<u>Morphology</u>
Morphology is the study of the ways in which words are formed and the functions of the parts that make up the whole of the word.

Morphemes
Like phonemes, **morphemes** are distinct grammatical units from which words are formed. But unlike phonemes, morphemes have unique meanings. For instance, the words *seen* /sin/ and *lean* /lin/ are distinguished by one phoneme, but the phonemes /s/ and /r/ have no inherent meanings themselves. On the other hand, when you put the phonemes /dɔg/ together, they form a unit that has a different meaning from the unit formed by /kæt/: *dog* vs. *cat*. A morpheme is not the same thing as a word, though. For instance, the string of phonemes /dɔgz/ (*dogs*) means something different from /dɔgd/ (*dogged*) or /dɔgi/ (*doggy*). Furthermore, the /z/, /əd/, and /i/ seem to mean more or less the same thing in /legz/ (*legs*), /rægəd/ (ragged), and /kɪti/ (*kitty*). But /z/, /əd/, and /i/ are not words. The logical conclusion is that each of these words has two morphemes with meanings like "plural", "having the quality of", and "affectionate diminutive". Likewise, it seems logical to conclude that the words *dogs* and *legs*, *dogged* and *ragged*, and *doggy* and *kitty* share common morphemes.

We can identify a morpheme by three criteria:

1. It is a word or part of a word that has meaning.
2. It cannot be divided into smaller meaningful parts without violation of its meaning or without meaningless remainders.
3. It recurs in differing word environments with a relatively stable meaning.

Take the word *straight* /stret/. It is obviously recognised as a word by English speakers. Although we can divide it up in all sorts of ways (*trait* /tret/, *rate* /ret/, *ate* /et/), they all mean something different and leave us with meaningless remainders like /s-/, /st-/, and /str-/. The unit /stret/ occurs with relatively stable meaning in words like *straighten*, *a straight line*, and *straightedge*. Thus it fits the criteria for a morpheme. Likewise, consider the words *bright* (light) and *brighten* (make light). We might conclude that the *–en* in *brighten* is a morpheme with a causative meaning, and we certainly find that elsewhere in words like *deepen*, *soften*, *stiffen*.

A note on how to represent morphemes: Morphemes are normally represented using their most common English spelling surrounded by curly brackets: for instance, the morpheme in the simple word dog is represented {dog}. This is called **morphemic transcription**. Note that it refers to the meaning, not the pronunciation. What happens when the same morpheme has multiple pronunciations, as with the plural *–s*, pronounced /s/ in words like *cats* and /z/ in words like *dogs*? You use the same transcriptions. So *cats* would be represented as {cat} + {-s pl} and {dogs} would be represented {dog}+ {-s pl}. The "-" and "pl" are not strictly necessary, but they may help clarify the meaning. For instance, consider the word "walks" in "He walks in the park". Here the /s/ does not mean "plural"; it means "present tense". In both cases, the morpheme can only be attached to another morpheme, which is what the "-" indicates. By placing these extra markers in your morphemic transcription, you make it more clear. Often this is necessary because some morphemes sound the same but mean something difference. The "plural" and

"present tense" morphemes are one example. Another is the /ər/ sound in *wider* and *baker*, which has two different meanings: "comparative" and "agent" (i.e. "one who does something"). The words would be transcribed {wide} + {-er comparative} and {bake} + {-er agent} In some cases the same morpheme may have two different spellings, as in *baker* and *actor*. The latter would be transcribed {act} + {-er agent}.When performing morphemic transcriptions, you should include as much information as you feel necessary in order to assure that your reader knows which morphemes you are talking about.

Allomorphs
When a single morpheme takes more than one form, as the {-s pl} morpheme does, each form is called an **allomorph**. Here is another example: the indefinite article *a* also occurs as *an* in certain circumstances. There is only one morpheme {a} with two allomorphs /e/ (or /ə/) and /æn/. Most allomorphs are phonemic variants; that is, they are slightly different pronunciations of the same morpheme. In many cases, the choice of allomorph depends on where the morpheme occurs in the word. For instance, in the present tense verb *talks* the {-s present tense} allomorph is /s/, but in *begs* it is /z/. In many cases the choice of allomorph is determined by the presence of another morpheme. For instance, in the word *pronounce* the allomorph of {nounce} (which means something like "say") is /nauns/, but in *pronunciation* it is /nəns/ because of the morphemes at the end of the word. (Many of my students in fact mispronounce and misspell the word *pron<u>u</u>nciation* as *pron<u>ou</u>nciation*. This is an unconscious simplifying of the morpheme into only one allomorph.) Another example is the change of stress in words like *átom* and *atómic* (the " ′ " indicates which syllable is stressed). Not only does the stressed syllable change when you add {-ic}, but some of the phonemes change. The morpheme {atom} in fact has two allomorphs: /′ætəm/ and /ət′ɔm/.

