

The  
**Source**<sup>®</sup>  
for  
**Childhood  
Apraxia  
of Speech**

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**Skill: Apraxia  
Ages: 2 through 12  
Grades: PreK through 7th**

The strategies in this book incorporate components identified by the Childhood Apraxia of Speech Association of North America (CASANA) and the American Speech-Language-Hearing Association (ASHA).



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## Foreword

Our goal in writing this book is to provide information and support to parents, families, therapists, educators, physicians, and others who care for and work with children with Childhood Apraxia of Speech. The purpose of this book is to organize information in order to share current research and what we've learned in our many years of working with children with Childhood Apraxia of Speech.

## Introduction

The strategies in *The Source for Childhood Apraxia of Speech* incorporate components identified as important in the treatment of Childhood Apraxia of Speech as referenced by the American Speech-Hearing-Language Association (ASHA) and the Childhood Apraxia of Speech Association of North America (CASANA). These components are listed below.

1. Conduct a thorough evaluation of communication and related skills. Address the needs of the whole child, including health, motor, and sensory concerns as well as communication skills.
2. Establish basic skills needed for success in therapy such as joint attention and interaction.
3. Use child-centered therapy building on the child's current skills.
4. Use an effective therapy approach by:
  - using principles of motor learning for development of speech skills
  - emphasizing speech movements and syllable shapes
  - using appropriate cues and prompts to ensure success including multisensory cues
  - providing appropriate feedback to verbal attempts
  - applying meaning and functionality to speech practice targets
  - providing frequent and consistent therapy
5. Use augmentative communication systems as needed as a bridge to speech.
6. Target prosody skills along with speech skills in therapy.
7. Target language skills as needed—receptive, expressive, pragmatics, narrative, and discourse.
8. Extend speech and language practice to the home and community settings.
9. Facilitate literacy, academics, and other learning skills.

Numerous professional references used in developing this book are listed on pages 179–183.

We hope you find the information and techniques in this book helpful as you work with children with apraxia.

Robin and Catherine



# Parent Interview Form

Child's Name \_\_\_\_\_ Date \_\_\_\_\_

Birthdate \_\_\_\_\_ Informant \_\_\_\_\_

Parent(s) Name(s) \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Home Phone \_\_\_\_\_ Work Phone \_\_\_\_\_

Cell Phone \_\_\_\_\_ Other Phone \_\_\_\_\_

1. Describe your child's speech problem. \_\_\_\_\_
2. When did you first notice a speech problem? \_\_\_\_\_
3. Does anyone else in your family have a speech, language, hearing, or learning problem?    yes    no  
If *yes*, please describe. \_\_\_\_\_

## Health and Developmental History

4. Did you have a normal pregnancy?    yes    no    Length of pregnancy \_\_\_\_\_  
If *no*, please list any problems. \_\_\_\_\_

5. Describe your child's delivery and birth.  
           typical            spontaneous            induced            Caesarian            breech            unusually long labor

6. What was your child's birth weight? \_\_\_\_\_ APGAR score \_\_\_\_\_

7. What was your child's condition at birth?  
           typical    birth injury/defect    jaundiced    breathing problem    low birth weight    other \_\_\_\_\_

8. Does your child have a history of any of the following? (Circle all that apply.)

drooling	ear tubes	intubation/ventilator
ear infections	surgery	hospitalization
allergies	chronic or severe illness	seizures
asthma	high or prolonged fevers	head injury
hearing loss	reflux	serious accidents

Please explain any of the above as needed. \_\_\_\_\_

\_\_\_\_\_

9. List any medication(s) your child is currently taking. \_\_\_\_\_

10. What is your child's current state of health?            excellent            good            fair            poor

11. Has your child ever had a hearing evaluation?    yes    no

If *yes*, list date(s) and results. \_\_\_\_\_

\_\_\_\_\_

12. Does your child have a history of feeding problems?    yes    no

If *yes*, circle all that apply.

choking	difficulty biting	overstuffing mouth
poor nursing	difficulty chewing	difficulty swallowing
other _____		



Appendix 3A, continued

- 13. Is your child a messy or picky eater?
14. At what age did your child attain these developmental milestones?
sitting first words
walking first sentences
toilet training

Speech and Language

- 15. Did your child babble? yes no
If yes, did he/she use a variety of sounds when babbling? yes no
16. What were your child's first words?
17. Once your child started to use words, did he/she continue to add new words to his/her speaking vocabulary on a weekly basis? yes no
18. Does your child have a history of using a word once or several times, and then never using it again? yes no
If yes, please give examples.
19. Is your child reluctant to communicate or become frustrated when trying to speak? yes no
If yes, please describe.
20. Is your child reluctant to imitate speech sounds or words? yes no
If yes, does he/she refuse these types of tasks? yes no
21. Does it seem that your child has more difficulty producing understandable speech on some days and not others or at certain times? yes no
If yes, please explain any consistencies you may have noticed.
22. How would you describe your child's speech errors? consistent change from word to word and/or day to day
23. Circle the speech sounds your child currently uses:
vowels: long a e i o u short a e i o u
consonants: p b m w t d n f v k g
h s z sh ch j y l r th
24. Approximately how much of your child's speech do you understand?
less than 25% 25% 50% 75% 100%
25. Can people outside the family understand your child's speech? yes no
26. How would you describe the melody and rhythm of your child's speech? (Circle all that apply.)
smooth slow soft
halting fast lacking in intonation
choppy loud lacking in pitch changes
27. How does your child typically communicate with others? (Circle all that apply.)
talking (whether understandable or not) facial expressions
gestures pulling/taking adult to what he/she wants
signs crying
pictures pointing
voice output speech device other



28. Does your child play and communicate well with his/her friends and family?    yes    no  
If *no*, please describe. \_\_\_\_\_
29. Does your child seem to understand most of what you say or tell him/her to do?    yes    no
30. Does your child have difficulty following directions?    yes    no  
If *yes*, please describe. \_\_\_\_\_
31. How many words does your child now use?    0-20    20-50    100-150    150-200    more than 200
32. If your child uses phrases and sentences, how long are they on average?  
2 words    3 words    4 words    5 words    longer than 5 words
33. Does your child (check *yes* or *no* for each)    yes    no
- |  |                          |                          |
|--|--------------------------|--------------------------|
| ask questions to gain information.....                           | <input type="checkbox"/> | <input type="checkbox"/> |
| understand vocabulary .....                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| use age-appropriate vocabulary .....                             | <input type="checkbox"/> | <input type="checkbox"/> |
| stay on subject in a conversation.....                           | <input type="checkbox"/> | <input type="checkbox"/> |
| take turns when talking to someone.....                          | <input type="checkbox"/> | <input type="checkbox"/> |
| describe and explain .....                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| answer questions .....   | <input type="checkbox"/> | <input type="checkbox"/> |
| have difficulty putting words together into a sentence .....     | <input type="checkbox"/> | <input type="checkbox"/> |
| leave words out of sentences.....                                | <input type="checkbox"/> | <input type="checkbox"/> |
| use correct grammar such as plurals, verb tenses, pronouns ..... | <input type="checkbox"/> | <input type="checkbox"/> |

### Voice and Fluency

34. Is your child's voice clear?    yes    no  
If *no*, please describe. \_\_\_\_\_
35. Describe your child's voice. (Circle all that apply.)
- |   |              |          |
|---|--------------|----------|
| nasal                                   | soft         | monotone |
| denasal (sounds like he/she has a cold) | high-pitched | breathy  |
| loud                                    | low-pitched  | hoarse   |
36. Does your child talk smoothly without repeating sounds or words?    yes    no  
If *no*, does he/she have trouble getting words out?    yes    no  
If *yes*, please describe. \_\_\_\_\_

### Auditory Processing and Learning

37. Does your child have difficulty with any of the following? (Circle all that apply.)
- |                |   |
|----------------|---|
| memory tasks   | remembering and following directions        |
| comprehension  | putting thoughts together                   |
| word retrieval | difficulty learning or using new vocabulary |
38. Does your child have difficulty learning early academic skills such as matching, identifying same/different, and/or knowing names of colors, shapes, numbers, and letters?    yes    no  
If *yes*, please describe. \_\_\_\_\_
39. Does your child have difficulty with learning skills in the areas of reading, math, spelling, other?    yes    no  
If *yes*, please describe. \_\_\_\_\_



**Appendix 3A, continued**

40. Is your child receiving special help with learning skills?    yes    no

If *yes*, please explain. \_\_\_\_\_

41. Do you have concerns about your child's learning skills?    yes    no

If *yes*, please explain. \_\_\_\_\_

**Sensory and Motor**

42. Does your child have any difficulty walking, running, sitting, or other large motor skills?    yes    no

If *yes*, please describe. \_\_\_\_\_

43. Is your child clumsy or does he/she fall easily?    yes    no

44. Does your child have low body tone?    yes    no

45. Does your child have difficulty with fine motor skills such as stacking, cutting, and handwriting?    yes    no

If *yes*, please describe. \_\_\_\_\_

46. Is your child sensitive to certain textures of food or clothing?    yes    no

If *yes*, please describe. \_\_\_\_\_

47. Does your child dislike having substances on his/her hands such as glue or dirt?    yes    no

48. Is your child oversensitive to being touched/dislikes being touched?    yes    no

If *yes*, please describe. \_\_\_\_\_

49. Circle all that apply regarding your child.

- |  |   |
|--|---|
| dislikes washing his/her face or hair                          | does not demonstrate caution              |
| dislikes haircuts  | puts things in his/her mouth besides food |
| spends too little time or too much time brushing his/her teeth | chews on his/her clothes                  |

**Behavior**

50. Does your child typically display any of the following behaviors? (Circle all that apply.)

- |  |                            |
|--|----------------------------|
| reduced or lack of interaction with others | difficulty staying on task |
| tantrums                                   | difficulty finishing tasks |
| passive in interactions                    | sensitive                  |
| very active                                | angry/acting out behavior  |
| underactive                                | frustrated                 |
| inattentive                                | shy                        |
| refuses to perform tasks                   |                            |

**Other Information**

51. Who does your child live with? (Circle all that apply.)

- |                     |                |
|---------------------|----------------|
| both parents        | grandparents   |
| mother only         | foster parents |
| father only         | other _____    |
| parent + stepparent |                |

52. Are languages other than English spoken in the home?    yes    no

If *yes*, please list. \_\_\_\_\_





53. Has your child had a previous speech-language evaluation?    yes    no

If *yes*, please list date(s) and results. \_\_\_\_\_  
 \_\_\_\_\_

54. Has your child had previous speech-language therapy?    yes    no

If *yes*, please list dates, setting(s), and therapist(s). \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

55. If your child had speech-language therapy, what kind of progress did your child make? \_\_\_\_\_  
 \_\_\_\_\_

Were you pleased with your child's progress?    yes    no

Please explain. \_\_\_\_\_

56. Has your child been evaluated by any other professional? (Circle all that apply.)

occupational therapist (OT)

educator/teacher

physical therapist (PT)

geneticist

neurologist

physician

developmental pediatrician (specialist)

other \_\_\_\_\_

psychologist/psychiatrist

57. Does your child have a diagnosis from any of the above professionals?    yes    no

If *yes*, please list date, professional, and diagnosis for each. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

58. What other concerns do you have about your child? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

59. What do you consider to be your child's greatest strengths? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

60. What do you hope to gain from this evaluation? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Summary of Observation and Test Findings

Child's Name \_\_\_\_\_ Birthdate \_\_\_\_\_

Evaluation Date(s) \_\_\_\_\_ Clinician \_\_\_\_\_

1. Type(s) of play observed (Circle all that apply.)

- none
- solitary
- parallel
- interactive
- turn taking
- symbolic
- role-playing

2. What did the child do when playing with toys/objects? (Circle all that apply.)

- explored toys only
- demonstrated functional use of toys
- used single schemes with objects
- demonstrated more than one scheme with object
- used two objects together in play
- used connected schemes in play
- demonstrated creative/pretend play

3. Toys/activities the child preferred \_\_\_\_\_

4. Types of interactions observed (Check all that apply.)

	emerging	mastered	not observed	with whom (parent, clinician, peer)
joint attention				
joint interaction				
action turn taking				
verbal turn taking				

Did the child avoid interactions?                      yes      no

Was there a lack of engagement with others?                      yes      no

Was there a lack of eye contact with others?                      yes      no

5. Did the child prefer to communicate nonverbally?                      yes      no

If *yes*, how? (Circle all that apply.)

- gesture
- sign
- pointing
- pulling adult
- whining/crying
- other \_\_\_\_\_

6. Types of imitation observed or elicited (Circle all that apply.)

- actions
- animal sounds
- environmental sounds
- speech sounds
- single syllables
- syllable strings
- words
- phrases/sentences

Examples \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_



7. Verbalizations observed (Circle all that apply.)

spontaneously produced      elicited      imitated

8. Did the child resist or refuse speech imitation or production?    yes    no

9. List specific sounds, syllables, words, phrases/sentences elicited from the child.

sounds \_\_\_\_\_

syllables \_\_\_\_\_

words \_\_\_\_\_

phrases/sentences \_\_\_\_\_

10. What pragmatic skills did the child exhibit? (Circle for nonverbal and underline for verbal.)

greeting	repairing
requesting	selecting a topic
commenting	maintaining a topic
rejecting/refusing/protesting	narrative
questioning	other _____

11. Did the child speak more freely in one setting or with a specific person?    yes    no

If *yes*, please explain. \_\_\_\_\_

## Evaluation Results

List tests, findings, and observations.

### Articulation/Phonology Tests and Results

Phonetic inventory (Circle all sounds spontaneously used by the child.)

vowels:	long	a	e	i	o	u					
	short	a	e	i	o	u					
consonants:	p	b	m	w	t	d	n	f	v	k	g
	h	s	z	sh	ch	j	y	l	r	th	

Sounds the child is stimulable for (Circle all that are stimulable.)

vowels:	long	a	e	i	o	u					
	short	a	e	i	o	u					
consonants:	p	b	m	w	t	d	n	f	v	k	g
	h	s	z	sh	ch	j	y	l	r	th	



**Speech Production/Performance Load Effects**

Circle what the child can do in elicited imitation tasks. List the child's productions in each section.

