

**Title of Lesson:** Chapter 3: Percents

**Grade Level(s):** 9<sup>th</sup> – 12<sup>th</sup>; Postsecondary

**Materials Needed:** *Business Math Using Excel*, Chapter 3  
Sharon Burton and Nelda Shelton  
South-Western ISBN 0-538-72601-6  
3 ½" floppy diskette OR USB flash drive (optional)

**Lesson Overview:**

This lesson can be taught **WITH OR WITHOUT** the computer-related software. The math skills are the same. Students learn how to figure percentages as indicated in the learning objectives. Math problems must be applied to written story problems for the chapter. In addition, should the students want to apply the skills in Excel software, a spreadsheet package, materials are available.

**Learning Objectives:**

Solve business problems using (1) the traditional method of calculating; and (2) using Excel to do the calculating in the following business problems: Percents.

Note: Refer to the "Skills Students Will Gain" section of this application.

**Procedures:**

Unique methods of teaching are utilized with this course. The class is taught using two individuals—a math instructional assistant who teaches the math concepts only, and the regular classroom teacher who teaches the Excel portion of each chapter.

This course is primarily lecture-based with lab assignments. The lecture, laboratory, and examination schedule is shown on the next page. You are expected to read each assigned project prior to the lecture. Lectures will be short, to the point, and will discuss the highlights of the project for that week. Most of the class time will be spent working on your laboratory assignments.

Weekly assignments must be handed in BEFORE lecture begins on a new chapter. Assignments handed in after lecture begins are considered late.

Read the chapter for each week prior to the lecture. Three days weekly will be devoted to chapter lecture and assignments; the fourth day will be review, and the fifth day will be testing.

**NOTE:** Do all odd-numbered exercises (1, 3, 5, 7, etc.) and all Excel exercises on CD as directed by lessons.

Week	Day	Reading Assignment	Chapter Assignments	Test Points
3	1	Chapter 3	3.1	100
	2		3.2	
	3		3.3	
	4		Chapter Review Quiz, p. 162	
	5		Chapter Test 3	

**Method of Evaluation (if applicable, please include the answer key on a separate sheet of paper):**

See attached Chapter 3 Test.

**Examination Policy:**

There is a chapter test on the fifth day of the class. No make-up tests will be allowed without prior arrangements being made. Make-up exams must be taken when scheduled.

*Preparing for Examinations:* Attend lecture and read the chapters. Complete all projects and exercises assigned. Check your work at the self-check station in the classroom as well as on your student CD.

*In Case You Are Late or Absent:* It is your responsibility to get the chapter information, handouts, and assignments should you miss class or be late.

**Note:** A student can receive a final grade no greater than a D if more than four chapter assignments are not completed. Incomplete chapter assignments are not considered.

**Options and variations of lesson (optional):**

**Relevance to NBEA or NCTM Standards (see Educator Resources at [www.oscpa.com](http://www.oscpa.com))**

This course actively incorporates the NBEA Education Standard of Computation as shown by the individual standard components (I, II, VI) shown below:

**Computation:**

- I. **Mathematical Foundations**  
Achievement Standard: Apply basic mathematical operations to solve problems.
- II. **Number Relationships and Operations**  
Achievement Standard: Solve problems involving whole numbers, decimals, fractions, percents, ratios, averages, and proportions.

## VI. Problem-Solving Applications

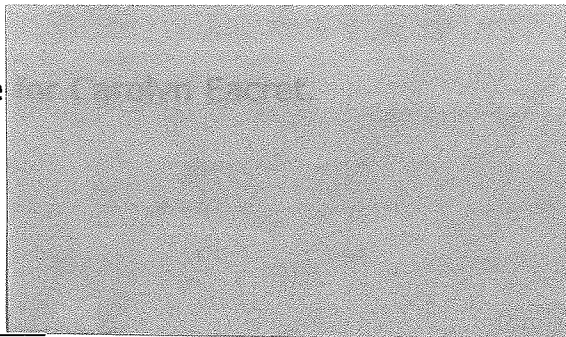
Achievement Standard: Use mathematical procedures to analyze and solve business problems.<sup>1</sup>

Skills students will gain:

- Convert percents to decimals
- Convert decimals to percents
- Change percents to fractions and reduce to lowest terms
- Change fractions to percents
- Find the rate in problems
- Determine the part, rate, or base in problems
- Find the rate of increase or decrease for problems
- Determine percentage distribution for problems
- Use Excel to solve problems involving each of the math concepts introduced in chapter (optional).

Please include, on a separate sheet, a short biography for yourself, as well as your credentials (resumes are acceptable). Contest entries should be sent via e-mail to [awelch@oscpa.com](mailto:awelch@oscpa.com) or mailed in typed form to OSCP, Attention: Amy Welch, 1900 NW Expressway, Ste. 910; Oklahoma City, OK, 73118. Questions can be directed to Amy at [awelch@oscpa.com](mailto:awelch@oscpa.com) or by phone at 405/841-3800, ext. 3806 or toll free at 800/522-8261. All lessons become the property of OSCP and cannot be returned.

See attached resume



<sup>1</sup> *National Standards for Business Education* © 2001 by the National Business Education Association, 1914 Association Drive, Reston, VA 20191.

