

119 N Reinway Ave,  
Waterford, CA 95386  
(209) 874-1080

April 2, 2020

Dear Families and Students,

First, we want to wish each one of you good health during these unprecedented times. We want to thank you in advance for coming to pick up your child's recommended school work during the week of April 6th. We are grateful for your unwavering support to your child's education during this confusing and difficult time.

Unfortunately, the time has come where we cannot assist your child with the traditional methods we have used in the past. We are asking that you help your child work on the attached pages to continue to develop their skills. We hope that the shelter in place mandate will not stop our amazing fifth grade students from learning by providing you with some grade appropriate work, but as previously communicated by the WUSD office, none of this work is mandatory nor will it affect your student's grade. We have included a recommended list of activities and tasks. Your child can do the activities we are giving them at their own pace in your home.

We are still available as your child's teachers and you can still contact us, either through Class Dojo or through the Waterford Unified School District web site [www.waterford.k12.ca.us](http://www.waterford.k12.ca.us). We will check these sites and be available to you from 1:00-2:00 on Mondays through Fridays.

Sincerely,

Fifth Grade Teachers  
Lucille Whitehead Intermediate

### *Fifth Grade Recommended Activities*

We have included a recommended list of activities and tasks for you to choose from. Your child can do the activities we are giving them at their own pace in your home.

Subject
<p>Reading</p> <ul style="list-style-type: none"><li>-Read for thirty minutes and use binder paper to summarize your reading.</li><li>-You can access stories from our Benchmark reading program using Clever to reread previous stories; list the main idea and supporting details for any informational stories, name the key events in any fictional story.</li><li>-Use IXL for language arts</li></ul>
<p>Writing</p> <ul style="list-style-type: none"><li>-Do a daily journal entry about your day.</li></ul> <p>After reading one of the stories from Benchmark Advance, write either an opinion or informational essay about what you read.</p> <ul style="list-style-type: none"><li>-Write a letter to someone you're thinking about</li></ul> <p>Grammar</p> <ul style="list-style-type: none"><li>-We have included sentences to correct for grammar</li></ul>
<p>Math</p> <ul style="list-style-type: none"><li>-Work on the review worksheets attached</li><li>-You can work on both of these websites (IXL, Prodigy).</li><li>-You can also make flash cards for multiplication and/or division math facts to work on</li></ul>
<p>Science-</p> <ul style="list-style-type: none"><li>-work on the articles and videos listed, and write a summary</li><li>-work on the worksheets or experiments attached</li><li>-IXL for Science</li></ul>
<p>Social Studies</p> <ul style="list-style-type: none"><li>-do the research and fill out the notes page on the American Revolution)</li><li>-work on the United States and capitals worksheets attached</li><li>-make flash cards for the United States and their corresponding capital to work on</li><li>-IXL for Social Studies</li></ul>
<p>Physical Education/</p> <p>1. 30 sit ups.    2. 5 pushups.    3. 10 jumping jacks</p> <p>Take a walk with your family, or you can do the full body workout for kids featured here:</p> <p><a href="https://m.youtube.com/watch?v=dhCM0C6GnrY&amp;feature=youtu.b">https://m.youtube.com/watch?v=dhCM0C6GnrY&amp;feature=youtu.b</a></p>

**ELA**

Daily Language Review

Name: \_\_\_\_\_

**Monday**

**1**

**Correct these sentences.**

1. has you ever been to a audition for a play
2. were glad that sammy is on hour team this year

**Singular or plural?**

3. oxen

**Give two words that rhyme with truth.**

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

**Choose the word that best completes the sentence.**

5. \_\_\_\_\_ you finished making your bed yet?

Are not

Arent

Aren't

Ain't



Daily Language Review

Name: \_\_\_\_\_

**Tuesday**

**1**

**Give an antonym for each word.**

1. build \_\_\_\_\_
2. tidy \_\_\_\_\_

**Correct these sentences.**

3. allen watch television from 630 to 830 last night
4. them boys rides the bus two school ever day

**Declarative, interrogative, imperative, or exclamatory?**

5. Ouch, that hurts

Name: \_\_\_\_\_

**Wednesday****1****Correct these sentences.**

- werent their no cookies left
- why cant jerome never get here on time

**Complete the analogy.**

- height : inches :: weight :

**Where will the following probably take place?**

- The umpire yelled, "You're out!"

**What is the root or base word?**

- illegal



Name: \_\_\_\_\_

**Thursday****1****What is the correct abbreviation for ounce?**

- a. ou.
- b. oz.
- c. oun.
- d. none of these

**What reference source would you use to find the meaning of etiquette?**

- 

**Correct these sentences.**

- put corinnes ice skates in that there closet
- what time are we do at miss grissoms recital

**Which words have three syllables?**

- vertical
- equation
- temperature
- decorate

Choose the best word to complete the sentence.

1. The lion growled \_\_\_\_\_ than the lioness.  
loudest loudly louder
2. Tonya draws \_\_\_\_\_  
better best well
3. My grandfather is \_\_\_\_\_ than that man.  
kind kinder kindest
4. Mrs. Gee is the \_\_\_\_\_ person in Wisconsin.  
old older oldest
5. The mall is very \_\_\_\_\_ every day of the week.  
busy busier busiest

**Monday**

1. Have you ever been to an audition for a play?
2. We're glad that Sammy is on our team this year.
3. plural noun
4. Answers will vary.
5. Aren't

**Tuesday**

1. destroy
2. messy
3. Allen watched television from 6:30 to 8:30 last night.
4. Those boys ride the bus to school every day.
5. exclamatory

**Wednesday**

1. Weren't there any cookies left?
2. Why can't Jerome get here on time?
3. pounds or ounces
4. at the ball park
5. legal

**Thursday**

1. b. oz.
2. dictionary
3. Put Corinne's ice skates in that closet.
4. What time are we due at Miss Grissom's recital?
5. vertical, equation, decorate

**Friday**

1. louder
2. well
3. kinder
4. oldest
5. busy

Name: \_\_\_\_\_

**Monday**

**2**

**Correct these sentences.**

1. we dont got no pets in our family

2. kelsey said i want to go to aunt joys for thanksgiving

**Use context clues to determine the meaning of the bolded word below.**

3. **Catastrophes**, including floods and earthquakes, did great damage to the farm town.

**Fact or fiction?**

4. A moose strips off and eats the bark of trees.

5. The herd of moose danced in a circle in the middle of the stream.



Name: \_\_\_\_\_

**Tuesday**

**2**

**Give a synonym for respond.**

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

**Which word would come first in alphabetical order?**

2. amuse

address

Arab

antler

actor

**Correct these sentences.**

3. i havent never been to a professional football game

4. i wont eat spinach and beets for dinner shouted maurice

**Write the pronoun that would replace the underlined nouns.**

5. Ernie and Fred went scuba diving in Florida.

Name: \_\_\_\_\_

**Wednesday**

**2**

**Correct these sentences.**

1. please put a ice cube in there lemonade

2. mr mastin asked whose ordering school lunch today

**What do you call this part of a friendly letter?**

3. Love, \_\_\_\_\_

**Simile or metaphor?**

4. The old man's hair was as white as snow.

**Circle the adverb in this sentence.**

5. Treat the new kitten gently so you don't injure it.



Name: \_\_\_\_\_

**Thursday**

**2**

**Which word would come last in alphabetical order?**

1. together

the

twice

tiger

turkey

**How many syllables does this word have?**

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

**Correct these sentences.**

3. does the music start at 400 or 430 inquired Ms Clark

4. the workmen has come to repair the roof on hermans house

**Which words have the same sound as /sh/ in wish?**

5. sure

occasion

mission

official



**Daily Language Review**

Name: \_\_\_\_\_

**Friday****2**

Which reference source would be best to look up the information: thesaurus, dictionary, telephone book, atlas, encyclopedia, or almanac?

1. in which country is the Amazon River \_\_\_\_\_
2. an antonym for the word "awkward" \_\_\_\_\_
3. the address of your doctor's office \_\_\_\_\_
4. how to pronounce the word "mischievous" \_\_\_\_\_
5. information on the District of Columbia \_\_\_\_\_

**Daily Language Review****Answer Key****2****Monday**

1. We don't have any pets in our family.
2. Kelsey said, "I want to go to Aunt Joy's for Thanksgiving."
3. Catastrophes are terrible disasters.
4. fact
5. fiction

**Tuesday**

1. answer, reply
2. actor
3. I haven't ever been to a professional football game.
4. "I won't eat spinach and beets for dinner!" shouted Maurice.
5. they

**Wednesday**

1. Please put an ice cube in their lemonade.
2. Mr. Mastin asked, "Who's ordering school lunch today?"
3. closing
4. simile
5. gently

**Thursday**

1. twice
2. four
3. "Does the music start at 4:00 or 4:30?" inquired Ms. Clark.
4. The workmen have come to repair the roof on Herman's house.
5. sure      mission      official

**Friday**

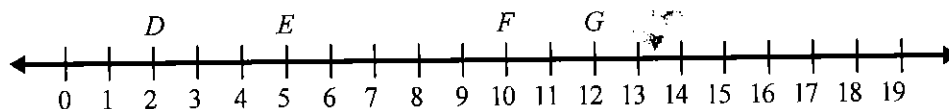
1. atlas, encyclopedia
2. thesaurus
3. telephone book
4. dictionary
5. almanac, encyclopedia

**MATH**

# Am I Ready?

## Review

Write the number that represents each point on the number line.



There are four points on the number line, *D*, *E*, *F*, and *G*.

Locate each point.

Then write the number that corresponds to each point.

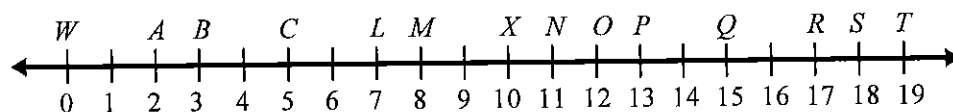
Point *D* is located at the number 2.

Point *E* is located at the number 5.

Point *F* is located at the number 10.

Point *G* is located at the number 12.

Write the number that represents each point on the number line.



1. *S* \_\_\_\_\_

2. *C* \_\_\_\_\_

3. *N* \_\_\_\_\_

4. *A* \_\_\_\_\_

5. *T* \_\_\_\_\_

6. *P* \_\_\_\_\_

7. *M* \_\_\_\_\_

8. *B* \_\_\_\_\_

9. *R* \_\_\_\_\_

10. *L* \_\_\_\_\_

11. *O* \_\_\_\_\_

12. *Q* \_\_\_\_\_

13. *W* \_\_\_\_\_

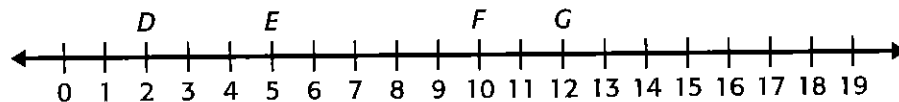
14. *X* \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Review

Write the number that represents each point on the number line.



There are four points on the number line, *D*, *E*, *F*, and *G*.

Locate each point.

Then write the number that corresponds to each point.

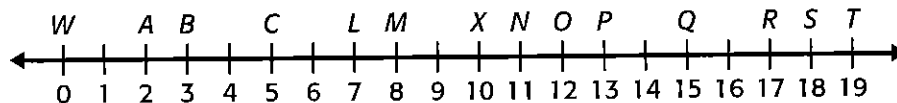
Point *D* is located at the number 2.

Point *E* is located at the number 5.

Point *F* is located at the number 10.

Point *G* is located at the number 12.

Write the number that represents each point on the number line.



1. *S* 18

2. *C* 5

3. *N* 11

4. *A* 2

5. *T* 19

6. *P* 13

7. *M* 8

8. *B* 3

9. *R* 17

10. *L* 7

11. *O* 12

12. *Q* 15

13. *W* 0

14. *X* 10

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

Write each number in word form.

1. 7 \_\_\_\_\_

2. 4 \_\_\_\_\_

3. 21 \_\_\_\_\_

4. 35 \_\_\_\_\_

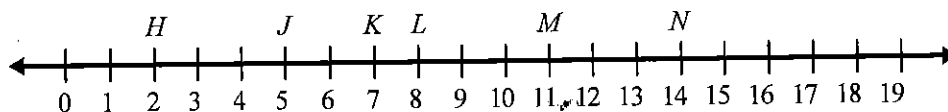
5. 112 \_\_\_\_\_

6. 228 \_\_\_\_\_

7. 504 \_\_\_\_\_

8. 460 \_\_\_\_\_

Write the number that represents each point on the number line.



9. *M* \_\_\_\_\_

10. *H* \_\_\_\_\_

11. *K* \_\_\_\_\_

12. *N* \_\_\_\_\_

13. *J* \_\_\_\_\_

14. *L* \_\_\_\_\_

Write each sentence using the symbols  $<$ ,  $>$ , or  $=$ .

15. 3 is less than 7 \_\_\_\_\_

16. 42 is greater than 39 \_\_\_\_\_

17. 5 is equal to 5 \_\_\_\_\_

18. 218 is greater than 202 \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

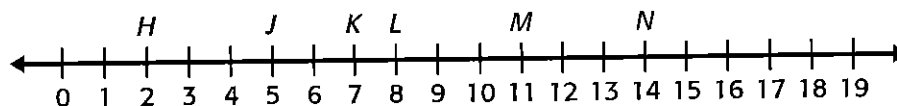
## Am I Ready?

### Practice

Write each number in word form.

1. 7 **seven**
2. 4 **four**
3. 21 **twenty-one**
4. 35 **thirty-five**
5. 112 **one hundred twelve**
6. 228 **two hundred twenty-eight**
7. 504 **five hundred four**
8. 460 **four hundred sixty**

Write the number that represents each point on the number line.



- |                |                 |
|----------------|-----------------|
| 9. M <b>11</b> | 10. H <b>2</b>  |
| 11. K <b>7</b> | 12. N <b>14</b> |
| 13. J <b>5</b> | 14. L <b>8</b>  |

Write each sentence using the symbols  $<$ ,  $>$ , or  $=$ .

- |   |  |
|---|--|
| 15. 3 is less than 7 <b><math>3 &lt; 7</math></b> | 16. 42 is greater than 39 <b><math>42 &gt; 39</math></b>     |
| 17. 5 is equal to 5 <b><math>5 = 5</math></b>     | 18. 218 is greater than 202 <b><math>218 &gt; 202</math></b> |

# Am I Ready?

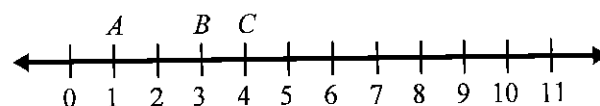
## Apply

Solve.

1. Mr. Levenstein, Mrs. Padgett, and Mrs. Sheeley all teach fifth grade science. Mr. Levenstein has 26 students, Mrs. Padgett has 24 students, and Mrs. Sheeley has 29 students. Write *29 is greater than 26* using symbols.

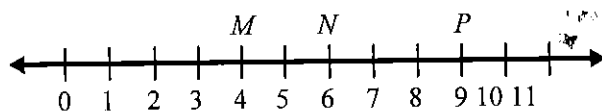
\_\_\_\_\_

2. The ages in years of the Bixler family children are represented on the number line below. The point *A* represents Abigail's age. The point *B* represents Bradley's age. The point *C* represents Charlotte's age. How old is Bradley?



\_\_\_\_\_

3. The number of miles that three people ran on Monday is represented on the number line below. The point *M* represents the number of miles Martin ran. The point *N* represents the number of miles Nina ran. The point *P* represents the number of miles Paloma ran. How many miles did Nina run?



\_\_\_\_\_

4. The table gives the number of pets that four friends have. Write *3 is less than 5* using symbols.

Friend	Number of Pets
Damon	3
Felisa	2
Kristin	0
Tyrone	5

\_\_\_\_\_

5. A bakery made 144 banana nut muffins and 72 blueberry muffins. Write *144 is greater than 72* using symbols.

\_\_\_\_\_

6. Regina sent 42 text messages during the month of March. She sent 51 text messages during the month of April. Write *42 is less than 51* using symbols.

\_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

# Am I Ready?

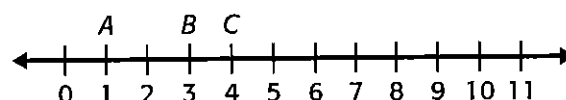
## Apply

**Solve.**

1. Mr. Levenstein, Mrs. Padgett, and Mrs. Sheeley all teach fifth grade science. Mr. Levenstein has 26 students, Mrs. Padgett has 24 students, and Mrs. Sheeley has 29 students. Write *29 is greater than 26* using symbols.

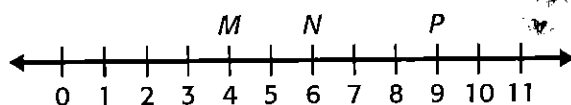
$$\underline{29 > 26}$$

2. The ages in years of the Bixler family children are represented on the number line below. The point *A* represents Abigail's age. The point *B* represents Bradley's age. The point *C* represents Charlotte's age. How old is Bradley?



**3 years old**

3. The number of miles that three people ran on Monday is represented on the number line below. The point *M* represents the number of miles Martin ran. The point *N* represents the number of miles Nina ran. The point *P* represents the number of miles Paloma ran. How many miles did Nina run?



**6 mi**

4. The table gives the number of pets that four friends have. Write *3 is less than 5* using symbols.

Friend	Number of Pets
Damon	3
Felisa	2
Kristin	0
Tyrone	5

$$\underline{3 < 5}$$

5. A bakery made 144 banana nut muffins and 72 blueberry muffins. Write *144 is greater than 72* using symbols.

$$\underline{144 > 72}$$

6. Regina sent 42 text messages during the month of March. She sent 51 text messages during the month of April. Write *42 is less than 51* using symbols.

$$\underline{42 < 51}$$



# Am I Ready?

## Apply

Solve.

1. Felisa ran two miles on Monday, three miles on Tuesday, and one mile on Wednesday. If she runs the same number of miles for 5 weeks, how many total miles will she run?

\_\_\_\_\_

3. During the first year of a festival, there were 1,205 attendees. The second year, there were 180 more attendees than the first year. The third year, there were 500 more attendees than the second year. How many people attended the festival the third year?

\_\_\_\_\_

5. A bookstore has discounted books for \$7 each. Joseph buys 3 books for his sister and 4 books for himself. How much does Joseph spend?

\_\_\_\_\_

7. Tony made three dozen banana muffins. He gave 22 to his classmates and three to his sister. How many did he have left?

\*Hint: 1 dozen

\_\_\_\_\_

2. Three friends went to see a movie. They each spent \$9 on the movie ticket and \$2 on a beverage. How much money altogether did they spend?

\_\_\_\_\_

4. Marcus scored 15 points during his first basketball game. He scored twice as many points during his second basketball game. If he scored a total of 60 points during his first three basketball games, how many points did he score during his third basketball game?

\_\_\_\_\_

6. Mr. Fraser drove 240 miles on Friday. On Saturday, he drove 180 miles. If he needs to drive a total of 600 miles by Sunday, how many miles does he need to drive on Sunday?

\_\_\_\_\_

8. Greg downloaded 11 songs on his MP3 player. Each song was 3 minutes long. How many minutes of music did Greg download?

\_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Apply

Solve.

1. Felisa ran two miles on Monday, three miles on Tuesday, and one mile on Wednesday. If she runs the same number of miles for 5 weeks, how many total miles will she run?

**30 miles**

3. During the first year of a festival, there were 1,205 attendees. The second year, there were 180 more attendees than the first year. The third year, there were 500 more attendees than the second year. How many people attended the festival the third year?

**1,885 people**

5. A bookstore has discounted books for \$7 each. Joseph buys 3 books for his sister and 4 books for himself. How much does Joseph spend?

**\$49**

7. Tony made three dozen banana muffins. He gave 22 to his classmates and three to his sister. How many did he have left?

\*Hint: 1 dozen = 12

**11 muffins**

- 27 Three friends went to see a movie. They each spent \$9 on the movie ticket and \$2 on a beverage. How much money altogether did they spend?

**\$33**

- 47 Marcus scored 15 points during his first basketball game. He scored twice as many points during his second basketball game. If he scored a total of 60 points during his first three basketball games, how many points did he score during his third basketball game?

**15 points**

6. Mr. Fraser drove 240 miles on Friday. On Saturday, he drove 180 miles. If he needs to drive a total of 600 miles by Sunday, how many miles does he need to drive on Sunday?

**180 miles**

8. Greg downloaded 11 songs on his MP3 player. Each song was 3 minutes long. How many minutes of music did Greg download?

**33 minutes**

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Review

**Multiply.**

1.  $4 \times 5 =$

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

2.  $6 \times 7 =$

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

3.  $11 \times 3 =$

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

4.  $7 \times 8 =$

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

5.  $4 \times 6 =$

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

6.  $5 \times 3 =$

6. \_\_\_\_\_

7.  $6 \times 9 =$

7. \_\_\_\_\_

8.  $9 \times 8 =$

8. \_\_\_\_\_

9.  $10 \times 7 =$

9. \_\_\_\_\_

10.  $9 \times 4 =$

10. \_\_\_\_\_

11.  $9 \times 5 =$

11. \_\_\_\_\_

12.  $5 \times 10 =$

12. \_\_\_\_\_

13. Kaylee read 12 books each month over the summer.  
How many books did she read in three months?

13. \_\_\_\_\_

14. Chase went to the movies with 4 friends. They each  
spent \$9. How much did they spend in all?

14. \_\_\_\_\_

15. Bella made 6 bracelets for her friends. She used 7 beads  
on each bracelet. How many beads did she use on all the  
bracelets?

15. \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Review

#### Multiply.

1.  $4 \times 5 =$

2.  $6 \times 7 =$

3.  $11 \times 3 =$

4.  $7 \times 8 =$

5.  $4 \times 6 =$

6.  $5 \times 3 =$

7.  $6 \times 9 =$

8.  $9 \times 8 =$

9.  $10 \times 7 =$

10.  $9 \times 4 =$

11.  $9 \times 5 =$

12.  $5 \times 10 =$

13. Kaylee read 12 books each month over the summer.  
How many books did she read in three months?

14. Chase went to the movies with 4 friends. They each  
spent \$9. How much did they spend in all?

15. Bella made 6 bracelets for her friends. She used 7 beads  
on each bracelet. How many beads did she use on all the  
bracelets?

1. **20**

2. **42**

3. **33**

4. **56**

5. **24**

6. **15**

7. **54**

8. **72**

9. **70**

10. **36**

11. **45**

12. **50**

13. **36 books**

14. **\$45**

15. **42 beads**

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

Write all of the factors of each number.

1. 12 \_\_\_\_\_

2. 13 \_\_\_\_\_

3. 10 \_\_\_\_\_

4. 25 \_\_\_\_\_

5. 36 \_\_\_\_\_

6. 22 \_\_\_\_\_

Write each repeated addition sentence as a multiplication sentence.

7.  $5 + 5 + 5 = 15$

8.  $8 + 8 + 8 + 8 = 32$

\_\_\_\_\_

\_\_\_\_\_

9.  $11 + 11 = 22$

10.  $6 + 6 + 6 + 6 + 6 = 36$

\_\_\_\_\_

\_\_\_\_\_

11.  $12 + 12 + 12 = 36$

12.  $9 + 9 + 9 + 9 + 9 + 9 = 54$

\_\_\_\_\_

\_\_\_\_\_

**Multiply**

13.  $8 \times 3 =$  \_\_\_\_\_

14.  $1 \times 12 =$  \_\_\_\_\_

15.  $7 \times 9 =$  \_\_\_\_\_

16.  $6 \times 10 =$  \_\_\_\_\_

17. Coach Evans purchased nine soccer balls for gym class for \$10 each.  
Find the total cost for all nine balls. \_\_\_\_\_



Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

Write all of the factors of each number.

