

## Prime Factors (E)

Use a tree diagram to find the prime factors of each number.

36

36

46

35

14

46

14

34

26

## Prime Factors (F)

Use a tree diagram to find the prime factors of each number.

15

18

25

18

38

39

27

20

42

## Practice 2-3

## Frequency Tables and Line Plots

1. a. Choose a page from a book you are reading. Choose 50 words on that page. Using these 50 words, complete the frequency table.

Letter	Tally	Frequency
t		
s		
r		
n		
d		

- b. Make a line plot for your frequency table.  
 c. Which letter occurred most frequently in your sample? least frequently?

Use the line plot at the right for Exercises 2–5.

2. What information is displayed in the line plot?

\_\_\_\_\_

3. How many students spent time doing homework last night?

\_\_\_\_\_

4. How many students spent at least half an hour on homework?

\_\_\_\_\_

5. What is the range of time spent on homework last night?

\_\_\_\_\_

6. A kennel is boarding dogs that weigh the following amounts (in pounds).

5    62    43    48    12    17    29    74  
 8    15    4    11    15    26    63

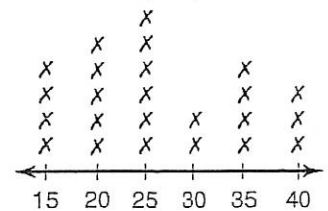
- a. What is the range of the dogs' weights?

\_\_\_\_\_

- b. How many of the dogs weigh under 50 pounds?

\_\_\_\_\_

Time Spent Doing Homework Last Night (min)



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## Place Value (C)

What is the value of each underlined digit?

5033

3710

6556

3495

1712

9209

9023

9607

7271

9359

3106

8325

2060

8252

2386

7007

## Identifying Place (A)

In what place is each underlined digit?

8,664,501

1,157,611

7,529,681

2,623,732

7,343,657

4,673,653

7,872,325

1,038,261

8,841,966

2,091,845

5,603,344

4,530,360

2,737,587

8,671,242

2,975,419

5,255,994

## Division (J)

Find each quotient.

$9\overline{)765}$

$1\overline{)24}$

$1\overline{)62}$

$6\overline{)486}$

$9\overline{)594}$

$8\overline{)96}$

$1\overline{)76}$

$4\overline{)324}$

$2\overline{)46}$

$7\overline{)679}$

$4\overline{)312}$

$9\overline{)198}$

$8\overline{)424}$

$5\overline{)420}$

$4\overline{)288}$

$7\overline{)427}$

$9\overline{)828}$

$8\overline{)496}$

$3\overline{)141}$

$2\overline{)94}$



## Subtraction Facts to 18 (J)

Calculate each difference.

7	8	12	2	8	4	10	9	10	6
<u>-1</u>	<u>-2</u>	<u>-6</u>	<u>-0</u>	<u>-0</u>	<u>-1</u>	<u>-9</u>	<u>-4</u>	<u>-3</u>	<u>-2</u>

12	16	15	14	11	13	11	4	6	16
<u>-7</u>	<u>-8</u>	<u>-8</u>	<u>-5</u>	<u>-7</u>	<u>-6</u>	<u>-9</u>	<u>-0</u>	<u>-3</u>	<u>-7</u>

12	12	10	10	10	6	7	6	12	9
<u>-3</u>	<u>-5</u>	<u>-1</u>	<u>-5</u>	<u>-2</u>	<u>-4</u>	<u>-6</u>	<u>-0</u>	<u>-9</u>	<u>-2</u>

9	10	7	14	4	6	8	6	10	10
<u>-7</u>	<u>-4</u>	<u>-7</u>	<u>-7</u>	<u>-4</u>	<u>-1</u>	<u>-3</u>	<u>-6</u>	<u>-6</u>	<u>-8</u>

7	12	9	5	2	5	1	13	12	2
<u>-4</u>	<u>-4</u>	<u>-1</u>	<u>-2</u>	<u>-1</u>	<u>-1</u>	<u>-0</u>	<u>-8</u>	<u>-8</u>	<u>-2</u>