*Single Syllables*

- vowel sequences (VV) \_\_\_\_\_
- consonant-vowel (CV) \_\_\_\_\_
- vowel-consonant (VC) \_\_\_\_\_

*Syllable Combinations*

- reduplicated CVCV (same C and V; e.g., *mama*) \_\_\_\_\_
- CVCV (same C, different V; e.g., *puppy*) \_\_\_\_\_
- CVCV (same V, different C; e.g., *pogo*) \_\_\_\_\_
- CVCV (various C, V; e.g., *happy*) \_\_\_\_\_

*Consonant-Vowel-Consonant Words*

- CVC with same C in both positions of word (e.g., *pop*) \_\_\_\_\_
- CVC with different C in each position (e.g., *pot*) \_\_\_\_\_

*Multisyllabic Words*

- two-syllable \_\_\_\_\_
- three-syllable \_\_\_\_\_
- four or more syllables \_\_\_\_\_

*Consonant Sequences (Blends)*

- initial \_\_\_\_\_
- medial \_\_\_\_\_
- final \_\_\_\_\_
- three-element blends (e.g., *str-*, *spr-*) \_\_\_\_\_

*Connected Words*

- two-word utterances \_\_\_\_\_
- phrases \_\_\_\_\_
- sentences \_\_\_\_\_

Consistency of productions (Describe the effect of having the child repeat the same word several times, particularly words with more than one syllable or with blends.) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Sample of conversational speech (List speech sounds used and an estimate of general intelligibility.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Prosody (Circle areas of difficulty.)

rate	loudness
intonational contours	appropriate syllable or word stress
pitch	

Oral mechanism (Circle areas of concern.)

mandible	lingual frenulum	teeth
lips	hard palate	occlusion
tongue	soft palate	tonsils

Oral-motor movements (Circle areas of concern.)

mandible	velum	sequenced nonspeech oral movements
lips	separation of tongue and jaw movements	diadochokinetic tasks
tongue		

Suspected developmental dysarthria?    yes    no

Suspected oral apraxia?                    yes    no

Concerns with breath control or respiration/phonation for speech?    yes    no

If *yes*, please describe concerns. \_\_\_\_\_  
 \_\_\_\_\_

Feeding (Circle all areas of difficulty.)

forming bolus	storing food in cheeks
using tongue to manipulate bolus	oral tactile sensitivity
moving bolus to back of mouth	picky eater
swallowing	difficulty biting
swallowing before fully chewing	immature chew
overstuffing mouth	other _____

Describe feeding concerns as needed. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Receptive Language Tests and Results**

comprehension \_\_\_\_\_  
 vocabulary/concepts \_\_\_\_\_  
 other \_\_\_\_\_

**Expressive Language Tests and Results**

pragmatics \_\_\_\_\_  
 vocabulary/concepts \_\_\_\_\_  
 morpho-syntax \_\_\_\_\_  
 narrative \_\_\_\_\_  
 conversational sample \_\_\_\_\_  
 other \_\_\_\_\_



**Voice, Resonance, and Fluency Observations**

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---

**Auditory Processing and Learning Observations**

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---

---

**Hearing Tests and Results**

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---

screening \_\_\_\_\_

pure tone \_\_\_\_\_

tympanometry \_\_\_\_\_

other \_\_\_\_\_

Did the child demonstrate age-appropriate fine and gross motor skills?    yes    no

If *no*, list concerns. \_\_\_\_\_

Did the child attend well for his/her age?    yes    no

If *no*, list concerns. \_\_\_\_\_

Did the parent feel that the speech and language behaviors exhibited by the child on this date were characteristic of the child's usual performance?    yes    no

If *no*, please explain. \_\_\_\_\_

**Referrals/Follow-up**

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---

**Statement of Findings**

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## Speech Sound Practice Pages

---

The following pages can be placed in the child's Speech Practice Book as he begins targeting specific consonant speech sounds. The pages can be used for practice or review of speech sounds in isolation, syllables (long and/or short), syllable sequences, and words. Syllable sequences, words, and/or pictures can be added to the page as needed. Pictures of words with each consonant sound can be found on pages 95–114.

The pages are in order of development, beginning with the earliest-developing sounds.

/p, b, m/

/w, y/

/f, v/

/t, d, n/

/k, g, h/

/s, z/

/sh, ch, j/

/l, r, th/



Name \_\_\_\_\_



Practice saying the /p/ sound where checked below. Practice each one 2 to 4 times. Remember to put your lips together and pop the air out as you make this sound.

- Say each sound.

P P P P P P P P

- Say each syllable (using a long or short vowel sound).

pa pe pi po pu ap ep ip op up

- Say each syllable sequence:

- Say each word \_\_\_\_\_ times:





Name \_\_\_\_\_

**B b**

Practice saying the /b/ sound where checked below. Practice each one 2 to 4 times. Remember to put your lips together and pop the air out as you make this sound. Use voicing.

- Say each sound.

b b b b b b b b

- Say each syllable (using a long or short vowel sound).

ba be bi bo bu ab eb ib ob ub

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /m/ sound where checked below. Practice each one 2 to 4 times. Remember to close your lips and keep the air going as you make this sound. Use voicing.

- Say each sound.

m m m m m m m m

- Say each syllable (using a long or short vowel sound).

ma me mi mo mu am em im om um

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /w/ sound where checked below. Practice each one 2 to 4 times. Remember to round your lips and keep the air going as you make this sound. Use voicing.

- Say each sound.

w w w w w w w w

- Say each syllable (using a long or short vowel sound).

wa we wi wo wu

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /y/ sound where checked below. Practice each one 2 to 4 times. Remember to smile, pull your tongue back, and glide the air as you make this sound. Use voicing.

- Say each sound.

y y y y y y y y

- Say each syllable (using a long or short vowel sound).

ya ye yi yo yu

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_

**Ff**

Practice saying the /f/ sound where checked below. Practice each one 2 to 4 times. Remember to gently bite your lip and keep the air going as you make this sound.

- Say each sound.

f f f f f f f f

- Say each syllable (using a long or short vowel sound).

fa fe fi fo fu af ef if of uf

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /v/ sound where checked below. Practice each one 2 to 4 times. Remember to gently bite your lip and keep the air going as you make this sound. Use voicing.

- Say each sound.

v v v v v v v v

- Say each syllable (using a long or short vowel sound).

va ve vi vo vu av ev iv ov uv

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /t/ sound where checked below. Practice each one 2 to 4 times. Remember to put your tongue up behind your teeth and pop the air out as you make this sound.

- Say each sound.

t t t t t t t t

- Say each syllable (using a long or short vowel sound).

ta te ti to tu at et it ot ut

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /d/ sound where checked below. Practice each one 2 to 4 times. Remember to put your tongue up behind your teeth and pop the air out as you make this sound. Use voicing.

- Say each sound.

d d d d d d d d

- Say each syllable (using a long or short vowel sound).

da de di do du ad ed id od ud

- Say each syllable sequence:

- Say each word:





Name \_\_\_\_\_

**N n**

Practice saying the /n/ sound where checked below. Practice each one 2 to 4 times. Remember to put your tongue up behind your teeth and keep the air going as you make this sound. Use voicing.

- Say each sound.

n n n n n n n n

- Say each syllable (using a long or short vowel sound).

na ne ni no nu an en in on un

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /k/ sound where checked below. Practice each one 2 to 4 times. Remember to open your mouth slightly, pull your tongue back, and pop the air as you make this sound.

- Say each sound.

k k k k k k k k

- Say each syllable (using a long or short vowel sound).

ka ke ki ko ku ak ek ik ok uk

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /g/ sound where checked below. Practice each one 2 to 4 times. Remember to open your mouth slightly, pull your tongue back, and pop the air out as you make this sound. Use voicing.

- Say each sound.

g g g g g g g g

- Say each syllable (using a long or short vowel sound).

ga ge gi go gu ag eg ig og ug

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /h/ sound where checked below. Practice each one 2 to 4 times. Remember to open your mouth and push the air out as you make this sound.

- Say each sound.

h h h h h h h h

- Say each syllable (using a long or short vowel sound).

ha he hi ho hu

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_

**Ss**

Practice saying the /s/ sound where checked below. Practice each one 2 to 4 times. Remember to put your teeth together, smile slightly, put the front of your tongue up (or down), and keep the air going as you make this sound.

- Say each sound.

s s s s s s s s

- Say each syllable (using a long or short vowel sound).

sa se si so su as es is os us

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_

Practice saying the /z/ sound where checked below. Practice each one 2 to 4 times. Remember to put your teeth together, smile slightly, put the front of your tongue up (or down), and keep the air going as you make this sound. Use voicing.

- Say each sound.

z z z z z z z z

- Say each syllable (using a long or short vowel sound).

za ze zi zo zu az ez iz oz uz

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_

**SH sh**

Practice saying the /sh/ sound where checked below. Practice each one 2 to 4 times. Remember to round your lips, put the front of your tongue up (or down), and keep the air going as you make this sound.

- Say each sound.

sh sh sh sh sh sh sh sh

- Say each syllable (using a long or short vowel sound).

sha she shi sho shu ash esh ish osh ush

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /ch/ sound where checked below. Practice each one 2 to 4 times. Remember to round your lips, put the front of your tongue up, and pop out the air as you make this sound.

- Say each sound.

ch ch ch ch ch ch ch ch

- Say each syllable (using a long or short vowel sound).

cha che chi cho chu ach ech ich och uch

- Say each syllable sequence:

- Say each word:





Name \_\_\_\_\_

**Jj**

Practice saying the /j/ sound where checked below. Practice each one 2 to 4 times. Remember to round your lips, put the front of your tongue up, and pop out the air as you make this sound. Use voicing.

- Say each sound.

j j j j j j j j

- Say each syllable (using a long or short vowel sound).

ja je ji jo ju aj ej ij oj uj

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /l/ sound where checked below. Practice each one 2 to 4 times. Remember to open your mouth, put your tongue up behind your teeth, and glide the air out as you make this sound. Use voicing.

- Say each sound.

l l l l l l l l

- Say each syllable (using a long or short vowel sound).

la le li lo lu al el il ol ul

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_

**Rr**

Practice saying the /r/ sound where checked below. Practice each one 2 to 4 times. Remember to open your mouth and pull your tongue back and up as you keep this sound going. Use voicing.

- Say each sound.

r r r r r r r r

- Say each syllable (using a long or short vowel sound).

ra re ri ro ru ar er ir or ur

- Say each syllable sequence:

- Say each word:



Name \_\_\_\_\_



Practice saying the /th/ sound where checked below. Practice each one 2 to 4 times. Remember to place your tongue between your teeth and keep the air going as you make this sound. It can be produced with or without voicing.

- Say each sound.

th th th th th th th th

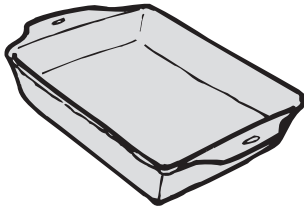
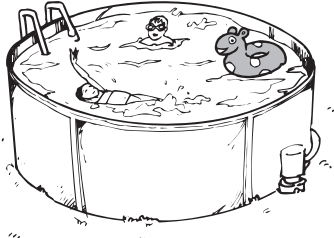
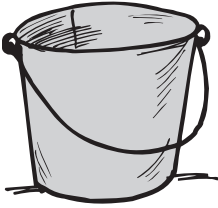


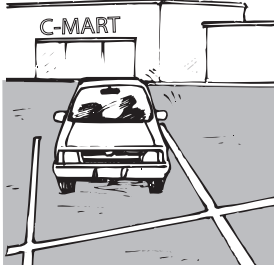
- Say each syllable (using a long or short vowel sound).

tha the thi tho thu ath eth ith oth uth

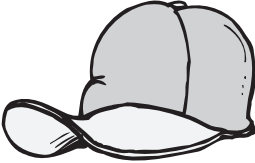

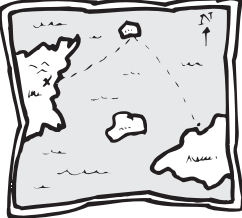



- Say each syllable sequence:

- Say each word:

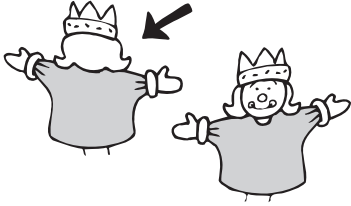

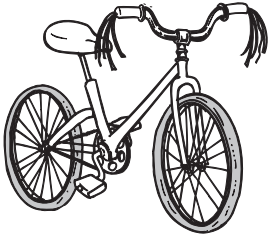
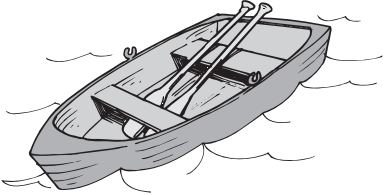


### initial /p/

 <p>pan</p>	 <p>pool</p>	 <p>pail</p>
 <p>pot</p>	 <p>pin</p>	 <p>park</p>



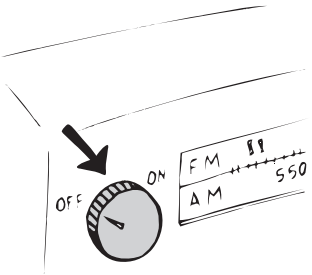

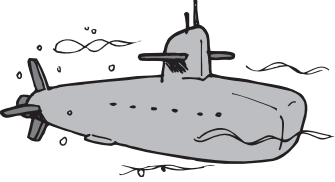

### final /p/

 <p>cap</p>	 <p>up</p>	 <p>map</p>
 <p>mop</p>	 <p>soup</p>	 <p>top</p>

### initial /b/

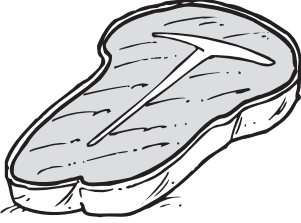





 <p>back</p>	 <p>beans</p>	 <p>bike</p>
 <p>boat</p>	 <p>bus</p>	 <p>build</p>

### final /b/

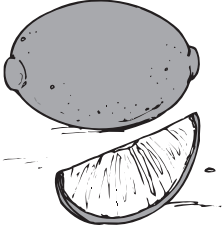
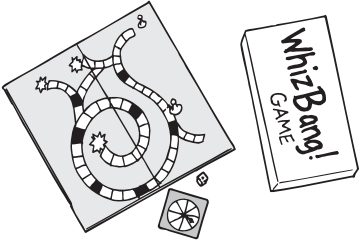

