

Summer Instructional Packets



Language Arts *Grade 7*

Name: _____

Date: _____

Spelling Worksheet (Writing Part 2) ELA-Literacy.L.7.2

Directions: Write a spelling word from the box below to complete each sentence.

1. The _____ stopped working.
2. That is my _____ team.
3. It is very _____ to cross that street.
4. Will you _____ the volume?
5. Do you know your true _____?
6. He tried to _____ from prison.
7. I _____ want you to go to bed.
8. Let me know all the _____.
9. Will you _____ the party?
10. The secret _____ protects the president.

Spelling Words

1. escape
2. dangerous
3. immediately
4. favorite
5. details
6. motor
7. arrange
8. identity
9. service
10. increase

Name: _____

Date: _____

Adding Punctuation Marks Worksheet ELA-Literacy.L.7.2

Period (.)

Exclamation Mark (!)

Question Mark (?)

Comma (,)

Apostrophe (')

Quotation Mark ("____")

Directions: Re-write each sentence below and add the correct punctuation mark or marks where needed.

Example A: Congratulations _____ You graduated with honors _____

Answer: Congratulations! You graduated with honors!

1. I am so excited to see my family for Christmas _____

2. Where is an exciting place to visit _____

3. Make sure to complete all your homework on time _____

4. John asked when are we going on a vacation _____

5. Terry Sam and Jeremy went to the movies together _____

6. Wow _____ What a wonderful event _____

Name: _____

Date: _____

Precise and Concise Language (L.7.3a Part 1)

Language that expresses ideas precisely and concisely allows one to eliminate redundancy and wordiness.

Directions: Re-write each group of sentences and eliminate the redundant words to make them more precise and concise.

Example A- I went to the store to buy food. When I got to the store I bought food.

Answer- I went to the store and purchased food.

1. The theme of the story is to never give up. I learned that the message is to never give up.

2. I can't wait for summer break. I'll be so excited when summer break arrives.

3. I'm very hungry. I'm starving right now. When are we eating?

4. I love computers. I'm really good at using computers.

5. My family loves going to the park. We enjoy the park.

6. I have a question to ask. May I ask a question?

7. I thought the book was interesting. It was a fun book to read.

8. I had fun at the beach. The beach was fun.

Name: _____

Date: _____

Capitalization Worksheet (Circling Part 1) ELA-Literacy.L.7.2

Capitalization is the writing of a word with its first letter as upper case and the remaining letters in lower case. Capital letters are used to start sentences and identify proper nouns.

Directions: Read each group of words below. Circle the word that should be capitalized.

Example A: school auditorium washington school

Answer- Washington School

1. david boy child
2. computer microsoft keyboard
3. barnes park city park
4. restaurant subway dinner
5. new york state city
6. state country oregon
7. statue statue of liberty monument
8. nebraska midwest plains

Directions: Read each sentence. Circle the word that should be capitalized.

9. susan walked with me home after school.
10. I traveled to wisconsin for the summer.
11. los angeles is very warm in the summer.

Name: _____

Date: _____

Four Kinds of Sentence Worksheet

There are four kinds of sentences in the English language. (Imperative gives command, Declarative makes a statement, Exclamatory expresses strong feeling, Interrogative asks a question)

Directions: Write three examples of each.

Imperative (gives a command)

Example A: Do your homework immediately after school.

1. _____
2. _____

Declarative (makes a statement)

Example A: The sky today looks very clear.

1. _____
2. _____

Exclamatory (expresses strong feeling)

Example A: Why did you hit your sister!

1. _____
2. _____

Interrogative (asks a question)

Example A: What are we eating for dinner tonight?

1. _____
2. _____

Name: _____

Date: _____

Compound Sentences Worksheet (and, or, but) Part 1 ELA-Literacy.L.7.1b

The word *and* shows addition, *or* shows an alternative, and *but* is used to join contrasting ideas.

Directions: Create a compound sentence by combining the simple sentences given below. Use the connecting words (and, or, but).

Example A: Kerry went to the woods. She went hunting.

Answer: Kerry went to the woods, and she went hunting.

1. Timmy loves to play basketball. Timmy's dad doesn't have a basketball.

2. John loves to watch the movie Transformers. John loves to eat popcorn.

3. There are many days during the month. There are many days during the year.

4. One of the greatest is tennis. Tennis is not watched very much on television.

5. The dog must eat dinner on time. The dog goes hungry.

6. David likes to play baseball. David likes to play soccer.

7. John needs to study harder. John will not graduate this year.

8. Becky loves fishing. Becky cannot fish if she doesn't wake up early.

Name: _____

Date: _____

Spelling Worksheet (Writing Part 1) ELA-Literacy.L.7.2

Directions: Write a spelling word from the box below to complete each sentence.

1. I tried to _____ falling down.
2. I looked over in an _____.
3. She wore a _____ on her neck.
4. We will have to _____ tomorrow.
5. They danced with a lot of _____.
6. I _____ the tall mountain.
7. People protested for world _____.
8. We will have a _____ during the day.
9. Does the country have _____ relations?
10. She _____ to help pay for lunch.

Spelling Words

1. climbed
2. symbol
3. peace
4. instance
5. barbecue
6. avoid
7. foreign
8. rhythm
9. offered
10. continue

Name: _____

Date: _____

Sentences Worksheet (Circling Part 1) ELA-Literacy.L.7.1b

A sentence is a group of words that expresses a complete thought.

Directions: Circle each sentence below.

Example A- David went to the park.

Answer-

David went to the park.

1. John hit.
2. It was another ordinary day.
3. Go to the movies.
4. Football is a physical game.
5. Happy day.
6. I will make myself available for the draft.
7. Jump for joy.
8. We went to the store to buy furniture.
9. All day.
10. I sat on the leather couch.
11. I traveled to a foreign country.
12. Am sad.
13. Hit the ball.
14. I played an instrument in the band.
15. I did not recognize my friend.

Name: _____

Date: _____

Context Clues Worksheet (L.7.4a Part 2)

Using context clues means to use the overall meaning of a sentence or paragraph; a word's position or function in a sentence, as a clue to the meaning of a word or phrase.

Directions: Write the meaning of the underlined word using context clues.

Example A: I sped to the market to pick up my favorite chips.

Answer: sped- hurried quickly

1. The teacher did not anticipate having such a horrible class during the year.

2. The external harddrive cost John about fifty dollars at the electronics store.

3. The car cost a lot of money, so my mom decided to pay twelve monthly installments.

4. I had to fill out an application for my job interview.

5. The school district offers good health benefits.

Name: _____

Date: _____

Context Clues Worksheet (L.7.4a Part 1)

Using context clues means to use the overall meaning of a sentence or paragraph; a word's position or function in a sentence, as a clue to the meaning of a word or phrase.

Directions: Write the meaning of the underlined word using context clues.

Example A: I sped to the market to pick up my favorite chips.

Answer: sped- hurried quickly

1. The tornadoes wrath destroyed many homes within the state of Kansas.

2. The treacherous rain fell upon the city for five straight days.

3. The boy vanished from his house without any signs or warnings.

4. The two neighbors had a large dispute over who owned the apples from the apple tree.

5. The students chattered during the assembly.

6. The little girls began to giggle when they watched a funny scene from the play.

7. The football player's energy was sapped after the end of the third quarter.

8. I was really hungry, and the pear I ate did not appease my hunger.

Summer Instructional Packets



Grade 7 Mathematics

Name _____

Date _____

Approximating Values Lesson

Using the value: 4,875.1289

- 1) Rewrite the value using 3 significant figures.
- 2) Round the value to the nearest 100.
- 3) Round the value to 2 decimal places.



Explanation:

1) We are asked to rewrite the value in 3 significant figures. We would need to use the 3 largest non-zero number available and round based on the position of the ending place. $4,875.1289 = 4,880$

2) We would need to first identify the hundreds place (4,875.1289). We would look at the integer in the tens place to tell us if we round up or down. If the value is 5 or more, round up. The tens place is 7, so we round up.

$$4,875.1289 = 4,900$$

3) Locate the last decimal place in question: 4,875.1289

Look to the next place (hundredths). If the value is 5 or more, round up. The value is 8 this means that we would round up.

$$4,875.1289 = 4,875.13$$



Name _____

Date _____

Approximating All Kinds of Values Worksheet 1**READ THE COLUMN HEADINGS CAREFULLY. THIS IS A MIXED EXERCISE.**

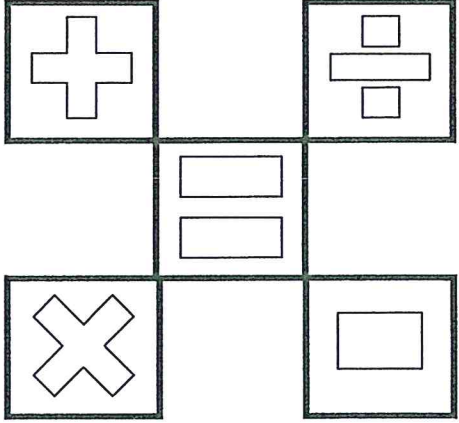
Number	Round off to 2 significant figures	Round off to the nearest 100	Round off to 2 decimal places	Round off to the nearest whole number
84.2684				
5,268.7485				
12,885.471				
0.265874				
102.65287				
14,325.874				
55,874.026801				
1,245.26819				
0.5214867				
1,874.236				
100,587.036				
827.5412				



Name: _____ Score: _____

Order of Operations with Fractions and Exponents Worksheet 2

Solve. Reduce fraction to lowest term.

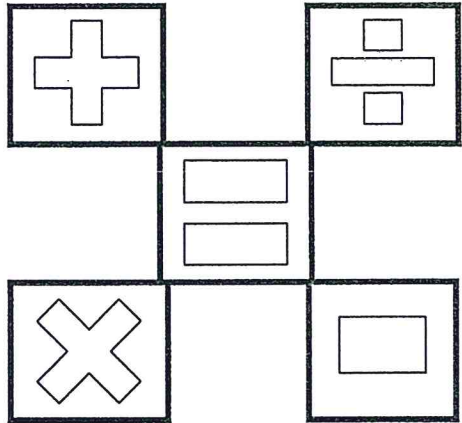
1. $10 + \left(\frac{1}{3}\right)^3 \times 2$	
2. $\left(\frac{1}{2}\right)^2 \times 8 - 3$	
3. $9 \div \left(\frac{1}{3}\right)^2 \times 7$	
4. $100 \times \left(\frac{1}{5}\right)^3 + 9 \times 6$	
5. $\frac{10}{3} \div 6 \times 9 \div 5$	6. $9 \times \frac{27}{3} \times 4 + 10$
7. $4 \times 2 + \frac{1}{3} \times 9$	8. $8 - 2 - \frac{1}{2} + \frac{3}{4}$
9. $6 \div \frac{1}{4} - 4 + 8$	10. $\frac{3}{5} \div 6 \times 3 - 10$



Name _____

Order of Operations Practice Sheet 3

Solve. Round number to hundredth.

1. $14 + 12 + 6.1^2 = \underline{\hspace{2cm}}$	
2. $8 \times 2 \times 12.3^2 = \underline{\hspace{2cm}}$	
3. $5 \times 14.1 \div 2^3 = \underline{\hspace{2cm}}$	
4. $10^3 \times 6 - 6.5 = \underline{\hspace{2cm}}$	
5. $2 + 13.5^2 \div 10 = \underline{\hspace{2cm}}$	6. $10.1 \times 4.7^2 - 12 = \underline{\hspace{2cm}}$
7. $72 \div 6^2 \times 12.5 = \underline{\hspace{2cm}}$	8. $2.5^2 + 13.6 \div 1.6 = \underline{\hspace{2cm}}$
9. $6.2 - 4.7 + 3^3 = \underline{\hspace{2cm}}$	10. $10^3 \div 10 - 7.1 = \underline{\hspace{2cm}}$

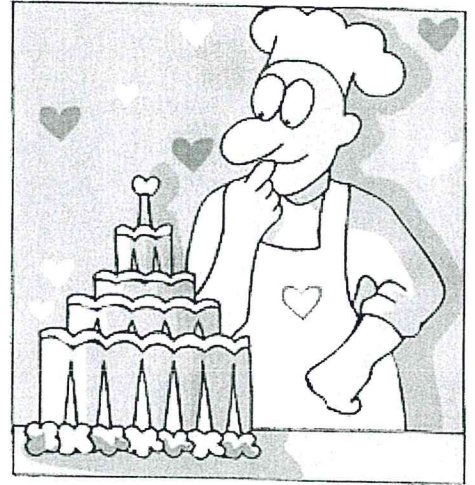


Name _____

Date _____

Time Word Problems - Independent Practice Worksheet

Complete all the problems.



