
- (C) 3
- (D) 4

24. Five students were surveyed about their favorite meal in the cafeteria. Three of them said they liked pizza. What fraction shows the portion of students who liked pizza?

- (F)  $\frac{5}{3}$
- (G)  $\frac{3}{5}$
- (H)  $\frac{2}{5}$
- (J) Not Here



25. Timmy flips a coin 10 times and gets 8 heads and 2 tails. What would he expect the next flip to result in?
- (A) heads  
(B) tails
26. On a baseball diamond, it is 90 feet between each base, and there are four bases. Suppose a runner hits a double and has reached second base. How much farther does the runner have to go to reach home?
- (F) 90 ft  
(G) 180 ft  
(H) 270 ft  
(J) 360 ft
27. The Spanish Club wants to buy a set of instructional videos. Each video costs \$12.50. What information will they need to determine how much money they must raise to buy the entire set of videos?
- (A) the number of students in the school  
(B) how long each video is  
(C) the number of videos in the set  
(D) how many students there are in the Spanish Club
28. Natasha is building her strength for the swimming season. She can now lift 75 pounds. She wants to increase the weight she can lift by 5 pounds a week for 6 weeks. At the end of 6 weeks, how much weight will she be able to lift?
- (F) 105 pounds  
(G) 30 pounds  
(H) 92 pounds  
(J) 80 pounds
29. An auto mechanic earns \$19 an hour. She works 8 hours a day. Which number sentence shows how to find how much she earns in a day?
- (A)  $19 + 8 = \blacksquare$   
(B)  $19 - 8 = \blacksquare$   
(C)  $19 \times 8 = \blacksquare$   
(D)  $19 \div 8 = \blacksquare$
30. A waterproof jacket costs \$49.95. The cold-weather lining for the jacket is \$22.50 and a matching hat is \$12.75. How much would it cost to buy the jacket and liner, but not the hat?
- (F) \$85.20  
(G) \$72.45  
(H) \$61.45  
(J) \$62.70
31. What value does  $b$  have to make both equations true?  
 $b - 7 = 15$ ;  $2 \times 11 = b$
- (A) 85  
(B) 12  
(C) 21  
(D) 22
32. Which of these rules is correct?
- (F) Half of any even number is odd.  
(G) Half of any even number is even.  
(H) All odd numbers can be divided by 3.  
(J) All even numbers can be divided by 2.





# Mathematics Test

## Answer Sheet

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- 1 (A) (B) (C) (D)
- 2 (F) (G) (H) (J)
- 3 (A) (B) (C) (D)
- 4 (F) (G) (H) (J)
- 5 (A) (B) (C) (D)
- 6 (F) (G) (H) (J)
- 7 (A) (B) (C) (D)
- 8 (F) (G) (H) (J)
- 9 (A) (B) (C) (D)
- 10 (F) (G) (H) (J)
  
- 11 (A) (B) (C) (D)
- 12 (F) (G) (H) (J)
- 13 (A) (B) (C) (D)
- 14 (F) (G) (H) (J)
- 15 (A) (B) (C) (D)
- 16 (F) (G) (H) (J)
- 17 (A) (B) (C) (D)
- 18 (F) (G) (H) (J)
- 19 (A) (B) (C) (D)
- 20 (F) (G) (H) (J)
  
- 21 (A) (B) (C) (D)
- 22 (F) (G) (H) (J)
- 23 (A) (B) (C) (D)
- 24 (F) (G) (H) (J)
- 25 (A) (B)
- 26 (F) (G) (H) (J)
- 27 (A) (B) (C) (D)
- 28 (F) (G) (H) (J)
- 29 (A) (B) (C) (D)
- 30 (F) (G) (H) (J)
  
- 31 (A) (B) (C) (D)
- 32 (F) (G) (H) (J)

# TAKS Science Content Standards

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The science section of the state test measures four different areas.

- 1) *Objective 1: Scientific processes*
- 2) *Objective 2: Science concepts*
- 3) *Objective 3: Science concepts*
- 4) *Objective 4: Science concepts*

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# TAKS Science—Objective 1

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The student will demonstrate an understanding of the nature of science. Objective 1 is focused on the student as a scientist. This objective is found in fifth, tenth, and eleventh grades. The nature of science is at the heart of all sciences, K–16. The skills developed in Objective 1 progress in sophistication and complexity as the student matures and advances academically. In order to understand scientific processes, students must perform the activities of scientists, which include making observations, collecting data, and drawing conclusions. For instance, student expectation (5.2) (B) states that students are expected to “collect information by observing and measuring.” Rather than just lecturing to students on how to use lab equipment, the teacher should give students the opportunity to work with thermometers, balances, and measuring cups. Activities related to the TEKS of Objective 1 develop students’ critical-thinking skills and problem-solving abilities. Using critical-thinking skills to apply science concepts is the primary goal of science education. To best develop these skills, scientific processes should be taught and reinforced throughout the curriculum instead of as an isolated unit.

## **(5.2) Scientific processes**

The student uses scientific methods during field and laboratory investigations. The student is expected to

- (A)** plan and implement descriptive and simple experimental investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology; *(See page 114.)*
- (B)** collect information by observing and measuring; *(See page 115.)*
- (C)** analyze and interpret information to construct reasonable explanations from direct and indirect evidence; *(See page 116.)*
- (D)** communicate valid conclusions; and *(See page 117.)*
- (E)** construct simple graphs, tables, maps, and charts using tools [including computers ] to organize, examine, and evaluate information. *(See page 118.)*

## **(5.3) Scientific processes**

The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to

- (A)** analyze, review, [and critique ] scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information; *(See page 119.)*
- (B)** draw inferences based on information [related to promotional materials] for products and services; and *(See page 120.)*
- (C)** represent the natural world using models and identify their limitations. *(See page 121.)*

# Scientific Processes

**Objective**  
**1**

**Expectation:** plan and implement descriptive and simple experimental investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology

**DIRECTIONS:** Read about Ryan’s experiment, then answer the questions.

Ryan wanted to find out if people could tell the difference between the taste of cold tap water and cold bottled water. He filled one glass pitcher with tap water and another glass pitcher with bottled water. Then he placed the pitchers in the same refrigerator overnight.

**1. Before completing his experiment, Ryan guessed that people would not be able to tell the difference between the two types of water. What part of the scientific process does this guess involve?**

- (A) listing the materials
- (B) stating a hypothesis
- (C) organizing data
- (D) stating a conclusion

**2. What should be the next step in Ryan’s experiment?**

- (F) He should ask several people to taste the tap water.
- (G) He should ask several people to taste the bottled water.
- (H) He should ask several people to taste both types of water and guess which one is tap water and which one is bottled water.
- (J) He should ask several people to taste both types of water and tell which one they like the best.

**3. After he has gathered the data, what should he do with it?**

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**4. How can Ryan best present his findings?**

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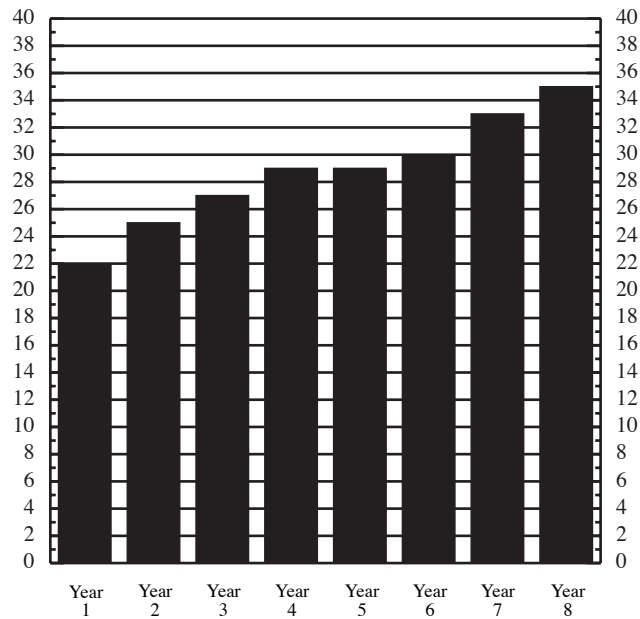
# Scientific Processes

## Objective 1

**Expectation:** collect information by observing and measuring

**DIRECTIONS:** Read the graph showing the number of herons on Ash Pond, and then answer the questions.

**Hérons on Ash Pond**



1. In which two years did the number of herons stay the same?

- (A) years 1 and 2
- (B) years 2 and 3
- (C) years 3 and 4
- (D) years 4 and 5

2. Based on the data, how much did the heron population increase between year 1 and year 8?

- (F) by 22
- (G) by 13
- (H) by 12
- (J) by 57

3. What was the average number of herons on Ash Pond over the 8 years?

- (A) 26
- (B) 27
- (C) 28
- (D) 29

4. Based on the data, what could you predict for year 11?

- (F) The number of herons will increase.
- (G) The number of herons will decrease.
- (H) The number of herons will stay the same.
- (J) Herons will become endangered.



# Scientific Processes

## Objective 1

**Expectation:** analyze and interpret information to construct reasonable explanations from direct and indirect evidence

**DIRECTIONS:** Read the passage. Then answer the questions.

### Planet Temperatures

Scientists have looked at the other planets in our solar system to see if they would be good places to live. One of the first problems is temperature. Earth's average temperature is about 58°F, which is the temperature on a brisk fall day. Our neighbor Venus is one planet closer to the sun than Earth, and much hotter. The average temperature on Venus is 867°F. This is mostly because of Venus's thick atmosphere, which traps the sun's heat so that it cannot escape. The trapping of heat in this way is called the "greenhouse effect." It is named for the way that hot air is trapped inside a greenhouse and is kept warmer than the air outside. On the other hand, Earth's neighbor Mars is one planet farther away from the sun. It's a little too cold for comfort on Mars. Its average temperature is about -65°F.

#### 1. What is the "greenhouse effect"?

- (A) air that is trapped by glass and cannot escape
- (B) air that is heated by the sun and then trapped by a planet's thick atmosphere
- (C) air that is heated by the sun and then orbits a planet and keeps it warm
- (D) air that travels from one planet to another

#### 2. Which of these might be an example of the greenhouse effect?

- (F) a car on a summer's day with the air conditioning on
- (G) a parked car on a summer's day with the windows closed
- (H) a car on a summer's day that is traveling down the highway with the windows open
- (J) a parked car on a summer's day with all of the windows open

#### 3. After reading the passage, which of these statements do you think is probably true?

- (A) The average temperature increases the closer a planet is to the Sun.
- (B) The average temperature increases the closer a planet is to Earth.
- (C) The average temperature decreases the closer a planet is to the Sun.
- (D) The average temperature increases the further a planet is from the Sun.

#### 4. After reading the passage, which conclusion can you draw?

- (F) With the proper shelter, it would be possible to live on Mars.
- (G) With the proper shelter, it would be possible to live on Venus.
- (H) Earth's average temperature is warmer than Mars' average temperature.
- (J) Earth's average temperature is warmer than Venus's average temperature.



# Scientific Processes

**Objective**      *Expectation: communicate valid conclusions*

## 1

**DIRECTIONS:** Read the passage. Then answer the questions.

### Cheetahs

Cheetahs are animals that have tawny fur coats with round black spots. They belong to the cat family, just like lions and cougars. However, cheetah babies are not called kittens but cubs. The cubs start following their mother on hunts when they are only six weeks old. When they are six months old, the cubs start learning from their mother how to hunt for themselves.

It is amazing that cheetahs in the wild can run 50 to 70 miles per hour. They are the fastest land animals in the world. When cheetahs hunt, it is usually at night. They creep up on their prey. Then, with a burst of speed, the cheetah can catch the animal. If it has to, a cheetah can run for over three miles at an average speed of 45 miles per hour.

Today, cheetahs are struggling to survive on land that once was good hunting ground but is now being farmed. In Africa, Southwest Asia, and India, where the cheetahs live, farmers set traps for these animals. The cheetahs hunt cattle, and the farmers lose money when their livestock is killed. In the past 10 years, for example, farmers in Namibia have trapped and killed over 7,000 cheetahs. It is estimated that only about 12,000 remain in the world.

**1. Which one of these statements is a fact?**

- (A) Cheetahs are the most beautiful animals in the world.
- (B) Cheetahs should not be killed by farmers.
- (C) Cheetahs are the fastest land animals in the world.
- (D) Cheetahs would make great pets.

**2. Which statement is false?**

- (F) Cheetahs have more fun hunting cattle than other animals.
- (G) Cheetahs surprise their prey with bursts of speed.
- (H) Cheetah mothers teach their cubs to hunt for themselves.
- (J) In the past 10 years, farmers in Namibia have killed over 7,000 cheetahs.

**3. Which statement is true?**

- (A) Cheetahs can run up to 60 miles per hour.
- (B) Cheetahs have black fur with tawny spots.
- (C) Cheetahs make traps for their prey.
- (D) Cheetahs are being killed by farmers in the United States.

**4. Where is the cheetah's habitat?**

- (F) Africa, China, and India
- (G) Southwest Asia, Africa, and India
- (H) Australia, Asia, and India
- (J) Africa, Namibia, and India



# Scientific Processes

**Objective**  
**1**

**Expectation:** construct simple graphs, tables, maps, and charts using tools [including computers] to organize, examine, and evaluate information

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**DIRECTIONS:** Ramon and Lila are studying weather. The chart below shows the average daily temperature in Abilene for the past week. In the space below, construct a bar graph to represent the data.

Day	Temperature
Sunday	70°
Monday	72°
Tuesday	69°
Wednesday	74°
Thursday	80°
Friday	91°
Saturday	77°





# Scientific Processes

**Objective**  
**1**

**Expectation:** analyze, review, [and critique] scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information

**1. Jan read an article about how the dinosaurs became extinct. It said that most scientists agreed that at some time in the past a huge asteroid hit Earth. This caused certain environmental changes that made it difficult for dinosaurs to survive. Scientists have several hypotheses about how the asteroid killed off the dinosaurs. Which of the following seems most likely?**

- (A) It caused an ice age.
- (B) It caused fires that destroyed food dinosaurs needed to survive.
- (C) It caused "space sickness."
- (D) It turned the dinosaurs to stone.

**2. Miguel watched as several fruit flies buzzed around the bananas on the counter. He wondered where they came from since it was very cold outside and they only live for 24 hours. Which of the following is a likely theory for how the fruit flies got on the bananas?**

- (F) fruit fly eggs were on the bananas when his mother bought them
- (G) the fruit flies were hiding in the house since summer
- (H) bananas turn into fruit flies as they ripen
- (J) when bananas are near apples, fruit flies appear

**3. Jordan observes many fossils and sedimentary rocks in a desert area. What conclusion can he make about the area?**

- (A) It has always been a desert.
- (B) It will soon be flooded.
- (C) It used to be a river or ocean bed.
- (D) Someone placed the rock sample there.

**4. A mysterious disease that started in China two weeks ago is now being diagnosed in Houston. State your theory of how the disease got to the United States and give evidence for why you believe this.**

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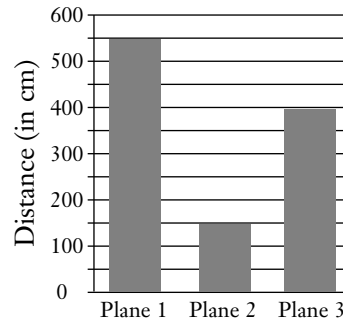
# Scientific Processes

## Objective 1

**Expectation:** draw inferences based on information [related to promotional materials] for products and services.

**DIRECTIONS:** Use the information from the graph to answer the questions.

Anthony did an experiment to see how the flight of a paper airplane would be affected by changing the angle of the airplane's wings. He constructed three paper airplanes, slanting the wings down on Plane 1, and slanting them up on Plane 2. The wings of Plane 3 were level.



1. The dependent variable in Anthony's experiment was the \_\_\_\_\_ .

- (A) paper that he used to build the airplanes
- (B) angle of the airplane's wings
- (C) size of the airplane
- (D) weight that he put on the nose of the airplane

2. Anthony might have decided to make a graph because it made it easier to \_\_\_\_\_ .

- (F) keep his data organized
- (G) compare the distances each plane flew
- (H) draw conclusions about his data
- (J) all of the above

3. Which of the following statements is not true?

- (A) Plane 1 flew more than twice as far as Plane 2.
- (B) Plane 3 flew half as far as Plane 1.
- (C) Plane 2 flew 400 centimeters less than Plane 1.
- (D) Plane 2 flew less than half as far as Plane 3.

4. Which of the following conclusions can Anthony draw from the graph?

- (F) Paper airplanes fly best with their wings pointed up.
- (G) Paper airplanes fly best with level wings.
- (H) Paper airplanes fly best with their wings pointed down.
- (J) Real airplanes fly best with level wings.

5. Plane 1 flew an average of 550 centimeters. If Anthony wanted to compare the distances that Plane 1 flew during each flight, what would be the best graphic to use?

- (A) a bar graph
- (B) a pictograph
- (C) a pie chart
- (D) a double line graph

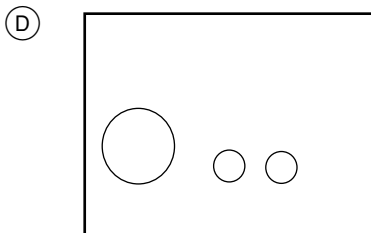
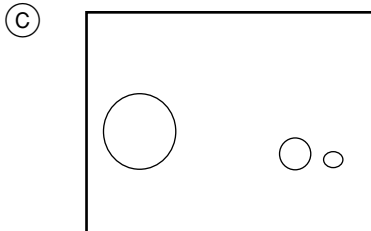
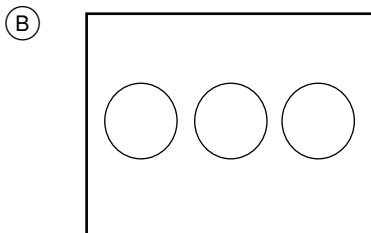
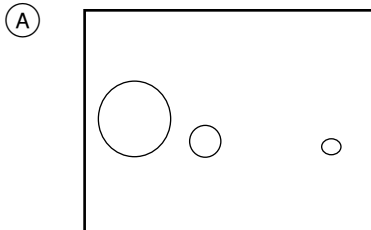


# Scientific Processes

**Objective 1**

**Expectation:** represent the natural world using models and identify their limitations

1. Look at the pictures below. Which is the best representation of the Sun, Earth, and the Moon, overall?

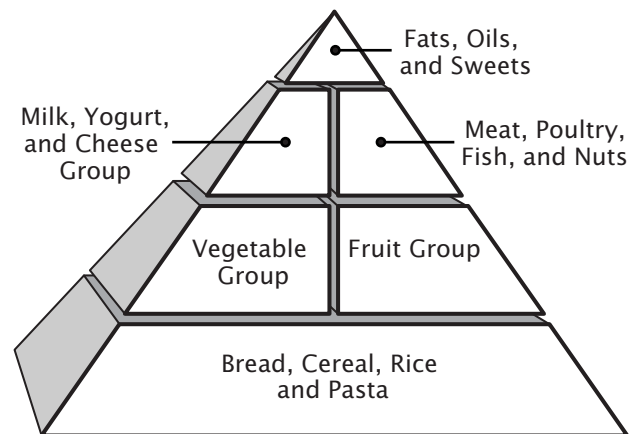


2. Natalie is trying to explain the solar system to her younger brother. What three objects should she choose to best represent the Sun, Earth, and the Moon?

