LA MESA-SPRING VALLEY SCHOOLS

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HOME INDEPENDENT WORK PACKET

SIXTH GRADE

PACKET B

Wonders

Grade 6

Language Arts

Your Turn

Practice Book

Mc Graw Hill Education

Name _____

assess	compensate	deteriorated	devastating
implement	peripheral	potential	summit

Label each statement *True* or *False*. If the statement is false, rewrite it as a true statement.

1. When something has *deteriorated*, it is in a better condition than it was before.

_____

2. To *compensate* for missing lunch, one might have a large afternoon snack.

_____

3. In a dance contest, the judges *assess* the dancers' performances.

_____

4. *Devastating* news usually makes people feel happy.

_____

5. When you *implement* a new plan, you are avoiding it.

_____

6. *Peripheral* vision can help you see things that are next to you.

_____

7. You climb down to the *summit* of a mountain.

_____

8. A seed has the *potential* to become a plant.

_____

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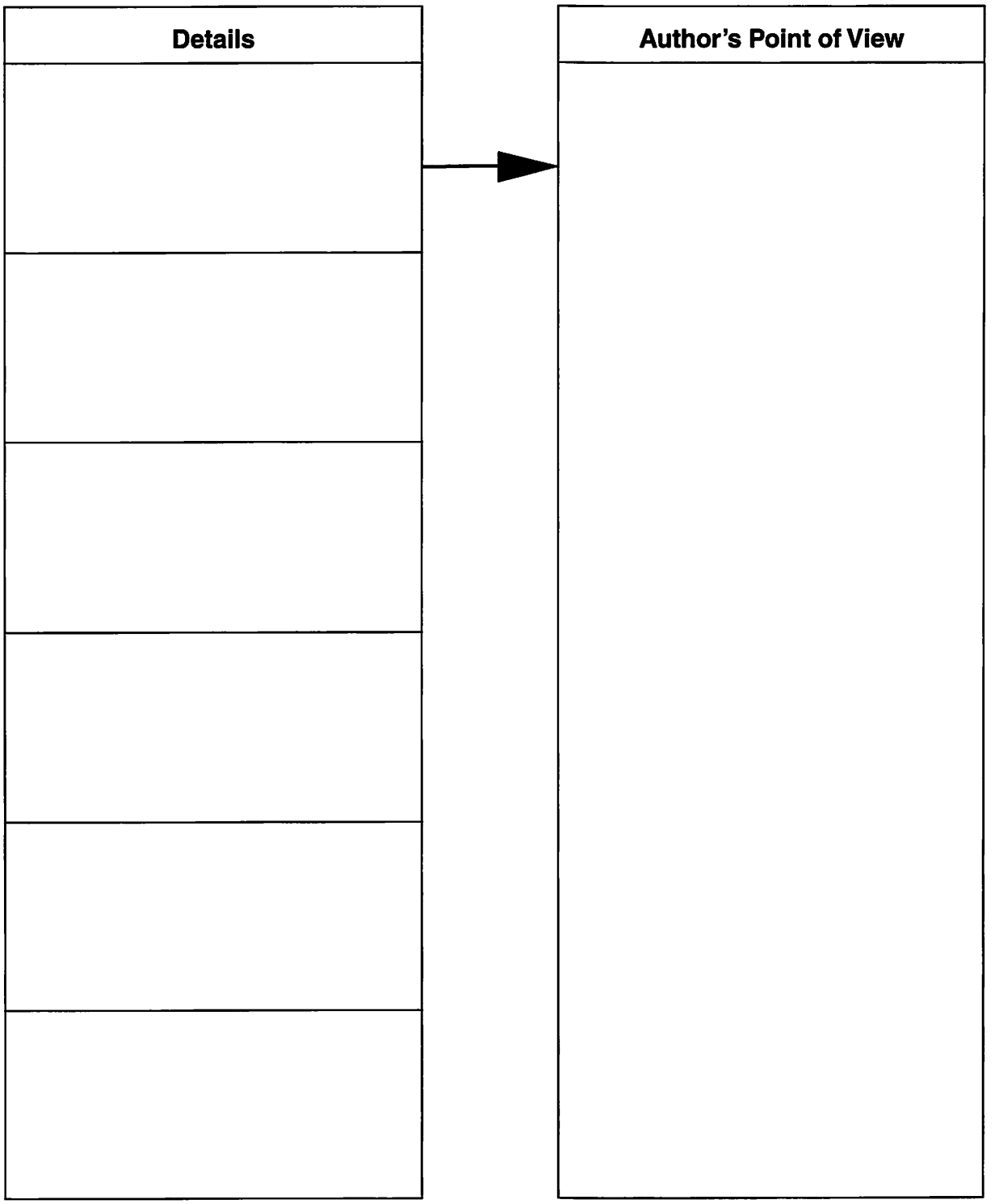
Name _____

Read the selection. Complete the author's point of view graphic organizer.



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Read the passage. Use the reread strategy to check for understanding as you read the passage.

Jesse Owens: A Message to the World

Jesse Owens was an African American track-and-field star who set world records and won four Olympic gold medals. Without a doubt, Owens earned his victories at the 1936 Olympic Games in Germany. However, he achieved an even greater victory for people everywhere. In 1936, Germany was under the control of Adolf Hitler. The Nazis had planned to prove that white athletes were better than other races. Jesse Owens won four gold medals and dealt a blow to that Nazi myth. Owens was clearly a superior athlete.

Ready, Set, Go!

Owens's parents named him James Cleveland Owens when he was born in 1913. The family moved from Alabama and settled in Ohio in the 1920s. A new teacher from Ohio mistook his nickname, "J.C.," for "Jesse." His new name stuck. Owens became a track star in high school, setting records in the high jump and running broad jump. He went on to The Ohio State University in 1933. Owens tied world records for the 100-yard dash in 1935. He set new world records for the 220-yard dash, the 220-yard low hurdles, and the running broad jump. Owens's success was not just a flash in the pan. He was only warming up for the Olympics.

Hitler promised the Olympic Committee that he would not promote racism during the games. Yet signs and banners with Nazi beliefs were all around. The Nazis hoped to prove that white people were the best. Jesse Owens competed with bold courage as the world watched. Performing to the best of his abilities, Owens proved the Nazis wrong—not once, but four times.

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Name _____

Excellence Fights Discrimination

Owens set new Olympic and world records. It didn't matter that the Nazis called him inferior. Owens needed bold courage again when he went home. People cheered his success, but discrimination was a fact of life in America. Owens still had to ride in the back of the bus at home. Black people could not live in certain neighborhoods back then. He wasn't invited to the White House for honors the way heroes are today.

Despite his problems, Owens was a man who inspired others. He enjoyed speaking to youth groups and at sports banquets. Owens loved working with youth. He was a director and board member for the Chicago Boys' Club. He passed on his life message, "Find the good. It's all around you. Find it, showcase it, and you'll start believing it."

Receiving Recognition

Owens had carried the weight of the world on his shoulders and triumphed at the 1936 Olympics. Eventually he received the honors he deserved. In 1976, Jesse Owens was finally invited to the White House. President Gerald Ford gave him the Medal of Freedom award that year. After Owens's death, President George H.W. Bush awarded him the Congressional Gold Medal in 1990.

Today, Owens's desire to help youth continues. His three daughters work to keep his mission alive. They run the Jesse Owens Foundation, which provides services to young people. Its goal is to help them go the extra mile to become all they are meant to be.

Ingram Publishing

Jesse Owens won four gold medals at the 1936 Olympics.

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A. Reread the passage and answer the questions.

1. Look at the first paragraph of the passage. What does the author say about the victories that Owens achieved at the 1936 Olympic Games?

_____

_____

2. In the last paragraph on the first page, what words does the author use to describe the way Owens competed in the 1936 Olympics?

_____

3. Look at paragraph 3 on the second page. What does the author say about the honors that Owens received in 1976 and then in 1990? What does the word *eventually* say about the author's point of view?

_____

_____

4. Which statement best describes the author's point of view about Jesse Owens? Circle the letter of your answer.

   a. Owens was not a good athlete, but he was a strong person.

   b. Owens was a great athlete, but he was not a very strong person.

   c. Owens was a great athlete and a strong person.

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B. Work with a partner. Read the passage aloud. Pay attention to intonation. Stop after one minute. Fill out the chart.

	Words Read	–	Number of Errors	=	Words Correct Score
First Read		–		=	
Second Read		–		=	

Name _____

Franklin D. Roosevelt's Battle with Polio

Franklin Delano Roosevelt (FDR) was the 32nd president of the United States from 1933 to 1945. He was the only U.S. president elected four times. FDR saw the country through two difficult times: the Great Depression and World War II. Many Americans at the time did not know that FDR suffered a hard time of his own. In 1921, he became ill during a family vacation. He was diagnosed with polio, a disease that causes paralysis. For many years, FDR needed to use a wheelchair. He never let his disease slow him down. FDR became a champion of polio research that led to a vaccine in 1955—ten years after his death.

Major Events Related to Franklin D. Roosevelt's Life

Date(s)	Event
1921	Diagnosed with polio
1929–1939	The Great Depression
1933–1945	FDR is president of the United States
1941	United States enters World War II
1945	World War II ends
1945	President Roosevelt dies
1955	Salk Polio vaccine used effectively

Answer the questions about the text.

1. What main event in FDR's life does this text focus on?

_____

2. What two words would you use to describe FDR?

_____

3. How is the information in the table organized?

_____

4. Write two examples of extra information that the table tells you about FDR's years as president.

_____

_____

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Name _____

An **idiom** is a group of words that means something more than the meanings of its individual words.

It's **raining cats and dogs** out there! I'm soaked!

You can use context clues and the usual meanings of the words to figure out that *raining cats and dogs* means "raining heavily" in the passage above.

Read each passage below. Underline the context clues that help you figure out the meaning of each idiom in bold. Then circle the letter of the meaning of each idiom.

1. He set new world records for the 220-yard dash, the 220-yard low hurdles, and the running broad jump. Owens's success was not just a **flash in the pan.** He was only warming up for the Olympics.

   a. overwhelming **b.** exciting **c.** a one-time success

2. Owens set new Olympic and world records. It didn't matter that the Nazis called him inferior. Owens needed bold courage again when he went home. People cheered his success, but discrimination was a fact of life in America. . . . Owens had **carried the weight of the world** on his shoulders but triumphed at the 1936 Olympics.

   a. been skilled **b.** done what was expected **c.** was responsible for many people's hopes

3. They run the Jesse Owens Foundation, which provides services to young people. Its goal is to help them **go the extra mile** to become all they are meant to be.

   a. do more than is necessary **b.** run farther **c.** pay more money

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Adding a suffix to the end of a base word sometimes changes a vowel sound in the original word. For example, a base word may have a long-vowel sound that becomes a short-vowel sound after a suffix is added. The word *crime* has a long *i* sound, while the word *criminal* has a short *i* sound. The change in vowel sound between related words is called vowel alternation.

A. Read each sentence. The underlined word has a long-vowel sound. Circle the related word that has a short-vowel sound. The first one has been done for you.

1. The nation put together a strong team for the (national) meet.
2. We are happy to reside in a community with many residents.
3. The storyteller was wise and she shared her wisdom with us.
4. I will invite him with a hand-delivered invitation.

B. Read the words below. Draw a line from the base word to the related word that has vowel alternation. The first one has been done for you.

5. metal	competition
6. repeat	criminal
7. compete	reference
8. crime	original
9. origin	metallic
10. refer	repetition

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A. Read the draft model. Use the questions that follow the draft to help you think about what transitions you can add to connect ideas and indicate time order.

Draft Model

My brother was born healthy. He developed a heart problem. His weak heart made him sick.

1. When was the brother born in the list of events? What word or phrase could help the reader understand the order of events?

2. When did he develop his heart problem? What transitions could help the reader understand the order of events?

3. What transitions would help the reader understand why the brother's heart problem led to sickness?

B. Now revise the draft by adding transitions to connect ideas and to show when events took place.

_____

_____

_____

_____

_____

_____

_____

_____

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The student who wrote the paragraphs below used text evidence from two different sources to answer the question: *Is it necessary to exercise regularly?*

Exercising regularly is absolutely necessary. Many people sit all day at school or work. That isn't good for their physical health. They need to exercise to get moving! Our brains need oxygen to stay alert. Breathing deeply during aerobic exercise moves oxygen to all parts of the body, including to the brain. Aerobic exercises like walking, swimming, or mountain climbing also help bring oxygen to cells. Cells need oxygen so they can turn food into energy.

Exercise is not only good for a person's physical health, it is good for a person's mental health, too. Erik Weilhenmayer was blind by the time he was thirteen. As his sight gradually failed, Erik still exercised by playing sports and riding his bike. When he turned 14, his mother died. To help him cope with his blindness and the loss of his mother, Erik's father took him and his siblings on trips around the world, including rock-climbing trips. These trips inspired Erik to begin rock climbing, scuba diving, and sky-diving. Through exercise, Erik continues to cope with and conquer challenges.

Exercising regularly keeps people healthy—both physically and mentally.