1. 12 1, 2, 3, 4, 6, 12

2. 13 1, 13

3. 10 1, 2, 5, 10

4. 25 1, 5, 25

5. 36 1, 2, 3, 4, 6, 9, 12, 18, 36

6. 22 1, 2, 11, 22

Write each repeated addition sentence as a multiplication sentence.

7.  $5 + 5 + 5 = 15$

$3 \times 5 = 15$

8.  $8 + 8 + 8 + 8 = 32$

$4 \times 8 = 32$

9.  $11 + 11 = 22$

$2 \times 11 = 22$

10.  $6 + 6 + 6 + 6 + 6 + 6 = 36$

$6 \times 6 = 36$

11.  $12 + 12 + 12 = 36$

$3 \times 12 = 36$

12.  $9 + 9 + 9 + 9 + 9 + 9 = 54$

$6 \times 9 = 54$

Multiply

13.  $8 \times 3 =$  24

14.  $1 \times 12 =$  12

15.  $7 \times 9 =$  63

16.  $6 \times 10 =$  60

17. Coach Evans purchased nine soccer balls for gym class for \$10 each.  
Find the total cost for all nine balls. \$90



# Am I Ready?

## Review

### Multiplication

Step 1 Multiply the ones.

$$\begin{array}{r} 4 \\ 38 \\ \times 6 \\ \hline 8 \end{array}$$

$6 \times 8 \text{ ones} = 48 \text{ ones}$   
 $48 \text{ ones} = 4 \text{ tens and } 8 \text{ ones}$

Step 2 Multiply the tens.

$$\begin{array}{r} 4 \\ 38 \\ \times 6 \\ \hline 228 \end{array}$$

$6 \times 3 \text{ tens} = 18 \text{ tens}$   
 $18 \text{ tens} + 4 \text{ tens} = 22 \text{ tens}$

Multiply.

1.  $\begin{array}{r} 12 \\ \times 4 \\ \hline \end{array}$

2.  $\begin{array}{r} 21 \\ \times 3 \\ \hline \end{array}$

3.  $\begin{array}{r} 43 \\ \times 2 \\ \hline \end{array}$

4.  $\begin{array}{r} 51 \\ \times 6 \\ \hline \end{array}$

5.  $\begin{array}{r} 83 \\ \times 3 \\ \hline \end{array}$

6.  $\begin{array}{r} 71 \\ \times 4 \\ \hline \end{array}$

7.  $\begin{array}{r} 45 \\ \times 8 \\ \hline \end{array}$

8.  $\begin{array}{r} 62 \\ \times 6 \\ \hline \end{array}$

9.  $\begin{array}{r} 39 \\ \times 9 \\ \hline \end{array}$

10.  $\begin{array}{r} 27 \\ \times 5 \\ \hline \end{array}$

11.  $\begin{array}{r} 29 \\ \times 3 \\ \hline \end{array}$

12.  $\begin{array}{r} 63 \\ \times 7 \\ \hline \end{array}$

13.  $\begin{array}{r} 44 \\ \times 3 \\ \hline \end{array}$

14.  $\begin{array}{r} 48 \\ \times 5 \\ \hline \end{array}$

15.  $\begin{array}{r} 97 \\ \times 3 \\ \hline \end{array}$

16.  $\begin{array}{r} 40 \\ \times 2 \\ \hline \end{array}$

Name \_\_\_\_\_ Date \_\_\_\_\_

# Am I Ready?

## Review

### Multiplication

**Step 1** Multiply the ones.

$$\begin{array}{r} 4 \\ 38 \\ \times 6 \\ \hline 8 \end{array}$$

$6 \times 8$  ones = 48 ones

48 ones = 4 tens and 8 ones

**Step 2** Multiply the tens.

$$\begin{array}{r} 4 \\ 38 \\ \times 6 \\ \hline 228 \end{array}$$

$6 \times 3$  tens = 18 tens

18 tens + 4 tens = 22 tens

### Multiply.

$$\begin{array}{r} 1. \ 12 \\ \times 4 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 2. \ 21 \\ \times 3 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 3. \ 43 \\ \times 2 \\ \hline 86 \end{array}$$

$$\begin{array}{r} 4. \ 51 \\ \times 6 \\ \hline 306 \end{array}$$

$$\begin{array}{r} 5. \ 83 \\ \times 3 \\ \hline 249 \end{array}$$

$$\begin{array}{r} 6. \ 71 \\ \times 4 \\ \hline 284 \end{array}$$

$$\begin{array}{r} 7. \ 45 \\ \times 8 \\ \hline 360 \end{array}$$

$$\begin{array}{r} 8. \ 62 \\ \times 6 \\ \hline 372 \end{array}$$

$$\begin{array}{r} 9. \ 39 \\ \times 9 \\ \hline 351 \end{array}$$

$$\begin{array}{r} 10. \ 27 \\ \times 5 \\ \hline 135 \end{array}$$

$$\begin{array}{r} 11. \ 29 \\ \times 3 \\ \hline 87 \end{array}$$

$$\begin{array}{r} 12. \ 63 \\ \times 7 \\ \hline 441 \end{array}$$

$$\begin{array}{r} 13. \ 44 \\ \times 3 \\ \hline 132 \end{array}$$

$$\begin{array}{r} 14. \ 48 \\ \times 5 \\ \hline 240 \end{array}$$

$$\begin{array}{r} 15. \ 97 \\ \times 3 \\ \hline 291 \end{array}$$

$$\begin{array}{r} 16. \ 40 \\ \times 2 \\ \hline 80 \end{array}$$

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Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

**Multiply.**

1.  $14 \times 2 =$  \_\_\_\_\_

2.  $21 \times 4 =$  \_\_\_\_\_

3.  $11 \times 5 =$  \_\_\_\_\_

4.  $50 \times 6 =$  \_\_\_\_\_

5.  $21 \times 5 =$  \_\_\_\_\_

6.  $51 \times 8 =$  \_\_\_\_\_

7.  $3 \times 25 =$  \_\_\_\_\_

8.  $5 \times 15 =$  \_\_\_\_\_

9.  $8 \times 82 =$  \_\_\_\_\_

10.  $7 \times 19 =$  \_\_\_\_\_

**Round each number to its greatest place value.**

11.  $212 =$  \_\_\_\_\_

12.  $1,673 =$  \_\_\_\_\_

13.  $380 =$  \_\_\_\_\_

14.  $\$37,252 =$  \_\_\_\_\_

15.  $\$1,289 =$  \_\_\_\_\_

16.  $34,500 =$  \_\_\_\_\_

17.  $23,945 =$  \_\_\_\_\_

18.  $3,023 =$  \_\_\_\_\_

19.  $59,721 =$  \_\_\_\_\_

20.  $782 =$  \_\_\_\_\_

**Divide.**

21.  $12 \div 4 =$  \_\_\_\_\_

22.  $42 \div 6 =$  \_\_\_\_\_

23.  $14 \div 7 =$  \_\_\_\_\_

24.  $48 \div 6 =$  \_\_\_\_\_

25.  $64 \div 8 =$  \_\_\_\_\_

26.  $15 \div 3 =$  \_\_\_\_\_

27.  $81 \div 9 =$  \_\_\_\_\_

28.  $45 \div 5 =$  \_\_\_\_\_

29.  $56 \div 7 =$  \_\_\_\_\_

30.  $24 \div 8 =$  \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

**Multiply.**

1.  $14 \times 2 =$  28

2.  $21 \times 4 =$  84

3.  $11 \times 5 =$  55

4.  $50 \times 6 =$  300

5.  $21 \times 5 =$  105

6.  $51 \times 8 =$  408

7.  $3 \times 25 =$  75

8.  $5 \times 15 =$  75

9.  $8 \times 82 =$  656

10.  $7 \times 19 =$  133

**Round each number to its greatest place value.**

11. 212 = 200

12. 1,673 = 2,000

13. 380 = 400

14. \$37,252 = \$40,000

15. \$1,289 = \$1,000

16. 34,500 = 30,000

17. 23,945 = 20,000

18. 3,025 = 3,000

19. 59,721 = 60,000

20. 782 = 800

**Divide.**

21.  $12 \div 4 =$  3

22.  $42 \div 6 =$  7

23.  $14 \div 7 =$  2

24.  $48 \div 6 =$  8

25.  $64 \div 8 =$  8

26.  $15 \div 3 =$  5

27.  $81 \div 9 =$  9

28.  $45 \div 5 =$  9

29.  $56 \div 7 =$  8

30.  $24 \div 8 =$  3

## Am I Ready?

### Apply

Solve.

1. Megan bought 4 packs of pencils for school. Each pack contained 8 pencils. How many pencils did Megan buy in all?  
\_\_\_\_\_
2. José helps his mom groom dogs. They can groom 2 small dogs each hour. How many small dogs can they groom in 8 hours?  
\_\_\_\_\_
3. The local football team's best running back rushed for 1,474 yards. Round the number of rushing yards to the nearest thousand.  
\_\_\_\_\_
4. Annika has \$369 in her savings account. Rounded to the nearest hundred, how much money has Annika saved?  
\_\_\_\_\_
5. Christian walks a total of 24 miles in 8 days. If he walks the same number of miles each day, how many miles does Christian walk each day?  
\_\_\_\_\_
6. A tailor uses 5 yards of fabric to make one dress. How many dresses can the tailor make with 45 yards of fabric?  
\_\_\_\_\_
7. Bradley plays tennis with three friends. If each player brings 3 tennis balls, how many tennis balls do they have altogether?  
\_\_\_\_\_
8. Isabel packs 2 boxes of raisins in each bag. How many boxes of raisins will Isabel need to pack 15 bags?  
\_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Apply

Solve.

1. Megan bought 4 packs of pencils for school. Each pack contained 8 pencils. How many pencils did Megan buy in all?

**32 pencils**

2. José helps his mom groom dogs. They can groom 2 small dogs each hour. How many small dogs can they groom in 8 hours?

**16 small dogs**

3. The local football team's best running back rushed for 1,474 yards. Round the number of rushing yards to the nearest thousand.

**1,000 yards**

4. Annika has \$369 in her savings account. Rounded to the nearest hundred, how much money has Annika saved?

**\$400**

5. Christian walks a total of 24 miles in 8 days. If he walks the same number of miles each day, how many miles does Christian walk each day?

**3 miles**

6. A tailor uses 5 yards of fabric to make one dress. How many dresses can the tailor make with 45 yards of fabric?

**9 dresses**

7. Bradley plays tennis with three friends. If each player brings 3 tennis balls, how many tennis balls do they have altogether?

**12 tennis balls**

8. Isabel packs 2 boxes of raisins in each bag. How many boxes of raisins will Isabel need to pack 15 bags?

**30 boxes**

# Am I Ready?

## Review

Multiply  $58 \times 16$ .

**Step 1** Multiply 58 by 6.

$$\begin{array}{r} 4 \\ 58 \\ \times 16 \\ \hline 348 \end{array}$$

$6 \times 8 \text{ ones} = 48 \text{ ones}$

$6 \times 5 \text{ tens} = 30 \text{ tens}$

$48 \text{ ones} = 4 \text{ tens and } 8 \text{ ones}$

$30 \text{ tens} + 4 \text{ tens} = 34 \text{ tens}$

$34 \text{ tens} = 3 \text{ hundreds and } 4 \text{ tens}$

**Step 2** Multiply 58 by 10.

$$\begin{array}{r} 58 \\ \times 16 \\ \hline 348 \\ + 580 \\ \hline \end{array}$$

$10 \times 8 \text{ ones} = 80 \text{ ones}$

$10 \times 5 \text{ tens} = 50 \text{ tens}$

$80 \text{ ones} = 8 \text{ tens and } 0 \text{ ones}$

$50 \text{ tens} + 8 \text{ tens} = 58 \text{ tens}$

$58 \text{ tens} = 5 \text{ hundreds and } 8 \text{ tens}$

**Step 3** Add.

$$\begin{array}{r} 58 \\ \times 16 \\ \hline 348 \\ + 580 \\ \hline 928 \end{array}$$

Multiply.

1.  $28 \times 3 =$  \_\_\_\_\_

2.  $150 \times 6 =$  \_\_\_\_\_

3.  $42 \times 12 =$  \_\_\_\_\_

4.  $34 \times 25 =$  \_\_\_\_\_

5.  $813 \times 43 =$  \_\_\_\_\_

6.  $73 \times 14 =$  \_\_\_\_\_

7.  $416 \times 3 =$  \_\_\_\_\_

8.  $58 \times 23 =$  \_\_\_\_\_

9.  $21 \times 19 =$  \_\_\_\_\_

10.  $138 \times 5 =$  \_\_\_\_\_

11.  $39 \times 12 =$  \_\_\_\_\_

12.  $27 \times 29 =$  \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

# Am I Ready?

## Review

**Multiply  $58 \times 16$ .**

**Step 1** Multiply 58 by 6.

$$\begin{array}{r} 4 \\ 58 \\ \times 16 \\ \hline 348 \end{array}$$

$6 \times 8$  ones = 48 ones

$6 \times 5$  tens = 30 tens

48 ones = 4 tens and 8 ones

30 tens + 4 tens = 34 tens

34 tens = 3 hundreds and 4 tens

**Step 2** Multiply 58 by 10.

$$\begin{array}{r} 58 \\ \times 16 \\ \hline 348 \\ + 580 \\ \hline \end{array}$$

$10 \times 8$  ones = 80 ones

$10 \times 5$  tens = 50 tens

80 ones = 8 tens and 0 ones

50 tens + 8 tens = 58 tens

58 tens = 5 hundreds and 8 tens

**Step 3** Add.

$$\begin{array}{r} 58 \\ \times 16 \\ \hline 348 \\ + 580 \\ \hline 928 \end{array}$$

**Multiply.**

1.  $28 \times 3 =$  84

2.  $150 \times 6 =$  900

3.  $42 \times 12 =$  504

4.  $34 \times 25 =$  850

5.  $813 \times 43 =$  34,959

6.  $73 \times 14 =$  1,022

7.  $416 \times 3 =$  1,248

8.  $58 \times 23 =$  1,334

9.  $21 \times 19 =$  399

10.  $138 \times 5 =$  690

11.  $39 \times 12 =$  468

12.  $27 \times 29 =$  783

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Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

Estimate. Tell whether the estimate is *greater than* or *less than* the actual product. Show your work.

1.  $115 \times 24 =$  \_\_\_\_\_

2.  $268 \times 25 =$  \_\_\_\_\_

3.  $378 \times 67 =$  \_\_\_\_\_

4.  $302 \times 73 =$  \_\_\_\_\_

**Multiply.**

5.  $591 \times 5 =$

6.  $1,162 \times 4 =$

7.  $2,084 \times 8 =$

8.  $8,893 \times 2 =$

9.  $245 \times 18 =$

10.  $491 \times 27 =$

11.  $549 \times 39 =$

12.  $843 \times 86 =$

**Solve.**

13. Tamika and Devon hiked 7 miles each day for 5 days. How many miles did Tamika and Devon hike in all?

14. Fernando's dogs eat 3 cups of food each day. How much food will his dogs eat in 30 days?

15. Each page in Dana's sticker album holds 121 stickers. Dana has filled 11 pages of her album. How many stickers does she have in all?

16. Linda sold 132 magazine subscriptions for her school fundraiser. Each magazine subscription costs \$9. How much money did Linda collect?

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

**Estimate.** Tell whether the estimate is *greater than* or *less than* the actual product. Show your work.

1.  $115 \times 24 =$   $100 \times 20 = 2,000$ ; less than

2.  $268 \times 25 =$   $300 \times 30 = 9,000$ ; greater than

3.  $378 \times 67 =$   $400 \times 70 = 28,000$ ; greater than

4.  $302 \times 73 =$   $300 \times 70 = 21,000$ ; less than

**Multiply.**

5.  $591 \times 5 =$

**2,955**

6.  $1,162 \times 4 =$

**4,648**

7.  $2,084 \times 8 =$

**16,672**

8.  $8,893 \times 2 =$

**17,786**

9.  $245 \times 18 =$

**4,410**

10.  $491 \times 27 =$

**13,257**

11.  $549 \times 39 =$

**21,411**

12.  $843 \times 86 =$

**72,498**

**Solve.**

13. Tamika and Devon hiked 7 miles each day for 5 days. How many miles did Tamika and Devon hike in all?

**35 miles**

14. Fernando's dogs eat 3 cups of food each day. How much food will his dogs eat in 30 days?

**90 cups**

15. Each page in Dana's sticker album holds 121 stickers. Dana has filled 11 pages of her album. How many stickers does she have in all?

**1,331 stickers**

16. Linda sold 132 magazine subscriptions for her school fundraiser. Each magazine subscription costs \$9. How much money did Linda collect?

**\$1,188**



## Am I Ready?

### Apply

Solve.

1. Elena purchased 12 packs of trading cards. Each pack contained 25 cards. How many trading cards did Elena purchase in all?  
\_\_\_\_\_
2. Ahmed has 15 albums filled with baseball cards. Each album holds 225 cards. How many baseball cards does Ahmed have in all?  
\_\_\_\_\_
3. Dan is the running back on his high school football team. Last year, he ran for 199 yards in each of 7 games. How many yards did Dan run last year?  
\_\_\_\_\_
4. Nicole saves \$793 each year. How much will she have saved after 15 years?  
\_\_\_\_\_
5. Rico rides his bike 15 miles each day. How many miles will he travel after 8 days?  
\_\_\_\_\_
6. Ms. Jones purchased 15 reams of paper for an art project. Each ream of paper contained 500 sheets. How many sheets of paper did Ms. Jones purchase in all?  
\_\_\_\_\_
7. Tony is making 24 trays of chocolate-covered donuts. There are 24 donuts on each tray. How many donuts is Tony making in all?  
\_\_\_\_\_
8. Sarah is volunteering at a fundraising event for a local charity. She is packing snack bags for the participants. She can pack 38 bags each hour. How many bags can she pack in 12 hours?  
\_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Apply

Solve.

1. Elena purchased 12 packs of trading cards. Each pack contained 25 cards. How many trading cards did Elena purchase in all?

**300 trading cards**

2. Ahmed has 15 albums filled with baseball cards. Each album holds 225 cards. How many baseball cards does Ahmed have in all?

**3,375 baseball cards**

3. Dan is the running back on his high school football team. Last year, he ran for 199 yards in each of 7 games. How many yards did Dan run last year?

**1,393 yards**

4. Nicole saves \$793 each year. How much will she have saved after 15 years?

**\$11,895**

5. Rico rides his bike 15 miles each day. How many miles will he travel after 8 days?

**120 miles**

6. Ms. Jones purchased 15 reams of paper for an art project. Each ream of paper contained 500 sheets. How many sheets of paper did Ms. Jones purchase in all?

**7,500 sheets**

7. Tony is making 24 trays of chocolate-covered donuts. There are 24 donuts on each tray. How many donuts is Tony making in all?

**576 donuts**

8. Sarah is volunteering at a fundraising event for a local charity. She is packing snack bags for the participants. She can pack 38 bags each hour. How many bags can she pack in 12 hours?

**456 bags**

# Am I Ready?

## Review

### Addition

#### Step 1

$$\begin{array}{r} 1 \\ 185 \\ + 347 \\ \hline 2 \end{array}$$

#### Add the ones.

Add. 5 ones + 7 ones = 12 ones

12 ones = 1 ten and 2 ones

Write a 2 in the ones place of the sum.

Regroup the tens.

#### Step 2

$$\begin{array}{r} 11 \\ 185 \\ + 347 \\ \hline 32 \end{array}$$

#### Add the tens.

Add. 1 ten + 8 tens + 4 tens = 13 tens

13 tens = 1 hundred and 3 tens.

Write a 3 in the tens place of the sum.

Regroup the hundreds.

#### Step 3

$$\begin{array}{r} 11 \\ 185 \\ + 347 \\ \hline 532 \end{array}$$

#### Add the hundreds.

Add. 1 hundred + 1 hundred + 3 hundreds = 5 hundreds

Write a 5 in the hundreds place of the sum.

### Add.

$$\begin{array}{r} 1. \quad 28 \\ + 96 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 64 \\ + 87 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 83 \\ + 49 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 48 \\ + 45 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 28 \\ + 16 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 95 \\ + 27 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 405 \\ + 221 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 529 \\ + 192 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 321 \\ + 113 \\ \hline \end{array}$$

Name \_\_\_\_\_ Date \_\_\_\_\_

# Am I Ready?

## Review

### Addition

#### Step 1

$$\begin{array}{r} 1 \\ 185 \\ + 347 \\ \hline 2 \end{array}$$

#### Add the ones.

Add. 5 ones + 7 ones = 12 ones  
12 ones = 1 ten and 2 ones  
Write a 2 in the ones place of the sum.  
Regroup the tens.

#### Step 2

$$\begin{array}{r} 11 \\ 185 \\ + 347 \\ \hline 32 \end{array}$$

#### Add the tens.

Add. 1 ten + 8 tens + 4 tens = 13 tens  
13 tens = 1 hundred and 3 tens.  
Write a 3 in the tens place of the sum.  
Regroup the hundreds.

#### Step 3

$$\begin{array}{r} 11 \\ 185 \\ + 347 \\ \hline 532 \end{array}$$

#### Add the hundreds.

Add. 1 hundred + 1 hundred + 3 hundreds = 5 hundreds  
Write a 5 in the hundreds place of the sum.

#### Add.

$$\begin{array}{r} 1. \quad 28 \\ + 96 \\ \hline 124 \end{array}$$

$$\begin{array}{r} 2. \quad 64 \\ + 87 \\ \hline 151 \end{array}$$

$$\begin{array}{r} 3. \quad 83 \\ + 49 \\ \hline 132 \end{array}$$

$$\begin{array}{r} 4. \quad 48 \\ + 45 \\ \hline 93 \end{array}$$

$$\begin{array}{r} 5. \quad 28 \\ + 16 \\ \hline 44 \end{array}$$

$$\begin{array}{r} 6. \quad 95 \\ + 27 \\ \hline 122 \end{array}$$

$$\begin{array}{r} 7. \quad 405 \\ + 221 \\ \hline 626 \end{array}$$

$$\begin{array}{r} 8. \quad 529 \\ + 192 \\ \hline 721 \end{array}$$

$$\begin{array}{r} 9. \quad 321 \\ + 113 \\ \hline 434 \end{array}$$

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

Name the place-value position of each underlined digit.

1. 63 \_\_\_\_\_ 2. 0.2 \_\_\_\_\_ 3. 5,107 \_\_\_\_\_

4. 8.24 \_\_\_\_\_ 5. 1,389 \_\_\_\_\_ 6. 95 \_\_\_\_\_

Add.

7.  $59 + 34 =$  \_\_\_\_\_ 8.  $18 + 7 =$  \_\_\_\_\_ 9.  $40 + 26 =$  \_\_\_\_\_

10.  $143 + 17 =$  \_\_\_\_\_ 11.  $9 + 5 + 8 =$  \_\_\_\_\_ 12.  $18 + 6 + 7 =$  \_\_\_\_\_

13. Allie has 3 pairs of white socks, 5 pairs of blue socks, and 2 pairs of pink socks. Wade has 8 pairs of white socks, 1 pair of brown socks, and 4 pairs of black socks. How many more pairs of socks does Wade have than Allie?

\_\_\_\_\_

Round each number to the underlined place.