- (F) a chair, a book, and a candle
- (G) paper, a pencil, and a crayon
- (H) a basketball, a softball, and a table tennis ball
- (J) an apple, an orange, and a lemon

3. By using these three objects to help explain a larger system, Natalie has made a \_\_\_\_\_ of the solar system.

- (A) scale
- (B) model
- (C) original
- (D) copy



4. Based on the food pyramid above, which group of foods should you eat the least of?

- (F) bread, cereal, rice, and pasta
- (G) fats, oils, and sweets
- (H) fruits
- (J) vegetables



**Objective**

For pages 114-115

**1**

**Mini-Test**

**DIRECTIONS:** Read the passage. Then answer the questions.

**Wonderful Webs**

Different types of spiders make different kinds of webs from the silk they spin. Tangled webs are made by house spiders and black widow spiders. These webs of tangled silk are used to trap insects for food in much the same way that a fishnet traps fish. Sheet webs, made by platform spiders, are found in tall grass or in the branches of trees. When hunting, the platform spider hides under the sheet waiting for prey. Then it pulls its catch through the webbing. The triangle spider makes a web shaped like its name. The sticky strands of this web catch insects that land on the surface.

**1. What kind of web does a triangle spider weave?**

- (A) a pattern of circles
- (B) a tangled-silk web
- (C) a sticky, triangle-shaped web
- (D) a messy cobweb

**2. What is the purpose of a sheet web?**

- (F) to trap insects on the sticky surface
- (G) to confuse insects and make them dizzy
- (H) to serve as a place for the platform spider to hide
- (J) to serve as a net to trap insects

**3. Which of these is a fact about spiders?**

- (A) Platform spiders are smarter than other spiders.
- (B) All webs work in the same way.
- (C) Most webs are woven in a pattern of circles.
- (D) Webs are used by spiders as a means of getting food.

**4. Which of these is not a term used when describing spiders?**

- (F) spin
- (G) web
- (H) wings
- (J) hunt

**5. What conclusion can you draw from this passage?**

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# TAKS Science—Objective 2

The student will demonstrate an understanding of the life sciences. This objective assesses students' understanding of inherited traits and the diversity of life through a focus on the similarities and differences between organisms. The objective also addresses the basic needs of living organisms through the study of the traits and behaviors of plants and animals in different environments. The concepts of evolution, ecology, and genetics are introduced at their most fundamental levels for the Elementary Science—Grade 5 TAKS test. Students need to understand that they are interconnected with the world around them. Awareness of this interdependence will enable them to be better informed when making decisions concerning their health, their well-being, and their environment. Through the study of populations, students begin to see themselves as part of an ecosystem. The life science concepts learned in the elementary grades provide the foundation for the biological concepts developed in sixth through eighth grades and tested on the Grade 10 and the Grade 11 Exit Level TAKS.

## **(5.10) Science concepts**

The student knows that likenesses between offspring and parents can be inherited or learned. The student is expected to

- (A)** identify traits that are inherited from parent to offspring in plants and animals; and *(See page 125.)*
- (B)** give examples of learned characteristics that result from the influence of the environment. *(See page 126.)*

## **(5.9) Science concepts**

The student knows that adaptations may increase the survival of members of a species. The student is expected to

- (A)** compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem; *(See page 127.)*
- (B)** analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem; and *(See page 128.)*
- (C)** predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem. *(See page 129.)*

### **What It Means**

Adaptive characteristics are those that have evolved to give an organism a better chance at survival. Some examples include teeth and claws in cats, and the ability to fly in birds.

## **(5.6) Science concepts**

The student knows that some change occurs in cycles. The student is expected to

- (C)** describe and compare life cycles of plants and animals. *(See page 130.)*

**(3.8) Science concepts.**

The student knows that living organisms need food, water, light, air, a way to dispose of waste, and an environment in which to live. The student is expected to

- (A) observe and describe the habitats of organisms within an ecosystem; *(See page 131.)*
- (B) observe and identify organisms with similar needs that compete with one another for resources such as oxygen, water, food, or space; *(See page 132.)*
- (C) describe environmental changes in which some organisms would thrive, become ill, or perish; and *(See page 133.)*
- (D) describe how living organisms modify their physical environment to meet their needs such as beavers building a dam or humans building a home. *(See page 134.)*

**(2.9) Science concepts**

The student knows that living organisms have basic needs. The student is expected to

- (A) identify the external characteristics of different kinds of plants and animals that allow their needs to be met; and *(See page 135.)*
- (B) compare and give examples of the ways living organisms depend on each other and on their environments. *(See page 136.)*

**(5.5) Science concepts**

The student knows that a system is a collection of cycles, structures, and processes that interact. The student is expected to

- (A) describe some cycles, structures, and processes that are found in a simple system; and *(See page 137.)*
- (B) describe some interactions that occur in a simple system. *(See page 138.)*

**(4.6) Science concepts**

The student knows that change can create recognizable patterns.

The student is expected to

- (A) identify patterns of change such as in weather, metamorphosis, and objects in the sky. *(See page 139.)*

# Scientific Concepts

**Objective**  
**2**

*Expectation: identify traits that are inherited from parent to offspring in plants and animals*

**DIRECTIONS:** For each of the following, put an **I** in the blank if it is an inherited trait. Leave all others blank.

- 1. \_\_\_\_\_ riding a bike
- 2. \_\_\_\_\_ hair color
- 3. \_\_\_\_\_ the number of petals on a flower
- 4. \_\_\_\_\_ hibernation
- 5. \_\_\_\_\_ counting
- 6. \_\_\_\_\_ eye color
- 7. \_\_\_\_\_ talking
- 8. \_\_\_\_\_ direction a tree grows
- 9. \_\_\_\_\_ curly or strait tails in pigs
- 10. \_\_\_\_\_ bees building hives
- 11. \_\_\_\_\_ dogs shaking hands
- 12. \_\_\_\_\_ birds laying eggs

- 13. Height is a trait that is inherited, but can be affected by the environment. Give some examples of environmental factors that may affect how tall a person grows to be.**

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# Scientific Concepts

**Objective**  
**2**

*Expectation: give examples of learned characteristics that result from the influence of the environment*

**DIRECTIONS:** For each of the following, put an **L** in the blank if it is a learned trait. Leave all others blank.

- 1. \_\_\_\_\_ playing tennis
- 2. \_\_\_\_\_ skin color
- 3. \_\_\_\_\_ leaves on a tree
- 4. \_\_\_\_\_ hibernation
- 5. \_\_\_\_\_ reading
- 6. \_\_\_\_\_ petal color and flowers
- 7. \_\_\_\_\_ language
- 8. \_\_\_\_\_ cheek dimples
- 9. \_\_\_\_\_ straight or curly hair
- 10. \_\_\_\_\_ humans building houses
- 11. \_\_\_\_\_ horses carrying riders
- 12. \_\_\_\_\_ tadpoles turning into frogs

**13. Describe some learned characteristics that you have acquired.**

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# Scientific Concepts

**Objective  
2**

**Expectation:** compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem

1. A trait or ability that helps an organism survive in its environment is called a(n) \_\_\_\_\_ .

- (A) response
- (B) adaptation
- (C) ecosystem
- (D) organization

2. An adaptation related to a fox's keen sense of hearing is the fox's \_\_\_\_\_ .

- (F) long, bushy tail
- (G) long snout
- (H) large, upright ears
- (J) sharp, canine teeth

3. A chameleon's ability to change its color to blend in with its surroundings is an adaptation called \_\_\_\_\_ .

- (A) selection
- (B) symmetry
- (C) evolution
- (D) camouflage

4. An example of camouflage is \_\_\_\_\_ .

- (A) a tiger's stripes
- (B) a bird's beak
- (C) a porcupine's quills
- (D) a monkey's tail

5. Think of your favorite plant or animal. Describe some of its adaptations and explain how they make it better able to survive.

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# Scientific Concepts

## Objective 2

**Expectation:** analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem

**DIRECTIONS:** Identify each organism by writing producer, consumer, or decomposer in the blank following its name.

1. cactus \_\_\_\_\_
2. lion \_\_\_\_\_
3. bacteria \_\_\_\_\_
4. cow \_\_\_\_\_
5. blue whale \_\_\_\_\_
6. grass \_\_\_\_\_
7. earthworm \_\_\_\_\_
8. fir tree \_\_\_\_\_
9. peregrine falcon \_\_\_\_\_
10. algae \_\_\_\_\_
11. palm tree \_\_\_\_\_
12. fungus \_\_\_\_\_
13. pike \_\_\_\_\_
14. sword fern \_\_\_\_\_

**DIRECTIONS:** Answer the following question.

15. Choose an ecosystem, such as the tundra, a rain forest, or a desert. Describe the niches filled by various organisms—producers, consumers, and decomposers—within that ecosystem. Describe any adaptations that help an organism fill its niche.

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# Scientific Concepts

**Objective**  
**2**

**Expectation:** predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem

**DIRECTIONS:** Match the ecosystem of each mystery organism in **Column A** to one or more adaptations that would be most beneficial for its survival in **Column B**.

**COLUMN A**

1. \_\_\_\_\_ in a tree in the rainforest
2. \_\_\_\_\_ underground in the back yard
3. \_\_\_\_\_ on the leaves of a rose bush
4. \_\_\_\_\_ in a coral reef
5. \_\_\_\_\_ on a glacier in Alaska
6. \_\_\_\_\_ on a mountainside
7. \_\_\_\_\_ in a polluted stream
8. \_\_\_\_\_ in the desert
9. \_\_\_\_\_ on the side of a cliff
10. \_\_\_\_\_ in a cave
11. \_\_\_\_\_ in a forest in the midwest
12. \_\_\_\_\_ on the bank of a nearly dry stream

**COLUMN B**

- a. strong legs for climbing
- b. a tail to help it hang from branches
- c. deep roots to find water
- d. the ability to breathe air as well as water
- e. being a color that blends in with leaves
- f. strong claws for digging and moving dirt
- g. a thick coat and layer of fat
- h. strong wings to fly and glide
- i. ability to see in the dark
- j. clear eyelids to keep out sand and dirt
- k. hibernating in the winter when food is scarce
- l. ability to completely draw inside a shell



# Scientific Concepts

**Objective**  
**2**

*Expectation: describe and compare life cycles of plants and animals*

**Example:**

Number each stage of the life cycle in the order it occurs.

**Moth**

\_\_\_\_\_ larva

\_\_\_\_\_ adult moth

\_\_\_\_\_ egg

\_\_\_\_\_ pupa

Answer: (3) (1) (4) (2)

**1. Oak Tree**

\_\_\_\_\_ tree

\_\_\_\_\_ acorn

\_\_\_\_\_ seedling

**2. Pig**

\_\_\_\_\_ newborn

\_\_\_\_\_ piglet

\_\_\_\_\_ adult pig

**3. Human**

\_\_\_\_\_ child

\_\_\_\_\_ adult

\_\_\_\_\_ newborn

\_\_\_\_\_ adolescent

**4. Frog**

\_\_\_\_\_ adult frog

\_\_\_\_\_ tadpole

\_\_\_\_\_ egg



# Scientific Concepts

**Objective**  
**2**

**Expectation:** observe and describe the habitats of organisms within an ecosystem

**DIRECTIONS:** A hollow log in the forest might contain an ecosystem. Describe the habitat of each of the following organisms within the ecosystem.

**1. moss**

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**2. ants**

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**3. earthworms**

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**4. chipmunks**

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**5. termites**

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# Scientific Concepts

**Objective**  
**2**

**Expectation:** observe and identify organisms with similar needs that compete with one another for resources such as oxygen, water, food, or space

**DIRECTIONS:** Within an ecosystem, all organisms compete for limited resources. Decide what resource is being competed for in each of the following.

**1. The horses and cows on Mrs. Parker's ranch both eat grass. They are in competition for what resource?**

- (A) oxygen
- (B) space
- (C) water
- (D) food

**2. The only resource that lizards and cactus in a large desert compete for is \_\_\_\_\_ .**

- (F) food
- (G) space
- (H) water
- (J) Not Here

**3. Mr. Wyatt has a small bowl with 3 goldfish on his desk at work. He loves to watch them swim and feeds them several times a day. His children give him 3 more goldfish as a gift. The 6 fish must now compete for \_\_\_\_\_ .**

- (A) space
- (B) oxygen
- (C) both A and B
- (D) Not Here

**4. Bears that wander into areas populated by humans are usually looking for food. What other need forces bear into areas occupied by humans?**

- (F) competition for space
- (G) competition for water
- (H) competition for oxygen
- (J) Not Here

**5. Explain how the weeds in a garden compete for resources with the plants or vegetables.**

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# Scientific Concepts

**Objective**  
**2**

*Expectation: describe environmental changes in which some organisms would thrive, become ill, or perish*

1. What types of changes would occur to the environment if the temperature in Texas suddenly dropped by 50 degrees?

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2. If the temperature suddenly dropped, what types of organisms might completely die out?

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3. Which organisms would thrive in a colder environment? What challenges might they still face?

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4. What would change if the climate suddenly became 50 degrees warmer?

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5. Would the extinction of mosquitoes and other pests be a good thing? Why or why not?

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# Scientific Concepts

**Objective**  
**2**

**Expectation:** describe how living organisms modify their physical environment to meet their needs such as beavers building a dam or humans building a home

**DIRECTIONS:** Living organisms modify their environment to meet their needs. Match the need on the left with an example of how humans have met that need.

- |                         |                                    |
|-------------------------|------------------------------------|
| 1. _____ warmth         | A. development of hunting tools    |
| 2. _____ food           | B. building fires                  |
| 3. _____ protection     | C. invention of cars               |
| 4. _____ communication  | D. development of written language |
| 5. _____ transportation | E. building of forts               |

**DIRECTIONS:** Choose the best answer.

**6. What is an adaptation?**

- (A) a trait or ability that helps an organism survive in its environment
- (B) the number of pairs of genes a particular organism has
- (C) the ways in which an organism can travel
- (D) an organism's place in the food chain

**7. An example of an adaptation would be \_\_\_\_\_ .**

- (F) a dog shedding its heavy coat in the summer
- (G) the thorns on a rose bush
- (H) a tiger's sharp teeth and claws
- (J) All of the above

**8. One example of an adaptation in catfish is that they have dark backs and light bellies. How might this help them survive?**

- (A) It helps them find food on the bottom of the lake.
- (B) It helps turtles find them.
- (C) It makes them less visible to prey from above and from below.
- (D) It makes them taste better.

**9. Some organisms have special adaptations that help them blend into the background of their environment so that predators can't see them. This is called \_\_\_\_\_ .**

- (F) blendability
- (G) camouflage
- (H) selection
- (J) fusion





# Scientific Concepts

**Objective**  
**2**

*Expectation: identify the external characteristics of different kinds of plants and animals that allow their needs to be met*

1. The part of a plant that helps it make food is the \_\_\_\_\_ .

- (A) root
- (B) leaf
- (C) pistol
- (D) stamen

2. The process by which plants can make their own food is called \_\_\_\_\_ .

- (F) phototropism
- (G) homeostasis
- (H) camouflage
- (J) photosynthesis

3. The part of the plant that delivers water and nutrients is the \_\_\_\_\_ .

- (A) root
- (B) leaf
- (C) pistol
- (D) stamen

4. An animal's body is protected from the environment by the \_\_\_\_\_ .

- (F) digestive system
- (G) eyes
- (H) skin
- (J) paws

5. Fingernails in a human serve many of the same functions as \_\_\_\_\_ in a cat.

- (A) claws
- (B) teeth
- (C) paws
- (D) tail

6. Most mammals have some type of \_\_\_\_\_ for tearing and chewing food.

- (F) lips
- (G) tongue
- (H) teeth
- (J) gums

7. Insects have a protective outer covering called a(n) \_\_\_\_\_ .

- (A) endoskeleton
- (B) exoskeleton
- (C) plankton
- (D) chitin

8. Structures by which some plants reproduce are called \_\_\_\_\_ .

- (F) leaves
- (G) roots
- (H) seeds
- (J) petals

9. Most fish have \_\_\_\_\_ to protect their bodies.

- (A) eyes
- (B) scales
- (C) teeth
- (D) feet

10. Birds and many insects have \_\_\_\_\_ to help them travel and escape predators.

- (F) teeth
- (G) stingers
- (H) hives
- (J) wings



# Scientific Concepts

**Objective**  
**2**

**Expectation:** compare and give examples of the ways living organisms depend on each other and on their environments.

**DIRECTIONS:** Choose the correct word from the parentheses at the end of each sentence to fill in the blanks and complete the definitions.

1. The place where an organism lives is its \_\_\_\_\_ .  
(habitat, community)

2. All of the living organisms within an area form a \_\_\_\_\_ .  
(community, habitat)

3. The unique role of an organism in the community is its \_\_\_\_\_ .  
(habitat, niche)

4. A biological community and physical environment that interact to form a stable system is called a(n) \_\_\_\_\_ .  
(ecosystem, niche)

5. An organism, usually a green plant, which can make its own food is called a \_\_\_\_\_ .  
(consumer, producer)

6. An organism that lives by feeding on other organisms is called a \_\_\_\_\_ .  
(decomposer, consumer)

7. An organism that feeds on the remains of other organisms is called a \_\_\_\_\_ .  
(decomposer, consumer)

**DIRECTIONS:** Answer the following question.

8. The oldest tree in Sunnyvale is located in Victory Park. The tree is also an ecosystem for many organisms. Describe the niches of three different organisms that could live in the tree: a producer, a consumer, and a decomposer.

