

## GED 2002 Teachers' Handbook of Lesson Plans

Area/Skill - Math	Cognitive Skill Level - Application/Evaluation	Correlation to Math Framework - 05.08	Lesson Number - 43
<p><b>Activity Title - A Statistical Study of the Alphabet</b></p> <p><b>Goal/Objective</b></p> <p>To teach students skills how to determine probability through the use of statistics.</p> <p><b>Lesson Outline</b></p> <p><b>Introduction</b></p> <p>Statistics and probability play an important part in our lives and are particularly useful in helping us make wise decisions. This lesson will help students develop skills in calculating percentage probabilities, in addition and rounding of numbers, and (if desired) in using the calculator. Discuss how many students have watched game shows such as the Wheel of Fortune. Ask how many ever thought that probability would be a helpful skill in playing the popular game show. The teacher may wish to show a video clip of the show or spend 5 minutes playing the game of Hangman.</p> <p><b>Activity</b></p> <p>Ask students whether there are some letters in the English alphabet that are used more than others. Provide students with the <b>Handout - How to Win on the Wheel of Fortune – A Statistical Study of the Alphabet</b>. Have students choose a book or magazine to research the use of letters. They can begin at random and tally the letters one at a time, filling out the table provided on the first worksheet. They should not “jump around” the page, but work straight through. Students should use approximately 300 words. Have the students calculate the percentage probability of finding each letter. You may wish to have students round to 1 or 2 decimal places.</p> <p><b>Debriefing/Evaluation Activity</b></p> <p>Have students compare and contrast the results. Have them note the similarities and try to account for the differences. Use Worksheet 2 as a review of the activity.</p>			<p><b>Materials/Texts/Realia/Handouts</b></p> <ul style="list-style-type: none"> <li>• Handout - <b>How to Win on the Wheel of Fortune – A Statistical Study of the Alphabet</b></li> <li>• Books, magazines, and newspapers</li> <li>• Paper, pencils</li> <li>• Calculators</li> <li>• Video of Wheel of Fortune and television/vcr</li> <li>• Set-up for Hangman game</li> </ul>
			<p><b>Extension Activity</b></p> <p>Have students play another round of Hangman or the Wheel of Fortune using the information that they gained from their study. Discuss whether they did better or worse at selecting letters. Why?</p>
			<p><b>ESE/ESOL Accommodations</b></p> <ul style="list-style-type: none"> <li>• Provide students with the first fifty digits of pi.</li> <li>• Give students a sample table into which they can tally their numbers.</li> <li>• Provide students with written definitions of terms and step-by-step examples of how to determine each measure of central tendency.</li> <li>• Allow students to use calculators to figure mean, median, and mode.</li> </ul>
<p><b>Real-Life Connection</b></p> <p>Have students predict how the use of statistics and probability can help them at their workplace or in their daily lives. Discuss how often different individuals can come up with different statistics and how this information would impact a decision.</p> <p>Students may wish to discuss what types of words are often used in writing based on their statistical study.</p>			

## GED 2002 Teachers' Handbook of Lesson Plans - Script

Area/Skill - Math	Cognitive Skill Level - Application/Evaluation	Correlation to Framework - 05.08	Lesson Number - 43
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### Activity Title - A Statistical Study of the Alphabet

#### Introduction

*Ask:* Has anyone ever watched the game show “The Wheel of Fortune”? Has anyone ever played the game Hangman?

The teacher may wish to play a short game of Hangman or have students watch a short video clip of The Wheel of Fortune before beginning the lesson.

#### Main Activity

*Say:* Statistics and probability play an important part in our lives and are particularly useful in helping us make wise decisions. Even game shows like The Wheel of Fortune base things on probability.

*Say:* Today, you will be completing a statistical study on the letters of the alphabet. Choose a book, magazine, or newspaper. Take a few minutes to locate something that you would like to use for this study.

Provide students with a copy of the handout. *Say:* Beginning anywhere in your article, begin to tally the letters, one letter at a time. Fill out the table that you see on the first worksheet. Do not “jump around” the page, but work straight through. Use about 300 words. You will need to count how many words that you used for accuracy. Now, figure the percentage of probability of finding each letter. Round to the second decimal point for each of your answers.