14. 976 \_\_\_\_\_ 15. 428 \_\_\_\_\_ 16. 3,159 \_\_\_\_\_

17. 625 \_\_\_\_\_ 18. 1,837 \_\_\_\_\_ 19. 2,816 \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

Name the place-value position of each underlined digit.

1. 63 **ones**      2. 0.2 **tenths**      3. 5,107 **thousands**

4. 8.24 **hundredths**      5. 1,389 **hundreds**      6. 95 **tens**

Add.

7.  $59 + 34 =$  **93**      8.  $18 + 7 =$  **25**      9.  $40 + 26 =$  **66**

10.  $143 + 17 =$  **160**      11.  $9 + 5 + 8 =$  **22**      12.  $18 + 6 + 7 =$  **31**

13. Allie has 3 pairs of white socks, 5 pairs of blue socks, and 2 pairs of pink socks. Wade has 8 pairs of white socks, 1 pair of brown socks, and 4 pairs of black socks. How many more pairs of socks does Wade have than Allie?

**3 pairs**

Round each number to the underlined place.

14. 976 **980**      15. 428 **400**      16. 3,159 **3,160**

17. 625 **630**      18. 1,837 **1,800**      19. 2,816 **2,820**

## Am I Ready?

### Apply

Solve.

1. Tyrell spent \$4 on a sandwich, \$2 on chips, and \$2 on a drink. Jackson spent \$3 on a vegetable, \$3 on a salad, and \$1 on a drink. How much more did Tyrell spend than Jackson?  
\_\_\_\_\_
2. The Orta family has 5 fish, 2 birds, and 1 dog. The Phillips family has 1 cat, 1 dog, and 3 fish. How many more pets does the Orta family have than the Phillips family?  
\_\_\_\_\_
3. Nick's batting average during last year's baseball season was .318. What is the place-value position of the 1 in .318?  
\_\_\_\_\_
4. Alonda jogs 5.92 miles each day. What is the place-value position of the 9 in 5.92?  
\_\_\_\_\_
5. Su Ling likes the rock-climbing wall at the gym. Her highest climb so far is 8.47 meters. What is the place-value position of the 8 in 8.47?  
\_\_\_\_\_
6. Jannelle made sandwiches for a party. She made 11 chicken sandwiches, 8 cheese sandwiches, and 8 peanut butter sandwiches. How many sandwiches did she make in all?  
\_\_\_\_\_
7. Virgil practiced the piano 28 minutes on Wednesday and 25 minutes on Friday. How many minutes did he practice in all?  
\_\_\_\_\_
8. Karen opens a bag of mixed nuts to eat for a snack. She counts 4 pecans, 5 almonds, and 14 peanuts. How many nuts does Karen count in all?  
\_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Apply

Solve.

1. Tyrell spent \$4 on a sandwich, \$2 on chips, and \$2 on a drink. Jackson spent \$3 on a vegetable, \$3 on a salad, and \$1 on a drink. How much more did Tyrell spend than Jackson?

**\$1**

2. The Orta family has 5 fish, 2 birds, and 1 dog. The Phillips family has 1 cat, 1 dog, and 3 fish. How many more pets does the Orta family have than the Phillips family?

**3 pets**

3. Nick's batting average during last year's baseball season was .318. What is the place-value position of the 1 in .318?

**hundredths**

4. Alonda jogs 5.92 miles each day. What is the place-value position of the 9 in 5.92?

**tenths**

5. Su Ling likes the rock-climbing wall at the gym. Her highest climb so far is 8.47 meters. What is the place-value position of the 8 in 8.47?

**ones**

6. Jannelle made sandwiches for a party. She made 11 chicken sandwiches, 8 cheese sandwiches, and 8 peanut butter sandwiches. How many sandwiches did she make in all?

**27 sandwiches**

7. Virgil practiced the piano 28 minutes on Wednesday and 25 minutes on Friday. How many minutes did he practice in all?

**53 min**

8. Karen opens a bag of mixed nuts to eat for a snack. She counts 4 pecans, 5 almonds, and 14 peanuts. How many nuts does Karen count in all?

**23 nuts**



# Am I Ready?

## Review

Multiply  $37 \times 12$ .

**Step 1**      **Multiply 37 by 2.**

$$\begin{array}{r} 1 \\ 37 \\ \times 12 \\ \hline 74 \end{array}$$

$2 \times 7 \text{ ones} = 14 \text{ ones}$

$2 \times 3 \text{ tens} = 6 \text{ tens}$

$14 \text{ ones} = 1 \text{ ten and } 4 \text{ ones}$

$6 \text{ tens} + 1 \text{ ten} = 7 \text{ tens}$

**Step 2**      **Multiply 37 by 10.**

$$\begin{array}{r} 37 \\ \times 12 \\ \hline 74 \\ + 370 \\ \hline \end{array}$$

$10 \times 7 \text{ ones} = 70 \text{ ones}$

$10 \times 3 \text{ tens} = 30 \text{ tens}$

$70 \text{ ones} = 7 \text{ tens and } 0 \text{ ones}$

$30 \text{ tens} + 7 \text{ tens} = 37 \text{ tens}$

$37 \text{ tens} = 3 \text{ hundreds and } 7 \text{ tens}$

**Step 3**      **Add.**

$$\begin{array}{r} 37 \\ \times 12 \\ \hline 74 \\ + 370 \\ \hline 444 \end{array}$$

**Multiply.**

1.  $48 \times 47 =$  \_\_\_\_\_

2.  $66 \times 38 =$  \_\_\_\_\_

3.  $83 \times 10 =$  \_\_\_\_\_

4.  $256 \times 24 =$  \_\_\_\_\_

5.  $18 \times 16 =$  \_\_\_\_\_

6.  $20 \times 19 =$  \_\_\_\_\_

7.  $12 \times 59 =$  \_\_\_\_\_

8.  $491 \times 62 =$  \_\_\_\_\_

9.  $74 \times 31 =$  \_\_\_\_\_

10.  $95 \times 27 =$  \_\_\_\_\_

11.  $543 \times 10 =$  \_\_\_\_\_

12.  $607 \times 15 =$  \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

# Am I Ready?

## Review

Multiply  $37 \times 12$ .

**Step 1 Multiply 37 by 2.**

$$\begin{array}{r} 1 \\ 37 \\ \times 12 \\ \hline 74 \end{array}$$

$$\begin{array}{l} 2 \times 7 \text{ ones} = 14 \text{ ones} \\ 2 \times 3 \text{ tens} = 6 \text{ tens} \end{array}$$

$$\begin{array}{l} 14 \text{ ones} = 1 \text{ ten and } 4 \text{ ones} \\ 6 \text{ tens} + 1 \text{ ten} = 7 \text{ tens} \end{array}$$

**Step 2 Multiply 37 by 10.**

$$\begin{array}{r} 37 \\ \times 12 \\ \hline 74 \\ + 370 \\ \hline \end{array}$$

$$\begin{array}{l} 10 \times 7 \text{ ones} = 70 \text{ ones} \\ 10 \times 3 \text{ tens} = 30 \text{ tens} \end{array}$$

$$\begin{array}{l} 70 \text{ ones} = 7 \text{ tens and } 0 \text{ ones} \\ 30 \text{ tens} + 7 \text{ tens} = 37 \text{ tens} \\ 37 \text{ tens} = 3 \text{ hundreds and } 7 \text{ tens} \end{array}$$

**Step 3 Add.**

$$\begin{array}{r} 37 \\ \times 12 \\ \hline 74 \\ + 370 \\ \hline 444 \end{array}$$

**Multiply.**

1.  $48 \times 47 = \underline{2,256}$       2.  $66 \times 38 = \underline{2,508}$       3.  $83 \times 10 = \underline{830}$

4.  $256 \times 24 = \underline{6,144}$       5.  $18 \times 16 = \underline{288}$       6.  $20 \times 19 = \underline{380}$

7.  $12 \times 59 = \underline{708}$       8.  $491 \times 62 = \underline{30,442}$       9.  $74 \times 31 = \underline{2,294}$

10.  $95 \times 27 = \underline{2,565}$       11.  $543 \times 10 = \underline{5,430}$       12.  $607 \times 15 = \underline{9,105}$

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

**Multiply.**

1.  $17 \times 42 =$  \_\_\_\_\_ 2.  $29 \times 13 =$  \_\_\_\_\_ 3.  $680 \times 10 =$  \_\_\_\_\_

4.  $31 \times 28 =$  \_\_\_\_\_ 5.  $54 \times 20 =$  \_\_\_\_\_ 6.  $206 \times 32 =$  \_\_\_\_\_

7. Skirts are on sale for \$16 each. How much will 3 skirts cost?

\_\_\_\_\_

8. Sydney bought 6 tickets to an amusement park for his family. Each ticket cost \$18. How much did Sydney spend?

\_\_\_\_\_

**Divide.**

9.  $105 \div 15 =$  \_\_\_\_\_ 10.  $95 \div 5 =$  \_\_\_\_\_ 11.  $88 \div 11 =$  \_\_\_\_\_

12.  $1,200 \div 10 =$  \_\_\_\_\_ 13.  $472 \div 8 =$  \_\_\_\_\_ 14.  $120 \div 5 =$  \_\_\_\_\_

15. Abby ordered 4 new bats for the girls' softball team. The cost before tax was \$104. If each bat cost the same amount, how much did each bat cost?

\_\_\_\_\_

**Round each decimal to the nearest whole number.**

16.  $9.7 =$  \_\_\_\_\_ 17.  $6.2 =$  \_\_\_\_\_ 18.  $3.6 =$  \_\_\_\_\_

19.  $2.27 =$  \_\_\_\_\_ 20.  $18.78 =$  \_\_\_\_\_ 21.  $8.4 =$  \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Practice

**Multiply.**

1.  $17 \times 42 =$  714      2.  $29 \times 13 =$  377      3.  $680 \times 10 =$  6,800

4.  $31 \times 28 =$  868      5.  $54 \times 20 =$  1,080      6.  $206 \times 32 =$  6,592

7. Skirts are on sale for \$16 each. How much will 3 skirts cost?

\$48

8. Sydney bought 6 tickets to an amusement park for his family. Each ticket cost \$18. How much did Sydney spend?

\$108

**Divide.**

9.  $105 \div 15 =$  7      10.  $95 \div 5 =$  19      11.  $88 \div 11 =$  8

12.  $1,200 \div 10 =$  120      13.  $472 \div 8 =$  59      14.  $120 \div 5 =$  24

15. Abby ordered 4 new bats for the girls' softball team. The cost before tax was \$104. If each bat cost the same amount, how much did each bat cost?

\$26

**Round each decimal to the nearest whole number.**

16.  $9.7 =$  10      17.  $6.2 =$  6      18.  $3.6 =$  4

19.  $2.27 =$  2      20.  $18.78 =$  19      21.  $8.4 =$  8

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# Am I Ready?

## Apply

Solve.

1. Jason bought 3 sandwich trays for a party. If each tray cost \$24, how much did Jason spend in all?

\_\_\_\_\_

2. Sabrina practiced the violin 45 minutes each day for 6 days. How many minutes did she practice in all?

\_\_\_\_\_

3. Kelsey opened a bag of marbles that included red, yellow, green, and blue marbles. There were 144 marbles in all. If there was an equal number of each color of marble, how many of each color of marble were in the bag?

\_\_\_\_\_

4. Thalia spent a total of \$63 last month for lunch at school. Each lunch cost the same amount. If she bought her lunch 21 times, how much is a lunch at Thalia's school?

\_\_\_\_\_

5. Mason buys a computer game that costs \$19. He wants to save his money to buy 6 more games at that amount. How much money does Mason need to save?

\_\_\_\_\_

6. Natalie donated 10 DVDs to a charity fundraiser. The value of the DVDs was \$130. If each DVD had the same value, what was the value of each DVD?

\_\_\_\_\_

7. Andrew bought a bicycle to ride on his paper route. He paid \$99.32 for the bicycle. What is the price of the bicycle, rounded to the nearest dollar?

\_\_\_\_\_

8. Jalissa ran 7.8 kilometers in a race. About how many kilometers did she run, rounded to the nearest whole number?

\_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

## Am I Ready?

### Apply

Solve.

1. Jason bought 3 sandwich trays for a party. If each tray cost \$24, how much did Jason spend in all?

**\$72**

2. Sabrina practiced the violin 45 minutes each day for 6 days. How many minutes did she practice in all?

**270 min**

3. Kelsey opened a bag of marbles that included red, yellow, green, and blue marbles. There were 144 marbles in all. If there was an equal number of each color of marble, how many of each color of marble were in the bag?

**36**

4. Thalia spent a total of \$63 last month for lunch at school. Each lunch cost the same amount. If she bought her lunch 21 times, how much is a lunch at Thalia's school?

**\$3**

5. Mason buys a computer game that costs \$19. He wants to save his money to buy 6 more games at that amount. How much money does Mason need to save?

**\$114**

6. Natalie donated 10 DVDs to a charity fundraiser. The value of the DVDs was \$130. If each DVD had the same value, what was the value of each DVD?

**\$13**

7. Andrew bought a bicycle to ride on his paper route. He paid \$99.32 for the bicycle. What is the price of the bicycle, rounded to the nearest dollar?

**\$99**

8. Jalissa ran 7.8 kilometers in a race. About how many kilometers did she run, rounded to the nearest whole number?

**8 km**

**SCIENCE**

## Science Articles and Videos

You can read the following articles. For each article, write a brief summary where you include at least one main idea with 3 supporting details.

(Example: In the article that is named....)

- 1)<https://newsela.com/read/elem-longer-days/id/44041/>
- 2)<https://newsela.com/read/natgeo-volcano-ecosystem/id/48042/>
- 3)<https://newsela.com/read/brazil-amazon-fires/id/56224/>
- 4)<https://newsela.com/read/natgeo-environmental-impacts-agriculture/id/2000002462/>
- 5)<https://newsela.com/read/lib-finding-distance-sun/id/33928/>
- 6)<https://newsela.com/read/natgeo-freshwater-resources/id/50456/>

You can watch the following videos. For each video, write a brief summary where you include at least one main idea with 3 supporting details.

(Example: In the video that is named....)

- 7)<https://youtu.be/zWYGvIDSYFA>
- 8)<https://www.insidescience.org/video/what-would-happen-if-there-were-no-moon>
- 9)<https://youtu.be/Zo-sKzMWYFA>
- 10)<https://youtu.be/1SN1BOPLZAs>
- 11)<https://youtu.be/l64YwNI1wr0>
- 12)<https://youtu.be/BbzCA0Lgf3Y>



Name \_\_\_\_\_

Use with pp. 9–11

# Lesson 1: What are properties of matter?

## Vocabulary

**element** one of more than 100 basic kinds of matter that cannot be broken into smaller pieces through physical or chemical processes

**physical property** any property of a material that can be seen or measured without changing the material

**chemical property** any property of a material that describes how it changes into other materials

## Elements

An **element** is a basic building block of matter. There are more than 100 elements. For example, gold is an element. Gold is made only of gold. Elements combine to make all other matter.

Most living and nonliving things are made of only a few elements. These elements combine in many ways. More than 98 percent of Earth's crust is made of only eight elements—oxygen, silicon, aluminum, iron, calcium, sodium, potassium, and magnesium. Earth's crust has almost 3,500 minerals in it. These minerals are mostly made of the eight common elements in the crust.

Living things are mostly made of the elements carbon, oxygen, hydrogen, nitrogen, sulfur, and phosphorous. For example, 96 percent of your body is made of carbon, hydrogen, oxygen, and nitrogen.

## Physical Properties of Matter

A **physical property** of a material is something that can be seen or measured without changing the material. We observe many different physical properties of a material or substance. Color and hardness are physical properties. If we look at a piece of copper, we see that it is a solid, not a liquid or a gas. This is a physical property. Copper is also shiny.

Mass and weight are physical properties. Mass is the amount of matter in an object. Weight measures the pull of gravity on an object. The weight of an object changes when gravity is stronger or weaker. For example, your weight on Earth is six times more than your weight on the Moon. But your mass on the Earth and your mass on the Moon are the same.

A physical property of a material is magnetism. Other physical properties are the temperatures that make a substance boil and freeze. Another physical property is whether or not a substance dissolves in other substances.

## Chemical Properties of Matter

Matter also has chemical properties. The **chemical properties** of a substance tell how this substance mixes with something else to form a new substance. When wood burns, it changes into ash and gases. A chemical property of wood is that wood is flammable. Flammable means that it can burn. Water cannot burn. A chemical property of water is that water is not flammable.

Another chemical property is whether a substance changes when it is mixed with acid. A nail made of zinc forms bubbles when it touches acid. This is a chemical property of zinc.



Name \_\_\_\_\_

## Lesson 1 Questions

1. Choose an object in your classroom. Describe three physical properties of this object.

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2. Name five of the most common elements in Earth's crust.

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3. What is one chemical property of wood?

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4. The \_\_\_\_\_ of an object measures the amount of matter in the object.  
The \_\_\_\_\_ of an object measures the pull of gravity on the object.



Name \_\_\_\_\_

## Lesson 2: What makes up matter?

### Vocabulary

**atom** the smallest particle of an element with the same properties of the element

**atomic number** the number of protons in the nucleus of an atom; the single most important property of an element

**molecule** the smallest part of a substance made from more than one atom that still has the properties of that substance

### Atoms and Elements

An **atom** is the smallest piece of an element that still has the properties of that element. Each element is made of only one kind of atom. For example, gold only has atoms of gold.

Atoms are made of smaller parts. The center of the atom is the nucleus. Protons and neutrons are in the nucleus. A neutron does not have an electrical charge. A proton has a positive charge. Each element has a different number of protons in its nucleus. The number of protons is called the element's **atomic number**. The atomic number is the most important property of an element. Electrons have a negative charge. They move very quickly around the nucleus.

### Molecules

Atoms combine to make molecules. A **molecule** is the smallest part of a substance that has the same properties as the substance.

Atoms and molecules are too small for you to see, even with a normal microscope. Scientists have devices to "see" atoms and molecules. Atoms look like small spheres arranged in patterns.

### Elements and the Periodic Table

The periodic table on page 12 of your textbook shows elements in order according to their atomic numbers. The atomic numbers increase as you read across the table from left to right. The numbers

also increase as you read down the table. Elements in the same column have similar chemical properties. Every element has a symbol of one or two letters.

### Classifying Elements

There are three groups of elements: metals, nonmetals, and metalloids. Nonmetals are usually brittle. They break when you bend them. They are not good conductors of heat or electricity. Metalloids have some properties of metals and some properties of nonmetals.

### Information on the Periodic Table

The periodic table has 18 columns. Each column is called a group or family. The elements in a group react in similar ways when they mix with other substances.

Each row is called a period. The elements in a period have very different properties.

### Metals and Their Properties

Most metals are solid and shiny. They are malleable, which means that they do not break when you bend them. Metals are good conductors of heat and electricity. They can be made into wire, so they are called ductile. Some metals are pure elements, like gold and copper.

Some metals are made of more than one element. Metals that are made of two or more metals are called alloys. Steel is an alloy made of iron and carbon. Steel is stronger than iron.



Name \_\_\_\_\_

## Lesson 2 Questions

1. What is an atom? In the Lesson 2 Summary, circle the name of one smaller part inside an atom.

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2. What is an element's atomic number?

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3. Name the three groups of elements, and give one property of each group.

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4. How is the periodic table arranged?

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5. What is an alloy?

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## Lesson 3: What are compounds?

### Vocabulary

**compound** a kind of matter made of a chemical combination of two or more elements

### Properties of Compounds

When atoms of two or more elements combine, they form a **compound**. Most things in the world are compounds. When atoms make a compound, the compound's properties are different from the properties of the atoms. Sugar is made from carbon atoms, hydrogen atoms, and oxygen atoms. But carbon atoms are not sweet. Hydrogen and oxygen atoms are not sweet. Sugar is sweet because carbon, hydrogen, and oxygen atoms combine in a special way.

Every compound has a chemical formula. The formula tells you how many atoms of each element are in the compound. Water has the formula  $H_2O$ . The H stands for hydrogen. The "2" tells you that a molecule of water has two atoms of hydrogen. The O stands for oxygen. There is no number after the O, so there is one atom of oxygen. Every molecule of water has one atom of oxygen and two atoms of hydrogen.

### The Same Element in Different Compounds

Compounds are important to your body. Water is a compound. About 60 percent of your body is made of water. Other compounds are in your skin and your bones.

One element can be in different compounds. For example, sodium is an element. Sodium and chlorine make table salt. Table salt is safe and we can eat it. But sodium and water react violently. They can catch fire and burn. Sodium and water make sodium hydroxide and hydrogen gas.

### Salts

Salts are compounds. The particles in salts have opposite charges. The positive and negative charges hold the particles together.

There are many kinds of salts. Almost all salts have two properties. First, almost every salt has at least one metal element and one nonmetal element. Table salt is made of sodium, a metal, and chlorine, a nonmetal. Second, all salts form crystals. A crystal is made of particles that are arranged in regular patterns. Salt crystals are brittle.

### Forming Salts

Salts can form when an acid mixes with a base. Many acids and bases are dangerous. They can burn your skin or poison you. NEVER taste any chemicals in a science experiment.

### Properties of Salts

Table salt, or sodium chloride, is the salt you eat. Most salts have many properties in common. You read that most salts contain metal and nonmetal elements. All salts form brittle crystals.

Most salts melt only at very high temperatures. Most salts dissolve in water. When salts are dissolved in water, they conduct electricity.

Salts have different properties than the elements that make them. For example, copper is not blue, sulfur is not blue, and oxygen is not blue. But copper, sulfur, and oxygen together make a blue salt. This salt is poisonous.



Name \_\_\_\_\_

### Lesson 3 Questions

Use with pp. 20-25

## Lesson 3 Questions

1. What three kinds of atoms mix together to make sugar?

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2. What two elements mix together to make table salt?

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3. Most kinds of salts have many properties in common. Name two properties of most salts.

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4. In a chemical formula, what does the small number tell you? For example, the chemical formula for carbon dioxide is  $\text{CO}_2$ . What does the small "2" tell you?

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Name \_\_\_\_\_

## Lesson 4: How can we separate mixtures?

### Vocabulary

**solution** a mixture in which substances are spread out evenly and will not settle.

### Mixtures

Mixtures and compounds are different. The parts of a compound bond together. A compound has new physical and chemical properties. The parts do not keep their own properties.

The parts of a mixture do not bond together. Each part of a mixture keeps its own properties.

Many foods you eat are mixtures. Soup is a mixture. Soup can have chicken, noodles, carrots, and broth. You can separate the carrots from the noodles and eat them with your spoon.

The parts in a mixture are not always in the same amounts. One bowl of soup can have more carrots or noodles than another bowl.

### Separating Mixtures

In a compound, the parts bond together. They become a new substance.

In a mixture, the parts do not bond together. Mixtures can be separated. To separate a mixture, you need to know the physical or chemical properties of the parts. Imagine you have sand mixed with small pieces of iron. It will take a long time to pick the pieces of iron from the sand. But you know that iron is magnetic. Sand is not magnetic. So, you can use a magnet to separate the iron from the sand. The magnet will pick up the iron. The magnet will not pick up the sand.

A filter can separate a mixture. Imagine you have a glass filled with a mixture of soil and water. Pour the mixture through a filter. The soil collects in the filter. The water flows through the filter. The mixture is separated.

### Solutions

A **solution** is a special kind of mixture. The parts are spread evenly through all areas of the mixture. The parts do not settle to the bottom. Salt and water mix together to make a solution. The salt dissolves in the water.