Reread the passage. Follow the directions below.

1. Why is exercise necessary? **Circle** text evidence that supports the claim.

2. **Draw a box** around a transitional sentence that moves the reader from one idea to the next.

3. **Underline** the conclusion that summarizes the claim.

4. **Write** a subject pronoun and an object pronoun on the line.

_____

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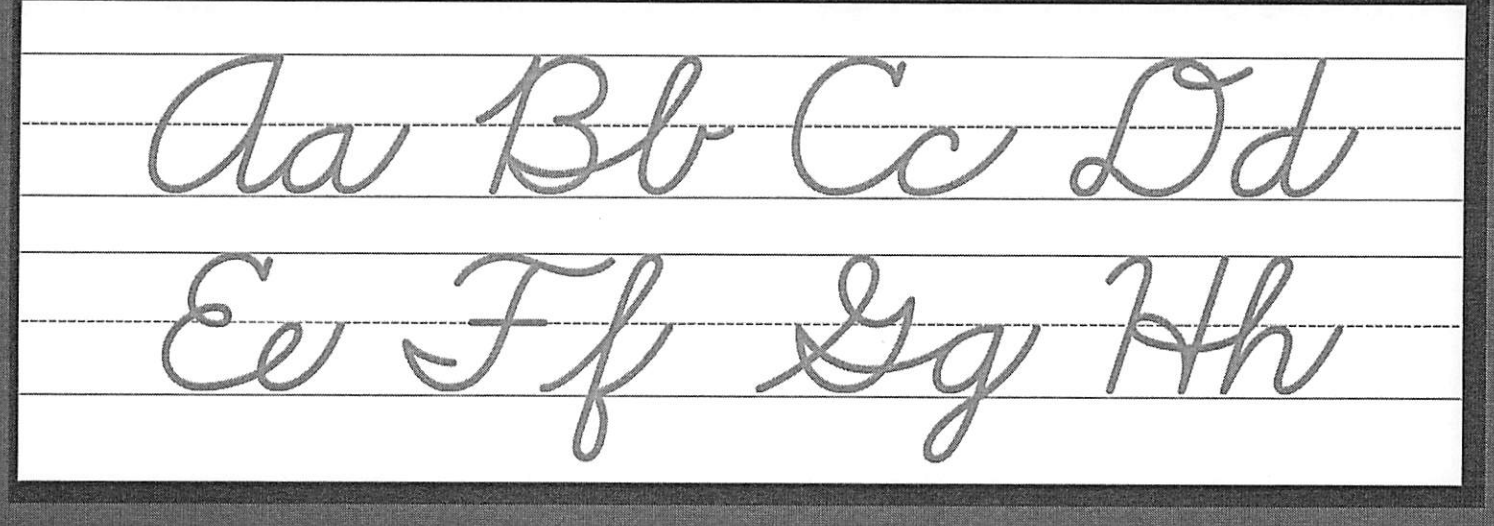
McGraw-Hill Reading Wonders

Grades 3-6

Handwriting



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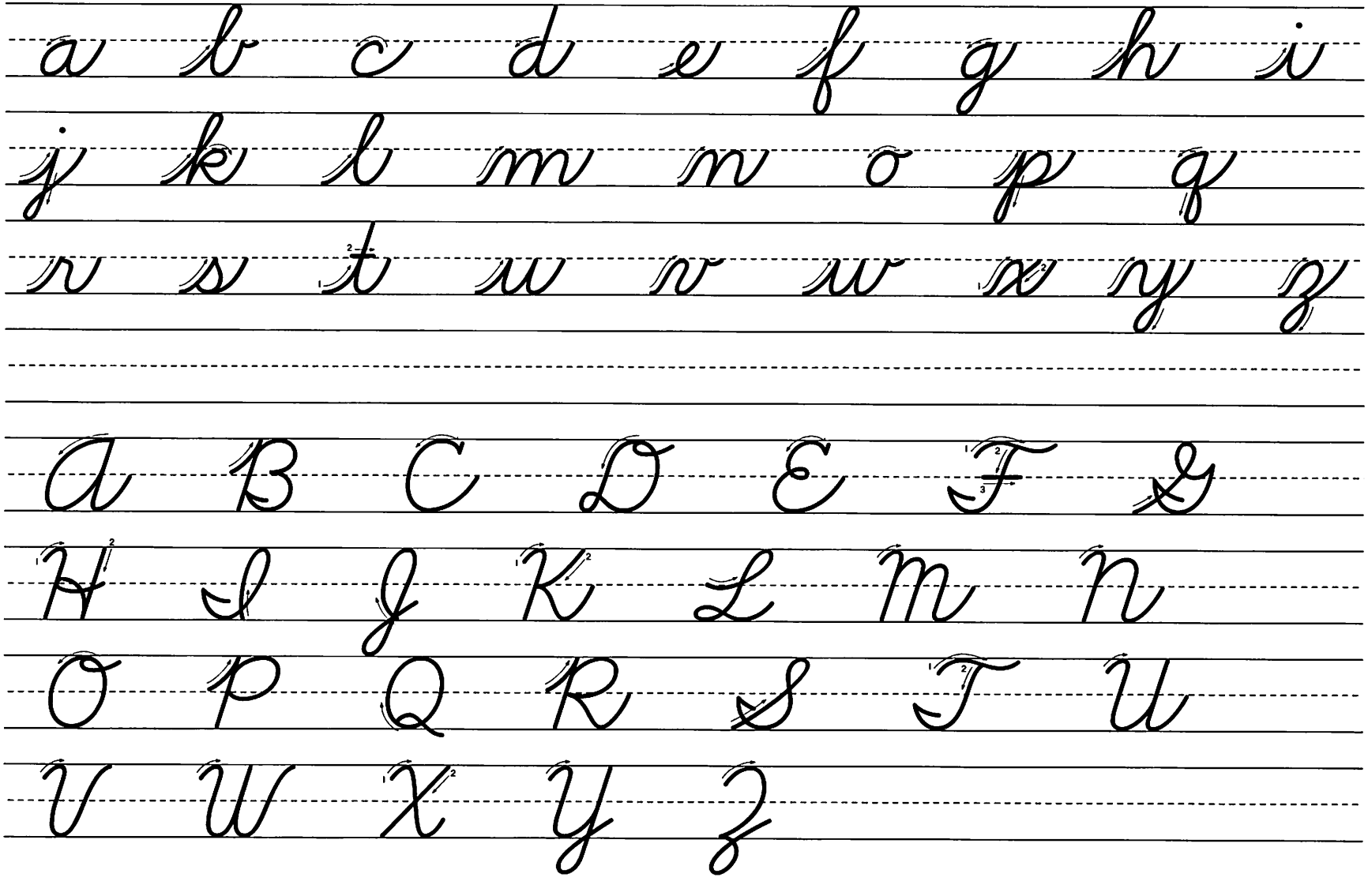
Name _____ Date _____

The Cursive Alphabet



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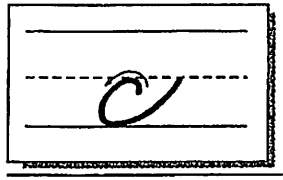
Name _____ Date _____

c d

Trace and write the letters. Then write the words and the phrases.



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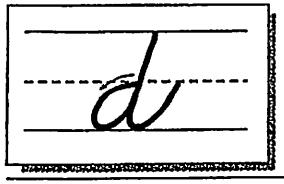

d d d d d d d d

coat deed load code

moon dance note time

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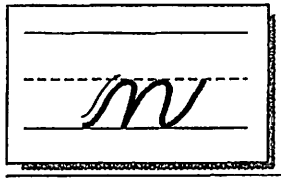
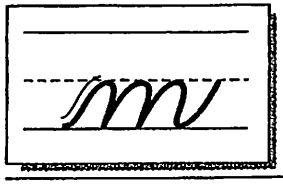
Handwriting

Name _____ Date _____

n m

Trace and write the letters. Then write the words.





name note moat mitten

tame mail melt mine

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Handwriting

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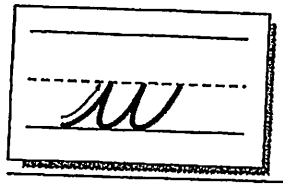
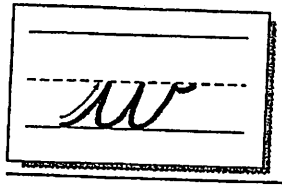
u w

Trace and write the letters. Then write the words.



u u u u u u u



w w w w w w w

wait wit could would

umm undo uncle lute

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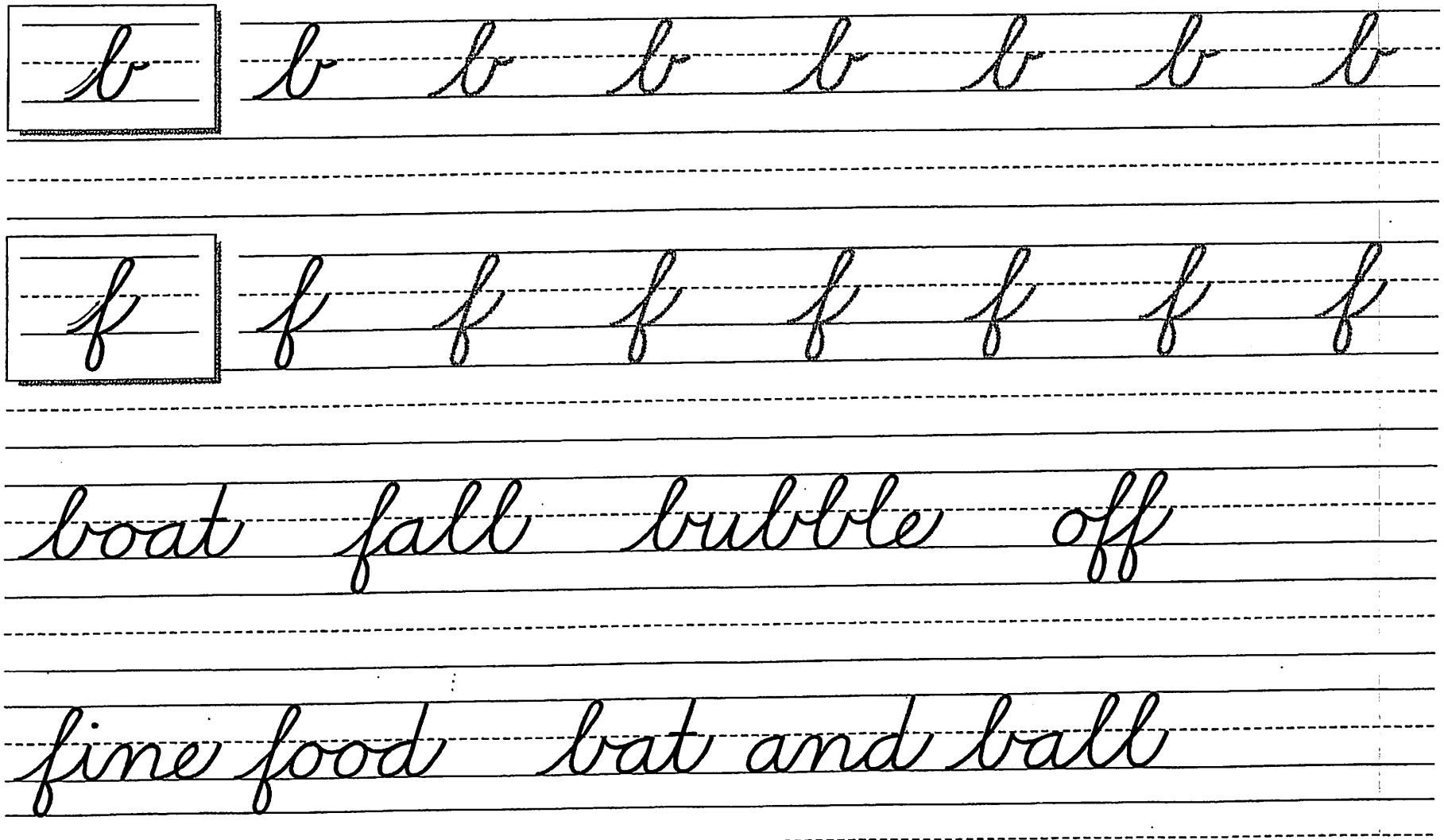
Name _____ Date _____

b f

Trace and write the letters. Then write the words and the phrases.



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Name _____ Date _____

h k

Trace and write the letters. Then write the words.

h h h h h h h h

k k k k k k k k

chick hatch kickball

hook kilt luck kite

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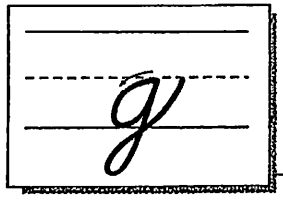
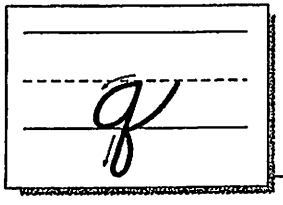
Name _____ Date _____

g q

Trace and write the letters. Then write the phrases.



g g g g g g g g



q q q q q q q q

quacked good and loud

quite a fog

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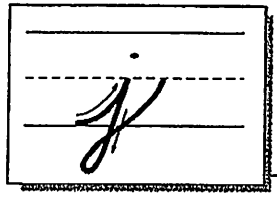
Handwriting

Name _____ Date _____

j p

Trace and write the letters. Then write the phrases.



