ED 010 167 12-29-65 24 (REV)

SOUNDS OF ENGLISH, WRITING SYSTEMS--LANGUAGE CURRICULUM 16, STUDENT VERSION.

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RDR60280 UNIVERSITY OF OREGON, EUGENE
CRP-H-149-28
BR-5-0366-28
-65
EDRS PRICE MF-$0.09 HC-$1.28 32P.

*CURRICULUM GUIDES, LANGUAGE INSTRUCTION, ENGLISH, EIGHTH GRADE, STUDENTS, *STUDY GUIDES, SPEECH, *WRITING, PHONETICS, *ENGLISH CURRICULUM, *LANGUAGE, EUGENE, OREGON, PROJECT ENGLISH, NEW GRAMMAR

A GUIDE WAS PREPARED FOR STUDENTS IN THE EIGHTH-GRADE LANGUAGE CURRICULUM. THE GUIDE CONTAINED INSTRUCTIONS AND EXERCISES APPROPRIATE FOR UNITS ON SOUNDS OF ENGLISH AND WRITING SYSTEMS. BACKGROUND INFORMATION ON ENGLISH SOUNDS (CONSONANT AND VOWEL PHONEMES) WAS PRESENTED. THE UNIT ON WRITING SYSTEMS WAS CONCERNED WITH (1) RELATIONSHIPS BETWEEN SPEECH AND WRITING, (2) TYPES OF WRITING (PICTURE, IDEOGRAPHIC, AND PHONETIC), AND (3) THE HISTORY OF WRITING. QUESTIONS FOR DISCUSSION AND RELATED ASSIGNMENTS WERE ALSO PRESENTED. THE STUDY GUIDE FOR STUDENTS WAS KEYED TO A WRITING SYSTEMS GUIDE FOR TEACHERS (ED 010 158). (WW)

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SOUNDS OF ENGLISH

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WRITING SYSTEMS

Language Curriculum II
Student Version

The project reported herein was supported through the Cooperative Research Program of the Office of Education, U.S. Department of Health, Education, and Welfare.

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SOUNDS OF ENGLISH

Language Curriculum II

Student Version

THE SOUNDS OF ENGLISH

For the foreign student learning the English language, spelling often causes great trouble. But we know that it isn't just the foreign speaker who has difficulty with English spelling. Many native speakers of our language are confused by the seeming lack of reason and order in English spelling. Look at the words cough, through, rough, though, bough, and thought. All contain ough, but each is pronounced in a different way. This may be an extreme example, but we don't have to look very far to find equally puzzling spellings in English. Look at the different pronunciations for the letter e in the words that open this paragraph, especially in the words the, English, language, spelling, and foreign. What sound does e represent in each case?

Just as e and ough can represent several different sounds, the sound sh, as in push, can be represented by at least ten other spellings in our language. Here are a few: sugar, ocean, mention, machine. Can you think of others?

What conclusions can we draw from these observations? It would be accurate to say that a single letter in English frequently stands for more than one sound. It would be equally accurate to say that a single sound in English is frequently represented by several different letters.

What other spellings produce words that sound like these?

1. rain 2. cents 3. bough 4. beau 5. vane

What two sets of sounds do these spellings produce?

1. read 2. bow 3. wind 4. sow 5. present

When a writing system uses only one symbol for each occurrence of a single sound in a language, the writing system is said to be "phonetic." English writing, as we have seen by the various ways of writing the sound sh and the various pronunciations of ough, does not always represent a single sound with a single symbol. But is it unphonetic? Are there some sounds in our language which are always represented by single letters or the same combination of letters? Keep this question in mind as we look now at the sounds that make up our language.

When we write a language, we use symbols to stand for sounds. We have found that the letters of our alphabet--which are really symbols--often have different sounds. Therefore, in order to talk about the sounds of English, we need to find symbols each of which we can all agree stands for only one sound. These are known as phonetic symbols and they are the kind we will be using in this lesson. Many of the symbols used are those used by linguists and those who write dictionaries. To distinguish such symbols from letters of the alphabet we always place the symbol which stands for a sound between slanting lines, / /. Any symbol written this way stands for a sound and you should not confuse it with letters outside the slanting lines, which don't always correspond to a single sound. The word sat, for example, is written /s æ t/,

which tells us how the word sounds, but not how it is spelled. The symbol / æ / always indicates the sound given to the a in sat.

The symbols placed between the lines are called phonemes. The English language contains thirty-eight distinct sounds or phonemes; some languages have as few as eleven and some as many as one hundred-fifty phonemes.

How are the sounds of language made?

Before looking into the sounds and their written symbols, it would be well for us to understand how human sounds are made. We can say that all speech sounds are produced by forcing air through the passages of the throat, nose, and mouth. In the throat there are some cords, known as vocal cords, which produce sound. We can control these cords so that the passage of air through the throat, nose, and mouth can be accompanied by sound or not. And the kind of sounds which we produce depend on what we do with our vocal cords, our tongue, our palate, our teeth, and our lips. Sometimes the passage of air is stopped briefly by the tongue or the lips. This is how the sounds of p, b, t, d, k, g, j, and ch, are produced.

When we permit only limited amounts of air to pass through the teeth and lips, we are able to produce the sounds of v, f, s, z, m, n, wh, h, y, r, and l. Notice that some of these sounds are accompanied by voice and some are voiceless. The sounds which are produced by stopping the flow of air or by restricting it in some way are called consonant phonemes. The sounds which are produced by an unrestricted flow of air are called vowel phonemes.

Let us look first at the phonemic symbols for consonants which are already familiar to you, so that you can get used to phonemic spelling. In the list that follows you will find most of the common consonant phonemes. First you will find the symbol which represents the sound. It is printed between slanted lines, and following each is a word which contains the sound. The spelling of the sound is underlined in the word. Notice that the sound represented by the symbol can sometimes be spelled in more than one way, as in kick, judge, and zoos.

