

TSHA SI DISABILITY DETERMINATION GUIDELINES FOR ARTICULATION DISORDERS

REVISED 2020



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Table of Contents

General Information	3
Purpose and Intended Use of the Articulation Guidelines.....	4
Informational Materials	5
Information on Articulation for Parents and Teachers	6
When is a Sound Error a Concern?	8
Classroom Considerations for Articulation	11
Data Collection for Student Support Team	14
Data Collection.....	15
Standardized Assessment of Articulation.....	16
Guidelines for Administering Standardized Assessments	17
Current Standardized Assessments.....	18
Information about Selected Standardized Assessments	19
Informal Assessment of Articulation	23
Rationale for Informal Assessment	24
Informal Measures of Articulation	25
Instructions for Informal Evaluation Measures of Articulation.....	26
Reporting Use of Informal Measures	31
Eligibility Considerations	33
Eligibility Process.....	34
Dismissal Considerations	40
References.....	44
Appendix A: Other Considerations.....	48
Use of Developmental Norms for Determining an Articulation Disorder	49
Considerations for Exceptions to Standard Procedures.....	49
Report Writing Considerations.....	54
Appendix B: Forms and Charts.....	55
Classroom Considerations and Articulation Intervention Recommendations	56
Parent and Teacher Observations of Articulation	57
Observaciones de Padres y Maestros de la Articulación	58
Oral Mechanism Evaluation Form	59

Disability Determination Worksheet.....	64
Stage 1: Evidence of Disorder.....	65
Stage 2: Adverse Impact on Educational Performance	66
Stage 3: Need for Specialized Services	66
Re-Evaluation Disability Determination Worksheet.....	68
Stage 1: Evidence of Disorder.....	70
Stage 2A: Adverse Impact on Educational Performance	70
Stage 2B: Considerations for Dismissal	71
Stage 3: Need for Specialized Services	72
Point to Point Comparison	73
Percentage of Consonants Correct	74

General Information

*The SI Disability Determination Guidelines have been prepared by the Texas Speech-Language-Hearing Association (TSHA). Please note that they are **guidelines**. TSHA has no regulatory or administrative authority and there is no requirement to use the guidelines. They are provided by TSHA as a public service to enhance the quality of SLP services in public schools.*

Purpose and Intended Use of the SI Disability Determination Guidelines for Articulation Disorders

The purpose of the Disability Determination Guidelines for Articulation Disorders is to provide a structure within which the speech-language pathologist (SLP) can use consistent, evidence-based evaluation practices in accordance with the law to:

- Provide information to teachers and parents regarding the nature of articulation and disorders of articulation and, when indicated, provide classroom intervention recommendations based on data collected by the Student Support Team (SST).
- Complete a comprehensive evaluation of a student's articulation abilities following a referral for articulation concerns for a Full and Individual Evaluation (FIE) for special education.
- Identify whether an articulation disorder is present.
- Determine if the presence of an articulation disorder results in a disruption in academic achievement and/or functional performance, and document the need for specially designed instruction by the SLP.
- Make recommendations to the Admission, Review, Dismissal (ARD) Committee regarding eligibility for special education services and support based on speech impairment (SI).

These guidelines are intended to be used in combination with the information provided in the Texas Speech Language Hearing Association (TSHA) Disability Determination Guidelines for Speech Impairment, 2019, with the understanding that use of the tools in this articulation guidelines manual requires additional, specialized training. SLPs should become very familiar with the information in that manual and be aware that information from both manuals is essential to completing a comprehensive evaluation of articulation.

Please see the TSHA Disability Determination Guidelines for Speech Impairment, 2020, for additional information (available online at www.txsha.org).

Informational Materials

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Information on Articulation for Parents and Teachers

Speech Sound Disorders

The term *speech sound disorders* refers to any combination of difficulties with perception, motor production, and/or the phonological representation of speech sounds and speech segments that impact a person’s ability to be understood. Not uncommonly, speech sound disorders are described under the umbrella term of *articulation* and a person may be diagnosed with an *articulation disorder*.

Speech sound disorders have both known and unknown etiologies. They may stem from a motor-based impairment such as childhood apraxia of speech, a structurally based disorder such as cleft palate, or a sensory impairment such as a hearing impairment. Often, it is not possible to determine the underlying cause of a speech sound disorder.