The phenomenon of allomorphy (that is, the existence of multiple allomorphs for a single morpheme) occurs for a large number of reasons. Sometimes the reason is phonological assimilation (as in *cats* and *dogs*). Sometimes allomorphs were created by phonological processes that took place in the past. For instance, {wolf} has the allomorphs /wʊlf/ and /wʊlv/ (in the plural *wolves*). The reason is that sometime around five hundred years ago /f/ became /v/ before the {-s pl} morpheme: hence we have variants like *wife*/*wives* and *leaf*/*leaves*. The process is no longer active, which is why we say the *Toronto Maple Leafs*, not the *Toronto Maple Leaves*. About the same period in history, /e/ and /ɛ/ changed to /i/ in stressed syllables, although we still spell these vowels as if they were pronounced the old way (in words like *see*, *flee*, etc.). However, the change did not occur if the stressed syllable was followed by two more syllables, so we end up with morphemes like {supreme} with two allomorphs /suprim/ and /suprɛm/ (*supreme*/*supremacy*). A similar process also explains the allomorphy in words like *divine*/*divinity* and *pronounce*/*pronunciation*. We could also call the vowel changes in the past tenses of some verbs allomorphs of the normal past tense inflection, as in the forms *talk*/*talked* and *run*/*ran*. So we would transcribe them something like {talk} + {-ed past tense} and {run} + {-ed past tense}.

Components of Words
Every word must have at least one morpheme, but it may have more than one. Morphemes that can stand alone and have meaning as a word are called **free morphemes**. Morphemes that cannot

stand alone but must be attached to another morpheme to have meaning are called **bound morphemes**. Hence there is a major difference between morphemes like{bright}, a free morpheme, and {-en}, a bound morpheme. A **base** is the part of a word that carries its principal meaning. Often it can be a free morpheme, such as {bright}, but it can also be bound. Most bases that are bound morphemes come in words of foreign origin. For example, the {sent} in *consent* and *dissent* has nothing to do with "sending"; it comes from the Latin word *sentire* "to feel".

A word must contain one base and may contain one or more bound morphemes called **affixes**. An affix is a generic term for a bound morpheme that is not a base. If it occurs before the base it is called a **prefix**. If it occurs after the base, it is called a **suffix**. There is also a type of affix called an **infix**, which actually goes in the middle of the base. These are very rare in English, but two important examples are the vowel changes in *man/men* and *run/ran*. Clearly these vowel changes represent plural and past tense morphemes.

Some important observations:
1. Prefixes and suffixes can be piled on top of each other, as in *insubordinate*:

prefix	prefix	base	suffix	suffix
{in-}	{sub-}	{ord}	{-in}	{-ate}

2. Infixes can only occur within the base, which is not possible to represent easily in standard morphemic notation:

singular	plural	present tense	past tense
m<u>a</u>n {man}	*m<u>e</u>n* {man} + {-s pl}	*r<u>u</u>n* {run}	*r<u>a</u>n* {run} + {-ed past tense}

Derivational and Inflectional Affixes

Some affixes have the effect of creating new words, although the end result may or may not have a closely related meaning. For instance, the affix {-en} added to {gold} will produce *golden*, the adjective form of *gold*. The prefix {con} added to {sent} will produce *consent*, whereas the prefix {dis} added to {sent} will produce *dissent*, quite a different meaning! Affixes of these types are called **derivational morphemes**. Sometimes derivational morphemes change the part of speech, converting, say a verb to a noun or vice versa (like *break/breakage*), or a noun to an adjective (like *day/daily*). Sometimes they derive a new word of the same part of speech like *camp/camper*. They can even have feminine meaning, like *fiancé/fiancée* or *baron/baroness*. Sometimes they have diminutive meanings like *dog/doggy*, *cat/kitten*. English has a great variety of derivational suffixes, in part because it has borrowed many from other languages. **Note: derivational morphemes are always prefixes or suffixes**. **Inflectional affixes** (or just **inflections**) are morphemes which supplement the meaning of the base with information about the grammatical significance of the word in a particular sentence. Hence the introduction of the underlined inflections in the following sentences does not change the basic meanings of the words but does give us essential information such as "How many?", "When?", and "How much?".