Some of the common consonant phonemes:

1. /b/ as in bib
2. /p/ as in pop
3. /d/ as in did
4. /t/ as in tot
5. /g/ as in gag
6. /k/ as in kick
7. /v/ as in valve
8. /f/ as in fife
9. /j/ as in judge
10. /s/ as in sis
11. /z/ as in zoos
12. /m/ as in mum
13. /n/ as in nine
14. /w/ as in win
15. /h/ as in how
16. /y/ as in yes
17. /l/ as in lull
18. /r/ as in roar

The vowel sounds are made in the throat or mouth. The various vowel sounds are controlled by the shape of the mouth and the tongue and palate.

Some of the common vowel phonemes:

19. /e/ as in pet

20. /i/ as in pit

21. /ə/ as in a2

22. /a/ as in got

23. /ɑ/ as in saw

24. /æ/ as in hat

Exercise 1:

A. The following are some phonemic spellings of words. What words are being represented? Write them in standard English spelling.

Example: /rōz/ rose

1. /jet/
2. /lɔ/
3. /drap/
4. /spōk/
5. /hiz/
6. /gō yō/
7. /flip/
8. /fōn/
9. /sens/
10. /hwip/
11. /wind/
12. /stol/
13. /beg/
14. /jem/
15. /lo/
16. /wilōz/
17. /pets/
18. /jim/
19. /hat/
20. /kredit/

B. What are the phonemic spellings for these English words? Don't forget the slanting lines.

Example: joke /jōk/

1. step
2. fizz
3. saw
4. pin
5. will
6. boat
7. plot
8. froze
9. strict
10. frost
11. guest
12. knit
13. window
14. meant
15. head
16. prince
17. yellow
18. wren
19. ought

There are several consonant sounds in English which cannot be represented by one letter. They require two or more. These are the sounds found in the underlined portion of the following words:

bang, there, thump, cheek, shift, and the sound found in

vision, azure, and leisure.

The following are symbols for the sounds found in these words and also the sound found in vision, azure, and leisure.

25. /ŋ/ as in ring
26. /ð/ as in this
27. /θ/ as in thing
28. /c/ as in chip
29. /ʃ/ as in shed
30. /ʒ/ as in vision

Exercise 2:

Convert these words to phonemic spellings.

1. pitch
2. flesh
3. oath
4. king
5. fishing
6. thought
7. catch
8. with
9. which
10. sew
11. swing
12. then
13. crest
14. fence
15. singe
16. width
17. length
18. popping
19. French
20. British
21. thimble
22. instead
23. those
24. index
25. clothes

Exercise 3:

Write the English words which are represented by the following phonemic spellings.

1. /rōz/
2. /ð is/
3. /wic/
4. /selt/
5. /θ iŋ/
6. /bōθ /
7. /kōt/
8. /speliŋ /
9. /iŋgliš/
10. /cek/
11. /rigiŋ /
12. /hwen/
13. /yelō/
14. /benc/
15. /pikiŋ /
16. /flintstōn/
17. /ic/
18. /ðem/
19. /soiŋ /
20. /ej/
21. /stapiŋ /
22. /eksit/
23. /θ riliŋ /
24. /klōðiŋ/
25. /kōz/

The eight remaining sounds are vowel sounds. Here are five of them:

31. /ē/ as in gate
32. /ī/ as in he
33. /ū/ as in rude
34. /u/ as in put
35. /ə / as in cut, sofa, ever, sir

Symbol #35 needs a little explanation. This symbol will be used to represent a number of very similar sounds such as the vowel sound before /r/ in butter or sir and the vowel sound in syllables that are not stressed. For example the words sir, later, cut, and sofa will be represented in our special phonemic writing system as /sə r/, /lētər/, /kət/, and /sōfə/.

Exercise 4:

Write the English words for the following phonemic spellings.

1. /sē/
2. /ə p/
3. /bī/
4. /sæt/
5. /gud/
6. /cīp/
7. /flə d/
8. /brūm/
9. /stēl/
10. /kə m/
11. /jə j/
12. /grūp/
13. /byūtī/
14. /jə mp/
15. /rēnj/
16. /brīf/
17. /tēk/
18. /plīz/
19. /hwə t/
20. /kwīn/
21. /flēk/
22. /stəg/
23. /cūz/
24. /brīd/
25. /rūt//

Exercise: Convert these words to phonemic spellings

1. trade
2. bulb
3. reap
4. stump
5. look
6. boot
7. upon
8. these
9. beating
10. slope
11. squeeze
12. bathe
13. child
14. chew
15. rouge
16. until
17. sleeping
18. toothpick
19. issue
20. enough
21. suggest
22. straight
23. once
24. bookplate
25. paintbrush

The final group of symbols are called diphthongs. They are symbols for three vowels sounds which begin with one sound and shift to another as we say them. Pronounce cow and find very slowly and you will discover the shift that takes place as you are pronouncing the ow part of cow and the i part of find. The symbols are these:

36. /oy/ as in boy

37. /aw/ as in round

38. /ay/ as in bite

Exercise:

What English spellings should these phonemic combinations have?

1. /ræm/
2. /fayt/
3. /plat/
4. /sawnd/
5. /fɔt/
6. /lo/
7. /pay/
8. /sæk/
9. /lawd/
10. /stap/
11. /raytiŋ/
12. /baw/
13. /rædiš/
14. /æžur/
15. /batl/
16. /baej/
17. /cap/
18. /kofi/
19. /akupay/
20. /rawnd/
21. /bæθ təb/
22. /θ otful/
23. /jə mpθ jæk/
24. /ogə st/

Of course differences occur in the ways people pronounce some words. Not all speakers of English use /æə /, for example. Most Americans pronounce path /pæə /, but some say /paə /. The words merry, Mary, and marry are all the same sounds to a great number of us; but many people especially those in the Northeast, pronounce them /meri/, mēri/, and mæri/ respectively.

Confused and disorderly as English spelling sometimes seems to be, this unit should have shown you that there is some relation between the sounds of English and their written equivalents, and that there is some order to the various kinds of sounds.

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WRITING SYSTEMS

Language Curriculum II

Student Version

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WRITING SYSTEMS

I. Introduction to the Student

Try to imagine what life would be like if we did not have writing and speaking to use in carrying on our daily affairs. Even the simplest tasks would be difficult, perhaps even impossible. Writing and speaking are so much a part of our lives that many of us find it impossible to picture life without them. Yet many of us would also find it difficult to define just exactly what it is we mean when we use the words speech and writing. For some people, speech and writing are somehow mixed together in a more general term which they call language. But we must learn to tell the difference between these two very different inventions of man.