Speech Sound Development

Children often develop speech sounds in a generalized pattern, though there is some individual variability in which sounds are acquired. While the American Speech Language Hearing Association does not endorse one set of developmental norms over another, it is important to consider when specific speech sounds may be developed for the purposes of making a referral for speech/language therapy services and for eligibility purposes.

The following can be considered a general guideline for when the absence or mispronunciation of a speech sound can be considered a concern:

Sounds	Approximate Age of Concern
/p/	3
/b, m, d, n, h, t, k, g, w, f, j, ŋ “ng”/	4
/l, dʒ “j,” tʃ “ch,” s, v, ʃ “sh,” z/	5
/r, ʒ “zh,” ð “th”/	6
/θ “th”/	7

Note. Based on McLeod and Crowe (2018).

Signs and Symptoms of Speech Sound Disorders

Often, the first sign or symptom that a student may present with a speech sound disorder is that he or she is difficult to understand during connected speech tasks such as conversation. Students may present with one or more of the following types of articulation errors.

- **Substitutions:** One sound is substituted for another (e.g., “wing” for “ring” in which /w/ is substituted for /r/).
- **Distortions:** A sound is altered or changed (e.g., production of /s/ occurs laterally when the airflow moves through the sides of the mouth rather than centrally).
- **Omissions/Deletions:** A sound or syllable is not produced in a word (e.g., “cu” for “cup” in which the /p/ is deleted from the word entirely or “efant” for “elephant” in which the unstressed syllable is deleted).
- **Additions:** One or more extra sounds are added to a word (e.g., “buhread” for “bread” in which an “uh” sound is inserted between /b/ and /r/ altering the consonant blend /br/).
- **Prosody Errors:** Errors which occur in stress, intensity, rhythm, or intonation.

Speech sound errors may occur independently or as part of a larger pattern often referred to as a *phonological process* such as the deletion of final consonants in words, or velar fronting in which a child may produce the /k/ and /g/ sounds as /t/ and /d/, respectively.

School-based Implications

The speech sound disorder or *articulation disorder* may affect the student’s ability to accomplish the listening and speaking grade level standards or TEKS. It may also impact the student’s oral reading, spelling, and relations with peers. In a school environment, articulation therapy refers to the remediation process for correcting errors of specific speech sounds that impede the learning process.

Assessment

An assessment of a child’s speech sound system occurs when the speech-language pathologist analyzes a child’s production of *phonemes*, also known as speech sounds, in comparison with developmental norms. This may be completed through formal means, such as the administration of a standardized and norm-referenced test or through informal measures such as measuring a child’s intelligibility (the percentage at which a child is understood), language sampling, or obtaining a percentage of correctly produced consonant sounds. The SLP will also conduct an evaluation of the child’s oral mechanism to evaluate the integrity of the oral structures as well as their function.

Treatment

Treatment of speech sound disorders may be provided to a student either directly or indirectly while at school through interventions provided under Special Education or Response to Intervention.

- **Direct services** are those in which the SLP works directly with the student individually or as part of a small group of students for a specified amount of time on a weekly basis on specific goals and objectives related to the remediation of the speech sound disorder.
- **Indirect Services** are those in which the SLP observes, consults, or provides materials so that others such as general education teachers or parents may assist the student with his or her difficulties and/or to monitor for generalization of speech sounds to other contexts.
- **Home and Intervention Programs** are often used to facilitate the carryover of speech-language sound targets to the home or classroom environment. The SLP may also work with a classroom teacher to design an intervention program to be carried out by the classroom teacher under the guidance of an SLP.

What to do if You Think a Child has a Speech Sound Disorder

If you think your child may have a speech sound disorder, contact the SLP on staff at your local public school to discuss your concerns. If your child is not enrolled in school, contact the Child Find office in your local school district to discuss your options.

When is a Sound Error a Concern?

Due to the way speech sounds develop within a child's speech sound system, difficulty producing sounds becomes a concern at a certain age. Teachers and parents are encouraged to discuss their concerns with SLP related to the way a child produces speech sounds or how often the child is able to be understood.