16	8	10	11	7	7	3	9	5	17
<u>-9</u>	<u>-1</u>	<u>-7</u>	<u>-3</u>	<u>-2</u>	<u>-0</u>	<u>-2</u>	<u>-5</u>	<u>-5</u>	<u>-9</u>

5	4	8	3	15	5	14	9	4	11
<u>-3</u>	<u>-3</u>	<u>-5</u>	<u>-1</u>	<u>-6</u>	<u>-0</u>	<u>-8</u>	<u>-9</u>	<u>-2</u>	<u>-5</u>

8	8	9	11	6	7	3	3	13	14
<u>-8</u>	<u>-6</u>	<u>-6</u>	<u>-8</u>	<u>-5</u>	<u>-3</u>	<u>-0</u>	<u>-3</u>	<u>-7</u>	<u>-9</u>

8	17	15	13	14	11	13	11	0	11
<u>-4</u>	<u>-8</u>	<u>-7</u>	<u>-5</u>	<u>-6</u>	<u>-2</u>	<u>-4</u>	<u>-4</u>	<u>-0</u>	<u>-6</u>

15	13	1	18	7	9	8	9	5	9
<u>-9</u>	<u>-9</u>	<u>-1</u>	<u>-9</u>	<u>-5</u>	<u>-8</u>	<u>-7</u>	<u>-3</u>	<u>-4</u>	<u>-0</u>





Skills Worksheet

## Directed Reading A

### Section: Exploring Physical Science

- \_\_\_\_\_ 1. What two activities are basic to most of science?
- getting good grades and asking questions
  - observing the world and asking questions
  - paying attention in class and memorizing
  - observing science and reading the answers

#### THAT'S SCIENCE!

2. Science starts with gathering \_\_\_\_\_ about the natural world.
3. The knowledge obtained by observation and the testing of laws and principles is called \_\_\_\_\_.

#### WHAT IS PHYSICAL SCIENCE?

- \_\_\_\_\_ 4. What is physical science?
- the study of scientific methods
  - the study of knowledge
  - the study of nonliving matter
  - the study of living things
5. The stuff that everything is made of is \_\_\_\_\_.
6. The ability to do work is called \_\_\_\_\_.
7. All moving objects have energy of \_\_\_\_\_.
8. All matter, including matter that isn't moving, has \_\_\_\_\_.

#### BRANCHES OF PHYSICAL SCIENCE

9. The two major branches of physical science are \_\_\_\_\_ and \_\_\_\_\_.
10. The study of substances made of carbon is called \_\_\_\_\_.
11. The study of all forms of matter, including how matter interacts with other matter, is called \_\_\_\_\_.
12. An important part of chemistry is the study of the structure and properties of \_\_\_\_\_.

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

**Directed Reading A** *continued*

13. Changes in substances, called \_\_\_\_\_, take place around us all of the time.

14. List three subjects included in the science of chemistry.

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

15. An important concern of physics is the way that \_\_\_\_\_ affects matter.

16. The examination of different forms of energy is part of the study of \_\_\_\_\_.

17. List some of the things that are parts of physics.

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

18. Compasses help us find our way because of the existence of \_\_\_\_\_.

**PHYSICAL SCIENCE: ALL AROUND YOU**

19. A person who studies the atmosphere is called a(n) \_\_\_\_\_.

20. Do meteorologists need to have a knowledge of physical science? Explain your answer.

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

21. The study of the origin, history, and structure of Earth is called \_\_\_\_\_.

\_\_\_\_\_

**Directed Reading A** *continued*

22. A person who studies the chemistry of rocks, minerals, and soil is a(n)

\_\_\_\_\_.

