

A Sound Track to Reading

Facial Diagrams for Teaching 44 English Phonemes





























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October 6, 2019









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A Sound Track To Reading: Phoneme Chart with Key Words

26 Basic Consonant Sounds

 p	 wh	 f ph ff	 th	 t -ed	 s c ss	 sh -ti- -ci- -si-	 ch tch	 k c ck	 h
 b	 w	 v	 th this	 d -ed	 z s	 zh -si- -su-	 j g -ge	 g	
 m				 n kn				 -ng  -nk	
	 qu /kw/			 l ll	 r wr	 y y Yak		 X = /ks/	

18 Basic Vowel Sounds

Short Sound Rule 1	 a ¹	 e ¹ ea ²	 i ¹	 o ¹	 u ¹	<h1>Diphthongs</h1>			
Long Sound Rules 2 & 3	<u>a</u> te a ² a-e ai ay	<u>e</u> at e ² ee -e ea ¹ -y	<u>i</u> ce i ² i-e igh ie -y	<u>o</u> ld o ² o-e -o oa ow	<u>u</u> se u ² u-e ew				
Third Sound Rule 4	<u>a</u> ll a ³ ar au aw alt			<u>o</u> to o ³ oo	<u>u</u> put u ³ oo	Murmur Diphthongs	 ar	 or	 er ir ur

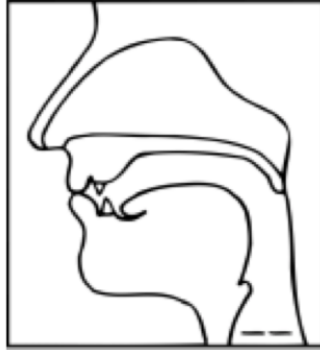
26 Basic English Consonants Sounds

Group 1: Bilabial Consonants

p Press lips together tightly, then release a **voiceless** puff of air. (aspirated bilabial stop)

pup pig pay
support
rope

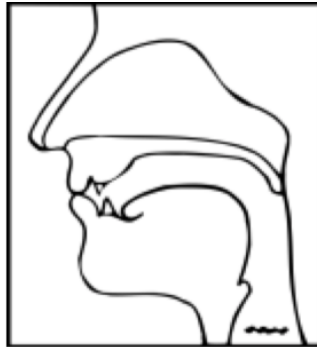
pay bay
pole bowl
cap cab
cop cob



b Press lips together tightly, then release as **voiced** puff of air. (voiced bilabial stop)

bed bear **be**
rabbit robe

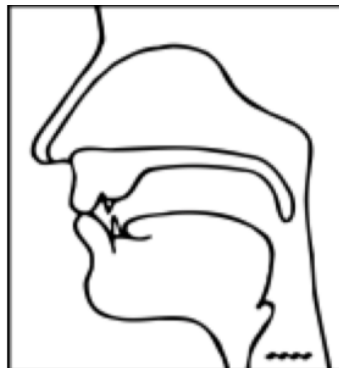
pay bay base vase
pea be boat vote
cap cab rip rib
cop cob rope robe



m Put lips together and release the **voiced** stream of air through the nose. (bilabial nasal continuant)

mop monkey **moon**
summer same **comb** palm

mail nail me knee mine nine
say same tie time came cane



Group 2: Bilabial Fricatives (Continuants) Consonants

wh /hw/ Make the lips round, as for a kiss or to blow out a candle. Release a strong, **voiceless** stream of air.

whip wheel when

wear where
weather whether
witch which



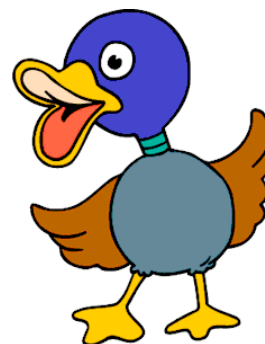
W Make the lip round, as for a kiss or to blow out a candle. Release a steady **voiced** stream of air. (also called a glide.)

web wagon wet queen

wear where
world whirled
wine whine



qu This is a consonant blend k /kw/. There is no separate facial diagram since there are no new sounds. **quack queen quick quail quarter quart**



Group 3: Labiodental Fricative (Continuants)