1. The boy played with the dog/dog<u>s</u>.
2. The boy<u>'s</u> dog played with him.
3. The boy play<u>s</u>/play<u>ed</u> with the dog.
4. The boy is happy/happi<u>er</u>/happi<u>est</u> when playing with the dog.

The inflectional system in English can be summarised as follows:

Inflection	Name	Examples
Noun Inflections		
{-s pl}	Noun plural	dogs, bushes
{-s poss}	Noun possessive	boy's, boys', men's*
Verb Inflections		
{-s 3rd sg pres}	3rd person singular present	runs, catches
{-ing vb}	present participle	discussing
{-ed past}	past tense	chewed
{-d past part}	past participle	chewed, eaten**
Adjective Inflecions		
{-er comp}	comparative	bolder, sooner, nearer
{-est super}	superlative	boldest, soonest, nearest

* English spelling distinguishes the possessive from other {-s} morphemes using apostrophes, but this is not in the pronunciation.
** -en is a very common variation from {–d} in the past participle. We'll talk about the reasons for this below.

Note: inflectional morphemes are always suffixes or infixes. Suffixes that do not have one of the inflectional meanings listed above are not inflectional; they are derivational.

Inflections often have allomorphs such as /s/ and /z/ for {-s pl}, or even the so-called zero-allomorph in words like "two *sheep*" and "two *fish*", where the plural morpheme is not pronounced, or in words like *ran*, where the {-ed past} morpheme is an infix. Some students find it confusing to represent these allomorphs with the more common English spellings *–s* and *–ed*. If you find this confusing, you may omit the spellings and just write {noun plural}, {past tense}, {comparative}, etc. All that is really important is that you be clear which morpheme you are indicating.

Historically, English had many more inflexions, and some of them still occur infrequently. Here are some examples;

1. Noun plurals: *ox/oxen, child/children, man/men, sheep/sheep*.
2. 3rd person singular present: *speaketh, pleaseth*.
3. Past participle: *driven, caught, slept*.

Word Paradigms
The above account of the inflectional system of Present-Day English is a somewhat simplified version of all the inflectional categories found in the language. When looking at the history of the language it is better to examine the inflectional system in terms of paradigms, tables showing all the inflectional forms of a word. Historically, English words had many more inflectional forms than they do today.

Noun Paradigms

Today, nouns may be categorised in terms of **number** (singular or plural) and **case** (possessive or not). A paradigm for all the forms of a noun is called a **declension**, and to write a paradigm for a particular noun is called **declining** the noun. Here is an example of the declension for the words *stone*, *ox*, and *man*.

	Singular	Plural
Not Possessive Case	stone, ox, man	stones, oxen, men
Possessive Case	stone's, ox's, man's	stones', oxen's, men's

Put another way, we can say that the inflections of these nouns are as follows:

	Singular	Plural
Not Possessive Case	--	-es, -en, vowel change infix
Possessive Case	-'s	-es', -en's, vowel change infix + -'s

Today, most nouns follow the pattern of *stone*, but historically many words were declined with different inflections. In Old English, nouns had four or five different cases, not just a possessive one. For more information on this, see the section on "Pronouns" below and the section on "Subjects and Predicates" in the file entitled **Phrases**.