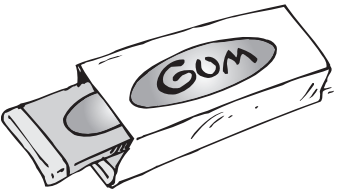
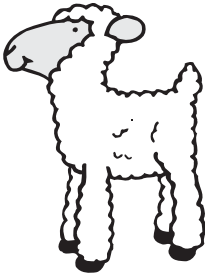
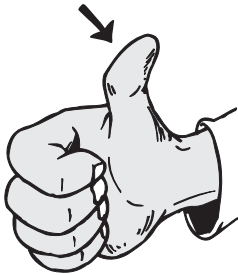
 <p>cab</p>	 <p>job</p>	 <p>knob</p>
 <p>robe</p>	 <p>sub</p>	 <p>web</p>



initial /m/

 <p>meat</p>	 <p>man</p>	 <p>mail</p>
 <p>milk</p>	 <p>moose</p>	 <p>mutt</p>

final /m/






 <p>lime</p>	 <p>game</p>	 <p>home</p>
 <p>gum</p>	 <p>lamb</p>	 <p>thumb</p>



### initial /w/

 <p>wall</p>	 <p>wave</p>	 <p>walk</p>
 <p>wing</p>	 <p>wig</p>	 <p>wolf</p>


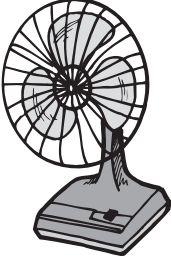
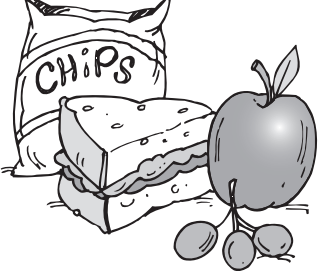

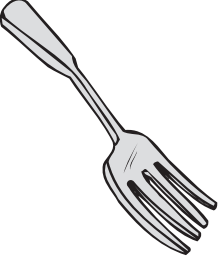

### initial /y/

 <p>yak</p>	 <p>yolk</p>	 <p>yes</p>
 <p>young</p>	 <p>yawn</p>	 <p>yuck</p>

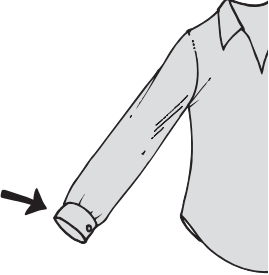
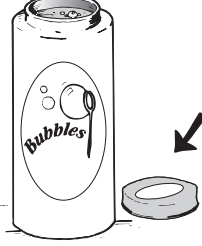
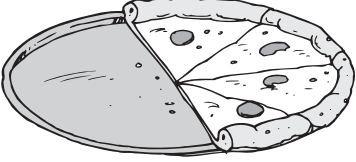
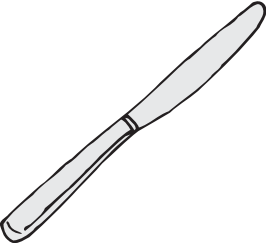

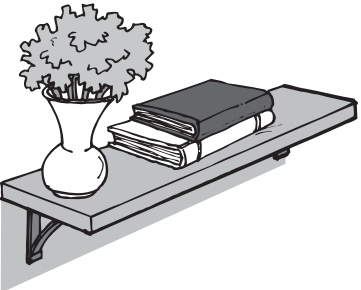




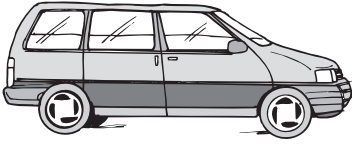
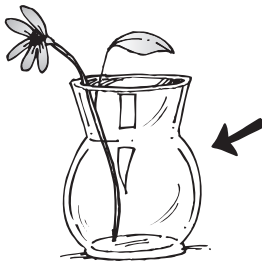
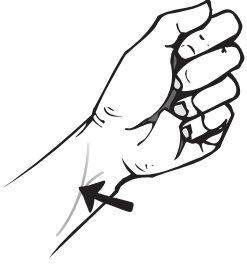

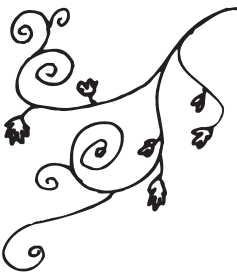
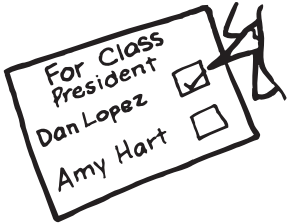
initial /f/

 <p>face</p>	 <p>fan</p>	 <p>food</p>
 <p>five</p>	 <p>fork</p>	 <p>phone</p>







final /f/

 <p>cuff</p>	 <p>off</p>	 <p>half</p>
 <p>knife</p>	 <p>leaf</p>	 <p>shelf</p>

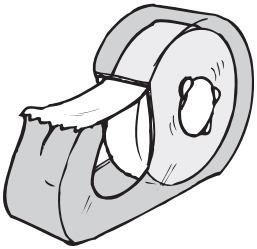
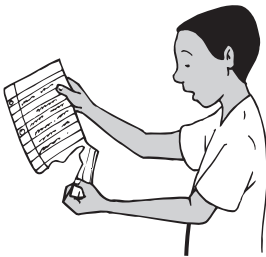
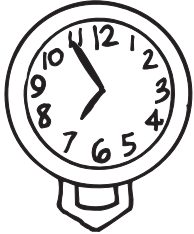
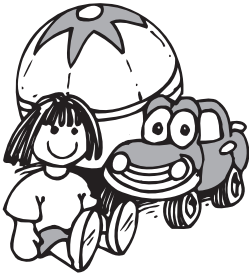

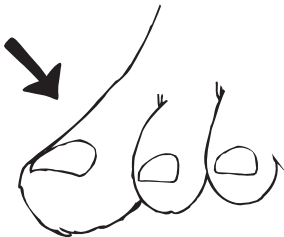
initial /v/

 <p>van</p>	 <p>vase</p>	 <p>vein</p>
 <p>vet</p>	 <p>vine</p>	 <p>vote</p>




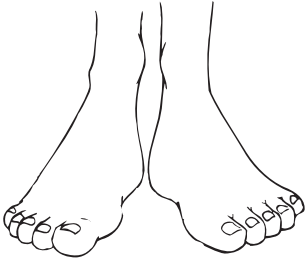

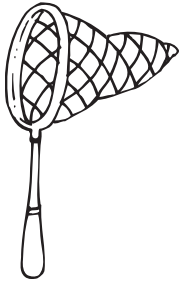
final /v/

 <p>cave</p>	 <p>save</p>	 <p>hive</p>
 <p>love</p>	 <p>shave</p>	 <p>wave</p>

initial /t/



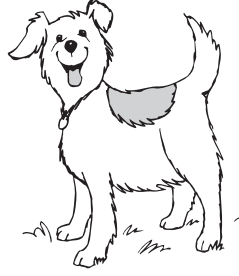
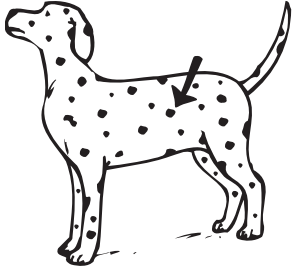
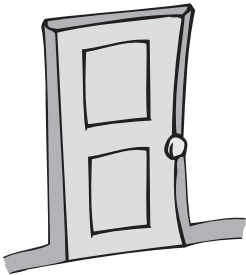
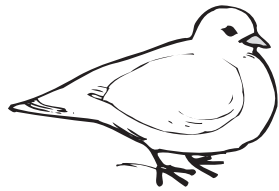
 <p>tape</p>	 <p>tear</p>	 <p>time</p>
 <p>toys</p>	 <p>two</p>	 <p>toe</p>

final /t/


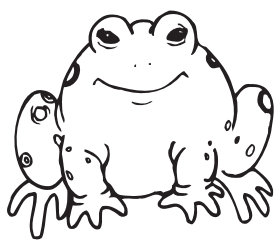




 <p>boot</p>	 <p>coat</p>	 <p>eat</p>
 <p>feet</p>	 <p>hat</p>	 <p>net</p>



### initial /d/

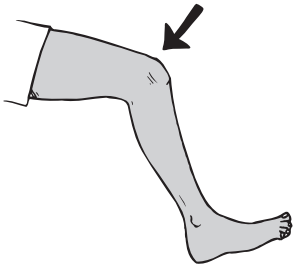

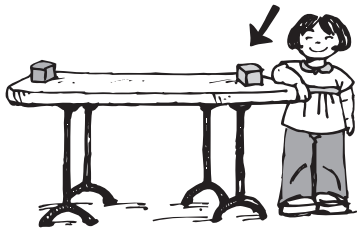


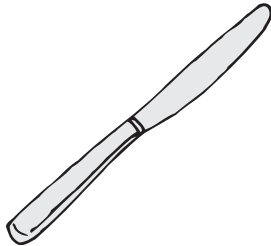
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 <p data-bbox="332 987 397 1029">dot</p>	 <p data-bbox="771 987 852 1029">door</p>	 <p data-bbox="1209 987 1291 1029">dove</p>

### final /d/

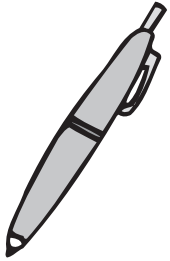
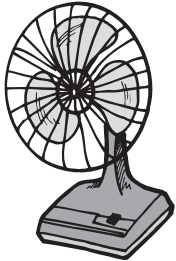
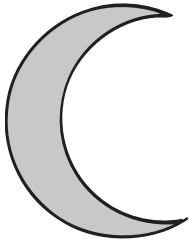



 <p data-bbox="332 1491 397 1533">bed</p>	 <p data-bbox="771 1491 852 1533">toad</p>	 <p data-bbox="1209 1491 1291 1533">head</p>
 <p data-bbox="332 1869 389 1911">lid</p>	 <p data-bbox="771 1869 852 1911">shed</p>	 <p data-bbox="1209 1869 1291 1911">salad</p>



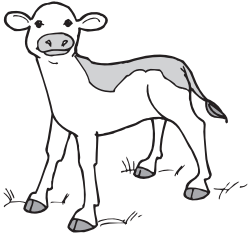

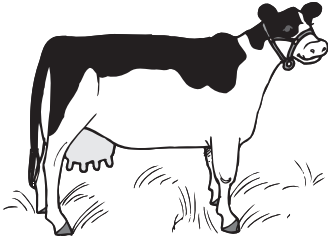

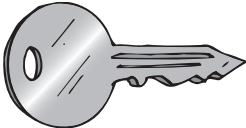

initial /n/

 <p>knee</p>	 <p>nap</p>	 <p>near</p>
 <p>night</p>	 <p>nose</p>	 <p>knife</p>


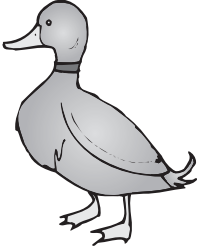
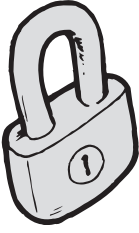
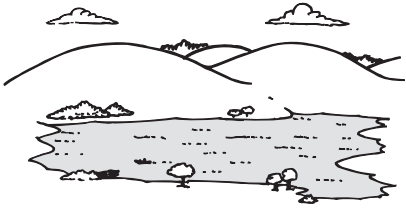

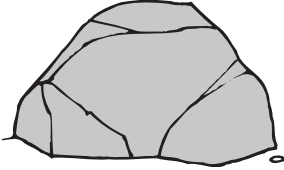
final /n/

 <p>pen</p>	 <p>fan</p>	 <p>moon</p>
 <p>one</p>	 <p>ten</p>	 <p>pin</p>

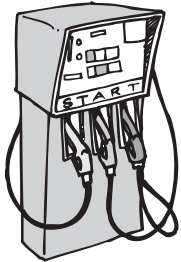
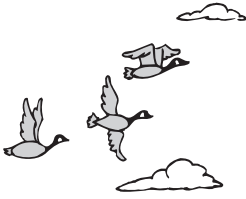



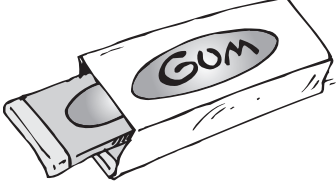
### initial /k/

 <p>calf</p>	 <p>cat</p>	 <p>cow</p>
 <p>cup</p>	 <p>key</p>	 <p>king</p>

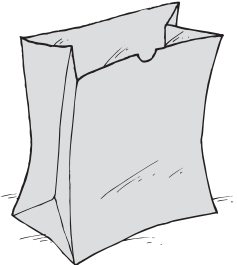
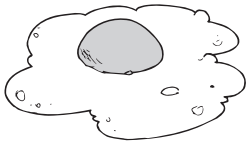

