

Level 1 Sounds in isolation

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1 Introduction

As you can see, the phonemic chart (Fig. 1) has three main sections. The vowels are shown in the upper half, monophthongs /mɒnə'fθɒŋz/ on the left, and diphthongs /dɪpθɒŋz/ or /dɪfθɒŋz/ on the right. The consonants /kɒnsənənts/ are shown in the lower half. The colon by five of the vowel symbols indicates length. The box in the top right-hand corner contains stress and intonation symbols.

ɪ	ɪ	ʊ	u:	ɪə	eɪ	ː	ʌ
e	ə	ɜ:	ɔ:	ʊə	ɔɪ	əʊ	
æ	ʌ	ɑ:	ɒ	eə	aɪ	əʊ	
p	b	t	d	tʃ	dʒ	k	g
f	v	θ	ð	s	z	ʃ	ʒ
m	n	ŋ	h	l	r	w	j

Fig. 1: The phonemic chart

Sounds are all produced in the vocal tract. The vocal tract refers to the parts of the body that contribute to the production of vocal sounds: the lungs, larynx, oral cavity (mouth), lips and nose.

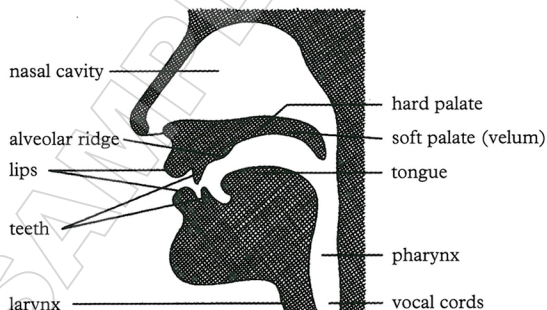


Fig. 2: The vocal tract

To facilitate the learning of the phonemes of standard English, we need to know:

- **how** each sound is produced within the vocal tract (referred to as *manner of articulation*);
- **where** in the vocal tract each sound is produced (referred to as *place of articulation*).

The phonemic chart is arranged to convey much of this information visually.

The first two discovery activities focus on distinguishing monophthongs, diphthongs and consonants. After that they are investigated in more depth.



Discovery activity 1 Distinguishing consonants from vowels

Here we make a first exploration of how and where the sounds are produced, and at the same time distinguish vowels from consonants.

Focusing on your mouth, say these pairs of words slowly, both aloud and whispered, and notice how you make the difference between the two words.

- | | |
|------------|-----------|
| 1 eee /i:/ | key /ki:/ |
| 2 ooh /u:/ | two /tu:/ |
| 3 or /ɔ:/ | nor /nɔ:/ |
| 4 er /ɜ:/ | sir /sɜ:/ |
| 5 ah /ɑ:/ | bar /bɑ:/ |

Commentary ■ ■ ■

In each case the first word consists of a single vowel sound, and the second word consists of the same vowel preceded by a consonant. Notice that the vowel sound on its own has no particular restriction to the air flow, though it does require a particular 'posture' of the tongue, jaw and lips. The second word of each pair begins with some kind of restriction to the air flow which you then release as you move into the following vowel. Most consonants have their own restriction to the flow of air, which is what gives them their unique sound. (The exceptions are at the right of the bottom row of the chart. We'll return to these later.) ■



Discovery activity 2 Distinguishing two kinds of vowel

Now we'll subdivide the vowel sounds. These pairs of words have the same initial consonant, but different vowels following. What happens in your mouth? Observe carefully your tongue, jaw and lips, and notice how you make the difference between the two words.

- | | |
|--------------|------------|
| 1 key /ki:/ | kay /keɪ/ |
| 2 two /tu:/ | toe /təʊ/ |
| 3 nor /nɔ:/ | now /naʊ/ |
| 4 sir /sɜ:/ | sigh /saɪ/ |
| 5 bore /bɔ:/ | boy /bɔɪ/ |

Commentary ■ ■ ■

What I hope you notice is that in the second word of each pair the tongue/jaw/lip posture changes during the sounding of the vowel, while in the first word there is no such movement. If this is what you found then you are observing the general difference in articulation between monophthongs and diphthongs*. The distinction is particularly important in English and has some very practical classroom implications. ■

*These two words are from the Greek for (respectively) one sound and two sounds: *mono* one; *di* two; *phthoggos* sound or voice.