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# Scientific Concepts

**Objective**  
**2**

**Expectation:** describe some cycles, structures, and processes that are found in a simple system

**DIRECTIONS:** Describe the digestive process by filling in the blanks with the correct word from the list below.

small intestine

mouth

stomach

large intestine

esophagus

enzyme

1. The digestive process begins when food enters the \_\_\_\_\_ .
2. The salivary glands produce a(n) \_\_\_\_\_ that helps to break down carbohydrates into sugar.
3. The tongue pushes food down the long tube called the \_\_\_\_\_ .
4. In the \_\_\_\_\_ , food is mixed with digestive juices or acids.
5. Most of the digestive process takes place in the \_\_\_\_\_ .
6. The digested material then moves to the \_\_\_\_\_ where water is removed and returned to the body.

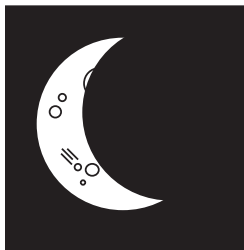




# Scientific Concepts

**Objective**  
**2**

**Expectation:** identify patterns of change such as in weather, metamorphosis, and objects in the sky



Crescent Moon



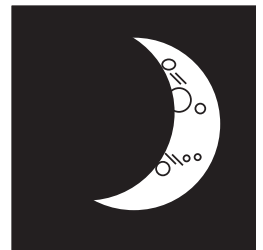
Half Moon



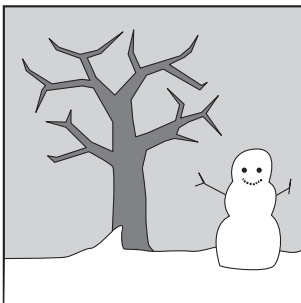
Full Moon



Half Moon



Crescent Moon



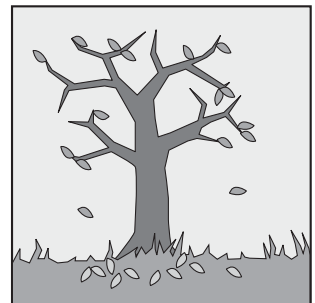
Winter



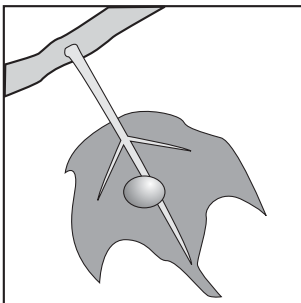
Spring



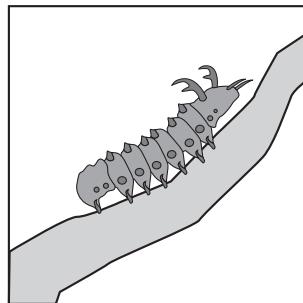
Summer



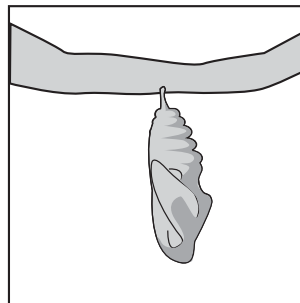
Fall



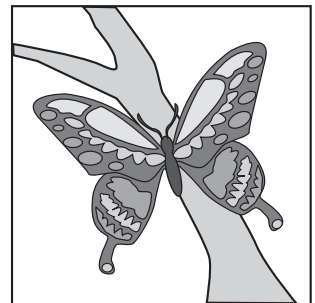
Egg



Larva



Pupa



Adult

1. What do each of the diagrams above have in common?

\_\_\_\_\_

\_\_\_\_\_

2. Why is it important to understand that changes occur in patterns?

\_\_\_\_\_

\_\_\_\_\_

3. Think about the weather. If weather changes did not occur in predictable patterns, how might this change your daily life? Give examples.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Objective**

For pages 125-139

**2**

**Mini-Test**

**DIRECTIONS:** Read the selection then answer the questions.

**Cells of Living Things**

Cells are the smallest and most basic units of living matter. They are the small pieces that when put together make organs, plants, and even people. All living things are made of cells, though not all cells are exactly alike.

Both animal and plant cells have a cell membrane, which holds all the cell parts together. The nucleus is one of the largest parts of the cell. It is the command center of the cell and controls the activities in the cell. Chromosomes inside this command center control what an organism will be like. For instance, your chromosomes carry the information that makes you have blue or brown eyes or black or red hair. Cytoplasm is the thick liquid that all the parts of the cell float in. It's mostly water, but also has some important chemicals inside. Both plant and animal cells have mitochondria, which is where food is burned to give the cell energy.

Animal and plants cells also have some differences. The plant cell has a cell wall, just outside the cell membrane, that makes the cell stiff. Both animal and plant cells have vacuoles, but animals have far more and they are much smaller. Finally, plant cells have chloroplasts. This is where the cell produces chlorophyll. This chemical makes food for the plant when the sunlight hits it. This is how a plant feeds itself.

While animals and plants cells have similarities and differences, one thing is certain. Without cells, the basic building blocks, living things would not exist.

**1. What is the role of the nucleus in a cell?**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2. What is the role of chromosomes in the cell?**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**3. Why do you think plants cells contain chloroplasts and animal cells do not?**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# TAKS Science—Objective 3

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The student will demonstrate an understanding of the physical sciences. The physical sciences explain the overall structure and the basic physical principles of the universe, with an emphasis on matter, energy, motion, and forces. Forces cause matter to undergo changes. These changes, whether they occur when sugar dissolves in water or when electricity flows through a wire, involve energy and energy transformations. A basic understanding of the physical sciences learned in the elementary grades provides the foundation for a deeper comprehension of energy, machines, properties of matter, and chemical reactions developed in sixth through eighth grades and assessed on the Grade 10 and the Grade 11 Exit Level TAKS.

## **(5.8) Science concepts**

The student knows that energy occurs in many forms. The student is expected to

- (A)** differentiate among forms of energy including light, heat, electrical, and solar energy; *(See page 142.)*
- (B)** identify and demonstrate everyday examples of how light is reflected, such as from tinted windows, and refracted, such as in cameras, telescopes, and eyeglasses; *(See page 143.)*
- (C)** demonstrate that electricity can flow in a circuit and can produce heat, light, sound, and magnetic effects; and *(See page 144.)*
- (D)** verify that vibrating an object can produce sound. *(See page 145.)*

## **(5.7) Science concepts**

The student knows that matter has physical properties. The student is expected to

- (A)** classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound; *(See page 146.)*
- (B)** demonstrate that some mixtures maintain the physical properties of their ingredients; *(See page 147.)*
- (C)** identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving sugar in water; and *(See page 148.)*
- (D)** observe and measure characteristic properties of substances that remain constant such as boiling points and melting points. *(See page 149.)*

## **(3.6) Science concepts**

The student knows that forces cause change. The student is expected to

- (A)** measure and record changes in the position and direction of the motion of an object to which a force such as a push or pull has been applied. *(See pages 150–151.)*

## **(5.5) Science concepts**

The student knows that a system is a collection of cycles, structures, and processes that interact. The student is expected to

- (A)** describe some cycles, structures, and processes that are found in a simple system; and *(See page 152.)*
- (B)** describe some interactions that occur in a simple system. *(See page 153.)*

## **(4.6) Science concepts**

The student knows that change can create recognizable patterns. The student is expected to

- (A)** identify patterns of change such as in weather, metamorphosis, and objects in the sky. *(See page 154.)*

# Scientific Concepts

**Objective**  
**3**

**Expectation:** differentiate among forms of energy including light, heat, electrical, and solar energy

**Example:**

1. After a heavy rain, you may see puddles on the road. Eventually, the puddles evaporate due to heat. What is the source of the heat that causes the water to evaporate?

(A) the Sun  
(B) the air  
(C) the water  
(D) Not Here

Answer: (A)

1. Heat and sound travel in \_\_\_\_\_ .

- (A) beams
- (B) drops
- (C) waves
- (D) currents

2. When a girl starts running, she is converting stored energy into \_\_\_\_\_ .

- (F) heat energy
- (G) sound energy
- (H) kinetic energy
- (J) light energy

3. The word kinetic relates to \_\_\_\_\_ .

- (A) the amount of matter in an object
- (B) the energy of motion
- (C) the attractive force between two objects
- (D) the measurement of force

4. What is the name of the energy from the Sun?

- (F) solar
- (G) polar
- (H) ocular
- (J) lunar

5. Electric motors transform electrical energy into \_\_\_\_\_ .

- (A) kinetic energy
- (B) heat energy
- (C) mechanical energy
- (D) electrical energy

6. Emma sees a flash of lightning and then hears the thunder about 5 seconds later. Next, she sees another flash of lightning, and the thunder comes 2 seconds later. What can she conclude?

- (F) The light is traveling faster than before.
- (G) The thunder is getting louder.
- (H) The lightning is closer than before.
- (J) The thunder is further away than before.

7. How does light travel?

- (A) in waves only
- (B) in particles only
- (C) in both waves and particles
- (D) in neither waves nor particles





# Scientific Concepts

## Objective 3

**Expectation:** identify and demonstrate everyday examples of how light is reflected, such as from tinted windows, and refracted, such as in cameras, telescopes, and eyeglasses

**Example:**

Bending light by passing it through a transparent substance of a different density is called \_\_\_\_\_ .

- (A) reflection
- (B) refraction
- (C) imposition
- (D) transposition

Answer: (B)

1. What tool would you use to split white light into colors?

- (A) prism
- (B) laser
- (C) splicer
- (D) flashlight

2. The color that reflects all light is \_\_\_\_\_ .

- (F) white
- (G) blue
- (H) yellow
- (J) black

3. \_\_\_\_\_ is the bending of light as it passes from one material into another.

- (A) refraction
- (B) reflection
- (C) luster
- (D) filtration

4. Objects are visible to us only when \_\_\_\_\_ .

- (F) they are viewed in the correct atmosphere
- (G) light is absorbed by them
- (H) light is refracted off them
- (J) light is reflected off them

5. What is the correct order of colors in the spectrum?

- (A) red, yellow, orange, green, blue, violet, indigo
- (B) red, orange, yellow, green, blue, indigo, violet
- (C) red, green, orange, yellow, indigo, violet, blue
- (D) red, orange, yellow, green, blue, violet, indigo

6. If an object reflects red and green light, what color does the object appear to be?

- (F) yellow
- (G) red
- (H) green
- (J) purple

7. If an object absorbs all the light that hits it, what color is it?

- (A) white
- (B) blue
- (C) black
- (D) green



# Scientific Concepts

## Objective 3

**Expectation:** demonstrate that electricity can flow in a circuit and can produce heat, light, sound, and magnetic effects

1. What are the north and south ends of a magnet called?

- (A) borders
- (B) caps
- (C) poles
- (D) tips

2. The complete path through which electricity flows is called a \_\_\_\_\_.

- (F) sensor
- (G) wire
- (H) circuit
- (J) plug

3. What are the ends of a magnet called?

- (A) boundaries
- (B) edges
- (C) poles
- (D) sockets

4. In which direction does a magnetic compass always point?

- (F) north
- (G) south
- (H) east
- (J) west

5. Which item does not require electricity?

- (A) telephone
- (B) vacuum
- (C) broom
- (D) light

6. What is the path that electricity travels along?

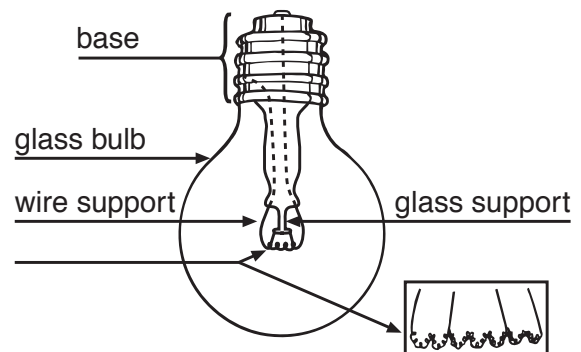
- (F) gap
- (G) circuit
- (H) wire
- (J) plug

7. Which of these would not make a good insulator?

- (A) an eraser
- (B) a piece of paper
- (C) a paper clip
- (D) a plastic comb

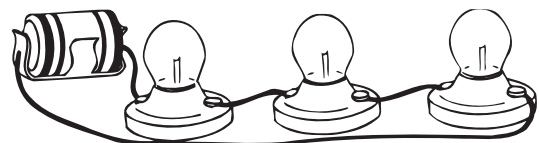
8. Which label is missing from the drawing?

- (F) coil filament
- (G) circuit
- (H) terminal
- (J) plug



9. The drawing below shows a \_\_\_\_\_ circuit.

- (A) parallel
- (B) series
- (C) cross
- (D) open



# Scientific Concepts

**Objective***Expectation: verify that vibrating an object can produce sound***3**

**DIRECTIONS:** Read about Miranda's experiment and then do numbers 1–4.

Miranda made two drums. For Drum A, she covered a large, empty coffee can with wax paper and fastened the paper with tape. For Drum B, she covered a small, empty soup can with wax paper and fastened the paper with tape. Then she firmly beat on the surface of each drum.

**1. What statement is probably true?**

- (A) Drum A has a lower tone.
- (B) Drum B has a lower tone.
- (C) Drums A and B have the same tone.
- (D) Drum A has a higher tone.

**2. If Miranda beat one drum more quickly, its sound waves would become \_\_\_\_\_ .**

- (F) farther apart.
- (G) closer together.
- (H) shorter.
- (J) longer.

**3. How do the sound waves of lower tones differ from the sound waves of higher tones?**

- (A) They are longer
- (B) They are shorter
- (C) They are closer together
- (D) They are further apart

**4. In which situation could sound not travel?**

- (F) through a wood and plaster wall
- (G) in the water
- (H) in a vacuum
- (J) through the air

**5. When you wear earplugs, you can't hear because the vibrations cannot reach the \_\_\_\_\_ .**

- (A) air
- (B) eardrums
- (C) ear canal
- (D) medium

**6. For the vocal cords to produce a \_\_\_\_\_ pitch, they must get tighter and closer together.**

- (F) high
- (G) loud
- (H) low
- (J) soft

**7. A piano tuner will tighten the strings of a piano so that the pitch will be \_\_\_\_\_ .**

- (A) louder
- (B) softer
- (C) lower
- (D) higher

**8. Bats and dolphins both hear a \_\_\_\_\_ than humans do.**

- (F) smaller range of pitches
- (G) smaller range of frequencies
- (H) larger range of resonances
- (J) larger range of pitches and frequencies



# Scientific Concepts

## Objective 3

**Expectation:** classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound

### Example:

If matter has a fixed volume, but changes its shape to fit its container, it is a \_\_\_\_\_ .

- (A) solid
- (B) liquid
- (C) gas
- (D) suspension

(B) Answer

**DIRECTIONS:** Choose the best answer.

1. How can you change matter from one state to another?

- (A) by changing its container
- (B) by adding or removing heat
- (C) by dividing it in half
- (D) by changing its volume

2. Ice is water in its \_\_\_\_\_ state.

- (F) solid
- (G) changing
- (H) liquid
- (J) gas

3. You fill a balloon with steam and then put it in the refrigerator. What do you predict will happen next?

- (A) The balloon will expand.
- (B) The balloon will contract.
- (C) The balloon will pop.
- (D) The balloon will not change.

4. When water freezes, it changes from a \_\_\_\_\_ .

- (F) gas to a solid
- (G) liquid to a gas
- (H) liquid to a solid
- (J) solid to a gas

5. What will happen between these two magnets?

N	S
---	---

S	N
---	---

- (A) attract
- (B) repel
- (C) not move
- (D) Not Here

6. Which of the following cannot be used to classify forms of matter?

- (F) water
- (G) liquid
- (H) gas
- (J) solid



# Scientific Concepts

## Objective 3

**Expectation:** demonstrate that some mixtures maintain the physical properties of their ingredients

**DIRECTIONS:** Read about Jeannie's experiment, and then do numbers 1 and 2.

**My Question:** Is warm water more dense than cold water?

**What I Already Know:** If two objects take up the same amount of space, the lighter one will be less dense.

**What I Did:** I filled a beaker with 100 ml of cold water. Then I filled another beaker with 100 ml of hot water, and I used red food coloring to color it red. I used an eyedropper to put the warm, red water into the beaker of cold water.

**What Happened:** The drops of red water floated to the top of the beaker. The red water made a layer on top of the layer of cold water in the beaker.

1. Jeannie can conclude from her experiment that \_\_\_\_\_ .

- (A) warm water is more dense than cold water
- (B) warm water is less dense than cold water
- (C) warm water and cold water have the same density
- (D) neither warm nor cold water have any density

2. What phenomena does this experiment help Jeannie understand?

- (F) why it rains in the summer
- (G) why cold water boils so slowly
- (H) why the top layer of the ocean is warmer than the lower layers
- (J) why it is hard to make sugar dissolve in iced tea

**DIRECTIONS:** Choose the best answer.

3. What compound is formed when an acid and a base join?

- (A) liquid nitrogen
- (B) a salt
- (C) glue
- (D) putty

4. If sand and sugar are mixed, how would it taste?

- (F) sweet
- (G) salty
- (H) sour
- (J) bitter

5. Which of the following methods would separate the sugar and sand?

- (A) melt the mixture in a pot
- (B) pour the mixture through a sieve
- (C) pour the mixture into water to dissolve the sugar
- (D) they can't be separated

6. Magdalena has dropped a box of antique needles in a haystack. Some of the needles are made of wood, some are made of iron, and some are made of bone. If she runs a magnet over the haystack, which needles will she be able to find?

