

This is a very brief summary of how your voice works

Voice production for singing and speaking can be divided easily into three parts: breathing (lungs), voice source (larynx) and resonance (throat and mouth). Breathing is simple, we do it all the time. Normally when we breathe out, or exhale, the air comes out with a whoosh and then a fizzle. If we want to sing, we have to produce a steady flow of air from the lungs. This means we have to use muscles to gently control the movement of the air from the lungs – this is most effective when we use the muscles in the lower belly. You can put your hands onto your tummy, just below your tummy button, and feel this area moving gently in towards your back as you are singing. When you want to breathe in, you can just release the belly muscles, they bounce outwards and enough air will drop into your lungs – you don't need to suck it in.

Voicing happens in the larynx, you can feel this in the front of your neck – it buzzes when you speak. The larynx is a very mobile container made of several cartilages (a bit softer than bone). Within these are the vocal folds – two tiny flaps of membrane about 10mm long in children. As the air comes up from the lungs, through the larynx, these vocal folds collide and wobble. If you sing a middle C, these folds are colliding 260 times a second! The muscles within the larynx move the cartilages around in order to change the length and thickness of the vocal folds. This alters the pitch and the basic voice quality.

The sound coming directly from the larynx is a sort of buzzing noise; in order to refine this into either intelligible speech or beautiful singing we rely on the shape of the throat and mouth, and the position of the tongue and soft palate. These alter vowel sounds and resonant qualities such as brightness or warmth in the tone. If the tongue is raised in the mouth with the lift towards the front, you will create an 'ee' vowel, flatten the tongue and you have an 'ah' or raise the back and you have an 'oo'.

If you purse your lips forward, you lengthen the vocal tract (the resonant tube) resulting in a darker sound; if you widen them in a cheesy grin, you shorten the vocal tract, resulting in a brighter sound (just like the descant and treble recorder have different sound qualities even when playing the same pitch). The soft palate is a mobile plug, it seals the space between the mouth and the nose so that when you swallow, your food goes into your stomach, not into your nose. If you raise it when you sing, you get a bigger resonant space for the sound; if you drop it when you sing, you get a nasal sound (only useful for some French vowels).

Your jaw can open wide for eating and just be soft and loose for singing. You don't need to open it very much – most of the work happens with your tongue. All you need now is the coordination of tongue and lips to make consonants, and you are making complete sense – easy isn't it?