WHAT IS SOUND?

Sound is made when molecules in the air vibrate. For example, when a tuning fork vibrates, it squashes and expands the air molecules around it. The compression and expansion causes sound waves to form like the one below.

HIGH/LOW PITCH

Ever wondered why screaming has a higher pitch than, I don’t know, not screaming?

When we hear a lower pitch, the sound wave has a lower frequency. This means that the air molecules are vibrating at a slower rate.

When we hear a higher pitch, the sound wave has a higher frequency. This means that the air molecules are vibrating at a faster rate.

SIMPLE/COMPLEX WAVES

The wave below is a simple wave.

When you add two or more simple waves together (bottom left), you get a complex wave (bottom right). The sounds we make with our mouth, using our lips, teeth and tongue, are complex waves.

SPECTROGRAM

Spectro-what? Spectrograms are tools that allow linguists to analyze consonants, vowels, and other properties in greater detail by displaying the frequencies of the speech signal over time.

Right: A spectrogram displaying the vowels in the words ‘bead’, ‘bid’, ‘bed’, and ‘bad’. Notice how they all look very different? The bottom two horizontal lines (or bands) correspond to tongue positions and help linguists identify vowels.

VOWELS & DIALECTS

Why do linguists use special tools to look at vowels? One reason is that many dialects differ in how their vowels sound. Some people pronounce ‘cot’ and ‘caught’ the same way, others pronounce them differently. The same goes for ‘pin’ and ‘pen’. How do you pronounce these sounds?

DIALECT DIFFERENCES

Vowels aren’t the only way dialects differ. In the South, some people say “I might should oughta do it”, and some people in Pennsylvania might say “Those dishes need washed.” Even though these dialects are all part of American English, we can still find many differences!