Verb Paradigms

Verbs are categorised in terms of **number** (singular or plural) and **person** (first, second, and third). First person refers to the person speaking (*I* or *we*); second person refers to the person being addressed (*you*); and third person refers to someone or something who is neither speaking nor being addressed (*he*, *she*, *it*, or *they*). A paradigm for all the forms of a verb is called a **conjugation**, and to write a paradigm for a particular verb is called **conjugating** the verb. Here is an example of the conjugation for the words *talk* and *take*:

	Singular	Plural
First Person	talk, take	talk, take
Second Person	talk, take	talk, take
Third Person	talks, takes	talk, take

Put another way, we can say that the inflections of these verbs are as follows:

	Singular	Plural
First Person	--	--
Second Person	--	--
Third Person	-s	--

As you can see, only the third person singular has a separate inflection. Historically, however, there were more separate forms. You can still see this in the verb *be*: *I am*, *you are*, *he/she/it is*, *they are*. There are separate forms for the past tense:

	Singular	Plural

First Person	-ed, infix (talked, took)	-ed, infix (talked, took)
Second Person	-ed, infix (talked, took)	-ed, infix (talked, took)
Third Person	-ed, infix (talked, took)	-ed, infix (talked, took)

Here we can see that all the forms are the same, regardless of person and number.

Verbs can be either **finite** or **non-finite**. Finite verbs are verbs with a present or past tense inflection and generally indicate action occurring in the present or past time. Non-finite verbs are either **infinitives**, verbs with no inflections which are often preceded by the word *to*, or **participles**, verbs which often accompany auxiliaries (see the file entitled **Phrases**). There are two types of participle, the **present participle** (*talking, taking*) and the **past participle** (*talked, taken*). Participles indicate **aspect**: whether the action of the verb is ongoing or completed. The present participle indicates **progressive aspect** (ongoing, repetitive, or habitual action), and the past participle indicates **perfective or perfect aspect** (completed action). The following sentences illustrate how they work.

I talk (present tense)
I talked (past tense)
I am talking (present progressive), I was talking (past progressive)
I have talked (present perfect), I have talked (past perfect)

I take (present tense)
I took (past tense)
I am taking (present progressive), I was taking (past progressive)
I have taken (present perfect), I have taken (past perfect)

Taking all this together, we can say that verbs have five **principal parts**: the infinitive, the present tense, the past tense, the present participle, and the past participle.

Infinitive	Present Tense	Past Tense	Present Participle	Past Participle
(to) talk, (to) take	talk(s), take(s)	talked, took	talking, taking	talked, taken

Adjective and Adverb Paradigms
Adjectives and adverbs have inflections for the comparative (*-er*) and superlative (*-est*). Some words have **suppletive** forms: that is, forms that use a different word: *good, better, best*; *bad worse, worst*. In Old English, the word *ma* "big, great" had the comparative forms *mare* and *mast*. These have become the words *more* and *most*, and some adjectives and adverbs today are made comparative or superlative with these words rather than with inflections.

Pronouns Paradigms
Like nouns, pronouns are declined: that is, inflected for number and case. But, like verbs, they are also inflected for person. For pronouns, Present-Day English has three cases: **subjective**, **objective**, and **possessive**:

First Person	Singular	Plural
Subjective	I	we

Objective	me	us
Possessive	my	our

Second Person	Singular	Plural
Subjective	you	you (older *ye*)
Objective	you (older *thou*)	you
Possessive	your (older *thy*)	your

Third Person	Singular	Plural
Subjective	he, she, it	they
Objective	him, her, it	them
Possessive	him, her, it (older *his*)	their

The subjective case is used for the subject of a verb, and the objective case is used for the direct object or indirect object of a verb and for the object of a prepositions, as the following sentences demonstrate:

I take.
He takes me.
He gives me the book.
He gives it to me.

For more information on subjects, direct objects, indirect objects, and objects of prepositions, see the files entitled **Phrases** and **Five Sentence Types**.

Word Formation
At the end of the day, morphemes combine into the linguistic units we identify as words. Exactly how we identify them as words is something that really isn't known. The nature of the problem is illustrated by variations in English spelling. For instance, *Webster's Ninth New Collegiate Dictionary* lists the words *woodchuck* and *woodcock* as one word, but on the same page lists *wood duck* and *wood louse* as two. Are there any formal criteria for differences in the printed form? In fact, many combinations of free morphemes are written as two words in English where they would be written as one word in German.