Phonological Processes

Research indicates children utilize phonological processes to simplify the way they speak; however, the persistence of these patterns of error past a certain age, called the *age of suppression*, indicates a concern. The list of phonological processes below is not intended to be an exhaustive list, but rather a record of some of the most common phonological processes.

Pattern	Description	Example(s)	Age of Suppression*
Final Consonant Deletion	Deleting the final consonant of a word	“bi” for “big” “ma” for “mat”	3 - 3:6
Fronting	Substituting an alveolar sound (e.g., /t/, /d/, /s/) for a velar or a palatal sound (e.g., /k/, /g/, /j/ “sh”)	“soo” for “shoe” “tea” for “key” “dod” for “dog”	3:6 - 4
Weak Syllable Deletion	Deleting one or more syllables in a word	“efent” for “elephant” “nana” for “banana”	3:6 - 4
Cluster Reduction	Deleting one sound of a consonant blend	“top” for “stop” “pay” for “play” “bed” for “bread”	4 4 - 5 with /s/
Stopping	Stopping the airflow of a sound typically made with airflow	“pish” for “fish” “do” for “zoo” “wat” for “wash”	3 /f, s/ 4 /v, z/ 5 /ʃ, tʃ, dʒ, ð/
Gliding	Producing liquids (/l/, /r/) as glides (/w/, /j/ “y”)	“wabbit” for “rabbit” “yion” for “lion”	/l/ by 6 /r/ by 6 - 7

Note. Norms vary widely in the literature and across individuals as reflected by the age ranges in the chart. Clinicians should not rely solely on the age of suppression for eligibility but rather use this as a guide when considering overall intelligibility.

Individual Speech Sound Errors

Children should be able to produce *all* speech sounds with 90% accuracy or greater by age seven and a half. McLeod and Crowe (2018) completed a cross-linguistic review of acquisition of consonants which included 15 studies of English-speaking children. The following table presents the normative data for the acquisition of individual speech sounds and at what age mastery is expected. Mastery levels are defined as the age at which a given percentage of individuals acquired the phonemes listed. For example, 75-85% of individuals were able to produce /r/ between the ages of 4:00-4:11 and 90-100% of individuals were able to produce /r/ between the ages of 5:00-5:11.

Age Range*	75-85% criteria	90-100% criteria
2:00-2:11	/m, n, h, p, w, d, b, f, k, g, ŋ “ng”/	/p/
3:00-3:11	/j, t, s, l, ʃ “sh”/	/b, m, d, n, h, t, k, g, w, f, j, ŋ “ng”/
4:00-4:11	/tʃ “ch,” z, r, ʒ “zh,” dʒ “j,” v/	/l, dʒ “j,” tʃ “ch,” s, v, ʃ “sh,” z/
5:00-5:11	/ð “th”/	/r, ʒ “zh,” ð “th”/
6:00-6:11	/θ “th”/	/θ “th”/

Note. SLPs should consider normative data regarding phonological processes when the child presents with errors representative of a phonological processing disorder.

While age of acquisition is an important consideration in determining the presence of speech sound disorder, SLPs should not rely on this data as the determining factor for eligibility but rather as part of a body of data. SLPs should consider individual variability in speech sound production as well as the specific dialect with which the student speaks.

Other Considerations

The following are other factors which should be taken into consideration when determining if speech sound errors are a concern.

Speech intelligibility. If a child over 4 years of age is able to be understood less than 80% of the time, teachers and parents should consider consulting with the school-based SLP.

Lateralization. If the child produces a sound *laterally* at any age, this indicates a significant concern. A lateralized production occurs when a child produces a sound with airflow exiting one or both sides of the mouth, rather than centrally exiting the mouth. Lateralized sounds often sound “slushy” and most often occur for the sounds: /s/, /z/, /dʒ/ (“j”), /tʃ/ (“ch”), /ʃ/ (“sh”).

Childhood Apraxia of Speech. Childhood Apraxia of Speech (CAS) is a disorder in which a child struggles with the coordination and motor planning of the articulators, such as the lips and tongue, to form sounds. Children with CAS may inconsistently make speech sound errors; have difficulty imitating what others say; appear to move lips, tongue, or jaw a few times before a sound is made; or put stress on the wrong syllable in a multisyllabic word.