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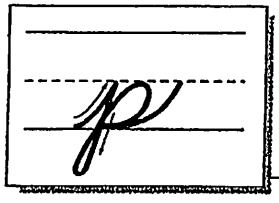

p p p p p p p p

pound a beat pull up

to put on an act

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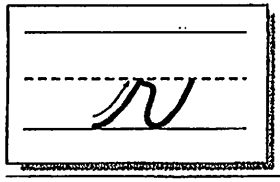
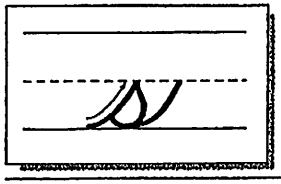
Name _____ Date _____

r s

Trace and write the letters. Then write the phrases.





pride and joy set sail

rose blossom rings a bell

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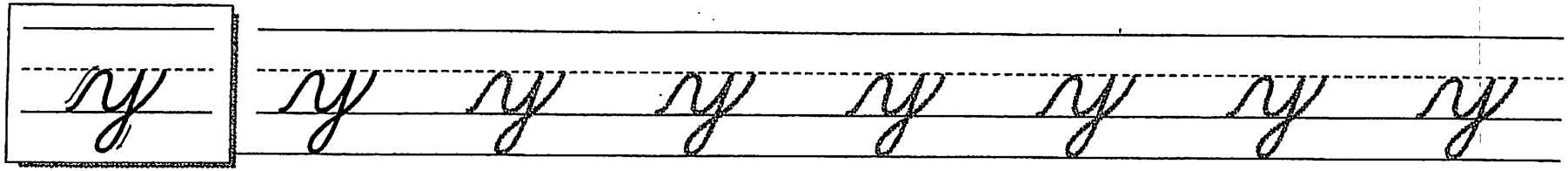
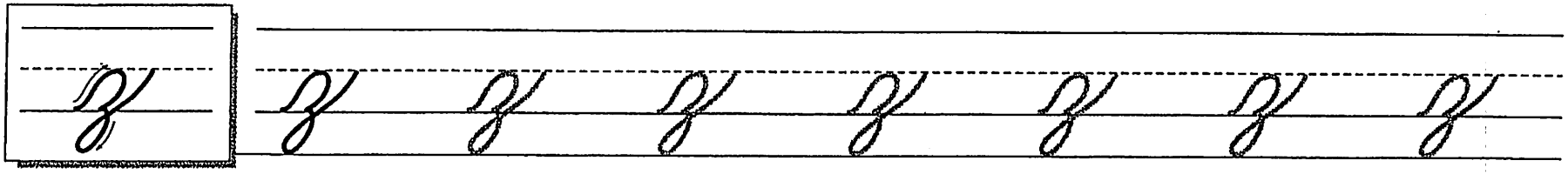
Handwriting

Name _____ Date _____

y z

Trace and write the letters. Then write the phrases.





zip code zoom in

pretty yellow azaleas

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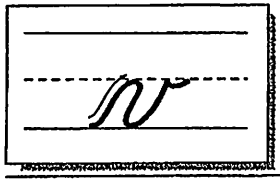
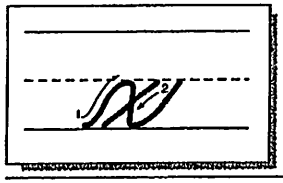
Handwriting

Name _____ Date _____

v x

Trace and write the letters. Then write the phrases.





x marks the spot

vim and vigor

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Spring Board

Math Packet

Course 1

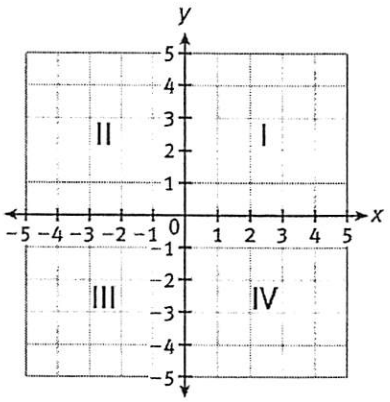
Getting Ready Practice

Independent Study
La Mesa-Spring Valley School District

NAME CLASS DATE

Coordinate Plane

The coordinate plane is formed by two perpendicular lines called axes. The horizontal axis is called the ***x-axis***. The vertical axis is called the ***y-axis***. The axes divide the coordinate grid into four ***quadrants***.



You can describe the location on the plane by using an ***ordered pair*** (x, y) where x is called the x-coordinate and y is called the y-coordinate. The point where the two axes meet is called the ***origin***, which is the point (0, 0).

EXAMPLE A

What is the location of point A?

Step 1: Find the value of the x-coordinate. Count the number of units to the left of 0.

Step 2: Find the value of the y-coordinate. Count the number of units above 0.

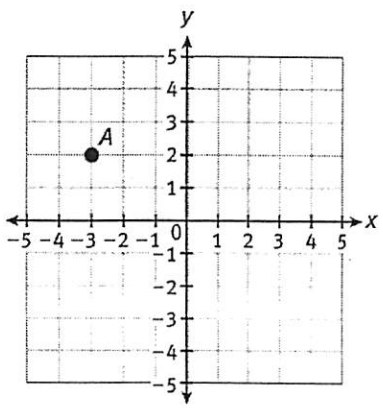
Step 3: Write the ordered pair.

Solution: Point A is located at $(-3, 2)$.

A is located 3 units to the left of 0. The x-coordinate is -3.

A is located 2 units above 0. The y-coordinate is 2.

The ordered pair is $(-3, 2)$.



You can plot points on a coordinate grid using these rules.

- The first coordinate tells the number of units to the left or right of 0.
- The second coordinate tells the number of units below or above 0.

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EXAMPLE B

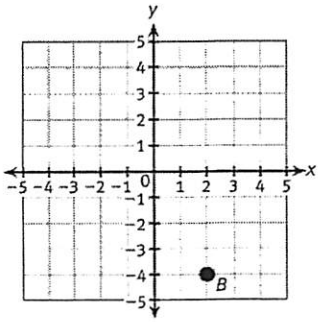
Plot and label point B at $(2, -4)$ on a coordinate grid.

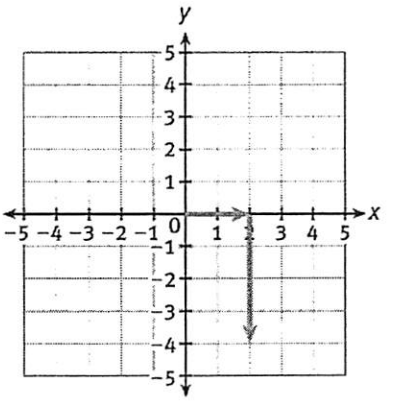
Step 1: Starting at (0, 0), move 2 units right.

Step 2: From that point, (2, 0), move 4 units down.

Step 3: Plot and label point B.

Solution:





EXAMPLE C

The vertices of a figure are $A(-1, 4)$, $B(5, 4)$, $C(5, 1)$, $D(-1, 1)$. What is the perimeter of the figure?

Step 1: Plot the points on a coordinate plane.

Step 2: Find the distance from point A to point D.

The distance is 3 units.

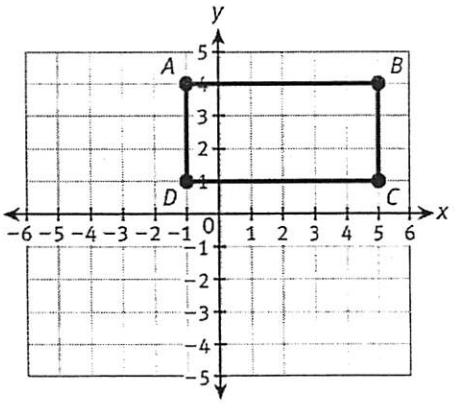
Step 3: Find the distance from point A to point B.

The distance is 6 units.

Step 4: Find the perimeter of the rectangle.

$P = 2l + 2w$
$= 2(6) + 2(3)$
$= 12 + 6$
$= 8$ units

Solution: The perimeter of the figure is 8 units.



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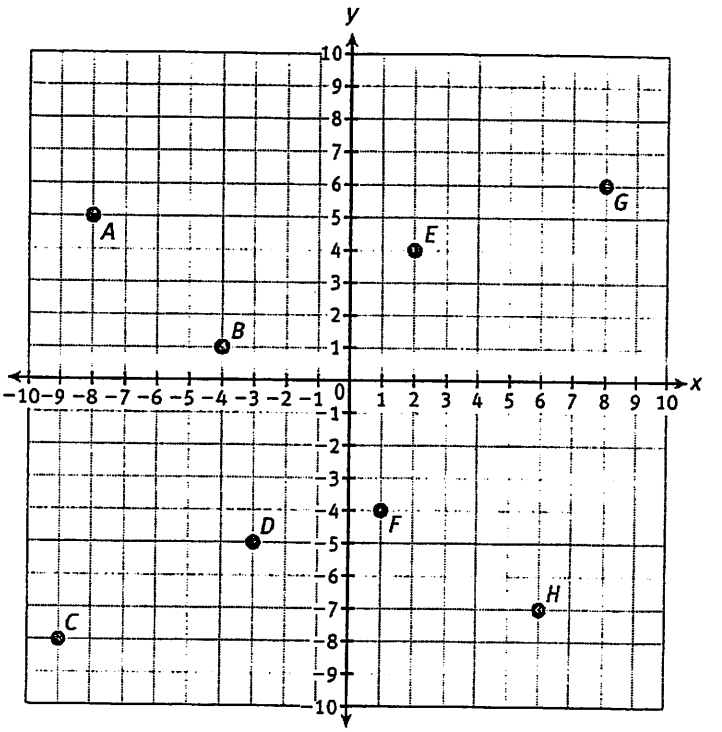
Name:

PRACTICE

Write the ordered pair for each point.

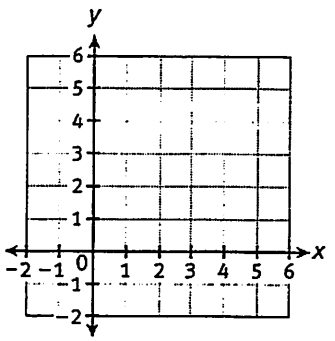
1. A
2. B
3. C
4. D
5. E
6. F
7. G
8. H



Plot and label each point.

9. $J\,(5, 7)$
10. $K\,(7, -5)$
11. $L\,(-3, 4)$
12. $M\,(-7, -2)$
13. $N\,(6, 2)$
14. $O\,(-2, -8)$

15. The vertices of a figure are $A(-1, 5)$, $B(4, 5)$, $C(4, 1)$, $D(-1, 1)$. What is the perimeter of the figure?



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NAME CLASS DATE

Perimeter

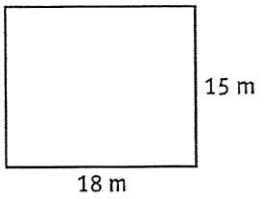
Perimeter is the distance around a plane figure. You can measure the perimeter of a plane figure by finding the sum of the lengths of its sides.

You can also use formulas to find the perimeter of plane figures.

Figure	Formula
Square	$P = 4s$
Rectangle	$P = 2l + 2w$
Triangle	$P = a + b + c$

EXAMPLE

What is the perimeter of the given figure?



Step 1: Write the formula for the given figure. $P = 2l + 2w$

Step 2: Substitute the length and width into the formula and simplify.

$$P = 2(18) + 2(15)$$
$$= 36 + 30$$
$$= 66 \text{ m}$$

Solution: The perimeter of the rectangle is 66 m.

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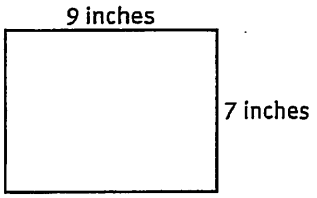
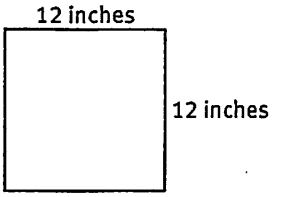
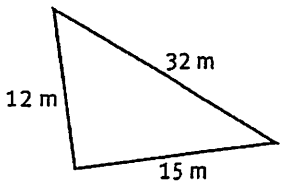
Name:

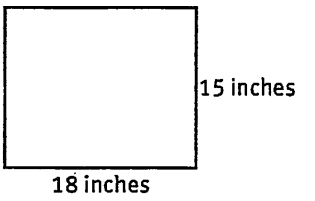
PRACTICE

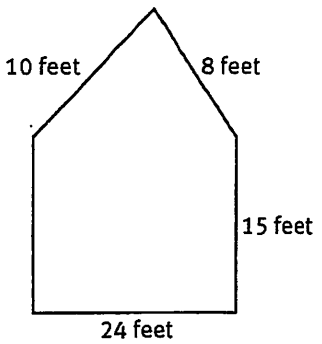
nd the perimeter of each figure.