1. Tony takes 1 hour to bake a cake. He has to bake 15 cakes. How much time does he take to bake all the cakes?
2. Mack opens his shop at 6:30 a.m. and he closes his shop at 10:30 p.m. How long is his shop open for?
3. Lily goes to bed at 11:00 p.m. She sleeps for 8 hours. What time did she wake up?
4. An airplane takes off at 2:00 pm and lands at 3:30 p.m. How long did the plane travel?
5. A school bus takes 20 min to get each child. The bus transports 50 children every day. How much time does it take?
6. Jonson went to the doctor at 12:30 pm for a checkup. His check up was over at 3:30 p.m. How long did he spend with the doctor?
7. Alia went to the club at 2 p.m. She spent three hours there. At what time did she come out of the club?
8. Sam went to play pool at 7 p.m. He played pool for two hours. At what time did he stop playing?
9. On Wednesday, Max went to a movie at 9:30 p.m. The film was two hours long. At what time did the film end?
10. A lady went to the church for prayer at 1:00 p.m. She prayed there for two hours in church. At what time did she leave the church?



Name _____

Fractions in Simplest Form

P 7-10

Write each fraction in simplest form.

- | | | |
|---------------------------|---------------------------|---------------------------|
| 1. $\frac{5}{10}$ _____ | 2. $\frac{6}{24}$ _____ | 3. $\frac{9}{27}$ _____ |
| 4. $\frac{3}{15}$ _____ | 5. $\frac{10}{12}$ _____ | 6. $\frac{9}{15}$ _____ |
| 7. $\frac{2}{18}$ _____ | 8. $\frac{25}{60}$ _____ | 9. $\frac{12}{72}$ _____ |
| 10. $\frac{30}{70}$ _____ | 11. $\frac{22}{48}$ _____ | 12. $\frac{16}{56}$ _____ |
| 13. $\frac{9}{90}$ _____ | 14. $\frac{72}{81}$ _____ | 15. $\frac{7}{28}$ _____ |

16. **Number Sense** Explain how you can tell $\frac{4}{5}$ is in simplest form.

Math Test

Write in simplest form.

17. What fraction of the problems on the math test will be word problems?

⇒ 20 Multiple-choice problems
⇒ 10 Fill in the blanks
⇒ 5 Word problems

18. What fraction of the problems on the math test will be multiple-choice problems?

Test Prep

19. Which is the simplest form of $\frac{10}{82}$?

A. $\frac{1}{8}$

B. $\frac{1}{22}$

C. $\frac{10}{82}$

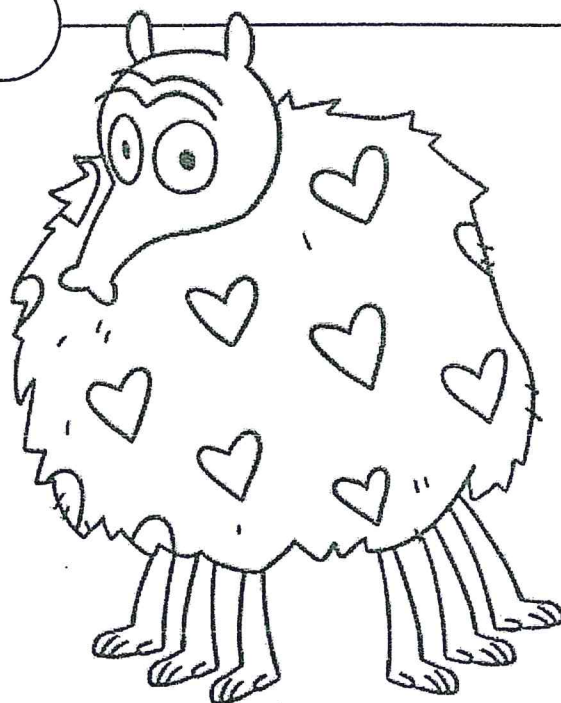
D. $\frac{5}{41}$

20. **Writing in Math** Explain how you can find the simplest form of $\frac{100}{1,000}$.

Name: _____

13 Hearts

Add to find the sums or subtract to find the differences. Then, solve the riddle by matching the letters to the blank lines below.



C $-6 + (-12) = \underline{\hspace{2cm}}$ **F** $-1 - (-2) = \underline{\hspace{2cm}}$

A $8 - (-5) = \underline{\hspace{2cm}}$ **I** $-4 + 3 = \underline{\hspace{2cm}}$

N $-3 - 8 = \underline{\hspace{2cm}}$ **S** $-7 - (-7) = \underline{\hspace{2cm}}$

G $7 + (-4) = \underline{\hspace{2cm}}$ **A** $6 + (-10) = \underline{\hspace{2cm}}$

A $-20 + 12 = \underline{\hspace{2cm}}$ **E** $-1 - (-3) = \underline{\hspace{2cm}}$ **C** $13 - (-5) = \underline{\hspace{2cm}}$ **D** $-11 - 5 = \underline{\hspace{2cm}}$

O $6 - (-3) = \underline{\hspace{2cm}}$ **Y** $-16 - 1 = \underline{\hspace{2cm}}$ **R** $-3 + (-10) = \underline{\hspace{2cm}}$ **P** $-7 + (-8) = \underline{\hspace{2cm}}$

D $-8 + (-4) = \underline{\hspace{2cm}}$ **K** $-8 + 5 = \underline{\hspace{2cm}}$ **L** $-2 + 10 = \underline{\hspace{2cm}}$

What has 13 hearts, but no other organs?

<u>13</u>	<u>-16</u>	<u>2</u>	<u>-18</u>	<u>-3</u>	<u>9</u>	<u>1</u>
<u>-15</u>	<u>8</u>	<u>-4</u>	<u>-17</u>	<u>-1</u>	<u>-11</u>	<u>3</u>
<u>18</u>	<u>-8</u>	<u>-13</u>	<u>-12</u>	<u>0</u>		

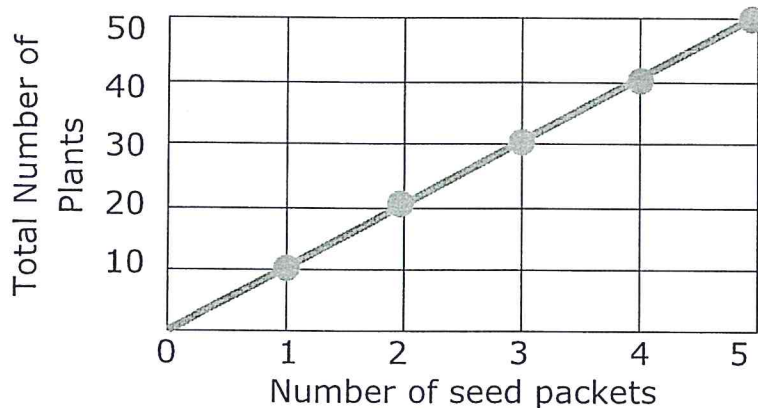
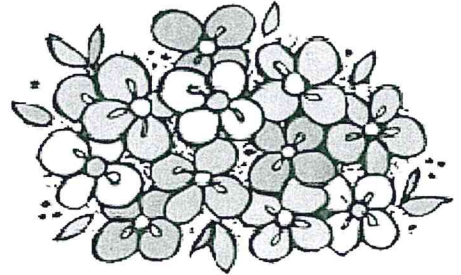
Name _____

Date _____

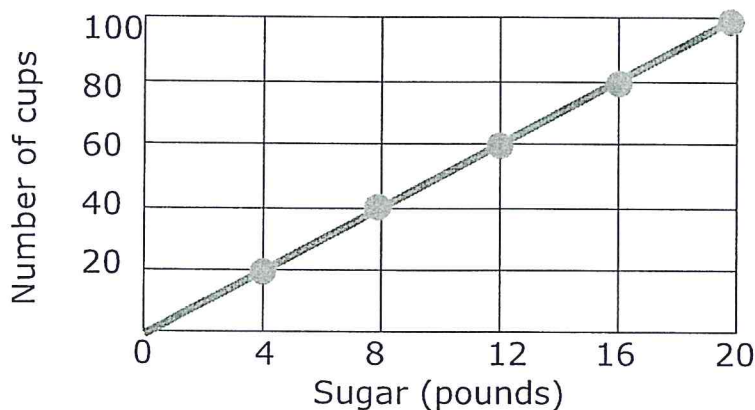
Identify the Constant of Proportionality Independent Practice Worksheet

Complete all the problems. Make sure to draw pictures to help you solve the problems.

1. The graph below represents the total number of plants and number of seed packets used. What is the constant of proportionality?



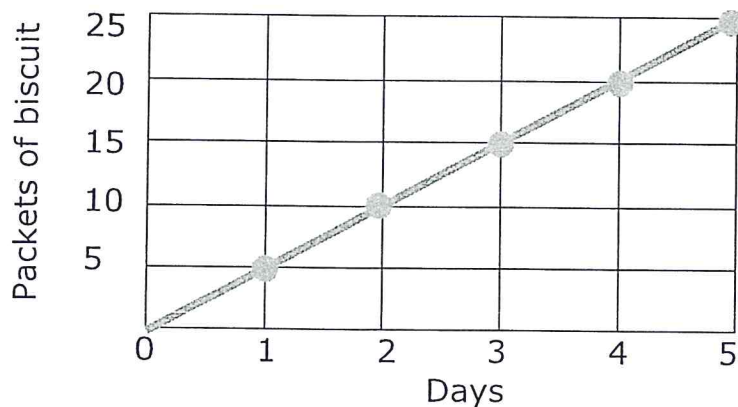
2. The graph below represents the total number of cups of coffee and the total amount of sugar required to make the coffee. What is the constant of proportionality?



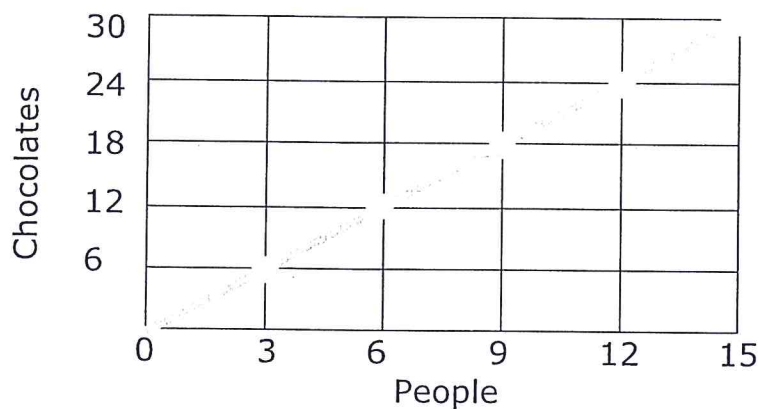
Name _____

Date _____

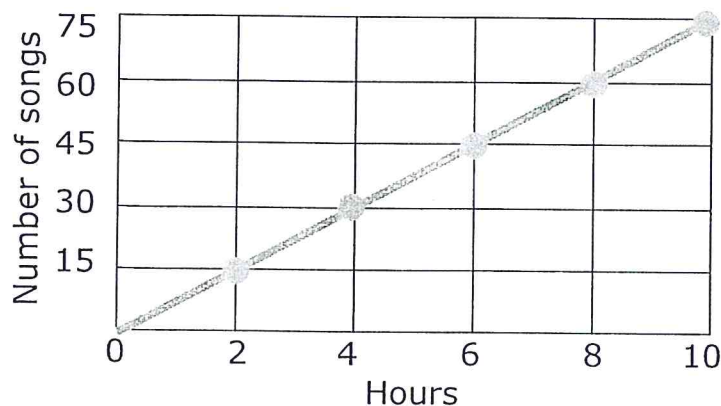
3. The graph below represents the packets of biscuits consumed over time. What is the constant of proportionality?



4. The graph below represents the chocolate consumed by people. What is the constant of proportionality?



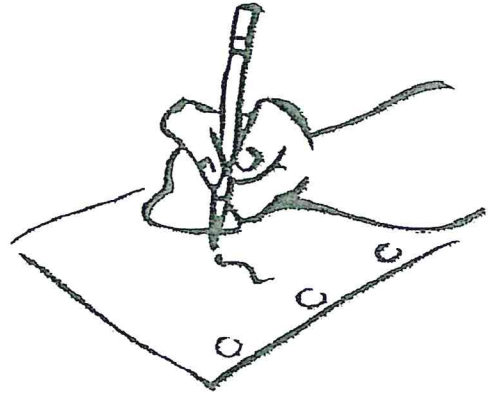
5. The graph below represents the number of songs played on a radio station. What is the constant of proportionality?