#### Closure/Conclusion

Have students compare and contrast their results. *Ask:* Were there any discrepancies? Why? Were there similarities? Why?

Have students complete Worksheet 2 as a review of the activity.

#### Follow-Up Lessons/Activities

Have students brainstorm how statistics and probability can help them at their workplace or in their daily lives. Discuss how often different individuals can come up with different statistics and how this information would impact a decision.

Have students predict what some of the most common words in writing are and why.

**GED 2002 Teachers' Handbook of Lesson Plans  
Math Lesson 43 Handout**

**How to Win on the Wheel of Fortune – A Statistical Study of the Alphabet  
Worksheet 1**

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

Name of the book or magazine \_\_\_\_\_ page: \_\_\_\_\_

Number of letters surveyed: \_\_\_\_\_  
(Survey at least 300 letters.)

<b>Letter</b>	<b>Tally</b>	<b>Total</b>	<b>Percent</b>
A			
B			
C			
D			
E			
F			
G			
H			
I			
J			
K			
L			
M			
N			
O			
P			
Q			
R			
S			
T			
U			
V			
W			
X			
Y			
Z			
	<b>GRAND TOTAL</b>		<b>100%</b>

***To Find Percent, Use the Calculator: Total/Grand Total = Percent***

**Complete the following:**

**TOP TEN LETTERS**

1. \_\_\_\_\_ %
2. \_\_\_\_\_ %
3. \_\_\_\_\_ %
4. \_\_\_\_\_ %
5. \_\_\_\_\_ %
6. \_\_\_\_\_ %
7. \_\_\_\_\_ %
8. \_\_\_\_\_ %
9. \_\_\_\_\_ %
10. \_\_\_\_\_ %

**BOTTOM FIVE LETTERS**

22. \_\_\_\_\_ %
23. \_\_\_\_\_ %
24. \_\_\_\_\_ %
25. \_\_\_\_\_ %
26. \_\_\_\_\_ %

**The Final Survey Questions**

1. How many vowels are in the TOP TEN? \_\_\_\_\_
2. Which consonants would be the most useful in the "Wheel of Fortune"?  
\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
3. Which vowel might be the least useful? \_\_\_\_\_
4. What percentage of all the letters surveyed were vowels? \_\_\_\_\_
5. See if you can make ten different words using only the top five letters.  
\_\_\_\_\_  
\_\_\_\_\_

**Statistical Conclusions – Letters of the Alphabet  
Worksheet 2**

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

**True or False**

1. You should never expect to find the letter Q on "The Wheel Of Fortune."  
T    F
2. Almost every word requires a vowel.  
T    F
3. The letter K is useful when playing the games of "Hangman" and "Wheel of Fortune."  
T    F
4. I and O are the most useful vowels.  
T    F
5. The Top Ten letters account for about 75% of the letters needed to write in the English language.  
T    F
6. The English language could get along fine without the letters J, Q, and X.  
T    F

BONUS: Explain any of your answers to questions 1 through 6.

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7. If you were producing stickers with letters of the alphabet for use in labeling personal items, such as books, pens, bags and bedroom doors, which of these letters would you need most? (Circle 5 answers)  
A   B   C   D   E   F   G   H   I   J
8. To do a more accurate study for the above "alphabet stickers," I would need to make a survey of...(Circle the best answer)  
(a) a popular magazine  
(b) a list of student's names  
(c) a dictionary  
(d) a novel
9. In the game of "Scrabble," which of these letters would you expect to be worth the most points? (Hint: the harder it is to use, the more points it is worth. Circle the best answer)  
H    V    S
10. In "Scrabble," which of these letters would you expect to be worth only 1 point? (Circle the best answer)  
Q    N    K

## Suggested Answers (Answers May Vary)

### Worksheet 1

1. Four.
2. R, S, T, L, N, plus one more.
3. U.
4. About 30% to 40%
5. Answers will vary.

### Worksheet 2

1. False.
2. True.
3. True or False. (K would be a good letter to use to make the game difficult.)
4. False. (E is usually better.)
5. True.
6. True or False. (How would you replace them?)
7. A, E, H, I, plus one other.
8. Answers will vary. Answer (b) may be most useful since people like to label things with their name.
9. V.
10. N.