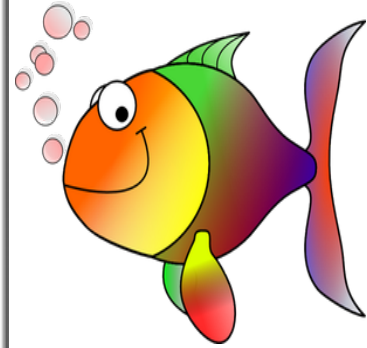
f Put the upper teeth firmly on the lower lip and force out a **voiceless** stream of air

fish fan foot
phone suffer

life enough

face vase feel veal
fine vine few view

safe save leaf leave
proof prove



V Put the upper teeth firmly on the lower lip and force out a **voiced** stream of air. (voiced labio-dental fricative.)

van valentine very
of have **S**tepen

face vase feel veal
fine vine few view
say save way wavesafe
save leaf leave

half have proof prove



Group 4: Tip Dental Fricative

th¹ Put the end of the tongue between the upper and lower teeth and release a **voiceless** stream of air.

thumb three think

sank thank sink think sick thick
sing thing some thumb

six sixth seven seventh eight eighth
use youth pass path mouse mouth

force fourth gross growth



th² Put the end of the tongue between the upper and lower teeth and release a **voiced** stream of air.

this the bathe

they day thee d thy die
though dough those dose

bay bathe tea teethe tie tithe

low loathe sue sooth
they say thee see that sat



this

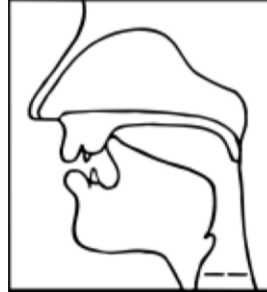
Group 5: Tip Alveolar

t Put the end of the tongue firmly against the roof of the mouth (not on the teeth) and then suddenly release it, letting a **voiceless** stream of air escape. (voiceless aspirated alveolar stop)

tent top to button date asked
debt indict yacht receipt
might

tie die time dime
 toe dough to do
 ray rate be beat

mate made seat seed
 right ride coat code



d Put the end of the tongue firmly against the roof of the mouth (not on the teeth!) and then suddenly release it, letting a **voiced** stream of air escape. (voiced aspirated alveolar stop)

duck day sudden made moved

(See minimal pairs above)

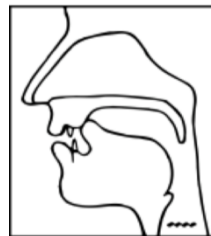


n Open the mouth. Put the tongue high up on the roof of the mouth, with the sides of the tongue touching the teeth. Release a **voiced** stream of air through the nose. (nasal alveolar)

nest night funny knife
sign pneumonia

Wednesday **mnemonic**

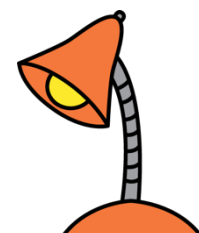
nail mail knee me night might
 pay pain bow bone
 cane came



l Make the tongue hard. Put it very firmly on the roof of the mouth, high above the teeth. Let a **voiced** stream of air escape around its sides. (voiced lateral continuant. Also called liquid)

lamp leaf long tall mile

late rage lead read low row
 ray rail he heel my mile
 mole more stole store

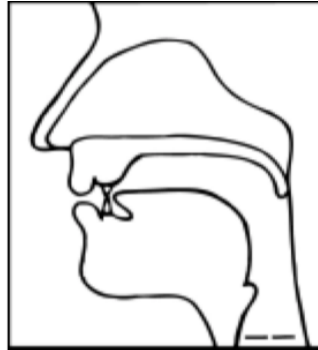


Group 6: Tip Alveolar Fricative (r is a voiced retroflex glide)

S Put teeth together, edge to edge. Keep the tongue flat and release a **voiceless** stream of air. Do not let the tongue touch the teeth.

sun saw sea glass base city ice
science **p**salm **s**word waltz

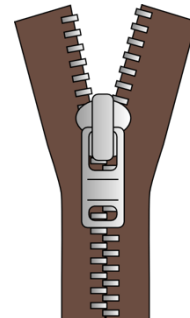
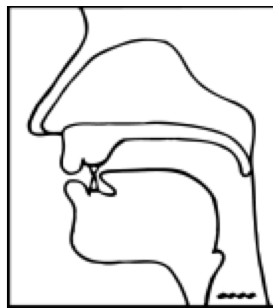
sea z seal zeal sink zinc
sip zip sue zoo
bay base knee niece



Z Put the teeth together, edge to edge. Keep the tongue flat and release a **voiced** stream of air. Do not let the tongue touch the teeth.

zipper zebra zero jazz
doze easy raise scissors
xylophone

(See minimal pairs for s.)