Name _____ Date _____

Rewriting Expressions Practice Sheet 3

1. Michael fills 3 pages in one hour. David fills 5 pages in one hour. This week Michael fills 2 pages extra. Write an expression that represents the weekly number of pages by both. M = the number of hours that Michael fills pages this week. D = the number of hours that David fills pages this week?



2. John weight is 75kg. Every year his weight increase by 3%. What will be his weight next year?

3. Brianna likes ice-creams. All varieties of ice-creams are \$8.30. Brianna buys strawberry ice-cream and vanilla ice-cream. Write an expression that represents the total cost.

4. A jacket cost is \$70. Next month the cost is raised by 7%. What will be the cost of the jacket next month?



Name _____

Date _____

Multistep Ratio and Percent Word Problems - Independent Practice Worksheet

Solve the following problems.

1) Hardy's plant grows rapidly. It grows by 10 cm every 2 years. How much taller will Hardy's plant be in 5 years?

2) A beaver burrows 10 holes every 5 minutes. How many holes will it burrow if time is increased to 25 minutes?

3) Gregory drinks 6 liters of water over 2 days. In how many days would he consume another 12 liters?

4) Ron's factory is currently producing 30 chairs in a day. How many chairs will be produced if production is to be increased by 130%?

5) Fred has a bakery. He sells 40 cakes in a day. If his sales increased by 120%, how many cakes will he sell in a day?

6) Henry eats $\frac{1}{3}$ of a loaf of bread in 2 days. How many loaves of bread will he eat in 12 days?

7) Veronica's bike requires 5 liters of gas to run for 10 kilometers. How many liters of gas does Veronica need if she has to cover 24 kilometers?

8) Betty has a cow. The cow produces 5 liters of milk in a day. If his diet is improved, the cow will produce 200% more milk. How much milk would the cow make in a day, if that were to happen?

9) A machine makes 20 carpets in a day. After oiling the machine, its efficiency will go up by 150%. How many carpets will be produced at this level?

10) Samantha can write $1\frac{1}{2}$ pages in 3 minutes. How many pages could she write in 12 minutes?



Name _____ Date _____

Percent Increase & Decrease Worksheet 1



Directions: Find the percent increase or decrease for each problem.

1. If your grocery bill came to \$205.67 and was reduced to \$145.90 after coupons, what is the percent decrease? _____

2. Last month, 17 people showed up to help a local charity. This month, 55 people volunteered. What is the percent increase? _____

3. Paula, the local baker, usually makes 15 loaves of bread and 10 cakes per day, but today she made 25 loaves of bread and 12 cakes. What is the percent increase for each bakery item?

- Bread: _____

- Cakes: _____

4. Janice usually sells 7 cars and 3 pickup trucks per week, but this week, she only sold 5 cars and 1 pickup truck. What is the percent decrease for each vehicle?

- Cars: _____

- Pickup Trucks: _____



Name _____

Date _____

Version 1: Markdown and Sale Price

For problem 1 and 2, calculate the markdown.

1.

Red evening dress

Cotton: size 10-12

Orig. \$41.28, sale \$22.79

2.

Male shirt Blue, Green

Silk: S-M-L

Orig. \$27.80, sale \$17.21

For problem 3 and 4, calculate the markdown and the sale price.

3.

Spring Sale

30% OFF! REG.\$50.00

Jackets, tops, sweaters and cardigans

Sizes: 5-14

4.

Summer Dresses

UP TO 20% Off! REG.\$42.12

Tops, shirts, and dresses

Cotton: size 6-12

5. An electronic store has television sets marked down 30 percent. What is the total price of five television sets that regularly sell for \$115.85, \$218.95, \$320.75, \$125.65, and \$221.75?

6. During Christmas sale, a local store in Virginia has marked all items 20 percent. George Walker bought a microwave that normally sell for \$100 and a refrigerator that usually goes for \$250. Calculate the total sale price.

7. Luis Gonzales shopped a store in California during the end of December sale. All items were marked down 40 percent. He purchased a pair of shoes that regularly sells for \$30.25, a wrist watch that normally sells for \$50.00, and leather jacket that sells for \$60.00. What is the total sale price?

8. During the end of Christmas sale, the Motor Bazaar has marked down all vehicles at 30 percent and all accessories 10 percent. Harry Bush bought a Nissan double cabin that usually sells at \$5000, a set of tires that regularly sells for \$150, a fuel pump that normally sells for \$400 and a side mirror that regularly sells at \$40. Determine the total sale price.



Name _____

Date _____

Version 1: Simple Interest



1. Jenna Louis deposited \$1200 in a new savings account at Bradenton Savings and Loan Association. There were no other deposits or withdrawals that were made. After 6 months, the interest was computed at an annual interest rate of 4%. Calculate the amount of simple interest earned by her money.
2. Jude Chin made a deposit of \$1400 in a new savings account at Trust National Bank. He made no other deposits or withdrawals. After 3 months the interest was computed at an annual rate of 7.5%. Calculate the amount of simple interest earned by his money.
3. On July 1 Eileen Anders deposited \$550 in a savings account at Mat Savings and Loan Association. At the end of December, her interest was computed at an annual rate of 4.3%. How much simple interest did her money earn?
4. On April 30, you opened a savings account at Zen Savings Bank with a deposit of \$754.50. At the end of November the interest was computed at an annual rate of 6.5% and added to the balance in your account.
 - a. How much simple interest did your money earn?
 - b. What was your new balance?
5. On January 1, the balance in your account is \$800. On July 1, you deposit \$250. Your bank pays 5.8% interest
 - a. Calculate the amount of simple interest that you earned on July 1.
 - b. Calculate your total balance as at July 1.
 - c. Calculate the amount of interest earned as at December 31.
 - d. What is your total balance as at December 1?
6. On June 1, Christen Dolan opened a savings account that paid a 4.2% exact interest at Fuller Savings Bank with a deposit of \$2800. A fortnight later, he deposited an additional \$7500. No other deposits or withdrawals were made. Six days later, the bank calculated the daily interest.
 - a. How much simple interest did his money earn?
 - b. How much was in the account at the end of 30 days?
 - c. Christen withdrew \$3500 at the end of the 30 days, what was the remaining total balance?
 - d. Calculate Christian's balance 18 days after the withdrawal.



Name _____

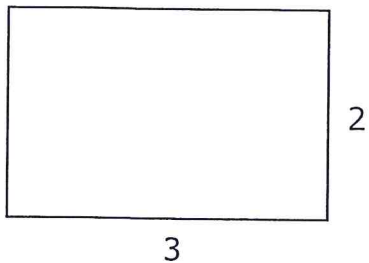
Date _____

Simple Area of a Rectangle Independent Practice Worksheet:

Complete all the problems. Find the area of the rectangles given below.

Find the perimeter too!

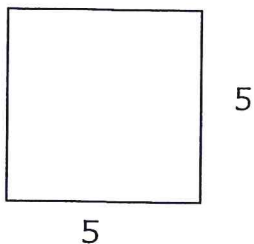
1.



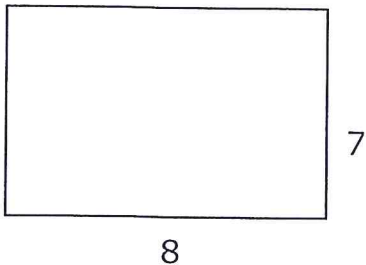
$A =$ _____

$P =$ _____

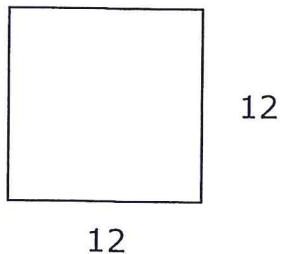
2.



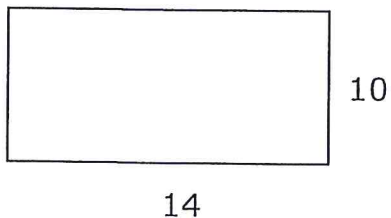
3.



4.



5.

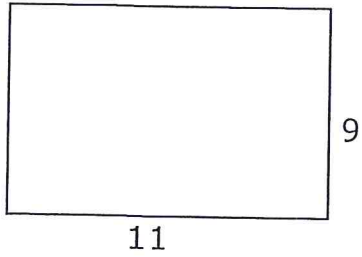




Name _____

Date _____

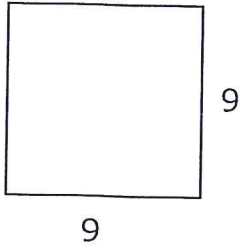
6.



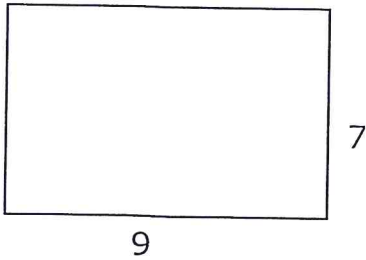
$A =$ _____

$P =$ _____

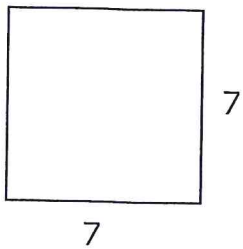
7.



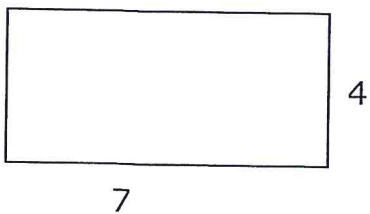
8.



9.



10.





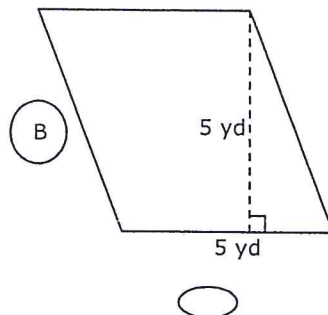
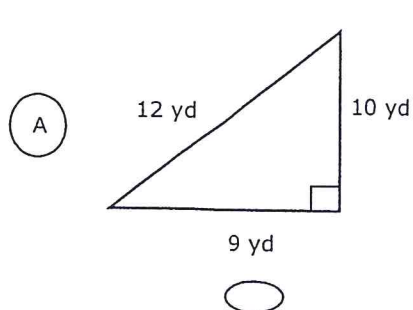
Name _____

Date _____

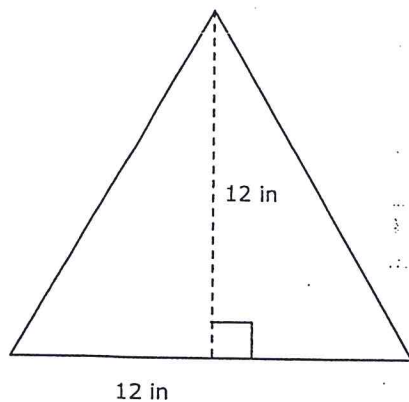
Finding the Area and Perimeter of Odd Shapes - Independent Practice Worksheet

Answer the following questions:

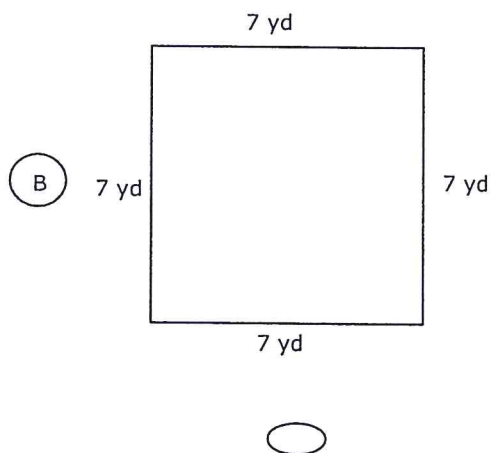
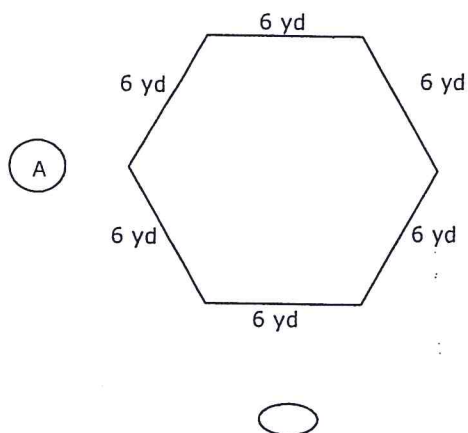
1. Which figure has a greater area?



