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**Consonants and vowels**

**Consonants** are produced by constricting the airstream to various de­grees as it flows through the oral tract. **Vowels** are produced with a smooth, unobstructed airflow through the oral tract.

**The classification of speech sound (consonants in English)**

Speech sounds are classified according to:

**1. The place of articulation**

As the airstream passes through the vocal tract, it may be modified by the movement of the articulators that is by the lips and the tongue obstructing its passage through the vocal tract to varying degrees. This process is called articulation. The obstruction of the airstream may occur at any point in the vocal tract, and is the result of an active articulator moving towards a passive articulator. The active articulators are the lips and the tongue, and the passive articulators are the locations on the roof of the mouth, for example the alveolar ridge, hard palate, etc. according to the place of articulation English consonants are classified into:

**1. Bilabial** sounds are made with both lips. There are five such sounds possible in English: [p] *p*at, [b] *b*at, [m] *m*at, [w] *w*ith, and [wh] *wh*ere.

**2. Labiodental** consonants are made with the lower lip against the upper front teeth. English has two labiodentals [f] as in *fat* and [v] as in *vat*.

3. **Dental** consonants are made with the tip of the tongue between front teeth. There are two interdental sounds in English: [θ] *th*igh and [ð] *th*y.

4. **Alveolar** sounds are made by bringing the tongue and the alveolar ridge (the bony ridge just behind the top teeth) together to create either a stop or fricative:

 [t] **t**ub boa**t**ing boa**t**

[s] **s**ip fu**ss**y gra**ce**

[d] **d**ub bo**d**ing bo**d**e

[z] **z**ip fu**zz**y gra**z**e

[n] **kn**it bo**n**ing bo**n**e

[r] **r**ip te**rr**or tea**r**

 5. **palatal** sounds are made by bringing the blade of the tongue to, or close to, the alveo-palatal area of the roof of the mouth to create fricatives and affricates:

[ʃ] **s**ure vi**ci**ous ru**sh**

[ʒ] **g**enre vi**si**on rou**ge**

[tʃ] **ch**in ca**tch**er e**tch**

[dʒ] **g**in e**dge**r e**dge**

6. **Velar** sounds are created by stopping the airstream by bringing the back of the tongue into contact with the velum:

 [k] **c**ould ba**ck**er tu**ck**

[g] **g**ood ba**gg**er tu**g**

[ŋ] ------ ba**ng**er to**ng**ue

**7**. **Lateral** approximants are made by touching the tongue to the alveolar ridge while allowing the air to pass along one or both sides, as in [l]—in *lack*, *call*, and *callow*.

**8**. **Glides** (**semivowels**) come in two kinds: palatal and labio-velar. **Palatal** glides are made by raising the tongue toward the hard palate, close to where the vowel in *eat* is made. The first sound of *yet*, *yolk*, and *y’all* is a palatal glide, represented phonetically as [j].

**9. Labio-velar** glides are made by rounding the lips and simultaneously raising the back of the tongue toward the velum, close to where the vowel sound of *ooze* is made. Labio-velar glides thus have two places of articulation—they are both labial and velar. The first sound of *wet*, *wall*, and *wink* is a labio-velar glide, represented phonetically as [w].

10. **Glottal**

The space between the vocal folds is the glottis. English has two sounds made at the glottis. The first is easy to hear: [h] as in *high* and *history*.

**2. Manner of Articulation**

So far, we have concentrated on describing consonant sounds in terms of where they are articulated. We can also describe the same sounds in terms of how they are articulated. It refers to manner of articulation. Based on the manner of articulation, English consonants may be grouped into six groups, namely: stops, fricative, affricates, nasals, liquid, and glides.

**1. Stops**

Stops are made by totally obstructing the airstream. Notice that when you say [p] and [b] your lips are closed together for a moment, stopping the air flow. [p] and [b] are bilabial stops. [b] is voiced bilabial stop. [t], [d], [k], and [g] are also stops.

**2. Fricatives**

Fricatives are made by forming a nearly complete stoppage of the airstream. The opening through which the air escapes is so small that friction is produced (much as air escaping from a punctured tire makes a ‘hissing’ noise) [š] is made by almost stopping the air with the tongue near the roof of the mouth. It is a voiceless palatal fricative. [f], [v], [θ], [ð], [s], [z], [S], [Z] are also fricatives.

**3. Affricates**

The affricates are special group of sounds that are formed by combining a stop and a fricative. In English, only one pair of sounds occurs in this category, as in *chain* and *rich* and as in Jane and *ridge*. Notice that in pronouncing, one seems to pronounce [t] following by [S].

**4. Nasals**

In English, the three nasals, [m, n, ŋ], are made with the lips and the tongue in the same respective position as they are for [p, t, k]; however, air pressure does not build up as it does in the stops. Instead, the uvula (the flap that controls the opening to the nasal passage) is open, allowing the air to flow through the nose. In English, the nasals are always voiced. Whereas [m] and [n] may occur at the beginning as well as at the end of a syllable in English, as in *mom* and *nun*, [N] occurs only at the end of syllable, as in *sing*.

**5. Liquid**

The consonants [l] and [r], as heard in *lilt* and *roar*, are called liquid. Both sounds are normally voiced. An [l] sound is formed by touching the tip of the tongue to the alveolar ridge and allowing air to escape to each side. The [r] sound in English is formed by curling the tip of the tongue up behind the alveolar ridge and flipping it forward and upward without actually touching the alveolar ridge.

**6. Glides**

Glides are made with only a slight closure of the articulators. In fact, if the vocal tract were any more open you would produce a vowel sound. [w] is made by rising the back of the tongue toward the velum while rounding your lips at the same time; it is thus classified as a *voiced bilabial glide*. (Notice the similarity in the way you articulate [w] in the *woo* and then [u] vowel in this word; the only change is that you open your lips

**3. Voicing**

In articulatory phonetics, we investigate how speech sounds are produced using the fairly complex oral equipment we have. We start with the air pushed out by the lungs up through the trachea (or windpipe) to the larynx. Inside the larynx are the vocal cords, which take two basic positions.

**1.** When the vocal cords are spread apart, the air from the lungs passes between them unimpeded. Sounds produced in this way are described as **voiceless**.

**2.** When the vocal cords are drawn together, the air from the lungs repeatedly pushes them apart as it passes through, creating a vibration effect. Sounds produced in this way are described as **voiced**.