Despite the fact that speech and writing are such important inventions, no one knows for certain who invented either of them. The beginnings of human speech are lost forever in those dark ages of man's earliest life on this planet. Even the discoveries of archaeologists tell us nothing about the speech habits of primitive man. Only since the invention of writing has early man left any traces of his language. The history of man, in some ways, begins with the invention of writing.

Writing may have been invented independently in several parts of the world, or it may have been invented in one place and spread to other tribes from that single point of origin. Whichever may be true, the fact remains that writing is one of man's greatest inventions. Without writing, the study of ancient languages and the study of history itself would be impossible. Only since the invention of the phonograph in 1877 has it been possible to preserve human speech. Writing remains the only source we have for the study of earlier languages. But ancient written records are important for yet another reason. From the study of early writing systems, we can get some idea of how the art of writing has developed.

The first fact that we discover is that writing is a very recent invention. Man has used spoken sounds for hundreds of thousands of years, but he has used writing for probably less than six thousand. Another important fact is that primitive man used many other means of communication besides speech and writing. But, since such things as smoke signals, notched sticks, or similar codes are really neither speech nor writing, we will not discuss them here. What we must do first is discover the exact relationship between speech and writing. Then we must define writing.

Relationship between speech and writing. Human speech consists of sounds. These sounds have meaning only when they are produced in patterns that other human beings have learned to connect with certain objects, actions, or ideas. For example, the sounds represented by the letters d o g are recognized by speakers of English as standing for a particular four-legged animal. If you do not say the sounds in the proper order, the listener will not get that meaning. Sounds such as "Hi diddle

dee dee" do not carry such meanings. They are not in an order that we recognize as having meaning in the usual sense, even though the sounds do communicate some sort of message. Similarly, nonsense words such as glimsy or koob do not have meanings for speakers of English. So each of us learns to produce meaningful sounds and to connect particular meanings with various patterns of sound.

During the course of time, man began to use marks on wood, stone, or other materials to communicate and record his thoughts. He often used pictures and other signs to stand for meanings which he previously had communicated only by means of speech sounds. No one actually knows what the first writing looked like. Probably, though, it was only a series of crudely drawn pictures intended to represent the pictured objects themselves. The first writers painted or carved pictures in the same order that they would have used spoken sounds in telling the story in person. So we could define writing as the conveying of ideas (for example, telling stories) by means of marks that can be seen, made on some kind of suitable material. Speech conveys meanings by using symbols which can be heard (that is, sounds), whereas writing conveys meanings by the use of symbols which can be seen (that is, letters, pictures).

Does this definition mean that all pictures and drawings are to be called writing? Are the primitive cave drawings (some of which date back to 20,000 B.C) considered to be writing? The answer to both questions is no. The early cave drawings, for one thing, are disconnected, and the pictures are not used systematically as the symbols in true writing are. The pictures in the early cave drawings are arranged haphazardly, perhaps in the same way the person remembered seeing them or in the order used in some magic ritual. In other words, the primitive drawings do not show any consciousness of speech itself, as do the drawings in true picture writing.

The definition of writing given above is quite broad. If we wish to define only that type of writing which we use in writing our own language, we can do so easily. Writing is simply a visual representation of speech. Such a definition will become clearer as you read the following section which explains the various types of writing.

DISCUSSION QUESTIONS:

1. What is known about the beginnings of human speech?

2. Who invented writing?

3. Would you consider Indian totem poles as a kind of writing?

4. In your own words, give a definition of writing which would include such things as picture writing.

5. Why is writing considered to be a comparatively recent invention?

Exercise 1

Mark each of the following statements as being true or false:

a. Both writing and speech are inventions of mankind.

b. Speech and writing were invented at approximately the same time.

c. Letters and speech sounds can properly be called symbols.

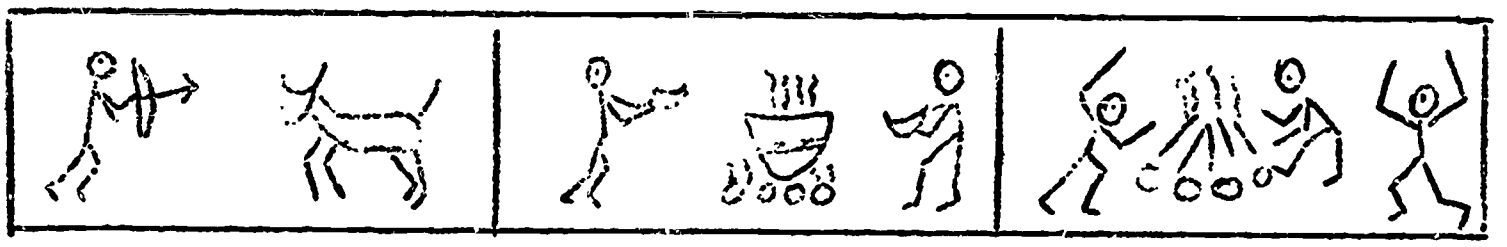
d. The only source of information we have for studying the languages of earlier civilizations is the written records which have survived.

e. Primitive cave drawings are a form of true writing.

II. Types of Writing

A. Picture writing

Picture writing is probably the oldest form of writing used by man. Primitive man might have begun to use pictures of objects and actions in the same ways he would have used spoken sounds to tell a story in person. The writer painted or carved these pictures on wood or stone for the same reasons that prompted him to communicate in other ways. The big advantage of the painted or carved symbols was that the writer did not have to be present to tell his story. In effect, he had overcome many of the limitations of time and space. The pictures told the story for the writer. The reader could decipher the story, no matter what language he spoke, simply by figuring out what the pictures stood for. Unlike the early cave drawings that we mentioned earlier, true picture writing was systematic. It consistently used certain pictures to represent certain objects and actions in setting down a simple story or idea. The pictures were arranged in patterns which showed that the writer was conscious of human speech. Picture writing can be illustrated in the following way:



(Killing) (Eating) (Celebrating)