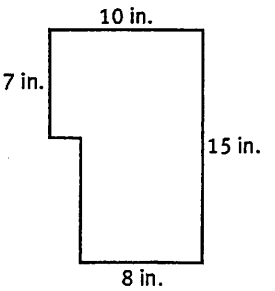
1. 

2. 

3. 

4. 

5. 

6. 

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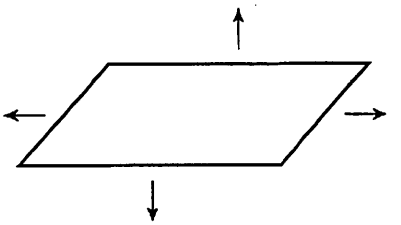
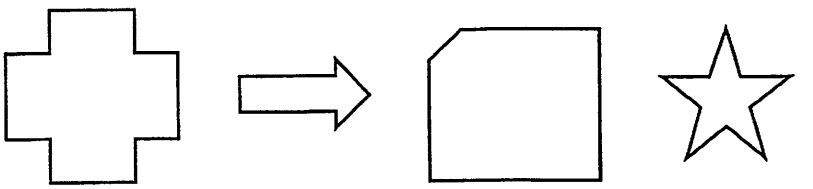
Two-Dimensional Figures

A plane is a flat surface that extends infinitely in all directions. A parallelogram like the one below is often used to model a plane, but remember that a plane—unlike a parallelogram—has no boundaries or sides.

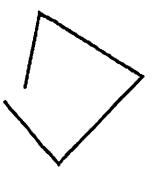


A ***plane figure*** or ***two-dimensional figure*** is a figure that lies completely in one plane. When you draw, either by hand or with a computer program, you draw two-dimensional figures. Blueprints are two-dimensional models of real-life objects.

Polygons are closed, two-dimensional figures formed by three or more line segments that intersect only at their endpoints. These figures are polygons.

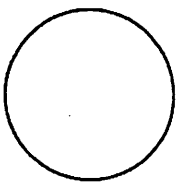


These figures are not polygons.



This is not a polygon because it is an open figure.

A heart is not a polygon because it is has curves.



A circle is not a polygon because it is made of a curve.

Polygons are named by the number of sides and angles they have. A polygon always has the same number of sides as angles. Listed on the next page are the most common polygons. Each of the polygons shown is a regular polygon. All the angles of a regular polygon have the same measure and all the sides are the same length.

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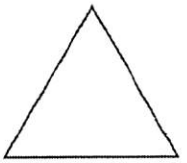
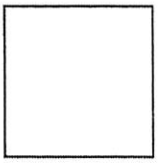
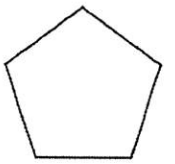


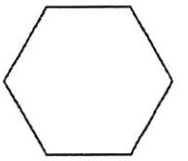
Triangle
3 sides; 3 angles



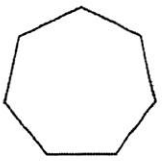
Quadrilateral
4 sides; 4 angles



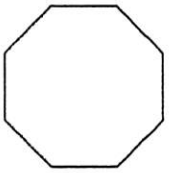
Pentagon
5 sides; 5 angles



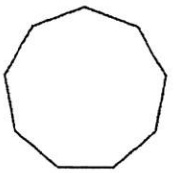
Hexagon
6 sides; 6 angles



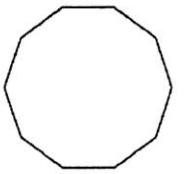
Heptagon
7 sides; 7 angles



Octagon
8 sides; 8 angles



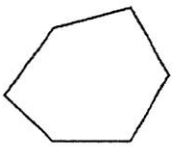
Nonagon
9 sides; 9 angles



Decagon
10 sides; 10 angles

EXAMPLE A

Classify the polygon.

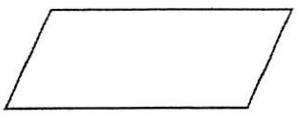


Step 1: Count the number of sides. The polygon has 6 sides.

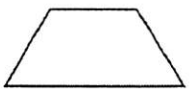
Step 2: Identify a polygon with 6 sides. A hexagon has 6 sides.

Solution: The polygon is a hexagon.

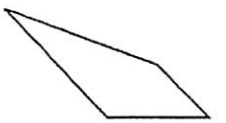
Quadrilaterals are classified by the number of pairs of parallel sides that they have. Parallel sides never meet and remain the same distance apart.



Parallelogram
(2 pairs of parallel sides)

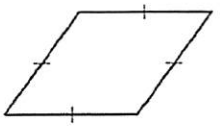


Trapezoid
(1 pair of parallel sides)

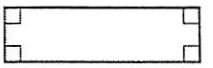


Neither a parallelogram
nor a trapezoid
(0 pairs of parallel sides)

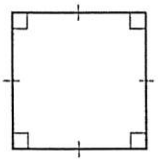
Parallelograms can further be classified by the number of equal sides and by the number of right angles that they have.



Rhombus
(4 equal sides)



Rectangle
(4 right angles)



Square
(4 equal sides and 4 right angles)

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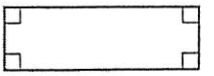
EXAMPLE B

Classify the quadrilateral at right in as many ways as you can.



Step 1: Determine if the quadrilateral is a parallelogram.

The figure is a parallelogram because it has two pairs of parallel sides.

Step 2: Determine if the parallelogram is a rectangle.

It is a rectangle because it has 4 right angles.

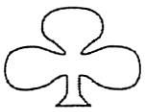
Step 3: Determine if the rectangle is a square or rhombus.

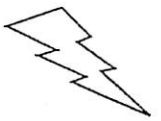
It is neither a square nor a rhombus because it does not have 4 equal sides.

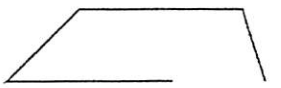
Solution: The quadrilateral is a parallelogram and rectangle.

PRACTICE

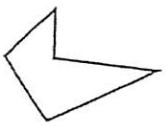
Determine if each shape is a polygon.

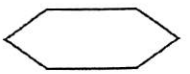
1. 

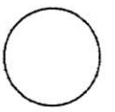
2. 

3. 

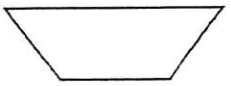
Name each two-dimensional figure.

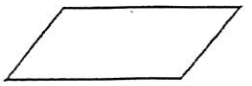
4. 

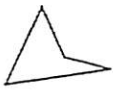
5. 

6. 

Classify each quadrilateral in as many ways as you can.

7. 

8. 

9. 

10. Adrian said that a square is always a rectangle. Curtis said a rectangle is always a square. Is either of the boys correct? Explain your answer.

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Spring Board

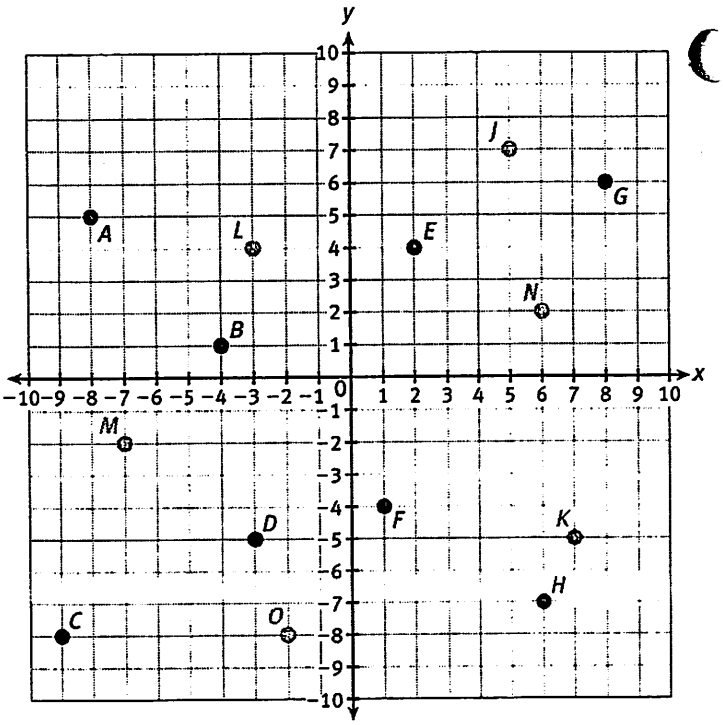
Math Packet
Answer Key
Course 1

Independent Study
La Mesa-Spring Valley School District

PRACTICE

Write the ordered pair for each point.

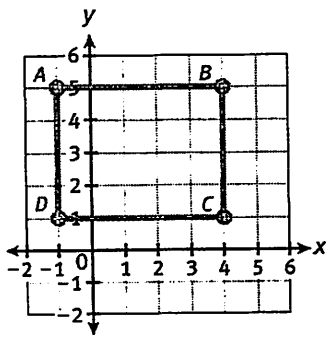
1. $A(-8, 5)$
2. $B(-4, 1)$
3. $C(-9, -8)$
4. $D(-3, -5)$
5. $E(2, 4)$
6. $F(1, -4)$
7. $G(8, 6)$
8. $H(6, -7)$



Plot and label each point.

9. $J(5, 7)$
10. $K(7, -5)$
11. $L(-3, 4)$
12. $M(-7, -2)$
13. $N(6, 2)$
14. $O(-2, -8)$

15. The vertices of a figure are $A(-1, 5)$, $B(4, 5)$, $C(4, 1)$, $D(-1, 1)$. What is the perimeter of the figure?



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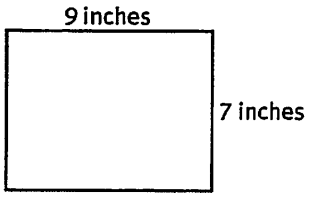
PRACTICE

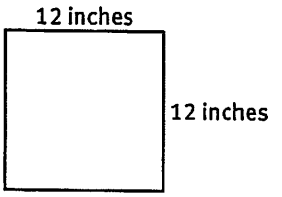
Find the perimeter of each figure.

1.



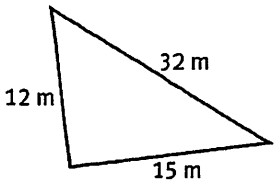
32 feet

2.



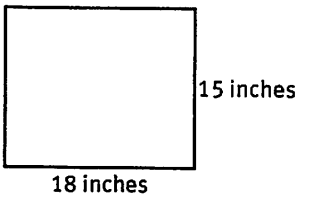
48 inches

3.



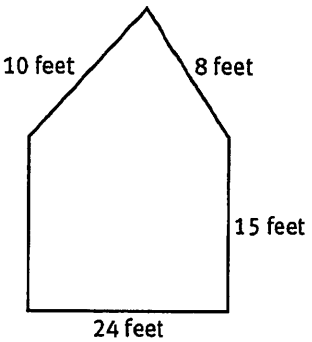
59 meters

4.



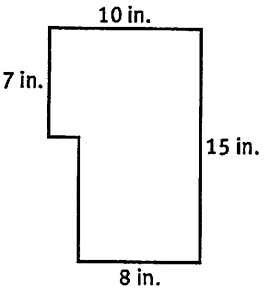
66 inches

5.



72 feet

6.



50 in.

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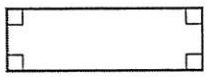
EXAMPLE B

Classify the quadrilateral at right in as many ways as you can.



Step 1: Determine if the quadrilateral is a parallelogram.

The figure is a parallelogram because it has two pairs of parallel sides.

Step 2: Determine if the parallelogram is a rectangle.

It is a rectangle because it has 4 right angles.

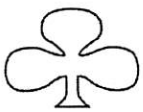
Step 3: Determine if the rectangle is a square or rhombus.

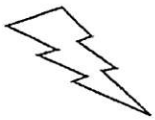
It is neither a square nor a rhombus because it does not have 4 equal sides.

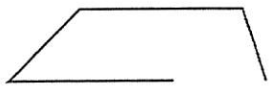
Solution: The quadrilateral is a parallelogram and rectangle.

PRACTICE

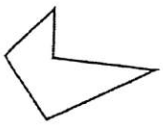
Determine if each shape is a polygon.

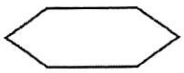
1.  no

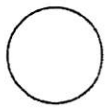
2.  yes

3.  no

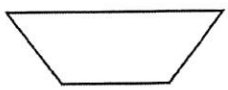
Name each two-dimensional figure.

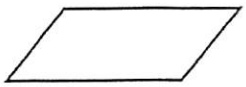
4.  pentagon

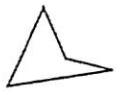
5.  hexagon

6.  circle

Classify each quadrilateral in as many ways as you can.

7.  trapezoid

8.  parallelogram

9.  quadrilateral

10. Adrian said that a square is always a rectangle. Curtis said a rectangle is always a square. Is either of the boys correct? Explain your answer.

Adrian is correct. A square is always a rectangle, but a rectangle is not always a square.

