



## Activity 12 Work Behaviors of Lottery Winners

### Objectives

- Develop and evaluate inferences and predictions that are based on data
- Use case studies to understand real-life situations involving probability
- Use logical reasoning to make informed decisions

<b>Materials</b>	paper, pencils, calculators
<b>Time</b>	30–45 minutes
<b>Math Idea</b>	H.R. Kaplan did a study on the effects of the lottery on the lives of lottery winners. Students will form a hypothesis about the work behaviors of lottery winners and use this study to test their hypotheses.

### Prior Understanding

Students should know how to work and calculate with percents and decimals.

### Introduction: Gambling Connection

Pose the following question to students and discuss their opinions. After they do the activity, ask the question again.

*If a person does win a substantial amount of money in a lottery, how is his or her behavior affected? What factors influence the decisions lottery winners (and their spouses) make?*



## Exercise 1

Divide students into groups. Ask each group to form a hypothesis about the work behavior of lottery winners and their spouses. Students should consider what variables they think will influence winners' decisions. Have the group write its hypothesis on a sheet of paper along with reasons that they chose that hypothesis. For example, a group might hypothesize that lottery winners would quit their jobs because they would have enough money to last them the rest of their lives without working.

Distribute copies of BLM 12 to groups. Explain that the data show various work behaviors chosen by lottery winners based on a study done by H. R. Kaplan. Have students calculate the percent of winners and their spouses who chose each work option and fill in the results in the Percent (%) columns.

## Discussion

Students should find that 56% of lottery winners do not change their work behavior after winning the lottery, while 11% quit their jobs; 62% of the spouses of lottery winners do not change their work behavior after winning the lottery, while 13% quit their jobs.



## Exercise 2

Have students use the data from Exercise 1 to draw conclusions about what lottery winners and their spouses do after they win the lottery in relation to work behaviors.

Then have students determine whether the data seem to support the hypotheses they formed in Exercise 1. Discuss possible reasons why the data came out the way they did.

## Discussion

Students should determine if the **hypothesis** they formed is supported by the **data** in the table. Encourage students to discuss the results of the study. For example, why wouldn't everyone quit their jobs if they won the lottery? What would be the advantages of maintaining the same work behaviors? Are the students surprised that 3% of the winners and 2% of the spouses of winners increased their hours of working after winning?

Students might **hypothesize** before seeing the **data** that age was an important variable affecting people's decision to remain in or leave the labor force. In fact, 39% of working winners 65 or older chose to retire early.

Other variables affecting work behavior are salary and educational level of winners. Workers earning less than \$10,000 had the highest percentage of quitting and retiring. Winners with lower educational levels were more likely to quit their jobs, decrease their hours, and retire. These findings might mean that less-educated, lower-income individuals held jobs that were less satisfying and meaningful, and therefore, when given the opportunity, chose to leave



their jobs more often than higher-educated, wealthier individuals. Another explanation could be that less-educated, lower-income individuals were willing to live only on the annual income the lottery provided because they were accustomed to living on a smaller income, whereas higher-educated, wealthier individuals could not support their present lifestyles on their annual lottery payments alone.



## Activity 12 Work Behaviors of Lottery Winners

### Teacher Support

#### Vocabulary

**data** information, often in the form of facts or figures obtained from experiments or surveys, used as a basis for making calculations or drawing conclusions

**hypothesis** a tentative explanation that accounts for a set of facts and can be tested by further investigation

**representative sample** a sample in which the characteristics of accurately reflect the characteristics of the whole population.

#### Ongoing Assessment

If response rate is defined as the percent of those who replied divided by the total number of people eligible to participate in the survey, what is the response rate of Kaplan's study of lottery winners? Do you think this a good response rate? Why or why not? (*A total of 576 usable questionnaires were returned. In addition, 20 potential respondents were found to be deceased, so the total number of eligible respondents was  $2,319 - 20 = 2,299$ . Response rate =  $576/2299 = 0.2505$  or about 25.1%*)



## Added Practice 12 Working Behaviors of Lottery Winners

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

Answer each question based on what you know about the Kaplan study.

1. Do you think this is a **representative sample**? Explain.
2. Do you think there are any particular characteristics about the individuals who did not return the questionnaires? If so, what might these characteristics be?



## **Answer Key Added Practice 12 Work Behaviors of Lottery**

### **Winners**

1. and 2. Student answers may include:

The sample of 2,319 could be representative of winners in the 12 states chosen. However, the information does not state how many states had lotteries in 1984, the year the study was conducted. If more than 12 states held a lottery in 1984, then the winners in the 12 sampled states might have different characteristics from the winners in the other states. In addition, only 25.1% of the sample returned their questionnaires, which is a small percentage in terms of being representative. Those who did not return the survey could differ significantly from those who did return the survey in age, feelings about working, income level, education level, and so on.



## Blackline Master 12 Work Behaviors of Lottery Winners

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

Questionnaires were sent to 2,319 lottery winners in 12 states between July and September of 1984. Winners included those who had won prizes ranging from \$50,000 to millions. A total of 576 usable questionnaires were returned. In addition, the U.S. Postal Service returned 280 questionnaires because the addresses were not correct, and 20 potential respondents were found to be deceased.

### Type of Change in Work Behavior of Winners and Spouses After Winning

Type of Change	Winners		Spouses	
	Number	Percent (%)	Number	Percent (%)
Quit	49		34	
Retire	59		35	
Quit Second Job	10		3	
Work Fewer Hours	37		11	
Increase Hours	15		5	
Stayed Same	249		157	
Other	4		--	
TOTAL	446*	**	253*	**

\* Not all respondents answered every question.

\*\* May not total 100 due to rounding

[Data taken from Kaplan, H.R. (1987). Lottery winners: The myth and reality. *Journal of Gambling Behavior*, 3, 168-179.]





## Answer Key Blackline Master 12

Type of Change	Winners		Spouses	
	Number	Per- cent (%)	Num- ber	Per- cent (%)
Quit	49	11	34	13
Retire	59	13	35	14
Quit Sec- ond Job	10	2	3	1
Work Fewer Hours	37	8	11	4
Increase Hours	15	3	5	2
Stayed Same	249	56	157	62
Other	4	1	—	—
<b>TOTAL</b>	<b>446*</b>	<b>**</b>	<b>253*</b>	<b>**</b>