ŕ Put the tongue exactly as for l, but do not touch the roof of the mouth. Or, make an l and break the contact with the roof of the mouth. Let a **voiced** stream of air escape. (called liquid)

ŕg rabbit red correct more write
rhyme

late rate lead read light right
lo row foal for mole more
stole store oval over

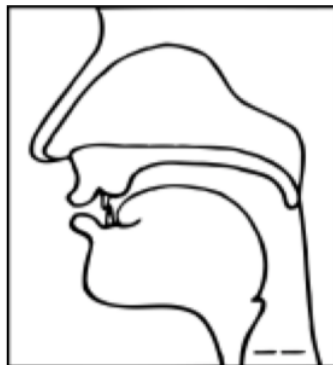


Group 7: Blade Alveolar Fricative (y is a liquid)

sh Put the front teeth together, arch the tongue and release a **voiceless** stream of air.

ship shoe sugar nation machine
 crucial expansion impression
 anxious conscious

sea she sigh shy so show
 sue shoe sip ship
 chop shop chew shoe chip ship
 cheap sheep chair share
 delusion dilution pleasure pressure



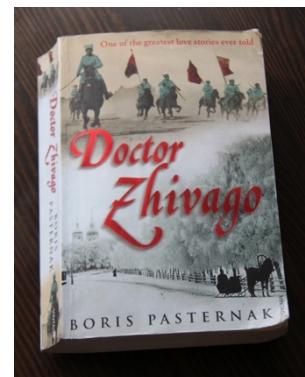
zh Put the teeth together, arch the tongue and release a **voiced** stream of air.

Zhivago television beige vision seizure
 pleasure

composer composure
 Caesar seizure

notion erosion
 vicious vision

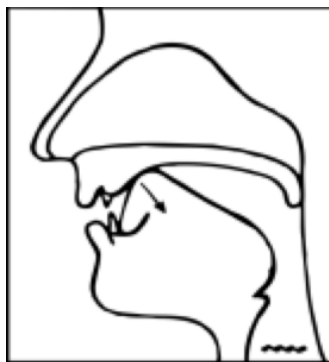
pressure pleasure
 major measure



y With the mouth open, raise the middle of the tongue to the roof of the mouth. Release a **voiced** stream of air. (Also called a glide, and classified as liquid)

yak yard yes onion

oak yoke ear year am yam
 ram yam rear year rung young
 jet yet jeer year jell yell
 joke yoke juice use



Group 8: Blade Alveopalatal Fricative

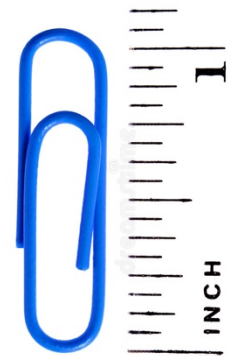
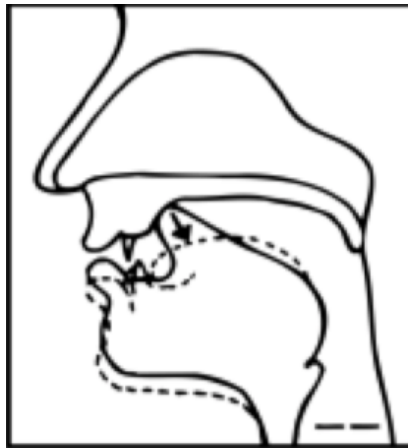
ch Put the tongue firmly against the roof of the mouth, as for the t, then quickly move the tongue into the arched position for sh. Release a **voiceless** puff of air and drop the lower jaw slightly. (voiceless blade alveopalatal fricative, also called an affricate)