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Physical Education

Physical activity has positive benefits to student health and academic achievement. The goal is to provide an adequate amount of moderate to vigorous physical acivity, build interest and proficiency in movement skills, and encourage students' lifelong fitess through physical activity. And finally, as educators of our children, we have the opportunity to be role models by example and by providing opportunities and encouraging children to make healthy choices.

Physical Education

Physical Education shall be provided:

Grade 1-6: 20 minutes per day
Grade 7-8: 40 minutes per day

Physical Fitness Testing

La Mesa-Spring Valley currently administers physical fitness tests (Fitness Gram) to students in grades 5 and 7. Each students' score on the physical performance test shall be included in his/her cumulative record.

Highlights of the Standards

The five overarching model content standards for elementary and middle school Physical Education students are as follows:

Standard 1: Students demonstrate the ***motor skills and movement patterns*** needed to perform a variety of physical activities (dribbling).

Standard 2: Students demonstrate ***knowledge of movement concepts***, principles, and strategies that apply to the learning and performance of physical activities (holding a bat).

Standard 3: Students assess and maintain a ***level of physical fitness*** to improve health and performance (improving).

Standard 4: Students demonstrate ***knowledge of physical fitness concepts***, principles, and strategies to improve health and performance (research and knowledge).

Standard 5: Students demonstrate and utilize ***knowledge of psychological and sociological concepts***, principles, and strategies that apply to the learning and performance of physical activity(sportsmanship).

The content standards emphasize the way in which students move through space and time in their environment, the way in which the student and a partner move in space together, the continuity and change in movement, the manipulation of objects in time and through space, and the manipulation of objects with accuracy and speed.

Component	*Kindergarten*	*First*	*Second*	*Third*	*Fourth*	*Fifth*	*Sixth*	*Seventh/Eighth*
Physical Fitness A. Endurance	Jog/walks for 3 minutes	Jog-walks for 4 minutes	Jog-walks for 5 minutes	Jog-walks for 6 minutes	Competes 9-110 yd. laps during 6 min. jog-walk	Completes 10-110 yd. Laps during 6 min. Jog-walk	Completes 11-110 yd. Laps during 6 min. jog-walk	Completes 6 min. jog
B. Strength	Climbs/hangs on apparatus for 5-10 seconds	Supports weight on overhead bar 10 seconds Sidesteps to the right and left	Crosses horizontal ladder Performs 8 knee bent sit-ups in 30 seconds	Crosses horizontal ladder alternate arms Performs 16 knee bent sit-ups in 60 seconds Jumps 40" in standing long jump	Flexed-arm hang for 7 seconds or 1 pull-up (palms outward) Performs 20 knee bent sit-ups in 60 seconds Jumps 56" in standing long jump 8 chair push ups girls, 15 boys 12 sidesteps in 10 seconds	Flexed arm hang for 9 seconds or 2 pull-ups (palms outward) Performs 24 knee bent sit-ups in 60 seconds Jumps 60" in standing long jump 10 chair push ups girls, 16 boys 14 sidesteps in 10 seconds	Flexed arm hang for 10 seconds or 2 pull-ups (palms outward) Performs 28 knee bent sit-ups in 60 seconds Jumps 64" in standing long jump 10 chair push ups girls, 20 boys 17 sidesteps in 10 seconds	Performs 32 knee bent sit-ups in 60 seconds Jumps 64" in standing long jump 10 chair push ups girls, 2(boys
Movement & Skill Throwing & Catching	Rolls & stops large ball Bounces a large ball Catches a large ball Bounces & catches large ball in succession	Bounces & catches large ball 10-15 feet apart Bounces & catches large ball to rhythmic accompaniment Throws small ball underhand 10-12 feet Throws large ball overhead with 2 hands for 10 feet	Throws & catches large ball in air 10-15 feet apart Throws ball overhand stepping forward on opposite foot Bounces large ball with either hand	Throws & catches volleyball in air 10-15 feet apart Throws ball to hit moving object Catches ball thrown to various heights	Throws & catches 12" softball 20 feet apart Throws softball from second base to home plate (65') with or without bouncing Dribbles basketball 50 feet Throws basketball with chest pass Shoots basketball from standing position	Catches fly balls and fields ground ball accurately Shoots basketball while moving (lay up)	Receives & sets volleyball	Can catch fly/ground ball Receives & sets volleyba Dribbles basketball 50 fee
Sportsmanship	Interacts positively with peers Takes turns Follows rules	Takes turns Demonstrates cooperative attitude Accepts differences in ability levels of self & peers	Takes turns Cooperates with others Accepts differences in ability levels Accepts wins & losses	Follows rules Plays without quarreling Accepts wins & losses Demonstrates teamwork	Respects feelings of. others Plays safely & fairly Chooses & accepts teammates willingly Accepts wins & losses	Encourages teammates Recognizes good playing by opposing team members Accepts wins & losses	Assists less capable teammates Assumes leadership role in group Demonstrates good sportsmanship	Demonstrates good sportsmanship Accepts wins & losses gracefully Helps less capable teammates

Get Fit Exercises

WARM-UP ACTIVITIES

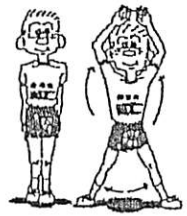
Side Bend

Trunk Twist

Knee Lift

Calf Stretch

Arm Circles


Jumping Jacks

Brisk Walking

STRENGTH DEVELOPMENT ACTIVITIES

Crunch

Curl-ups

Sit-ups

Back Arch

Wall Sit

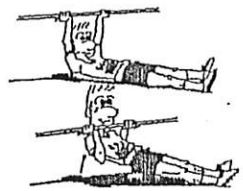
Lunges

Single Leg Lift

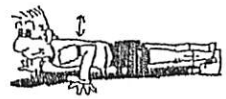
Arm Curls

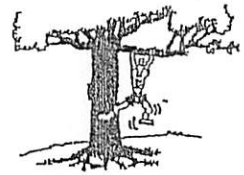
Military Press

(using canned food as weight)


Modified Pull-ups

Horizontal Ladder Activities


Push-ups


Climbing Activities

AEROBIC ACTIVITIES

Jogging Cycling Swimming Brisk Walking Rope Jumping Soccer Basketball

COOL-DOWN ACTIVITIES

Calf Stretch

Thigh Stretch

Sitting Toe Touch

Knee Hug

Arm/Shoulder Stretch

Arm/Side Stretch

Ancient Civilizations

CHAPTER 8 RESOURCES

Greek Civilization

Glencoe

New York, New York Columbus, Ohio Chicago, Illinois Peoria, Illinois Woodland Hills, California

Section 2

Greek Philosophy and History

Guide to Reading

History Social Science Standards

WH6.4 Students analyze the geographic, political, economic, religious, and social structures of the early civilizations of Ancient Greece.

Looking Back, Looking Ahead

Section 1 discussed early Greek artists and writers. Many of them made the years between 500 and 350 B.C. the Golden Age for Greece. Greek thinkers and historians produced works that shape people's views of the world today.

Focusing on the Main Ideas

- Greek philosophers developed ideas that are still used today. *(page 393)*
- Greeks wrote the first real histories in Western civilization. *(page 397)*

Meeting People

Pythagoras (puh•THA•guh•ruhs)
Socrates (SAH•kruh•TEEZ)
Plato (PLAY•TOH)
Aristotle (AR•uh•STAH•tuhl)
Herodotus (hih•RAH•duh•tuhs)
Thucydides (thoo•SIH•duh•DEEZ)

Content Vocabulary

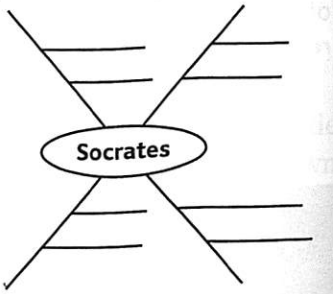
philosophy (fuh•LAH•suh•fee)
philosopher (fuh•LAH•suh•fuhr)
Sophist (SAH•fihst)
Socratic method (suh•KRA•tihk)

Academic Vocabulary

reject (ree•JEHKT)
accurate (A•kyuh•ruht)

Reading Strategy

Categorizing Information Use diagrams like the one below to show the basic philosophies of Socrates, Plato, and Aristotle.



NATIONAL GEOGRAPHIC Who & When?

500 B.C.

435 B.C. Herodotus writes history of Persian Wars

400 B.C.

399 B.C. Socrates sentenced to death

300 B.C.

335 B.C. Aristotle opens the Lyceum in Athens

WH6.4.8 Describe the enduring contributions of important Greek figures in the arts and sciences (e.g., Hypatia, Socrates, Plato, Aristotle, Euclid, Thucydides).

Greek Philosophers

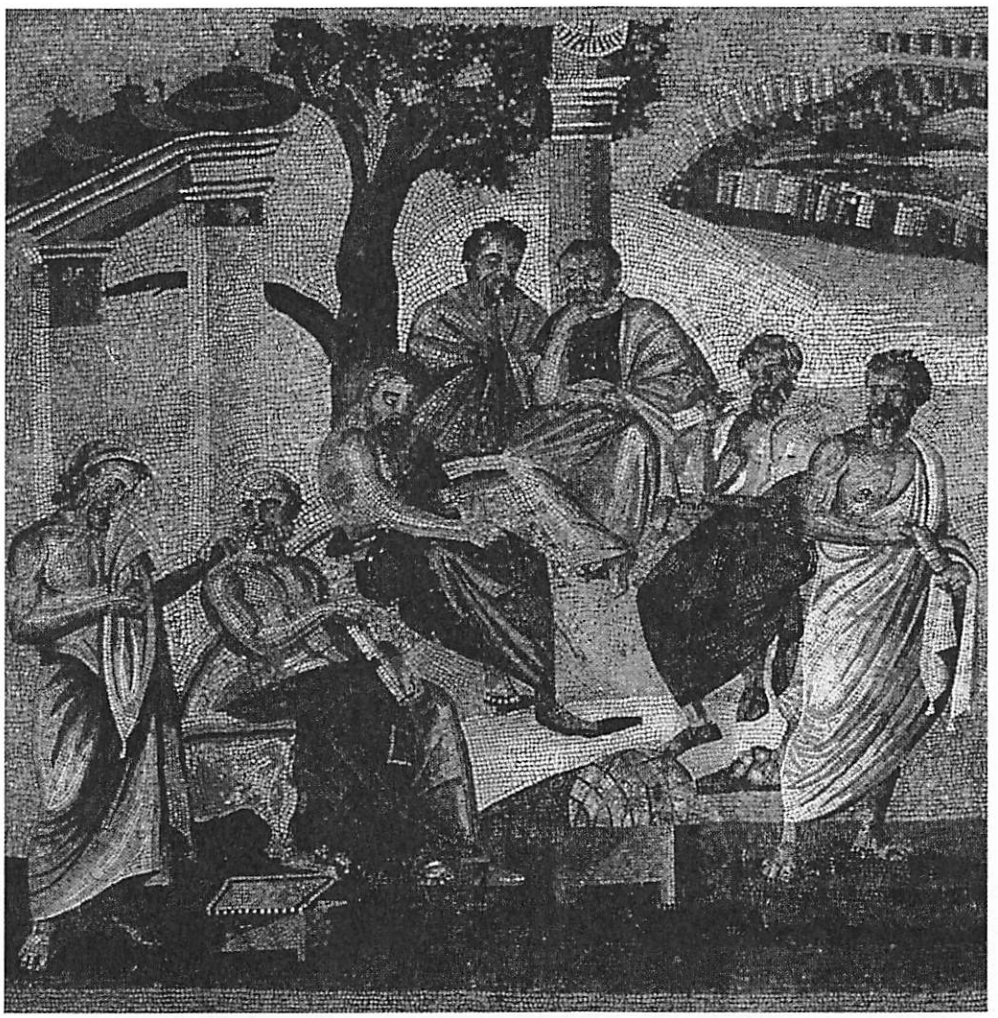
Main Idea **Greek philosophers developed ideas that are still used today.**

Reading Connection What is right? What is wrong? What makes a government good? Read to learn how the ancient Greeks tried to answer similar "big" questions.

The word **philosophy** (fuh•LAH•suh•fee) comes from the Greek word for "love of wisdom." Greek philosophy led to the study of history, political science, science, and mathematics. Greek thinkers who believed the human mind could understand everything were called **philosophers** (fuh•LAH•suh•fuhrs).

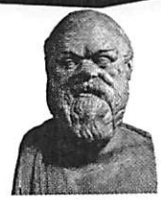
Many philosophers were teachers. One Greek philosopher, **Pythagoras** (puh•THA•guh•ruhs), taught his pupils that the universe followed the same laws that governed music and numbers. He believed that all relationships in the world could be expressed in numbers. As a result, he developed many new ideas about mathematics. Most people know his name because of the Pythagorean theorem that is still used in geometry. It is a way to determine the length of the sides of a triangle.