B. Ideographic writing

The next step in the development of writing probably involved simplifying the pictures used in the writing system. For example, a detailed drawing of an ox was no longer needed to communicate something

about this animal; perhaps a simple drawing which resembled its head would be enough. That is, the idea of the whole object is called to mind by a picture of part of the whole. The following diagram will perhaps show this more clearly:

A second characteristic of ideographic writing was that the simplified pictures took on broader meanings. The ideogram (a simplified picture) could refer not only to the object itself but also to related objects or ideas. For example, a picture of a bowl might have originally stood for simply the class of objects called "bowl." But later, since food is often served in bowls, the picture of a bowl might also be used to refer to "food" or to the act of eating. In the same way, a drawing of the sun () might have originally stood for only that object, but later a simpler sign ( ) might stand not only for the sun but for related ideas such as "heat," "light," or "day." Often the original object might not be recognizable in the sign (the ideogram) used to represent it. For example, "man" might be represented by two lines, as in the following ideogram (). Ideographic writing made it possible for man to express more complex ideas than was possible with simple picture writing. For example, how could he draw a picture of the wind or cold? But he could easily make an ideogram for these things, a symbol that suggested something about the effects of wind or cold.

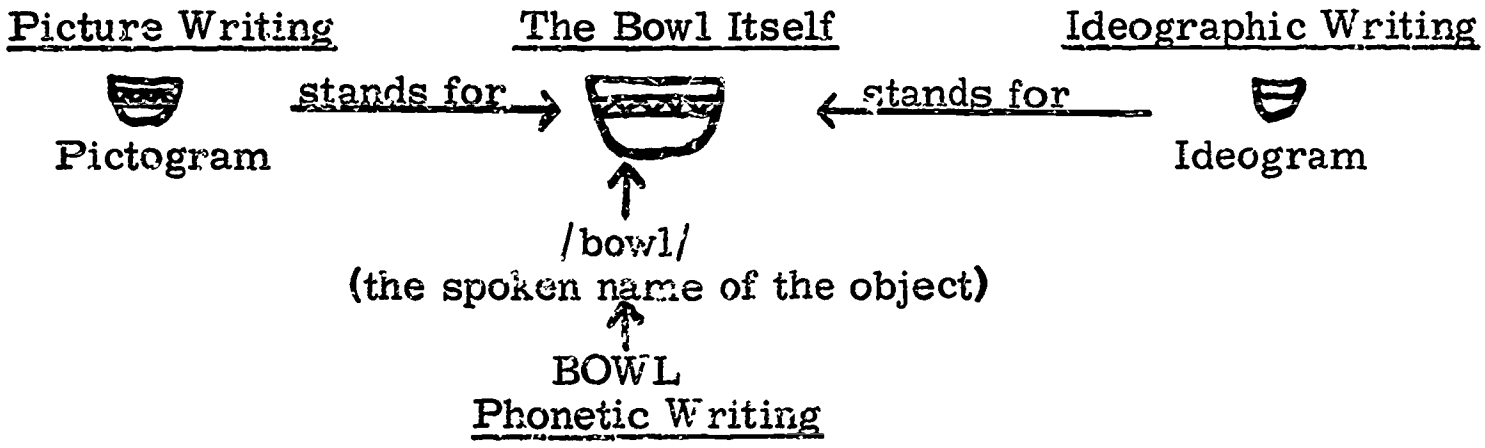
Like picture writing, ideographic writing can be read in any language, since in both systems the symbols stand for the objects and actions themselves, not the spoken names for them.

C. Phonetic writing

The next development in the art of writing is perhaps the most important one. Some of the signs used in writing took on a phonetic value. In other words, some of the signs were used to represent actual sounds in the language of the writer. How this first occurred, we can only guess. Perhaps some signs gained a phonetic value in the same way we use pictures to represent parts of a word in the puzzle which is called a rebus. The spoken names of the pictured objects suggest the name of some other object or action. For example, the word vestry can be suggested by means of two pictures:  vest tree Or the word boatswain can be suggested

by two other pictures:  bow  sun

Although we may never know exactly how phonetic writing began, we do know that this type of writing developed early in the history of the art of writing. In one ancient script, for example, the simplified picture of a man stood for the sounds /bu/, since the name for man in their language was bunushu. Thus any word which contained the sounds /bu/ would have as part of it a simplified picture of a man. In this same script, the picture of an apple stood for the sounds /tu/, because the name for apple in their language was tuffah. In phonetic writing, then, the symbol or sign stands for the sounds in the spoken name of the thing, not for the thing itself. The following illustration indicates how phonetic writing differs from pictographic and ideographic writing:



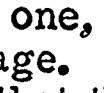
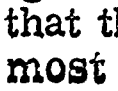
From the above diagram, we see that the symbols used in picture writing and ideographic writing stand for the object itself. In phonetic writing, the symbols (letters) stand for sounds in the spoken name of the object. Phonetic writing, unlike the other two systems, can only be read in the language used by the writer. The reason for this is that in phonetic writing there is a direct connection between the language being written and the symbols being used. Phonetic writing only makes sense when the reader knows the spoken names for the objects and actions which are being written.

Phonetic writing is of two kinds: syllabic and alphabetic. Syllabic writing is based upon the fact that words are made up of one or more groups of sounds which are spoken together. Each of these groups of sounds is called a syllable. Each syllable contains a vowel sound (sounds like those represented in English by the letters a, e, i, o, and u) and one or more consonant sounds which are pronounced with that vowel. For example, the word papa has two identical syllables made up of a consonant /p/ and a vowel /a/. In syllabic writing, a single symbol is used to represent each syllable of the language being written. For a language like modern Hawaiian, a syllabic script would be very suitable, since the language contains only three vowel sounds and eight consonant sounds. Furthermore, these sounds can be combined only in syllables consisting of a single vowel sound preceded by a single consonant sound, such as in the syllables ka, na, hu, la, ni.

Syllabic writing systems are not uncommon. Present-day Japanese is written in what is really a syllabic script. A syllabic script which was used on the island of Cyprus several centuries before the birth of Christ

is a good illustration of a syllabary--that is, a syllabic writing system. Several signs and their phonetic values are found below:

(For sample see David Diringer's Writing, published by Fredrick A. Praeger, Inc., 1962, p. 109.)

Using the above signs, a word such as kono would be written  ; a word like papa would be written  .