- (F) wooden needles
- (G) iron needles
- (H) bone needles
- (J) none of the needles



# Scientific Concepts

## Objective 3

**Expectation:** identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving sugar in water

**DIRECTIONS:** Choose the best answer.

- 1. It is a cold day outside. You are boiling water on your stove next to a window. You notice water droplets on the inside of the window. How did the water get there?**
  - (A) The glass conducted the water from outside.
  - (B) Water evaporated on the glass.
  - (C) Water vapor condensed on the glass.
  - (D) The water radiated through the air to the window.
- 2. Jose got a helium-filled balloon at the circus on Saturday night. Inside the warm tent, his balloon was big and taut. But while he was walking to the car to go home, his balloon started to shrink. By the time he got to the car, the balloon was almost limp. What caused the balloon to shrink?**
  - (F) The air temperature was hotter outside the tent than inside.
  - (G) The air temperature was cooler outside the tent than inside.
  - (H) The temperature was the same, but the air pressure was lower outside.
  - (J) The temperature was the same, but the air pressure was lower inside.
- 3. Which of the following sentences describes a chemical change instead of a physical one?**
  - (A) A copper bracelet gets twisted into a new shape.
  - (B) A copper bracelet gets melted into liquid copper.
  - (C) A copper bracelet turns green when it is worn.
  - (D) A copper bracelet is painted red.
- 4. Jaime dropped a glass bottle. It shattered into many pieces when it hit the ground. What caused the glass to break?**
  - (F) The ground pushed back on the glass with enough force to break the glass.
  - (G) The glass lost heat and became fragile when it fell through the air.
  - (H) The force of gravity caused the chemical change that made the glass weak.
  - (J) The glass vibrates as it falls through the air and the vibration causes it to break.
- 5. Malcolm left a cube of ice in a glass on a windowsill. In about an hour, the ice changed into a clear substance that took on the shape of the lower part of the glass. Finally, after three days, there appeared to be nothing in the glass at all. What states of matter did the ice cube pass through?**
  - (A) liquid then gas then solid
  - (B) solid then liquid then gas
  - (C) gas then liquid then solid
  - (D) solid then gas then liquid
- 6. Jerome wanted to make breakfast. First, he cracked several eggs into a bowl and stirred them briskly. Second, he grated low-fat cheese into the bowl. Third, he ground fresh black pepper into the bowl. After stirring the contents of the bowl, Jerome emptied it into a hot skillet and cooked the ingredients to perfection. Which of the steps is not a physical change?**
  - (F) cracking eggs into a bowl
  - (G) grating the cheese
  - (H) grinding the black pepper
  - (J) cooking the eggs



# Scientific Concepts

## Objective 3

**Expectation:** observe and measure characteristic properties of substances that remain constant such as boiling points and melting points

**DIRECTIONS:** Study Wally's lab notes and then answer questions 1 and 2.

Wally's notes
Properties of Mystery Substance X
Freezing point 11°C
Boiling Point: 89°C

1. At which temperature would Mystery Substance X be a liquid?

- (A) 4°C
- (B) 9°C
- (C) 88°C
- (D) 92°C

2. At which temperature would Mystery Substance X be a gas?

- (F) 4°C
- (G) 10°C
- (H) 88°C
- (J) 92°C

3. Darion is boiling some soup in a pot. He notices that when he takes the lid off the pot, drops of water are clinging to the inside of the lid. The lid was dry when he first put it on the pot. How did the water get from the pot to the inside of the lid?

- (A) It froze there and melted.
- (B) It melted and evaporated.
- (C) It evaporated and condensed.
- (D) It melted and evaporated.

4. Which of the following properties is dependent on the size of the sample?

- (F) density
- (G) melting point
- (H) volume
- (J) solubility

5. Physical properties can be observed \_\_\_\_\_.

- (A) without changing the object
- (B) anytime
- (C) only in direct sunlight
- (D) only with adult supervision

6. What changes when the mass of an object increases while volume stays the same?

- (F) color
- (G) length
- (H) density
- (J) height

7. What word best describes the type of materials that attract iron?

- (A) magnetic
- (B) chemical
- (C) mass
- (D) physical

8. Which is an example of a physical change?

- (F) metal rusting
- (G) silver tarnishing
- (H) water boiling
- (J) paper burning

9. What characteristic best describes what happens during a physical change?

- (A) composition changes
- (B) composition stays the same
- (C) form stays the same
- (D) mass is lost



# Scientific Concepts

## Objective 3

**Expectation:** measure and record changes in the position and direction of the motion of an object to which a force such as a push or pull has been applied

**DIRECTIONS:** Choose the best answer.

- Sam Johnson and his family were moving into their new house when Sam's mother gave him the job of taking a large wooden box out to the storage shed behind the house. Because the box was so heavy, Sam had to drag it. First he dragged it across the gravel in the driveway, then across the rocks around the flowerbed, and finally, across the grass. Over which surface was it easiest to move the box?**
  - The gravel in the driveway.
  - The rocks around the flower bed.
  - The grass.
  - All three surfaces were equal.
- A man standing at the top of the Grand Canyon accidentally knocked some pebbles over the edge. What force will cause them to land?**
  - gravity
  - magnetism
  - friction
  - solar power
- Slippery Sam pours salad oil on the floor because he likes watching people slip when they step on it. Before asking him to oil all the door hinges as punishment, Sam's teacher asks him to explain why oil makes people slip and keeps door hinges from squeaking. If Sam answers correctly, he will say that oil cuts down on \_\_\_\_\_.**
  - gravity
  - inertia
  - friction
  - mass
- If a marble and a baseball are both dropped 10 feet from the ground at the same time, what will happen?**
  - The marble will hit the ground first.
  - The baseball will hit the ground first.
  - The marble and the baseball will hit the ground at the same time.
  - Not Here
- Sandra and Dot were trying out their new skateboards. On level ground, Sandra stood on top of her skateboard, waiting for it to move. Finally, Dot pushed her. Sandra kept rolling even after Dot stopped pushing. She rolled until her skateboard hit the curb. Then, the skateboard stopped, but Sandra sailed into the grass. She was wearing her helmet and pads, so she was not hurt. Dot told her that her actions demonstrated inertia. What did Dot mean by inertia?**
  - The curb had more friction than the skateboard, and Sandra had more friction than the grass.
  - Sandra could not move until something moved her, and she could not stop until something stopped her.
  - Sandra started moving because of gravity, and she stopped moving because of magnetism.
  - Sandra started moving because of kinetic energy and she stopped moving because of potential energy.





# Scientific Concepts

## Objective 3

**Expectation:** *measure and record changes in the position and direction of the motion of an object to which a force such as a push or pull has been applied*

6. Dot decided to go home and ride in her wagon. She asked her brother Jorge to push her. At first, he pushed her very gently. After a while, he pushed harder. Then Sandra came to visit, and Jorge pushed both of them in the wagon at the same time. Which of the following is true?
- (F) Dot went slower when Jorge pushed harder. Dot and Sandra had more gravity than just Dot.
  - (G) Dot went faster when Jorge pushed harder. Dot and Sandra were harder to move than just Dot.
  - (H) Dot went slower when Jorge pushed harder. Dot and Sandra were easier to move than just Dot.
  - (J) Dot went faster when Jorge pushed harder. Dot and Sandra were easier to move than just Dot.
7. A push or pull on an object is called \_\_\_\_\_.
- (A) work
  - (B) force
  - (C) mass
  - (D) friction
8. Brian is pushing his kid sister Kassandra around the yard in a wheelbarrow. Brian always eats healthy meals, so he can push his sister very fast. Right in front of a patch of soft clover, Brian brings the wheelbarrow to a sudden stop. Kassandra sails out of the wheelbarrow. Fortunately, she lands in the soft clover. Why does Kassandra keep moving when the wheelbarrow stops?
- (A) gravity
  - (B) air pressure
  - (C) inertia
  - (D) friction
9. Twin sisters Didi and Pati are riding bicycles home from school. Their bicycles are exactly alike except that Didi's is red and Pati's is blue. Today, it is Pati's turn to carry their schoolbooks in her backpack. When they start pedaling, Pati has to pedal harder than Didi just to keep up with Didi. When they both apply their brakes at the same time, Pati skids just a little farther than Didi. What causes these differences?
- (A) Pati has more inertia than Didi because of the schoolbooks.
  - (B) Pati has more friction than Didi because of her blue bicycle.
  - (C) Didi has more inertia than Pati because of her red bicycle.
  - (D) Didi has more inertia than Pati because of the schoolbooks.
10. What simple machine does not use a force, a load, and a turning point to do work?
- (F) an inclined plane
  - (G) a pulley
  - (H) a lever
  - (J) a screw
11. Officer Hong of the Austin Police Department is practicing shooting bottles with her pistol. Whenever she hits a glass bottle, the glass shatters. The shattering is caused by \_\_\_\_\_.
- (A) heat from the friction of the bullet
  - (B) force from the bullet hitting the glass
  - (C) sound from the bullet being fired
  - (D) light reflected off the bullet hitting the glass



# Scientific Concepts

**Objective**  
**3**

**Expectation:** describe some cycles, structures, and processes that are found in a simple system

**Example:**

Children are trying to get supplies up into their tree house. The simple machine which would be most useful would be a \_\_\_\_\_ .

- (A) pulley
- (B) lever
- (C) wheel and axle
- (D) screw

Answer: (A)

**DIRECTIONS:** Choose the best answer.

1. A weather front passed through the state of Texas today. Low pressure air moved off to the east and was replaced by high pressure air from the west. What kind of weather is most likely to occur in Texas tomorrow?

- (A) thunderstorms
- (B) clear, cooler, and sunny
- (C) warmer and mostly cloudy
- (D) snow

2. Which of the following simple machines makes up the base of a light bulb?

- (F) wheel and axle
- (G) lever
- (H) screw
- (J) pulley

3. A bicycle contains many different simple machines. Which of the following simple machines is the pedal assembly?

- (A) wheel and axle
- (B) lever
- (C) screw
- (D) pulley

4. The application of science knowledge to practical problems is \_\_\_\_\_ .

- (F) pure science
- (G) a hypothesis
- (H) a discovery
- (J) technology

5. Physical science is the study of \_\_\_\_\_ .

- (A) matter
- (B) living things
- (C) energy
- (D) matter and energy

6. When physical scientists study the makeup of matter, they are studying the matter's \_\_\_\_\_ .

- (F) composition
- (G) energy
- (H) behavior
- (J) technology



# Scientific Concepts

## Objective 3

**Expectation:** describe some interactions that occur in a simple system

**DIRECTIONS:** Choose the best answer.

1. A knife or a chisel is an example of what type of simple machine?

- (A) an inclined plane
- (B) a lever
- (C) a wedge
- (D) a pulley

2. Lauren is entering the science fair. For her project, she wants to see which brand of batteries lasts longest: Everglo, Glomor, or Everlasting. Which of the following procedures will give accurate results?

- (F) She should place new batteries into the flashlights that her parents keep in the garage, the kitchen and their bedroom. She should then turn on the flashlights and wait for the batteries to run down.
- (G) She should place leftover batteries from a drawer in the garage into new flashlights. She is lucky that there are some of each of the brands she needs. She should then turn on the flashlights and wait for the batteries to run down.
- (H) She should place new batteries into identical new flashlights. She should then turn on the flashlights and wait for the batteries to run down.
- (J) None of the above procedures will give her good results.

3. A slanted surface used to raise an object is \_\_\_\_\_.

- (A) an inclined plane
- (B) a screw
- (C) an effort ramp
- (D) an efficiency board

4. Which of these would not be part of an aquarium filter system?

- (F) water
- (G) tubing
- (H) food
- (J) filter

5. If Adam rubs a balloon on his hair and holds it up to the wall, what will happen?

- (A) The balloon will be attracted to the wall.
- (B) The balloon will repel from the wall.
- (C) The balloon will pop.
- (D) Nothing will happen.

6. Rayna puts a magnet into a pile of metal paper clips. What will happen?

- (F) Nothing.
- (G) The paper clips will scatter.
- (H) The paper clips will attract to the magnet.
- (J) The magnet will melt the paper clips.

7. A ball bounces into a fish tank full of water. What will happen?

- (A) The ball bounces back out.
- (B) Water splashes out.
- (C) The fish jump out.
- (D) Nothing will happen.



# Scientific Concepts

**Objective 3**

*Expectation: identify patterns of change such as in weather, metamorphosis, and objects in the sky*

**DIRECTIONS:** Choose the best answer.

1. **Picture A** shows the Moon as it looked on **August 1**. **Picture B** shows the Moon as it looked on **August 14**. Which of the following shows how the Moon will look on **August 28**?



Picture A



Picture B



2. **Halley's Comet** appears at a regular interval. In other words, there is the same amount of time between any two sightings. When would you predict that **Halley's Comet** will return?

- (F) 2082
- (G) 2062
- (H) 2031
- (J) 2025

Sightings of Halley's Comet (Year)
1531
1607
1682
1758
1834
1910
1986

**DIRECTIONS:** Read the following passage and answer the questions.

Native Americans named specific full moons according to the seasonal events. March's full moon was the Full Sap Moon, because this is when the maple trees are tapped for their sweet saps. May was the Full Flower Moon, August was Green Corn Moon, and October was Leaf-Falling Moon. Other Native American names related more to events that take place during the entire month. For example, the Cherokee referred to the "month of the cold moon" for today's January, and called March the "month of the windy moon." The Lakota called April the "moon of tender grass."

3. **What would be a good name for July according to the Native Americans?**

- (A) month of the big moon
- (B) month of the summer moon
- (C) month of the new bud moon
- (D) month of the frost moon

4. **We would have a hard time using this naming system for the months because \_\_\_\_\_ .**

- (F) it is hard to translate these expressions into other languages
- (G) not everyone can see the Moon at night
- (H) different parts of the world have different seasons
- (J) most people live in cities



**Objective**

**3**

**Mini-Test**

**DIRECTIONS:** Choose the best answer.

1. The planet Venus is often called the “morning star.” This is because Venus sometimes rises above the horizon very early in the morning before sunrise. Before sunrise, Venus is often the brightest object in the sky. As the Sun rises, Venus becomes fainter and fainter. Predict the day that Venus will rise at 6:00 A.M.

Day	Time that Venus will rise
Sunday	6:24 A.M.
Monday	6:20 A.M.
Tuesday	6:16 A.M.
Wednesday	6:12 A.M.
Thursday	6:08 A.M.

- (A) Thursday  
 (B) Friday  
 (C) Saturday  
 (D) Sunday
2. When designing an experiment, the first step is to \_\_\_\_\_ .
- (F) state a hypothesis  
 (G) list a procedure  
 (H) state the problem  
 (J) analyze the data
3. Rain falls from the sky. What happens to the open ground?
- (A) It gets wet.  
 (B) It stays dry.  
 (C) It covers itself.  
 (D) Nothing.

4. Ice, raindrops, and steam are all \_\_\_\_\_ in different states of matter.

- (F) solids  
 (G) water  
 (H) liquids  
 (J) gases

5. Sorcha squeezed a piece of modeling clay in her hand. She noticed that its shape changed. What was the cause of this physical change?

- (A) pressure from her hand  
 (B) heat from her hand  
 (C) a chemical reaction with her hand  
 (D) potential energy from her hand

6. The eardrum vibrates due to \_\_\_\_\_ in the air of the ear canal.

- (F) compressions and rarefactions  
 (G) compressions only  
 (H) rarefactions only  
 (J) the type of medium

7. Which of the following properties is dependent on the size of the sample?

- (A) ability to attract a magnet  
 (B) weight  
 (C) state of matter  
 (D) color

8. What type of energy transfer produces weather?

- (F) radiation  
 (G) conduction  
 (H) convection  
 (J) atmospheric



# TAKS Science—Objective 4

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The student will demonstrate an understanding of the earth sciences. A basic knowledge of the earth sciences allows students to understand how Earth's physical features are shaped by forces and are continually changing. These changes affect the availability of resources, many of which are limited. The earth sciences lend themselves to the study of many types of systems, cycles, and change. Through the study of the physical features of Earth, the moon, and the sun, students begin to understand the universe as a dynamic system. Earth science concepts learned at the elementary grades and developed in sixth through eighth grades provide the connection for the earth science integrations found in Biology and IPC, which will be assessed at tenth grade and at eleventh grade.

## **(5.12) Science concepts**

The student knows that the natural world includes earth materials and objects in the sky. The student is expected to

- (A)** interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering; *(See page 158.)*
- (C)** identify the physical characteristics of the Earth and compare them to the physical characteristics of the moon. *(See page 159.)*

## **(5.11) Science concepts**

The student knows that certain past events affect present and future events. The student is expected to

- (A)** identify and observe actions that require time for changes to be measurable, including growth, erosion, dissolving, weathering, and flow; *(See page 160.)*
- (B)** draw conclusions about “what happened before” using data such as from tree-growth rings and sedimentary rock sequences; *(See page 161.)*
- (C)** identify past events that led to the formation of the Earth's renewable, non-renewable, and inexhaustible resources. *(See page 162.)*

## **(5.6) Science concepts**

The student knows that some change occurs in cycles. The student is expected to

- (A)** identify events and describe changes that occur on a regular basis such as in daily, weekly, lunar, and seasonal cycles; *(See page 163.)*
- (B)** identify the significance of the water, carbon, and nitrogen cycles. *(See page 164.)*

## **(4.11) Science concepts**

The student knows that the natural world includes earth materials and objects in the sky. The student is expected to

- (A)** test properties of soils including texture, capacity to retain water, and ability to support life; *(See page 165.)*
- (B)** summarize the effects of the oceans on land; *(See page 166.)*
- (C)** identify the Sun as the major source of energy for the Earth and understand its role in the growth of plants, in the creation of winds, and in the water cycle. *(See page 167.)*

**(3.11) Science concepts**

The student knows that the natural world includes earth materials and objects in the sky. The student is expected to

- (A) identify and describe the importance of earth materials including rocks, soil, water, and gases of the atmosphere in the local area and classify them as renewable, nonrenewable, or inexhaustible resources; (See page 168.)
- (C) identify the planets in our solar system and their position in relation to the Sun; (See page 169.)
- (D) describe the characteristics of the Sun. (See page 170.)

**(3.6) Science concepts**

The student knows that forces cause change. The student is expected to

- (B) identify that the surface of the Earth can be changed by forces such as earthquakes and glaciers. (See page 171.)

**(5.5) Science concepts**

The student knows that a system is a collection of cycles, structures, and processes that interact. The student is expected to

- (A) describe some cycles, structures, and processes that are found in a simple system; (See page 172.)
- (B) describe some interactions that occur in a simple system. (See page 173.)

**(4.6) Science concepts**

The student knows that change can create recognizable patterns. The student is expected to

- (A) identify patterns of change such as in weather, metamorphosis, and objects in the sky. (See page 174.)

# Scientific Concepts

## Objective 4

**Expectation:** interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering

### Example:

What is the name of the substance that flows out of a volcano?

- (A) magma
- (B) lava
- (C) ash
- (D) crater

Answer: (B)

**DIRECTIONS:** Choose the best answer.

1. What term describes a mass of snow and ice in motion?

- (A) loess deposit
- (B) glacier
- (C) outwash
- (D) abrasion

2. Christopher was looking at pictures of different mountain ranges in the United States. He was surprised to see that the Appalachian Mountains were smaller and more rounded than the Rocky Mountains. Why do the Appalachian Mountains look old and worn compared to the Rocky Mountains?

- (F) The effect of wind and water caused weathering, wearing away the mountains.
- (G) Too many people and animals traveled across the mountains, causing them to wear away.
- (H) All of the snowfall was so heavy that it weighted down the mountains and caused them to shrink.
- (J) The water that once covered Earth wore away parts of the mountains.

3. During one ice age, most of the state of Illinois was covered by a huge glacier that changed the landscape. Which of the following was not an effect of the glacier on the landscape of that state?

- (A) New mountains were made.
- (B) The peaks of hills were scraped off.
- (C) Many deep valleys were filled in.
- (D) Soil was transported miles away from its origin.