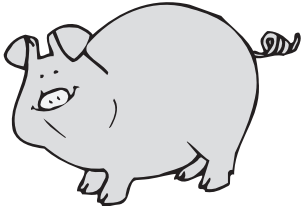


### final /k/

 <p>book</p>	 <p>duck</p>	 <p>lock</p>
 <p>lake</p>	 <p>sick</p>	 <p>rock</p>



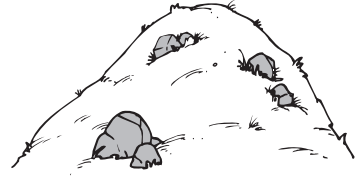


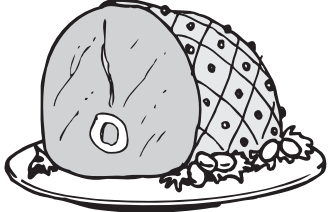
initial /g/

 <p>gas</p>	 <p>geese</p>	 <p>give</p>
 <p>goal</p>	 <p>gift</p>	 <p>gum</p>

final /g/


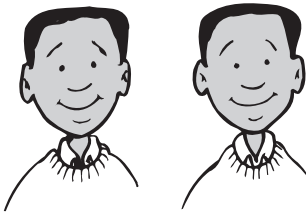


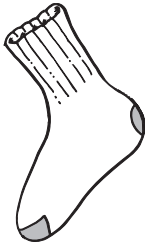
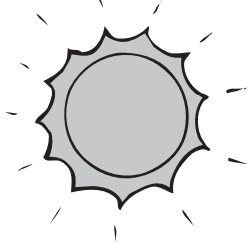
 <p>bag</p>	 <p>egg</p>	 <p>hug</p>
 <p>pig</p>	 <p>rug</p>	 <p>dig</p>

initial /h/

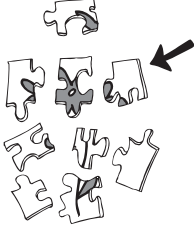
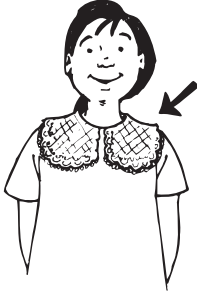


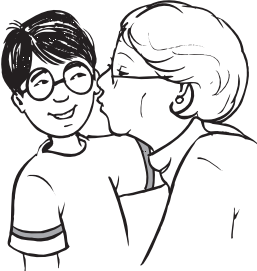

 <p>head</p>	 <p>hug</p>	 <p>hill</p>
 <p>hat</p>	 <p>hop</p>	 <p>ham</p>



### initial /s/

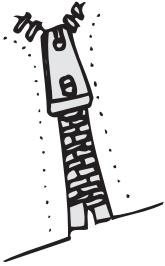
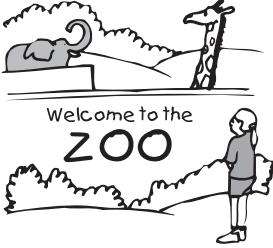

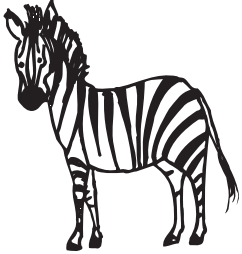


 <p>sad</p>	 <p>same</p>	 <p>sit</p>
 <p>soap</p>	 <p>sock</p>	 <p>sun</p>

### final /s/

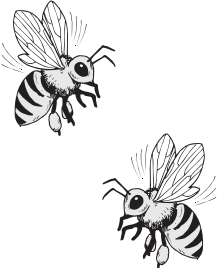

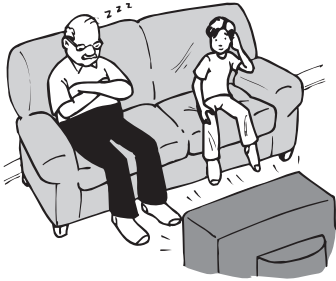


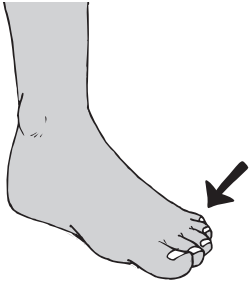
 <p>piece</p>	 <p>lace</p>	 <p>goose</p>
 <p>house</p>	 <p>kiss</p>	 <p>mouse</p>




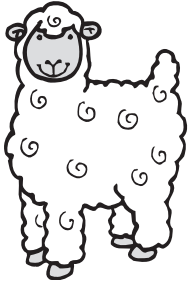
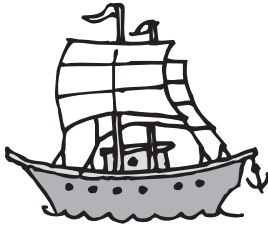
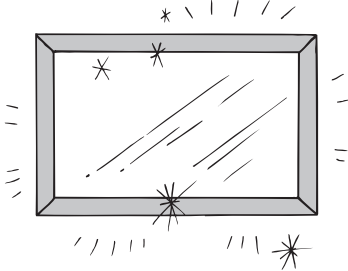
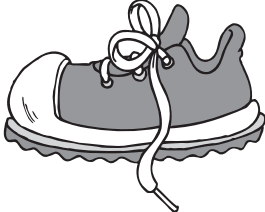
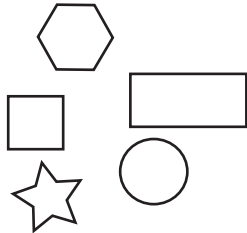
### initial /z/

 <p>zipper</p>	 <p>zoo</p>	 <p>zoom</p>
 <p>zebra</p>	 <p>zero</p>	 <p>zigzag</p>

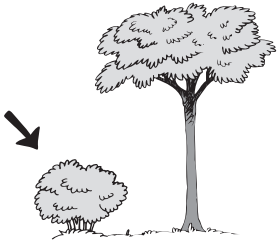
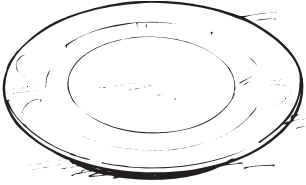
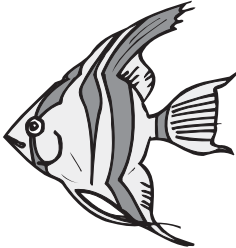
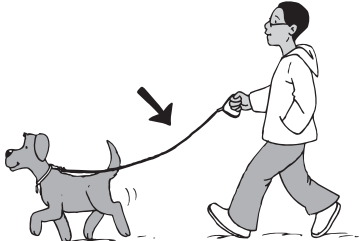


### final /z/

 <p>bees</p>	 <p>boys</p>	 <p>doze</p>
 <p>eyes</p>	 <p>trees</p>	 <p>toes</p>

initial /sh/

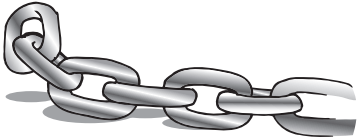

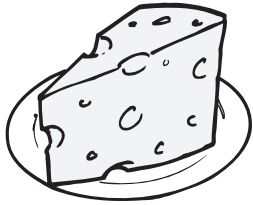

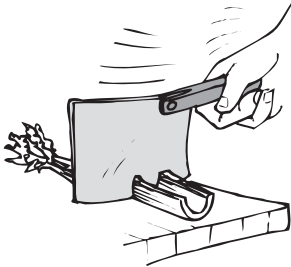

 <p>shirt</p>	 <p>sheep</p>	 <p>ship</p>
 <p>shine</p>	 <p>shoe</p>	 <p>shapes</p>

final /sh/

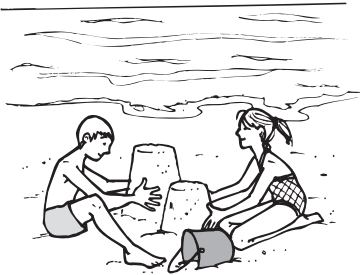
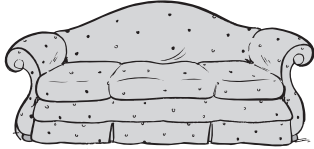
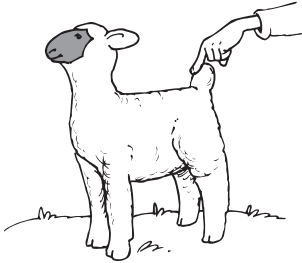

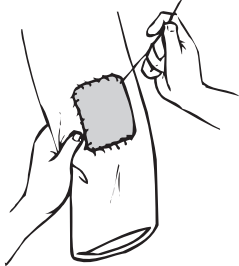
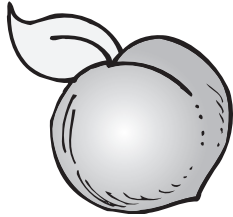
 <p>bush</p>	 <p>dish</p>	 <p>fish</p>
 <p>leash</p>	 <p>push</p>	 <p>sash</p>



### initial /ch/


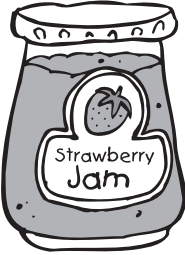

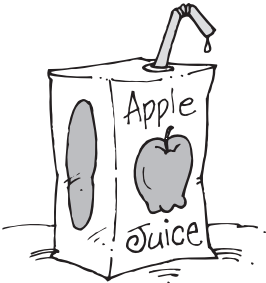
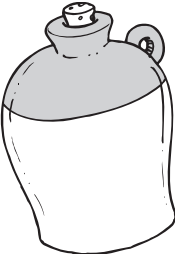

 <p>chain</p>	 <p>check</p>	 <p>cheese</p>
 <p>chew</p>	 <p>chop</p>	 <p>chick</p>

### final /ch/


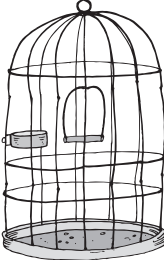
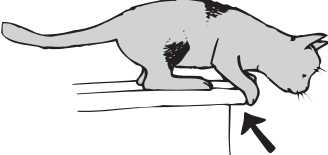

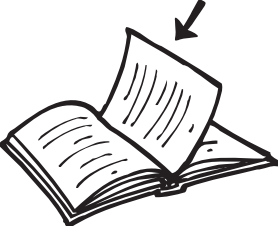
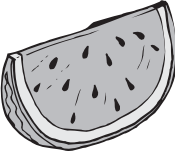
 <p>beach</p>	 <p>couch</p>	 <p>touch</p>
 <p>watch</p>	 <p>patch</p>	 <p>peach</p>



initial /j/



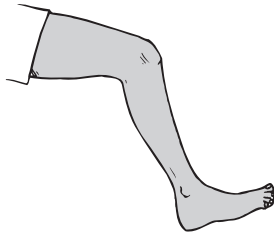
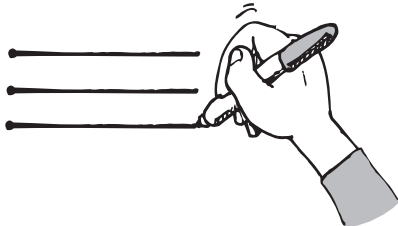
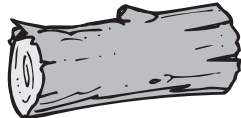

 <p data-bbox="342 611 391 653">jar</p>	 <p data-bbox="781 611 841 653">jam</p>	 <p data-bbox="1230 611 1284 653">jog</p>
 <p data-bbox="326 989 407 1031">juice</p>	 <p data-bbox="781 989 841 1031">jug</p>	 <p data-bbox="1214 989 1295 1031">jump</p>

final /j/

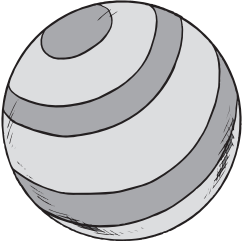

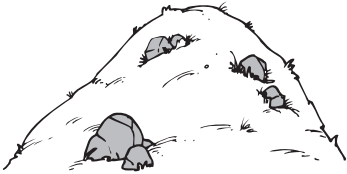
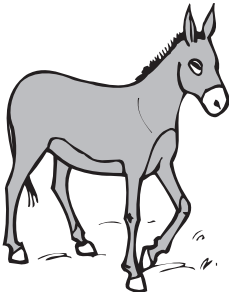
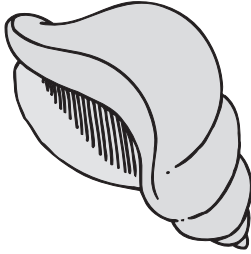
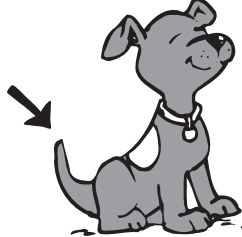
 <p data-bbox="318 1493 415 1535">badge</p>	 <p data-bbox="776 1493 846 1535">cage</p>	 <p data-bbox="1219 1493 1295 1535">edge</p>
 <p data-bbox="318 1871 415 1913">hedge</p>	 <p data-bbox="776 1871 846 1913">page</p>	 <p data-bbox="1203 1871 1312 1913">wedge</p>



### initial /l/


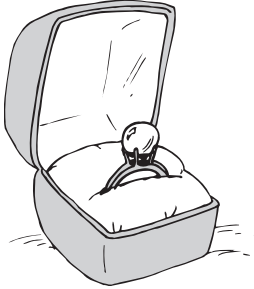
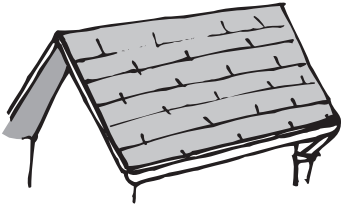



 <p>laugh</p>	 <p>light</p>	 <p>leg</p>
 <p>lines</p>	 <p>log</p>	 <p>lunch</p>

### final /l/

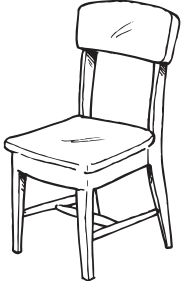
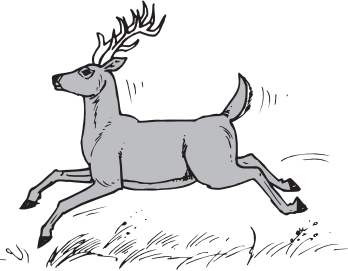
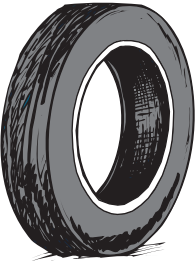

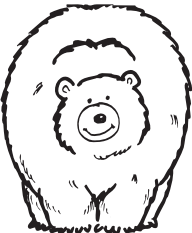
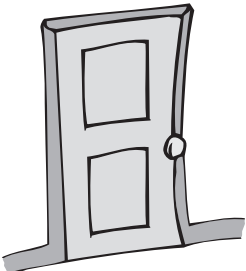
 <p>ball</p>	 <p>doll</p>	 <p>hill</p>
 <p>mule</p>	 <p>shell</p>	 <p>tail</p>



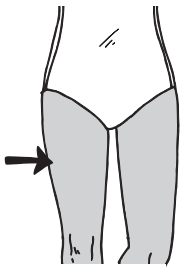
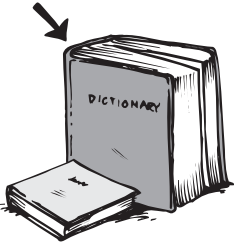