The substance that dissolves is called the solute. The substance in which the solute dissolves is called the solvent. When salt and water mix, salt is the solute. Water is the solvent. Water is the solvent in many solutions. So, water is called "the universal solvent."

Solubility is a physical property. Solubility tells how much of one substance will dissolve in another substance.

### Chromatography

Chromatography uses the different solubilities of substances to separate and identify the parts of a mixture. Police departments often use chromatography to identify substances.



## Lesson 4 Questions

Use with pp. 26–29

Name \_\_\_\_\_

### Lesson 4 Questions

1. How are mixtures and compounds different?

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2. You can separate a mixture using the physical properties of its parts.  
For example, you can separate iron filings from sand with a \_\_\_\_\_.

3. What is a solution?

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4. What is called “the universal solvent”?

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Name \_\_\_\_\_

## Lesson 1 Summary

Use with pp. 45–47

# Lesson 1: What are physical and chemical changes?

## Vocabulary

**physical change** a change in which matter keeps the same chemical properties; a change in size, shape, volume, or state of matter

**chemical change** a change in which one kind of matter changes into a different kind of matter with different properties

## Physical Changes

All matter can go through physical and chemical changes. A **physical change** can be a change in size, shape, volume, or state of matter. Rain can freeze to form ice. The rain and ice have different sizes, shapes, and states of matter. But they are both still water. They have not changed chemically.

You can cut paper into pieces. Wax can melt. Copper can be hammered into sheets. Diamonds can be cut into beautiful shapes. All of these changes are physical changes. The materials look a little different, but they have not changed into something else.

Some substances may look completely different after a physical change. When salt crystals dissolve in water, you cannot see the salt crystals. But the salt is still there. When the water evaporates, you can see the salt crystals again.

## Chemical Changes

A **chemical change** happens when one kind of matter changes into a different kind of matter with different properties. When a chemical change happens, atoms are rearranged. The matter does not just change size or shape. The matter becomes something else with new properties.

When you cook a potato, it turns brown and crispy. The potato's chemical properties change. The potato tastes different.

How do you know when a chemical change happens? When iron rusts, this is a chemical change. You can see that the gray iron changes to red-orange rust. The chemical change causes a color change. Chemical changes can also cause heat, light, and sounds such as fizzing.

## Evidence of Chemical Changes

A chemical change often produces a gas or a solid. Burning is a chemical change. When a candle burns, it goes through a chemical change. The oxygen gas in the air also goes through a chemical change. This process produces new substances: ash, carbon dioxide gas, and water vapor. These substances have different properties from the candle and the oxygen.



Name \_\_\_\_\_

## Lesson 1 Questions

1. When you cut paper into pieces, this is a physical change. Name three other examples of physical changes.

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2. When water freezes, is it a physical change or a chemical change?

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3. When iron rusts, is it a physical change or a chemical change?

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4. When a candle burns, it goes through a chemical change. What three new substances are produced?

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---



Name \_\_\_\_\_

## Lesson 2: How does matter change state?

### Vocabulary

**evaporation** the process by which particles leave a liquid and become a gas

**condensation** the process by which a gas becomes a liquid

**sublimation** the process by which a solid changes directly into a gas

### States of Matter: Solids and Liquids

Water has three states, or phases, of matter. It is a solid when it is frozen as ice. It is a liquid in the ocean. It is a gas in the air. Solid, liquid, and gas are phases of matter. The phase of any material depends on the motion and position of its atoms and molecules. The phase of a material is a physical property.

Solids have a definite shape and volume. The particles in solids are close together.

Liquids do not have their own shape. Liquids take the shape of their container. The particles in liquids are close together. But the particles can move and flow. Like solids, liquids have a definite volume.

### States of Matter: Gases

The particles in gases are far apart. Gas particles spread out evenly to fill a container. Gases do not have a definite shape or volume.

### Freezing and Melting

Melting point and freezing point are two names for the same temperature. The melting point is the temperature at which a solid turns into a liquid. The freezing point is the temperature at which a liquid turns into a solid.

Each material has its own melting point. Scientists use melting points to identify materials. When one material is added to another, the melting point changes. When you add salt to ice, the salt lowers the melting point of the ice.

### Particles in Motion

As a material gets hotter, its particles move faster. Particles that move faster have more space between them. The extra space makes the substance expand, or get larger.

When a material cools, it may get smaller. Its particles move more slowly. Particles that move slowly have less space between them.

### Evaporation and Condensation

**Evaporation** is when particles leave a liquid and become a gas. Particles at the surface of a liquid can evaporate.

When the temperature of a liquid is high enough, particles change to a gas below the surface. This is called the boiling point. Each liquid has its own boiling point. Boiling point is a physical property. The amount of a liquid does not change its boiling point.

**Condensation** happens when a gas turns into a liquid. For example, when gas particles touch a cold surface, they get colder. The particles slow down. As more and more particles condense, they form a liquid drop. Clouds and dew form by the process of condensation.

### Sublimation

Some solids change directly into gases. These solids do not form liquids first. This change is called **sublimation**. Solid carbon dioxide is called dry ice. Dry ice sublimates to form carbon dioxide gas.

Name \_\_\_\_\_

**Lesson 2 Questions**

Use with pp. 48–53

# Lesson 2 Questions

1. Name the three states, or phases, of matter.

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2. Tell whether the particles in a solid, a liquid, and a gas are close together or far apart.

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3. What is another name for the freezing point of a material? Find this name in the Lesson 2 Summary and underline it.

4. When you add salt to ice, what happens to the melting point of the ice?

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5. Write the original phase of the substance and the phase it changes into.

Example: **Melting:** A solid changes into a liquid.

**Evaporation:** A \_\_\_\_\_ changes into a \_\_\_\_\_.

**Condensation:** A \_\_\_\_\_ changes into a \_\_\_\_\_.

**Sublimation:** A \_\_\_\_\_ changes into a \_\_\_\_\_.



Name \_\_\_\_\_

## Lesson 3: What are some kinds of chemical reactions?

### Vocabulary

**reactant** a substance used in a chemical reaction

**product** a substance made by a chemical reaction

**chemical equation** a statement of chemical symbols that shows what happens during a chemical reaction

### Chemical Equations

A substance changes into another substance during a chemical reaction. The substance that changes is called the **reactant**. The substance that is made is called the **product**. The atoms of the reactants rearrange to make the products. The products have different physical and chemical properties than the reactants.

A **chemical equation** shows what happens during a chemical reaction. On the left side of the equation are the reactants. On the right side of the equation are the products. There is an arrow between the reactants and the products. The arrow is like the equals sign in a mathematics equation.

When electricity flows through water, the water molecules rearrange to make hydrogen and oxygen gases. Water is the reactant. Hydrogen and oxygen gases are the products. The chemical equation is  $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$ .

Magnesium is a gray metal. At high temperatures, it reacts with oxygen and burns. The chemical reaction makes magnesium oxide, a white powder. Magnesium oxide is the product of the reaction.

### Matter Is Always Conserved

Matter cannot be created or destroyed in a chemical reaction. The total mass of the products is exactly the same as the total mass of the reactants. This is the Law of Conservation of Mass.

### Types of Chemical Reactions

There are three major kinds of chemical reactions. In a decomposition reaction, a compound splits apart. This forms smaller compounds or elements. Water molecules break apart to form hydrogen and oxygen gases.

In a combination reaction, elements or compounds come together, or combine. A new compound is formed. Iron and sulfur join in a combination reaction. The product is iron sulfide.

In a replacement reaction, one or more compounds split apart. Then the parts switch places. A replacement reaction happens when a candle burns. Candle wax is made of carbon and hydrogen atoms. Oxygen gas is made of two oxygen atoms. When the wax burns, the molecules break apart. They join together to make carbon dioxide and water.

### Examples of Chemical Reactions

A chemical change is when one kind of matter changes into a different kind of matter with different properties. The products have different properties than the reactants.

Rust forms in a combination reaction. Iron atoms and oxygen atoms combine. They form a new substance made up of both elements. The new substance is iron oxide, or rust.



Name \_\_\_\_\_

### Lesson 3 Questions

Use with pp. 54–59

## Lesson 3 Questions

1. In a chemical reaction, what is the reactant? What is the product?

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2. What is the Law of Conservation of Mass?

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3. What are the three major kinds of chemical reactions?

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4. In the Lesson 3 Summary, find one example of a decomposition reaction. Circle the reactant. Underline the products.

5. Iron atoms and oxygen atoms make rust. What kind of chemical reaction is this?

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Name \_\_\_\_\_

## Lesson 4: How are chemical properties used?

### Separating Mixtures

Physical properties are used to separate some mixtures. For example, a magnet separates pieces of iron from sand. But some mixtures cannot be separated using physical properties. So how can you separate these mixtures?

People use chemical properties to separate some mixtures. Scientists often find fossils stuck in limestone rock. Scientists use the chemical properties of limestone to separate the fossils from the rock. They pour vinegar on the limestone. The vinegar breaks down the limestone, but it does not break down the fossil. The fossil separates from the rock.

### Separating Metals from Ores

Ore is a type of rock. Ore contains metals combined with other materials. People use chemical properties to separate the metal from the other material. Iron ore contains iron oxide. Hot temperatures make the iron separate from the oxygen in the ore.

### Separating Solutions

People use chemical properties to separate some solutions. Lead can be removed from a solution that contains lead and water. This solution is mixed with iodine. The lead reacts with the iodine to make a yellow solid. The yellow solid is lead iodide. A filter separates the lead iodide from the liquid.

### Identifying Substances

Scientists use physical properties to identify substances. They also use chemical properties to identify substances.

Chemical properties can identify acids and bases. Lemon juice and vinegar are acids. Some soaps are bases.

Universal indicator paper tells if a substance is an acid or a base. Acids and bases react with chemicals in the paper. Acids make the paper turn red or orange. Bases make the paper turn purple, blue, or green.

Universal indicator paper gives important clues to help identify a material. But it does not tell you exactly what material you have. Other tests are needed.

A flame test is when a material gets very hot in a flame. Different substances turn different colors when they are very hot. Scientists use flame tests to identify substances.



Name \_\_\_\_\_

## Lesson 4 Questions

Use with pp. 60–63

### Lesson 4 Questions

1. Name one way in which people use chemical properties to separate one substance from another substance.

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2. Name an acid and a base.

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3. What makes universal indicator paper turn red?

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Name \_\_\_\_\_

# Lesson 1: How can the oceans be described?

## Vocabulary

**sea level** the level of the surface of an ocean**salinity** a measure of the amount of salt in water

## The Hydrosphere

Earth is sometimes called the blue planet. Earth looks blue from space because it is covered mostly by water.

More than half of the people in the United States live within 80 kilometers of an ocean. Many people live near other bodies of water such as rivers and lakes.

The hydrosphere is made up of all of the waters of Earth. Most of the water on Earth is in the oceans. Only 3 percent of the water on Earth is outside the oceans. The hydrosphere covers three-fourths of Earth's surface. The largest ocean is the Pacific Ocean. It is also the deepest one. The deepest part of the Pacific Ocean is more than 11,000 meters deep!

The other oceans are the Atlantic Ocean, the Indian Ocean, the Southern Ocean, and the Arctic Ocean. All of the oceans are connected to each other. The oceans are all a little different from each other. Some oceans have more salt than others. Some oceans are warmer or colder than others. Even sea level is different for each ocean. **Sea level** is the level of the ocean's surface.

## Earth's Oceans

There are many kinds of salt in ocean water. If you go swimming at the beach, you may swallow a little salt water. Be careful: ocean water is bad for your health if you drink too much.

The oceans get salt from rivers. Rain falls over the oceans and the land. The rain dissolves salts and other minerals from the land. The rain carries the salts and minerals into the ocean. Water evaporates

from the surface of the ocean. The salts are left behind and do not evaporate. The salts build up in the water.

A measure of the amount of salt in water is called **salinity**. Ocean water is more salty in some places than in others. Where rivers flow into the ocean, the rivers bring fresh water. There, the salinity is low. In warmer places, ocean water evaporates quickly and the salts are left behind. The water in these places has higher salinity.

Cold water is heavier than warm water. Water with high salinity is heavier than water with low salinity.

## Ocean Temperatures

The temperature of ocean water varies in different places in the world. Ocean water near the equator is about 30°C. Ocean water near the poles can be as cold as -2°C. Ocean currents also have different temperatures. The Gulf Stream moves warm water toward the north from the Caribbean Sea to the North Atlantic Ocean. The California Current moves cold water toward the south, along the west coast of the United States.

## Ocean Resources

Many useful products come from the ocean. For example, tuna fish is a food that comes from the ocean. Much of the salt that we use for food also comes from the ocean. How do people get the salt out of the ocean water? Water from the ocean flows into shallow ponds. Then the water evaporates. The salt is left behind.



Name \_\_\_\_\_

## Lesson 1 Questions

Use with pp.173–175

### Lesson 1 Questions

1. What percent of the water on Earth is outside the oceans?

\_\_\_\_\_

2. The oceans are all a little different from each other. Name three ways that oceans are different from each other.

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

3. What is sea level?

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

4. In the ocean, where does the water have higher salinity?

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

5. The Gulf Stream moves \_\_\_\_\_ water toward the north. The California Current moves \_\_\_\_\_ water toward the south.



Name \_\_\_\_\_

## Lesson 2 Summary

Use with pp. 176-181

# Lesson 2: Where is fresh water found?

## Vocabulary

**aquifer** the layer of rock and soil that groundwater flows through

**water table** the top level of the groundwater in an aquifer

**watershed** the area from which water drains into a river

**reservoir** usually an artificial lake that forms behind a dam

## Fresh Water

Fresh water has much less salt than ocean water. The water we drink is fresh water. Most of Earth's fresh water starts as rain or snow. Part of it goes into the ground. Some goes into rivers and lakes. Some freezes in ice sheets and glaciers.

Some places in the world have more fresh water than others. The amount of fresh water on Earth is limited. People should use water carefully. You can recycle and use less water.

## Groundwater

Groundwater is rain or melted snow that soaks into the ground. The water goes into spaces between pieces of soil and rock. Groundwater sinks until it reaches a layer of rock or clay.

An **aquifer** is the layer of rock and soil that groundwater flows through. The top level of groundwater in an aquifer is called the **water table**. The level of a water table gets higher when it rains or snows. It gets lower when there is a drought.

## Rivers and Lakes

Water from rain and melting snow flows downhill. The water makes small creeks. Small creeks join to make larger streams and rivers. Most rivers flow into the ocean. In an area near a river, all of the water drains into the river. This area is a **watershed**. If chemicals are put in a watershed, they can go into the river.

A lake forms when water collects in a low place that has higher land around it.

A **reservoir** is an artificial lake that forms behind a dam. Water can leave a lake. It can flow out into a river, flow into the ground, or evaporate into the air.

## Ice and Glaciers

About seven-tenths of Earth's fresh water is frozen into ice. This fresh water is hard for people to use.

Glaciers are smaller areas of ice. Glaciers form when the amount of snow that falls is greater than the amount of snow that melts. The weight of new snow squeezes the snow underneath into ice. When glaciers or ice sheets touch the ocean, pieces of ice can break off. The pieces of ice are called icebergs.

## Getting Water to Homes

Some towns get their fresh water from groundwater. Other towns get it from surface water, but surface water can have harmful bacteria in it. Surface water and groundwater can be polluted with chemicals. That is why water must be treated before people use it.

When water is treated, it is pumped from a river or lake to a water treatment plant. Chemicals are added. The chemicals make small particles stick together. The small particles form large particles, which sink to the bottom. This removes some things that pollute water. Then, the water goes through filters that remove small particles. Next, some treatment plants add a small amount of chlorine to kill bacteria. The water is stored in a water tower.



Name \_\_\_\_\_

## Lesson 2 Questions

Use with pp. 176–181

### Lesson 2 Questions

1. What is an aquifer?

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2. When does the level of a water table get lower?

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3. Name three ways that water can leave a lake.

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4. About seven-tenths of Earth's fresh water is hard for people to use. It is hard for people to use because it is \_\_\_\_\_ into \_\_\_\_\_.

5. In the Lesson 2 Summary, find the name of one chemical that can be added to water in a water treatment plant. Underline the name of the chemical.



Name \_\_\_\_\_

## Lesson 3: What are some California water sources?

### Too Much or Not Enough?

Different areas of California get different amounts of rain. Some areas get a lot of rain. The northern coastal region gets about 250 centimeters of rain each year. Some areas get very little rain. The deserts in southeastern California get only about 10 centimeters of rain each year.

Most fresh water comes from rain or snow. Southern California is very dry, so the supply of fresh water is limited. But southern California needs a lot of fresh water. It is hard to make sure that southern California gets enough water.

Much of the fresh water in California falls as snow in the winter. When the snow melts, the water flows into rivers and lakes. The water is collected and saved so people can use it for the whole year.

### Transporting Water Throughout California

Many Californians depend on aqueducts to get their water. An aqueduct is a system of pipes that carries water from rivers or lakes to the area where it is needed.

The California Aqueduct carries water from the mouth of the Sacramento River to people living more than 400 kilometers to the south.

The Los Angeles Aqueduct brings fresh water to the city of Los Angeles. The first part of the system was built about 100 years ago. It carries water from the Owens River in the Sierra Nevada. In 1970 people built a second aqueduct for Los Angeles.

The Colorado River Aqueduct brings water to the city of San Diego. The aqueduct begins at Lake Havasu near the border of Arizona and California. The aqueduct carries water to Lake Mathews in Riverside County, and then to San Diego.

### Local Water Sources

No matter where you live, you live in a watershed. A watershed is the land that water flows across or under on its way to a river, lake, or ocean.

How much water is available in a watershed? This depends on how much water is collected and how much water is used in the watershed. In a watershed, the way people use the land affects water quality. Water quality is how clean the water is. For example, water that comes out of farms or city streets may have harmful chemicals in it. The government has laws to help keep water safe.

### Reclamation

Water can be recycled and used again, or reclaimed. This is called reclamation. Wastewater from homes or businesses goes to a treatment plant. The water is treated. People cannot drink reclaimed water, but they can use it to water lawns or to water crops on farms.

### Finding Out About Local Water Sources

Some people in California get their water from wells dug into aquifers. Other people get their water from nearby lakes, streams, or rivers. In some communities, aqueducts bring water from far away. Often this water is stored in a nearby reservoir.

Where does your community's water come from? To find out, you can contact your local water company, the library-media center, or the Association of California Water Agencies.



Name \_\_\_\_\_

**Lesson 3 Questions**

Use with pp. 182-187

## Lesson 3 Questions

1. Which area of California gets a lot of rain? Which area gets very little rain?

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2. Name three aqueducts in California.

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3. What city gets a lot of its water from Lake Havasu near the border of Arizona and California?

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4. What happens in the process of reclamation?

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Name \_\_\_\_\_

Use with pp. 188–191

## Lesson 4: What is the water cycle?

### Vocabulary

**water cycle** the repeated movement of water through the environment in different forms; also called the hydrologic cycle

**condensation** the process by which particles leave a gas and become a liquid

**evaporation** the process by which particles leave a liquid and become a gas

**precipitation** water that falls from clouds as rain, hail, sleet, or snow

### Water in the Air

Water surrounds you all the time. You do not see it, but it is in the air around you. This water is not a liquid like the water in rivers. It is not a solid like the water in glaciers. The water in the air is an invisible gas. It is called water vapor. Air always has some water vapor in it. Even air in very dry deserts has some water vapor. The particles of water vapor are always moving.

### The Water Cycle

Water moves between the oceans and land through the process of the **water cycle**. The water cycle is the repeated movement of water through the environment in different forms. It is also called the hydrologic cycle. The steps of the water cycle include evaporation, condensation, and precipitation.

**Evaporation** happens when liquid water changes to water vapor. This occurs when the Sun heats the water.

**Condensation** happens when water vapor gets colder and changes to a liquid. Water droplets are very small amounts of liquid water. They stay suspended, or floating, in the air. Clouds and fog are made of water droplets. When the water droplets get large enough, they fall from clouds as rain, hail, sleet, or snow. This is called **precipitation**.

In a simple water cycle, water begins

as a liquid in a lake or ocean. The water evaporates and rises. The water vapor condenses to form clouds. Precipitation falls from the clouds. Water can fall over the land. This water becomes groundwater or flows into lakes, rivers, or oceans. Water can also fall into the ocean.

Water can take different paths through the water cycle. For example, condensation can form clouds, but it can also form dew.

### Many Paths of the Water Cycle

Living things in the environment are also part of the water cycle. Living things use and make water. Plants break down water during photosynthesis. Plants and animals produce water during respiration.

### Energy in the Water Cycle

The Sun is very important in the water cycle. The energy from the Sun causes evaporation and melting. Water vapor needs energy to rise up to the clouds. This energy comes from the Sun.

Water releases energy as it condenses into liquid water. It releases heat energy. This heat warms nearby air or water. Water takes in heat energy when it evaporates. This cools nearby air or water. When the air or water gets warmer or cooler, this changes weather patterns.

Name \_\_\_\_\_

**Lesson 4 Questions**

Use with pp. 188–191

# Lesson 4 Questions

1. What are three steps of the water cycle?

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2. What are clouds and fog made of?

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3. Describe two ways that plants and animals are part of the water cycle.

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4. Water releases energy as it \_\_\_\_\_ into liquid water. Water takes in heat energy when it \_\_\_\_\_.





Name \_\_\_\_\_

## Lesson 5 Summary

Use with pp. 192–195

# Lesson 5: How do clouds form?

## Vocabulary

**sleet** frozen raindrops that fall as precipitation

### Temperature and Pressure

Clouds have many different shapes and sizes. Clouds form when water vapor condenses. The water vapor becomes tiny water droplets or ice crystals.

The temperature of the air determines whether a cloud is made of water droplets or ice crystals. The temperature high in the clouds is usually much colder than the temperature near the ground. There can be ice crystals in the clouds even on a summer day.

Air pressure also affects how clouds form. Clouds often form when air moves upward to areas with lower air pressure. When air rises, the air pressure is less. Where there is less pressure, the air expands and cools. If the air cools enough, water vapor condenses.

### Types of Clouds

High-altitude clouds form more than 6,000 m above the ground. Cirrus clouds are high-altitude clouds. They are thin, wispy, and white.

Thunderheads are a type of vertical cloud. The base of a vertical cloud can be as low as 1,000 m above the ground. The top of a vertical cloud can be higher than 12,000 m. Thunderheads often cause thunderstorms.

Mid-altitude clouds form between 2,000 m and 7,000 m above the ground. Altocumulus clouds are mid-altitude clouds. They look like puffy balls.

Low-altitude clouds form less than 2,000 m above the ground. Stratus clouds are low-altitude clouds. They cover the whole sky. They look dark.

Fog is a cloud at ground level. Fog can form when air near the ground gets cooler.

### Precipitation

Most rain in the United States starts as snow. High in the clouds, the temperature of the air is often below 0°C. Clouds of ice crystals form in the cold air. If the air between the clouds and the ground is colder than 0°C, the ice crystals fall to the ground as snow.

If the air is warmer than 0°C, the ice crystals melt. The ice crystals fall as rain.

Sometimes the air near the ground is very cold. Then the rain freezes before it hits the ground. These frozen raindrops are called sleet. **Sleet** is different from freezing rain. Sleet is made up of raindrops that are frozen before they hit the ground.

Freezing rain forms when rain falls onto ground that is very cold. When the rainwater hits the ground or lands on trees, it freezes into ice.