4. What kind of mountains are the Hawaiian Islands?

- (F) fault-block
- (G) volcanic
- (H) upwarped
- (J) folded





# Scientific Concepts

**Objective 4**

**Expectation:** identify the physical characteristics of the Earth and compare them to the physical characteristics of the moon

**DIRECTIONS:** Choose the best answer.

1. Study the chart below and determine what the Moon phase will be during week 6.



- (A)
- (B)
- (C)
- (D)

2. Which is the outermost layer of Earth?

- (F) core
- (G) crust
- (H) mantle
- (J) rim

3. What is the source of moonlight?

- (A) reflected light from stars
- (B) reflected light from moonbeams
- (C) reflected light from the Sun
- (D) reflected light from water

4. The Earth rotates on its axis and revolves around the Sun. The Moon rotates on its axis and revolves around \_\_\_\_\_ .

- (F) the Sun
- (G) Earth
- (H) the planets
- (J) the solar system

5. Like Earth, the Moon's core is \_\_\_\_\_ .

- (A) solid rock
- (B) nitrogen
- (C) molten rock
- (D) made up of craters

6. The gravity of the Moon is about 1/6 of the gravity on Earth. If a person weighs 120 pounds on Earth how much would that person weigh on the Moon?

- (F) 20 pounds
- (G) 60 pounds
- (H) 620 pounds
- (J) 720 pounds



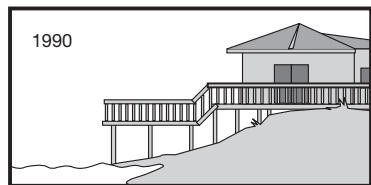
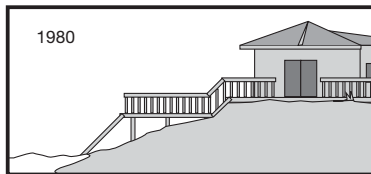
# Scientific Concepts

## Objective 4

**Expectation:** identify and observe actions that require time for changes to be measurable, including growth, erosion, dissolving, weathering, and flow

**DIRECTIONS:** Choose the best answer.

1. Look at the pictures below. What is the most likely cause of the change in the shoreline?



- (A) erosion  
(B) weathering  
(C) an earthquake  
(D) a glacier
2. When Tatiana was five years old, she played on a brand new slide at the park. When she was twenty-five, she went back and looked at the slide. She found it rusted and worn. Which of the following probably had the least to do with the slide wearing out?

- (F) sunlight and solar weathering  
(G) erosion and physical weathering  
(H) water and chemical weathering  
(J) Not Here

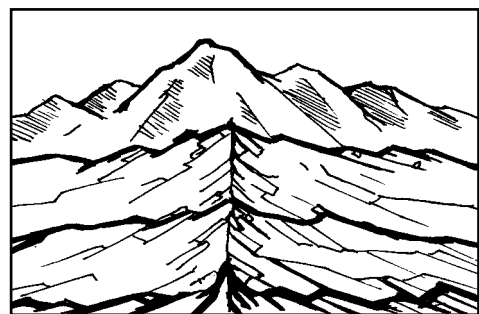
3. What two forces cause erosion?

- (A) water and gravity  
(B) sun and wind  
(C) wind and water  
(D) gravity and wind

4. Mt. Rushmore is a huge monument in the state of South Dakota. The faces of four American presidents are carved into the side of a cliff on the mountain. Every few years, workers spend six weeks hanging over the edge of the cliff. They are sealing cracks in the rock with caulk, the same material used to seal around the edges and bottoms of bathtubs. Which kind of weathering are the workers most likely trying to protect Mt. Rushmore from?

- (F) weathering caused by chemicals that dissolve the rock  
(G) weathering caused by air pollution and acid rain  
(H) weathering caused by tourists  
(J) weathering caused by freezing of water

5. Look at the picture below. It shows high mountains. The layers are made of sedimentary rock. Before the mountains were formed, the sedimentary rocks were in flat layers. How were the mountains formed?



- (A) The rock layers were squeezed together.  
(B) The rock layers were pulled apart.  
(C) The rock layers were pushed up.  
(D) The rock layers went in opposite directions.



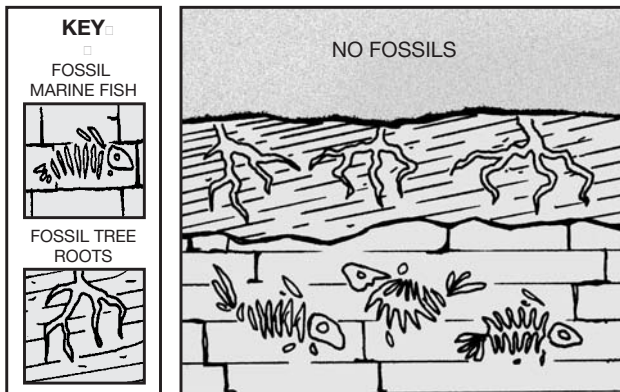
# Scientific Concepts

## Objective 4

**Expectation:** draw conclusions about "what happened before" using data such as from tree-growth rings and sedimentary rock sequences

**DIRECTIONS:** Choose the best answer.

1. Below is a cut-away view of three underground rock layers. The top layer is made of a sedimentary rock called shale. It has tree-root fossils at the top of the layer. The bottom layer is made of a marine sedimentary rock called limestone. It has fish fossils in it. Which story does the slice of the earth tell?



- (A) First, a volcano erupted, and lava covered the area. Then, trees grew on the cooled lava. Finally, the ocean washed over the trees and killed them.
- (B) First, a forest covered the area. Then a volcano erupted and hot lava killed the trees in the forest. Then, the ocean flowed over the lava.
- (C) First, an ocean covered the area. Then, sea level was lowered, and trees grew on the dry land. Finally, lava from a volcano covered the area.
- (D) First, a forest covered the area. Then the ocean washed over the trees and killed them. Finally, lava from a volcano covered the area.

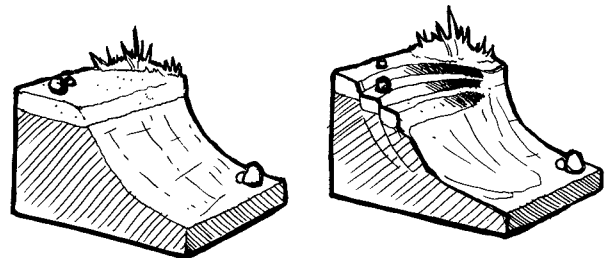
2. Fossils are usually found in \_\_\_\_\_ rocks.

- (F) igneous  
(G) sedimentary  
(H) metamorphic  
(J) striped

3. A geologist finds a rock sample that contains a fossil. What can she conclude from this?

- (A) It is a mineral.  
(B) It is a sedimentary rock.  
(C) It was formed in the recent past.  
(D) The fossil shows a plant that is now extinct.

4. Study the pictures below. Which of the following most likely caused the change shown in the two pictures?



- (F) a tornado  
(G) a flood  
(H) gravity  
(J) friction



# Scientific Concepts

## Objective 4

**Expectation:** identify past events that led to the formation of the Earth's renewable, non-renewable, and inexhaustible resources

**DIRECTIONS:** Choose the best answer.

1. Fossil fuels are \_\_\_\_\_ .

- (A) renewable resources
- (B) nonrenewable resources
- (C) inexhaustible resources
- (D) Not Here

2. It is possible that we are using fossil fuels \_\_\_\_\_ .

- (F) slower than they are replaced
- (G) at just the right speed
- (H) too little
- (J) faster than they are replaced

3. The majority of our energy needs come from \_\_\_\_\_ .

- (A) coal
- (B) oil
- (C) natural gas
- (D) all of the above

4. Solar energy is \_\_\_\_\_ .

- (F) a renewable resource
- (G) a nonrenewable resource
- (H) an inexhaustible resource
- (J) Not Here

5. Alternative sources of energy include all of the following except \_\_\_\_\_ .

- (A) wind
- (B) water
- (C) sun
- (D) soil

6. Energy that uses rocks heated by magma is called \_\_\_\_\_ .

- (F) geodesic energy
- (G) geographic energy
- (H) sauna energy
- (J) geothermal energy

7. What does nuclear energy produce?

- (A) solar energy
- (B) radioactive waste
- (C) conservation
- (D) nonrenewable resources

8. Which of the following is an example of a fossil fuel?

- (F) wind
- (G) water
- (H) natural gas
- (J) uranium

9. What kind of resource can be mined for a profit?

- (A) solar cell
- (B) wind
- (C) dam
- (D) ore

10. What kind of energy is generated by large dams built on rivers?

- (F) wind
- (G) nuclear
- (H) hydroelectric
- (J) solar



# Scientific Concepts

## Objective 4

**Expectation:** identify events and describe changes that occur on a regular basis such as in daily, weekly, lunar, and seasonal cycles

**DIRECTIONS:** Choose the best answer.

1. When a puddle of water disappears after the sun comes out, it is called \_\_\_\_\_ .

- (A) displacement
- (B) metamorphosis
- (C) isolation
- (D) evaporation

2. Fatima went to the library. She looked up the average amount of rain that fell in El Paso, Texas, during the month of November for each of the last ten years. What can she predict with this information?

- (F) She can predict about how much it will rain in El Paso, Texas, next April.
- (G) She can predict about how much it will rain in Chicago, Illinois, next November.
- (H) She can predict about how much it will rain in El Paso, Texas, next November.
- (J) She can predict about how much it will rain in Houston, Texas, next November.

3. A high-pressure air mass usually causes \_\_\_\_\_ .

- (A) dry, clear weather
- (B) rainy weather
- (C) cloudy, humid weather
- (D) snowy weather

4. Water vapor forming droplets that form clouds directly involves which process?

- (F) condensation
- (G) respiration
- (H) evaporation
- (J) transpiration

5. What do plants make that requires nitrogen?

- (A) sugars
- (B) proteins
- (C) fats
- (D) carbohydrates

6. Which of the following processes removes carbon dioxide from the air?

- (F) condensation
- (G) photosynthesis
- (H) burning
- (J) respiration

7. Earth receives a constant supply of which of the following items?

- (A) light energy
- (B) carbon
- (C) nitrogen
- (D) water

8. Which of these is an energy source for chemosynthesis?

- (F) sunlight
- (G) moonlight
- (H) sulfur molecules
- (J) carnivores



# Scientific Concepts

## Objective 4

**Expectation:** identify the significance of the water, carbon, and nitrogen cycles

### Example:

Where does most of the water in the water cycle come from?

- (A) rivers
- (B) lakes
- (C) oceans
- (D) reservoirs

Answer: (C)

**DIRECTIONS:** Choose the best answer.

1. When you recycle paper, you help keep the carbon dioxide-oxygen cycle running. Why is this statement true?

- (A) When paper is recycled, the process releases oxygen back into the environment.
- (B) Carbon dioxide is trapped in the paper, and recycling releases it.
- (C) The machinery used to recycle paper releases oxygen.
- (D) Recycling paper saves trees which use carbon dioxide and release oxygen.

2. Most of Earth's water is in \_\_\_\_\_ .

- (F) glaciers
- (G) lakes
- (H) streams
- (J) the oceans

3. All the water that is found at Earth's surface is the \_\_\_\_\_ .

- (A) carbosphere
- (B) hydrosphere
- (C) precipitation
- (D) pollution

4. Ninety-seven percent of the water on Earth is \_\_\_\_\_ .

- (F) salt water
- (G) freshwater
- (H) rainwater
- (J) fog

5. Two-thirds of the freshwater is \_\_\_\_\_ .

- (A) in streams
- (B) in the ocean
- (C) frozen in ice caps at the poles
- (D) in city sewer systems

6. The nitrogen cycle describes how nitrogen in the air enters the soil and becomes part of \_\_\_\_\_ .

- (F) people
- (G) animals
- (H) living organisms
- (J) rocks

7. The carbon cycle describes how carbon cycles between the atmosphere and \_\_\_\_\_ .

- (A) people
- (B) animals
- (C) living organisms
- (D) rocks



# Scientific Concepts

## Objective 4

**Expectation:** test properties of soils including texture, capacity to retain water, and ability to support life

### Example:

Sandstone is an example of what kind of rock?

- (A) igneous
- (B) sedimentary
- (C) metamorphic
- (D) mineral

Answer: (B)

**DIRECTIONS:** Choose the best answer.

1. Which of the following would not help you identify a mineral?

- (A) buoyancy
- (B) hardness
- (C) streak
- (D) cleavage

2. What can result when poor farming practices occur in areas that receive little rain?

- (F) ice wedging
- (G) oxidation
- (H) leaching
- (J) desert formation

3. In what region is chemical weathering most rapid?

- (A) cold, dry
- (B) cold, moist
- (C) warm, moist
- (D) warm, dry

4. What is a mixture of weathered rock and organic matter called?

- (F) soil
- (G) limestone
- (H) carbon dioxide
- (J) clay

5. What is another term for decayed organic matter?

- (A) leaching
- (B) humus
- (C) soil
- (D) sediment

6. What does no-till farming help prevent?

- (F) leaching
- (G) crop rotation
- (H) overgrazing
- (J) soil erosion



# Scientific Concepts

**Objective***Expectation: summarize the effects of the oceans on land***4****DIRECTIONS:** Choose the best answer.

1. Which of the following features of the ocean floor is the deepest?

- (A) a trench
- (B) a continental shelf
- (C) a seamount
- (D) an abyssal plain

2. What is desalination?

- (F) the process of water evaporating and condensing
- (G) the process of removing dissolved salts from seawater and making it useable
- (H) the process of adding salt to fresh water
- (J) the process of removing groundwater

3. When the Moon, Earth, and the Sun are in a line, tidal range is \_\_\_\_\_.

- (A) unchanged
- (B) unpredictable
- (C) lowest
- (D) greatest

4. Motions in the oceans caused by gravity are called \_\_\_\_\_.

- (F) upwellings
- (G) waves
- (H) currents
- (J) tides

5. When the Sun, the Moon, and Earth form a 90° angle, we have \_\_\_\_\_ tides.

- (A) spring
- (B) neap
- (C) normal
- (D) fall

6. Currents that are caused by winds are called \_\_\_\_\_ currents.

- (F) upwelling
- (G) cold water
- (H) warm water
- (J) surface

7. In some places, a circulation in the ocean brings deep, cold water to the surface. These \_\_\_\_\_ bring nutrients to the surface, resulting in good fishing areas.

- (A) upwellings
- (B) crests
- (C) tides
- (D) currents

8. When one mass of ocean water meets a second mass of greater density, the second mass may \_\_\_\_\_ the first to form a density current.

- (F) rub against
- (G) sink under
- (H) rise over
- (J) warm up





# Scientific Concepts

## Objective 4

**Expectation:** identify the Sun as the major source of energy for the Earth and understand its role in the growth of plants, in the creation of winds, and in the water cycle

### Why Are There Seasons?

Earth revolves around the Sun. It also spins on an invisible axis that runs through its center.

It takes 365 1/4 days, or one year, for Earth to revolve once around the Sun. Just as the Moon moves in an orbit around Earth, Earth moves around the Sun. Earth does not move in a perfect circle. Its orbit is an ellipse, which is a flattened circle, like an oval. As Earth revolves around the Sun in an elliptical shape, it spins on its invisible axis.

Earth's axis of rotation is not straight up and down, it is tilted. This important feature produces the seasons on Earth. No matter where Earth is in its rotation around the Sun, its axis is tilted in the same direction and at the same angle. So, as Earth moves, different parts of it are facing the Sun and different parts are facing away. The North Pole is tilting toward the Sun in June, so the northern half of Earth is enjoying summer. In December, the North Pole is tilted away from the Sun, so the northern part of the world experiences winter.

This important relationship between Earth and the Sun determines how hot and cold we are, when we plant our crops, and whether we have droughts or floods.

**DIRECTIONS:** Read the selection. Choose the best answer.

1. If North America is having summer, what season would the Australians be enjoying?

- (A) spring
- (B) summer
- (C) winter
- (D) fall

2. What would happen if Earth's axis were not tilted, but straight up and down?

- (F) Nothing would change.
- (G) Earth wouldn't change seasons.
- (H) It would always be summer on Earth.
- (J) It would always be winter on Earth.

3. Earth's orbit is \_\_\_\_\_ .

- (A) a circle
- (B) a square
- (C) a figure eight
- (D) an ellipse

4. If there are 24 consecutive hours of daylight, then \_\_\_\_\_ .

- (F) it is summer near the North Pole
- (G) you are experiencing a large building's microclimate
- (H) it is the spring equinox at the equator
- (J) it is a warm day in a temperate zone



# Scientific Concepts

## Objective 4

**Expectation:** identify and describe the importance of earth materials including rocks, soil, water, and gases of the atmosphere in the local area and classify them as renewable, nonrenewable, or inexhaustible resources

### Example:

Geologists rate the hardness of minerals using \_\_\_\_\_ .

- (A) the International Hardness Index
  - (B) Moh's Hardness Scale
  - (C) the Mineral Hardness Indicator
  - (D) the Roosevelt Hardness Scale
- (B) Answer

**DIRECTIONS:** Choose the best answer.

**1. What determines a mineral's cleavage?**

- (A) the way its atoms are arranged
- (B) its temperature
- (C) its size
- (D) its density

**2. The property that describes how a mineral's surface shines is called \_\_\_\_\_ .**

- (F) cleavage
- (G) luster
- (H) hardness
- (J) streak

**3. Marble is an example of what type of rock?**

- (A) metamorphic
- (B) igneous
- (C) sedimentary
- (D) shale

**4. Which of these is not a type of rock?**

- (F) metamorphic
- (G) fragmentary
- (H) sedimentary
- (J) igneous

**5. Many power companies burn coal to make electricity. Some power companies burn coal that contains high amounts of an element called sulfur. When this coal is burned, the sulfur combines with oxygen to form a poisonous gas called sulfur dioxide. When the sulfur dioxide gas is released into the atmosphere, it combines with water to form a powerful chemical called sulfuric acid. When it rains, the sulfuric acid returns to Earth as acid rain. How does acid rain change the environment?**

- (A) Acid rain helps clean buildings and roads.
- (B) Acid rain harms plants and animals.
- (C) Acid rain returns valuable nutrients to the soil.
- (D) Acid rain helps clean polluted water.