inch cherry **check** nature **witch** cello

chop shop chew shoe
chip ship cheap sheep
e each be beach
tea teach pea peach
cheap jeep cheap jeep

choke joke chin gin

chest jest cheer jeer

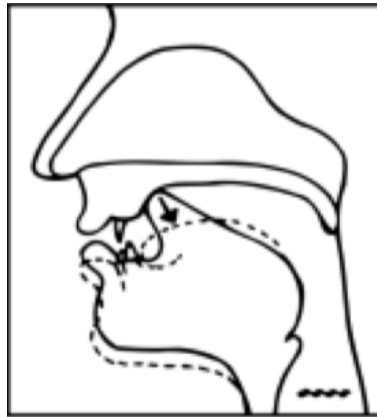


j Put the end of the tongue firmly against the roof of the mouth, as for d, then quickly move the tongue into the arched position for zh. Release a **voiced** puff of air and drop the lower jaw slightly. (voiced alveopalatal fricative, also called an affricate)

jet jar **jump** **gin** graduate **rage**

cheap jeep choke joke

chin gin chest jest
a age pay page ray rage
way wage say sage
gale jail gear jeer get jet



Group 9: Back Velar Stops (ng is a back velar nasal continuant)

k Put the back of the tongue up until it touches the soft palate and stops the stream of air.
Release the stop with a little **voiceless** puff of air.

kid **key** **keep** **candle** **account** **queen** **school**
sack **walk** **make** **ache** **khaki**

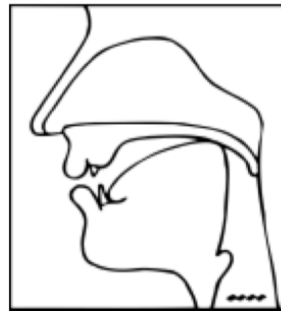
came game coat goat cold gold
come gum could good back bag
rack rag tack tag sack sag



g Pull the back of the tongue up until it touches the soft palate and stop the stream of air.
Release the stop with a little **voiced** puff of air.

gum **goat** **good** **foggy** **guest** **ghost**

came game coat goat cold gold
come gum could good
bag bang gag gang wig wing
buck bug muck mug duck dug



ng Put the back of the tongue up until it touches the soft palate at the back of the mouth, the same as for k and g. Release a voiced stream of air through the nose to produce the resonance of a bell's "ding-dong." (Note: **nk** is /ngk/ as in **bank** **blank** **tank** **sank**)

ring **swing** **sing** **sang** **song**
tongue
anchor

bank **tank** **sank** **blank** **bunk**
skunk **trunk** **plunk**



X X is a combination of K + S. /ks/ See facial diagrams for k & s.

box **fox** **tax** **wax** **fix** **mix**



Group 10: Voiceless Glottal Continuant

h Open the mouth wide and release a **voiceless** stream of air. The lips and tongue are usually shaped by the following vowel.

hat horn whole

is	his	it	hit	air	hair
ear	hear	old	hold		
am	ham	at	hat	as	has
all	hall	and	hand		
a	hay	e	he		
o	hoe	u	hue		



18 English Vowel Sounds

5 Short Vowels: First Sound

Rule 1: If there is only one vowel in a word or syllable and it comes before a consonant, the vowel is usually short.

-a- Short ă. The mouth is open and relaxed. The tongue has a low arch in front.

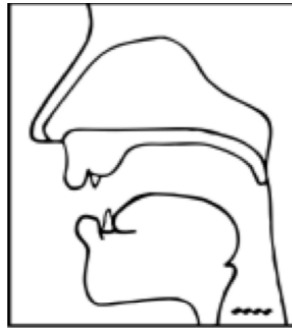
cat apple at laugh half

bat bait hat hate mat mate

fat fate rat rate

sack sick lack lick tack tick

pan pen tan ten than ten



-e- Short ě. The mouth is open and the lips are relaxed. The tongue has a low arch.