Perhaps you would like to experiment with a syllabic script? It is easy to invent one, but you would have difficulties in making one for the English language. Do you know why? Part of the difficulty would come from the fact that there are so many syllables in English--hundreds of them. Also, most of our syllables have more than one consonant sound. If you were trying to invent a syllabic script for English, how would you write a word such as fifths or strength? Both words are single syllables.

Alphabetic writing is the second and most important type of phonetic writing. It has often been described as the most efficient and flexible writing system ever invented. Any language on the earth can be written in an alphabetic script. The principle upon which alphabetic writing is based is that each distinctive speech sound in a language can be represented by a single unchanging sign. The writing which you are now reading is based upon the alphabetic principle.

We can make hundreds of different sounds with our speech organs. However, no single language makes use of all the possible sounds that these organs can produce. Spoken American English has approximately thirty-eight separate and distinct sounds which make a difference in meaning. These sounds can be represented by the following set of symbols:

b - boy	l - lap
p - pat	r - rat
t - tap	w - win
k - king	y - yet
c - chap	h - hope
d - day	i - pin
j - junk	ī - peel
g - get	u - put
f - fan	ū - boot
θ - thin	ȯ - caught, law
s - sin	ə - putt, sofa
š - ship	ė - pet
v - vat	ē - pate
ð - then	æ - that
z - zipper	ä - not
ž - measure	ō - boat
m - man	ay - bite
n - not	aw - pout
ŋ - sing	oy - boy

Have you ever seen this set of symbols before? Where? Besides these separate sounds, other sound features such as stress (accent), pitch (intonation), and juncture (pauses) make up the rest of our English sound system. A perfect alphabet, then, would be one which used a single unchanging symbol to stand for each distinctive speech sound in the language being written. In other words, there must be a one-for-one relationship between the distinctive sounds in a language and the symbols used in the writing system.

In writing your own language, you have probably discovered that our English writing system is not a perfect application of the alphabetic principle. We have only twenty-six letters to represent the thirty-nine distinctive sounds. Some letters stand for more than one sound, and some sounds are represented by more than one letter. The following chart shows some ways in which our writing system does not fit our spoken language[2]

Sound	Written Symbols
/k/	c, k, ck
/t/	t, tt, ed
/d/	d, dd, ed
/z/	z, zz, s
/u/	u, co

Written Symbol	Sounds
s	sit, rise, sure
g	get, gin, rouge
u	tune, unit
c	cite, cute
x	lexical, exist

Learning to use the English writing system requires a great deal of study. But it would take much longer to learn a writing system which contained hundreds or thousands of different symbols. Have you ever read anything about the writing systems used in other countries? Perhaps you would be surprised to find out that not all modern writing systems are alphabetic like our own. The remainder of this unit will deal briefly with the history of the art of writing.

DISCUSSION QUESTIONS:

1. How does true picture writing differ from primitive painting and carving?

2. In what two ways do ideograms (signs used in ideographic writing) differ from pictograms (signs used in picture writing)?

3. Why is it correct to define phonetic writing as "a visual representation of speech"?

4. Of the various types of writing you have studied, which is the most efficient? Why?

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[2] W. Nelson Francis, The Structure of American English (New York, 1958), pp. 448-453.

5. What symbols (other than the twenty-six letters) do you use in writing English?

Exercise 2

1. Complete each of the following statements:

   a. In picture writing, each sign (or pictograph) stands for _____ .

   b. In ideographic writing, each sign (or ideogram) stands for _____.

   c. In phonetic writing, each sign (or letter) stands for _____.

   d. In phonetic writing, each combination of letters which we call a word stands for _____.

2. Which of the following types of writing use signs which have no connection with the spoken language and thus can be read in any language?

   a. Alphabetic writing

   b. Syllabic writing

   c. Ideographic writing

   d. Picture writing

3. Using the special alphabet given on page 3 of this unit, try to write the following words exactly as you pronounce them:

   (example: night -- /nayt/, rough -- /rəf/)

   a. flat -

   b. shape -

   c. tempt -

   d. chick -

   e. not

   f. thought -

   g. black -

   h. thrill -

4. Write other words in which the scund of the underlined letter (or letters) is different from the sound it stands for in the given word.

   (example: sample -- sugar, boys, measure, etc.

   a. character -

   b. that -

   c. get -

   d. cycle -

   e. tape -

   f. net -

III. History of Writing

A. Man's earliest writing systems

Scholars still do not know where writing was first invented or who invented it. What they do know is that no complete system of writing has been discovered which was in use before 3500 B. C. The two oldest complete writing systems which have been found are combinations of ideographic and phonetic writing. Both Egyptian hieroglyphic and Sumerian cuneiform writing have signs which stand for things and actions directly, and signs which stand for sounds in the language being written. It is possible that both of these systems developed out of earlier picture writing systems and passed through a stage of pure ideographic writing, but proof of such development is lacking. Further, no connection has ever been established between our earliest writing systems and the primitive cave drawings and inscriptions. The large gaps in our knowledge of the history of writing may never be fully explained, but the search for new evidence goes on.

Sumerian Cuneiform. The oldest complete writing system now known to man is the one used by the ancient Sumerians. Ancient Sumer was a kingdom which occupied much of tne Tigris-Euphrates Valley, territory which now forms a part of Syria and Iraq. Using modern dating techniques, scholars have placed the earliest Sumerian inscriptions at approximately 3500 B. C. The earliest inscriptions are not completely deciphered, but they appear to be primarily a type of picture writing. Sometime after 3200 B. C., the Sumerians began to write their script in a very special way. Using soft clay tablets as writing material, the Sumerians pressed a sharpened stick into the clay, making wedge-shaped marks. These marks stood for certain objects and actions (ideograms) and also for sounds in the Sumerian language (phonetic signs). Thus the cuneiform script is both ideographic and phonetic, a combination of two kinds of writing. The wedge-shaped marks gave the script its modern name--cuneiform. This name is made from the Latin words cuneus, meaning "wedge," and forma, meaning "form" or "shape." The cuneiform script was used by the Sumerians for many hundreds of years, and it was adopted by several neighboring kingdoms for use in writing other languages.