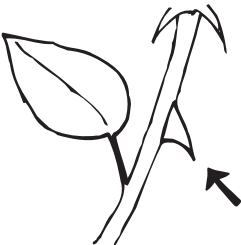
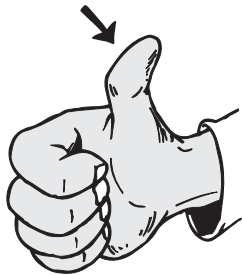
## initial /r/

 <p data-bbox="332 615 396 646">rain</p>	 <p data-bbox="781 615 841 653">ring</p>	 <p data-bbox="1219 615 1295 646">roof</p>
 <p data-bbox="329 995 402 1031">rope</p>	 <p data-bbox="781 995 841 1026">run</p>	 <p data-bbox="1214 995 1295 1026">write</p>


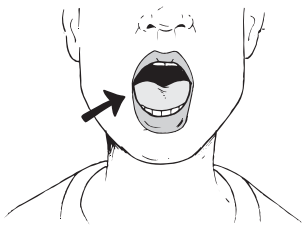



## final /r/

 <p data-bbox="326 1493 402 1524">chair</p>	 <p data-bbox="776 1493 846 1524">deer</p>	 <p data-bbox="1230 1493 1284 1524">tire</p>
 <p data-bbox="329 1871 402 1902">four</p>	 <p data-bbox="776 1871 846 1902">bear</p>	 <p data-bbox="1214 1871 1295 1902">door</p>

### initial /th/

 <p>thigh</p>	 <p>thick</p>	 <p>thin</p>
 <p>thimble</p>	 <p>thorn</p>	 <p>thumb</p>

### final /th/

 <p>booth</p>	$2 + 4 = 6$	 <p>mouth</p>
 <p>tooth</p>	 <p>teeth</p>	 <p>wreath</p>



# Speech Therapy Tracking Sheet

Name \_\_\_\_\_

Date	phoneme	isolation	CV, VC syllables	CVCV syllable sequences	CVC (same consonant)	CVC (different consonants)	2-syllable words	3-syllable words	4-syllable words	phrases	sentences	blends	Comments



## Cues and Prompts

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A cue or prompt is given by the therapist to facilitate correct speech production. They can be used to assist the child in placing his articulators in the correct position to produce sounds, sequence sounds to make words, and to monitor the accuracy of his productions. For example, use a hand signal at the beginning and the ending of a CVC word to cue each of the consonant productions. By providing appropriate and effective cues, you promote the child's success when producing speech.

### How to Use Cues and Prompts

1. Initially use all the cues and prompts the child requires for success.
2. Determine the sequence of the presentation of the cues and prompts that are most effective in promoting the child's success.
3. Once the child is consistently successful producing the speech target, begin to gradually fade the number and types of cues.
4. Continue to decrease cues and prompts until just a visual cue (e.g., picture, letter, written word) is all that is needed to cue production of the speech target.

### Types of Cues and Prompts

Cues and prompts can be auditory, visual, tactile, proprioceptive/movement, environmental, or a combination.

#### ► Auditory Cues and Prompts

- **Verbal model** Say the sound, syllable, syllable sequence, word, phrase, or sentence as a model prior to the child's production attempts.
- **Verbal prompt or cue** Tell the child what to do by giving a verbal direction, by repeating the direction or model, or by asking the child to imitate the verbal model. For example, emphasize the target sound by saying it louder or longer such as "cat" or "busssss;" say, "Repeat after me;" remind the child to use lots of air when producing /sh/.
- **Placement cue** Tell the child step-by-step how to place and use his articulators to produce a specific consonant or vowel sound.

#### ► Visual Cues and Prompts

- Printed letter for target sound
- A picture of a target sound, syllable, syllable sequence, or word
- Hand signal: Use a specific hand position and hand movement paired with the production of an isolated speech sound to cue production of a specific consonant or vowel sound (e.g., for /h/, hold the hand with palm facing the mouth, exhale toward the hand as you slowly move the hand away).
- Have the child watch your mouth.
- Highlight or underline targeted speech sounds, syllables, or words.



- Gestural prompt: The adult points, gestures, pantomimes, or demonstrates for the child.
- Manual sign: Use the sign alphabet to prompt production of a target sound in isolation (e.g., using the sign for *s* to prompt the child to produce /s/ sounds). Signs can be produced close to the face to assure that the child focuses on the oral cues.
- Vowel turtles (See pages 121-122 in this appendix.)
- Mirror

### ➤ Tactile Cues and Prompts

- Use touch to assist the child in positioning his articulators correctly for specific sound production (e.g., tapping the center of the upper and lower lips to facilitate lip closure for the /p/, /b/, and /m/ sounds).
- Have the child touch his articulators to cue correct placement and production.
- Have the child rest his chin in his cupped hands to assist him in keeping his jaw closed or graded appropriately for correct production of a specific speech sound (e.g., /r/, /er/).
- Slide your finger down the child's arm to cue a continuant sound.

### ➤ Proprioceptive/Movement Cues and Prompts

(Movement cues are often very beneficial for a child with CAS.)

- Movement cues may mirror features of the target sounds. For example, slide your hand down your arm to cue a long sound such as /s/, or slide your hand down your arm and then stop to cue production of a long sound followed by a short sound such as /st/.
- Use one hand signal to represent each sound in the syllable or the beginning and ending sounds of a word. Be sure to present them from right to left when facing the child. Move the hand signals together as the child sequences the sounds, syllables, or words. (See the hand signals on pages 118–119 in this appendix.)
- Use letter tiles or cards and slide them together as the child sequences sounds during speech tasks.

### ➤ Environmental Cues and Prompts

These cues and prompts may include stopping the interaction between you and the child, looking expectantly, and waiting for a response or engineering the environment to promote a specific response. For example, to get the child to say the word *shoe* multiple times, hide one of the shoes before telling him to get it and put it on.

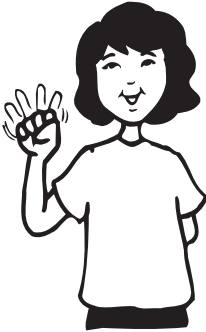








### ➤ Multisensory Cues and Prompts

Use several cues from different modalities (visual, auditory, tactile, proprioceptive/movement, environmental) and combine them to assist the child in producing speech targets correctly. Multisensory cues are particularly effective with the child with CAS.







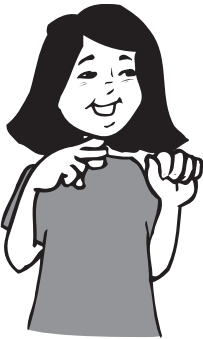

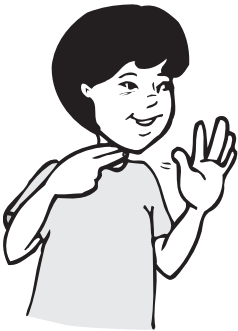




# Hand Signals for Consonant Sounds

Descriptions on how to make the hand signals are on page 120.

<p>P</p>  <p>p</p>	<p>B</p>  <p>b</p>	<p>M</p>  <p>m</p>
<p>T</p>  <p>t</p>	<p>D</p>  <p>d</p>	<p>K</p>  <p>k</p>
<p>G</p>  <p>g</p>	<p>F</p>  <p>f</p>	<p>V</p>  <p>v</p>



<p>H</p>  <p>h</p>	<p>L</p>  <p>l</p>	<p>R</p>  <p>r</p>
<p>N</p>  <p>n</p>	<p>SH</p>  <p>sh</p>	<p>CH</p>  <p>ch</p>
<p>J</p>  <p>j</p>	<p>S</p>  <p>s</p>	<p>Z</p>  <p>z</p>
<p>W</p>  <p>w</p>	<p>Y</p>  <p>y</p>	