**6. A renewable resource can be replaced. A nonrenewable resource cannot be replaced. Which of the following is a nonrenewable source of energy?**

- (F) solar power
- (G) gas power
- (H) wind power
- (J) water power

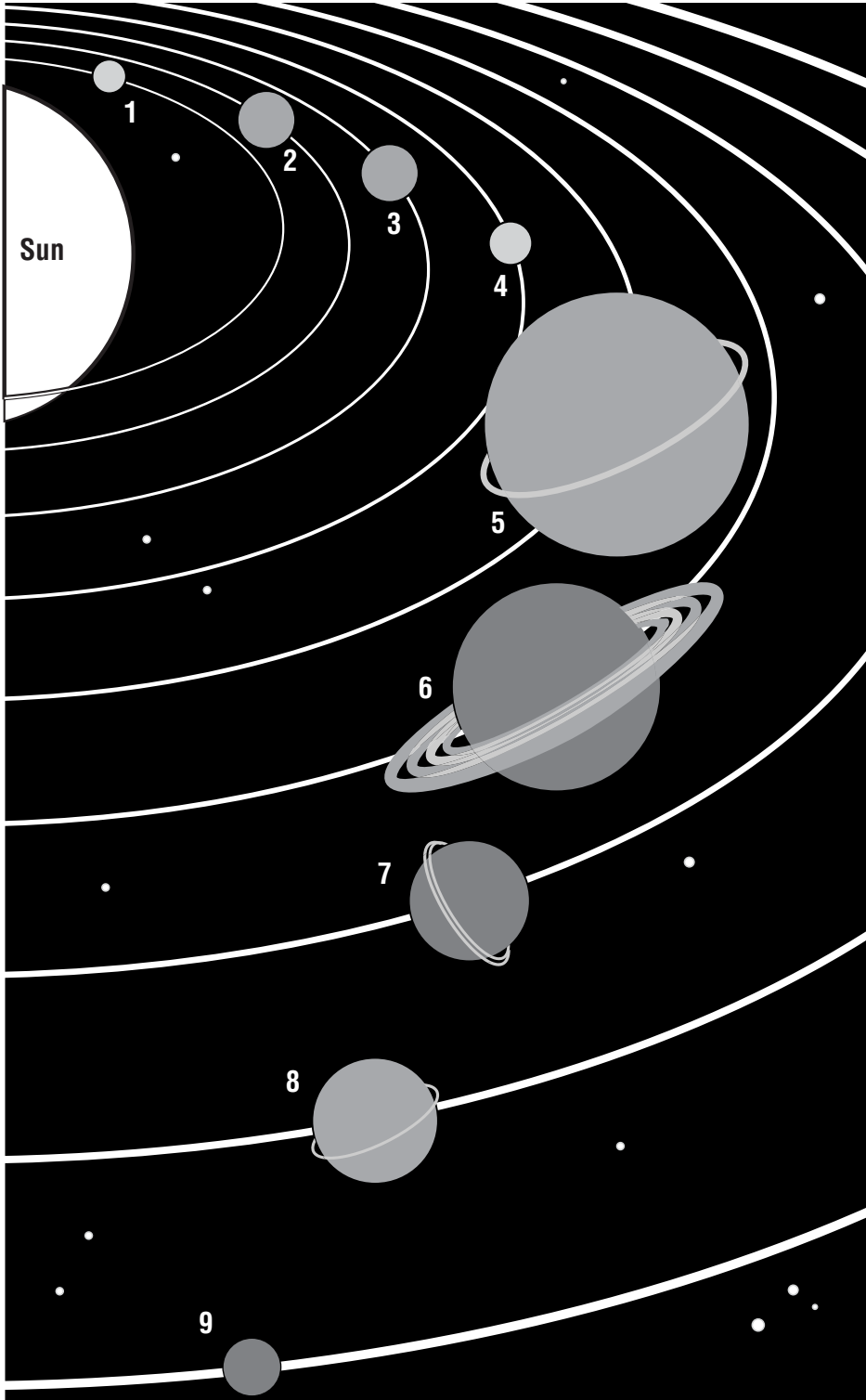


# Scientific Concepts

**Objective**  
**4**

**Expectation:** identify the planets in our solar system and their position in relation to the Sun

**DIRECTIONS:** Fill in the blanks with the names of planets according to their correct order from the Sun.



1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_



# Scientific Concepts

**Objective**  
**4**

**Expectation:** describe the characteristics of the Sun

**Example:**

**What causes the Sun to appear to rise and set?**

- (A) Earth's revolution
- (B) the Sun's revolution
- (C) Earth's rotation
- (D) Earth's elliptical orbit

(C) Answer

**DIRECTIONS:** Choose the best answer.

1. The Sun is a major source of \_\_\_\_\_ for changes on Earth's surface.

- (A) energy
- (B) heat
- (C) light
- (D) radiation

2. The Sun loses energy by emitting \_\_\_\_\_ .

- (F) energy
- (G) heat
- (H) light
- (J) radiation

3. Sunlight consists of all of the following, except \_\_\_\_\_ .

- (A) visible light
- (B) infrared
- (C) ultraviolet radiation
- (D) microwaves

4. The Sun is \_\_\_\_\_ .

- (F) a black hole
- (G) a white dwarf
- (H) an average star
- (J) a red giant

5. The Sun is the central and \_\_\_\_\_ body in the solar system.

- (A) largest
- (B) smallest
- (C) fastest
- (D) slowest

6. The Sun is made primarily of \_\_\_\_\_ .

- (F) helium
- (G) hydrogen
- (H) helium and hydrogen
- (J) water

7. The path of a planet around the Sun is due to \_\_\_\_\_ .

- (A) the gravitational attraction between the Sun and the planet
- (B) the gravitational attraction between the planets
- (C) the gravitational attraction between the moons and the planet
- (D) the elliptical orbit of the planet

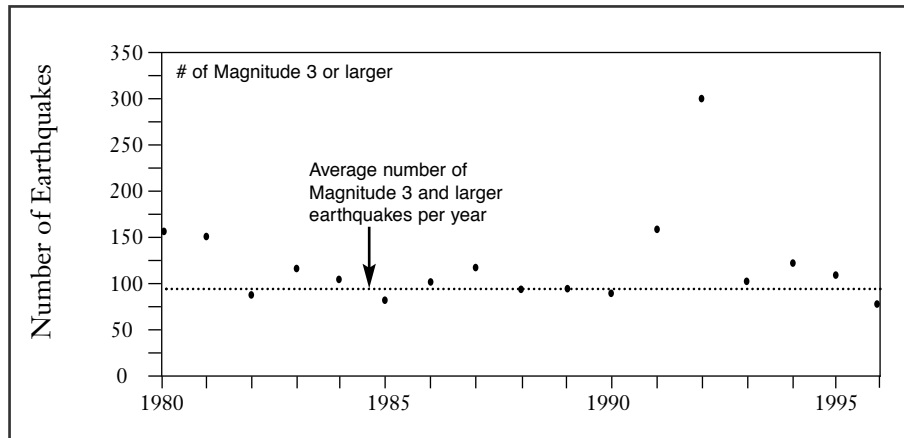


# Scientific Concepts

## Objective 4

**Expectation:** identify that the surface of the Earth can be changed by forces such as earthquakes and glaciers

**North Coast California: Number of Earthquakes per Year**



**DIRECTIONS:** Study the graph below, and then answer numbers 1–4.

1. In what year did the greatest number of earthquakes occur?

- (A) 1990
- (B) 1991
- (C) 1992
- (D) 1993

2. In what year did the fewest number of earthquakes occur?

- (F) 1981
- (G) 1986
- (H) 1991
- (J) 1996

3. Based on the data, what is an average number of earthquakes per year on the North Coast of California?

- (A) about 250
- (B) about 150
- (C) about 100
- (D) about 50

4. An earthquake is caused by an abrupt shift in the Earth along a fracture, or \_\_\_\_\_.

- (F) fault
- (G) seismic wave
- (H) Geiger counter
- (J) plate

**DIRECTIONS:** Choose the best answer.

5. Igneous rocks are formed \_\_\_\_\_.

- (A) by volcanoes
- (B) by heat and pressure deep inside Earth
- (C) in layers
- (D) in ocean beds

6. What part of Earth lies just below the crust?

- (F) the core
- (G) the mantle
- (H) the oceans
- (J) the faults



# Scientific Concepts

**Objective**  
**4**

**Expectation:** describe some cycles, structures, and processes that are found in a simple system

**Example:**

Every day, Ryan passes a field of sunflowers on his way to school. The flowers are mostly facing east. On his way home from school, he notices that they are almost all facing west. At 4:00 P.M. on Saturday, he decides to ride his bike to the schoolyard to play on the swings. Predict which way most of the sunflowers will be facing when Ryan passes them on Saturday.

- (A) north
- (B) south
- (C) east
- (D) west

(D) Answer:

**DIRECTIONS:** Choose the best answer.

1. **Mussels and barnacles have adapted to the wave action of what?**

- (A) sandy beach
- (B) rocky shore
- (C) open ocean
- (D) estuary

2. **In an energy pyramid, which level has the most available energy?**

- (F) first
- (G) second
- (H) third
- (J) fourth

3. **What determines the climate of an area?**

- (A) plankton
- (B) succession
- (C) plants and animals
- (D) temperature, elevation, precipitation

4. **Tundra, taiga, grassland, and desert are examples of \_\_\_\_\_ .**

- (F) ecosystems
- (G) biomes
- (H) habitats
- (J) communities

5. **What is a treeless, cold, and dry biome called?**

- (A) taiga
- (B) tundra
- (C) desert
- (D) grassland

6. **Which is not a grassland?**

- (F) pampas
- (G) veldt
- (H) steppe
- (J) estuary



# Scientific Concepts

## Objective 4

**Expectation:** describe some interactions that occur in a simple system

**DIRECTIONS:** Study the chart that shows how much one school has helped the environment. Then answer questions 1–3.

Conservation Efforts at Coe School			
Year	Pounds of Paper Recycled	Pounds of Cans Recycled	Number of Trees Planted
1990	550	475	120
2000	620	469	250
2001	685	390	320

1. Which sentence is true about paper recycling at Coe School?

- (A) Students recycled more paper each year.
- (B) Students recycled less paper each year.
- (C) Students never recycled paper.
- (D) Students recycled the same amount of paper each year.

2. Which conservation project did not show better results each year?

- (F) recycling paper
- (G) recycling cans
- (H) planting trees
- (J) They all showed better results each year.

3. Which of the following is the most likely reason for the decrease in can recycling at Coe School?

- (A) Students reduced the amount of canned beverages they were drinking.
- (B) Students found new uses for their cans.
- (C) Students saved their cans.
- (D) Students began recycling their cans at home.

4. What is made up of all populations in an area?

- (F) niche
- (G) habitat
- (H) community
- (J) ecosystem

5. What does the number of individuals in a population occupying an area of a specific size describe?

- (A) clumping
- (B) size
- (C) spacing
- (D) density

6. What is a relationship in which one organism is helped and the other is harmed?

- (F) mutualism
- (G) symbiosis
- (H) commensalism
- (J) parasitism



# Scientific Concepts

## Objective 4

**Expectation:** identify patterns of change such as in weather, metamorphosis, and objects in the sky

**DIRECTIONS:** Choose the best answer.

1. Warm, low pressure air can hold more water than cold air. As warm air rises, it cools, causing water vapor to gather together, or condense, into water drops. Cold air sinks, and this cold air pressing downward creates higher air pressure. As cold air sinks, it warms up, which causes water drops to evaporate. What kind of weather probably goes along with high air pressure?

- (A) clouds and rain
- (B) clouds without rain
- (C) clear skies
- (D) tornadoes

2. A rainstorm is an example of

- (F) precipitation
- (G) evaporation
- (H) condensation
- (J) reformulation

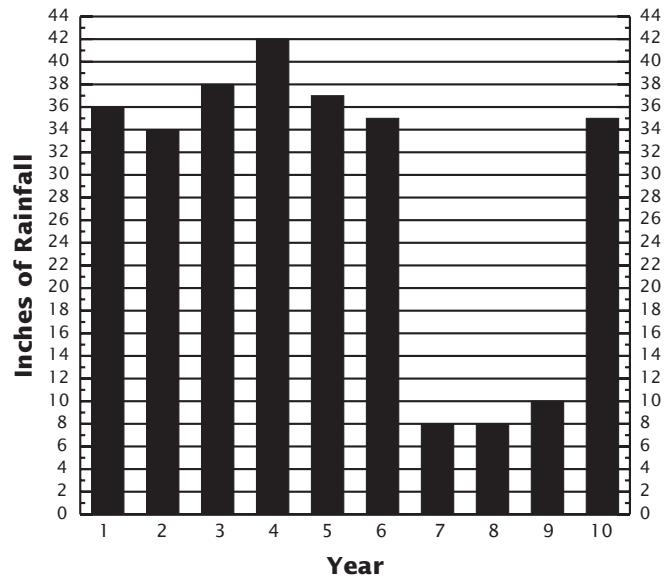
3. Which of these is not a type of cloud?

- (A) cirrus
- (B) cumulus
- (C) humerus
- (D) stratus

4. What does a meteorologist use to measure air pressure?

- (F) barometer
- (G) kilometer
- (H) odometer
- (J) thermometer

**DIRECTIONS:** Study the graph of rainfall in Kansas, and then do numbers 5 and 6.



5. What weather condition is suggested by the rainfall data for years 7-9?

- (A) flood
- (B) tornado
- (C) hurricane
- (D) drought

6. Which period of time showed the greatest increase in rainfall?

- (F) from year 2 to year 3
- (G) from year 6 to year 7
- (H) from year 7 to year 8
- (J) from year 9 to year 10





**Objective**

For pages 158–174

**4****Mini-Test****DIRECTIONS:** Choose the best answer.**1. Which energy resource uses heat from below Earth's crust?**

- (A) solar energy
- (B) geothermal energy
- (C) hydroelectric energy
- (D) photovoltaic energy

**2. What is a comet?**

- (F) a fragment of an asteroid that revolves around the Sun
- (G) a large ball of frozen dust and gas that is pulled through the solar system by the Sun's gravity
- (H) a small, planet-like mass that orbits the sun between the orbits of Mars and Jupiter
- (J) a cold, rocky sphere that orbits Earth

**3. What occurs when weathered rock and organic matter are mixed together?**

- (A) leaching
- (B) oxidation
- (C) soil erosion
- (D) soil formation

**4. What results in a change in a rock's composition?**

- (F) chemical weathering
- (G) ice wedging
- (H) leaching
- (J) mechanical weathering

**5. \_\_\_\_\_ leaving the Sun reaches Earth.**

- (A) All of the light
- (B) None of the light
- (C) Most of the light
- (D) A tiny fraction of the light

**6. What is it called when rocks break down without changing in chemical composition?**

- (F) chemical weathering
- (G) oxidation
- (H) mechanical weathering
- (J) leaching

**7. The oceans were formed when precipitation filled low areas on Earth called \_\_\_\_\_ .**

- (A) basins
- (B) troughs
- (C) salt marshes
- (D) harbor channels

**8. The property of minerals indicated by breaking with rough edges is \_\_\_\_\_ .**

- (F) luster
- (G) streak
- (H) fracture
- (J) cleavage

**9. In the water cycle, how is water returned to the atmosphere?**

- (A) evaporation
- (B) condensation
- (C) precipitation
- (D) fixation



10. The water cycle occurs between Earth and the \_\_\_\_\_ .

- (F) hydrosphere
- (G) atmosphere
- (H) stratosphere
- (J) biosphere

11. Johann showed a rock to his Aunt Gordy, a geologist. She said that it looked as though it had been in a river or stream for a long time. Which of the following is most likely to be true?

- (A) The rock contains stripes of lots of colors
- (B) The rock contains very old fossils.
- (C) The rock is rough with very sharp edges.
- (D) The rock is smooth with rounded edges.

12. \_\_\_\_\_ rocks are formed by volcanic activity.

- (F) Igneous
- (G) Sedimentary
- (H) Metamorphic
- (J) Shiny

13. When many windmills are located in one place in order to generate electricity, what do they form?

- (A) wind farm
- (B) dam
- (C) oil well
- (D) nuclear reactor

14. What type of wind erosion leaves pebbles and rocks behind?

- (F) deflation
- (G) loess
- (H) abrasion
- (J) sandblasting

15. Rocks that are formed from magma that has cooled and hardened are called \_\_\_\_\_ .

- (A) metamorphic
- (B) sedimentary
- (C) conglomerate
- (D) igneous

16. Identify the statement that is NOT true for streams.

- (F) The more sediment a stream carries, the more new sediment it creates.
- (G) Over time, a stream gets wider and shallower.
- (H) A stream flows more quickly after a heavy rain.
- (J) A stream slows down as its slope increases.

17. Which does not contain freshwater?

- (A) lakes
- (B) ponds
- (C) rivers
- (D) oceans

18. Climate is different from weather in that it \_\_\_\_\_ .

- (F) changes more rapidly
- (G) changes less rapidly
- (H) is more extreme
- (J) gets more attention on television

19. Opposite extremes of day and night temperatures are associated with \_\_\_\_\_ .

- (A) high deserts
- (B) areas near the oceans when there are tidal waves
- (C) the greenhouse effect
- (D) the tropics



# How Am I Doing?

<b>Objective 1 Mini-Test</b>  Page 122 <b>Number Correct</b>  <input type="text"/>	5 answers correct	<b>Great Job!</b> Move on to the section test on page 179.
	3–4 answers correct	<b>You're almost there!</b> But you still need a little practice. Review practice pages 114–121 before moving on to the section test on page 179.
	0–2 answers correct	<b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 114–121. Then retake the test on page 122. Now move on to the section test on page 179.
<b>Objective 2 Mini-Test</b>  Page 140 <b>Number Correct</b>  <input type="text"/>	3 answers correct	<b>Awesome!</b> Move on to the section test on page 179.
	2 answers correct	<b>You're almost there!</b> But you still need a little practice. Review practice pages 125–139 before moving on to the section test on page 179.
	0–1 answers correct	<b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 125–139. Then retake the test on page 140. Now move on to the section test on page 179.

# How Am I Doing?

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<b>Objective 3 Mini-Test</b>  Page 155 <b>Number Correct</b> <input type="text"/>	<b>7–8</b> answers correct	<b>Great Job!</b> Move on to the section test on page 179.
	<b>5–6</b> answers correct	<b>You're almost there!</b> But you still need a little practice. Review practice pages 142–154 before moving on to the section test on page 179.
	<b>0–4</b> answers correct	<b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 142–154. Then retake the test on page 155. Now move on to the section test on page 179.
<b>Objective 4 Mini-Test</b>  Page 175 <b>Number Correct</b> <input type="text"/>	<b>16–19</b> answers correct	<b>Awesome!</b> Move on to the section test on page 179.
	<b>10–15</b> answers correct	<b>You're almost there!</b> But you still need a little practice. Review practice pages 158–174 before moving on to the section test on page 179.
	<b>0–10</b> answers correct	<b>Oops!</b> Time to review what you have learned and try again. Review the practice section on pages 158–174. Then retake the test on page 175. Now move on to the section test on page 179.

