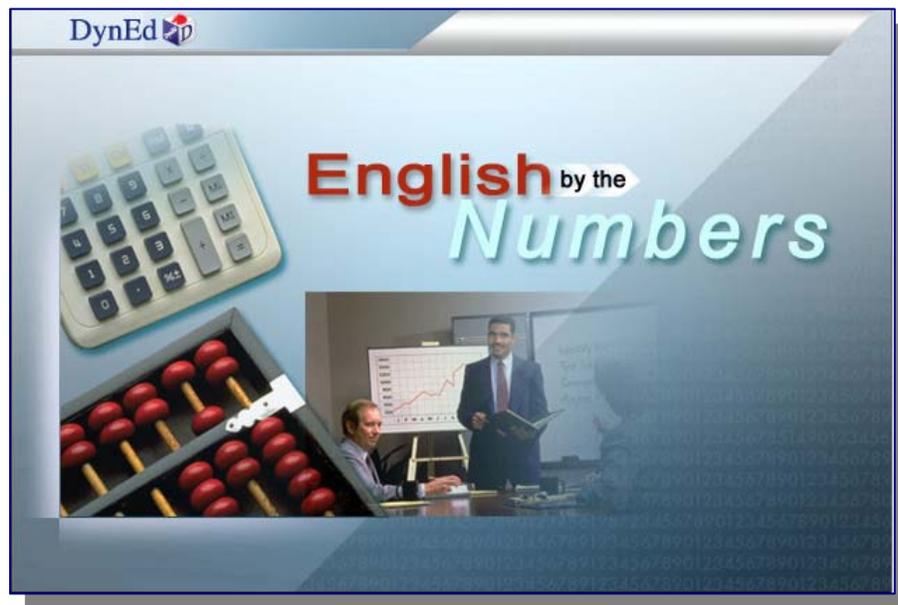


# English by the Numbers

## Study Guide



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## Introduction

Welcome to *English by the Numbers!* Numbers are very important in everyday life. Many times each day we need to understand and communicate information presented in numerical terms. *English by the Numbers* gives you the language you need to understand and express quantitative information in English. You will learn how to read and understand very large (and very small) numbers, describe formulas and other mathematical expressions, talk about changing situations with the use of graphs and charts, discuss the probability of events, and examine logical relationships.

*English by the Numbers* is based on classroom-proven instructional strategies and techniques. The course maximizes the effectiveness of multi-media by focusing on the key skill necessary to acquire any language: listening. The language of the course is carefully chosen and sequenced to ensure comprehension while at the same time remaining natural, and includes the key vocabulary and expressions you will need to understand and express quantitative information in English.

With DynEd's unique interactive design, you can study at your own pace. At any point in the program, you can ask for repetition, record and monitor yourself, see an English text display, or study glossary screens that provide additional information about vocabulary or key expressions.

*English by the Numbers* is divided into seven units. Units 1 and 2 focus on numbers and numerical operations. Units 3-6 focus on graphs and changes. The last unit, Unit 7, is both a review and an extension of previous material. The language in each unit is reinforced with practice questions to help build your listening comprehension skills.

For further study of English expressions and concepts for communication in business and technology, we recommend the courses *Dynamic Business English* and *Functioning in Business*, which are part of the *Business English Advantage Series*. For further information, please see the *BEAS Teacher's Guide*. These courses can be studied alongside this course for more variety and effectiveness.