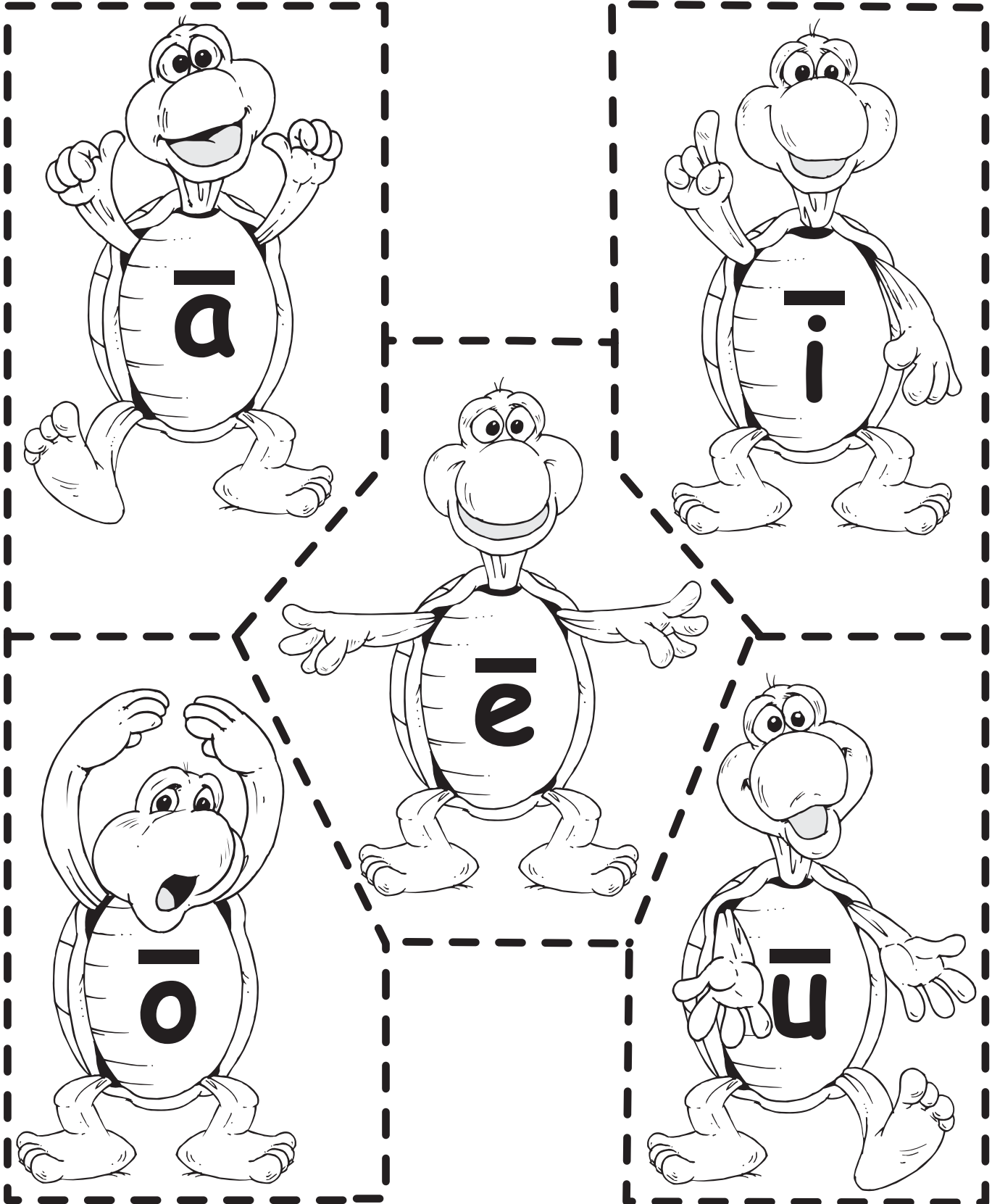


## The Consonant Hand Signals

Illustrations of the hand signals are on pages 118–119

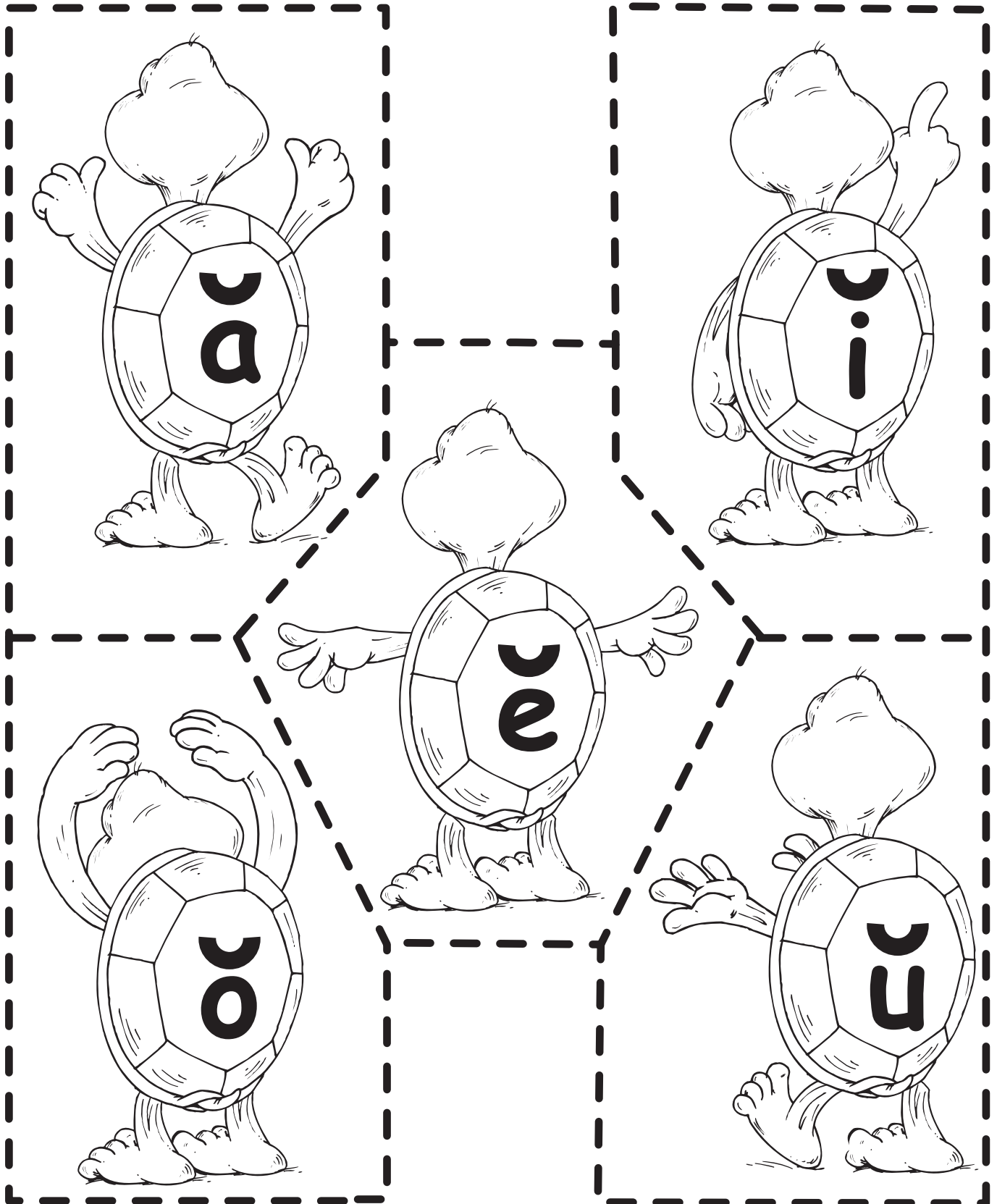
- p The popcorn sound. Make fist at shoulder level, palm facing students. Spring fingers open quickly as you say “p.”
- b The baby sound. Same motion as “p,” but put other hand on throat as you say “b.”
- m The humming sound. Make a fist with palm down. Pull fist slowly across body at chest level as you say “m.”
- t The ticking sound. Tap index finger on top lip as you say “t.”
- d The music sound. Same motion as “t,” but put other hand on throat as you say “d.”
- k The crunching carrot sound. Open hand, over shoulder, palm facing away from student. Pull hand over shoulder as you say “k.”
- g The drinking sound. Same motion as “k,” but put other hand on throat as you say “g.”
- f The angry cat sound. Make claw, palm facing student at face level. Move hand down as you say “f.”
- v The vacuum sound. Same motion as “f,” but other hand is on throat.
- h The sighing sound. Open hand facing your lips. Pull hand away from mouth as you say “h.”
- l The singing sound. Hold index finger and thumb in L-shape at mouth level, facing student as you say “l.”
- r The growling bear sound. Open hand, palm facing you at mouth level, next to head. Move hand up and back as you say “r.”
- n The neighing sound. Put index finger on nose as you say “n.”
- sh The quiet sound. Put your index finger in front of your lips as you say “sh.”
- ch The train sound. Make fist at shoulder level, facing student. Push up fist as you say “ch.”
- j The jingle sound. Same motion as “ch,” but put other hand on throat as you say “j.”
- s The snake sound. Open both hands at chest level, with palms facing student. Push hands out as you say “s.”
- z The buzzing sound. Similar motion as “s,” but put one hand on throat.
- w The whistle sound. Use index finger to circle lips as you say “w.”
- y The cheerleader sound. Hold thumb and index finger in a V-shape at chin level. Move hand toward throat as you say “y.”

# Vowel Turtles—Long Vowels





# Vowel Turtles—Short Vowels







# Oral-Motor Techniques to Facilitate Correct Production of Isolated Consonant Sounds

## Speech Sound Groups and Specific Intervention for Each

Direct oral-motor facilitation techniques can be applied to the articulators to facilitate accurate production of speech sounds. The specific sounds are presented in groups based on the production features of the sounds.

Not all direct techniques listed under a sound group must be used. Select the ones that facilitate the child's articulator placement for the target speech sound. Generally repeat each technique three times. Be sure to position the child correctly and apply techniques symmetrically to both sides of the face, jaw, lips, and tongue. When the child can produce the target speech sound voluntarily with consistency, direct techniques may be faded.

Not all of the direct oral-motor facilitation techniques are described under each sound group. The starred (\*) techniques are described and illustrated on pages 133–138. Position the child appropriately for oral-motor facilitation and speech activities. Make sure there is proper alignment between the hip-shoulder-head-neck with the head held upright and in midline. The mouth should be open in a neutral position with the chin slightly tucked and the tongue in the mouth.

To make oral-motor facilitation easier, make an oral-motor therapy equipment box that contains all the necessary supplies. Suggested materials:

- latex gloves
- blowing toys (e.g., horns, whistles, party blowers)
- cotton swabs
- edible treats (e.g., raisins, dried fruit, crackers)
- dental floss and dental floss holders
- straws
- aquarium tubing (clear plastic tubing of different diameters available at pet stores)
- Infa-dents
- toothbrushes
- Toothettes
- mouthwash
- coffee stirrers
- blunt, flat toothpicks
- tongue depressors
- washcloth
- rubbing alcohol
- antibacterial soap

Clean oral-motor equipment well. Use an antibacterial soap and rinse well or clean with rubbing alcohol. Some items may be cleaned in the dishwasher on the top shelf. Wear gloves and wash well when working on the child's face or in the mouth. Check the child for latex allergies before using gloves.

For children who have difficulty producing /p, b, m/, or /w/, use the following direct techniques. Each of the techniques for facilitating sound placement are appropriate to facilitate /p, b/, and /m/. Techniques 4 through 6 are appropriate to facilitate /w/.

1. To increase sensory awareness of lip contact, rub the contact surfaces of the upper and lower lip with texture (e.g., washcloth, toothbrush) or a cotton swab dipped in mouthwash.
2. Put a washcloth, straw, or a tongue depressor flat between the child's lips. Have him resist as you gently attempt to pull it out. Make sure the object is between the lips only, not the child's teeth.
3. Have the child briefly suck on ice cubes or a Popsicle.



4. Do bunny nose\*, V-pressure\*, mustache press\*, lip stroke\*, pucker resistance\*, and/or smile resistance\* exercises. (pages 134–135)
5. Apply sustained blowing activities\*. (Note: Use larger straws or plastic aquarium tubing to facilitate lip rounding for /w/.) (page 138)
6. Apply resistive sucking activities\*. (page 138)

## Labiodental Sounds /f, v/

For children who have difficulty with labiodental sounds, use the following direct techniques for facilitating sound placement of /f/ and /v/.

1. To increase sensory awareness, use the fingers to tap along the lower lip four or five times gently, but firmly. Do the same on the bottom edge of the upper central incisors. This may be done with a stroke using a cotton swab dipped into diluted mouthwash or a washcloth.
2. Apply lip stroke\* to the bottom lip only. (page 135)
3. Place the index finger along the entire lower lip. Apply deep pressure into the lip and hold for four to five seconds. Then use your fingers to apply sustained pressure to the upper teeth.
4. Manually tuck the child's lower lip into his mouth while providing jaw support. With the child's teeth open slightly, gently press upward with your finger as you push the child's lip into his mouth between his teeth.
5. Have the child briefly suck an ice cube or Popsicle. Rub the ice on the child's lower lip and on the edge of the child's upper teeth.
6. Have the child use his front teeth to bite through carrot or celery sticks or crackers to encourage appropriate jaw function.
7. Put marshmallow cream, jelly, or another sticky food on the child's lower lip, and have him scrape it off using his upper teeth.

## Lingua-Alveolar Sounds /t, d, n/

For children who have difficulty with lingua-alveolar sounds, use the following direct techniques for facilitating sound placement of /t, d/, and /n/.

1. To increase sensory awareness, rub the sides and tip of the tongue and the alveolar ridge with texture (e.g., washcloth, toothbrush, cotton swab, Infa-dent, or Toothette) as you name the points of contact.
2. Use your finger to apply deep pressure to the tongue front and tip in a series of quick taps.
3. Do tongue tip press: in\*, tongue tip press: down\*, tongue tip press: lateral\*, and/or tongue stroke\* exercises. (pages 136 and 138)
4. With your gloved finger, press down on the front top of the child's tongue at the center. Slowly lift your finger and ask the child to follow your finger with his tongue.
5. Hold a sucker, pretzel, carrot stick, celery stick, tongue blade, or Popsicle upright in front of the child's mouth. Have him use his tongue to lick from the bottom to the top of the object without moving his head.



6. Put a thin cocktail straw or coffee stirrer horizontally behind the child's front teeth (i.e., side-to-side, not front-to-back). Have him hold it there for a count of 10, using only the front of his tongue. Don't let him close down his jaw to hold the straw.
7. Place a sticky food on the child's alveolar ridge. Have him lick it off with the front and tip of his tongue using a front-to-back motion rather than a sucking motion.

## Velar Sounds /k, g/

For children who have difficulty with velar sounds, use the following direct techniques for facilitating sound placement of /k/ and /g/.

1. To increase sensory awareness, rub the sides of the back half of the child's tongue, moving from front to back with a finger, Toothette, Infa-dent, or a cotton swab dipped in mouthwash. Then rub the insides of the back teeth along the gum edge.
2. Do central groove tap\*, tongue back press: top\*, tongue back press: sides\*, and/or tongue base press\* exercises. (pages 135–137)
3. Have the child drink a tart liquid such as lemonade or cranberry juice through a thin straw.

## Lingua-Alveolar Strident Sounds /s, z/

For children who have difficulty with strident sounds, keep in mind that there are several important factors that can affect placement and production of /s/ and /z/. Direct techniques for sound placement are listed in a general therapy progression to target these factors. Techniques to facilitate jaw stability, a central groove in the tongue, and elevation of the tongue tip and sides are listed below. Select techniques as needed for a frontal lisp, a lateral lisp, or for increased respiration/breath support for these sounds. Some techniques may target more than one problem area.

1. Facilitate jaw stability and graded jaw movements. Without this control, the tongue has difficulty moving independently to find and maintain a correct position for sound production. Jaw positioning, stability, and control can be affected by overall body positioning, body and facial muscle tone, and by a habitual jaw-open position with mouth breathing.
  - a. Use jaw resistance activities\*. (page 134)
  - b. Do the push into the point of the chin\* exercise. (page 134)
  - c. Apply biting and chewing activities.
  - d. Do sustained blowing\* and resistive sucking\* activities. (page 138)
  - e. Use a bite block\* to stabilize the jaw and maintain a jaw opening without shifting or excessive opening during speech attempts. (page 134)
  - f. Use jaw cupping\* or position the child's chin on his fist during speech productions as needed. (page 134)
2. Facilitate a central groove in the midline of the tongue to get tongue placement and proper airflow. The central groove is needed for passage of the air stream. When the air stream is absent or reduced, the child omits the /s/ or /z/ or substitutes a stop, a lateral production, or a frontal production.
  - a. Use central groove stroke\* and/or central groove tap\* exercises. (page 135)



- b. Put a thin straw, a flat blunt toothpick, or a coffee stirrer on the front quarter of the central groove of the child's tongue. Have the child produce a sustained /s/ with the object on the central groove. Slowly pull the object out as the child continues to blow air and produce the sound.
3. Facilitate elevation of the tongue tip and sides. An elevated tongue tip with a central groove and front opening for airflow is needed, although some children may be more successful with the tongue tip depressed. Without elevation of the sides of the tongue, the sound may be produced as a stop or with lateralized airflow.
  - a. To increase sensory awareness, use your gloved finger or texture (e.g., pretzel, washcloth, Infadent, Toothette) to rub the alveolus and the tongue where contact is made between the two.
  - b. Stroke each side of the tip of the tongue. Begin at the center of the tip and stroke one quarter of the way back on each side of the tongue. Then stroke each top side of the tongue along the edges from the tip to the back.
  - c. Do tongue tip press: in\* and/or tongue tip press: down\* exercises. (page 136)
  - d. Do tongue side press: in\*. Repeat and have the child push back with his tongue (resistance). (page 137)
  - e. Do tongue side press: down\*. Repeat as the child attempts to push up (resistance). (page 137)
  - f. Place a sticky food such as peanut butter, jelly, icing from a tube, or marshmallow cream on the center of the child's alveolus and have him lick it off, using the front and tip of his tongue to lick from front to back.
4. Counteract excessive tongue protrusion (frontal lisp). The tongue needs to be retracted behind the central incisors.
  - a. Apply jaw techniques\* as needed. (page 134)
  - b. Apply central groove techniques\*. (page 135)
  - c. Use tongue stroke\* along with tongue tip and side elevation techniques\* as described above (pages 136 and 137). Stroke the tongue on the midline from the center to the tip. (page 138)
  - d. Grasp the child's tongue with a washcloth, pull it forward, briefly hold it, and then release it.
  - e. Elevate the child's tongue and briefly vibrate on either side of the lingual frenum.
  - f. Do resistive sucking through a straw\*. Put the straw on the front central groove (midline of the tongue) when drinking. The child's tongue should be in his mouth, not protruded. Use a tart drink such as lemonade or cranberry juice to facilitate tongue retraction. (page 138)
5. Counteract lateral emission of airflow (lateralized production). The sides of the tongue must be elevated and there must be a central groove for airflow for a non-lateralized strident production.
  - a. Apply jaw techniques\* as needed. (page 134)
  - b. Apply central groove techniques\*. In a lateral production, the air tends to flow over the sides of the tongue rather than down the central groove. (page 135)
  - c. Apply tongue tip and side elevation techniques\*. Emphasize elevation of the sides of the tongue. (pages 136–137)
  - d. Use a bite block\* during speech to stabilize the jaw and maintain mouth opening without shifting or excessive opening of the jaw. (page 134)



6. Facilitate respiration/breath support for speech. Without appropriate air support for speech, the strident may become an omission or stop, and there may be cluster or syllabication reduction.
  - a. Use gross motor activities to prepare the body, such as hopping or jumping.
  - b. Position the child with the head, neck, and hips in alignment. (page 133)
  - c. Do blowing activities\* that require sustained breath. (page 138)
  - d. The child may lie on his stomach, propped on his elbows during speech production. (page 133)
  - e. Have the child produce sustained vowels, a continuous vowel sequence, or sustained vowels gliding into a strident production (e.g., “eeesss”).
  - f. Push into the child’s diaphragm as he produces the strident sound.
  - g. Do exercises that facilitate breath control such as jumping, bouncing, running, sit-ups, or yoga.
  - h. Have the child lie facedown over a large therapy ball. Hold the child at the hips. Push into the ball as you bounce him.
  