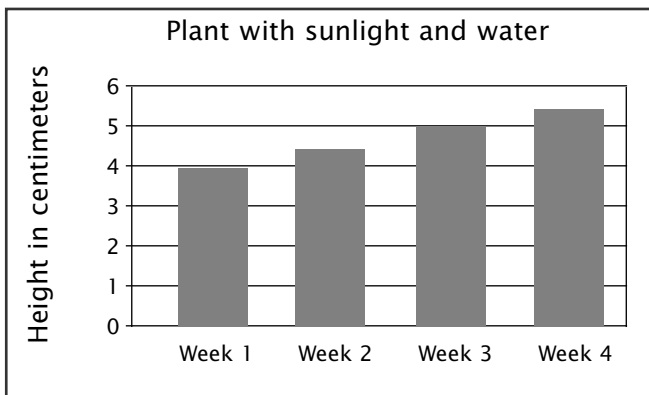
# Final Test for Science

for pages 114–176

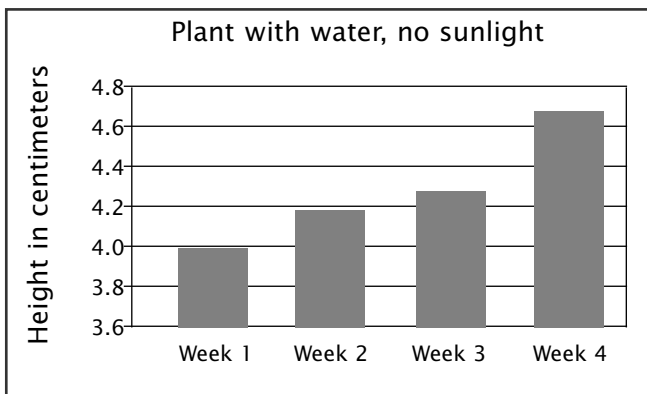
**DIRECTIONS:** Read about Zoe's experiment and study her graphs. Then answer the questions.

Zoe wanted to find out how sunlight and water affect a plant's growth. She did an experiment with three different scenarios. Plant A received both water and sunlight. Plant B received water, but no sunlight, and Plant C received sunlight, but no water. Her results are graphed below.

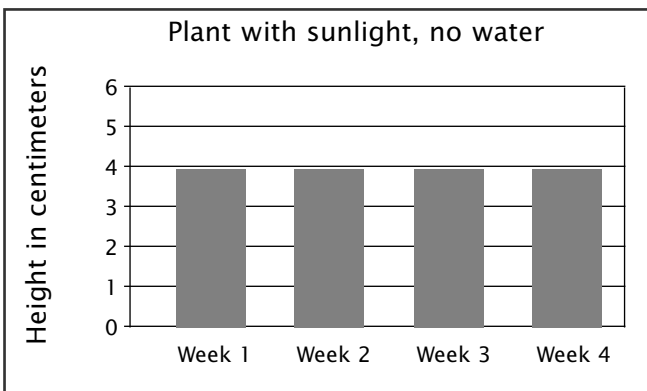
### Plant A



### Plant B



### Plant C



1. Which of the following was a variable in Zoe's experiment?

- (A) type of soil
- (B) amount of water
- (C) type of plant
- (D) duration of experiment

2. Which plant showed the least growth?

- (F) Plant A
- (G) Plant B
- (H) Plant C
- (J) All are equal.

**DIRECTIONS:** Choose the best answer for each question.

3. Which of the following statements about plants is not true?

- (A) Plant cells have chlorophyll.
- (B) Plants get food from outside themselves.
- (C) Plants have limited movement.
- (D) Plants have the ability to reproduce.

4. The process in which a plant creates food is called \_\_\_\_\_.

- (F) photosynthesis
- (G) chloroplast
- (H) reproduction
- (J) budding

5. Which of these is an example of camouflage?

- (A) The stick insect resembles the twig on which it sits.
- (B) The young joey grows and develops in its mother's pouch.
- (C) The anteater has a long, slender snout and a long tongue, which it can thrust into anthills.
- (D) The porcupine is covered with long sharp quills.



**DIRECTIONS:** Read about the experiments, and then answer the questions.

Adam wants to find out how lemon juice reacts when it is combined with different substances. In three separate paper cups, he puts equal amounts of baking soda, salt, and sugar. Then he puts 3 drops of lemon juice into each cup. After 30 seconds, he observes all three cups.

**6. What is the variable in this experiment?**

- (F) the lemon juice
- (G) the time passed
- (H) the size of the cup
- (J) the type of substance tested

Lily and Corey want to find out how heat, color, and temperature are related. They line one shoebox with white paper and another with black paper. Then they put a thermometer in each shoebox. They place both shoeboxes outside in the sun for one hour. At the start of the experiment, the temperature in both boxes was 72°F. At the end of the hour, the box with the white paper showed a temperature of 85°F, and the box with the black paper showed a temperature of 92°F.

**7. What conclusion can Lily and Corey make?**

- (A) The color of the paper had no effect on the temperature in the box.
- (B) The black paper absorbed more heat than the white paper.
- (C) The white paper absorbed more heat than the black paper.
- (D) One of the thermometers was broken.

**8. The esophagus, stomach, and small intestine are all part of the \_\_\_\_.**

- (F) digestive system
- (G) respiratory system
- (H) circulatory system
- (J) muscular system

**9. Which animal is highest in the food chain?**

- (A) insect
- (B) snake
- (C) rat
- (D) bear

**10. Which animal would be lowest on a food chain?**

- (F) frog
- (G) mosquito
- (H) duck
- (J) man

**11. Look at the food chain. Which missing animal might fit in the space?**

grasshopper



frog



hawk

- (A) shrub
- (B) grass
- (C) snake
- (D) elephant

**12. Which of these would not be found in a desert ecosystem?**

- (F) cactus
- (G) lizard
- (H) otter
- (J) tortoise



13. Which animal would not be found in a pond ecosystem?
- (A) rabbit
  - (C) insect
  - (B) fish
  - (D) frog

14. Baseball pitchers use several forces to change the motion of the ball. One force is the strong push from the pitcher's arm that starts the ball moving toward home plate. What force pulls the ball down as it moves?
- (F) velocity
  - (G) friction
  - (H) inertia
  - (J) gravity

15. Study the chart below. What will the moon phase probably be on March 27?

Date	Moon Phase
December 29	Full moon
January 5	Last quarter
January 11	New moon
January 19	First quarter
January 27	Full moon
February 3	Last quarter
February 10	New moon
February 18	First quarter
February 26	Full moon

- (A) full moon
- (B) last quarter
- (C) new moon
- (D) first quarter

16. A rule or principle that describes the behavior of something in nature is a \_\_\_\_\_ .
- (F) scientific law
  - (G) hypothesis
  - (H) theory
  - (J) variable

17. Renaldo shuffles his feet as he walks across the carpet on a cool, dry day. What will happen when he touches the TV screen?
- (A) The TV will turn on.
  - (B) The TV will turn off.
  - (C) A spark will pass between Renaldo and the TV.
  - (D) Nothing will happen.

18. When water melts from an ice cube, this is an example of a physical change. The water changes from a \_\_\_\_\_ .
- (F) solid to a gas
  - (G) liquid to a vapor
  - (H) solid to a liquid
  - (J) liquid to solid

19. Tuesday afternoon there was a summer shower in Dallas. The next day Josh noticed the water puddle on the sidewalk in front of his house was becoming smaller and smaller. Which of the following explains what happened to the water?
- (A) It condensed.
  - (B) It evaporated.
  - (C) It melted.
  - (D) It froze.

20. Which of these is the innermost layer of Earth?
- (F) mantle
  - (G) core
  - (H) crust
  - (J) trench

21. Which of the following properties is not dependent on the size of the sample?
- (A) mass
  - (B) weight
  - (C) volume
  - (D) density



22. How does the Sun's energy reach us?

- (F) conduction
- (G) convection
- (H) radiation
- (J) insulation

23. Which of the following can be used to magnify objects?

- (A) a concave lens
- (B) a convex lens
- (C) a convex mirror
- (D) all of the above

24. Most of the mass of an atom is in its \_\_\_\_\_ .

- (F) electrons
- (G) quarks
- (H) charges
- (J) nucleus

25. Sound travels in steel faster than in water because the particles of matter in steel \_\_\_\_\_ .

- (A) vibrate faster
- (B) are further apart
- (C) are closer together
- (D) vibrate more slowly

26. Which of the following is not true about glaciers?

- (F) Most of Earth's water is in the form of glaciers.
- (G) Melting glaciers supply water for many people.
- (H) Glacial movements can leave behind valleys.
- (J) Glaciers pick up boulders and sediment as they move.

27. Which resource could be conserved by recycling a stack of newspapers?

- (A) rocks
- (B) trees
- (C) plastic
- (D) oil

28. Which is not a planet in our solar system?

- (F) Uranus
- (G) Neptune
- (H) Saturn
- (J) Venice

29. Light from the Sun \_\_\_\_\_ to Earth.

- (A) reflects
- (B) transfers energy
- (C) refracts
- (D) rarefacts

30. Study the table below. Predict which season the southern hemisphere will have during the month of September.

Month	Northern Hemisphere	Southern Hemisphere
December	Winter	Summer
March	Spring	Autumn
June	Summer	Winter
September	Autumn	?

- (F) autumn
- (G) winter
- (H) summer
- (J) spring





**31. Acid rain formed when water vapor in the atmosphere mixes with \_\_\_\_\_ .**

- (A) oxygen
- (B) hydrogen
- (C) sulfur oxides
- (D) Not Here

**32. When the wind blows across a body of water, \_\_\_\_\_ between the water and air causes the water to move.**

- (F) a turbine
- (G) gravity
- (H) friction
- (J) density

**33. During an equinox, the Sun is directly above \_\_\_\_\_ .**

- (A) the axis
- (B) the South Pole
- (C) the North Pole
- (D) the equator

**34. The size of a population that lives for a long period of time in an environment is called its \_\_\_\_\_ .**

- (F) niche
- (G) carrying capacity
- (H) web
- (J) pyramid

**35. Which does not have flowing water?**

- (A) ponds
- (B) rivers
- (C) seashores
- (D) streams

**36. Which is not part of the water cycle?**

- (F) evaporation
- (G) condensation
- (H) precipitation
- (J) respiration

**37. When water enters a crack in a rock and then freezes, what will possibly happen to the rock?**

- (A) The crack might get larger and split the rock.
- (B) The rock might become stronger due to the ice.
- (C) The rock might melt and change into an igneous rock.
- (D) Not Here

**38. \_\_\_\_\_ is the melted rock that comes out of a volcano.**

- (F) Marble
- (G) Granite
- (H) Cement
- (J) Lava

**39. A nonrenewable resource cannot be replaced in less than how many years?**

- (A) 5
- (B) 10
- (C) 50
- (D) 100

**40. What is a ridge formed by deposition of till called?**

- (F) striation
- (G) esker
- (H) cirque
- (J) moraine



# Final Science Test

## Answer Sheet

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- |    |     |     |     |     |    |     |     |     |     |
|----|-----|-----|-----|-----|----|-----|-----|-----|-----|
| 1  | (A) | (B) | (C) | (D) | 31 | (A) | (B) | (C) | (D) |
| 2  | (F) | (G) | (H) | (J) | 32 | (F) | (G) | (H) | (J) |
| 3  | (A) | (B) | (C) | (D) | 33 | (A) | (B) | (C) | (D) |
| 4  | (F) | (G) | (H) | (J) | 34 | (F) | (G) | (H) | (J) |
| 5  | (A) | (B) | (C) | (D) | 35 | (A) | (B) | (C) | (D) |
| 6  | (F) | (G) | (H) | (J) | 36 | (F) | (G) | (H) | (J) |
| 7  | (A) | (B) | (C) | (D) | 37 | (A) | (B) | (C) | (D) |
| 8  | (F) | (G) | (H) | (J) | 38 | (F) | (G) | (H) | (J) |
| 9  | (A) | (B) | (C) | (D) | 39 | (A) | (B) | (C) | (D) |
| 10 | (F) | (G) | (H) | (J) | 40 | (F) | (G) | (H) | (J) |
|    |     |     |     |     |    |     |     |     |     |
| 11 | (A) | (B) | (C) | (D) |    |     |     |     |     |
| 12 | (F) | (G) | (H) | (J) |    |     |     |     |     |
| 13 | (A) | (B) | (C) | (D) |    |     |     |     |     |
| 14 | (F) | (G) | (H) | (J) |    |     |     |     |     |
| 15 | (A) | (B) | (C) | (D) |    |     |     |     |     |
| 16 | (F) | (G) | (H) | (J) |    |     |     |     |     |
| 17 | (A) | (B) | (C) | (D) |    |     |     |     |     |
| 18 | (F) | (G) | (H) | (J) |    |     |     |     |     |
| 19 | (A) | (B) | (C) | (D) |    |     |     |     |     |
| 20 | (F) | (G) | (H) | (J) |    |     |     |     |     |
|    |     |     |     |     |    |     |     |     |     |
| 21 | (A) | (B) | (C) | (D) |    |     |     |     |     |
| 22 | (F) | (G) | (H) | (J) |    |     |     |     |     |
| 23 | (A) | (B) | (C) | (D) |    |     |     |     |     |
| 24 | (F) | (G) | (H) | (J) |    |     |     |     |     |
| 25 | (A) | (B) | (C) | (D) |    |     |     |     |     |
| 26 | (F) | (G) | (H) | (J) |    |     |     |     |     |
| 27 | (A) | (B) | (C) | (D) |    |     |     |     |     |
| 28 | (F) | (G) | (H) | (J) |    |     |     |     |     |
| 29 | (A) | (B) | (C) | (D) |    |     |     |     |     |
| 30 | (F) | (G) | (H) | (J) |    |     |     |     |     |



# Answer Key

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## Page 8

1. D
2. H
3. A
4. G

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## Page 9

1. C
2. F
3. A
4. J
5. C
6. F
7. B
8. H
9. again
10. not
11. can be
12. a person who
13. being
14. after

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## Pages 10–11

1. C
2. Students may suggest that the author would object to the article since he or she believes baseball is an exciting and important part of American culture.
3. H
4. Students' answers will vary but should present a clear opinion on the importance of the World Series.

---

## Pages 12–13

1. 1914
2. the United States
3. Isthmus
4. Panama
5. Atlantic
6. Pacific
7. to link the Atlantic and Pacific Oceans
8. disease
9. excavate earth to clear passages
10. build a dam across the Chagres River
11. build the series of locks
12. cost \$380 million
13. runs 50 miles across the Isthmus of Panama
14. water in the canal is controlled by three sets of locks
15. The Republic of Panama—Today has responsibility for administration, upkeep, and maintenance of the canal.
16. United States—Built the canal in 1907–1914; operated the canal prior to 1999.

17. 1903—Gave the U.S. permission to build and operate the canal.

18. 1977—Transferred the responsibility for administration, upkeep, and maintenance of the canal to the Republic of Panama.

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## Page 14

1. C
2. J
3. A
4. J

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## Pages 16–17

**Tate:** *How he feels before the game—excited; it's the championship game. What he does during the game—hits a home run. What he probably does next—gets another ice cream cone. (Answers will vary.)*

**Jeffrey:** *How he feels before the game—nervous; he's been in a batting slump. What he does during the game—hits the winning run.*

*What he probably does next—buys Tate another cone. Alyssa: How she feels before the game—calm and confident; it's her nature. What she does during the game—stays cool and pitches well. What she probably does next—enjoys the team's victory.*

**Pages 18–19**

1. A little boy's house, which is on a small lake. Most of the story takes place in his bedroom.
2. Answers will vary. There are approximately four time shifts: the present, when the boy is telling the story; the time his older brother Jimmy tells him about the swamp monster; the time he recalls being frightened and hiding under the covers; the time (at eight) when his mother got locked out of the house.
3. Steven. At the time of the action of the story, Steven is eight or younger.
4. Steven believes the stories that his older brother tells him. He adds interesting facts about the lake and creates a childhood fear that makes him overreact when his mom calls for help.
5. Steven tells the story as an adult or older person (his age

is not stated). He enjoys the silliness of his childhood fear. He says, "I was just a little kid. I didn't know any better."

6. No. He states, "It didn't seem so scary any more."
7. Answers will vary. The story has humorous qualities that suggest its purpose is to entertain and poke fun at childhood fears.

**Pages 20–21**

1. Setting—Philadelphia
2. Main Characters—the brave little black-eyed rebel; the boy selling apples and potatoes
3. Plot—problem: She wanted to bring letters to the wives and children of the soldiers.  
Plot—goal: To secretly pass the letters from the boy to the girl is the goal.
4. Episodes—The boy came to the market. The girl pretended to trade a kiss for a dozen apples. The boy passed the letters to the girl.

5. Climax—The girl puts her arms around his neck in front of a watching crowd.
6. Resolution—He put the letters under her shawl, and she delivered them to waiting loved ones.

**Pages 23–24**

1. The surface of the land was changed by the ice. When the ice withdrew, it caused waterways and streams to develop new paths. Lake Erie overflowed, and this produced Niagara Falls.
2. To make the Falls more attractive for tourists, observation towers are accessible, the Falls are lit up at night, and a steamer takes visitors for rides around the base of the Falls.
3. The shale underneath the dolomitic limestone is worn away more quickly, causing an overhang of limestone. This allows the Falls to drop at a sharp angle. When the layer

of limestone breaks off, the Falls gradually move back up the river.

4. Security around the Falls may have been tightened as a result of so many daredevils attempting to ride over the Falls.
5. observation towers
6. overflow of Lake Erie
7. limestone overhanging edge
8. ice sheets changed the land
9. erosion
10. *Maid of the Mist*

**Pages 25–26**

1. Both stories deal with telling the truth.
2. Students may suggest Phil is probably the better friend, since he could not lie to his friends.
3. Answers will vary, but may suggest that lies are usually found out.
4. Answers will vary, but may suggest that honesty is the best policy.

**Pages 27–28**

1. Tokyo, 34,800,000
2. New York, 20,200,000
3. Seoul, 19,900,000
4. Mexico City, 19,800,000
5. São Paulo, 17,900,000
6. Bombay, 17,900,000
7. Osaka, 17,900,000
8. Los Angeles, 16,200,000
9. Cairo, 14,400,000
10. Manila, 13,500,000
11. Buenos Aires, 13,300,000
12. Moscow, 13,200,000
13. Lagos, 13,100,000
14. Calcutta, 12,900,000
15. Jakarta, 12,300,000
16. Karachi, 12,100,000
17. London, 11,800,000
18. Shanghai, 11,800,000
19. Delhi, 11,500,000
20. Rio de Janeiro, 10,700,000

**Pages 29–30**

1. a spelling bee
2. confident; anxious
3. C
4. Students' answers will vary but should reflect emotions opposite of those in the journal entries.
5. Students' answers will vary but should reflect an understanding of Ben's character as revealed in his journal entries.