2. What is the area of this triangle?



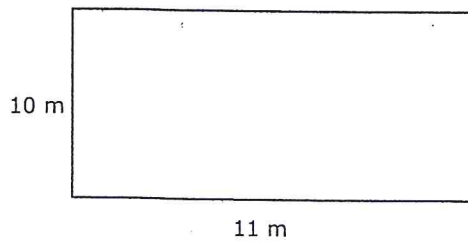
3. Which figure has a greater perimeter?



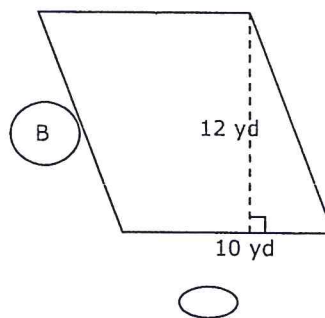
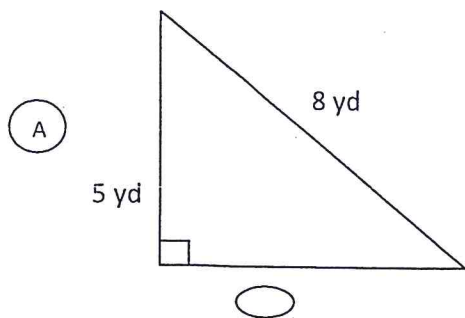
Name _____

Date _____

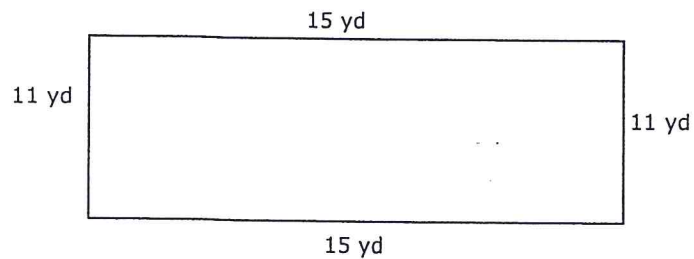
8. What is the perimeter of this rectangle?



9. Which figure has a greater area?



10. What is the perimeter of this figure?



Summer Instructional Packets



Grade 7
Science

Name: _____

Date: _____

Exercise 12.1

ECOSYSTEMS

**O
R
G
A
N
I
S
M
S**

__R__DU__ER__

C__NS__ME__S

HE__BI__O__ES

C__RN__VO__E__

O__NI__O__ES

D__TRITIVE__RE__

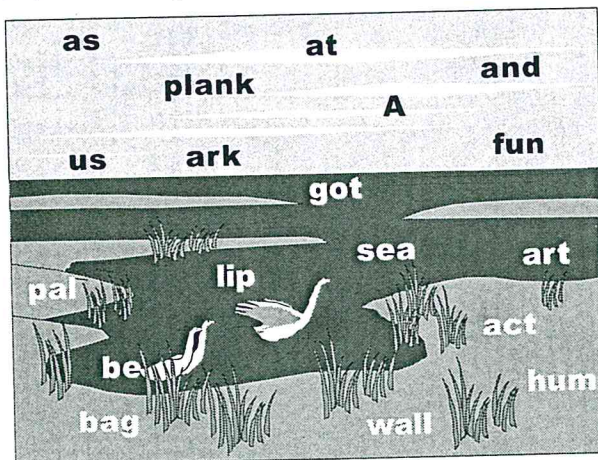
1. Complete the names of each of the types of organisms in the diagram below. Then explain the difference between each type of organism and list three examples for each type.

DET__ITU__FE__D__RS

DE__OM__O__E__S

2. Complete the names of the following organisms by selecting the correct words from the wetlands eco-system below. Then place each organism under its correct heading in the above diagram.

B__eria,
E__hworm,
__e, P__a,
__aby, Cab__e,
__m, Tu__s,
E__gle,
Cact__,
W__p, __l,
Sh__, __gi,
__ton, Mag__,
__an, R__



3. Change MAKE into FOOD by changing one letter per line with each letter you change forming a proper word. Then explain how plants make their own food.

MAKE

FOOD

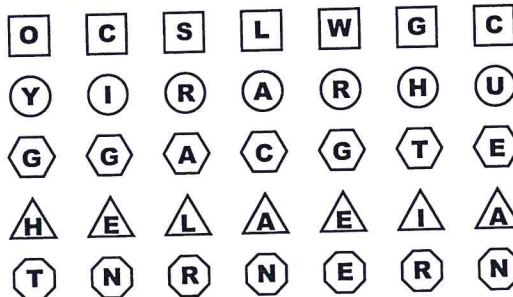


4. Rearrange the sentence below so it can be read properly

Include from web living several food can eco-systems a organisms.



DID YOU KNOW - that an eco-system may be as small as a drop of water on a leaf?



5. The passages below are each missing one or more words. By taking one letter from each shape you can form the missing words.

- An eco-system is a community of ____isms interacting with their abiotic environment.
- ____ plants absorb sunlight and change the ____ energy into chemical energy.
- A line of feeding relationships in an eco-system is termed a food ____.
- As a result of photosynthesis, oxygen and ____ are produced.
- The continuous supply of minerals, ____, oxygen, nitrogen and carbon in an eco-system is only possible if they are re____d among living organisms.

Name:

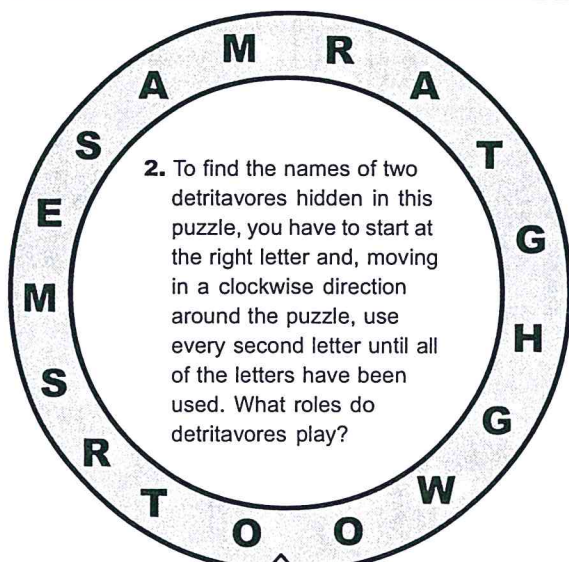
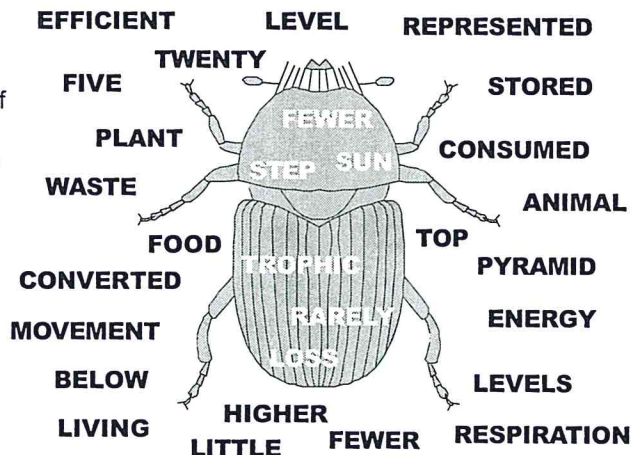
Date:

Exercise 12.2

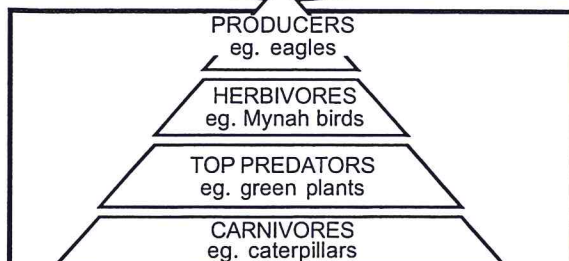
THE ENERGY PYRAMID

1. The missing words from the following passage can be found in and around the beetle below. Then list reasons as to why: a) Energy Pyramids don't have dozens of levels and; b) people of poor nations eat very little meat.

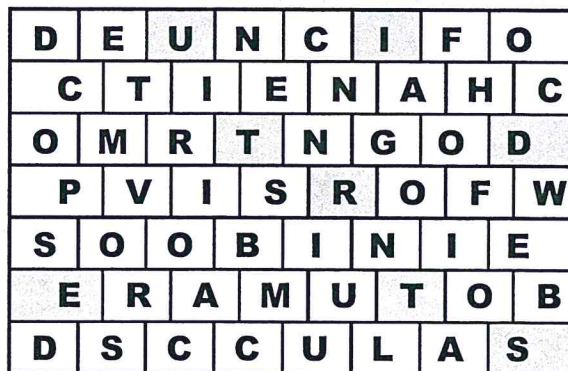
There is an inevitable _____ of energy within a _____ chain. As _____ as ten per cent of the energy a _____ captures from the _____ may be _____ in an animal's tissue. Not all of the plant is _____ and digested by an _____. Energy is lost in _____ material, energy is _____ into heat by _____ and energy is used for _____. Such energy loss can be _____ by an Energy _____, with each _____ up the pyramid representing a different _____ of consumer, or _____ level. The _____ up the pyramid the _____ animals there are, as each of the higher _____ require anything up to _____ times its weight in _____ material from the level _____. Energy Pyramids _____ have more than _____ levels and the _____ the levels, the more _____ an Energy Pyramid is, as less _____ is required to support the _____ level consumers.



2. To find the names of two detritivores hidden in this puzzle, you have to start at the right letter and, moving in a clockwise direction around the puzzle, use every second letter until all of the letters have been used. What roles do detritivores play?

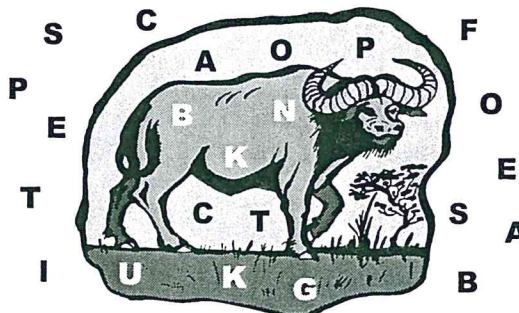


4. This Energy Pyramid has been incorrectly labeled. Rearrange the labels so that it reads correctly. Then compile an Energy Pyramid that would exist your local area.



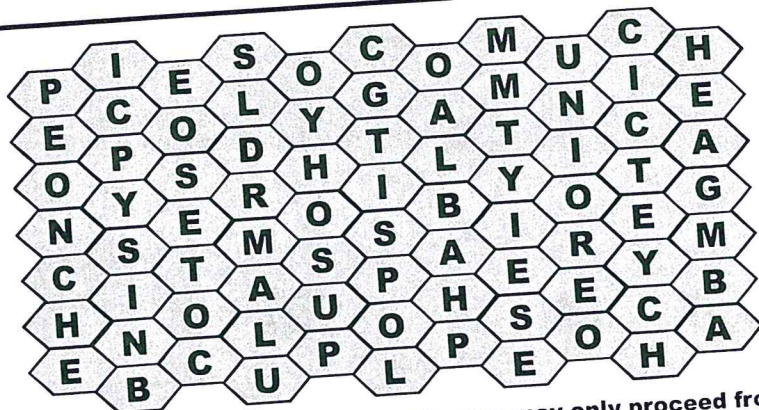
3. To find the six terms below in this puzzle you may only proceed from one letter to the next when their bricks are touching. Then, by arranging the eight shaded letters, you'll form the name of what decomposers feed on. Now define each term.

DETRITAVORES • FOOD WEB • BIOACCUMULATION • FOOD CHAIN • DECOMPOSERS • INORGANIC • NUTRIENTS



5. Two very important decomposers are ? and bacteria. To work out what ? is, you'll need to arrange the letters that appear only ONCE in and around the buffalo.