Eskimo bed exit end many said says

guest friend feather

pen pine den dine men mine

then thine pen pin ten tin

bed bead l ed lead red read

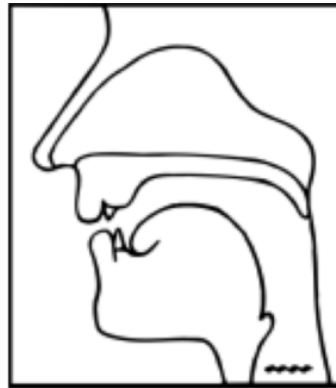
pen pan ten tan men man



-ĭ- Short ĭ. Make a little smile with the mouth slightly open. The tongue is arched, but not as high as for /ē/.

Indian fish it hymn women happiness

dip deep lip leap rip reap
 ship sheep chip cheap
 in an pin pan tin tan
 fin fan bin ban
 bid bed rid red lid led
 did dead hid head pin pen



-O- Short ō. The mouth is open about half way and the lips are relaxed. The tongue is low, flat and slightly pulled back.

ostrich top ox off father

cot cut hot hut not nut
 rot rut shot shut box backs
 rocks racks locks lacks
 hop hope mop mope sop soap
 pop pope cop cope



-U- Short ŭ. The mouth is open the width of a pencil and the lips are relaxed. The middle of the tongue is very slightly arched. All muscles are relaxed. (also called schwa /ə/)

umbrella duck up ago son does blood cousin

duck dock luck lock suck sock
 stuck stock shuck shock
 hut hat cut cat but bat rut rat
 sun sin ton tin fun fin done din



5 Long Vowels: Second Sound

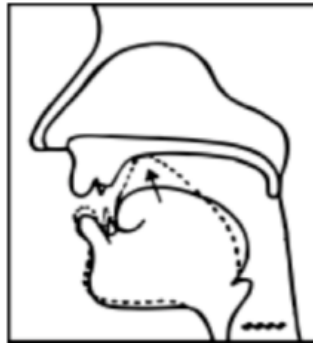
Rule 2: If there are two vowels in a word or syllable, the first vowel is usually long and the second silent. (Regular Vowel Digraph and Magic e)

Rule 3: If there is only one vowel in a word or syllable and the vowel comes at the end, the vowel is usually long.

a-e Long ā. The lips are relaxed and the mouth about the width of a pencil. The middle of the tongue is arched and moves to the roof of the mouth.

āte cake ate aim day they steak beige gauge
label maker baker

rain ran pain pan main man cane can
sail seal rail real pail feel fail feel
bait bet wait wet ate let mate met



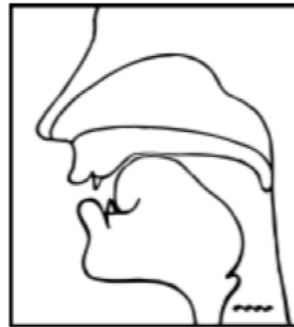
āte

e-e ee Long ē. Smile broadly with the teeth almost closed. The tongue is arched in the middle high enough to touch the upper teeth at the sides. The tongue is hard and the muscles of the mouth are tense.

ēat tree eel eat even people key field
receive baby machine phoenix be cedar

eat it feet fit beat bit seat sit heat hit

feed fed read red lēad lēad bead bed seed said
be bay me may we way see say thee they

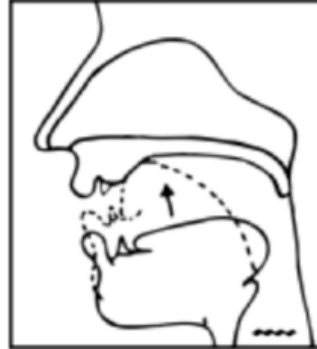


ēat

i-e Long ī. The mouth is half open with relaxed lips. The tongue is low and flat. As the mouth closes slightly, the lips are pulled back into a broad smile. The tongue moves forward in a frontal arch, high enough to touch the sides of the upper teeth.

five by **buy** **bye** **lie** **eye** **aisle** **night**
guide **island** **height** **tiger**

light let might met night net bite bet
 by be my me pie pea high he
 by bow my mow high hoe