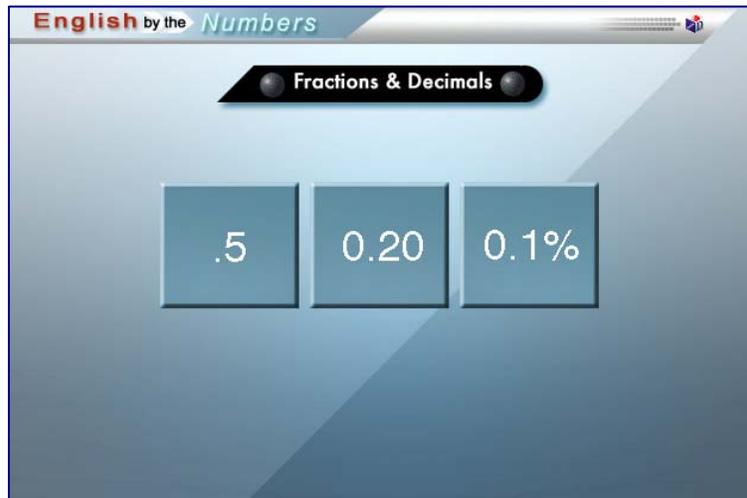
## How to Do a Lesson

1. The first screen of each unit shows the menu for the lesson. Start with the top choice. Go through it several times, on several different days. Then move downward, and end with the Quiz.
2. Listen to the information presented in each part. Use the *repeat* button to listen to each sentence several times. Try *not* to use the text button until you can say the sentence, or parts of the sentence, and can guess the meaning.
3. As you listen to each sentence, carefully study the picture (graph, equation, etc.) on the screen. Try to understand how each sentence relates to the picture. Listen to it until the language becomes natural and easy to understand.
4. Each lesson includes several comprehension questions. Answer the comprehension questions by clicking on the correct answer. If necessary, use the *pause* button to give yourself more time to do the question. In some units, you can also click on the *Question Box* on the choice screen to get a random series of questions.
5. After you become familiar with the language and information of the unit, practice saying each sentence to yourself several times. Record your voice using the *record* (microphone) button on the Control Bar, and compare your voice with the native speaker. Saying the sentence out loud helps to internalize the language. Try not to use the *text* button when recording yourself.
6. After you have gone through the lesson several times, click on the *text* button and check the highlighted words. If you click on a highlighted word, you'll see the *glossary* screen related to that word.
7. Practice each unit until you are confident of your understanding and your ability to express the information clearly and comfortably in English. Practice summarizing the information in your own words until you can make a confident oral presentation. Review the units often to refresh your listening and speaking skills. Good luck!

## Contents of *English by the Numbers*

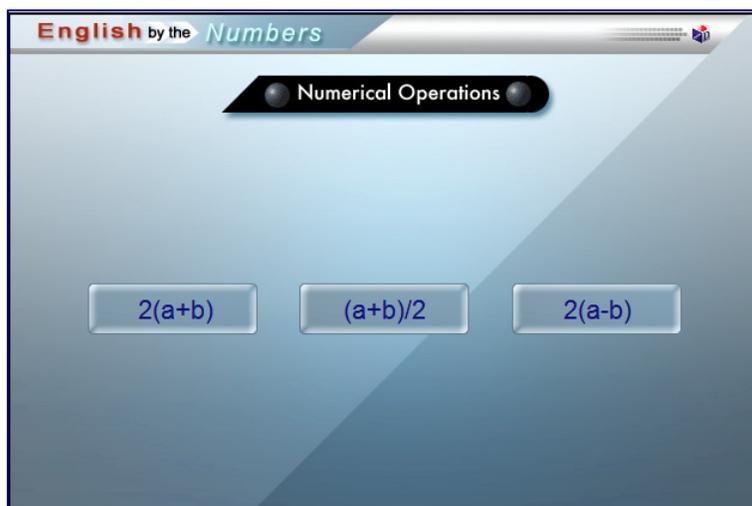
### Unit 1: Numbers, Fractions, and Decimals

This unit introduces basic expressions for talking about numbers and quantities. You will learn how to talk about very large (34,910) and very small numbers (.005), as well as fractions ( $\frac{3}{4}$ ) and percentages (8.5%). Study these expressions carefully, so that you can understand and express numbers with complete accuracy. In business or technical communication, misunderstandings about numbers can lead to very serious problems.



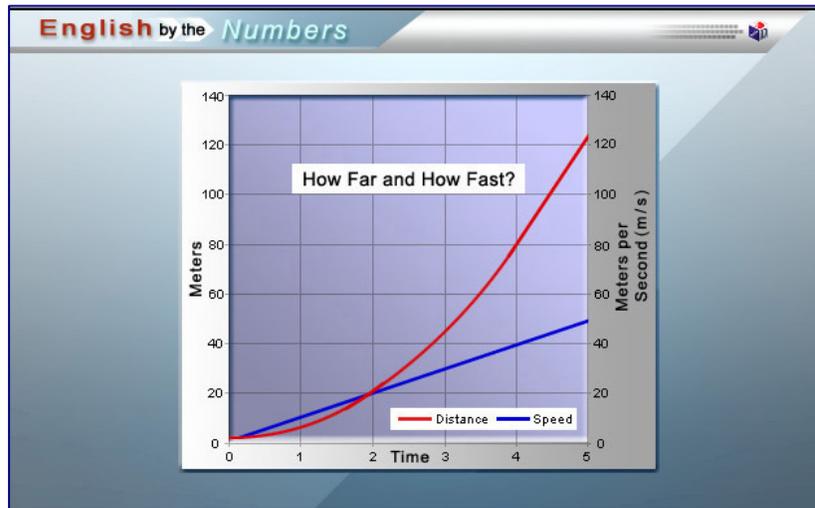
### Unit 2: Operations and Relationships