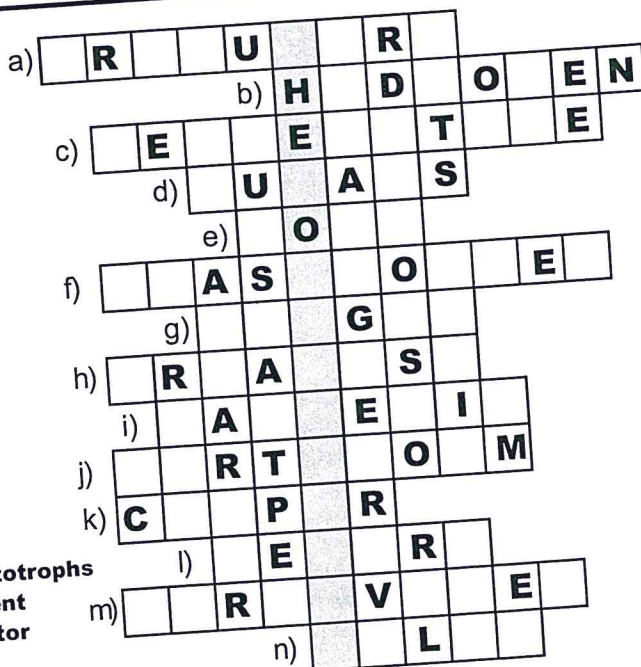
the biosphere



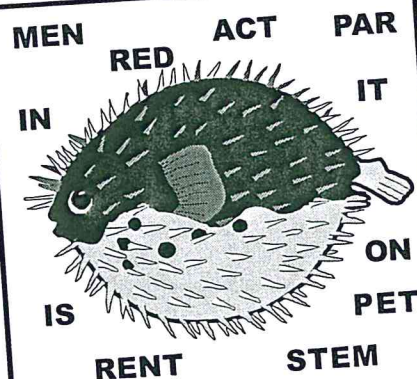
1. To find the terms below in this puzzle, you may only proceed from one letter to the next when their cells are touching. Then define each one.

BIOSPHERE, HYDROSPHERE, LITHOSPHERE, ATMOSPHERE, ECOSPHERE, BIOMES, NICHE, HABITAT, COMMUNITY, POPULATION, ECO-SYSTEM, BIOMASS, SPECIES, ECOLOGY, BIOTIC, ABIOTIC

3. Place the answers to each of the clues below into the puzzle. When complete, the name of the process whereby organic nutrients are produced in the total absence of sunlight will read down the shaded column.



- a) Also called Autotrophs
- b) A macro-nutrient
- c) An Abiotic factor
- d) An omnivore
- e) An aquatic eco-system
- f) A herbivore
- g) A by-product of photosynthesis
- h) Name given to any life form
- i) A decomposer
- j) A detritus feeder
- k) A micro-nutrient
- l) A biome
- m) Name given to primary consumers
- n) Energy from the Sun



2. The words around the puffer fish above can all be used to complete the words in the passage below. Then explain each of the ways mentioned in the passage that different species interact in eco-systems. Provide examples for each.

Com__iti__, p__ation,
__as__ism, mutual__m
and com__salism are the
ma__ ways in which diffe__
species inter__ in eco-
sy__s.

4. Either add or subtract a letter from each of the boxed words in the passage below to form the correct words. Then give five reasons why you would, would not, agree.

Ball lie forms on Earth
hare either directly tor
indirectly dependent upon
cone anther sand heir
non-living environments.

- What is meant by an organism's Range of Tolerance and its Limiting Factors? Select an organism and identify its a) Range of Tolerance for a chosen factor and; b) a Limiting Factor.
- With the use of diagrams, explain why life on Earth largely depends upon solar energy and the recycling of chemicals.

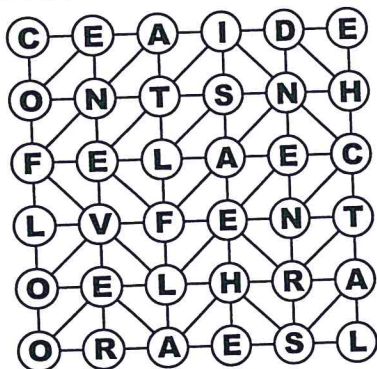
Name: _____

Date: _____

Exercise 12.4

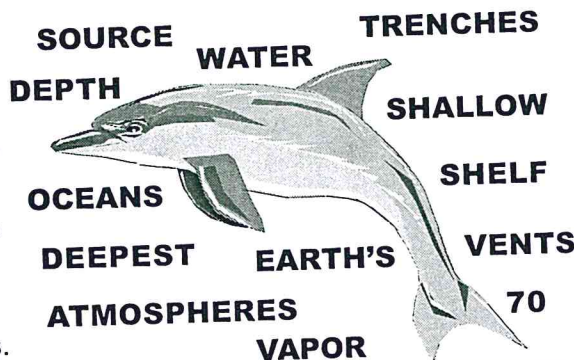
OUR OCEANS

1. To find the following six terms in the puzzle below, you may only proceed from one letter to the next along connecting lines. Then construct a cross-section of the ocean in the space provided and label it using these terms.



2. The missing words from the following passage can be found around the dolphin. Take care because there are more words than there are missing from the passage. Now with the use of diagrams, compile an Info-Sheet on the 'Vital role of oceans in the water cycle'.

_____ cover more than _____ % of the _____ surface. Their average _____ is 3800 meters and the _____ parts, the ocean _____, are more than 10,000 meters. Oceans are the main _____ of _____ vapor, with most of the _____ water _____ coming from the oceans.

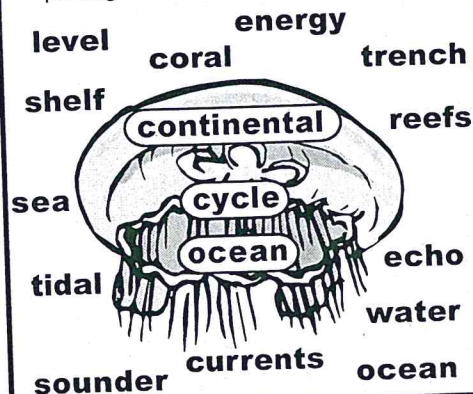


SALT

SEAS

3. Change SALT into SEAS by changing one letter per line with each letter forming a proper word. Then explain why our oceans are salty, when the rain that falls upon them and the rivers that run into them, are fresh.

4. The eight terms about the jellyfish have all come in two. Correctly match them up again and then place each one into a passage about our oceans.



5. Upwelling deep water is rich in nutrients. To find out where the greatest zone of upwelling occurs, you'll have to unjumble these two words. Now explain why such upwelling of deep water would occur and why they'd be so nutrient-rich.

TICTARANC ESAS

DID YOU KNOW -
some deep sea creatures glow in the dark?

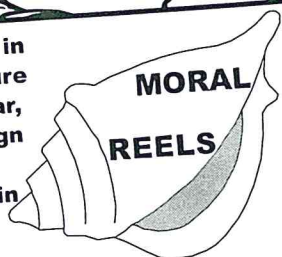
- Why do we know more about the Moon than we do about our oceans?
- Design your own method for harnessing some of the ocean's energy.
- Compile a list of impacts that you believe a rise in sea level would have on the world.
- Create a flow chart of the benefits we gain from the ocean.
- How can we possibly learn about oceans from satellites?

Name:

Exercise 12.5

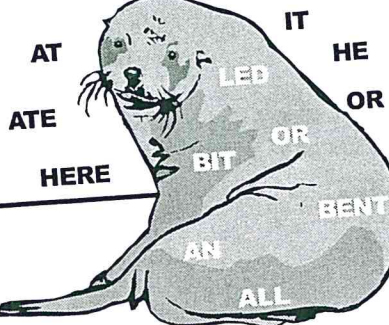
LIFE in OUR OCEANS

1. Change one letter in each word in the shell to form a natural feature that is found in our ocean's clear, warm, sunlit waters. Then design a method for monitoring the impact that one of the threats in Number 4 could have on this natural feature.



T___ are two maj___ habit___s in the oce___. The ocean w___r is c___ed the pelagic ha___at, whilst t___ ocean flo___ is cal___ the ___hic hab___at.

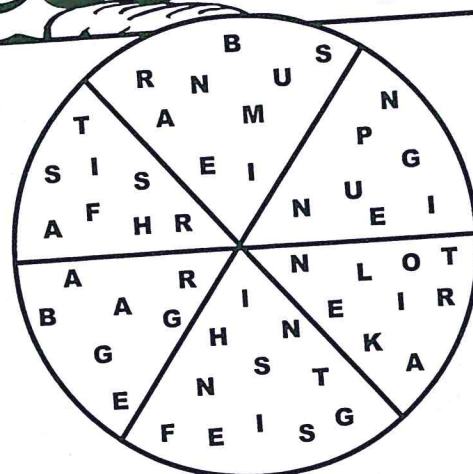
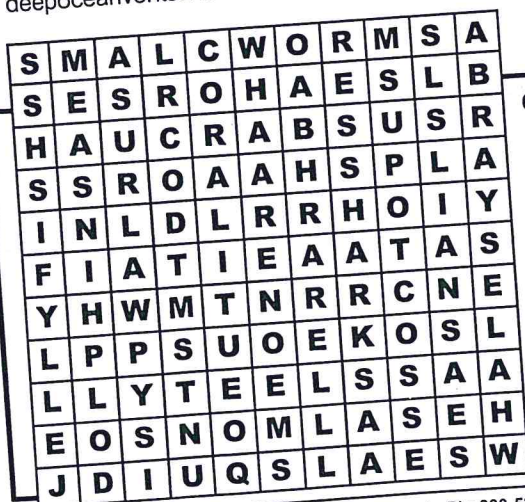
3. Place each word from the seal back into its correct place in the passage above to complete the words.



- Draw an ocean food chain. What could impact upon it?

5. Correctly punctuate the following passage so that it can be read properly.

mostoceanfoodchainsbeginwithtinyplants(phytoplankton)thatp
hotosynthesizeinthesunlitsurfacewaterstheseareeatenbytinyan
imals(zooplankton)whichareeatenbyfishandothercreaturessthes
einturnareeatenbylargerfishandmarinemammalshowerthefoo
dchainneardeepoceanventsbeginwithbacteriahatdonotneedsu
nlightforphotosynthesisgiantwormsupthreemeterslongliveneat
deepoceanventsandfeedonbacteria.



2. Fishing boats, sea grass beds and swordfish can all be found either on or in our oceans. To find six more that are hidden in the above puzzle, just rearrange the letters in each of the six sectors. Then describe the impact that each one has on the ocean.

4. Seven major threats to our ocean life are hidden in the puzzle. Find them, just take one set of letters from each of the columns. The first one has been done for you (Radioactive waste) but the rest are up to you.

RADI	STIC	ALWA	NG
OVE	ULTUR	OUTF	ION
PLA	STRI	IVEW	MICALS
INDU	POL	PROD	STE
OIL	OACT	SHI	ALL
AGRIC	AGE	LUT	UCTS
SEW	RFI	ALCHE	ASTE

6. Find these 22 sea creatures in the puzzle. When you've found them all, you'll be left with nine letters that form the name of a large sea bird that spends much of its time soaring over the vast distances of our oceans.

JELLYFISH SEA HORSES TUNA SARDINES
 OYSTERS DOLPHINS OCTOPUS WHALES
 SEA SNAILS SHARKS CRABS SQUID
 CORAL EELS SEALS WALRUS
 RAYS WORMS COD SHRIMP
 SALMON CLAMS

Name: _____

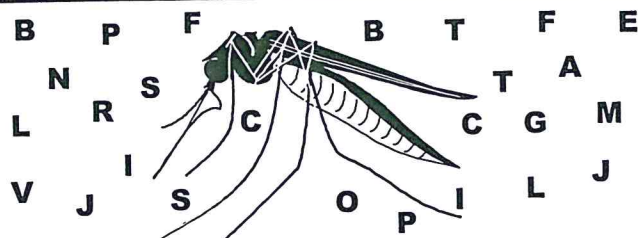
Date: _____

Exercise 12.6

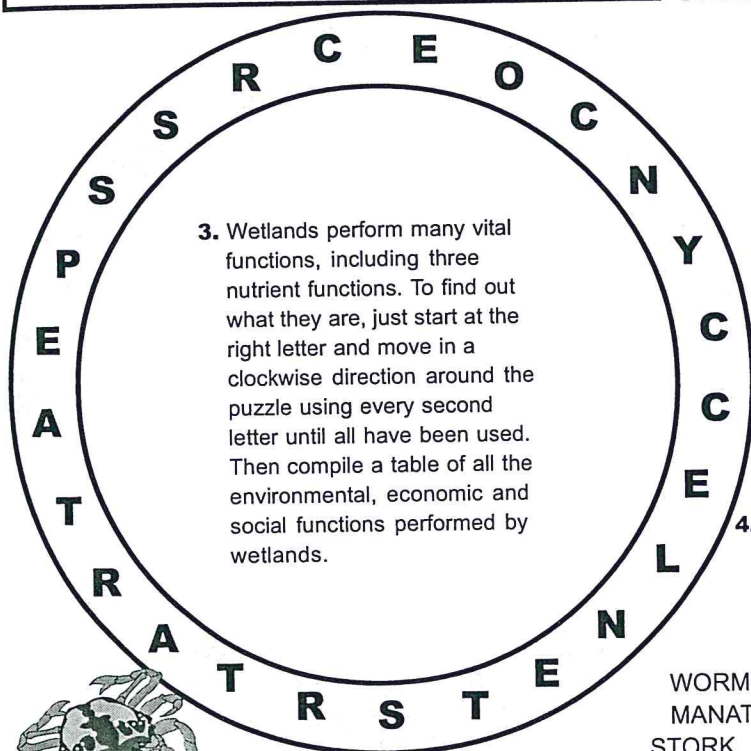
WETLANDS

1. Before you can read the following passage you'll have to delete the right eight letters and then correctly punctuate the passage. Now identify three wetland eco-systems that you know of and list four reasons as to why such eco-systems are so rich.

wetlands can be either saltwater or freshwater wetlands include waterlogged forests so called swamps wet grasslands called marshes and wet peatlands called bogs wetlands produce vast quantities of plant matter and are among the world's richest ecosystems.