### Hail Formation

Hail forms when strong winds blow upward into a cloud. The winds blow the raindrops back up to the top of the cloud. There, the temperature is freezing. The raindrops freeze into small pieces of ice. This may happen several times. Many layers of ice may build up. When the hailstones are too heavy, the wind cannot lift them. The hail falls to the ground.



Name \_\_\_\_\_

**Lesson 5 Questions**

Use with pp. 192–195

## Lesson 5 Questions

1. What are two things that affect how clouds form?

\_\_\_\_\_

2. Name three types of clouds.

\_\_\_\_\_

\_\_\_\_\_

3. There are clouds made of ice crystals in the air. The ice crystals start to fall to the ground. The air between the clouds and the ground is colder than  $0^{\circ}\text{C}$ . What kind of precipitation falls?

\_\_\_\_\_

4. How is sleet different from freezing rain?

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

Use with pp. 211-217

# Lesson 1: How does air move?

## Vocabulary

**atmospheric pressure** the weight of air pushing down on an area

**convection current** the rising and sinking of matter in a circular pattern caused by temperature differences

**wind** convection currents in the atmosphere

## Under Pressure / More About Atmospheric Pressure

The atmosphere is made of all the air around Earth. The atmosphere has many layers. Most weather occurs in the layer closest to Earth.

The temperature of the air changes as you go up through the atmosphere. The air pressure also changes as you go up. **Atmospheric pressure**, or air pressure, is the weight of the air pushing down on an area. The air is made up of particles of gases. The weight of particles above pushes down on particles below. Air pressure is highest at Earth's surface. There, the air particles are squeezed close together. High in the atmosphere, air pressure is low. There, the air particles spread far apart.

Air is invisible, but it has mass. Weight is the measure of the pull of gravity on an object. Gravity pulls air toward Earth's center. This means that air has weight. The weight of the air causes air pressure.

Particles of air move in all directions. This means that air pressure pushes on objects in all directions.

## Convection Currents

Cool air is heavier than warm air. When they are near each other, cool air will sink and warm air will rise.

Earth's surface heats unevenly. During the day, land heats faster than water does. At night, land cools faster than water does. This is why air over land and air over water have different temperatures. These

differences in temperature cause convection currents. In a **convection current**, matter rises and sinks in a circular pattern. Wind, storms, and all types of weather are caused by temperature differences in air.

Wind is the movement of air. **Wind** is caused by differences in air temperature. Some convection currents occur near large bodies of water. The current flows one way during the day. It flows the opposite way at night. Cool air sinks and warm air rises. The moving air can also form clouds, rain, and changes in air pressure.

## Uneven Heating Due to Earth's Tilt

All parts of Earth are not heated evenly. This causes huge convection currents in the atmosphere. The convection currents and the rotation of the Earth cause regional wind patterns. In most of the United States, regional winds blow from west to east.

Tropical areas are near the equator. They are warmer than areas farther away from the equator. This helps cause convection currents. Tropical areas are warmer because they get more energy from the Sun. Earth spins around an axis tilted at about 23.5°. Because Earth's axis is tilted, the Sun's energy hits the equator more directly than it hits the poles. Near the equator the Sun's energy is concentrated in a smaller area. It gets hot. Near the poles the energy is spread out over a large area. It is cold.



Name \_\_\_\_\_

## Lesson 1 Questions

Use with pp. 211–217

### Lesson 1 Questions

1. Circle the correct answers.

Near Earth's surface, the air pressure is **(high, low)**.

Near Earth's surface, the air particles are **(close together, far apart)**.

2. Which heats faster during the day: land or water?

\_\_\_\_\_

3. What two things cause regional wind patterns?

\_\_\_\_\_

\_\_\_\_\_

4. The Sun's energy hits the Earth more directly near the \_\_\_\_\_. The Sun's energy is more spread out near the \_\_\_\_\_.

Name \_\_\_\_\_

Use with pp. 218–223

## Lesson 2: What are air masses?

### Vocabulary

**air mass** a large body of air with similar properties all through it

**front** a boundary between two air masses

**cyclone** a wind that spirals inward around an area of low pressure

### Kinds of Air Masses

Air sometimes stays over an area for a long time. The air picks up properties of that area. It becomes an air mass. An **air mass** is a large body of air. All of the air in an air mass has similar properties. The most important properties are temperature and amount of water vapor.

There are four main kinds of air masses. A maritime polar air mass forms over the oceans near Earth's poles. The air is cold but moist. A maritime tropical air mass forms over tropical oceans or rain forests. The air is warm and humid. A continental tropical air mass forms over a desert. The air is warm and dry. A continental polar air mass forms over land near Earth's poles. The air is cold and dry. The weather where you live is caused by the air masses in your area.

Winds move air masses. Some winds are near the ground. Other winds are high up in the atmosphere. The jet stream is a strong air current that is high above the ground. The jet stream can move an air mass from Canada to the middle of the United States.

### When Air Masses Meet

A **front** is a boundary between two air masses. The name of a front comes from the kind of air that is moving into an area. A *cold front* brings in cold air. The cold air causes warm air to rise quickly. The rising air forms cumulus clouds. There is often heavy precipitation at a cold front.

A *warm front* brings in warm air. The warm air rises slowly over the cooler air.

The clouds of a warm front move slowly. At a warm front, there is often light precipitation for a longer period of time.

Sometimes a front stays in one place or moves back and forth over the same place. This is called a *stationary front*.

### Highs and Lows

The Sun heats the surface of Earth unevenly. Air is warmer in some places and cooler in others. Air temperature affects air pressure. Cool air is heavier and under higher pressure than the same volume of warm air. Air moves from areas of higher pressure to areas of lower pressure. When air moves, it causes wind.

On a weather map, H means an area of high pressure and L means an area of low pressure. Places under a high-pressure air mass have fair or good weather. Places under a low-pressure air mass are often cloudy and windy. Low-pressure systems often have precipitation.

### Cyclones

On earth's surface, high-pressure air surrounds warm, low pressure air. The high pressure causes the warm air in the center to rise. Then the surrounding high-pressure air flows in to take its place. This flow of air forms a **cyclone**. The winds of a cyclone spiral inward and form a weather system. In places north of the equator, including the United States, cyclone winds spin in a counterclockwise direction. This is because of Earth's rotation. A hurricane is one kind of cyclone.



Name \_\_\_\_\_

## Lesson 2 Questions

Use with pp. 218–223

### Lesson 2 Questions

1. In the Lesson 2 Summary, find the paragraph that describes four types of air masses. Draw a box around the names of the air masses that are cold. Circle the names of the air masses that are warm.

2. What are the two most important properties of an air mass?

\_\_\_\_\_

3. There is often precipitation at a front. What is the precipitation at a cold front like? What is the precipitation at a warm front like?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. What type of weather is associated with low-pressure systems?

\_\_\_\_\_

\_\_\_\_\_

5. In the United States, the winds of a cyclone spin in which direction?

\_\_\_\_\_



Name \_\_\_\_\_

## Lesson 3: What causes severe weather?

### Vocabulary

**tempered** describes air that is warmed in winter and cooled in summer because it is near a large body of water

### Thunderstorms

A thunderstorm is one kind of severe weather. In the first stage of a thunderstorm, currents of moist air move upward. Water condenses in the air and forms clouds. The clouds have both ice crystals and water droplets.

In the second stage of the storm, precipitation starts to fall. The precipitation pulls some air downward. Currents of air move both upward and downward.

In the last stage, all the air currents move downward. The precipitation leaves the clouds. The clouds get smaller.

Thunderstorms often have lightning. Lightning is a large electrical spark that moves between areas of opposite charge. Lightning can heat the air to 30,000°C. The air expands so quickly that it makes vibrations in the air. We hear these vibrations as thunder.

### Tornadoes

Thunderstorms can cause tornadoes. A tornado is a rotating column of air. It reaches from the clouds to the ground.

First, layers of wind blow in different directions or at different speeds. A column of air starts spinning between the layers of wind. Upward winds lift up one end of the spinning column. Downward winds push down on the other end. Then the spinning column of air is vertical. It is called a funnel cloud. When the funnel cloud touches the ground it is called a tornado.

Tornadoes only last a few minutes, but the winds in a tornado move very fast. These winds can move cars and buildings. If you hear or see warnings of a tornado,

you need to find a safe shelter and stay away from windows. The basement of a building is safe.

### Hurricanes

A strong cyclone that forms over warm ocean water is called a hurricane. When water vapor from the ocean condenses, it releases heat. This heat energy can build up and cause a hurricane.

A hurricane can be hundreds of kilometers wide. Hurricanes can cause huge waves. The waves can flood and damage things on the shore. Hurricanes also cause heavy rains.

The center of a hurricane is called the eye. Winds are calm in the eye. There are few or no clouds. There is no rain.

### Ocean Temperature Affects Weather

Large bodies of water, like oceans, can affect the temperature of the air above them. The air is **tempered**. It is warmed in winter and cooled in summer.

### Monsoons

A monsoon is a wind that changes direction in different seasons. Monsoons are common in southern and southeastern Asia. The winter monsoon starts when the land becomes colder than the nearby ocean. The winds move from the land to the ocean. Winds that come from the land are dry, so the winter monsoon is a dry season.

In the summer the ocean is cooler than the land. Then moist air over the ocean moves toward the land. The summer monsoon is a wet season with heavy rains. These rains water the crops on farms.



Name \_\_\_\_\_

### Lesson 3 Questions

Use with pp. 224–231

## Lesson 3 Questions

1. When we hear thunder, we are hearing vibrations in the air. What makes these vibrations?

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2. What is a tornado?

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3. Where do hurricanes form?

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4. The winter monsoon is a \_\_\_\_\_ season. The summer monsoon is a \_\_\_\_\_ season.





Name \_\_\_\_\_

## Lesson 4: How are weather forecasts made?

### Vocabulary

**barometer** a tool that measures air pressure

**anemometer** a tool that measures wind speed

**rain gauge** a tool that measures the amount of rain that has fallen

### Collecting Data

Many kinds of tools measure weather. A **barometer** measures air pressure. Some barometers have mercury in a tube. Air pressure pushes the mercury up the tube. A hygrometer measures the moisture in the air. Some hygrometers use a horsehair. The horsehair gets shorter in drier air.

An **anemometer** measures wind speed. The wind makes the anemometer spin. The anemometer spins faster when the wind is faster. A **rain gauge** measures how much rain falls.

Radar can measure winds and precipitation inside a storm. The radar sends out energy. Some of the energy bounces back from objects like raindrops. The energy changes when it comes back. This shows weather forecasters the direction and speed of a storm.

### Technology Helps Weather Forecasters

Weather forecasters are people who predict and report on weather. They use technology to gather weather data.

Weather balloons carry instruments high up into the atmosphere. The instruments measure air conditions, such as temperature, at different altitudes. The weather balloons send data to receivers on the ground.

Satellites orbit Earth, so they can gather data for all parts of Earth. Satellites use cameras and other instruments to measure clouds, temperature, and water vapor.

Doppler radar measures air motion and precipitation. This helps weather forecasters find and track storms such as tornadoes.

### Weather Patterns in Forecasting and Weather Maps

Weather follows patterns. Temperature usually rises during the day and falls at night. Temperature and precipitation also change with the seasons. It often snows in the winter and rains in the spring.

Weather forecasters use many kinds of data to predict the weather. They look for patterns to help them make better predictions. When forecasters have more data, they can make better predictions.

Weather forecasters display their data and predictions on weather maps. Most weather maps display air temperature, air pressure, and precipitation. Weather maps also show warm and cold fronts. Fronts are always in places with low pressure. Low-pressure areas are usually cloudy. High-pressure areas usually have clear blue skies.

### Satellite and Radar Maps

Satellite images can show where clouds are. Most maps that show weather conditions are made by high-speed computers. Computers can use data from Doppler radar to make an image of a storm while the storm is happening. Computers can also use data from many places to predict changes in the weather.



Name \_\_\_\_\_

## Lesson 4 Questions

Use with pp. 232–239

### Lesson 4 Questions

1. What does a barometer measure? What does an anemometer measure?

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2. How does radar measure the winds and precipitation inside a storm?

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3. In the Lesson 4 Summary, find three things that satellites can measure. Circle these three things.

4. Imagine that you see a high-pressure area on a weather map. What is the weather probably like in that area?

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Name \_\_\_\_\_

Use with pp. 257–259

# Lesson 1: What is the Sun?

## Vocabulary

**star** a huge ball of very hot gas that gives off energy

**solar system** a system that includes the Sun and its planets, along with many moons, asteroids, and comets

### The Star of Our Solar System

A **star** is a huge ball of hot gas that gives off energy. The Sun is a star. The Sun is the center of our solar system. Our **solar system** includes the Sun and the eight planets. It also includes moons, asteroids, and comets.

The Sun is the largest object in the solar system. It contains almost 99 percent of the mass in the solar system. The volume of the Sun is about one million times larger than the volume of the Earth.

The Sun is an average-sized star. Stars called supergiants can be more than 500 times larger than the Sun! Other stars are as small as Earth.

The Sun is made mostly of hydrogen and helium. Hydrogen particles hit each other inside the Sun. The particles fuse, or join together, to make helium. This is called fusion. Fusion gives off large amounts of energy.

### The Explosive Sun

The Sun has three layers. The *photosphere* is the inner layer. It gives off light that we can see. The next layer is the *chromosphere*. The outer layer is the *corona*.

*Sunspots* are dark areas on the surface of the Sun. Sunspots are not as hot as the rest of the Sun. Sometimes there are many sunspots, and sometimes there are few.

### Solar Eruptions

Prominences and solar flares are eruptions that happen on the surface of the Sun. A *prominence* looks like a thin strip or ribbon of glowing gas. *Solar flares* release very bright light and other powerful solar energy. This energy can interrupt radio and satellite communication on Earth.

### Light-Years

Light from the Sun takes about eight minutes to reach Earth. The nearest star to Earth, other than the Sun, is Alpha Centauri. Light from Alpha Centauri takes more than four years to reach Earth! The distance from Alpha Centauri to Earth is more than four light-years. Scientists use light-years to measure how far away stars are. A light-year is the distance that light travels during one year. This distance is over 9.4 trillion kilometers.



Name \_\_\_\_\_

## Lesson 1 Questions

Use with pp. 257–259

### Lesson 1 Questions

1. The volume of the Sun is how many times larger than the volume of Earth?

\_\_\_\_\_

2. How does fusion happen inside the Sun?

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

3. In the Lesson 1 Summary, circle the names of the three layers of the Sun.

4. What is a prominence?

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

5. What is a light-year?

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



Name \_\_\_\_\_

## Lesson 2: Why do planets revolve around the Sun?

### Vocabulary

**ellipse** a shape like an oval

**planet** a large, round object that moves around a star, such as the Sun

**satellite** an object that orbits another object in space

### The Solar System

The solar system includes the Sun, the planets, moons, asteroids, and comets. Every object revolves around the Sun in a path called an orbit. The orbits of the planets are elliptical, or shaped like an ellipse. An **ellipse** is a shape like an oval.

A **planet** is a large, round object that moves around a star. Planets are smaller than stars. They do not give off their own light. Planets reflect light from the Sun. This is why planets seem to shine. Our solar system has eight planets. The four planets closest to the Sun are called the inner planets. The other four planets are called the outer planets.

Planets orbit the Sun because of gravity. Gravity is a force of attraction between objects. The Sun and the planets are attracted to each other because of gravity. The Sun has much more mass than a planet, so the force of gravity makes the planets orbit the Sun.

### Gravity and the Moon

The Moon is a **satellite** of Earth. A satellite is an object that orbits another object in space. Gravity keeps the Moon in orbit around Earth. The Moon's orbit is elliptical. The Moon has much less mass than Earth, so Earth's gravity pulls on the Moon. What stops the Moon from crashing into Earth? The Moon is always moving forward. The forward movement of the Moon balances Earth's gravity. This keeps the Moon in orbit.

### Orbiting the Sun

Gravity keeps the Moon in orbit around Earth. Gravity also keeps the Moon and Earth together in orbit around the Sun.

### Free Falling

When you throw a baseball, it travels forward. But it also curves toward the ground as gravity pulls on it. If you could throw the ball hard enough, it would never hit the ground. It would keep moving forward all the way around Earth. The ball would orbit Earth.

This is what happens when a spaceship orbits Earth. The spaceship is falling around Earth. The astronauts inside the spaceship are falling also. They are in free fall. Astronauts in a spaceship feel weightless. They do not feel the effect of gravity.



Name \_\_\_\_\_

## Lesson 2 Questions

Use with pp. 260-265

### Lesson 2 Questions

1. What shape is the orbit of a planet around the Sun?

\_\_\_\_\_

2. What is gravity?

\_\_\_\_\_

\_\_\_\_\_

3. Why does Earth's gravity pull the Moon towards Earth?

\_\_\_\_\_

\_\_\_\_\_

4. Astronauts in a spaceship do not feel the effect of gravity. They are in

\_\_\_\_\_.



Name \_\_\_\_\_

## Lesson 3: What are the inner planets?

### Vocabulary

**asteroid** a rocky object up to several hundred kilometers wide that revolves around the Sun

**comet** a frozen mass of ice and dust with a tail up to 80 million kilometers long that is in orbit around the Sun

The four inner planets are small and rocky. They are Mercury, Venus, Earth, and Mars.

#### Mercury

Mercury is the planet closest to the Sun. It is small. It is covered with low spots called craters. Mercury has no moons. Mercury has almost no atmosphere. It is very hot during the day and very cold at night.

#### Venus

Venus is the second planet from the Sun. It is about the same size as Earth. Venus rotates in the opposite direction as Earth. Venus has thick clouds that are very hot and poisonous. It is very hot and dry on Venus. Like Mercury, Venus has no moons.

#### Earth

Earth is the third planet from the sun. Earth is the only planet with liquid water on its surface. The atmosphere of Earth filters out the Sun's harmful rays. Living things use the gases in the atmosphere. Earth is the only planet known to have living things on it.

#### The Moon

Earth has one moon. The Moon is about one-fourth the size of Earth. It has almost no atmosphere. It has many craters.

#### Mars

Mars is the fourth planet from the Sun. Mars is red because the soil contains iron oxide. The atmosphere of Mars has only a little oxygen. It is very cold on the surface. Mars has polar ice caps, like Earth does. There are many volcanoes and canyons on Mars. Mars has two moons.

#### Asteroids and Comets

**Asteroids** are rocky objects that revolve around the Sun. The largest asteroids are several hundred kilometers wide. The smallest ones are the size of small rocks. Most asteroids orbit in the *asteroid belt* between Mars and Jupiter.

#### Comets

A **comet** is a frozen mass of ice and dust that orbits the Sun. The nucleus is at the front of a comet. The nucleus is made of ice, frozen gases, and dust. The coma is a giant cloud of dust and gases around the nucleus. The two tails of a comet always point away from the Sun.



Name \_\_\_\_\_

### Lesson 3 Questions

Use with pp. 266–271

## Lesson 3 Questions

1. In the Lesson 3 Summary, underline the names of the four inner planets of the solar system.
2. Which two inner planets do not have moons?  
\_\_\_\_\_
3. Venus has thick clouds. What are these clouds like?  
\_\_\_\_\_
4. Why is Mars red?  
\_\_\_\_\_
5. Where is the asteroid belt located?  
\_\_\_\_\_
6. What is the name of the part of a comet around the nucleus?  
\_\_\_\_\_



Name \_\_\_\_\_

**Lesson 4 Summary**

Use with pp. 272-277

# **Lesson 4: What do we know about the outer planets and beyond?**

The four outer planets are Jupiter, Saturn, Uranus, and Neptune.

## **Jupiter**

Jupiter is the fifth planet from the Sun. It is the largest planet in the solar system. Jupiter is a gas giant, or a large planet made mostly of gases. Jupiter's atmosphere is mostly hydrogen and helium. Jupiter has rings around it. It has at least 63 moons.

## **Saturn**

Saturn is the sixth planet from the Sun. It is also a gas giant. Saturn's atmosphere is mostly hydrogen and helium. Saturn has at least 36 moons. There are thousands of bright rings around Saturn. The rings are made of pieces of ice, dust, and rock.

## **Uranus**

Uranus is the seventh planet from the Sun. Uranus is also a gas giant with rings. The atmosphere of Uranus is made of hydrogen, helium, and methane. Uranus is different from the other planets because it rotates on its side. Uranus has at least 27 moons.

## **Neptune**

Neptune is the eighth planet from the Sun. Neptune is a gas giant with rings. It is very far from the Sun. It takes 165

Earth years for Neptune to orbit the Sun. Neptune's atmosphere is mostly hydrogen, helium, and methane. Neptune has at least 13 moons.

## **Pluto**

Pluto is a dwarf planet. Dwarf planets are small, round or ball-shaped objects that revolve around the Sun. Pluto is smaller than Earth's moon! Pluto is not a gas giant. It has an icy, solid surface.

Pluto's moon Charon is only a little smaller than Pluto. Pluto has at least two other moons, Nix and Hydra. During part of its orbit, Pluto is closer to the Sun than Neptune.

## **Other Dwarf Planets**

In July 2005, scientists found an object in the solar system. It is farther from the Sun than Pluto. The new object is a little larger than Pluto. It has at least one moon. Scientists have named this dwarf planet Eris. There is also a dwarf planet, Ceres, in the asteroid belt.



Name \_\_\_\_\_

## Lesson 4 Questions

Use with pp. 272–277

### Lesson 4 Questions

1. What are the four outer planets that are gas giants?

\_\_\_\_\_

2. The atmospheres of Jupiter and Saturn are mostly made of two gases. What are these two gases?

\_\_\_\_\_

3. Which planet is both the largest and has the most moons in the solar system?

\_\_\_\_\_

4. How is Uranus different from all the other planets?

\_\_\_\_\_

\_\_\_\_\_

5. What makes the orbit of Pluto different from the orbits of all the planets?

\_\_\_\_\_

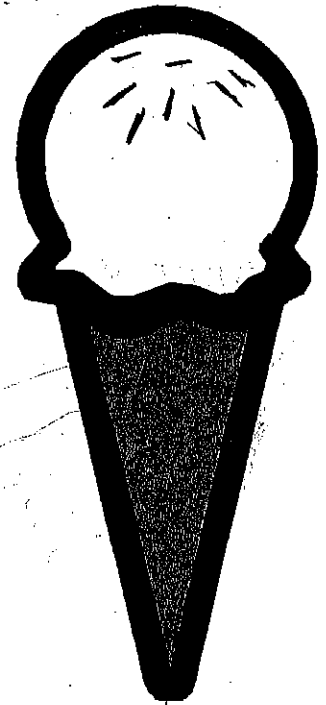
\_\_\_\_\_

liquid to a solid ☺

# Energy Changes in Making Ice Cream

## Materials:

Desk or counter  
Sugar (30 g)  
Whole milk or half and half (120 mL)  
Small, self-sealing freezer bag (1 quart or less)  
Ice  
Large coffee can with lid  
Rock salt (230 g)  
Thermometer  
water



## Procedure:

1. Put the milk and sugar into the freezer bag.
2. Take the temperature of the mixture and record it.
3. Seal the freezer bag completely and place it inside the large coffee can. Try to remove as much air as you can from the bag before sealing it.
4. Pack ice all around the sides of the freezer bag as well as on top of the freezer bag.
5. Pour the rock salt over the ice and pour about 50 ml of water over the ice and salt mixture. Then put the lid on the coffee can.
6. Roll the coffee can across the desk or counter at least 15 times.
7. Let the coffee can stand for 15 minutes – 30 minutes.
8. Check to see if the ice cream mixture has frozen. If not, repeat Steps 6-7.
9. Take the temperature of the ice cream mixture and record it.