**Pages 31–32**

1. Northern
2. 70, 5,000 to 7,800 feet
3. California, two, redwood, giant sequoia
4. C
5. The author writes to inform readers about the sequoia tree. The author gives facts about redwoods and giant sequoias in California. The author tells how sequoias used to be more common than they are today.

**Pages 33–34**

1. The original version uses words such as "art," "thou," "thy," "wilt," "thymself," and "doff." The modern version replaces those words with "have to be," "you," "your," and "take off."
2. Students' responses will vary but should clearly explain which version they would like to see performed and why.
3. Students' versions of the scene will vary but should demonstrate an understanding of the content and language.

**Pages 35–36**

1. A
2. H
3. A
4. J
5. Answers will vary, but students should comment thoughtfully on the author's success in presenting the information.

**Page 37 Mini-Test**

1. D
2. H

**Pages 39–40**

1. You could tell whether the elephants prefer to use their right or left tusk. The tusk they use most often would be shorter. You could tell whether the elephant lives in the savannah (longer, curved tusks) or the forest (shorter tusks).
2. The elephant might have become extinct if hunters had kept killing them for their tusks.
3. A poacher is someone who kills an animal illegally. A poacher breaks the law to earn money from an elephant's tusks.
4. Poachers had to find other ways to make money once the ivory trade was illegal. Poachers also might have decided to disobey the law and continue to hunt elephants for their tusks.

5. If ivory trade was made legal again, elephants might be at risk. People might continue to kill elephants for their tusks. Then there might be very few elephants left in the world.
6. Answers will vary. To continue to protect the elephants, the ivory trade should stay illegal. We should help develop opportunities in poor countries so people have better ways to earn money.

---

**Pages 41–42**

1. O
2. F
3. O
4. F
5. F
6. O
7. F
8. F
9. F
10. O
11. F
12. O
13. Students' answers will vary but should be supported with facts from the article.

---

**Pages 43–44**

1. Abraham's early life in Indiana was very difficult. He and his family lived in a windowless cabin with a dirt floor. Abe's mother died after the second year on the farm.
2. Abraham Lincoln's stepmother made improvements to the cabin. She encouraged Abe to go to school and to read.
3. Abraham had studied law and participated in many debates. These skills helped him as he considered both sides of the Civil War issues.
4. The Emancipation Proclamation stated that all people within the rebellious states were free. This did not yet include all states. The Gettysburg Address stated that "all men are created equal." This shows that Lincoln believed all humans had the right to equal status.

5. Answers will vary. Abraham Lincoln was responsible. As a young child, he kept the fire going in his family's cabin. He was determined. He borrowed books and walked to another town so he could listen to trials. He was strong. He led the country through the Civil War.

---

**Pages 45–46**

**Li Lui**

*house—apartment building*  
*where they live—city: Beijing*  
*where they live—country: China*  
*TV show—cartoons\**  
*what they like—food: shrimp chips*  
*what they like—drink: soda*  
*uniform—blue warm-up suit*  
*school—favorite subject: art, Chinese*  
*school—least favorite subject: math*  
**Yena**  
*house—one-floor house*  
*where they live—city: Accra*  
*where they live—country:*

*Ghana*  
*TV show—cartoons\**  
*what they like—food: plantains*  
*what they like—drink: fruit juice*  
*uniform—brown dress, yellow shirt*  
*school—favorite subject: science*  
*school—least favorite subject: French*

---

**Pages 47–48**

1. Venn diagram should be completed as follows:  
Cross-Country: can ski anywhere, races can be 50 minutes to 2 hours long, races can be from 9 miles to 30 miles, flexible boots attached to the ski at the toe only, poles used for glide-step technique, can burn 9 to 13 calories per minute  
Downhill: needs tall hills and a way to get to the top, takes place at ski resorts, short races, speed is the goal, up to 80 miles per hour, wider and shorter skis, boots are larger and connected at heel and toe, poles give balance and direction, can burn 6 calories per minute  
Both (overlapping area): require snow; can be done for relaxation or competition; require boots, skis, and poles; great exercise

2. Answers will vary. Cross-country skiing is easier to do because it does not require a special location.
3. Answers will vary. Downhill skiing is most expensive because it must be done at a ski resort.

---

**Page 49 Mini-Test**

1. Eiffel was the only one who thought the tower could be completed in two years.
2. Yes. The tower was completed at a cost lower than the original estimate.
3. Answers will vary. Students should support their opinions with facts from the article.

---

**Pages 52–55 Final****Reading Test**

1. B
2. J
3. D
4. F
5. B
6. H
7. C
8. H
9. D
10. G
11. B
12. H
13. D
14. F
15. A
16. H
17. A
18. J
19. A
20. H
21. B
22. J
23. A
24. J

---

**Page 60**

1. D
2. H
3. B
4. J
5. D
6. J
7. C
8. G

---

**Page 61**

1. C
2. F
3. D
4. G
5. C

---

**Page 62**

1. C
2. F
3. C
4. J
5. B

---

**Page 63**

1. C
2. H
3. B
4. J

---

**Page 64**

1. A
2. H
3. B
4. F
5. C
6. F

---

**Page 65**

1. B
2. F
3. C
4. J
5. A
6. H
7. A
8. H

---

**Page 66**

1. A
2. J
3. B
4. H
5. A

---

**Page 67**

1. A
2. H
3. D
4. H
5. B
6. F
7. D
8. G

---

**Page 68**

1. A
2. J
3. C
4. F
5. C
6. F



**Page 69**

1. B
2. J
3. A
4. G
5. D
6. F

**Page 70**

1. C
2. F
3. C
4. H
5. A
6. G
7. C

**Page 71**

1. D
2. H
3. B
4. F
5. A
6. F

**Page 72 Mini-Test**

1. C
2. G
3. B
4. G
5. A
6. J
7. A
8. G

**Page 74**

1. D
2. F
3. C

**Page 75**

1. A
2. H
3. D
4. G
5. B

**Page 76**

1. A
2. J
3. A
4. G
5. A
6. J

**Page 77**

1. A
2. F
3. D
4. H
5. B
6. G

**Page 78 Mini-Test**

1. B
2. G
3. C
4. F
5. A
6. F

**Page 80**

1. D
2. G
3. A
4. J
5. B

**Page 81**

1. B
2. F
3. D
4. F
5. D
6. J
7. D
8. F

**Page 82**

1.  $(1, -1); (3, -4); (2, -7)$
2.  $(-1, 3); (-5, 3); (-5, 6); (-1, 6)$
3.  $(1, -3); (5, -3); (5, -6); (1, -6)$
4.  $(2, 0); (0, 2); (-2, 0); (0, -2)$
5.  $(1, -4); (3, -2); (2, 1)$

**Page 83**

1. A
2. 8 left, 2 down
3. reflection over the y-axis
4. reflection over the x-axis

**Page 84**

1. capital H
2. capital I
3. capital H
4. capital I

**Page 85 Mini-Test**

1. B
2. J
3. C
4. J
5.  $(-2, 0); (-3, -2); (-4, 0); (-3, 2)$
6.  $(-1, 2); (-3, 4), (-2, 7)$

**Page 87**

1. B
2. J
3. B
4. F
5. B
6. H
7. A

**Page 88**

1. D
2. H
3. B
4. G
5. C
6. G

**Page 89**

1. B
2. G
3. A
4. G
5. C
6. G

**Page 90 Mini-Test**

1. A
2. G
3. B
4. J
5. A
6. G
7. B
8. H

**Page 92**

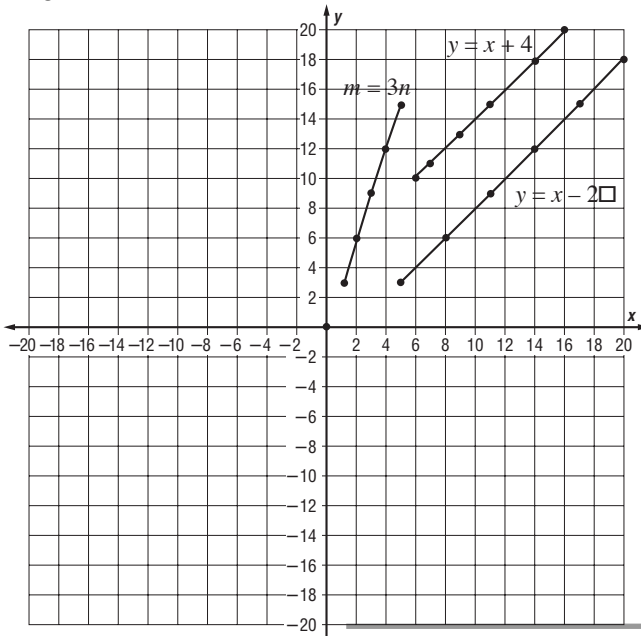
1. A
2. H
3. B
4.  $\frac{1}{2}$
5.  $\frac{3}{4}$

**Page 93**

1. D
2. G
3. B
4. F
5. C
6. H

**Page 94**

1. 0, 3, 6, 9, 12, 15
2. 3, 9, 15, 21, 27, 33
3.  $x + 4$
4.  $4x$
5.  $x - 2$
- 6.



**Page 95**

1. D
2. G
3. A

**Page 96**

1. A; A, B, D, C
2. 6
3. 11
4. three blocks north, six blocks west, one block south

**Page 97 Mini-Test**

1. B
2. J
3. C
4. G
5. D
6. H

**Page 99**

1. D
2. J
3. C
4. J
5. B
6. F

**Page 100**

1. D
2. J
3. D
4. F

**Page 101**

1. C
2. J
3. B
4. H
5. D
6. F
7. C

**Page 102**

1. B
2. H
3. A
4. H
5. A
6. J

**Page 103**

1. C
2. H
3. B
4. G
5. A
6. G
7. A
8. J

**Page 104 Mini-Test**

1. C
2. G
3. A
4. J
5. D
6. H
7. A

**Pages 107-110 Final Mathematics Test**

1. D
2. G
3. D
4. F
5. B
6. J
7. D
8. J
9. A
10. F
11. A
12. F
13. B
14. G
15. A
16. J
17. C
18. H
19. B
20. J
21. A
22. G
23. D
24. G
25. A
26. G
27. C
28. F
29. C
30. G
31. D
32. J

**Page 114**

1. B
2. H
3. Ryan needs to analyze the data he collected, then draw conclusions from the data. He should decide if the conclusions support his original hypothesis.
4. Answers will vary. Students may suggest that Ryan present his findings in graph form along with his written report.

**Page 115**

1. D
2. G
3. D
4. F

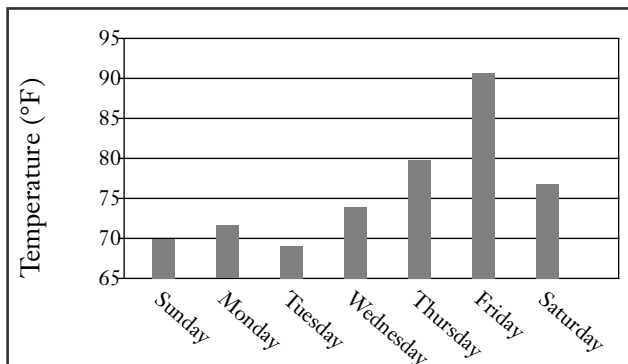
**Page 116**

1. B
2. G
3. A
4. H

**Page 117**

1. C
2. F
3. A
4. G

**Page 118**



**Page 119**

1. A
2. F
3. C
4. Answers will vary. Students may suggest that travelers brought the disease from China to Houston.

**Page 120**

1. B
2. J
3. B
4. H
5. A

**Page 121**

1. C
2. H
3. B
4. G

**Page 122 Mini-Test**

1. C
2. H
3. D
4. H
5. Answers will vary. Students may suggest that different spiders spin different types of webs, but all are related to food-gathering.

**Page 125**

1. (blank)
2. I
3. I
4. I
5. (blank)
6. I
7. (blank)
8. I
9. I
10. I
11. (blank)
12. I
13. Answers will vary. Students may note that a factor such as nutrition may affect height.

**Page 126**

1. L
2. (blank)
3. (blank)
4. (blank)
5. L
6. (blank)
7. L
8. (blank)
9. (blank)
10. L
11. L
12. (blank)
13. Answers will vary. Students may describe any skills, hobbies, or other unique behaviors that they exhibit.

**Page 127**

1. B
2. H
3. D
4. A
5. Answers will vary but should correctly identify an animal or plant and the adaptations that help it survive in its environment.

**Page 128**

1. producer
2. consumer
3. decomposer
4. consumer
5. consumer
6. producer
7. decomposer
8. producer
9. consumer
10. producer
11. producer
12. decomposer
13. consumer
14. producer
15. Answers will vary but students should correctly describe an ecosystem, the unique organisms found within that ecosystem, the roles played by those organisms, and any related adaptations.

**Page 129**

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

**Page 130**

1. 3, 1, 2
2. 1, 2, 3
3. 2, 4, 1, 3
4. 3, 2, 1

**Page 131**

1. the outside of the log
2. within/ underneath the log
3. underneath the log
4. in a nest within the log
5. throughout the inside of the log

**Page 132**

1. D
2. H
3. C
4. F
5. The weeds, plants, and vegetables all compete for nutrients in the soil and available water. They may even compete for sunlight, with some plants growing taller to reach the sunlight and shadow the other plants.

**Page 133**

1. Most of the desert flora and fauna would probably die.
2. The animals and plants found in the desert, such as cacti and reptiles.
3. Certain mammals, birds, and plants used to cooler temperatures might thrive. These organisms might have trouble finding food if their usual sources die off in the colder environment.
4. Only the most heat-resistant plants and animals would survive. Forests might be replaced by deserts.
5. Students may note that eliminating a pest species, such as mosquitoes, might affect other species that depend on mosquitoes for food, such as birds or bats.

**Page 134**

1. B
2. A
3. E
4. D
5. C
6. A
7. J
8. C
9. G

**Page 135**

1. B
2. J
3. A
4. H
5. A
6. H
7. B
8. H
9. B
10. J

**Page 136**

1. habitat
2. community
3. niche
4. ecosystem
5. producer
6. consumer
7. decomposer
8. Answers will vary. Students may pick organisms such as a moss, a bird, and a mushroom (fungus) that are associated with the tree.

**Page 137**

1. mouth
2. enzyme
3. esophagus
4. stomach
5. small intestine
6. large intestine

**Page 138**

1. S
2. S
3. N
4. S
5. S
6. S
7. S
8. N
9. S
10. S
11. S
12. S
13. S
14. S
15. S
16. S
17. S
18. Students should describe how the wheels, axles, bearings, board, and other associated parts of a skateboard function together.

**Page 139**

1. Each shows a pattern related to the natural world.
2. To help understand and predict future events.
3. Answers will vary. Students should note that planning outdoor events would be nearly impossible if weather patterns were not somewhat predictable.

**Page 140**

1. The nucleus is the command center of the cell and controls the activities in the cell.
2. Chromosomes control what an organism will look like. They carry the information that leads to eye and hair color, for example.
3. Chloroplasts produce chlorophyll, a chemical that allows plants to use sunlight to produce food. Animal cells do not produce their own food.

**Page 142**

1. C
2. H
3. B
4. F
5. A
6. H
7. C

**Page 143**

1. A
2. F
3. A
4. J
5. B
6. F
7. C

**Page 144**

1. C
2. H
3. C
4. F
5. C
6. G
7. C
8. F
9. B

**Page 145**

1. A
2. G
3. D
4. H
5. B
6. F
7. D
8. J

**Page 146**

1. B
2. F
3. B
4. H
5. B
6. F

**Page 147**

1. B
2. H
3. B
4. F
5. C
6. G

**Page 148**

1. C
2. G
3. C
4. F
5. B
6. J

**Page 149**

1. C
2. J
3. C
4. H
5. A
6. H
7. A
8. H
9. C

**Pages 150–151**

1. C
2. F
3. C
4. H
5. B
6. G
7. B
8. C
9. A
10. F
11. B

**Page 152**

1. B
2. H
3. A
4. J
5. D
6. F

**Page 153**

1. C
2. H
3. A
4. H
5. A
6. H
7. B

**Page 154**

1. B
2. G
3. B
4. H

**Page 155 Mini-Test**

1. C
2. H
3. A
4. G
5. A
6. F
7. B
8. F

**Page 158**

1. B
2. F
3. A
4. G

**Page 159**

1. D
2. G
3. C
4. G
5. C
6. F

**Page 160**

1. A
2. F
3. C
4. J
5. C

**Page 161**

1. C
2. G
3. B
4. G

**Page 162**

1. B
2. J
3. D
4. H
5. D
6. J
7. B
8. H
9. D
10. H

**Page 163**

1. D
2. H
3. A
4. F
5. A
6. G
7. A
8. H

**Page 164**

1. D
2. J
3. B
4. F
5. C
6. H
7. C

**Page 165**

1. A
2. J
3. C
4. F
5. B
6. J

**Page 166**

1. A
2. G
3. B
4. J
5. A
6. J
7. A
8. G

**Page 167**

1. C
2. G
3. D
4. F

**Page 168**

1. A
2. G
3. A
4. G
5. B
6. G

**Page 169**

1. Mercury
2. Venus
3. Earth
4. Mars
5. Jupiter
6. Saturn
7. Uranus
8. Neptune
9. Pluto

**Page 170**

1. A
2. J
3. D
4. H
5. A
6. H
7. A

**Page 171**

1. C
2. J
3. C
4. F
5. B
6. G

**Page 172**

1. B
2. J
3. D
4. G
5. B
6. J

**Page 173**

1. A
2. G
3. D
4. H
5. D
6. J

**Page 174**

1. C
2. F
3. C
4. F
5. D
6. J

**Page 175 Mini-Test**

1. B
2. G
3. D
4. F
5. D
6. H
7. A
8. H
9. A
10. G
11. D
12. F
13. A
14. F
15. D
16. J
17. D
18. G
19. A

**Pages 179–183 Final**

**Science Test**

1. B
2. H
3. B
4. F
5. A
6. J
7. B
8. F
9. D
10. G
11. C
12. H
13. A
14. J
15. A
16. F
17. C
18. H
19. B
20. G
21. D
22. H
23. A
24. J
25. C
26. F
27. B
28. J
29. B
30. J
31. C
32. H
33. D
34. G
35. A
36. J
37. A
38. J
39. D
40. J

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