2. Delete the letters that appear more than once around the mosquito then arrange the remaining letters to form the name of the most common species of tree found in saltwater wetlands.



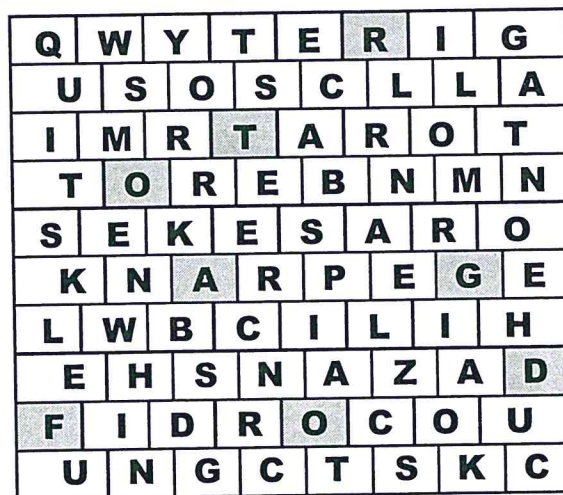
3. Wetlands perform many vital functions, including three nutrient functions. To find out what they are, just start at the right letter and move in a clockwise direction around the puzzle using every second letter until all have been used. Then compile a table of all the environmental, economic and social functions performed by wetlands.



DID YOU KNOW -

that around six percent of our Earth's surface is covered by wetlands?

- What is a Detrital Food Chain? Construct a diagram of one and explain why they would, or would not, be common in wetlands ecosystems.
- If seagrass beds and coral reefs lie offshore, how could the clearing of mangroves impact upon them?
- Design a method for monitoring the impacts that a human activity has on a wetland eco-system.
- Why aren't large populations of mammals found in wetland eco-systems?



4. To find the wetland organisms below in the puzzle, you may only proceed from one letter to the next when their bricks are touching. Then arrange the shaded letters to form the names of two more wetland creatures.

WORMS MOSQUITOES PELICANS FISH BATS ALGAE
MANATEES CRABS LIZARDS WHELKS DUCKS FUNGI
STORK CROCODILES BEES PRAWNS CRANE BACTERIA
HERON OYSTER ALLIGATOR SNAKES

CRUSTACEANS

MANY

AND

A

ARE

NURSERIES

GROUNDS

FOR

BREEDING

FISH

VITAL

AND

MANGROVES

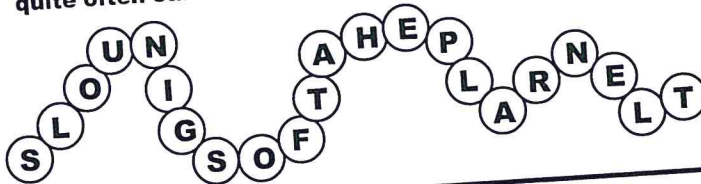
5. By correctly arranging the words above you will form a sentence about mangroves. Then draw a flow chart of the impacts that arise when mangroves are destroyed.

RAINFORESTS

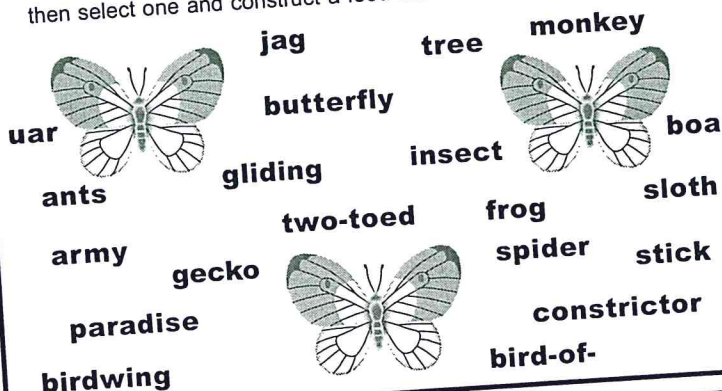
1. Our rainforests perform vital functions and provide us with an array of valuable resources. To discover 11 such functions and resources, correctly match up the first part in Column A with the second part in Column B. Then select three and outline their importance.

A	B
WATER	PRODUCTS
CARBON	HABITAT
GENE	CYCLE
TRADITIONAL	BANK
FOOD	FACTORS
WILDLIFE	CYCLE
OXYGEN	HOMES
RECREATIONAL	CATCHMENT
MEDICINAL	CONTROL
SOIL	ACTIVITIES
CLIMATIC	PRODUCTS

2. By crossing out the correct six letters from the string of letters below, you will form a name that rainforests are quite often called. Now why would they be called this?



3. The Cassowary and the Orangutan are two rainforest inhabitants. The names of ten more can be found around the butterflies below, however, they have come in two. Correctly match them up again and then select one and construct a food chain in which it would feature.



5 9 4 1 6 8 2 7 3

4. Water, oxygen, minerals and ? all pass through trees. To find out what ? is, you'll have to solve the puzzle. The nine-letter answer is represented by the nine numbers in the boxes above. In each circle below, you have a choice of two letters for each number. Select the correct letter and you'll form the right answer.

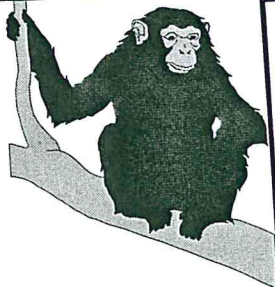


- Why are rainforests so abundant with life?
- Why are tropical rainforest soils so poor?
- Construct a flow chart of impacts that arise from the clearing of rainforests.
- You've received funding to research the rainforest ecosystem. What would be your research topic and why? Now outline your research program.

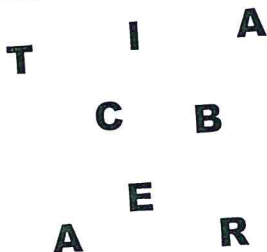
5. Change GRIP into TAIL by changing one letter per line with each letter you change forming a proper word. Now select three animals from Number 3 and list their biological adaptations for life in the rainforest.

GRIP
TAIL

DID YOU KNOW - that rainforests cover less than ten per cent of the Earth's land surface, yet are home to over 50% of all the world's plant and animal species?



6. Arrange the letters to form the name of a Decomposer organism. Then name another. Without these organisms, what would happen to the rainforest ecosystem?



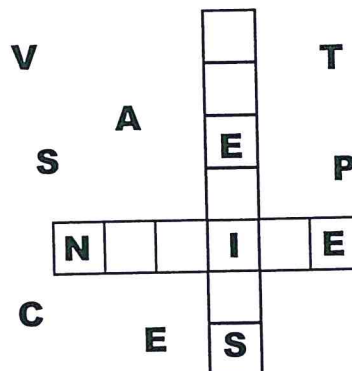
Exercise 12.8



THE URBAN ECOSYSTEM



1. In this box draw a diagram of an urban ecosystem (eg. house, yard, railway station, office block, factory site etc) and the plants and animals that have adapted living there.



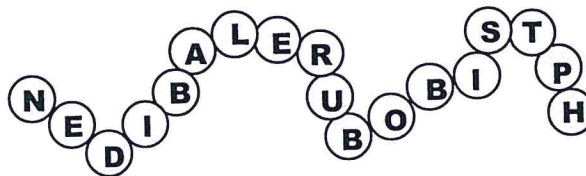
2. Correctly place the seven letters back into the puzzle to complete the two words. Then identify which ones have been successful in an urban ecosystem that you are familiar with and explain why.

DUST

MITE



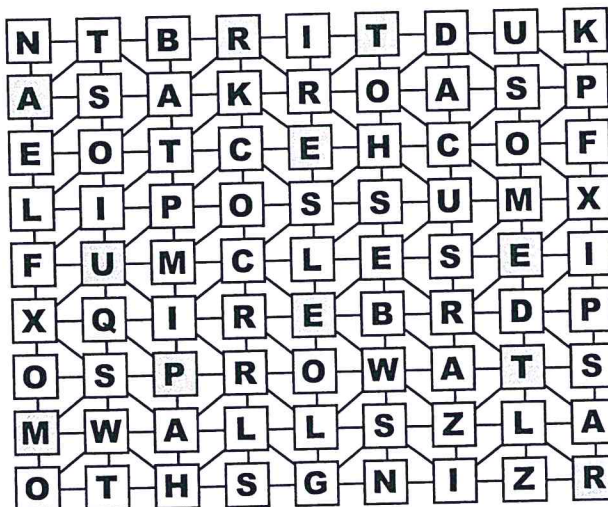
DID YOU KNOW - that you are home to billions of organisms?



3. Cross out the correct five letters from this string of letters and the remaining letters will form the name of a major food source of urban wildlife.

4. Change DUST into MITE by changing one letter per line with each letter you change forming a proper word. Now what factors make your home so attractive to dust mites that millions of them thrive in it?

- Select a creature from number 4 and detail the factors that have enabled it to adapt well to an urban ecosystem. Why can't all creatures adapt so well?
- Survey your home for species and draw up your own urban ecosystem diagram.
- Design an info-sheet titled 'Making Your Garden Wildlife-friendly'.



SPARROWS,
COCKROACHES,
ANTS, BATS,
MICE, SPIDERS,
POSSUMS,
SWALLOWS,
TOADS, MOTHS,
SQUIRRELS,
FLEAS,
STARLINGS,
BEES, RATS,
MOSQUITOES,
LIZARDS, FOXES

5. To find the creatures above that have adapted well to an urban eco-system, you may only proceed from one letter to the next along connecting lines. Then arrange the shaded letters to form the name of something that is generally higher in an urban area than it is in the surrounding countryside. Now explain why it would be higher.

BIODIVERSITY



1. One or more of the missing words from the following passage can be found on each line of the puzzle. When complete, give three reasons as to why you'd agree or disagree with the passage.

The _____ millions of _____ species in our _____ are an enormous genetic _____ of successful _____ strategies, that have developed _____ billions of years. The biological _____ of these _____ is the very foundation _____ which the _____ and integrity of the world's _____ ultimately depends.

2. By solving the word sums below you'll find six important reasons for maintaining biodiversity. Give an example of each one.

log + eco + ical

onal + recr + eati

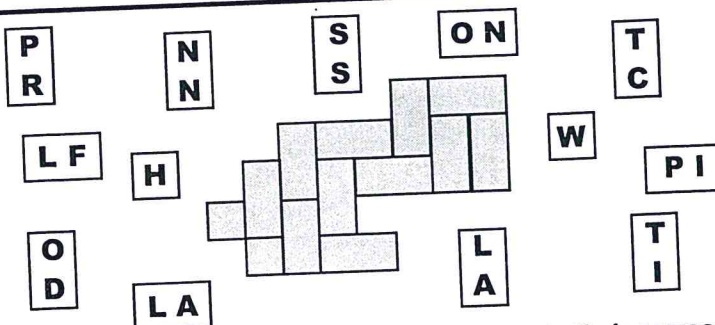
me + cal + di

BIODIVERSITY

the + aes + tic

no + mic + eco

fic + scie + nti

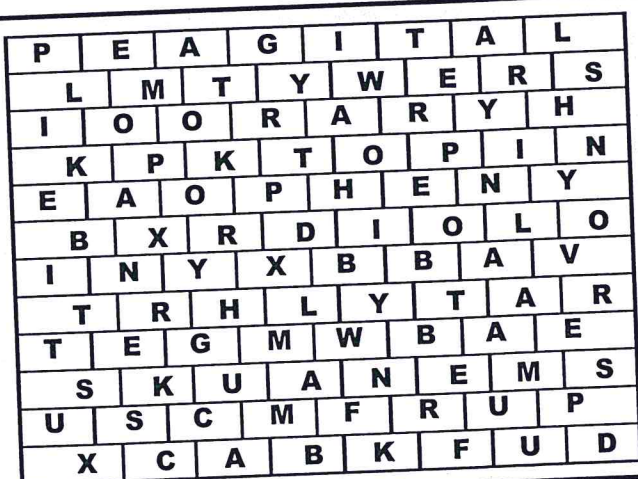
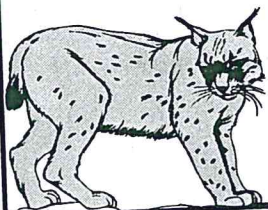


3. By placing the 13 letter tiles above back into their correct place in the puzzle grid, you'll form the five missing words from the following passage (each word will read across the puzzle).