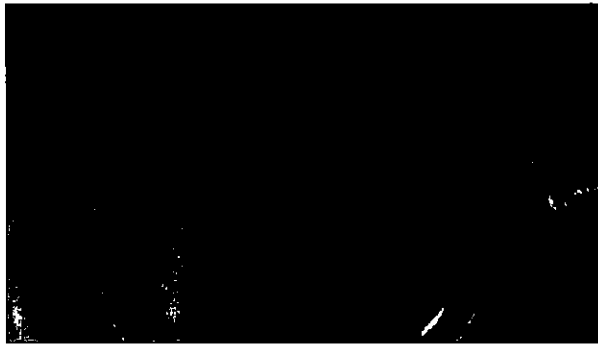
<https://www.howweelearn.com/turn-milk-into-plastic/>

## TURN MILK INTO PLASTIC!

You can turn milk into plastic in literally minutes with only milk and vinegar – and it is awesome.

1. First of all, take 1 cup of milk and warm it in the microwave for about 1.5 minutes (you want it hot, but not boiling)
2. Next, stir in 4 tablespoons of vinegar. The milk will start to clump as the acid in the vinegar breaks down the protein in the milk. Stir for about 1 minute.
3. Then, strain the milk through a strainer. All the clumps will stay in the strainer and really push on them to get all the liquid out.
4. Finally, transfer it to some paper towels and continue to press all the liquid out of the plastic milk. You can then shape it and colour it if you wish.
5. We used a cookie cutter and then added a few drops of food colouring (sometimes we left it white too).
6. We set them aside to dry for a good long while – about 2 nights – and then they were ready! Hard as could be and ready to be hung up in a window, on a door, or used to decorate a Christmas tree! (You know, if it wasn't March)

# Dry Erase



## Materials:

- A glass plate, bowl, or picture frame
- Dry erase marker
- Water

## Instructions:

1. Draw a simple picture on the glass. A stick figure is a good one to start with
2. Pour water onto the plate or into the bowl slowly to lift up the drawing
3. Swirl the water around to make the picture dance and move

## How does it work?

The marker leaves behind mixture of pigments and a type of alcohol mixed together. The alcohol dissolves and the pigments are left behind as a solid. Glass is so smooth that the solid slides right off when it gets wet!

<https://mommypoppins.com/weework-kid-recipe-how-to-make-homemade-butter>

## **Homemade Butter**

Homemade butter is easy and fun to make and requires nothing more than some heavy cream, a tight lidded container and a marble.

1. Pour any amount of heavy cream you like into a jar or food storage container that has a tight fitting lid. Add a clean marble and seal tightly.
2. Shake! This is the fun part, shake the jar till you feel the cream thicken and coat the jar, then shake some more. My mason jar took about 30 minutes (the less cream the faster your results!). You can also roll the jar back and forth with a partner.
3. As the butter solidifies it separates from the buttermilk. You will know it is complete when you have a fairly solid mass at the bottom of the jar. Pour off the buttermilk and place the butter in a food safe storage container for use. I
4. The butter will keep in the fridge as long as any butter you purchase in the store.

<https://www.stevespanglerscience.com/lab/experiments/naked-egg-experiment/>

## Naked Egg

1. Place the egg in a tall glass or jar and cover the egg with vinegar.
2. Look closely at the egg. There will likely be tiny bubbles forming on the shell.
3. Leave the egg in the vinegar for a full 24 hours.
4. Change the vinegar on the second day. Carefully pour the old vinegar down the drain and cover the egg with fresh vinegar. Place the glass with the vinegar and egg in a safe place for a week—that's right, 7 days! Don't disturb the egg but pay close attention to the bubbles forming on the surface of the shell (or what's left of it).
5. One week later, pour off the vinegar and carefully rinse the egg with water. The egg looks translucent because the shell is gone! The only thing that remains is a delicate membrane of the egg surrounding the white and the yolk. You've successfully made an egg without a shell. Okay, *you* didn't really make the egg (the chicken made the egg), you just stripped away the chemical that gives the shell its strength.

## How Does It Work

Let's start with the bubbles you saw forming on the shell. The bubbles are carbon dioxide (CO<sub>2</sub>). Vinegar is an acid called acetic acid (CH<sub>3</sub>COOH), and white vinegar from the grocery store is usually about 4% acetic acid and 96% water. Eggshells are made up of calcium carbonate (CaCO<sub>3</sub>). The acetic acid in the vinegar reacts with the calcium carbonate in the eggshell to make calcium acetate plus water and carbon dioxide that you see as bubbles on the surface of the shell.

The chemical reaction looks like this . . .



Acetic acid + Calcium carbonate = Calcium acetate + Water + Carbon dioxide

The egg looks translucent when you shine a flashlight through it because the hard outside shell is gone. The only part that remains is the thin membrane called a semipermeable membrane.

You might have noticed that the egg got a little bigger after soaking in the vinegar. Here's what happened...Some of the water in the vinegar solution (remember that household vinegar is 96% water) traveled through the egg's membrane in an effort to equalize the concentration of water on both sides of the membrane. This flow of water through a semipermeable membrane is called **osmosis**.

If you take your naked egg and place it in a glass filled with corn syrup, the egg will shrivel. Since corn syrup has a lower concentration of water than an egg does, the water in the egg moves through the membrane and into the corn syrup to equalize the water concentration levels on both sides.

## **Take It Further**

### **Change a Variable**

Do organic or free-range eggs have an eggshell that is stronger or weaker than generic eggs? What about really fresh eggs compared to those that have been around for a while? Conduct your own tests on several different kinds of eggs all at once to observe any differences in the time required for the vinegar to dissolve the shells.

Try using concentrated vinegar instead of traditional vinegar. Concentrated vinegar is about four times the strength of traditional household vinegar. If you really want to cut down on the time it takes for the eggshell to disappear...and you're chemistry teacher...try using 1 molar hydrochloric acid. Be careful—this is really strong stuff!

### **Bouncing Eggs**

Here's another idea. Put an egg in a separate glass. Cover the egg with vinegar. Allow the egg to sit in the vinegar for 24 hours. After 24 hours, pour out the vinegar and take the egg out of the glass. Drop the egg into the sink from a height of 3 inches. What happens? Continue dropping the egg from different heights (all drops should be done over the sink). What is the greatest height that you can drop the egg from before the egg goes splat? Can you measure the height of the bounces



<https://www.science-sparks.com/breathing-making-a-fake-lung/>

## **MAKE A MODEL LUNG**

The lungs are an essential organ to all mammals. Today we're going to find out how lungs work by making a lung model.

The lungs are part of our breathing system which has two functions:

- ventilation – the movement of air into and out of the lungs
- gas exchange – this is where gases are exchanged between tiny sacs called alveoli and the blood.

Under the lungs is the diaphragm which is a muscular sheet separating the lungs from the abdomen. Your diaphragm moves up and down to increase the space in your chest like the balloon at the bottom of the model.

## **TO MAKE A MODEL LUNG YOU'LL NEED**

- A plastic bottle
- A straw
- An elastic band
- Scissors
- 2 balloons

- Play dough

## **INSTRUCTIONS FOR MAKING A MODEL LUNG**

1. Carefully cut your bottle to about half the size.
2. Tie a knot in one end of one balloon and cut off the fat end.
3. Stretch the balloon around the bottom of your plastic bottle.
4. Put a straw in the neck of the other balloon and secure tightly with the elastic band but not so much that you crush the straw. The air must flow through, so test it with a little blow through the straw to see if the balloon inflates.
5. Put the straw and the balloon into the neck of the bottle and secure with the play dough to make a seal around the bottle – make sure that again, you don't crush the straw.

## **WHY DOES THIS HAPPEN?**

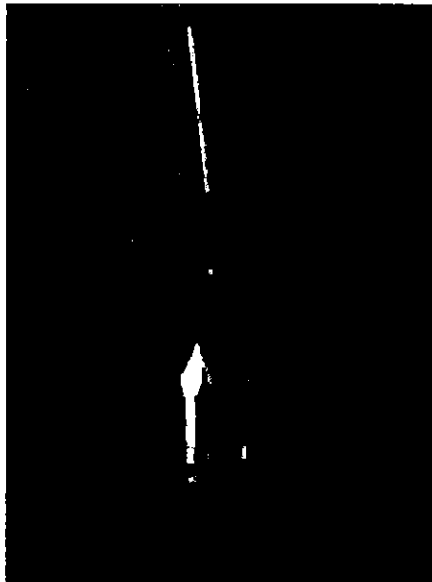
As the knotted balloon is pulled it creates more space inside the bottle. Air then comes down the straw and fills the balloon with some air to fill the space! When you let go of the knot the space no longer exists. Inside the lungs are a network of tubes which allow air to pass through. Air is warmed, moistened and filtered as it travels through the mouth and nasal passages. It then passes through the a network of tubes, eventually reaching tiny sacs called alveoli which are where gas exchange occurs.

## **HOW LUNGS WORK?**

This fake lung demonstrates how our lungs work. Air is taken in through the mouth and nose, passes down the windpipe and into our lungs. The diaphragm at the bottom of our

chest moves down to create more space. As we breathe out the diaphragm raises again. The knotted balloon represents the diaphragm and the balloon inside the container the lung. That's how lungs work!!

sts, so the air from the balloon is expelled making it deflate.



## CELERY SCIENCE EXPERIMENT FOR KIDS

### Celery Science Experiment

- celery (the leafy parts show the color the best)
- jars
- water
- food coloring

The kids put the celery in the colored water and then recorded their observations in their science notebooks. This helps to encourage them to think like scientists and helps them track the changes.

We left the celery in the colored water overnight and saw that the stems and the leaves of the celery started to turn the same color as the water that it was in.

This is the process of transpiration. The xylem in the plant sucks up water like a straw and the colored water moves throughout the celery. The cool thing about this experiment is that you can actually see the capillaries once they are colored.

The kids recorded their observations and we noticed that the celery stalks with more leaves "drank" more of the water than the ones with less. We concluded this was because the leaves needed water too.

<https://www.scholastic.com/parents/kids-activities-and-printables/activities-for-kids/math-and-science-ideas/home-science-experiments-elephants-toothpaste.html>

## At-Home Science Experiments: Elephant's Toothpaste

The foam your kids will create in this experiment resembles toothpaste being squeezed from a tube—just be sure they don't get it in their mouth!

### What You'll Need:

- A clean 16-oz plastic soda bottle
- 1/2 cup 20-volume hydrogen peroxide liquid (20-volume is a 6% solution; you can get this from a beauty supply store or hair salon)
- 1 Tablespoon (one packet) of dry yeast
- 3 Tablespoons of warm water
- Liquid dishwashing soap
- Food coloring
- Small cup
- Safety goggles

### What To Do:

*Note: As you can see from the picture, foam will overflow from the bottle, so be sure to do this experiment on a washable surface, or place the bottle on a tray.*

1. Hydrogen peroxide can irritate skin and eyes, so put on those safety goggles! An adult should carefully pour the hydrogen peroxide into the bottle.
2. Add 8 drops of your favorite food coloring into the bottle.

3. Add about 1 tablespoon of liquid dish soap into the bottle and swish the bottle around a bit to mix it.
4. In a separate small cup, combine the warm water and the yeast together and mix for about 30 seconds.
5. Now the adventure starts! Pour the yeast water mixture into the bottle (a funnel helps here) and watch the foaminess begin!

### **What's Happening:**

Foam is awesome! The foam is special because each tiny foam bubble is filled with oxygen. The yeast acted as a catalyst (a helper) to remove the oxygen from the hydrogen peroxide. Since it did this very fast, it created lots and lots of bubbles. Ask if your kids noticed the bottle got warm? The experiment created a reaction called an **exothermic reaction**, which means it not only created foam, it created heat! The foam produced is just water, soap, and oxygen, so you can clean it up with a sponge and pour any extra liquid left in the bottle down the drain.

The experiment can also be done with the hair care version of hydrogen peroxide, or the weaker pharmacy version, although the effect with the pharmacy version will be smaller. Readers should use safety goggles for any experiment, and should have adults read instructions on containers for safety precautions.

# How Do Leaves Breathe?

**How do plants breathe?** Learn what trees & plants need with this easy (and super COOL!) outdoor science activity that makes the invisible visible!

I just realized that we haven't shared many Simple Science Experiments lately.

Our goal with Simple Science activities is to provide you with quick & easy ideas that help kids explore science!

For today's experiment, we're going to head outside and learn how leaves and trees breathe!

We're going to create an environment where we can actually *SEE* photosynthesis taking place -- the oxygen/carbon dioxide process of plants!

While you don't need many supplies for this activity, we have listed affiliate links for books and a few items that we found helpful **Exploring How Tree & Plants Breathe**

Even though we chose to use a tree leaf, you can also conduct this experiment using a leaf from a plant -- the important step is including an **ACTIVE** leaf (meaning one that you remove from the tree or plant).

uring the experiment and to expand on the learning opportunity.

## **Step 1: Fill a large bowl with lukewarm water**

You can use a glass or plastic bowl (personally, I like glass bowls better as you'll be able to see the experiment from all angles however you will probably have the bowl outside so you may want to use plastic).

If you're replicating this experiment in the classroom, a large size beaker would also work -- in fact, you can extend the experiment by measuring the amount of water you use to cover the leaf to see if that has any impact on the results!

## **Step 2: Head outside and find a large leaf**

You'll want to remove a leaf from a tree or plant and not just pick one up off the ground as we want an 'active' leaf for the project. If you'd like to, have some fun with art & science by making a leaf rubbing before you go to the next step!

**Step 3: Place the leaf in the bowl of water and put a small rock on top of it so it is FULLY submerged under the water**

Then put the bowl in a sunny spot.

As you can see, this is really the benefit of using a glass bowl -- you can be sure your entire leaf is underwater.

If you have a place inside that's super sunny, you can also try keeping the bowl there.

**Step 4: WAIT!**

Oh yea, did I mention that now we need to wait a few hours ;)

I know -- one of the hardest things for kids. So go on with your day -- maybe set the experiment up before lunch or quiet time. Or your kids can get it ready before they head off to school or the park and it will be waiting for them when they come back.

**Step 5: Take a peek a few hours later**

What you should be seeing is small bubbles that form around the leaf and the edges of the bowl. These are easy to see with the naked eye but having a large magnifying glass on hand always makes an experiment feel more scienc-y ;)

**Explaining Photosynthesis & Respiration in Plants and Trees**

Ask your kids what would happen if they held their breath, went underwater in the pool and then let their breath out -- they would see bubbles coming up in the water.

That's what they are seeing here -- the leaf is still using the sunlight as part of the photosynthesis process (where leaves convert sunlight to energy).

As a leaf creates that energy, it needs to get rid of the items it no longer needs so it will expel both the extra oxygen during photosynthesis along with water (the release of water from a plant is called transpiration).

The process of photosynthesis is what allows us to see the bubbles -- as the leaf releases its extra oxygen while submerged, the oxygen can be seen as bubbles in the water.

And since oxygen is lighter than water, the bubbles will eventually rise to the surface.



# **SOCIAL STUDIES**

Name:

Topic: The American Revolution	
List three important events :	
1.	
2.	
3.	
Date(s)/Duration of the war and the two countries Involved:	
Name the location(s) of two Important battles:	
1.	
2.	
Name 5 Important People in the American Revolution and why they were important:	
Name:	Importance:
What are two events that caused The American Revolution to happen:	
1.	
2.	
What is one effect/result that the American Revolution had:	

A Brief Summary of the American Revolution:

2 Interesting Facts about the American Revolution

1.

2.

Sources (websites):

Draw something about the American Revolution/ Visual:

# United States Geography



Fill the correct answer into the space provided.

1. What is the capital of the United States? \_\_\_\_\_
2. Which is the largest state? \_\_\_\_\_
3. What is the longest river in the United States? \_\_\_\_\_
4. In which state is Mount Rushmore located? \_\_\_\_\_
5. Which ocean is west of the United States? \_\_\_\_\_
6. What country is north of the United States? \_\_\_\_\_
7. In which state is Mount McKinley located? \_\_\_\_\_
8. Which state is the only one to border only one state? \_\_\_\_\_
9. What is the highest mountain in the United States? \_\_\_\_\_
10. Which Great Lake is the only one completely within the United States?  
\_\_\_\_\_
11. When stretched out, Maine has a longer coastline than what state?  
\_\_\_\_\_
12. What ocean is to the east of the United States? \_\_\_\_\_

# SCRAMBLED STATES (page one)

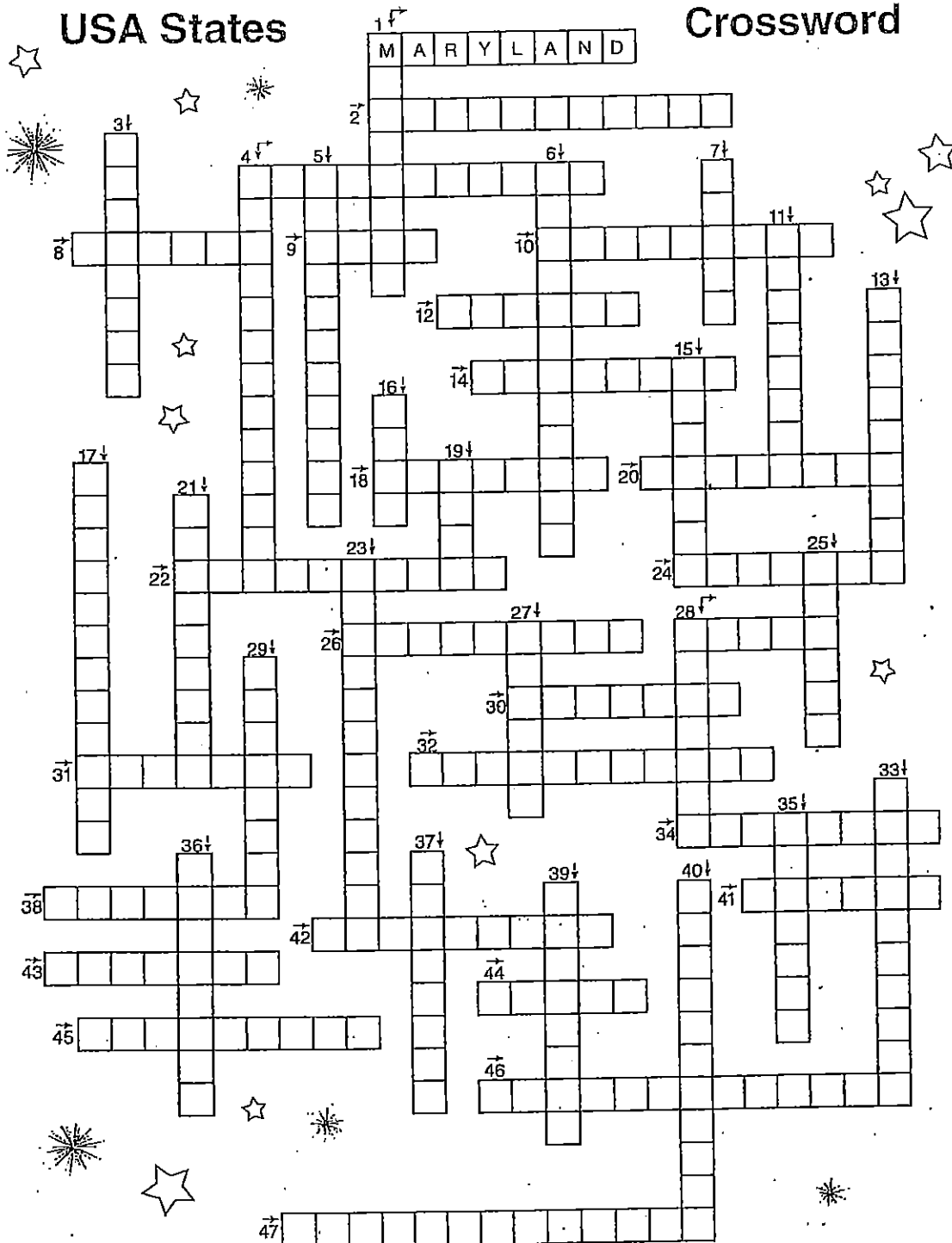
Directions: The two-letter abbreviation for each state name is listed below. Next to the abbreviation is the state's name, but it's scrambled. Unscramble the name and write it on the line. Then write the state abbreviation in the correct place on the map on the next page. Look at a map of the United States if you need help.