23. Do geochemists need to have a knowledge of physical science? Explain your answer.

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

24. A knowledge of physical science will help a biologist understand how animals get \_\_\_\_\_ from food.

25. How are life science and physical science related? Explain your answer.

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

Skills Worksheet

# Directed Reading A

## Section: Scientific Methods

### WHAT ARE SCIENTIFIC METHODS?

- \_\_\_\_\_ 1. What is the series of steps scientists use to answer questions and solve problems?
- a. observations
  - b. formulations
  - c. flowcharts
  - d. scientific methods
2. List the steps that are considered scientific methods.

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### ASKING A QUESTION

- \_\_\_\_\_ 3. What does asking questions help scientists to do?
- a. find answers with less investigation
  - b. focus the purpose of an investigation
  - c. ask questions and memorize answers
  - d. know where to look up the answers
4. Any use of the senses to gather information is called \_\_\_\_\_.

5. Observations made with tools are called \_\_\_\_\_.

6. Efficiency compares energy output with \_\_\_\_\_.

7. Explain why the efficiency of a boat is important.

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**Directed Reading A** *continued*

8. What real world question did the two engineers James Czarnowski and Michael Triantafyllou explore?

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**FORMING A HYPOTHESIS**

\_\_\_\_\_ 9. An explanation that is based on observation and that can be tested is  
a. an observation.  
b. a hypothesis.  
c. efficiency.  
d. a conclusion.

\_\_\_\_\_ 10. After a scientist has asked questions and made observations, she is ready to  
a. answer the questions.  
b. explain the answers.  
c. start a different investigation.  
d. form a hypothesis.

11. How are observations related to the process of forming a hypothesis?

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12. A good hypothesis should be \_\_\_\_\_.

13. What is the problem with a hypothesis that can't be tested? Explain your answer.

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14. What was the hypothesis that Czarnowski formed?

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

**Directed Reading A** *continued*

15. How did Czarnowski form his hypothesis? Explain your answer.

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

16. A good way to make a prediction about a hypothesis is by stating it in a(n) \_\_\_\_\_ format.

17. How might Czarnowski and Triantafyllou have stated their prediction in an if-then format?

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

**TESTING THE HYPOTHESIS**

18. Testing a hypothesis helps you determine if the hypothesis is  
a. a reasonable answer to your question.  
b. a controlled experiment.  
c. efficient.  
d. an adaptation.

19. If your tests show that your hypothesis is way off the mark, you will want to  
a. change the topic you are studying.  
b. buy new measurement tools.  
c. repeat the tests until you get the results you want.  
d. repeat the tests, then change the hypothesis if necessary.

20. A controlled experiment compares results from experimental groups with  
a. results from other experimental groups.  
b. results from other investigations.  
c. results from a control group.  
d. results from past experiments.

21. The purpose of a controlled experiment is to \_\_\_\_\_ a hypothesis.

22. In a controlled experiment, the control group and the experimental groups are the same except for a factor in the experimental groups called a(n) \_\_\_\_\_.

\_\_\_\_\_

**Directed Reading A continued**

23. Is a controlled experiment always possible? Explain your answer.

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

24. How did Czarnowski and Triantafyllou decide to test their hypothesis?

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

25. Pieces of information gathered through observation or experimentation are called \_\_\_\_\_.

26. What three kinds of the data were collected during the *Proteus* experiment?

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

**ANALYZING THE RESULTS**

27. After you run an experiment and collect data, you must

\_\_\_\_\_ the data to see if the results support your hypothesis.

28. Organizing data into \_\_\_\_\_ and

\_\_\_\_\_ can make information easier to use.

29. What kind of graph can be used to make a comparison?

\_\_\_\_\_

**DRAWING CONCLUSIONS**

30. What must you do at the end of an experiment?

- a. Draw a conclusion.
- b. Analyze a graph.
- c. Draw a picture.
- d. Analyze a chart.



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

**Directed Reading A** *continued*

31. Give examples of conclusions you might draw after an investigation.

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32. What did the two engineers conclude after the trials of the *Proteus*?

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**COMMUNICATING RESULTS**

33. What are some ways to communicate results of a scientific investigation?

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34. Why is it important to communicate results of a scientific investigation?

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