The ancient Persians were probably the last to use the cuneiform script. They adapted it to their language in approximately 500 B. C. The most recent cuneiform inscription which has been found was written in the first century A. D. The Persian writing was first deciphered in 1848 by an Englishman, Henry C. Rawlinson. Since then, the earlier cuneiform scripts have been deciphered, also. A few of the symbols used in Sumerian writing are shown in the following illustration:

(For illustration see David Diringer's Writing, published by Fredrick A. Praeger, Inc., 1962, p. 38.)

Egyptian Hieroglyphics. The writing system used in ancient Egypt is the second oldest script known to man. Like the Sumerian writing system, the Egyptian script contained a combination of ideograms and phonetic signs. The earliest known Egyptian inscriptions have been dated at approximately 3000 B. C. In appearance, the Egyptian script is quite different from cuneiform writing, since the former is more pictorial in nature. The symbols are often clearly recognizable as pictures of animals, men, birds, or other objects. However, this does not mean that the Egyptian writing was really picture writing. The symbols not only stood for the objects themselves, but many also stood for sounds in the Egyptian language. The name given to the script, hieroglyphics, comes from the Greek words hieros, meaning "sacred," and glyphein, meaning "to carve."

The Egyptian script was carved in stone, painted on wood, and eventually written on papyrus, a kind of paper made from reeds. As the number of uses for the writing system increased, the need for speed in writing brought about changes in the shape of the symbols. This does not mean that the basis of the writing system was changed; only the way of writing the signs was altered. One of the new scripts which de eloped was called hieratic. It is like our own cursive (or "longhand") writing, as opposed to printed letters.

This is cursive writing. This is printscript.

Another variation of the hieroglyphic script was called demotic. This script is comparable to our modern shorthand. All three of the scripts--hieroglyphic, hieratic, and demotic--used both ideograms and phonetic signs, and none of the three ever became a purely phonetic writing system.

The ancient Egyptian scripts were last written in the fifth century A. D. and then lost to mankind. A Frenchman, Jean Francois Champollion, finally deciphered the demotic and hieroglyphic scripts in 1822. One of the greatest aids in deciphering them was a stone slab on which had been written a proclamation in two languages and three kinds of script. The hieroglyphic and demotic sections were written in the Egyptian language, but the third section was written in the Greek language and in Greek alphabetic letters, which scholars already knew how to read. This valuable inscription is called the "Rosetta Stone." It was found in 1799 by a French soldier then serving in Egypt, but the stone is now kept in the British Museum.

Since all three sections of the stone contained the same message, the Greek section was very helpful in the decipherment. Also, certain parts of the Egyptian inscriptions gave valuable clues used in deciphering the remaining portion. For example, Champollion discovered that the names of the Egyptian kings and queens were written phonetically. In other words, the symbols in the names stood for sounds, not for the objects themselves. With this knowledge, he discovered the phonetic values of many other symbols. The inscription representing the name of the king, Ptolemy (Ptolemaios, in Greek), is given below:

(See P. E. Cleator's Lost Languages, New York, 1959, pp. 44, 49.)

Chinese writing. Another very ancient script, similar to the Sumerian and Egyptian scripts, is the one used in China. The earliest Chinese writing dates back to approximately 1500 B.C. This ancient script contains both ideograms and phonetic signs which are combined in several ways. Although the shapes of the symbols have changed greatly, modern Chinese writing still consists of a mixture of ideograms and phonetic signs. Such a writing system is much less efficient than purely phonetic writing, but then changes in writing systems never come about rapidly. The main disadvantage of the Chinese writing system is that the writer must learn a great number of different symbols. Present-day Chinese script contains approximately 8000 characters. How long would it take you to memorize that many separate symbols or letters?

B. Origins of phonetic writing

As you remember from your study of ancient writing, the earliest known writing systems made use of signs which stood for speech sounds. Thus the idea of phonetic writing is a very old invention. The use of symbols to stand for spoken sounds may even have been present in the oldest picture writing of the Sumerians. But the idea of having a writing system made up only of phonetic signs did not appear until later in history. Who were the first people to use a script consisting only of symbols which stood for speech sounds? The lack of evidence makes it nearly impossible to answer that question with certainty.

It is possible that the first purely phonetic writing was syllabic in nature. We have no evidence to prove this idea for certain, but it appears to be a reasonable theory. In syllabic writing, you remember, separate signs are used to stand for each syllable in the language being written. For an example of this type of writing, see the Cypriote Syllabary illustrated on page 109 of Writing, by David Diringer, published by Fredrick A. Praeger, Inc., 1962. Since syllabic writing may have been the direct ancestor of our own alphabetic writing, let us consider briefly a few syllabic writing systems.

One very ancient syllabary, claimed by some to be the prototype (the model or original) of the Alphabet, might have been in existence as far back as 2200 B. C. Found on the site of ancient Byblos, in present-day Lebanon, this script may well be the oldest example of a purely phonetic writing system. The syllabic script illustrated on page 109 of Writing, by David Diringer, was in use on Cyprus from 700 B. C. until the first century A. D. The ancient Persians invented a syllabic script (using cuneiform signs) in approximately 500 B. C. It was, you will recall, the first of the cuneiform scripts to be deciphered. But, as you will learn as you read on, alphabetic writing was in use long before the Cypriote and Persian syllabaries were invented. Alphabetic writing represents a gigantic step forward in the development of writing.

C. Alphabetic writing

For many years, scholars have argued about the origin of alphabetic writing. Several popular theories gave credit for the invention to ancient peoples such as the Egyptians, Babylonians, Assyrians, and many others. In the last thirty years, new discoveries have given us a clearer picture of the early history of the Alphabet.

Origins of alphabetic writing. That our own alphabetic system can be traced back to the ancient Greeks is a fact which nearly everyone knows. It is also commonly known that the Greeks reported that they had borrowed the idea from the Phoenicians. The Phoenicians were a sea-faring people who inhabited the lands in and around present-day Lebanon. But where had the Phoenicians gotten the idea? The territory bordering the eastern end of the Mediterranean Sea, called the Near East, is the place where the history of the Alphabet begins.