Approximately _____ of the world's prescription and _____ - prescription drugs contain active ingredients extracted from _____ organisms, many of which are _____ that are found only in the _____.

4. We share our planet with millions of other species. Below are just 32 of them and to find each one in this puzzle you may only move from one letter to the next when their bricks are touching.

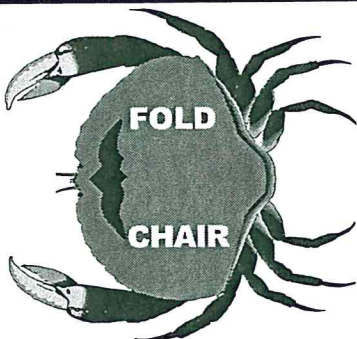
HYRAX, SERVAL, AUK, TERRAPIN,
IBEX, BLENNY, GUAN, TAYRA,
MAMBA, CUSCUS, ORYX, EARWIG,
TODY, PIKE, HOBBY, SKUA, TOPI,
HYDRA, LYNX, OKAPI,
NEWT, LIMPET, APHID,
PUDU, SLATER, VOLE,
BITTERN, SAMBAR,
SMEW, POTOROO,
RUFF, KEA



Exercise 13.1

ENVIRONMENTAL IMPACT OF HUMANS

1. By changing one letter in each of the words in the crab you can form the name given to a series of feeding relationships in an ecosystem. Then draw a diagram to show how toxic chemicals can enter this series of feeding relationships and end up in **YOU**.



3. By crossing out the correct two letters from each string below, you will form the eight missing words from the passage below. Then list reasons as to why world population has increased so dramatically. Now construct a flow chart of the impacts that a growing world population has on the environment.

Until the 1830s it had taken _____ of _____ for the _____ population to reach one _____. However, it took _____ than two _____ years for the world's _____ to reach _____ billion.

P O R P U L A T I S O N

N Y E L A R S

○ ○ ○ ○ ○

T S I E X
T E H O U S A R N D S

P W O R E L D S

S L E S A S

B I M L L E I O N

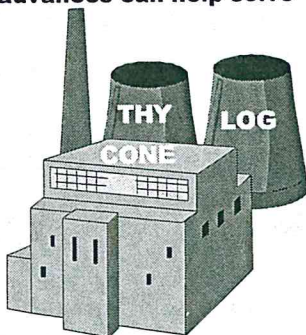
S H U N O D R E D

4. The ten letters in the three words in the factory can be arranged to form the word that is missing twice from the passage below. Then give three examples of how such advances can help solve the pollution problem.

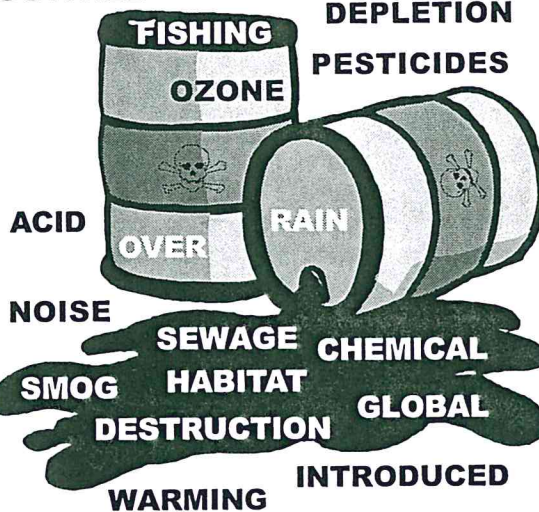
Advances in _____

_____ have contributed greatly to pollution, but advances in _____

_____ can also be used to help solve pollution problems.



POLLUTION AGRICULTURAL
RADIOACTIVE SPECIES WASTE
OUTFALL DEPLETION



PHOTOCHEMICAL

2. Industrial waste is just one of many negative impacts that humans have had on the environment. In and around these drums are 12 more such negative impacts, however they have each come in two. Correctly match them up again and then for each one, detail a strategy that could be implemented to reduce or eliminate that impact.

- Come up with a strategy to solve a local pollution problem.

ECOSYSTEM

7RB8N

8GR32C7LT7R8L

N8T7R8L

5. Crack the code to discover three types of ecosystems in the table above. Then for each one, list its characteristics and give three examples. Now, what has been the impact of the first two types of ecosystems on the third.

Summer Instructional Packets



*Middle School
Social Studies
Grade 7*

An army of soldiers has guarded a Chinese emperor for more than two thousand years! The author of the following article records her thoughts upon viewing these life-size clay figures, whose discovery was one of the most amazing archaeological finds of the twentieth century.

March of the Terra-Cotta Soldiers

from *Archaeology's Dig*

by VICTORIA C. NESNICK

The moment I stepped inside the massive tomb of Emperor Shihuangdi¹ in central China, I felt as though I was facing a humongous firing squad. My body shook as I imagined one of the emperor's generals shouting, "Ready, Aim, Fire!" before a storm of arrows pierced the air on their way to my body.

But then I remembered that these soldiers that seemed so terrifyingly real were made of terra cotta, a baked clay also used through the centuries to make pottery. Secretly buried for 2,200 years until it was found in 1974, the awesome army of artifacts is part of the burial complex of Qin Shihuangdi, who was China's first emperor (221–206 B.C.). As I looked at this amazing site filled with lifelike soldiers and horses, I could understand

MAGAZINE ARTICLE

HISTORY ●

SCIENCE ●

massive (mas'iv): huge.

You Need to Know...

The Egyptian pharaohs weren't the only ancient people to build huge tombs, complete with all the things they would need for a comfortable afterlife. Around 200 B.C., China's first emperor built vast burial chambers for himself. He filled them with thousands of life-size clay soldiers, probably in the belief that he would continue to be a powerful man in the afterlife.

The emperor's tomb lay hidden for more than two thousand years under a huge hill that stood over fifteen stories tall. In 1974, while digging a well, some farmers unearthed several of the clay soldiers. The ancient burial site had been discovered. Eventually, thousands of clay soldiers were recovered from the earth. Now, many visitors to China make a point of seeing this amazing collection of clay figures.

1. Shihuangdi (shir-hwǎŋ-dē): also spelled Shih Huang-ti.



SuperStock

▲ These terra-cotta soldiers have been guarding Shihuangdi's tomb for over two thousand years.

■ What might these statues reveal about Emperor Shihuangdi's beliefs about death?

why it has been called "The Greatest Archaeological Find of Our Time" and "The Eighth Wonder of the World."

Just 25 years ago, these tremendous troops were a company of crumbled clay. Ever since they were accidentally found in the tomb at the foot of Mount Li, east of the city of Xi'an,² archaeologists in China have been putting the pieces together as if they were working on a huge three-dimensional jigsaw puzzle. Think connecting 1,000 pieces of pictured cardboard is tough? Try putting together little bits of more than 7,000 life-size warriors and horses.

"If on a given day we find one piece that fits, that's a lucky day," says Song Yun, a member of the team that's been mending the broken soldiers for more than 20 years.

How Were They Found?

The soldiers were accidentally discovered when a group of local farmers was digging a well during a drought. One of the shovels pulled up the head of a clay warrior. "We all thought he was a ghost who drank all the water meant for the crops," recalls Yang Jungeng. Yang and his fellow farmers thought they had unleashed an evil spirit that would

2. Xi'an (shē'ān').

cause a terrible catastrophe. But when they found more sculpted warriors, they called in experts to investigate. Once excavations began, the site stretched to the size of four football fields.

"We couldn't believe what we found," says Yuan Zhongyi, the first archaeologist at the site. The first pit contained about 6,000 statues that formed the infantry of Shihuangdi's terra-cotta army. Many had been beheaded and smashed by ancient warlords who also set the pit on fire, causing the roof to collapse, which destroyed more statues.

In 1976, archaeologists discovered a second pit, containing 1,400 foot soldiers, cavalry, and the remains of 90 war chariots. (Soldiers and senior officers were sculpted in different styles.) A third pit held the military headquarters, where 68 officers, four horses, and one chariot were stationed. A fourth pit, excavated in 1977, was empty. Many scholars believe the emperor died before it was completed.

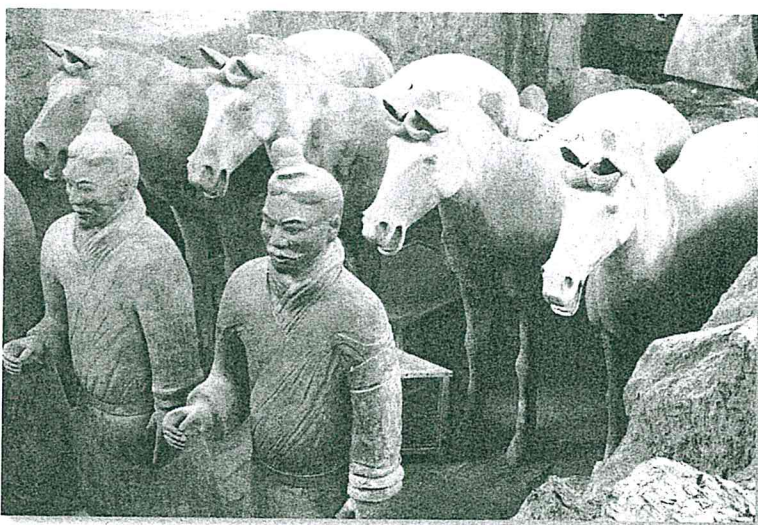
Why Were They Made?

Shihuangdi didn't build his terra-cotta army simply because he wanted to play with very large toy soldiers. Some scholars say he built it to protect his tomb and

catastrophe (kə-tas'trə-fē): a widespread misfortune or disaster.

Potion of Death?

The Chinese have an extremely long medical tradition. Over thousands of years they learned how to make many potent herbal remedies from plants. Emperor Shihuangdi seems to have had a personal interest in Chinese medical knowledge—he hoped to find a potion that would allow him to live forever. In his quest for eternal life, the emperor drank many mixtures of herbs and chemicals. Instead of extending his life, however, these mixtures may have slowly poisoned him. He died around 210 B.C., probably in his late forties.



© John P. Stevens/Ancient Art & Architecture Collection Ltd.

▲ Clay soldiers and horses from Emperor Shihuangdi's burial complex.

escort him into the afterlife. Others say the emperor wanted the army as a memorial to celebrate his military victories. Whatever the reason, it took more than 700,000 people, working for 40 years, to build the emperor's burial complex. Archaeologists believe that since all the warriors' faces are different, the sculptors must have come from many different places throughout Shihuangdi's empire.

Many of the emperor's loyal workers, however, were not rewarded for their hard work. Hundreds of nearby gravesites contained skeletons of tomb builders, ministers, and nobles. According to the *Shiji*, an ancient Chinese history book, anyone who knew about the burial complex was locked in and buried alive so they could not reveal its secret location.

[A]nyone who knew about the burial complex was locked in and buried alive so they could not reveal its secret location.

To make the tube-shaped bodies of the huge statues, the sculptors looped together coils of wet clay. Heads and hands were cast from molds. Then an outer layer of clay was applied and individual details sculpted. The moist statues were placed in low-temperature kilns³ to dry. Then they were fired at high temperatures for several days, until they actually glowed red-hot. Modern artisans are copying such methods to learn more about the sculpting techniques used during the emperor's time. They are also creating reproductions for display purposes and selling replicas as souvenirs to tourists to help raise money for the conservation effort.

Some of the smallest pieces provide the largest clues. From tiny paint chips, archaeologists have determined that the warriors were originally painted in 13 different colors. The paint was made from vegetable dyes and minerals mixed with binders such as animal blood or egg

3. kilns (kilz or kilnz): ovens used to bake pottery.

souvenirs (sōō'və-nirz'): things kept as reminders of the past.

white. But fire, floods, time, and recent exposure to air erased most of the ancient hues.⁴

The Last Puzzle Piece?