Learning from the discovery activities

The aim of the first two discovery activities is to make sure that you have noticed *in your own vocal tract* the difference between consonants, monophthongs and diphthongs. If you are uncertain about this distinction you could study Fig. 3, or go back over the discovery activity.

	WHERE	HOW
Monophthongs	The distinguishing quality of each vowel is produced by the shape and size of the resonant space in the mouth. This is controlled by the position and shape of the tongue, lips and jaw.	There is no obstruction to the escape of air through the mouth, and they are all voiced, ie the vocal cords vibrate in the air flow.
Diphthongs	As for monophthongs the distinguishing quality is produced by the tongue, lips and jaw. The difference is that there is one mouth posture at the beginning of the vowel sound, and another at the end. The resulting glide between these two tongue and lip positions gives the diphthong its characteristic 'two-sound' quality.	As with monophthongs there is no obstruction to the escape of air through the mouth, and they are all voiced, ie the vocal cords vibrate in the air flow.
Consonants	The restrictions to the air flow that make the characteristic consonant sounds are made at one of the points of contact between the various speech organs such as tongue, teeth, lips, roof of mouth, etc. All consonants involve some sort of restriction to the air flow except /w/ and /j/.	Restrictions to the air flow can be made in various ways, each giving a different characteristic sound. Restrictions can be produced by friction applied to the air flow, or by a momentary blocking of the air flow followed by a sudden release, or by diverting the air flow through the nose. The use of voicing and unvoicing also characterizes consonant sounds.

Fig. 3: The *how* and *where* for monophthongs, diphthongs and consonants

In general the aim of each discovery activity is to experience the auditory, visual and physical aspects of sounds. To make this experience more vivid there are three kinds of feedback you can give yourself in the discovery activities:

- kinesthetic feedback: the internal physical sensation of touch and of muscle movement in your throat, mouth, tongue and lips, etc;
- auditory feedback: what you hear, externally through the air, and internally through your head (you can enhance the latter by blocking your ears with your fingers when you speak);
- visual feedback: any physical movement connected with the production of the sound that you can see in yourself or in others (it is very helpful to have a pocket mirror available).

You can also deepen your observations in each activity by making use of three kinds of voicing, each of which reveal different aspects of articulation:

- speaking aloud;
- whispering;
- mouthing silently.

2 Vowels: monophthongs

In the production of vowel sounds, the vocal tract is open so that there is no obstruction to the air flow escaping over the tongue. The characteristic sound of a vowel depends on the shape and size of the resonant space in the mouth. This is determined by:

- the horizontal tongue position (front–center–back);
- the vertical tongue position (high–mid–low);
- the lip position (rounded–neutral–spread).

And there is a fourth characteristic of vowels which is not dependent on tongue or lip position:

- the typical length or duration of the vowel (long–short).

In this section we'll examine these four variables in turn, and through the discovery activities you will be able to see how you are using these variables when you make vowel sounds. This is important if you want to build up your repertoire of precise and positive techniques for helping learners to shape or reshape their vowel sounds. You will also see how these variables are incorporated in the design of the chart.

The horizontal tongue position



5

Discovery activity 3 Horizontal tongue position

Say /i:/ as in *tea*, and now /u:/ as in *two*. Alternate the sounds /i:/ ... u:/ ... i:/ ... u:/ .../. Try this slowly at first and then more rapidly. What internal physical movements do you notice? What do you hear? What can you see in a mirror? It may help you to focus attention on the internal movement if you whisper rather than say the sounds aloud.

Try the same thing with /e/ as in *pen*, and /ɔ:/ as in *door*, alternating them /e/ ... ɔ:/ ... e/ ... ɔ:/ .../. With these two sounds the jaw is a little more open than before, and the tongue correspondingly a bit lower. What movement does your tongue make as you slide between these two sounds?

Finally, try the same activities with the pair /æ/ as in *cat*, and /ɒ/ as in *pot*, alternating them /æ/ ... ɒ/ ... æ/ ... ɒ/ .../. The tongue is even lower in the mouth and the lip position is more open, but you will still be able to notice the horizontal forwards and backwards movement of the tongue.

Commentary ■■■

You probably notice two distinct areas of movement: the movement of the lips from a spread position to a rounded position, and the movement of the tongue sliding backwards and forwards in the mouth. For the moment it is the tongue movement we are interested in, and it will help if you try to distinguish between the internal sensations of the tongue and the lip movement.

The next discovery activity helps you to mask off the sensation of lip movement. ■