Early alphabetic writings have been found in four countries of the Near East: Lebanon, Syria, Egypt, and Israel. The oldest of these scripts (yet undeciphered), dating back to the seventeenth or eighteenth century B. C., was found in Israel. The second oldest, dating back to the sixteenth century B. C., was found on the Sinai desert in Egypt. Another alphabetic script, found in Syria, has been dated at the fourteenth or fifteenth century B. C. The fourth script, dated at approximately the eleventh century B. C., was found at Byblos on the Lebanese coast.

A noted authority on the Alphabet, interprets the newest evidence in the following ways:

(For interpretations, see David Diringer's Writing, published by Fredrick A. Praeger, Inc., 1962, pp. 112-122.)

The Greek alphabet. The ancient Greeks, at some time during the ninth or tenth century B. C., borrowed the North-Semitic alphabet from the Phoenicians and adapted it to their own language. Since the Greek language was quite different from that of the Phoenicians or the early Semites, the Greeks made many changes in the use of symbols. For example, the Phoenicians did not use any symbols to represent vowel sounds. The Greeks used five of the twenty-two letters (A - alpha, E - epsilon, Υ - upsilon, I - iota, and O - omicron) to represent vowel sounds of the Greek language. The Greeks even invented other symbols and combinations of symbols to stand for sounds which were peculiar to their language. The classical Greek script which finally developed consisted of twenty-four letters:

A	N
B	Ξ
Γ	O
Δ	Π
E	P
Z	Σ
H	T
Θ	Υ
I	Φ
K	X
Λ	Ψ
M	Ω

The Greeks, following the custom of the Semitic peoples, wrote

their script from right to left. Later, they used a system called boustrophedon (meaning in Greek "as the ox plows") which involved an alternating order of lines. In boustrophedon, one line was written from right to left, the next was written from left to right, and so forth. An illustration of this system follows:

By the fifth century B. C., the Greeks had adopted the custom which we follow today--namely, writing from left to right and proceeding from top to bottom.

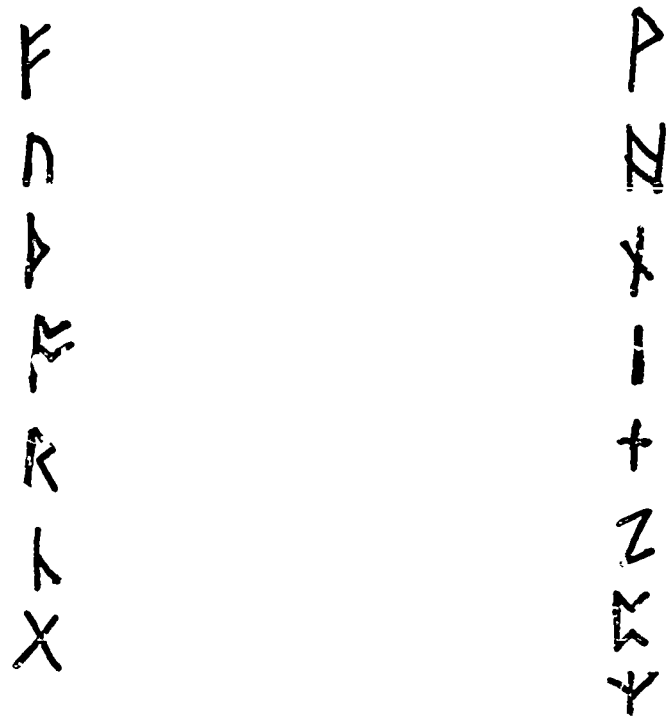
The Etruscan script. Soon after the Greeks had adopted the Semitic alphabet, a group of people called the Etruscans borrowed the script from the Greeks. The Etruscans spoke a language which is still unknown today. They later settled in northern Italy and in time were conquered by the powerful Romans. It is very likely that these Etruscans were the ones who brought alphabetic writing to the Romans. Latin, the language of the Romans, was to become one of the world's most important languages, but today little is known of the Etruscan writing system or their language.

The Latin alphabet. The Romans borrowed twenty-one letters from the Etruscan script. Later (in the first century B. C.), the Romans added two more letters (Y and Z) directly from the Greek alphabet. As the Roman Empire expanded over the lands of western Europe, the alphabetic writing system which they used was also spread. Many different groups of people adapted the script to their own languages. The Latin alphabet consisted of the following twenty-three letters:

A	N
B	O
C	P
D	Q
E	P (the early shape of R)
F	S
G	T
H	V
I	X
K	Y
L	Z
M	

Germanic writing. To the north of the Roman Empire lived Germanic tribes whose languages were only distantly related to Latin. The earliest

writing in any of the Germanic languages was done in a script which we now call the "runic" alphabet. A few runic letters follow:



The script was used very sparingly, but several inscriptions dating back as far as the third century A. D. have been found. In the fourth century A. D., a Germanic language, Gothic, was written in an alphabetic script invented by a Gothic bishop named Ulfila or Wulfilas. This Gothic writing, a translation of part of the Bible, is the oldest writing of any length in any Germanic language.

English writing. Most of the island of England and its Celtic inhabitants had been colonized in 46 A. D. by the Roman Emperor Claudius. During the next four hundred years (until 410 A. D.), the Latin language and writing system were in use on the island, although the Celtic inhabitants probably made little use of either. After the departure of the Romans, the island was invaded and settled by Germanic tribes who came originally from the regions along the northwestern coast of Europe. The languages spoken by these invading tribes are often grouped together under the name of Old English or Anglo-Saxon. From the very early years of this settlement, a few runic inscriptions have been found.

The Latin alphabet was introduced among these new "Englishmen" from two sources: Ireland and Rome. The Irish missionaries of the Catholic Church introduced the alphabet to Anglo-Saxons living in the northern and western parts of the island. Saint Augustine, who came to England from Rome in 597 A. D., introduced the Latin script in the southern and eastern sections of the island. It was the script introduced by the Irish which remained in popular use until the Norman Invasion of 1066. The scribes who first used the Latin alphabet for writing the English language made good use of the existing twenty-three letters and also introduced some changes.

The scribes used the five vowel symbols (A E I O U) and added two more: æ for the vowel sound in words like that, and the letter Ȳ for another vowel sound of Old English that we no longer have in English today. The scribes borrowed two runic letters: "thorn" (ᚦ), for the sound now spelled as th; and "wen" (ᚹ), for the sound now represented by w. Another

symbol used for the sound which is now spelled th was a crossed d (ð). It was called "eth." In general, the scribes did a good job of adapting an alphabetic script to the language of the Anglo-Saxons.