īce

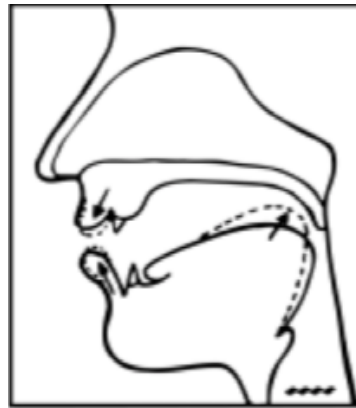
O-e Long ō. The mouth is half open and the lips are round and tense. Arch the tongue slightly at the back, then move it farther back and up, while tightening the rounded lips.

old **rose** **note** **own** **toe** **throat** **shoulder**
though **bureau** **yeoman** **open**

coal call hole hall bowl ball foal fall
 soak sock poke pock joke jock cloak clock
 boat but coat cut note nut
 goat gut wrote rut

Regular digraph: door floor

or may be viewed as a combination of ō + r.



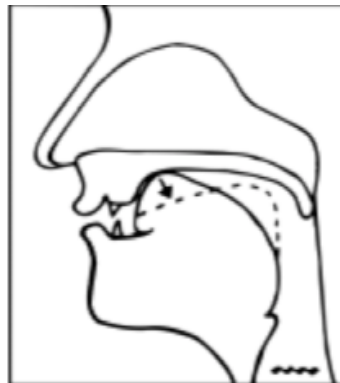
ōld

U-e Long ū. The mouth is slightly open and the lips are a little rounded. The tongue is arched in the middle and touches the hard palate. As the lower jaw drops slightly, the tongue is arched toward the back of the mouth. (The *American Heritage Dictionary* symbol is yōō)

use **mule** **use** **you** **hue** **few** **feud** **view** **beautiful**
Lucy

use ooze fuel fool feud food

hues whose beauty booty
 muse maze pews pays hues haze fuse phase
 fuel foal mule mole cute coat mute moat



ūse

Third Sound of a, o, u

a³

Rule 4: If an a is followed by u, w, r, ll, or lt, in the same syllable, it often has the third sound of a. (Italian ä).

au aw ar all alt. The lips are slightly rounded, but relaxed. The mouth is half open. The tongue is low and pulled back so that the back is higher than the front.

all saw awe author talk all
bought caught cough car

call coal fall foal ball bowl

hall hole mall mole dawn done
gone gun fawn fun pawn pun

It may be viewed as a combination of aw + r.

car r are far star arm farm art heart cart



all

o³

OO Long oo /oo/. The lips are round and tense, as if ready to whistle. The tongue is arched in the back high enough to touch the sides of the upper teeth. Irregular Digraph.

to moon school soon boot
through too zoo

woed would shoed should
stewed stood

to toe do dough
who hoe shoe show

through throw ooze use
fool fuel food feud



o

u³

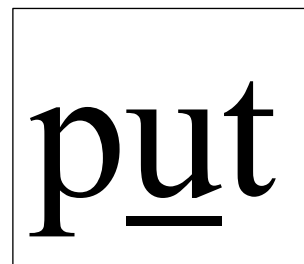
OO Short oo /oo/. The mouth and lip muscles are relaxed. The tongue is arched high in the back, but not enough to touch any teeth. Irregular Digraph.

put book could woman

would wooed could cooed

should shood stood stooed
book buok look luok

took tuok shook shook
fuoll faoll buoll baoll
wooll waoll puoll Pauol



5 Diphthong Sounds

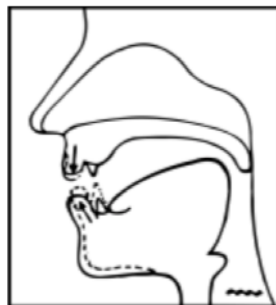
2 Plain Diphthongs

OW¹ OU The mouth is half open. The lips are slightly pulled back. The tongue is low and a little pulled back. As the mouth closes slightly, the lips become tense and round. Diphthong.

owl cow town bough out

doubt dot shout shot pour pot

towel tall fowl fall
now no sow so how hoe bow bow

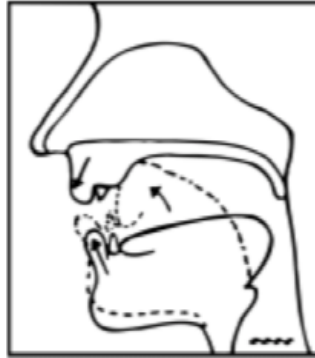


/o/ + /u³/

oi oy The mouth is half open with rounded lips. The tongue is low and a little pulled back. As the mouth closes slightly, the lips are pulled back into a broad smile. The tongue moves upward in a high frontal arch. Diphthong.