Mathematical and technical relationships are often presented through formulas such as  $a+b=c$  (*a plus b equals c; c is equal to the sum of a and b*). In this unit you will practice English expressions for describing formulas and other numerical relationships, such as multiples and square roots. You will learn to compare quantities (“Which number is half the sum of the smallest and largest numbers?”) and to talk about differences and percentages (“ten percent less than the largest number”).



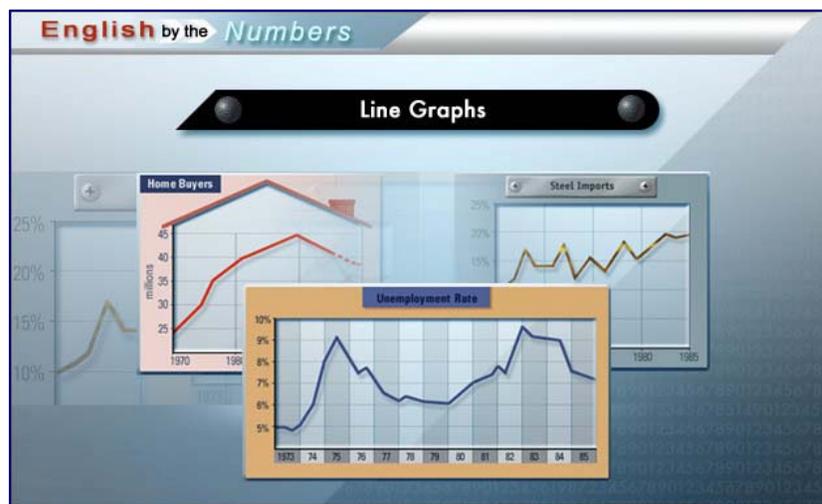
### Unit 3: Related Changes

Business and technical discussions use graphs to show changes through time; for example, the increase in the sales of automobiles or the changes in the average family size. In this unit you will learn expressions for describing increases, decreases, and other changes over time. It will also introduce expressions for explaining how one change is related to another (“X remained fairly constant, but Y increased significantly”).



### Unit 4: Line Graphs

This unit focuses on line graphs, a popular tool in business and technical presentations. You will learn how to describe clearly and concisely the information presented in graphs, describing individual pieces of data (“The rate at the end of ‘79 was about 6%”) as well as changes over time (“Sales dropped sharply between ‘80 and ‘85 and then recovered slightly”). The content of the lessons is based on actual statistics.



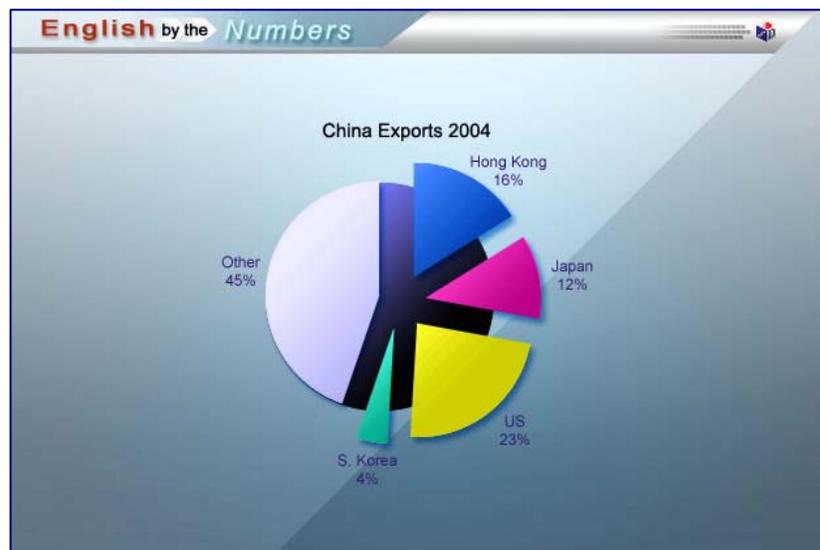
## Unit 5: Bar Graphs

Bar graphs (or bar charts) are very useful for presenting and comparing numerical information. You will learn how to express information from bar graphs (“The U.S. spent just over 5% of its GNP for defense in 1979”) and to make comparisons from the data presented (“Italy’s defense spending was about the same as Britain’s in 1979, but less in ‘84”).