Later developments, most of which came about as a result of French and Latin influence, brought many changes to the English writing system. The runic letters were dropped. The letters th were substituted for "thorn" and "eth;" the letters gh replaced an older letter called "yogh" (ȝ); and for "wen" was substituted a "doubled u." Since the u at the beginning of a word was written as a v, the "double vv" soon became written together as our letter w. Later additions brought the total number of symbols to twenty-six.

Modern English spelling. You may have been asking yourself: If English writing is alphabetic, why do many people have such a hard time spelling English words correctly? Each letter of an alphabet should always stand for one sound, and each sound should always be represented by only one letter. Is this true of American English writing today? For a partial answer to that question, refer to the chart found on page 7 of this unit. Perhaps you can list other examples of the lack of "fit" between our writing system and the sounds of our language.

It is obvious that the writing system we now use is not a perfect application of the alphabetic principle. The following words illustrate how several different sounds are spelled with the same set of letters: though, tough, cough, hiccough, plough, through. How has this situation come about? There are many reasons, but the following are among the most important: (1) Many of the sounds in our language have changed in the last five hundred years, but our spelling has remained nearly the same; for example, the k in "knight" and "knife" was once pronounced, and so was the gh in words like "though" and "through." (2) Thousands of words and their spellings have been borrowed from French. For example, we have taken "bureau," "lieutenant," and "colonel," keeping the French spelling, and in the same way we have borrowed from German such words as "blitzkrieg" and "wiener" and kept their German spelling.

Does this mean that you cannot hope to master English spelling? On the contrary, most people learn to spell English rather well. There are several patterns of English spelling (call them rules, if you please) which give you a lot of help in both reading and writing. For example, the large group of one-syllable words which follow the pattern of consonant-vowel-consonant are very regular in their spelling and pronunciation. You have no trouble spelling or reading words like bit, tap, pal, cub, pin, or can. In contrast to this pattern, there are numerous words of the same pattern which are spelled with an e on the end. Thus you have little trouble with words like bite, tape, pale, cube, pine, or cane. Since many larger words are built from these smaller words, there are a large number of English words which are quite regular in pronunciation and spelling. Can you think of some rules of spelling or pronunciation which show that English writing is not as irregular as it might first appear?

IV. Review

A. Remember that a writing system has no necessary connection

with any particular language. We could just as easily write English using the Arabic alphabet, if there were enough letters and if we could first decide which sound each letter would stand for. Or we could make up our own alphabet for English, using as many letters as there are distinctive sounds in the language. How many are there? Have you ever seen such an alphabet? Where?

B. Not all writing systems are phonetic. What is meant by that is that the symbols used in some writing systems do not stand for sounds in the spoken language. Symbols used in picture writing and ideographic writing stand for the objects, actions, or ideas themselves--not for the spoken names of them. Thus picture writing and ideographic writing can be read in any language.

C. Phonetic writing is the type of writing in which symbols stand for the sounds of speech. In other words, the symbols (letters, signs) used in phonetic writing stand for the sounds in the spoken names of the objects and actions--not for the objects and actions themselves.

D. Alphabetic writing is a type of phonetic writing in which each distinctive sound of a language is represented by one unchanging symbol, and each symbol always stands for the same sound.

E. English writing is alphabetic, but our present way of writing our language does not represent a perfect application of the alphabetic principle. Sound changes and word borrowing (among other things) have produced the problems we have with modern English spelling. English-speaking peoples must spend many hours learning how to use their writing system.

DISCUSSION QUESTIONS:

1. What are the oldest complete writing systems that we know of?

2. How does the writing of the ancient Sumerians differ from the system that we use for English?

3. What is known about the origin of the Alphabet?

4. What is the alphabetic principle?

5. Why is the Greek alphabet so important?

6. Can you think of several words which illustrate the fact that our writing system is not a perfect application of the alphabetic principle? What are they?

Exercise 3

Rearrange the following list of incidents so that they are in proper chronological order:

a. Decipherment of the Egyptian hieroglyphic writing

b. Earliest known example of Chinese writing

c. St. Augustine introduces Latin alphabet to English tribes

d. Greeks borrow the alphabetic script of the Phoenicians

e. Phoenicians adapt the North-Semitic alphabet to their language

f. Earliest known example of Egyptian writing

g. Decipherment of the Persian cuneiform writing

h. Earliest known example of Sumerian cuneiform writing

i. Probable date of the invention of the Alphabet

j. Romans borrow the Greek alphabet from the Etruscans

k. English language and writing system brought to the North American continent

V. Related Assignments

Your teacher has a list of questions which deal with the subject of writing systems. He may want you to write answers to these questions, or he may want you and your classmates to arrive at answers through class discussion. Whichever approach is used, try to back up your answers with facts and illustrations. This unit contains most of the information needed to answer the questions.

Perhaps your teacher will ask you and your classmates to experiment with different types of writing systems. If you are not given any such assignment in class, you might try one or more of the following activities:

A. Invent a group of symbols for one or more of the different types of writing systems: picture writing, ideographic writing, and phonetic writing. Try to write a short message using the symbols you have invented. See if a friend of yours can decipher the script.

B. Try to make several illustrations of the puzzle which is called a rebus. You will find them illustrated on page 4 of this unit. One and two-syllable words are easy, but longer words are difficult to suggest by means of rebuses.

C. Using the alphabetic script given you on page 6 of this unit, write a short message to a friend. It should be easy for him to understand if he uses his own list of symbols and knows the sounds that each symbol stands for.

D. Construct a time-line of the history of writing. One end of the line should be labeled as 3500 B. C., and the other end should

be labeled with the current year. Place all the important dates in the history of writing in their proper places and label them.

E. A man from Mars has just asked you to explain the marks you have been making on paper. He communicates with you by means of a miraculous machine that translates his speech sounds into written English, and this same machine translates your writing into spoken Martian. Explain briefly (taking the Martian as your audience) the basis of English writing. Assume that Martians have no writing system with which you could draw a parallel.