7. Counteract substitution of a stop sound for the continuant.
  - a. Apply jaw techniques\* as needed. (page 134)
  - b. Apply central groove techniques\*. (page 135)
  - c. Try an alternate placement (i.e., the tongue tip down).
  - d. Use techniques to facilitate elevation and spreading of the lateral margins of the tongue. Do tongue side press: in\*, tongue side press: down\*, and/or tongue spread\* exercises. (page 137)
  - e. Work on respiration and breath support for speech.

## Palatal Sounds /sh, ch, j/

For children who have difficulty with palatal sounds, use these techniques:

1. Facilitate jaw stability and graded jaw movements. Without this control, the tongue has difficulty moving independently to find and maintain a correct position for sound production. Jaw positioning, stability, and control can be affected by overall body positioning, body and facial muscle tone, and by a habitual jaw-open position with mouth breathing.
  - a. Apply jaw resistance activities\*. (page 134)
  - b. Do the push into the point of the chin\* exercise. (page 134)
  - c. Apply biting and chewing activities.
  - d. Do sustained blowing\* and resistive sucking\* activities. (page 138)
  - e. Use a bite block\* to stabilize the jaw and maintain a jaw opening without shifting or excessive opening during speech attempts. (page 134)
  - f. Use jaw cupping\* or position the child’s chin on his fist during speech productions as needed. (page 134)
  
2. Facilitate a central groove in the midline of the tongue to get tongue placement and proper airflow. This is needed for the passage of the airstream. When it is absent or reduced, the child produces the strident frontally, laterally, omits it, or substitutes a stop for it.



- a. Do central groove stroke\* exercise. (page 135)
  - b. Do central groove tap\* exercise. (page 135)
3. Facilitate elevation of the tongue tip and sides and spreading of the tongue. An elevated tongue tip with a central groove and front opening for airflow is needed. Without spreading and elevation of the sides of the tongue, the production may be a stop, a frontal production, or a lateral production.
- a. To increase sensory awareness, stroke the top sides of the tongue from the tip to the back, first stroking one side, then the other.
  - b. Do tongue tip press: in\*, tongue tip press: down\*, and/or tongue tip press: lateral\* exercises. (page 136)
  - c. Do tongue side press: in\*. Repeat and have the child push back with his tongue (resistance). (page 137)
  - d. Do tongue side press: down.\* Push down as the child attempts to push up (resistance). Don't let him use his head to help. (page 137)
  - e. Do tongue spread\* exercise. (page 137)
  - f. Encourage elevation of the back sides of the tongue using techniques a, b, and c.
4. Counteract excessive tongue protrusion (interdental placement).
- a. Apply jaw resistance techniques\*. (page 134)
  - b. Apply central groove techniques\*. (page 135)
  - c. Do tongue stroke\* exercise. (page 138)
  - d. Tap the tongue tip and front using short quick taps.
  - e. Apply tongue tip and side elevation techniques.\* (pages 136–137)
  - f. Grasp the child's tongue with a washcloth, pull it forward, and briefly hold it.
  - g. Elevate the child's tongue and briefly vibrate on either side of the lingual frenum.
  - h. Use a bite block\* during speech to stabilize the jaw and maintain jaw opening without shifting or excessive opening. (page 134)
5. Counteract lateral emission of airflow (lateralized production). The sides of the tongue must be elevated and there must be a central groove for airflow for a non-lateralized strident production. If the child lateralizes a palatal sound, work on increased lip rounding, central groove of the tongue, elevation of the lateral margins of the tongue, and jaw position and stability.
- a. Apply jaw resistance techniques\*. (page 134)
  - b. Apply central groove techniques\*. In a lateral production, the air tends to flow over the sides of the tongue rather than down the central groove. (page 135)
  - c. Apply tongue tip and side elevation techniques. Emphasize elevation of the sides of the tongue. (pages 136–137)
  - d. Use a bite block\* during speech to stabilize the jaw and maintain jaw opening without shifting or excessive opening. Apply other jaw stability and control techniques as needed. (page 134)



6. Increase lip tension to facilitate rounding.
  - a. Do sustained blowing activities\* or resistive sucking\*. (page 138)
  - b. Do manual vibration to the facial muscles, particularly around the lips\*. (page 133)
  - c. Do lip stroke\*, pucker resistance\*, and/or smile resistance\* exercises. (page 135)
  
7. Facilitate respiration/air support for /sh, ch/, and /j/. Without appropriate air support for speech, a stop sound may be substituted for the strident or the strident may be omitted.
  - a. Use gross motor movement activities to prepare the body such as jumping, hopping, and dancing.
  - b. Do blowing activities\* that require sustained breath. (page 138)
  - c. Have the child lie on his stomach, propped on his elbows during speech production. (page 133)
  - d. Produce sustained vowels, a continuous vowel sequence, or sustained vowels gliding into a strident production (e.g., “iiiiish”).
  - e. Push into the child’s diaphragm as he produces the strident sound.
  - f. Do exercises that facilitate breath control such as jumping, bouncing, running, or sit-ups.
  - g. Have the child lie facedown over a large therapy ball. Hold the child at the hips. Push into the ball as you bounce him.
  - h. Make sure the child’s head, neck, and hips are in alignment. (page 133)
  
8. If the child uses a stop for a continuant, work on placement of the sides of the tongue, airflow, and the central groove and opening at the front of the tongue.

## Lingua-Alveolar Glide Sound /l/

For children who have difficulty with the lingua-alveolar glide sound, use the following direct techniques for facilitating sound placement of /l/.

1. To increase sensory awareness, rub the sides and tip of the child’s tongue as well as the alveolus with texture (e.g., washcloth, toothbrush, cotton swab, Toothette, or Infa-dent) as you name the points of contact.
2. Facilitate jaw stability and graded jaw movements. Without this control, the tongue has difficulty moving independently to find and maintain a correct position for sound production. Jaw positioning, stability, and control can be affected by overall body positioning, body and facial muscle tone, and by a habitual jaw-open position with mouth breathing.
  - a. Apply jaw resistance activities\*. (page 134)
  - b. Do the push into the point of the chin\* exercise. (page 134)
  - c. Apply biting and chewing activities.
  - d. Do sustained blowing\* and resistive sucking\* activities. (page 138)
  - e. Use a bite block\* to stabilize the jaw and maintain a jaw opening without shifting or excessive opening during speech attempts. (page 134)
  - f. Use jaw cupping\* or position the child’s chin on his fist during speech productions as needed. (page 134)



3. Use your finger to apply deep pressure to the tongue front and tip in a series of quick taps.
4. Do tongue tip press: down\*, tongue tip press: lateral\*, tongue stroke\*, and/or tongue tip elevation\* exercises. (pages 136 and 138)
5. Press down on the top of the front of the child's tongue at the center with your finger. Slowly lift your finger and ask the child to follow it with his tongue.
6. Hold a sucker, pretzel, carrot stick, celery stick, tongue blade, or Popsicle upright in front of the child's mouth. Have the child use his tongue to lick from the bottom to the top of the object without moving his head. Repeat, providing proprioceptive input by pulling down on the object as the child licks up.
7. Put a thin cocktail straw or coffee stirrer horizontally (i.e., side-to-side, not front-to-back) behind the child's front teeth. Have him hold it there for a count of 10, using only the front of his tongue. Don't let the child close down his jaw to hold the straw. You can also place the straw on the central groove of the child's tongue and have him hold it against the alveolus.
8. Place a small amount of a sticky food such as peanut butter, jelly, or marshmallow cream on the center of the child's alveolus and palate. Have the child use the front of his tongue to lick from the alveolus back to the palate.
9. If the child is using lip rounding (which encourages substitution of /w/), have him smile slightly. You can also do techniques that encourage lip retraction such as stroking the lips from the center to the corners. Begin with words or syllables that contain the vowel "eee" (e.g., *leak*, *leap*, *believe*) that facilitate lip retraction.

## Palatal Glide Sounds /r, er/

The techniques are listed in a general progression to address the key variables for achieving correct /r/ and /er/ placement and production. The techniques under each heading may target more than one element. Not all techniques need to be implemented. You will need to determine which factors are affecting /r/ and /er/ placement difficulty and which areas to address. For children who have difficulty with /r/ and /er/ sounds, use these direct techniques:

1. Facilitate jaw stability and graded jaw movements so that jaw positioning is controlled and the tongue moves independently from the jaw. It's important to check jaw positioning and stability carefully. Many children who distort /er/ have difficulty maintaining a neutral jaw position. They may jut the jaw forward, laterally, or use a lax open jaw which pulls the tongue out of position. Poor postural alignment can affect jaw functioning.
  - a. Apply jaw resistance activities\*. (page 134)
  - b. Do the push into the point of the chin\* exercise. (page 134)
  - c. Apply biting and chewing activities.
  - d. Do sustained blowing\* and resistive sucking\* activities. (page 138)
  - e. Use a bite block\* to stabilize the jaw and maintain a jaw opening without shifting or excessive opening during speech attempts. (page 134)
  - f. Use jaw cupping\* or position the child's chin on his fist during speech productions as needed. (page 134)





2. Facilitate an appropriate amount of tension throughout the tongue.
  - a. Do tongue side press: in\*. Repeat and have the child push against your finger with his tongue (resistance). (page 137)
  - b. Do tongue side press: down\*. Repeat with the child using his tongue to push up against your finger (resistance). (page 137)
  - c. Push down on the center of the front of the child's tongue with your gloved finger as the child attempts to push your finger up (resistance).
  - d. If the child's tongue is overly tense so that he distorts /er/, work on tongue position (spreading and elevation of the back especially), and a reduction of tension in the tongue. It may help to close the jaw down some and produce the /er/ with a rising pitch.
  
3. Facilitate tongue retraction. The child's tongue should be pulled back with the back lateral margins elevated.
  - a. Using a gloved finger, a cotton swab dipped in mouthwash, a washcloth, an Infa-dent, or a Toothette, stroke the sides of the child's tongue and the upper molars and gums. Then have the child raise his tongue so the sides are in contact with the sides of the molars. Have him slowly slide his tongue back, maintaining contact between the sides of the tongue and the molars.
  - b. Have the child gently bite the sides of his tongue between his molars as he slides his tongue back.
  - c. Put a tongue depressor into the tip of the child's tongue. Push the tongue straight back for the /er/. You can also put the depressor under the front of the child's tongue and push back and slightly up.
  - d. Touch the back of the child's head at the base of his skull as he retracts his tongue. You can also gently pull the child's hair back at the base of his skull. These techniques give tactile information about tongue retraction.
  
4. Facilitate elevation of the back and sides of the tongue and spreading of the tongue.
  - a. To increase sensory awareness, use a gloved finger, a cotton swab dipped in mouthwash, a washcloth, an Infa-dent, or a Toothette to stroke the sides of the tongue and the upper molars and gums where contact is made.
  - b. Do tongue side press: in\*. Repeat and have the child push against your finger with his tongue (resistance). (page 137)
  - c. Do tongue side press: down\*. Repeat and have the child push up against your finger with his tongue (resistance). (page 137)
  - d. Do tongue base press\* and/or tongue spread\* exercises. (page 137)
  
5. Facilitate a central groove in the midline of the tongue to get tongue placement with the back sides elevated so that the tongue is spoon-shaped.
  - a. Do central groove stroke\* exercise. (page 135)
  - b. Do central groove tap\* exercise. (page 135)



6. Facilitate elevation of the tongue tip and front.
  - a. Apply deep pressure to the front and tip of the child's tongue in a series of quick taps with the finger.
  - b. Do tongue tip press: in\*. Repeat with the child pushing against your finger with his tongue tip (resistance). Don't let him push with his head. (page 136)
  - c. Do tongue tip press: down\*. Push down on the child's tongue as he pushes up (resistance). (page 136)
  - d. Do tongue tip press: lateral\* applied to the tongue front. Repeat as the child pushes against your finger (resistance). (page 136)
  - e. Press down on the front of the center of the child's tongue with your finger. Slowly lift your finger and ask the child to follow it with his tongue.
  - f. Put a tongue depressor under or into the tip of the child's tongue. Push the tongue back and slightly up for the /er/. For the retroflex position, push the tongue tip all the way up and back.
  
7. If the child is substituting /w/ for /r/, encourage lip spreading rather than rounding.
  - a. Apply manual vibration\* using slow vibration to the face. Slow vibration will reduce facial tension. (page 133)
  - b. Stroke the child's lips from the corners to the center, then shake the center gently to reduce lip tension.
  - c. Use a lip-spread vowel such as "ee" to precede the /r/ (e.g., *ear, deer, here*).
  - d. Use a smile and elongate the /r/ sound.
  - e. Use a mirror to monitor lip position.

## Consonant Blends

Apply appropriate techniques from pages 123-132 to facilitate the consonant sounds in the blends.

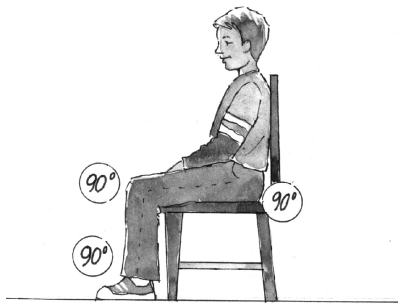


## Illustrated Oral-Motor Techniques

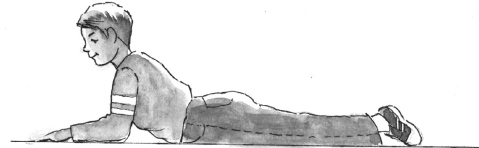
Not all techniques are illustrated. A technique may fall under more than one heading because it may facilitate more than one position or movement.

### Positioning

It's important to give the speech mechanism a stable base.