Who Were the Sophists? The **Sophists** (SAH•fihsts) were professional teachers in ancient Greece. They traveled from city to



▲ This artwork shows Greek philosophers involved in a discussion. ***Where does the word*** **philosophy** ***come from?***

Greek Philosophers

	Sophists	Socrates	Plato	Aristotle
Thinker or Group				
Main Idea	Sophists like Libanius (above) thought that people should use knowledge to improve themselves. They believed that there is no absolute right or wrong.	He was a critic of the Sophists. Socrates believed that there was an absolute right and wrong.	He rejected the idea of democracy as a form of government. Plato believed that philosopher-kings should rule society.	Aristotle taught the idea of the "golden mean." He believed observation and comparison were necessary to gain knowledge.
Important Contribution	They developed the art of public speaking and debate.	He created the Socratic method of teaching.	He described his vision of the ideal government in his work the *Republic*.	He wrote over 200 books on philosophy and science. He divided all governments into three basic types.
Influence on Today	The importance of public speaking can be seen in political debates between candidates.	His methods influenced the way teachers interact with their students.	He introduced the idea that government should be fair and just.	His political ideas still shape political ideas today.

city and made a living by teaching others. They believed students should use their time to improve themselves. Many taught their students how to win an argument and make good political speeches.

Sophists did not believe that gods and goddesses influenced people. They also **rejected** the concept of absolute right or wrong. They believed that what was right for one person might be wrong for another.

The Ideas of Socrates One critic of the Sophists was **Socrates** (SAH • kruh • TEEZ). Socrates was an Athenian sculptor whose true love was philosophy. Socrates left no writings behind. What we know about him we have learned from the writings of his students.

Socrates believed that an absolute truth existed and that all real knowledge was within each person. He invented the **Socratic method** (suh • KRA • tihk) of teaching still used today. He asked pointed questions to force his pupils to use their reason and to see things for themselves.

Some Athenian leaders considered the Socratic method a threat to their power. At one time, Athens had a tradition of questioning leaders and speaking freely. However, their defeat in the Peloponnesian War changed the Athenians. They no longer trusted open debate. In 399 B.C. the leaders accused Socrates of teaching young Athenians to rebel against the state. A jury found Socrates guilty and sentenced him to death. Socrates could have fled the city, but

he chose to remain. He argued that he had lived under the city's laws, so he had to obey them. He then drank poison to carry out the jury's sentence.

The Ideas of Plato One of Socrates' students was **Plato** (PLAY • TOH). Unlike Socrates, we are able to learn a lot about Plato from his writings. One work Plato wrote is called the *Republic*. It explains his vision of government. Based on life in Athens, Plato decided that democracy was not a good system of government. He did not think that rule by the people produced fair or sensible policies. To him, people could not live good lives unless they had a just and reasonable government.

In the *Republic*, Plato described his ideal government. He divided people into three basic groups. At the top were philosopher-kings, who ruled using logic and wisdom. Warriors made up the second group. They defended the state from attack.

The third group included the rest of the people. They were driven by desire, not by wisdom like the first group or courage like the second. These people produced the state's food, clothing, and shelter. Plato also believed that men and women should have the same education and an equal chance to have the same jobs.

Who Was Aristotle? Plato established a school in Athens known as the Academy. His best student was **Aristotle** (AR • uh • STAH • tuhl). Aristotle wrote more than 200 books on topics ranging from government to the planets and stars.

In 335 B.C. Aristotle opened his own school called the Lyceum. At the Lyceum, Aristotle taught his pupils the "golden mean." This idea holds that a person should do nothing in excess. For example, a person should not eat too little or too much but just enough to stay well.

Aristotle also helped to advance science. He urged people to use their senses to make observations, just as scientists today make observations. Aristotle was the first person to group observations according to their similarities and differences. Then he made generalizations based on the groups of facts.

Like Plato, Aristotle wrote about government. He studied and compared the governments of 158 different places to find the best form of government. In his book *Politics*, Aristotle divided the governments into three types:

- Government by one person, such as a monarch (king or queen) or a tyrant
- Government by a few people, which might be an aristocracy or an oligarchy
- Government by many people, as in a democracy

Aristotle noticed that governments run by a few people were usually run by the rich. He noticed that most democracies were run by the poor. He thought the best government was a mixture of the two.

Aristotle's ideas shaped the way Europeans and Americans thought about government. The founders of the United States Constitution tried to create a mixed government that balanced the different types Aristotle had identified.

Reading Check **Contrast** How did Aristotle's idea of government differ from Plato's?

History Online

Web Activity Visit ca.hss.glencoe.com and click on *Chapter 8—Student Web Activity* to learn more about ancient Greece.

Biography

WH6.4.8 Describe the enduring contributions of important Greek figures in the arts and sciences (e.g., Hypatia, Socrates, Plato, Aristotle, Euclid, Thucydides).

PLATO AND ARISTOTLE

Plato c. 428–347 B.C.
Aristotle 384–322 B.C.

Plato ▲

Plato was from a noble Greek family and had planned a career in politics. However, he was so horrified by the death of his teacher, Socrates, that he left politics and spent many years traveling and writing. When Plato returned to Athens in 387 B.C., he founded an academy, where he taught using Socrates' method of questioning. His academy drew bright young students from Athens and other Greek city-states. Plato looked for truth beyond the appearances of everyday objects and reflected this philosophy in his writing and teaching. He believed the human soul was the connection between the appearance of things and ideas.

Plato and Aristotle—two of the greatest ancient Greek philosophers—met as teacher and student at Plato's Academy in Athens. Aristotle left his home in Stagira and arrived on the Academy's doorstep when he was eighteen years old. He remained at Plato's Academy for 20 years, until the death of his teacher. Unlike Plato, Aristotle did not come from a noble family. His father was the court physician to the king of Macedonia. At an early age, Aristotle's father introduced him to the topics of medicine and biology, and these became his main interests of study. Aristotle sought truth through a systematic, scientific approach. He liked to jot down notes and details about different topics—from weather to human behavior—and arrange them in categories. He did not trust the senses' ability to understand the universe.

▲ Aristotle

After Plato's death, Aristotle traveled for about 12 years. He also tutored the future Alexander the Great. Later in his life, he returned to Athens and opened his own school, the Lyceum. He made his school the center for research in every area of knowledge known to the Greeks.

Then and Now

Aristotle spent 20 years at Plato's Academy. What present-day careers or subjects of study require lifelong learning?

WH6.4.8 Describe the enduring contributions of important Greek figures in the arts and sciences (e.g., Hypatia, Socrates, Plato, Aristotle, Euclid, Thucydides).

Greek Historians

Main Idea **Greeks wrote the first real histories in Western civilization.**

Reading Connection How would the United States be different if we did not know our history? Read to learn how the Greeks began to write history.

In most places in the ancient world, people used legends and myths to explain their past. No one tried to explain the past by studying events. Then, in 435 B.C., a Greek named **Herodotus** (hih • RAH • duh • tuhs) wrote the history of the Persian Wars.

In his book, Herodotus tried to separate fact from legend. He asked questions, recorded answers, and checked the truthfulness of his sources. Although his history includes some errors and uses gods and goddesses to explain some events, many European and American historians consider him the "father of history."

Many historians consider **Thucydides** (thoo • SIH • duh • DEEZ) the greatest historian of the ancient world. Thucydides fought in the Peloponnesian War. Afterward, he wrote his *History of the Peloponnesian War.*

Unlike Herodotus, Thucydides saw war and politics as the activities of human beings, not gods. He also stressed the importance of having **accurate** facts:

> **"Either I was present myself at the events which I have described or else I heard of them from eyewitnesses whose reports I have checked with as much thoroughness as possible."**
>
> —Thucydides, *History of the Peloponnesian War*

Reading Check **Identify** How did Thucydides view war and politics?

History Online

Study Central Need help with Greek philosophy and history? Visit ca.hss.glencoe.com and click on Study Central.

Section 2 Review

Reading Summary

Review the Main Ideas

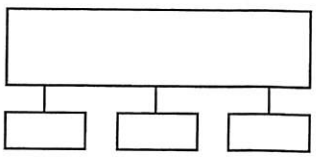
- The ideas of Greek philosophers, including Socrates, Plato, and Aristotle, still affect modern thinking about education, government, and science.
- Herodotus and Thucydides are considered western civilization's first historians. They believed that people could understand the present by studying the past.

What Did You Learn?

1. Who were the Sophists and what were their beliefs?
2. Before Herodotus, how did Greeks explain the past?

Critical Thinking

3. **Organizing Information** Draw a diagram like the one below. Use the diagram to organize Plato's ideas about an ideal government. CA 6RC2.4



4. **Science Connection** How are Aristotle's teachings related to the scientific method used by scientists today? CA 6RC2.3
5. **Contrast** What is different about the works of Herodotus and Thucydides? CA 6RC2.2
6. **The Big Ideas** How did the ideas of Greek philosophers affect Greek society? CA HI2.
7. **Persuasive Writing** Do you agree with Plato's vision of the ideal state in the *Republic?* Write an editorial expressing your viewpoint. CA 6WA2.5

Name _____ Date _____ Class _____

Guided Reading Activity 8-2

Greek Philosophy and History

Directions: Outlining Reading the section and completing the outline below will help you learn more about Greek philosophy and history. Refer to your textbook to fill in the blanks.

I. Greek _____ led to the study of history, political science, _____, and mathematics.

- **A.** Many philosophers were _____ like Pythagoras, who taught that all relationships in the world could be expressed in _____.
- **B.** One school of philosophers was the _____ who traveled from city to city making a living by teaching others.
- **C.** Socrates was an Athenian _____ whose true love was philosophy.
  - **1.** Socrates invented the _____ of teaching, which asks pointed questions to force students to use reason and to see things for themselves.
  - **2.** Socrates was accused of teaching young Athenians to _____ against the _____.
- **D.** _____ was a student of Socrates who taught that democracy was not a good system of _____.
- **E.** Aristotle, a student of Plato, influenced the way Europeans and _____ thought about government.

II. Greeks wrote the first real _____ in Western civilization.

- **A.** Herodotus wrote the history of the Persian Wars and tried to separate _____ from _____, but used _____ and _____ to explain some events.
- **B.** Most historians consider _____ the greatest historian of the ancient world because he saw war and politics as the activities of _____ and stressed the importance of having accurate _____.

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Social Studies

Study Guide B
with Directed Reading Worksheets

HOLT CALIFORNIA

Earth Science

Includes

- Directed Reading B worksheets
- Vocabulary and Section Summary B worksheets

HOLT, RINEHART AND WINSTON

SECTION 1

Earth's Oceans

Key Concept The characteristics of ocean water, such as temperature and salinity, affect the circulation of the ocean.

What You Will Learn

- Ocean water contains dissolved solids that make the water salty.
- The temperature of ocean water varies with depth, latitude, and movement of the water.

Why It Matters

The global ocean's temperature and salinity affect climate and life on Earth.

Vocabulary

- salinity
- thermocline

READING STRATEGY

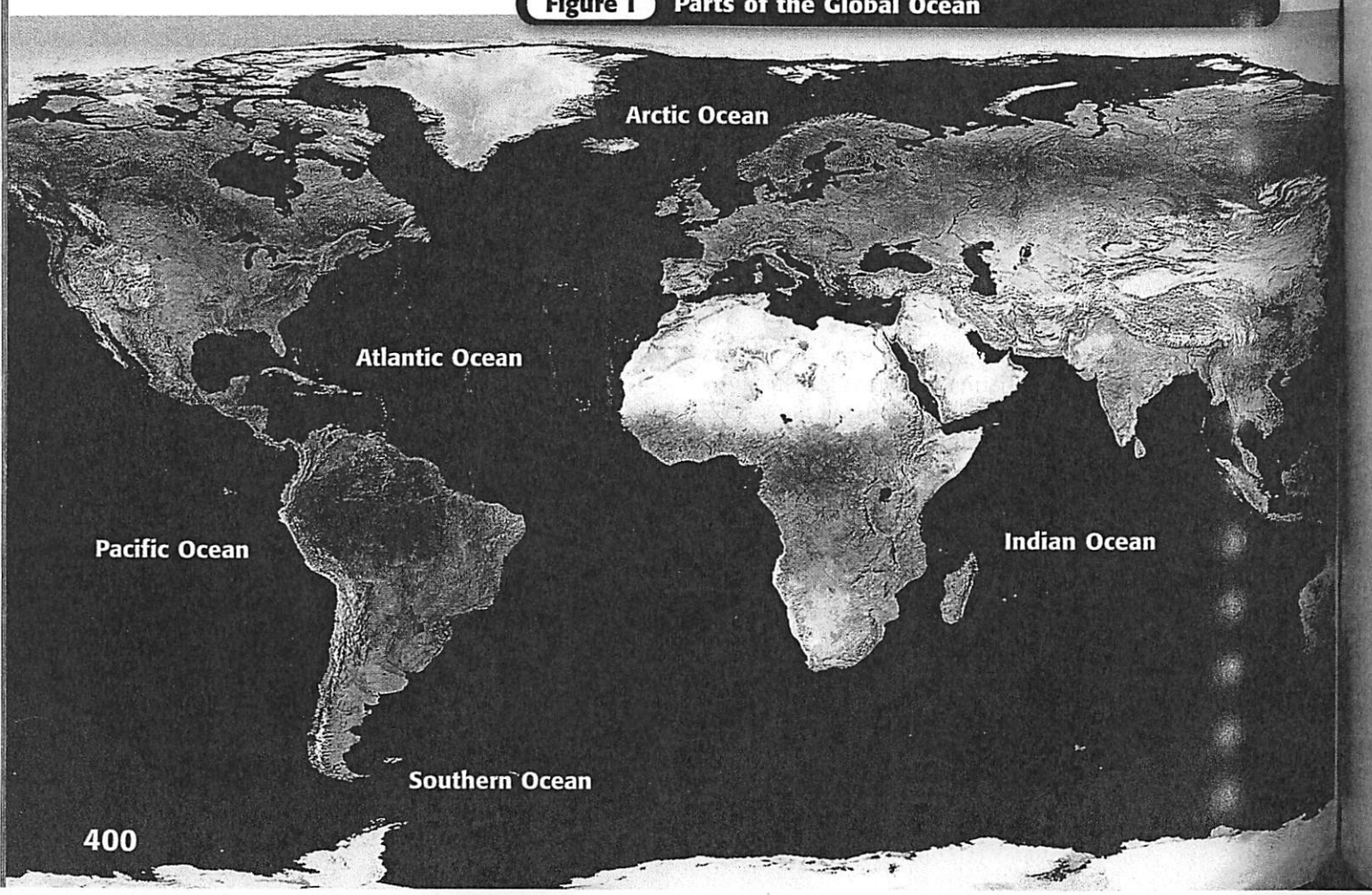
Prediction Guide Before reading this section, write each heading from this section in your **Science Journal.** Below each heading, write what you think you will learn.