1. IA—'WIAO \_\_\_\_\_
2. OH—HOOI \_\_\_\_\_
3. UT—HTUA \_\_\_\_\_
4. ID—JAIOH \_\_\_\_\_
5. ME—NEIMA \_\_\_\_\_
6. TX—SAXTE \_\_\_\_\_
7. AK—KSLAA \_\_\_\_\_
8. HI—WAIHA \_\_\_\_\_
9. KS—KSNASA \_\_\_\_\_
10. NV—AADVEN \_\_\_\_\_
11. OR—OEGRNO \_\_\_\_\_
12. AL—AALBMAA \_\_\_\_\_
13. AZ—NORIAZA \_\_\_\_\_
14. FL—RLOIFAD \_\_\_\_\_
15. GA—G'AEORG \_\_\_\_\_
16. IN—DANIIAN \_\_\_\_\_
17. MT—TNAANOM \_\_\_\_\_
18. VT—NEVRTMO \_\_\_\_\_
19. WY—YNGWOMI \_\_\_\_\_
10. AR—NASSAKRA \_\_\_\_\_
11. CO—DOCORAOL \_\_\_\_\_

22. IL—NISOILIL \_\_\_\_\_
23. KY—YKKECNUT \_\_\_\_\_
24. MD—LYARNADM \_\_\_\_\_
25. MI—GCAINMHI \_\_\_\_\_
26. MO—SMIISRUO \_\_\_\_\_
27. NE—ANKESBAR \_\_\_\_\_
28. NY—ENW RYKO \_\_\_\_\_
29. OK—AHKOMOAL \_\_\_\_\_
30. VA—IIVNRGAI \_\_\_\_\_
31. DE—AAEEDLRW \_\_\_\_\_
32. WI—CNNSSIIOW \_\_\_\_\_
33. LA—SOUAIAINL \_\_\_\_\_
34. MN—ENOSNITMA \_\_\_\_\_
35. TN—SENESTEE \_\_\_\_\_
36. WA—NSHTGINWAO \_\_\_\_\_
37. CA—FNACIORLAI \_\_\_\_\_
38. NJ—WEN EJRSYE \_\_\_\_\_
39. NM—EWN EOMCXI \_\_\_\_\_
40. CT—CCCTTNNOEIU \_\_\_\_\_
41. MS—SISISIPMP \_\_\_\_\_
42. ND—RNOHT ADTAK \_\_\_\_\_
43. PA—VPNIYNESAANL \_\_\_\_\_
44. RI—ODHER ALNSID \_\_\_\_\_
45. SD—USHOT TDOKAA \_\_\_\_\_
46. WV—SWET GIRVINAI \_\_\_\_\_
47. MA—CAESUTMSASHTS \_\_\_\_\_
48. NH—EWN PHESMHAIR \_\_\_\_\_
49. NC—TNRHO LARCAINO \_\_\_\_\_
50. SC—UHTSO RNALACIO \_\_\_\_\_

# USA States

# Crossword



Name: \_\_\_\_\_

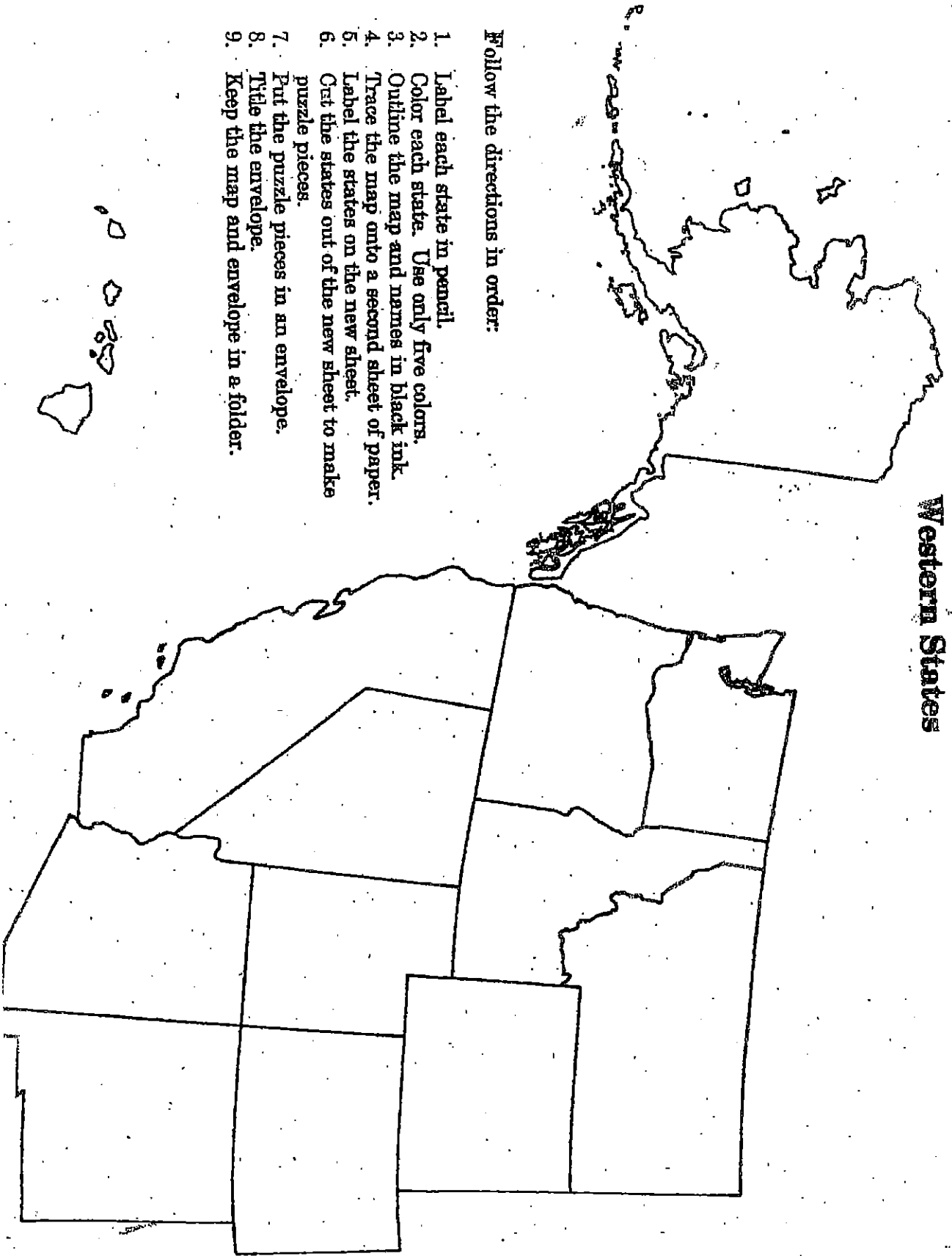
### Unscramble the State Capitals

1. NOLLUHD \_\_\_\_\_  
Capital of Hawaii.
2. ISOAMND \_\_\_\_\_  
Capital of Wisconsin.
3. YDOER \_\_\_\_\_  
Capital of Delaware.
4. FLSOGIENRPI \_\_\_\_\_  
Capital of Illinois.
5. AILDANPNS \_\_\_\_\_  
Capital of Maryland.
6. YEENNCH \_\_\_\_\_  
Capital of Wyoming.
7. TONNRTE \_\_\_\_\_  
Capital of New Jersey.
8. IRBAMKSD \_\_\_\_\_  
Capital of North Dakota.
9. TYLHOMKIDAAC \_\_\_\_\_  
Capital of Oklahoma.
10. SDIEB \_\_\_\_\_  
Capital of Idaho.
11. ELIEMNRTPO \_\_\_\_\_  
Capital of Vermont.
12. IEPRE \_\_\_\_\_  
Capital of South Dakota.
13. TNAEFAS \_\_\_\_\_  
Capital of New Mexico.
14. RGSIBURRA \_\_\_\_\_  
Capital of Pennsylvania.
15. CKNOASJ \_\_\_\_\_  
Capital of Mississippi.
16. AUTASINPL \_\_\_\_\_  
Capital of Minnesota.
17. SSEIDENMO \_\_\_\_\_  
Capital of Iowa.
18. AKETOP \_\_\_\_\_  
Capital of Kansas.
19. HIVSLLNAE \_\_\_\_\_  
Capital of Tennessee.
20. STNUIA \_\_\_\_\_  
Capital of Texas.
21. TSNBO \_\_\_\_\_  
Capital of Massachusetts.
22. CDOOCNR \_\_\_\_\_  
Capital of New Hampshire.
23. LCRIDEKTTL \_\_\_\_\_  
Capital of Arkansas.
24. AMASRNETDC \_\_\_\_\_  
Capital of California.
25. YIATSCORCN \_\_\_\_\_  
Capital of Nevada.
26. NMYEOTMRGO \_\_\_\_\_  
Capital of Alabama.
27. SEMAL \_\_\_\_\_  
Capital of Oregon.
28. XENHPDI \_\_\_\_\_  
Capital of Arizona.
29. NEHALE \_\_\_\_\_  
Capital of Montana.
30. LABNAY \_\_\_\_\_  
Capital of New York.
31. HLAREID \_\_\_\_\_  
Capital of North Carolina.
32. YALMPO \_\_\_\_\_  
Capital of Washington.
33. YOSRINCETEFJ \_\_\_\_\_  
Capital of Missouri.
34. NDVEER \_\_\_\_\_  
Capital of Colorado.
35. NILSNGA \_\_\_\_\_  
Capital of Michigan.
36. FOATRDRH \_\_\_\_\_  
Capital of Connecticut.
37. PCDEENROVI \_\_\_\_\_  
Capital of Rhode Island.
38. IMOCBULA \_\_\_\_\_  
Capital of South Carolina.
39. BUOSUDML \_\_\_\_\_  
Capital of Ohio.
40. ODSANILNAPII \_\_\_\_\_  
Capital of Indiana.
41. ELAHSAESLAT \_\_\_\_\_  
Capital of Florida.
42. KFAFRNTOR \_\_\_\_\_  
Capital of Kentucky.
43. IDCRHDMN \_\_\_\_\_  
Capital of Virginia.
44. UJEANU \_\_\_\_\_  
Capital of Alaska.
45. UATSUGA \_\_\_\_\_  
Capital of Maine.
46. SHOATRLNCE \_\_\_\_\_  
Capital of West Virginia.
47. YTLTICAKLSEA \_\_\_\_\_  
Capital of Utah.
48. DOTRUBNEGA \_\_\_\_\_  
Capital of Louisiana.
49. NNCLIDL \_\_\_\_\_  
Capital of Nebraska.
50. TTAALNA \_\_\_\_\_  
Capital of Georgia.

## Western States

Follow the directions in order:

1. Label each state in pencil.
2. Color each state. Use only five colors.
3. Outline the map and names in black ink.
4. Trace the map onto a second sheet of paper.
5. Label the states on the new sheet.
6. Cut the states out of the new sheet to make puzzle pieces.
7. Put the puzzle pieces in an envelope.
8. Tie the envelope.
9. Keep the map and envelope in a folder.



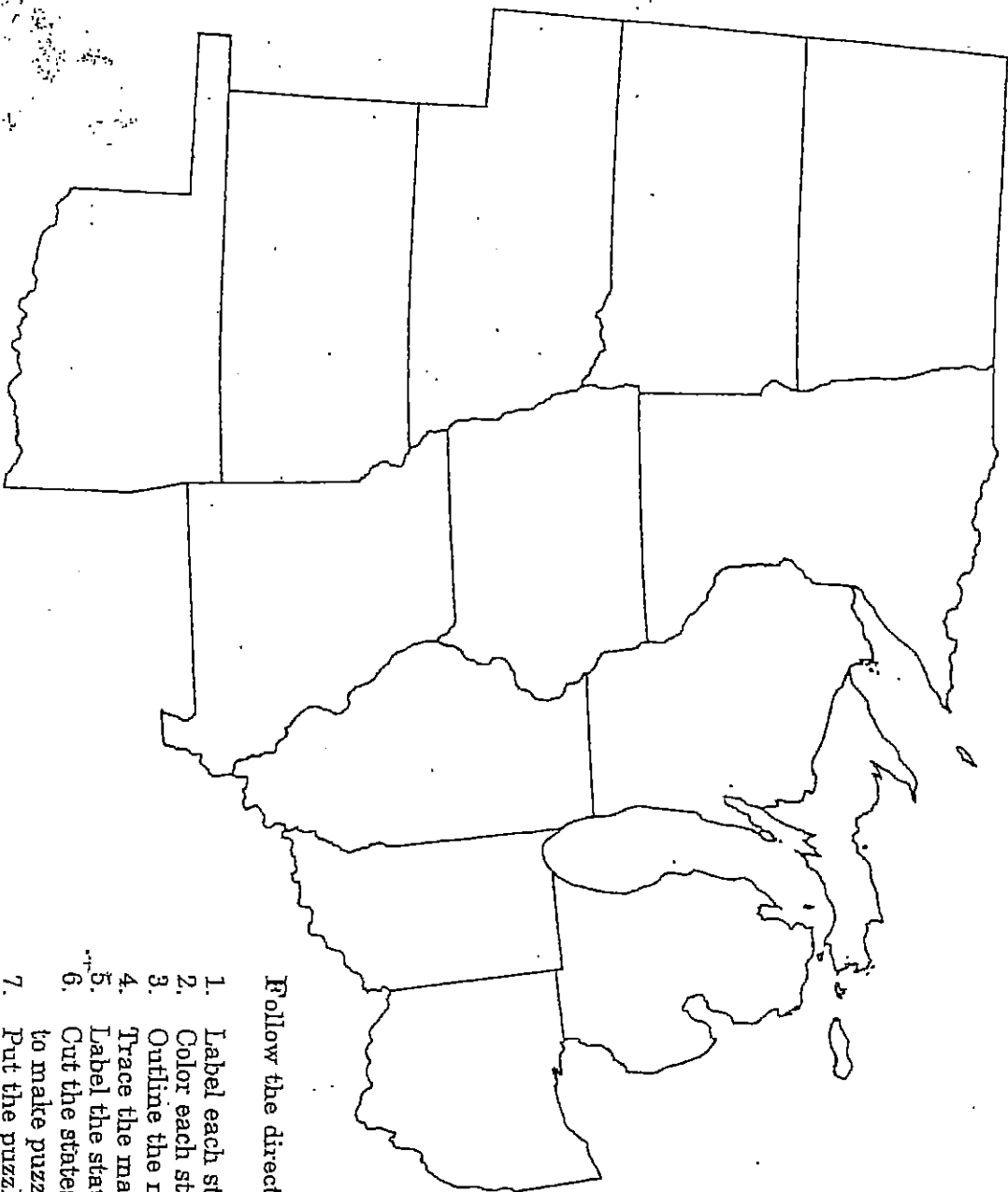


## Midwestern States

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3

Where in the U.S.?



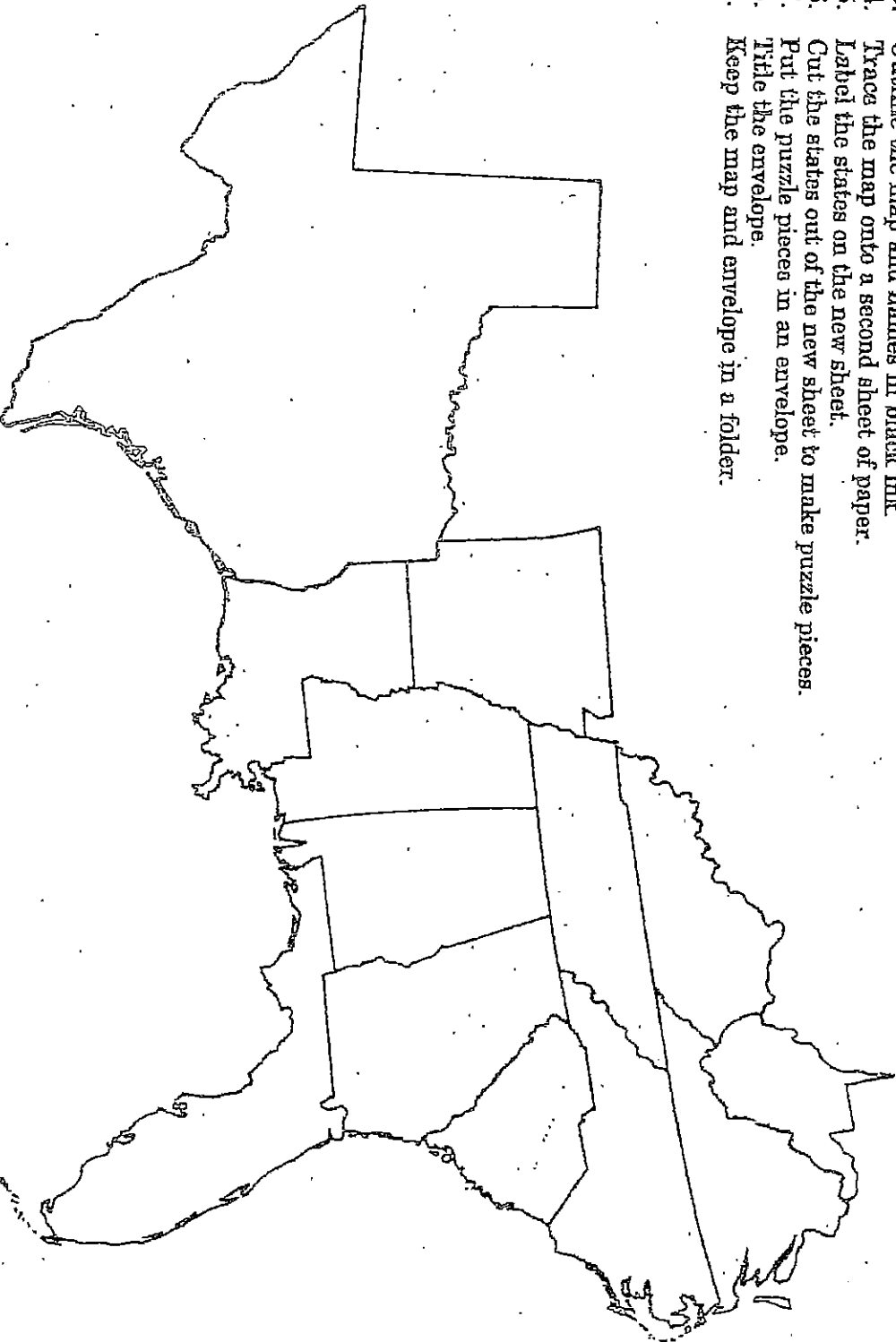
Follow the directions in order:

1. Label each state in pencil.
2. Color each state. Use only five colors.
3. Outline the map and names in black ink.
4. Trace the map onto a second sheet of paper.
5. Label the states on the new sheet.
6. Cut the states out of the new sheet to make puzzle pieces.
7. Put the puzzle pieces in an envelope.
8. Title the envelope.
9. Keep the map and envelope in a folder.

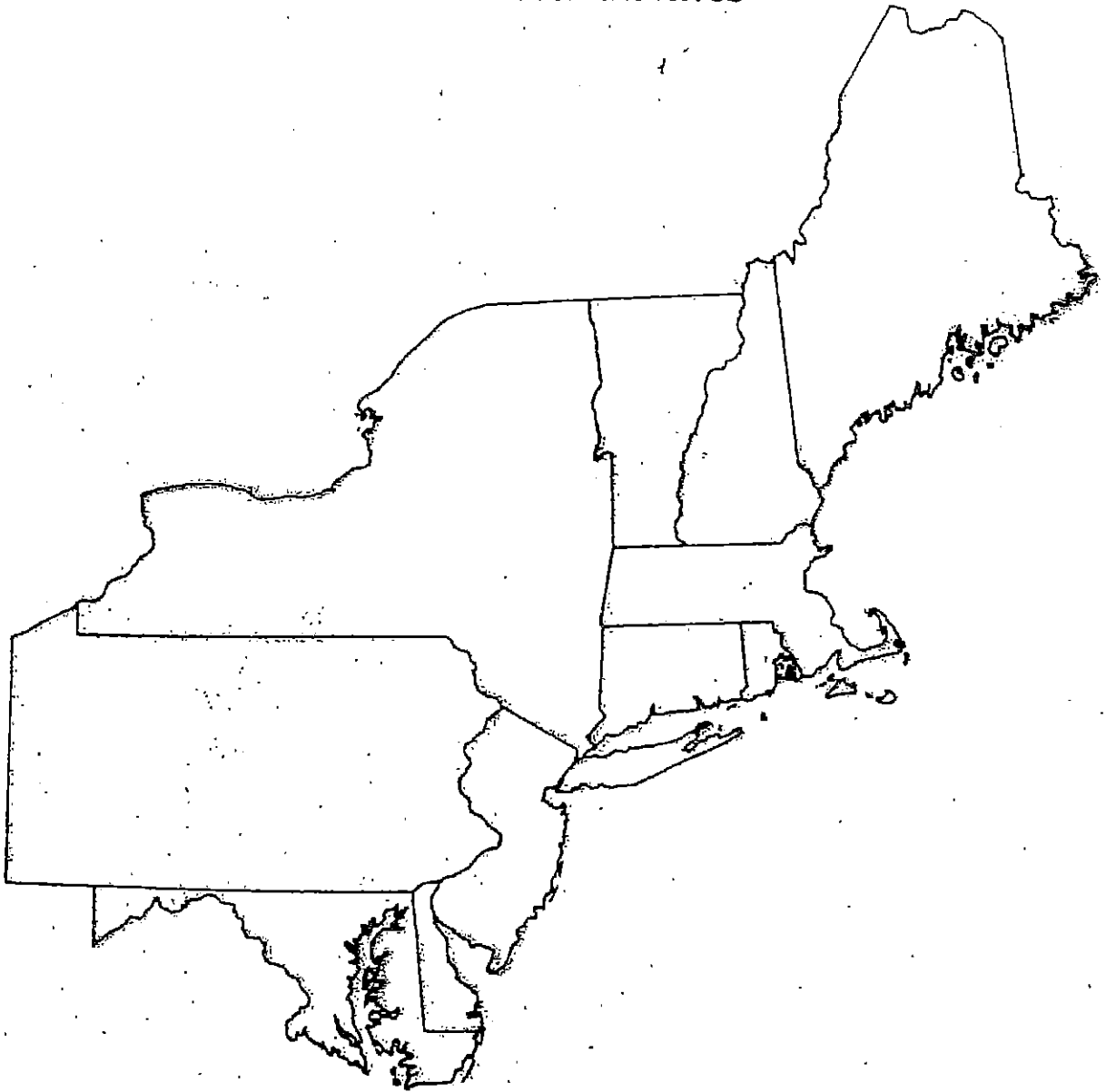
## Southern States

Follow the directions in order:

1. Label each state in pencil.
2. Color each state. Use only five colors.
3. Outline the map and names in black ink.
4. Trace the map onto a second sheet of paper.
5. Label the states on the new sheet.
6. Cut the states out of the new sheet to make puzzle pieces.
7. Put the puzzle pieces in an envelope.
8. Title the envelope.
9. Keep the map and envelope in a folder.



## Northeastern States



Follow the directions in order:

1. Label each state in pencil.
2. Color each state. Use only five colors.
3. Outline the map and names in black ink.
4. Trace the map onto a second sheet of paper.
5. Label the states on the new sheet.
6. Cut the states out of the new sheet to make puzzle pieces.
7. Put the puzzle pieces in an envelope.
8. Title the envelope.
9. Keep the map and envelope in a folder.

# ACTIVITIES

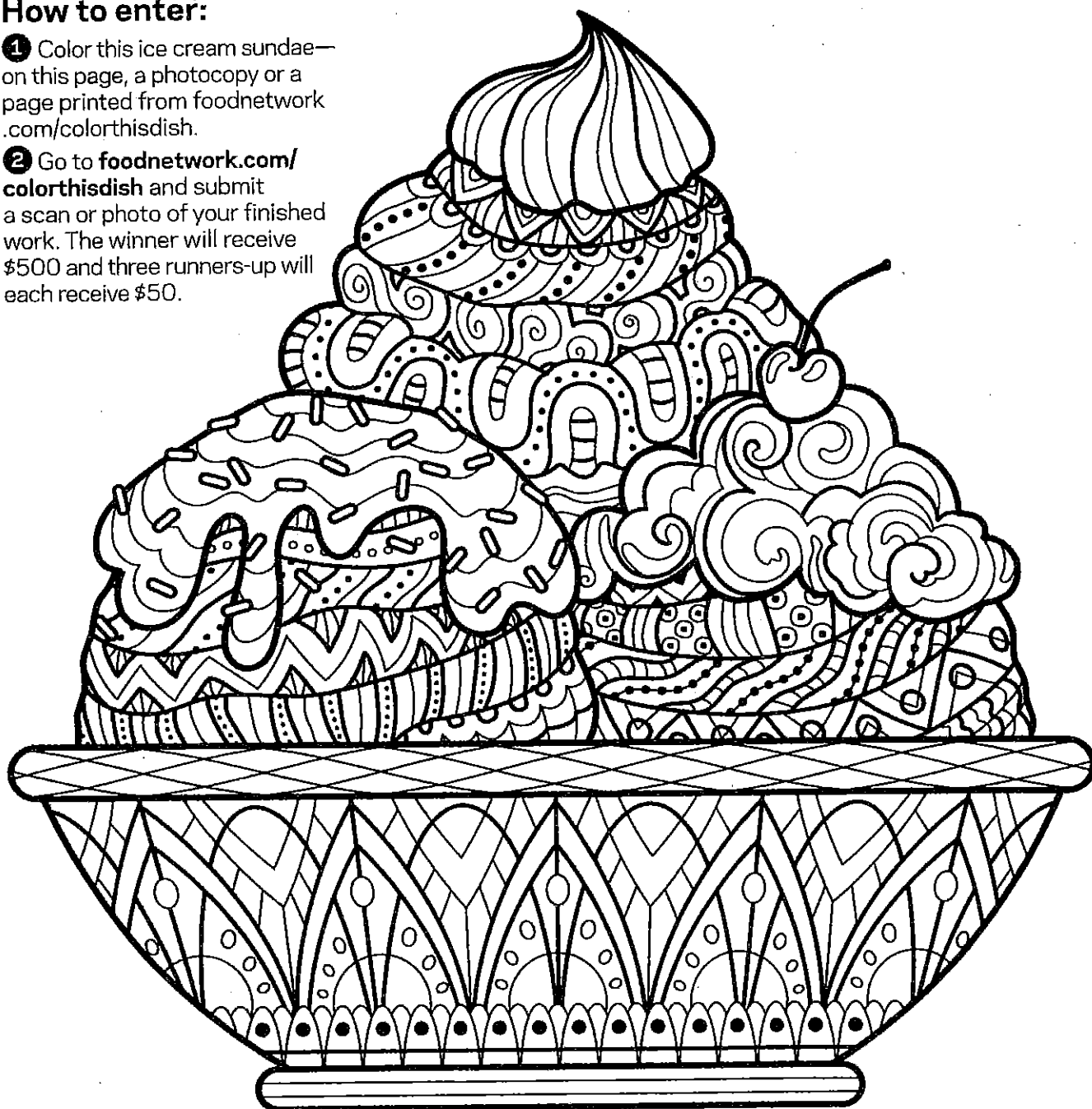
## Contest

# Color This Dish!

Break out your markers (or colored pencils!) and you could win big.