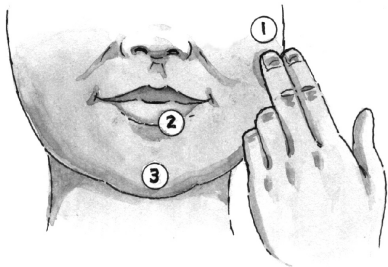
1. 90° - 90° - 90°  
hips, knees, and ankles at 90°;  
feet flat on floor



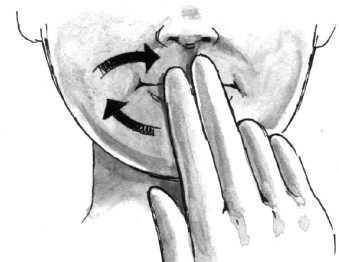
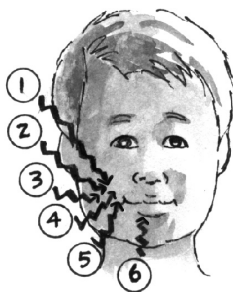
2. prone on elbows,  
elbows directly under shoulders,  
head forward and up  
(not sunk between shoulders)

### Face Wake-ups

These techniques are used to prepare the muscles of the face and mouth for speech production.



1. face pats  
Use two fingers to pat cheeks, lips, and chin.
2. manual vibration  
Using your index and middle fingers,  
vibrate along facial muscles from  
origin to point of insertion at mouth  
and around lips.



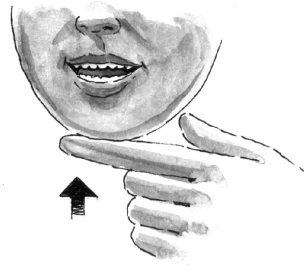


### Jaw Stability Techniques

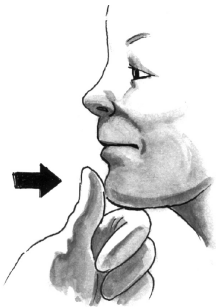
Jaw stability and grading are important for all speech sounds, particularly for connected speech.



1. resistance to jaw opening  
Push down on the child's chin as he attempts to keep his mouth closed.



2. resistance to jaw closing  
Push upward on the child's chin while he attempts to keep his mouth open.



3. push into the point of the chin  
Push inward on the point of the child's chin.



4. bite block  
Place an object between the child's molars.

5. jaw cupping  
Have the child cup his chin between the palms of both hands with his fingers along his jaw and his thumbs along or behind the angle of the mandible.

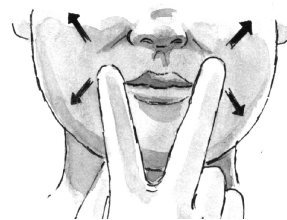


### Lip Closure Techniques

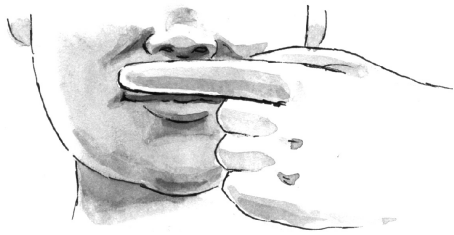
These techniques are important for /p, b/, and /m/ sounds. Lip closure can be affected by head and back positioning, low tone, stability, and habitual protrusion of the tongue.



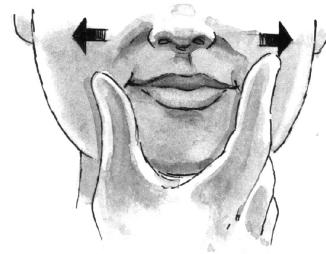
1. bunny nose  
Place your index and middle fingers on either side of the child's nose. Vibrate down to the child's top lip. Hold briefly.



2. V-pressure  
Place your index finger and middle finger in a V above the child's lips. Push up and out. For the bottom lip, push down and out.



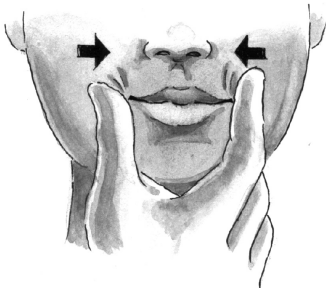
3. mustache press  
Place your index finger on the area above the child's top lip and press in.



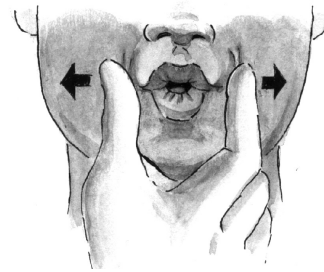
4. lip stroke  
Place your thumb and index finger at the center of the child's lips. Stroke to corners and hold briefly.

### Lip Rounding/Protruding Techniques

These techniques are important for /w, sh, ch/, and /j/ sounds.



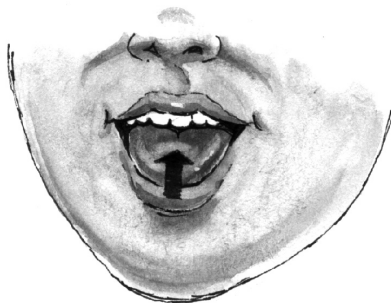
1. pucker resistance  
Have the child smile or say "ee" as you push his lips into a pucker.



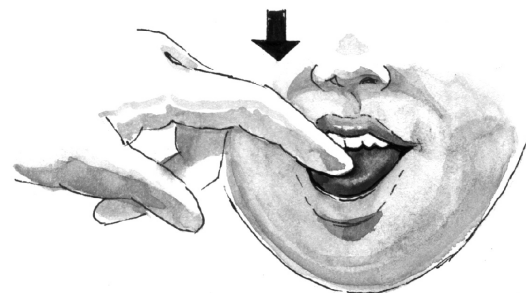
2. smile resistance  
Have the child pucker or say "ooh" as you pull his lips into a smile.

### Central Groove of the Tongue Techniques

These techniques are important for /s, z, sh, ch, j, er, r/, and /th/ sounds.



1. central groove stroke  
Stroke the central groove of the child's tongue from the tip to halfway back.

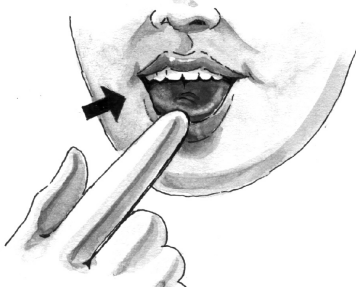


2. central groove tap  
Administer quick taps to the child's tongue along the central groove from the tip to halfway back.

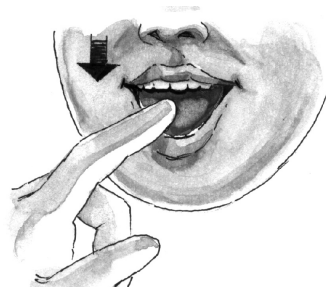


### Tongue Tip/Front Elevation and Spreading Techniques

These techniques are important for /t, d, n, l, s, z, sh, ch, j, er/, and /r/ sounds.



1. tongue tip press: in  
Press into the child's tongue tip.  
Repeat and have the child push back.



2. tongue tip press: down  
Push down on the child's tongue tip.  
Repeat and have the child push up.



3. tongue tip press: lateral  
Push into each side of the child's tongue. Repeat and have the child push back.



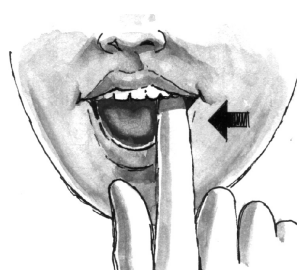
4. tongue tip elevation  
Place a small dental floss holder with floss in it behind the child's front teeth. Have the child tap or sustain touch on the floss with his tongue tip.

### Tongue Back Elevation Techniques

These techniques are important for /k, g, er, r/, and /y/ sounds.



1. tongue back press: top  
Push down on the top back of each side of the child's tongue.

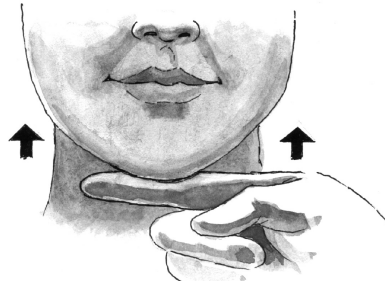


2. tongue back press: sides  
Push into the back sides of the child's tongue.



3. tongue base press

Push up on the base of the child's tongue by pressing upward behind the chin with your index finger.



### Tongue Lateral Margin Elevation and Spreading Techniques

These techniques are important for /t, d, n, s, z, sh, ch, j, er, r, l/, and /y/ sounds.



1. tongue side press: in

Put finger along the entire side of the child's tongue and push in toward the midline.



2. tongue side press: down

Put finger along the entire side of the top of the child's tongue and push down.



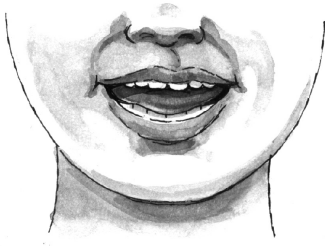
3. tongue spread

Place a standard-size dental floss holder between the child's molars. Have the child spread his tongue so its sides touch the sides of the dental floss holder.



### Tongue Retraction Techniques

These techniques are important for /k, g, y/, and /r/ sounds. You can also use the tongue tapping technique from the Central Groove of the Tongue Techniques on page 135, using deep pressure.



1. tongue bite  
Have the child gently bite on the sides of his tongue between his molars and slide his tongue back.



2. tongue stroke  
Stroke the child's tongue along the central groove from halfway back to the tongue tip.

### Resistive Sucking

Sucking increases lip closure, lip strength, graded jaw closure and stability, and use of the cheek muscles.

Make sure the child holds the straw with her lips, not her teeth. Encourage a stronger suck by using straws of various widths or shapes or twisted aquarium tubing. Use thicker drinking substances for greater sucking strength. Partially freeze drinks in plastic bottles. Have the child put her lips around the bottle and suck.



### Sustained Blowing

Blowing facilitates lip closure and rounding, facial tone, graded jaw positioning and movements, and breath support for speech.

Graduate the tasks by using blowing items or activities that require greater or lesser air flow, lip strength, lip contact, lip rounding, and jaw opening. Make sure the child holds the item for blowing with her lips, not her teeth. Use items such as:

- blowing toys (any toy that primarily uses blowing like horns or whistles)
- beach balls (child blows it up)
- sound makers (harmonica, whistle)
- paper party blowers that roll up
- bubbles (wands, bubble pipes, straws, flexible tubing like aquarium tubing)
- small plastic balls (child blows them around with air directly from her mouth or by using a straw)
- straws of different widths and shapes
- two-liter bottles (child puts her lips around the top and blows into it)





## Sequence of Cognitive, Play, and Communication Development

In young children, or children with other handicapping conditions, it can be difficult to separate language skills from cognitive (learning) and play skills as they are intertwined and interrelated. Following is the general sequence of typical development of cognitive, play, and communication skills.

Remember that these are the averages of when children begin using these skills. Typically-developing children develop some of these skills at earlier ages and some at later ages. Receptive language skills typically are higher than expressive language skills—children understand more than they can tell.

### 2 years old

- cognitive skills
  - ✓ object permanence (knowing that objects exist even when they are out of sight)
  - ✓ ends-means and causality (knowing that actions have results)
  - ✓ tool use (e.g., using a mallet on pegs, using a spoon when eating)
- play skills
  - ✓ functional use of objects (e.g., brushing hair with a brush)
  - ✓ one scheme or action type per object (e.g., pushing a toy truck or hugging a doll)
  - ✓ several schemes per object (e.g., hugging a doll, covering up the doll)
  - ✓ using two objects together in play (e.g., putting blocks in a truck and pushing the truck)
  - ✓ acting out simple themes the child has experienced (e.g., setting a table with toy dishes)
- communication skills
  - ✓ using first words around 12 months of age, about 50 words by age 2
  - ✓ putting two words together at 19 to 24 months
  - ✓ often have a burst in speaking vocabulary and use of two-word utterances when the child is using about 50 words
  - ✓ concepts the child understands include *in, on, off, out, up, down, hot, wet, dirty, yucky, pretty, loud, one, all, and all gone*

### 3 years old

- cognitive and play skills
  - ✓ reproduces in play what he/she sees and experiences, which extends and practices his/her cognitive knowledge
  - ✓ uses props (e.g., dress-up clothes, dishes) to play in scenarios (e.g., Mommy making dinner)
  - ✓ plays games with simple rules (e.g., *Hide-and-Seek*)
- communication skills
  - ✓ understands around 1000 to 2000 words and says over 1000 words
  - ✓ using 3 to 5 words in a sentence
  - ✓ concepts the child understands include *under, over, on top, top/bottom, next to/beside, front/back, around, high/low, big/little, hard/soft, same/not same, heavy, empty/full, fast/slow, and sticky*
  - ✓ matches colors



- ✓ knows one or more colors
- ✓ counts three objects
- ✓ 80% of his/her speech is understandable to people outside his/her family

#### 4 years old

- play skills
  - ✓ demonstrates creative and imaginative play
  - ✓ plays board games
- cognitive skills
  - ✓ begins to classify
  - ✓ puts things in order (e.g., largest to smallest)
  - ✓ understands time
  - ✓ understands that quantity stays the same no matter the size of the container
- communication skills
  - ✓ understands 1500-2000 words and uses up to 1500 words
  - ✓ typical sentences are 4 to 6 words in length and are fairly complete in structure and form
  - ✓ uses possession, plurals, some verb tenses, pronouns, question words, and words like *is*, *can*, and *will*
  - ✓ concepts the child understands include *middle*, *first/last*, *above/below*, *large/small*, *heavy/light*, *rough/smooth*, *loud/soft*, *tall/short*, *long/short*, *like/not alike*, *same/different*, *sharp/dull*, *each*, and *one more than*
  - ✓ counts objects to 5
  - ✓ most of his/her speech is understandable to people outside his/her family, although there still may be difficulty saying the /l, r, th, s/ sounds.

#### 5-6 years old

- play skills
  - ✓ plays table games and complicated floor games
  - ✓ plans and builds constructively
  - ✓ plays cooperatively with others in a group
- cognitive skills
  - ✓ continues to refine and expand cognitive skills
- communication
  - ✓ understands around 2500-2800 words and uses 2500 words
  - ✓ typical sentences are 5 to 7 words in length
  - ✓ uses pronouns, verb tenses, articles, and various sentence types, although errors are occasionally present
  - ✓ concepts the child understands include comparative adjectives (e.g., *tall-taller*, *to*, *of*, *between*, *in order*, *before*, *after*, and number concepts)
  - ✓ speech is fully intelligible, although occasional errors are present