Earth is unique in our solar system because 71% of its surface is covered with liquid water. Most of Earth's water is in the *global ocean.* The global ocean is divided by the continents into five main oceans. These five main oceans are shown in **Figure 1.** The global ocean has characteristics that play an important role in regulating Earth's climate.

Divisions of the Global Ocean

The largest ocean is the *Pacific Ocean.* It lies between Asia and the Americas. The volume of the *Atlantic Ocean,* the second-largest ocean, is about half the volume of the Pacific. The *Indian Ocean* is the third-largest ocean. It is located between Africa and Australia. The *Arctic Ocean* is the smallest ocean. This ocean is unique because much of its surface is covered by ice. The *Southern Ocean* extends from the coast of Antarctica to 60° south latitude.

Figure 1 **Parts of the Global Ocean**



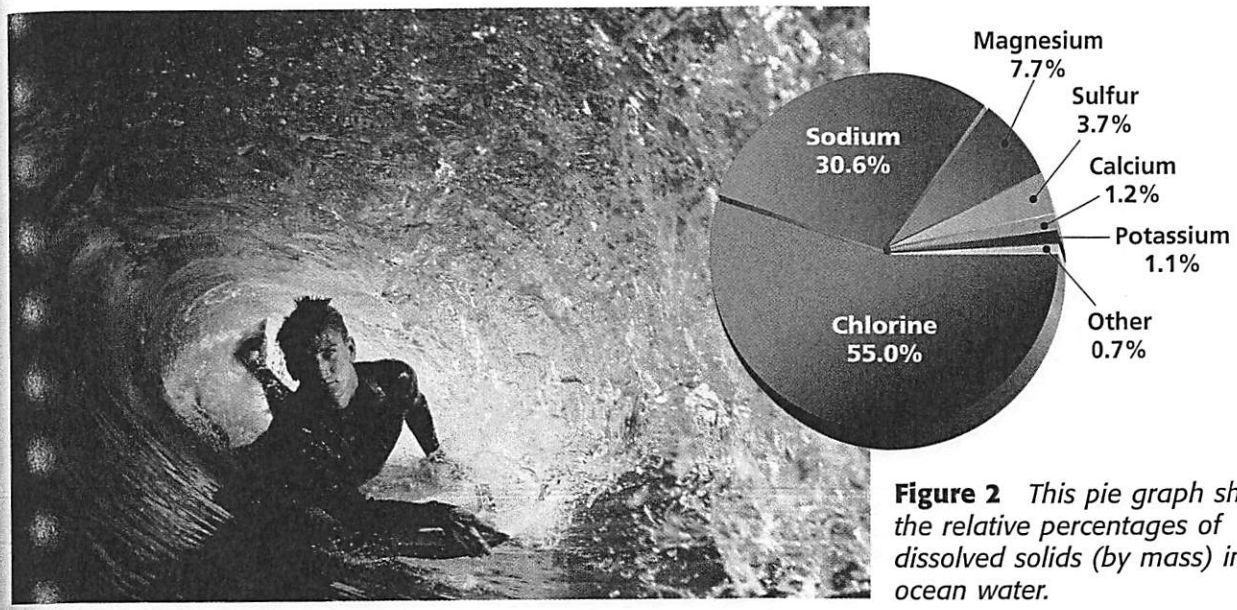


Figure 2 *This pie graph shows the relative percentages of dissolved solids (by mass) in ocean water.*

Characteristics of Ocean Water

Ocean water is different from the water that flows from your sink at home. For one thing, you can't drink ocean water. It is too salty and doesn't taste very good. But there are other things that make ocean water special.

Ocean Water Is Salty

Have you ever swallowed water while swimming in the ocean? It tasted really salty, didn't it? Most of the salt in the ocean is the same kind of salt that we sprinkle on our food. This salt is called *sodium chloride*. This compound consists of the elements sodium, Na, and chlorine, Cl. There are many other dissolved solids in ocean water, such as magnesium and calcium. **Figure 2** shows the relative amounts of the dissolved solids in ocean water.

Salts have collected in the ocean for billions of years. As rivers and streams flow toward the ocean, they dissolve minerals from the land. The running water carries these dissolved minerals to the ocean. At the same time, water is *evaporating* from the ocean. As the water evaporates, it leaves the dissolved solids behind. The most abundant dissolved solid in the ocean is sodium chloride.

Salinity

A measure of the amount of dissolved solids in a given amount of liquid is called **salinity.** Salinity is usually measured as grams of dissolved solids per kilogram of water. Every 1 kg (1,000 g) of ocean water has 35 g of dissolved solids in it. Therefore, if you evaporated 1 kg of ocean water, 965 g of fresh water would be removed and 35 g of solids would remain.

salinity (suh LIN uh tee) a measure of the amount of dissolved salts in a given amount of liquid

6.3.c Students know heat flows in solids by conduction (which involves no flow of matter) and in fluids by conduction and by convection (which involves flow of matter).
6.4.d Students know convection currents distribute heat in the atmosphere and oceans.

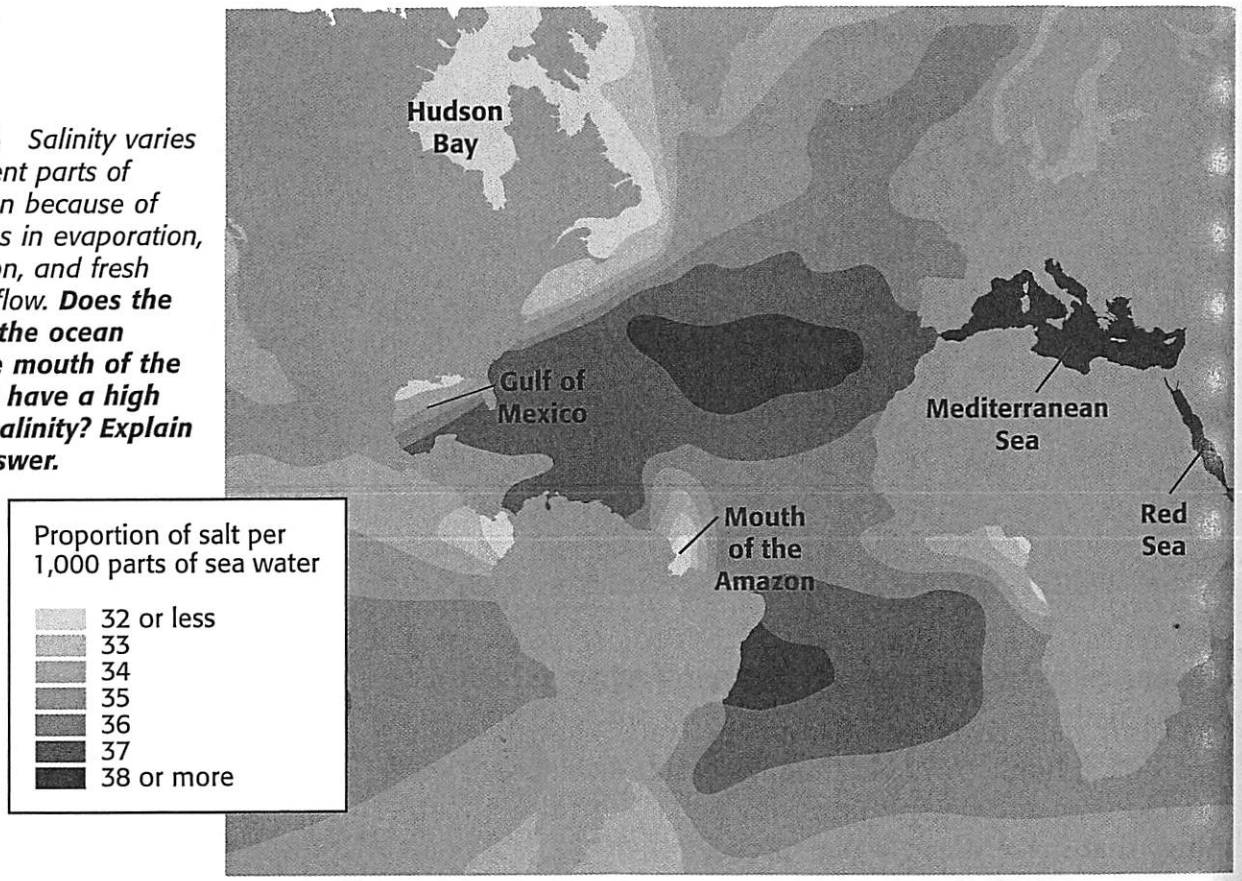


Figure 3 *Salinity varies in different parts of the ocean because of variations in evaporation, circulation, and fresh water inflow.* ***Does the area of the ocean near the mouth of the Amazon have a high or low salinity? Explain your answer.***

Climate Affects Salinity

Some parts of the ocean are saltier than others, as shown in **Figure 3.** In places that have hotter, drier climates, salinity is usually higher. In these areas, the evaporation rate is high because the temperatures are high. Evaporation removes water but leaves salts and other dissolved solids behind. The salinity of the Red Sea is very high because the hot, dry climate around the Red Sea causes a high rate of evaporation.

Coastal waters commonly have lower salinity than waters farther offshore. Fresh water from streams and rivers on land runs into the ocean in these areas. As the fresh water mixes with the ocean water, the concentration of salts in the ocean water decreases. The mouth of the Amazon is one such location, as shown in **Figure 3.**

Water Movement Affects Salinity

Another factor that affects ocean salinity is water movement. Slower-moving areas of water develop higher salinity. Some parts of the ocean, such as bays, gulfs, and seas, move less than other parts do. Parts of the open ocean that do not have currents running through them can also be slow moving. In **Figure 3,** identify the areas that are most likely to have slower-moving water.

Temperature of Ocean Water

The temperature of ocean water decreases as depth increases. However, this temperature change is not uniform. Water in the ocean can be divided into three layers by temperature. Those three layers are the surface zone, the thermocline, and the deep zone, as shown in **Figure 4.**

Surface Zone

The *surface zone,* or top layer of ocean water, is heated by the sun's energy. Heated ocean water becomes less dense and rises above the denser, cool water. This movement of water caused by differences in density forms convection currents. The convection currents distribute heat in the surface zone down to a depth of about 100 m to 300 m. The convection currents distribute the heat until the temperature is fairly uniform throughout the surface zone.

Standards Check How is heat distributed in the surface zone of the ocean? 6.4.d

Thermocline

The sun cannot directly heat ocean water below the surface zone. And the heated, less dense water of the surface zone cannot easily mix with the cold, dense water below. Therefore, below the surface zone, the temperature of the water decreases sharply as depth increases. The layer of the ocean in which temperature drops with increased depth faster than it does in other layers is called the **thermocline.** The thermocline's depth varies in different parts of the ocean. However, it may extend between 100 m and 1000 m below the ocean's surface.

MATH PRACTICE

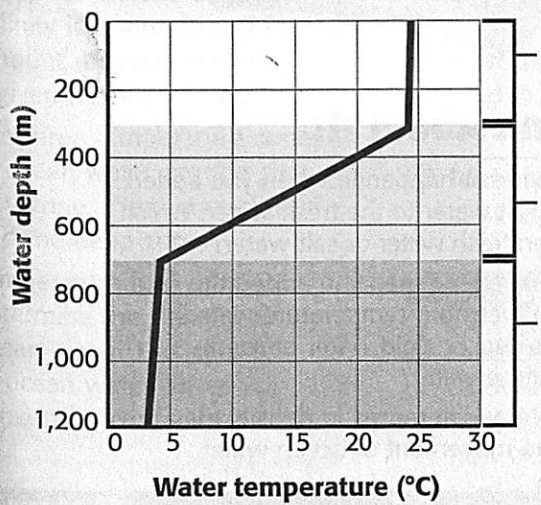
How Deep Is It?