## How to enter:

- 1 Color this ice cream sundae—on this page, a photocopy or a page printed from [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish).
- 2 Go to [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish) and submit a scan or photo of your finished work. The winner will receive \$500 and three runners-up will each receive \$50.



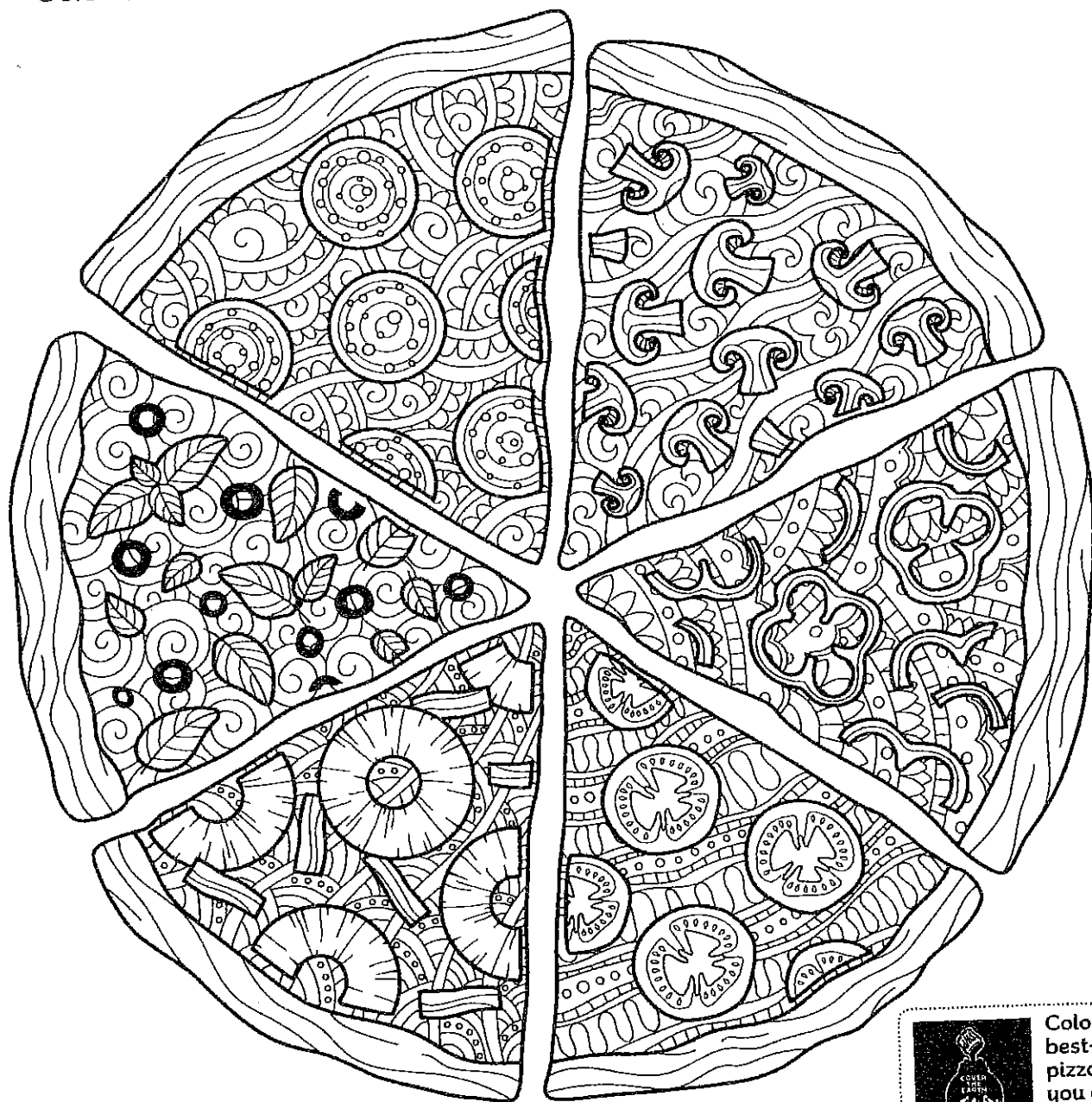
Color the best-looking sundae and you could win \$500, courtesy of Sherwin-Williams and Food Network Magazine!

NO PURCHASE NECESSARY TO ENTER OR WIN. Color This Dish! Contest. Sponsored by Hearst Communications, Inc. Beginning June 20, 2017, at 12:01 a.m. ET, through July 18, 2017, at 11:59 p.m. ET (the "Entry Period"), go to [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish) on a computer or wireless device and complete and submit the entry form pursuant to the on-screen instructions. All entries must include your name, address, telephone number, e-mail address and a scanned copy or photo of your completed version of the work that appears in the July/August 2017 issue of Food Network Magazine. Important notice: You may be charged for visiting the mobile website in accordance with the terms of your service agreement with your carrier. Must have reached the age of majority and be a legal resident of the 50 United States, the District of Columbia or Canada (excluding Quebec). Void in Puerto Rico and where prohibited by law. Contest is subject to complete official rules available at [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish).

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## Color This Dish!

Color these slices of pizza and you could win big!



**Color the best-looking pizza and you could win \$500 from Sherwin-Williams!**

**How to enter:**

- 1 Color this pizza—on this sheet, a photocopy or a printable download at [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish).
- 2 Go to [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish) and submit a scan or photo of your finished work. The winner will receive \$500, and three runners-up will each receive \$50.

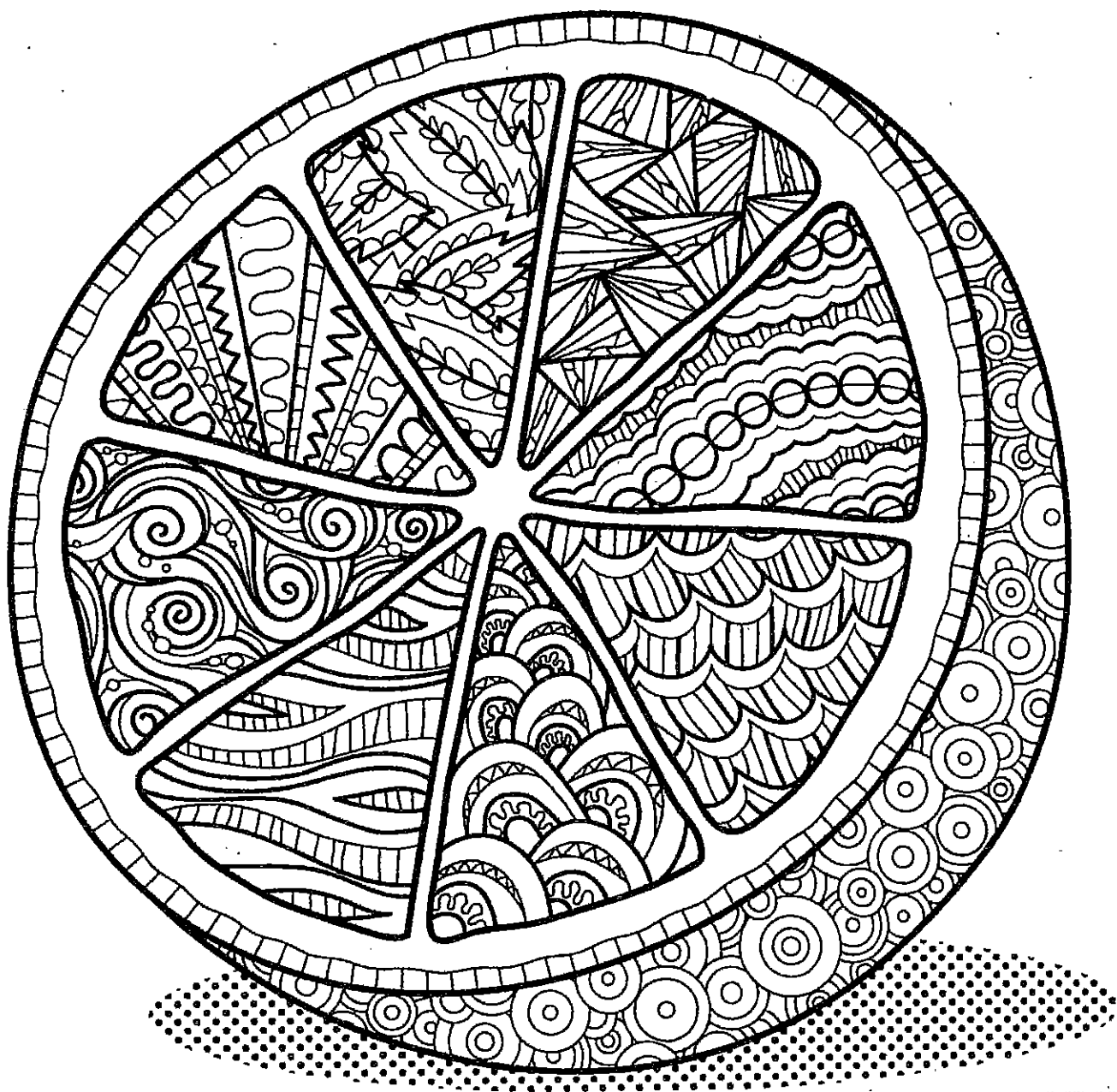
NO PURCHASE NECESSARY TO ENTER OR WIN. Color This Dish contest is sponsored by Hearst Communications, Inc. Beginning February 2, 2017, at 12:01 a.m. ET through February 23, 2017, at 11:59 p.m. ET (the "Entry Period"), go to [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish) on a computer or wireless device to complete and submit the entry form pursuant to the on-screen instructions. All entries must include your name, address, telephone number, e-mail address and a scanned copy or photo of your completed work that appears in the March 2017 issue of Food Network Magazine. Impact this notice: You may be charged for visiting the mobile website in accordance with the terms of your service agreement with your carrier. Must have reached the age of majority and be a legal resident of the 50 United States, the District of Columbia or Canada (excluding Quebec). Void in Puerto Rico and where prohibited by law. Contest is subject to complete official rules available at [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish).

**Figure 1**

## Contest

# Color This Dish!

Break out your markers (or colored pencils!) and you could win big.



Color the best-looking orange  
and you'll receive \$500 courtesy of  
**Food Network Magazine.**

### How to enter:

- 1 Color this orange—on this page, a photocopy or a page printed from [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish).
- 2 Go to [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish) and submit a scan or photo of your finished work. The winner will receive \$500 and three runners-up will each receive \$50.

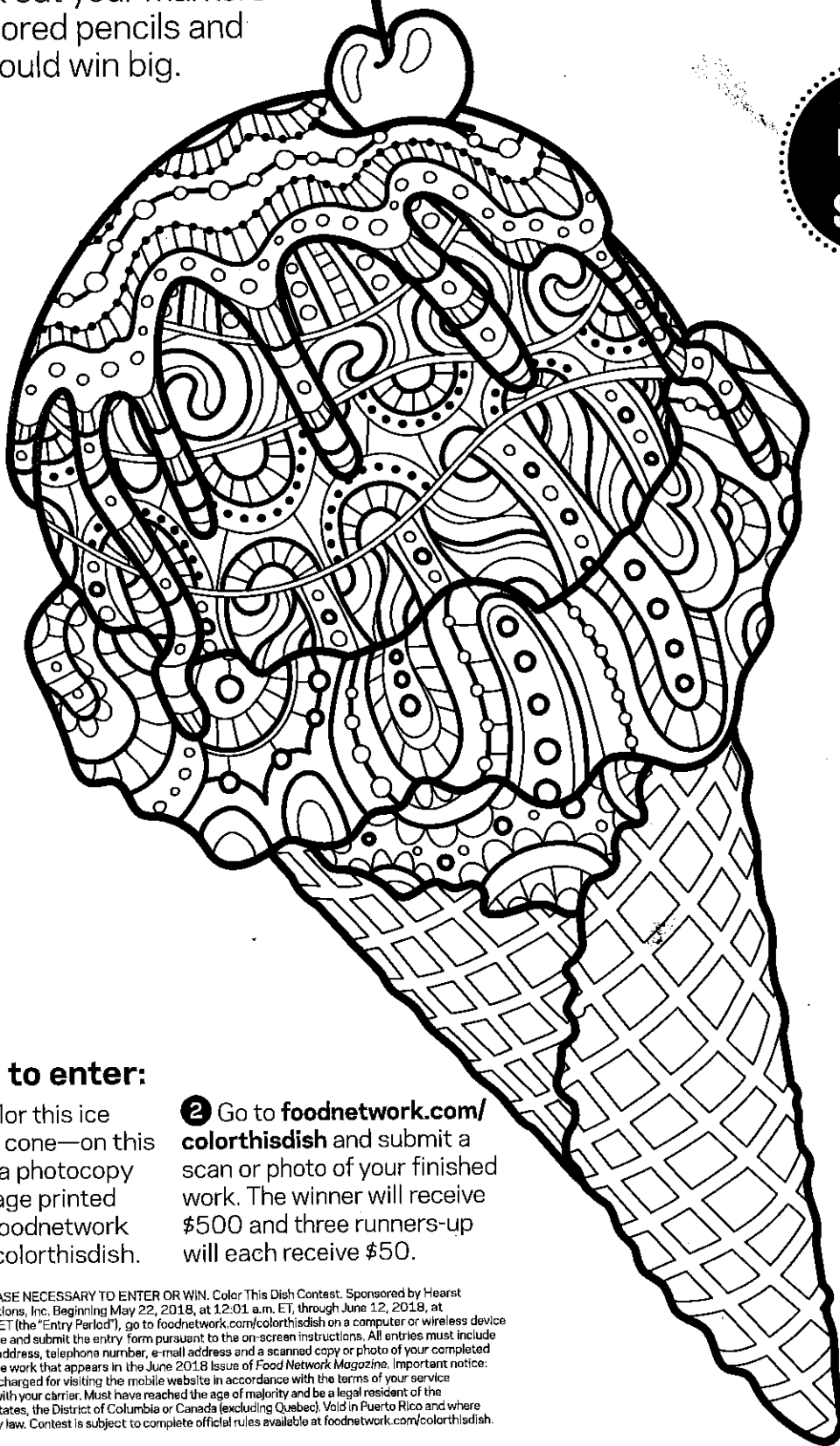
NO PURCHASE NECESSARY TO ENTER OR WIN. Color This Dish! Contest. Sponsored by Hearst Communications, Inc. Beginning May 16, 2017, at 12:01 a.m. ET through June 6, 2017, at 11:59 p.m. ET (the "Entry Period"), go to [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish) on a computer or wireless device and complete and submit the entry form pursuant to the on-screen instructions. All entries must include your name, address, telephone number, e-mail address and a scanned copy or photo of your completed work that appears in the June 2017 issue of Food Network Magazine. Important notice: You may be charged for visiting the mobile website in accordance with the terms of your service agreement with your carrier. Must have reached the age of majority and be a legal resident of the 50 United States, the District of Columbia or Canada (excluding Quebec). Void in Puerto Rico and where prohibited by law. Contest is subject to complete official rules available at [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish).

## Contest

# Color This Dish!

Break out your markers or colored pencils and you could win big.

FIRST  
PLACE  
WINS  
\$500!



## How to enter:

- ① Color this ice cream cone—on this page, a photocopy or a page printed from [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish).
- ② Go to [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish) and submit a scan or photo of your finished work. The winner will receive \$500 and three runners-up will each receive \$50.

NO PURCHASE NECESSARY TO ENTER OR WIN. Color This Dish Contest. Sponsored by Hearst Communications, Inc. Beginning May 22, 2018, at 12:01 a.m. ET, through June 12, 2018, at 11:59 p.m. ET (the "Entry Period"), go to [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish) on a computer or wireless device and complete and submit the entry form pursuant to the on-screen instructions. All entries must include your name, address, telephone number, e-mail address and a scanned copy or photo of your completed version of the work that appears in the June 2018 issue of Food Network Magazine. Important notice: You may be charged for visiting the mobile website in accordance with the terms of your service agreement with your carrier. Must have reached the age of majority and be a legal resident of the 50 United States, the District of Columbia or Canada (excluding Quebec). Void in Puerto Rico and where prohibited by law. Contest is subject to complete official rules available at [foodnetwork.com/colorthisdish](http://foodnetwork.com/colorthisdish).

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

ALBANY  
DELAWARE  
HARTFORD  
MICHIGAN  
PENNSYLVANIA  
VIRGINIA

COLUMBUS  
DOVER  
LANSING  
NASHVILLE  
RICHMOND  
WISCONSIN

CONNECTICUT  
HARRISBURG  
MADISON  
OHIO  
TENNESSEE

17 of 17 words were placed into the puzzle.

Solution

Created by Puzzlemaker at DiscoverySchool.com

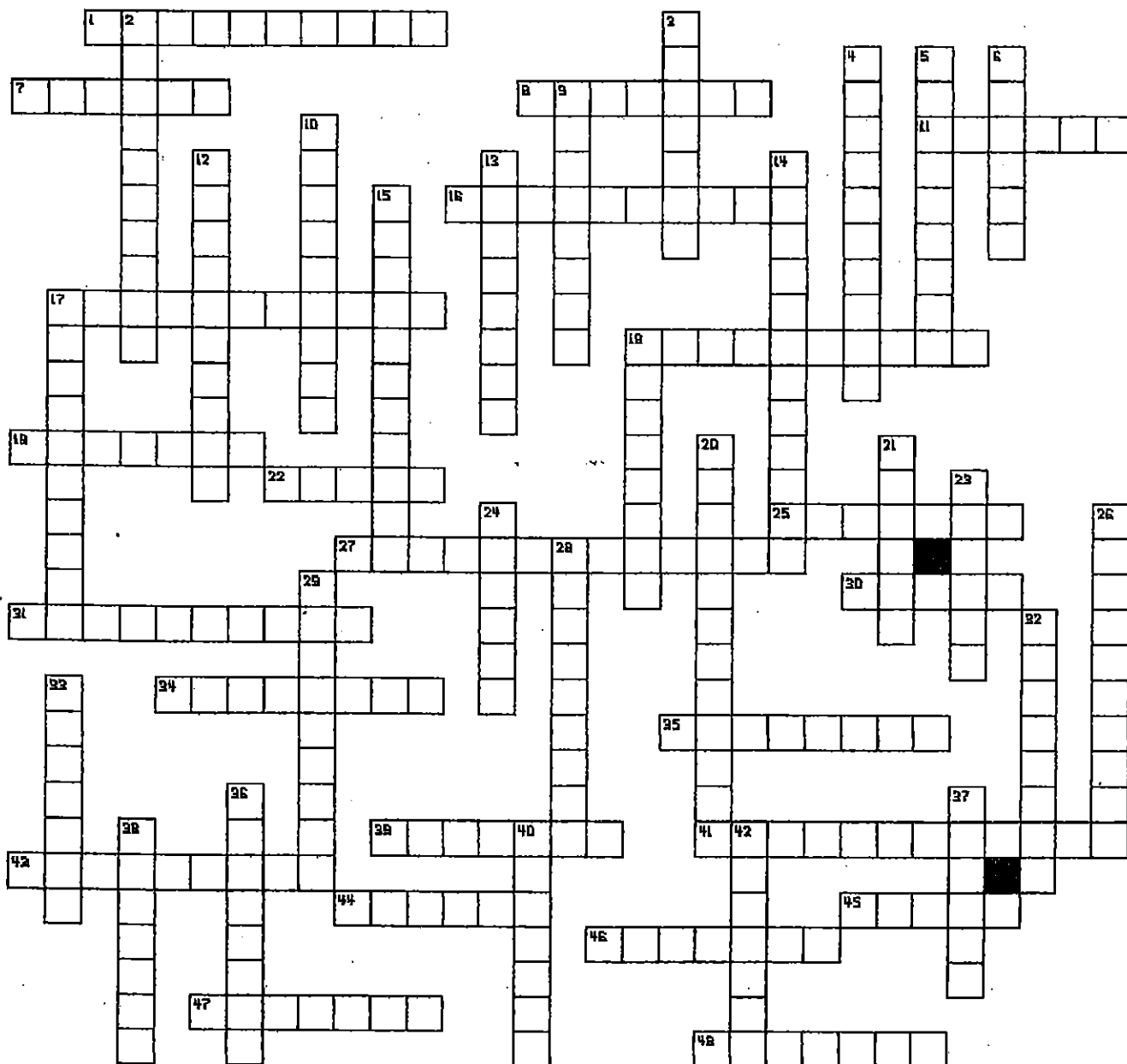
Write in the missing state!

30

Capitol	State
Sacramento	
Salem	
Olympia	
Boise	
Carson city	
Salt lake city	
Phoenix	
Santa Fe	
Austin	
Oklahoma city	
Denver	
Cheyenne	
Helena	
Bismarck	
Pierre	
Lincoln	
Topeka	
Jefferson city	
Des Moines	
St. Paul	
Baton Rouge	
Little Rock	
Jackson	
Montgomery	
Atlanta	
Tallahassee	
Nashville	
Raleigh	
Columbia	
Frankfort	
Springfield	
Madison	
Lasing	
Indianapolis	
Columbus	
Richmond	
Charleston	
Annapolis	
Harrisburg	
Dover	
Albany	
Hartford	

Name: \_\_\_\_\_

Do you know the capitals of each state?



Name: \_\_\_\_\_

## Do you know the capitals of each state?

### ACROSS

1. Capital of West Virginia.
7. Capital of South Dakota.
8. Capital of Arizona.
11. Capital of Texas.
16. Capital of Arkansas.
17. Capital of Illinois.
18. Capital of Nevada.
19. Capital of North Carolina.
22. Capital of Idaho.
25. Capital of New Jersey.
27. Capital of Missouri.
30. Capital of Oregon.
31. Capital of Vermont.
34. Capital of Virginia.
35. Capital of Hawaii.
39. Capital of Nebraska.
41. Capital of Utah.
43. Capital of Maryland.
44. Capital of New York.
45. Capital of Delaware.
46. Capital of New Mexico.
47. Capital of Maine.
48. Capital of Mississippi.

### DOWN

2. Capital of Pennsylvania.
3. Capital of New Hampshire.
4. Capital of Rhode Island.
5. Capital of Kentucky.
6. Capital of Massachusetts.
9. Capital of Connecticut.
10. Capital of Tennessee.
12. Capital of Louisiana.
13. Capital of North Dakota.
14. Capital of Oklahoma.
15. Capital of Florida.
17. Capital of California.
18. Capital of Wyoming.
20. Capital of Indiana.
21. Capital of Alaska.
23. Capital of Kansas.
24. Capital of Colorado.
26. Capital of Alabama.
28. Capital of Minnesota.
29. Capital of Iowa.
32. Capital of South Carolina.
33. Capital of Michigan.
36. Capital of Ohio.
37. Capital of Montana.
38. Capital of Wisconsin.
40. Capital of Washington.
42. Capital of Georgia.