The biggest puzzle of all may be Shihuangdi's tomb, located under Mount Li. If it hasn't been looted, the tomb is expected to contain all the possessions the emperor wanted to have in his afterlife. Sima Qian, the author of the *Shiji*, wrote in about 100 B.C. that Shihuangdi's tomb is "filled with models of palaces, precious stones, and rarities." The walls and roof are said to be made of copper and studded with diamonds and pearls to represent the heavenly sky. Miniature silver and gold ducks and geese float along quicksilver (mercury) streams and lakes. The landscape is adorned with foliage and trees made of precious jade.

Some people doubt the accuracy of Sima Qian, but Robert Murowchick, an expert on East Asian archaeology, says, "Sima Qian is one of the best historians. The things he wrote, that we've been able to check, have all turned out very much as he described them."

Although China's archaeologists are anxious to open Shihuangdi's tomb, there is a chance they may find an empty pit. If they do find one huge treasure chest, they will be faced with an enormous conservation job.

"The Chinese have learned from excavating other tombs that items like silk and paper will disintegrate in a matter of days once exposed to air," says Murowchick. "They realize the importance of not opening the emperor's tomb until they are ready to take care of the things inside it." Lack of money may also delay excavations. "It might take between five and 10 years before the problems surrounding the tomb will be solved," says Murowchick.

Then, of course, there are the booby traps to worry about. Booby traps? The *Shiji* warns about crossbows that are mechanically triggered at the tomb's entrance "so that any thief breaking in would be shot." Sounds like this excavation may be a job for Indiana Jones.

4. **hues** (hyooz): shades of color.

A Tomb in Texas

You have to go all the way to China to see Shihuangdi's tomb, but a replica of his burial complex can be found at an outdoor museum in Katy, Texas, a suburb of Houston. There, you can see reproductions of the original terra-cotta soldiers discovered in the emperor's massive tomb.

conservation (kän'sər-vā'shən): careful use and protection; preservation.

disintegrate (dis-in'tə-grāt'): to break apart into small pieces; to crumble.



▲ Pottery warrior from Qin Shihuangdi's eternal "army."

✓ Reading Check

1. Who were the first modern people to see the ancient terra-cotta soldiers? What did they think they had discovered?
2. How many statues were in the first pit to be excavated? What did archaeologists find in the second pit?
3. Name some of the reasons scholars think Qin Shihuangdi had all these soldiers made. According to the *Shiji*, what happened to the sculptors and other people who worked on the emperor's tomb?
4. Archaeologists have not yet opened the tomb of Qin Shihuangdi. If they do, what might be in it, according to the ancient historian Sima Qian?
5. What have the Chinese learned about tomb items from excavating other tombs? What other concerns may delay excavating Qin Shihuangdi's tomb?

MEET THE *Writer*

Victoria C. Nesnick (1945–) was an elementary school teacher for many years and has written numerous works of nonfiction for young readers. She is also the founder of The Kids Hall of Fame, an organization that spotlights both contemporary and historic achievements of young people.

NONFICTION BOOK

HISTORY •

GEOGRAPHY •

If you were asked to name two people from the Hebrew Bible (known to Christians as the Old Testament), chances are good you'd come up with Abraham and Moses. The stories of these ancient Hebrew leaders are legendary. Abraham is credited as the founder of a new religion, while Moses is known as the great liberator of his people. Read on to find out more about these famous figures of Hebrew history.

Judaism

from *One World, Many Religions*

by MARY POPE OSBORNE

"Hear, O Israel: the Lord our God, the Lord is one." (Deuteronomy 6:4)

The story of Judaism begins with a shepherd named Abraham and his wife, Sarah. They lived almost four thousand years ago in the ancient land of Ur, in what is now Iraq. At that time, the people of Ur worshiped many gods, including gods of fire, water, and the sky.

You Need to Know...

According to the Bible, Abraham and Sarah were the ancestors of the Hebrews. They came from the land of Ur, in ancient Mesopotamia (today's Iraq), and settled in Canaan. The adventures of Abraham, Sarah, and their family are narrated in Genesis, the first book of the Bible. *Genesis* means "beginnings," and the Hebrew people trace their beginning to Abraham and Sarah.

Several hundred years later, the Hebrews were forced into slavery in Egypt. Moses, a Hebrew raised in the Egyptian court of the pharaoh, eventually stepped in to deliver his people from bondage and led them on a long, long journey back to Canaan, the "promised land."

According to a Jewish legend, Abraham began to wonder which of these gods was the one true God. One day, when the sun was shining, Abraham decided the sun must be God. When the sun went down and the moon rose in the sky, he decided the moon was God. But when the moon vanished the next morning, Abraham decided there must be a power even greater than the sun or the moon—greater than all

living things. He thought this great invisible power must be the one true God.

In time, this one true God spoke to Abraham and made a covenant, or agreement, with him. God promised to bless Abraham and Sarah and lead them to a faraway land called Canaan. In return, Abraham promised that he and his family would always be faithful to God.

From then on, Abraham and his descendants believed in only one God, a God who enters every human life in a personal way. This was a stunning new idea—one that made Judaism different from all other religions of the time.

After Abraham and Sarah reached Canaan, their son Isaac had a son named Jacob, who would later be called Israel. As the centuries passed, Abraham's descendants came to be called the Israelites. The Israelites eventually left Canaan because of a shortage of food. About five hundred years after Abraham's death, they were living in Egypt. At first the Egyptians treated them well, but the Israelites grew too numerous, and the Egyptian ruler forced them into slavery.

Abraham and his descendants believed in only one God, a God who enters every human life in a personal way.

According to Jewish history, one day God spoke to an Israelite named Moses. God told Moses that he should lead the Israelites out of Egypt and back to the "Promised Land" of Canaan—the land God had promised to Abraham long ago.



▲ In this artwork by Dutch artist Gerard Hoet (1648–1733), Abraham is shown leading his family to the land of Canaan.

descendants (dē-sen'dānts): people who trace their families back to a certain ancestor.

stunning (stun'in): striking or remarkable.

plagues (plāgz): great troubles sent as divine punishments; calamities.

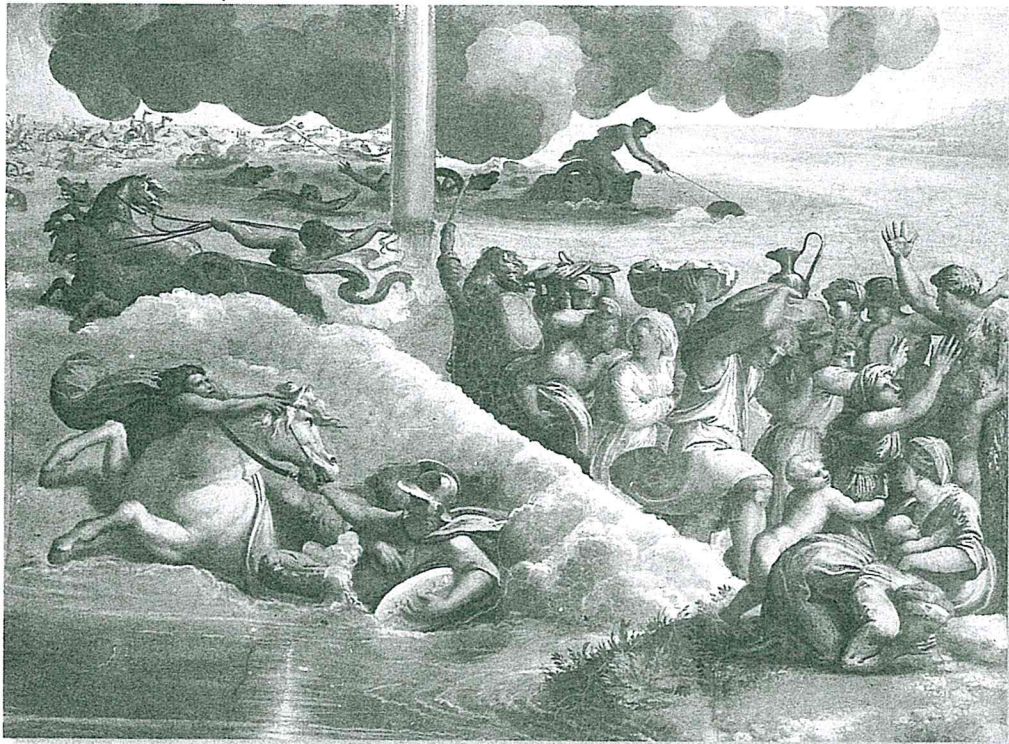
infestation (in'fes-tā'shan): destructive swarming.

Moses went to the Egyptian king and asked him to free the Israelite slaves. When the king said no, God caused ten terrible plagues to happen to the Egyptians, including a hailstorm, an infestation of locusts, and, worst of all, the death of every firstborn son. Finally, the king begged Moses to lead his people away.

The Israelites began to leave Egypt. But the king changed his mind and sent his soldiers after them to bring them back. The soldiers caught up with the Israelites at the Red Sea. The Israelites were trapped—water in front of them, soldiers behind.

Moses climbed up on a rock and prayed to God for help. Then he stretched his hand over the waters, and they parted. The Israelites crossed safely to the other side, and the waters returned, drowning the soldiers. At last, the Israelites were free from slavery. For the next forty years,

St. Peter's Basilica, The Vatican, Rome/SuperStock



▲ In this painting by Italian artist Raphael (1483–1520), Pharaoh's army is swallowed by the waters of the Red Sea. ■ What impact do you think such paintings have on believers of the Jewish faith?

SIDELIGHT

“Who was Moses? He was raised as an Egyptian yet came to the rescue of a Hebrew slave. He could not have spoken Hebrew yet was chosen to lead the Israelites out of Egypt. The Bible suggests that a million or more people followed Moses. Yet there are no Egyptian records of such a mass migration, nor could the desert have supported so many.

Were those who followed Abraham and those who followed Moses four hundred years later perhaps two very different groups of people whom Moses united under his leadership? . . .

Perhaps the ancient soils of the Near East will one day reveal their secrets.”

—from *The Ancient Hebrews* by Kenny Mann

they wandered in the desert, learning how to be a free people under the leadership of Moses and God.

During that time, God gave ten laws to Moses to give to the Israelites. These laws, called the Ten Commandments, were carved on stone tablets. They told the Israelites how they should behave in their daily lives.

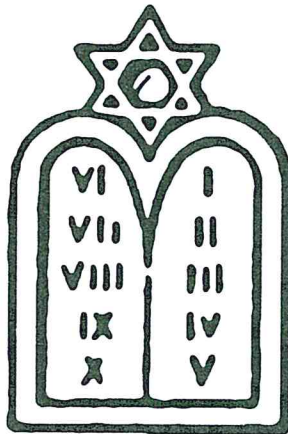
Moses died before his people reached the Promised Land. But after his death, the Israelites carried the stone tablets bearing the Ten Commandments into Canaan. And there they built a great nation.

The Ten Commandments became the core of Judaism’s holy book, which the Jews call the *Tanach*,¹ or Bible. The first five books of the Bible are called the Torah, which means “teaching.” Many Jewish people believe that God gave these five books directly to Moses.

The Torah includes some of humanity’s greatest stories. It tells us that God created the world in six days, then rested on the seventh. It tells the stories of Adam and Eve in the Garden of Eden; of their son Cain killing his brother, Abel; of Noah and the ark. The Torah tells Jews how they should live their lives, and it tells the history of their people.

1. **Tanach** (tä-näkh’): the entire Hebrew or Jewish Bible; the Christian Old Testament.





The Ten Commandments

Thou shalt have no other gods before me.

Thou shalt not make thyself a graven image.

*Thou shalt not take the name of the Lord thy God
in vain.*

Remember the Sabbath day, to keep it holy.

Honor thy father and thy mother.

Thou shalt not murder.

Thou shalt not commit adultery.

Thou shalt not steal.

Thou shalt not bear false witness against thy neighbor.

Thou shalt not covet.



Reading Check

1. In God's covenant with Abraham, what did God promise? What did Abraham promise in return?
2. A few centuries after Abraham and Sarah, the Israelites left Canaan and moved to Egypt. Why did they move?
3. Why did the Israelites become unhappy in Egypt?
4. What was carved on the stone tablets God gave Moses?

MEET THE *Writer*

Mary Pope Osborne (1949–) has published novels, as well as retellings of myths and fairy tales for young people. Recently, she has focused on picture books, biographies, and nonfiction.