One area of the ocean is 4,000 m deep. Its surface zone extends to about 300 m below the surface of the ocean. What percentage of the total depth of the ocean in this particular area is the surface zone? Record your work in your **Science Journal.**

thermocline (THUHR moh KLIEN) a layer in a body of water in which water temperature drops with increased depth faster than it does in other layers

Wordwise The root *therm-* means "heat." The root *clino-* means "slope." Other examples are *incline, decline,* and *thermometer.*

Figure 4 **Temperature Zones in the Ocean**



Surface zone The *surface zone* is the warm, top layer of ocean water. It can extend to 300 m below sea level. Sunlight heats the top 100 m of the surface zone. Convection currents mix the heated water with cooler water below.

Thermocline The *thermocline* is the second layer of ocean water. In the thermocline, temperature drops with increased depth faster than it does in the other two zones.

Deep zone The *deep zone* is the bottom layer that extends from the base of the thermocline to the bottom of the ocean. The temperature in this zone can range from 1°C to 3°C.

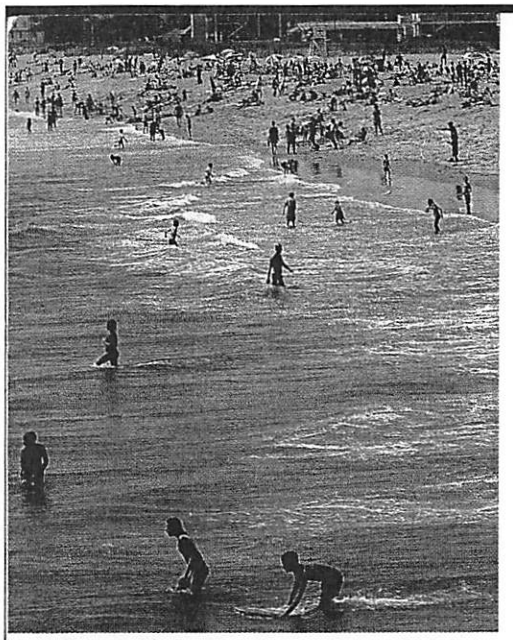


Figure 5 *People in Maine enjoy swimming in the ocean during the summer because the water is warmer during the summer.*

Deep Zone

The layer of the ocean directly below the thermocline is called the *deep zone*. In the deep zone of the ocean, the temperature of the water is usually about 2°C. The colder the water is, the denser it is. The density of cold, deep water controls the slow movement of deep ocean currents. This movement begins when the cold, dense water at the poles sinks and flows beneath warm water.

Surface Temperature Changes

Surface temperatures of different parts of the ocean are different depending on the latitude. Water along the equator is warmer because it receives more direct sunlight than water closer to the poles does. At low latitudes, ocean surface temperatures can be as high as 30°C. But in the polar oceans, temperatures of the ocean surface can be as low as –1.9°C!

The temperature of surface water also changes depending on the time of the year. The ocean surface at higher latitudes receives more direct sunlight during the summer season than during the winter season. Therefore, during summer, the surface water is warmer. For this reason, the Maine beach shown in **Figure 5** is crowded during the summer.

Quick Lab

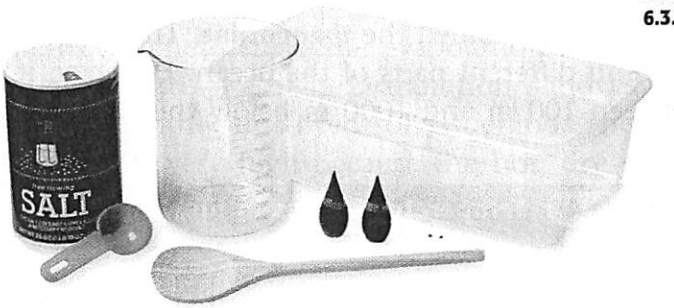
6.3.c

Density Factors

In this lab you will learn how salinity and temperature affect the density of ocean water.

Try It!

1. Fill a **deep, clear plastic container** half full with **room-temperature water.**
2. In a **1 L beaker,** mix **30 g (1/8 cup) of table salt, three drops of red food coloring,** and 1 L of room-temperature water (about 21°C). Stir the mixture until the salt is dissolved.
3. Slowly add the red saltwater mixture to the water in the clear plastic container. Record your observations. Then, dump out the water and refill the container half full with room-temperature water.
4. In the 1 L beaker, mix a **three drops of blue food coloring** with water that is 8°C.
5. Slowly add the cold, blue water to the clear plastic container. Record your observations.



Think About It!

6. Describe what happened when you added the red salt water to the fresh water. Which is denser: fresh water or salt water?
7. What happened when you added the cold water to the room-temperature water? Which is denser: cold water or room-temperature water?
8. Explain how differences in density may affect the movement of ocean water.

20 min

Density

Salinity and temperature affect the density of ocean water. The large amount of dissolved solids in ocean water makes ocean water denser than pure fresh water. Ocean water also becomes denser as it becomes colder. Water temperature affects the density of ocean water more than salinity does. Therefore, the densest ocean water is found in the polar regions, where the ocean surface is coldest. Differences in density throughout the global ocean drive the circulation of ocean water, which distributes heat in the ocean.

Standards Check What factors affect the circulation of ocean water?

6.3.c

SECTION Review

6.3.c, 6.4.d

Summary

- The global ocean is divided by the continents into five main oceans: Pacific Ocean, Atlantic Ocean, Indian Ocean, Southern Ocean, and Arctic Ocean.
- Salts have collected in the ocean for billions of years. Salinity is a measure of the amount of dissolved salts in a given mass of liquid.
- The three temperature zones of ocean water are the surface zone, the thermocline, and the deep zone.
- Temperature and salinity determine the density of ocean water. The density of ocean water drives convection currents.

Using Vocabulary

1. In your own words, write definitions for *salinity* and *thermocline.*

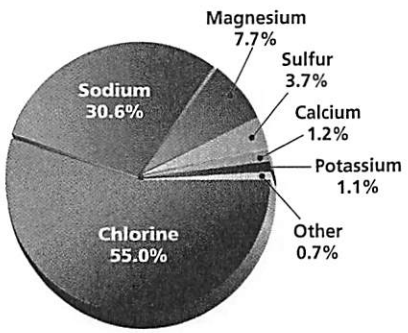
Understanding Concepts

2. **Listing** Name the major divisions of the global ocean.
3. **Analyzing** Why does ocean water taste salty?
4. **Describing** Describe the temperature layers in ocean water.
5. **Comparing** Which is more dense, ocean water or fresh water? Why?
6. **Analyzing** How is heat distributed in the surface zone of the ocean?
7. **Identifying** What causes convection currents?

Critical Thinking

8. **Predicting Consequences** If all ocean water was the same temperature all the way through, how would the movement of ocean water be affected?

INTERPRETING GRAPHICS Use the graph below to answer the next question.



9. **Identifying Relationships** What is the combined percentage of magnesium and sulfur in the dissolved solids in ocean water?

Challenge

10. **Identifying Relationships** How does density of ocean water affect how heat is distributed in the ocean?

Internet Resources

For a variety of links related to this chapter, go to www.scilinks.org
Topic: Exploring Earth's Ocean
SciLinks code: HY70557

Name _____ Class _____ Date _____

Skills Worksheet

Directed Reading B

Section: Earth's Oceans (pp. 400–406)

1. What percentage of Earth's surface is covered with water?

_____

2. The global ocean is divided by the continents into _____ main oceans.

DIVISIONS OF THE GLOBAL OCEAN

Match the correct definition with the correct term. Write the letter in the space provided.

_____ **3.** the largest ocean

_____ **4.** the ocean that is about half the volume of the Pacific Ocean

_____ **5.** the third-largest ocean

_____ **6.** the ocean whose surface is partly covered by ice

_____ **7.** the ocean that extends from the coast of Antarctica to 60° south latitude

a. Atlantic Ocean
b. Arctic Ocean
c. Indian Ocean
d. Southern Ocean
e. Pacific Ocean

CHARACTERISTICS OF OCEAN WATER

_____ **8.** Which of the following statements about salt in the ocean is true?
a. It is sodium chloride.
b. It is poisonous.
c. It is saltier than the salt we eat.
d. It is less salty than the salt we eat.

_____ **9.** The measure of the amount of dissolved salts in a given amount of liquid is called
a. circulation.
b. sodium chloride.
c. salinity.
d. evaporation.

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_____ **10.** Water salinity is usually higher in
- **a.** coastal waters in cool, humid environments.
- **b.** river waters.
- **c.** coastal waters in hot, dry climates.
- **d.** coastal waters near river outlets.

_____ **11.** When water evaporates,
- **a.** dissolved salts in the water also evaporate.
- **b.** dissolved salt breaks down into its base elements.
- **c.** dissolved salts rise to the surface of the water.
- **d.** dissolved salts in the water are left behind.

_____ **12.** Which of the following does NOT affect ocean salinity?
- **a.** climate
- **b.** sea animals
- **c.** inflow of fresh water
- **d.** water movement

13. How do minerals on land make oceans salty?

_____

_____

_____

TEMPERATURE OF OCEAN WATER

Match the correct definition with the correct term. Write the letter in the space provided.

_____ **14.** second, cooler layer of ocean water

_____ **15.** warm, top layer of ocean water

_____ **16.** bottom, coolest layer of ocean water

- **a.** surface zone
- **b.** thermocline
- **c.** deep zone

17. In the _____, temperature drops with greater depth faster than it does in the other two zones.

18. What two things affect the surface temperatures of oceans in most regions?

_____

_____

19. What two things affect the density of ocean water?

_____

_____

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HOLT CALIFORNIA

Earth Science

Study Guide B with Directed Reading Worksheets

ANSWER KEY

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15. B
16. cities, factories, and farms
17. how to identify their sources
18. Clean Water Act of 1972
19. The number has increased.
20. the Marine Protection, Research, and Sanctuaries Act of 1972, the Oil Pollution Act of 1990
21. the preservation and wise use of natural resources
22. C
23. A
24. B
25. D
26. D

Vocabulary and Section Summary B

pg 171

SECTION: THE ACTIVE RIVER

Across

5. erosion
6. watershed
7. water cycle

Down

1. divide
2. channel
3. tributary
4. load

SECTION: STREAM AND RIVER DEPOSITS

pg 173

1. deposition
2. alluvial fan
3. levee
4. floodplain
5. sediment
6. dam
7. delta

pg 174

O	G	G	D	Z	B	X	E	D	N	E	N	X	I	Q
M	A	T	E	T	R	A	S	O	O	P	A	P	C	D
Z	B	A	L	E	M	A	I	D	B	H	F	Q	O	I
Y	H	E	T	F	R	T	U	X	C	W	L	P	U	S
D	N	U	A	N	I	R	I	P	U	Z	A	K	S	R
X	H	I	E	S	S	L	F	P	I	N	I	Y	E	T
Y	A	S	O	G	E	Y	S	G	S	Y	V	R	S	N
I	P	F	E	V	E	U	Y	W	H	D	U	D	O	M
U	E	U	E	D	F	L	O	O	D	P	L	A	I	N
D	J	E	N	T	I	D	D	H	L	H	L	J	X	U
V	B	Y	M	A	D	M	J	E	X	Z	A	U	Q	T
B	E	O	I	I	N	R	E	M	B	D	M	D	W	R
L	B	B	J	R	N	L	E	N	O	F	F	T	D	X
Z	L	U	C	L	A	Z	B	B	T	Z	I	W	O	W

SECTION: USING WATER WISELY

pg 175

1. xeriscaping
2. water table
3. conservation
4. aquifer
5. overdraft
6. groundwater
7. water pollution

Answer Key

Directed Reading B

pg 176

SECTION: EARTH'S OCEANS

1. 71%
2. five
3. E
4. A
5. C
6. B
7. D
8. A
9. C
10. C
11. D
12. B
13. As rivers and streams flow toward the oceans, they dissolve minerals on land. The water carries these dissolved minerals to the ocean.
14. B
15. A
16. C
17. thermocline
18. latitude and time of year
19. salinity and temperature

SECTION: THE OCEAN FLOOR

pg 178

1. D
2. A
3. B
4. to depths of up to 11,000 m
5. It can explore depths that are too dangerous for piloted vessels to go.
6. Sound travels about 1,500 miles per second.
7. Sound impulses are sent from a ship down into the ocean. The sound bounces off the ocean floor and returns to the ship. Scientists calculate the depth of the ocean floor by measuring the length of time it takes for the sound to return to the ship.
8. deep-ocean
9. continental margin
10. continental shelf, continental slope, continental rise
11. abyssal plain, mid-ocean ridges, rift valleys, ocean trenches
12. the movement of tectonic plates
13. abyssal plains
14. seamounts
15. mid-ocean ridges
16. rift
17. ocean trench
18. subduction