For our purposes it is not important to dwell on how we identify words, since most of the time we intuitively identify words. If you want a test which is generally successful, try pausing between potential words. If you can insert a pause without stranding a meaningless (and therefore probably bounded) morpheme before or after the potential word, it probably is a word. There is one way this test yields lousy results. English contains many verbs consisting of two parts: verbs like *call up* (telephone), *keep on* (continue), *take off* (depart). If you separate the two parts, the meaning changes. Although we spell these verbs as two words, they are really one word. The part we spell separately is called a particle. Generally these particles occurred at the beginning of the word (in *forget* and *begin*, for instance) in the early history of English; however, from the nineteenth century onwards words with the particle at the end of the word have developed in large numbers. We'll be looking at these verbs in greater detail later.

Simple, Complex, and Compound Words
A **simple word** consists of a single free morpheme: like *slay*, *flea*, *long*, or *spirit*. **Complex words** consist of either two bound morphemes (*matricide, televise, exclude, cosmonaut*), or a bound morpheme and a free morpheme (*lioness, telephone, eraser, pyromania*). **Compound words** consist of two free morphemes.

Compound words bear a strong resemblance to grammatical constructions consisting of more than one separate word. In fact, they often imply concepts that can be expressed by grammatical constructions:

1. subject + verb   earthquake (when the earth quakes)
2. verb + object   killjoy (someone who kills joy)
3. verb + adverbial   downpour (when something pours down)
4. subject + adjective   high chair (a chair that is high)

Innumerable jokes have been based on word plays which pun on the resemblance of compound words with grammatical constructions consisting of two separate words. Here's one: "So the cannibal chief says to his victim, 'What did you do for a living?' The victim replies, 'I was an associate editor.' The chief answers, 'Cheer up. After tonight you'll be an editor-in-chief'" Normally compound words can be distinguished from grammatical constructions by different stress patterns. For instance, "It was a hard ball" is stressed differently from "They play hardball".

Word Etymologies
We now get to look at the interesting subject of how words are formed historically. Many of you notice that new words are created all the time, but fewer of you probably think about the fact that this has been going on for centuries. What is old now was once new. Some words, including many of our everyday words can actually be traced back some 5,000 years or more (though you have to reverse all the phonological changes that they've been subjected to). In addition, many words in English have been borrowed from other languages like French and Latin. Any good dictionary will give you the origin or **etymology** of a word, whether it goes back to Old English, the earliest form, or whether it has been borrowed from another language.

But English speakers do not rely on the current stock of vocabulary and borrowing from other languages. There are a number of other processes by which new words are created. We'll quickly go through a numbers of them.

1. Borrowing: loanwords as just described.
2. Compounding: we've already discussed this.
3. Derivation: by adding derivational suffixes to word bases, new word can be created. Examples are: *dis-advise, de-plane, tele-play, eco-system, counselor-ship*, and *Mc-Anything*.
4. Invention: some words are totally made up by stringing together meaningless phonemes. Examples are *Kodak, nylon, dingbat, goof*, and *blurb*.
5. Echoism: words whose sound suggests their meaning. Examples such as *hiss, peewee, clang, quack, whisper*. This is often called *onomatopoeia*.

6. Clipping: words created by cutting off the beginning or the end of a word, or both, leaving a part to stand for the whole. Examples are: *lab*, *dorm*, *prof*, *exam*, *plane*, *phone*, *flu*, *fridge*, *sitcom*, *math(s)*. Cf. Also US English *pissed*.
7. Acronymy: *acronyms* are words formed from the initials or beginning sounds of a succession of words Examples are: *MP* (Member of Parliament or military police), *NATO* (North Atlantic Treaty Organisation), and *radar* (radio detecting and ranging).
8. Blending: words formed by fusing two words into one. Examples are: *brunch*, simulcast, *motel*, *smog*.

Here are two more. *Back-formation* is when a word consisting of two bound morphemes has one of the morphemes removed, turning the remaining bound morpheme into a free one. For instance, if you ask, "What does a *feeper* do?" the answer is, "He feeps." Historically, many words have been created like this. The words *peddlar*, *beggar*, *swindler*, and *editor* all pre-existed the verbs *peddle*, *beg*, *swindle*, and *edit*, which were created from them. *Folk etymology* is when a new word is created to explain an historical form of the word which the speaker doesn't understand. For instance, the word *female* comes from French *femelle*, Latin *femella*. It does not contain the morpheme {male}, but rather {fem} (woman) + {ella} (diminutive). However, from the fourteenth century on, English speakers began to associate the string of phonemes /mel/ in this word with the morpheme {male} and so altered the spelling.