Name \_\_\_\_\_

Date \_\_\_\_\_

Score \_\_\_\_\_

**CHAPTER 3 TEST***Directions* Complete the following problems.

A. Convert the following percents to decimals.

- |             |   |                 |           |   |               |
|-------------|---|-----------------|-----------|---|---------------|
| 1. 43%      | = | <u>0.43</u>     | 2. 0.32%  | = | <u>0.0032</u> |
| 3. 7.25%    | = | <u>0.0725</u>   | 4. 89.5%  | = | <u>0.895</u>  |
| 5. 12.2345% | = | <u>0.122345</u> | 6. 153.7% | = | <u>1.537</u>  |

B. Convert the following decimals to percents.

- |            |   |              |             |   |                 |
|------------|---|--------------|-------------|---|-----------------|
| 7. 0.29    | = | <u>29%</u>   | 8. 8.0796   | = | <u>807.96%</u>  |
| 9. 4.55    | = | <u>455%</u>  | 10. 0.088   | = | <u>8.8%</u>     |
| 11. 0.0051 | = | <u>0.51%</u> | 12. 3.33045 | = | <u>333.045%</u> |

C. Change the following percents to fractions. Reduce each fraction to lowest terms when possible.

- |          |   |                                     |          |   |                                    |
|----------|---|-------------------------------------|----------|---|------------------------------------|
| 13. 40%  | = | <u><math>\frac{2}{5}</math></u>     | 14. 60%  | = | <u><math>\frac{3}{5}</math></u>    |
| 15. 121% | = | <u><math>1\frac{21}{100}</math></u> | 16. 3%   | = | <u><math>\frac{3}{100}</math></u>  |
| 17. 18%  | = | <u><math>\frac{9}{50}</math></u>    | 18. 225% | = | <u><math>2\frac{1}{4}</math></u>   |
| 19. 75%  | = | <u><math>\frac{3}{4}</math></u>     | 20. 45%  | = | <u><math>\frac{9}{20}</math></u>   |
| 21. 350% | = | <u><math>3\frac{1}{2}</math></u>    | 22. 67%  | = | <u><math>\frac{67}{100}</math></u> |

D. Change the following fractions to percents. Round to the nearest tenth.

- |                    |   |              |                    |   |              |
|--------------------|---|--------------|--------------------|---|--------------|
| 23. $\frac{4}{5}$  | = | <u>80%</u>   | 24. $\frac{5}{8}$  | = | <u>62.5%</u> |
| 25. $\frac{5}{10}$ | = | <u>50%</u>   | 26. $\frac{2}{3}$  | = | <u>66.7%</u> |
| 27. $\frac{7}{8}$  | = | <u>87.5%</u> | 28. $\frac{1}{8}$  | = | <u>12.5%</u> |
| 29. $\frac{7}{10}$ | = | <u>70%</u>   | 30. $1\frac{3}{4}$ | = | <u>175%</u>  |

E. Find the part in the following problems. Round to the nearest hundredth.

- |                |   |               |                    |   |                |
|----------------|---|---------------|--------------------|---|----------------|
| 31. 60% of 220 | = | <u>132</u>    | 32. 3% of 8        | = | <u>0.24</u>    |
| 33. 75% of 201 | = | <u>150.75</u> | 34. 54% of \$60.00 | = | <u>\$32.40</u> |

F. Find the rate in the following problems. Round to the nearest hundredth.

35. 55 is what percent of 100? 55%
36. 35 is what percent of 250? 14%
37. 85 is what percent of 400? 21.25%
38. 300 is what percent of 900? 33.33%

G. Determine the part, rate, or base for the following problems.

39. 75% of \$480 = ?. 360
40. \$125 is what percent of \$5,000? 2.5%
41. \$90 is 15% of ?. 600
42. 67% of \$4 is ? \$2.68

H. Find the rate of increase or decrease for the following problems. Round to the nearest hundredth.

	Sales Last Year	Sales Current Year	Rate of Increase or Decrease
43.	\$348,123	\$398,876	<u>14.58%</u>
44.	65,003	85,550	<u>31.61%</u>
45.	201,888	195,000	<u>-3.41%</u>
46.	42,500	90,500	<u>112.94%</u>
47.	425,478	505,385	<u>18.78%</u>

I. Determine percentage distribution for the following problems. Round to the nearest hundredth.

	Departments	Sales	Percent
48.	Furniture	\$2,459	<u>35.72%</u>
49.	Cosmetics	965	<u>14.02%</u>
50.	Women's Wear	1,975	<u>28.69%</u>
51.	Men's Wear	<u>1,485</u>	<u>21.57%</u>
		\$6,884	100.00%

J. Use Excel to solve the following problems.

52. Retrieve *ch03test01* from your student Data CD.

- a. Enter formulas in Column D to calculate the Dollar Increase or Decrease for each Department between 2001 and 2002. Format Column D for Currency. Set Decimal places to 2. Set Currency symbol to \$.
- b. Enter a formula in each cell in Column E to calculate the Percent of Increase or Decrease. Format Column E for Percentage. Set Decimal places to 1.
- c. Enter formulas in Column F to calculate the Percent of Total 2002 Sales contributed by each Department. Format Column F for Percentage. Set Decimal places to 1.
- d. Save the file as *ch03test01a.xls*. For solution, see Instructor's Resource CD.

53. Retrieve *ch03test02* from your student Data CD.

- a. Enter formulas in Column D to calculate the Dollar Increase or Decrease for each Department between 2001 and 2002. Format Column D for Currency. Set Decimal places to 2. Set Currency symbol to \$.
- b. Enter a formula in each cell in Column E to calculate the Percent of Increase or Decrease. Format Column E for Percentage. Set Decimal places to 1.
- c. Enter formulas in Column F to calculate the Percent of Total 2002 Sales contributed by each Department. Format Column F for Percentage. Set Decimal places to 1.
- d. Save the file as *ch03test02a.xls*. For solution, see Instructor's Resource CD.

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