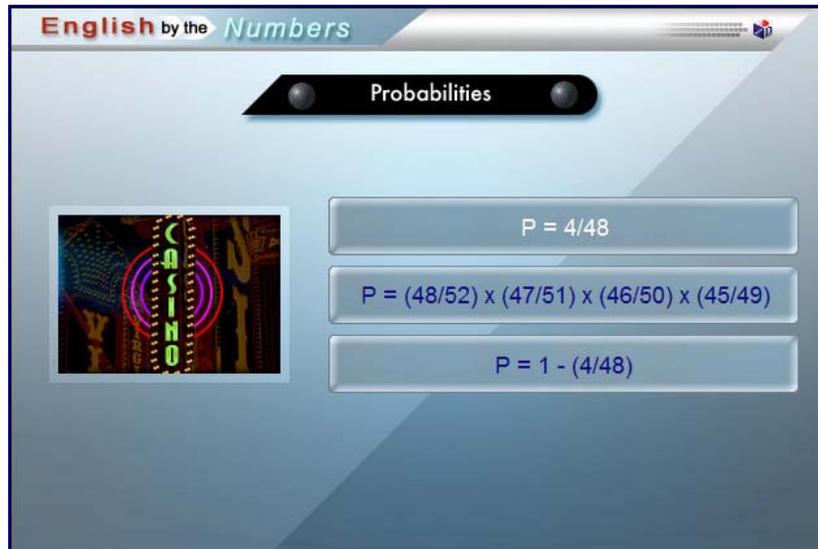
## Unit 6: Pie Graphs

Pie graphs are very useful for presenting and comparing how various parts contribute to the whole. You will learn how to present and answer questions about pie graphs (“express information from bar graphs (“Sixteen percent of China’s imports came from Japan in 2004.”) and to make comparisons from the data presented (“China imported more from Japan than the EU.”)



## Unit 7: Probabilities, Logical Relations, and Review

This section provides language that is useful in technical discussions, academic lectures, and business negotiations, plus a review of previous material. You will study the language of logical relationships (*If X is greater than Y, and Y is greater than Z, which conclusion is incorrect?*), probability (*What is the probability of drawing four cards in a row without getting an ace?*), equations (*This equation gives the gravitational force between two objects of mass M1 and M2 separated by the distance r.*), and changes through time (*The production volume per employee increased from 20 units per employee in 1980 to over 40 in 1990.*).



English by the Numbers

Probabilities



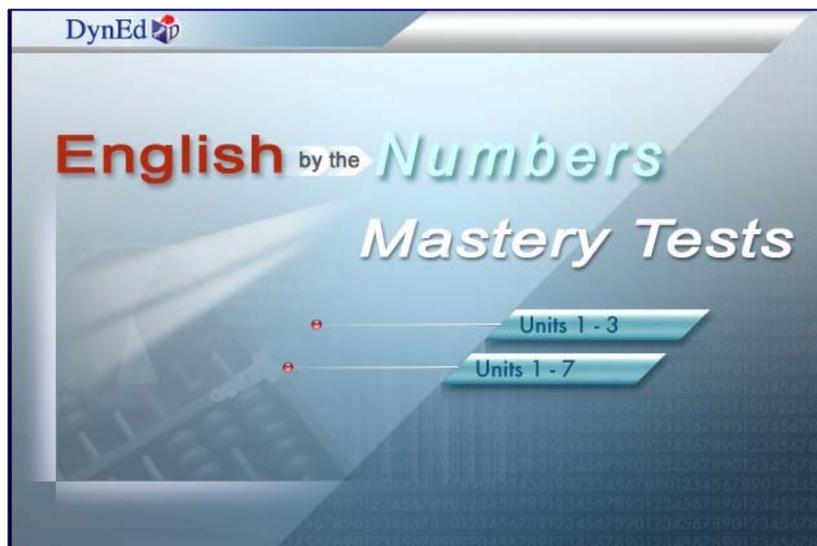
$P = 4/48$

$P = (48/52) \times (47/51) \times (46/50) \times (45/49)$

$P = 1 - (4/48)$

## Mastery Tests

These two Mastery Tests help determine your mastery of the Units. You should try to get a score of 90 or higher. Good luck!



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Mastery Tests

Units 1 - 3

Units 1 - 7

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