boy voice royal toy

toil towl foil fowl coy cow
 toil tall foil fall boil ball
 coil call toiled told foiled fold
 soiled sold

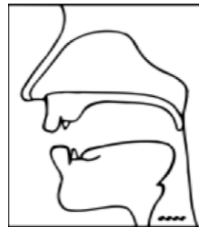


/ō/ + /ē/

3 Murmur Diphthongs

ar This is an r-controlled vowel combining the third sound of /a³/ (Italian ä) with /r/. This is a Murmur Diphthong.

car far star arm
 farm art heart cart



/a³/ + /r/ = /är/

Or This is an r-controlled vowel combining the long sounds of /ō/ with /r/. It is a Murmur Diphthong.

fork ore for more war or

tore sore store

corn torn thorn cork horse
 lord cord syord



/ō/ + /r/

er ir ur (-or) These r-controlled vowels share the same sound. They are Murmur Diphthongs.

urn is key word for /ûr/

her **early** **brother** **sister**
after **faster** **over** (**earth** **father**)

fir **sir** **dirt** **first** **thirst**
bird **girl** **birth**

murk **turn** **fur** **cur** **burn** **turn**
nurse **purse** **curl** **burp** **church**

mayor **major** **color** **doctor** **motor**
harbor **labor** **work** **word** **world**



/û/ + /r/

Eight Helpful Rules for the Vowels

BASIC RULES:

1. If there is only one vowel in a word or syllable and it comes before a consonant, the vowel is usually short.

not	gulp	thick	(cvc)
on	imp	us	(vc)

2. If there are two vowels in a word or syllable, the first vowel is usually long and the second is silent.

oak	maid	sleet	meat	(cvc)
note	made	mine	mute	(cvcv)

3. If there is only one vowel in a word or syllable and the vowel comes at the end, the vowel is usually long.

no	why	she	go	ye	si·lent	(cv)
----	-----	-----	----	----	---------	------

4. If an a is followed by u, w, r, ll or lt, in the same syllable, it often has the third sound of a³. (a³ or Italian ä)

fault	drawn	starch	hall	malt
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RULES FOR ENDINGS:

5. If y comes at the end of a two or more syllable word, y has the sound of long e /ē/ if the y syllable **is not accented**. pup'py wa'vy soa'py (y = /ē/)

6. If y comes at the end of a two or more syllable word, y has the sound of long i /ī/ if the y syllable **is accented**.

re·ply'	ap·ply'	ter·ri·fy'	(y = /ī/)
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7. If words end with the suffix ing, er, or ed, the first vowel in the syllable is usually short if it comes before two consonants.

get·ting	lif·ted	drum·mer
----------	---------	----------

8. If words end with the suffix ing, er or ed, the first vowel is usually long if it comes before a single consonant.

zo·ning	ska·ting	wi·ser
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International Phonetic Alphabet Symbol Equivalents

26 Consonant Sounds

<u>A Sound Track</u>	<u>IPA</u>	<u>A Sound Track</u> <u>Key Word</u>
1. /p/	/p/	p <u>p</u>
2. /b/	/b/	<u>b</u> ed
3. /m/	/m/	<u>m</u> op
4. /wh/	/hw/	<u>w</u> hip
5. /w/	/w/	<u>w</u> eb
6. /qu/	/kw/	<u>q</u> uack
7. /f/	/f/	<u>f</u> ish
8. /v/	/v/	<u>v</u> an
9. /th ¹ /	/θ/	<u>t</u> humb
10. /th ² /	/ð/	<u>t</u> his
11. /t/	/t/	<u>t</u> ent
12. /d/	/d/	<u>d</u> uck
13. /n/	/n/	<u>n</u> est
14. /l/	/l/	<u>l</u> amp
15. /s/	/s/	<u>s</u> un
16. /z/	/z/	<u>z</u> ipper
17. /r/	/r/	<u>r</u> ug
18. /sh/	/ʃ/	<u>sh</u> ip
19. /zh/	/ʒ/	<u>Z</u> hivago (tele <u>vis</u> ion)
20. /y/	/j/	<u>y</u> ak
21. /ch/	/tʃ/	<u>ch</u> in
22. /j/	/dʒ/	<u>j</u> et
23. /k/	/k/	<u>k</u> id
24. /g/	/g/	<u>g</u> um
25. /x/	/ks/	<u>x</u> box
26. /h/	/h/	<u>h</u> at

18 Basic Vowel Sounds

A Sound Track	AHD	IPA	A Sound Track Key Word
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5 Short Vowels

1. ä	/ǎ/	/æ/	<u>a</u> pple
2. ě	/ě/	/ɛ/	<u>E</u> skimo
3. ĭ	/ĭ/	/ɪ/	<u>I</u> ndian
4. ǒ	/ǒ/	/ɔ/ or /ɑ/	<u>o</u> strich
5. ŭ	/ŭ/	/ə/	<u>u</u> mbrella

5 Long Vowels

6. /ā/	/ā/	/e/	āte
7. /ē/	/ē/	/i/	ēat
8. /ī/	/ī/	/aɪ/	īce
9. /ō/	/ō/	/o/	ōld
10. /ū/	/yōō/	/ju/	ūse

Third Sound of a, o, u

11. /a ³ /	/ä/	ɑ	<u>a</u> ll
12. /o ³ /	/ōō/	u	<u>o</u>
13. /u ³ /	/ōō/	ʊ	<u>u</u> t

Five Vowel Diphthongs

2 Regular

14. /ow/	/ou/	aʊ	<u>ow</u> l
15. /oi/	/oy/	ɔɪ	<u>oi</u> l

3 Murmur (R-Controlled)

16. /ar/	/är/	ɑr	<u>a</u> r
17. /ör/	/ōr/	ɔr	<u>o</u> r
18. /ür/	/ər/	ər	<u>u</u> r

IPA Resources

<http://www.ipachart.com/>

<https://www.coursehero.com/file/7322052/modified-IPA-chart-pdf/>

<http://www.antimoon.com/how/pronunc-soundsipa.htm>

<https://jakubmarian.com/international-phonetic-alphabet-ipa-for-english-consonants/>

<https://jakubmarian.com/international-phonetic-alphabet-ipa-for-english-vowels/>

I used the following program for creating the IPA symbols.

For IPA Phonetic Symbols: <https://ipa.typeit.org/full/>

Note from Internet Publisher: Donald L. Potter

October 6, 2019

These facial diagrams are designed to aid teachers using Sister Monica Foltzer's *A Sound Track to Reading: advanced, intensive phonics book and reader*.

Note especially the minimal pair contrast drills. The first word in the pairs is the target sound, the second is the contrast.

For many children, simply imitation is sufficient for learning to hear and produce the phonemes. Nevertheless, it is beneficial for all students to learn something of the mechanics of sound production, and it is essential for some. This is why I prefer to teach it to all my students. I see no reason to wait until a student fails to start to provide good articulation training. Be sure to have a mirror handy so the children can watch how the shape and movement of the lips in forming the speech sounds.

Teachers will find this information especially valuable for students who need to improve their speech and for dyslexic in need of improving their phonemic awareness.

Note that the vowel sounds are notoriously difficult to describe and liable to alternate interpretations, as comparing any two popular dictionaries will quickly prove. I attempt to be as accurate as possible, but within the reasonable limits necessary to teach students good phonics reading skills.

Here is the Internet Address for all *A Sound Track to Reading* materials.

http://donpotter.net/education_pages/a-sound-track-to-reading.html

The facial diagrams for teaching articulation are from *Lane's English Pronunciation Guide*.

<http://esl-online.net/probook1view.pdf>

First Lessons in Speech Improvement by Birmingham and Krapp (1922) is one of the best books ever written on the sound of English. Very practical!

<https://archive.org/details/firstlessonsinsp00birmuoft>

<https://scholar.harvard.edu/files/adam/files/phonetics.ppt.pdf>

Tongue Trouble! A blog of useful information on American English Pronunciation

<https://cylareashea.blogspot.com>

<https://pronuncian.com/sounds>

http://mommyspeechtherapy.com/?page_id=55

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