Dysarthria. The term *dysarthria* refers to an explicit group of neuromuscular articulation disorders that can be congenital or acquired in nature. Children with a dysarthria may present with challenges with any subsystem of speech, including phonation, respiration, resonance, and/or articulation as a result of muscle weakness. Articulation may appear distorted, labored, imprecise, and/or slow. Often these children have received a medical diagnosis prior to being

referred to an SLP. However, if a medical diagnosis has not been established, evaluation by a physician is usually warranted.

Classroom Considerations and Articulation

Intervention Recommendations

The following suggestions may be given to classroom teachers and/or parents as recommendations for stimulating sound production prior to making a referral for a Full Individual Evaluation (FIE). This checklist is not intended to be provided to the classroom teacher or parent, but utilized as a way for the SLP to track given recommendations as part of the Response to Intervention process.

General Considerations	✓ if Attempted	Results
Has the student's hearing been checked within the last 3 months? Is more than one language spoken in the home? Has the SLP conducted an observation of the student? Has the following data been gathered? <ul style="list-style-type: none"> • Parent Data Forms • Teacher Data Forms • Health Data Forms • Articulation Checklist 		

The SLP can provide the following strategies to parents and/or classroom teachers.

Strategy	✓ if Attempted	Results
Model and correct speech sound productions containing target sounds as they occur.		
Strategies for sound production provided to parent and/or classroom teacher.		

<p>A home program provided for the parents to address specific speech sound errors. Activities suggested <i>may</i> include:</p> <ul style="list-style-type: none"> • Ask the student to cut pictures from magazines or draw pictures of words containing the error sound(s). • Make the student a list of words containing the error sound(s) to read for practice. • Use words from the student’s reading material, spelling lists, and daily vocabulary to practice. 		
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It is recommended that if attempts to stimulate or reinforce correct sound production cause the child to display significant resistance or frustration, strategies given to classroom teachers and/or parents be discontinued. These concerns should be brought to the attention of the Student Support Team through Response to Intervention.

Intervention Programs

The decision to provide services and supports for articulation through RTI is a decision made at the district level and may vary from district to district.

If a student presents with only 1 or 2 sounds in error which fall outside of the range of developmental norms, and the student is stimulable for the production of the sounds in error, the SLP may consider designing an intervention program to be provided by the general education teacher.

- The general education teacher should be thoroughly trained on the program.
- The SLP will either provide materials or will direct the general education teacher to appropriate curriculum-based materials to use for interventions.
- Data collected by the general education teacher should be monitored by the SLP at specified intervals.
- If after a specified period of time, the student is not making progress, a referral for a Full Individual Evaluation, and/or interventions provided by the SLP, may be considered by the Student Support Team through Response to Intervention.

If a student presents with 1 or 2 sounds in error without stimulability or a singular phonological process, it is recommended that an intervention program be provided by the SLP through Response to Intervention if allowed by district guidelines.

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Strategy	✓ if Attempted	Results
Implementation of an intervention program based on the student's speech sound error(s) implemented by the general education teacher .		
Implementation of an intervention program based on the student's speech sound error(s) implemented by the speech-language pathologist .		

If the student demonstrates a lack of progress given interventions and/or strategies used by the parents, classroom teacher, and/or speech-language pathologist, the student may be considered for a referral for a Full Individual Evaluation.

Data Collection for Student Support Team

Data Collection

The following data are considered essential to completing a comprehensive evaluation of the student's communication skills; however, the method in which the data are collected is district specific and is therefore not included in this manual.

- **Parent Data** provides information on sociological factors, achievement of developmental milestones, parent identified strengths and concerns for the student, information on emotional/behavioral functioning, and functional skills.
- **Teacher Data** provides information on the educational impact of the student's communication difficulties as well as information related to the student's performance academically and behaviorally in the general education classroom as well as information related to state/district assessments.
- **Health Data** provides information on recent hearing and vision screenings as well as any other known health conditions.
- **Home Language Data** provides information on the language(s) of the home and whether or not the child is exposed to languages other than English.
- **Documentation of Interventions** provides information on the specific interventions provided to the student and whether or not progress was made.
- **Student Support Team / Response to Intervention Team Deliberations** provides information on the decisions made by the Student Support Team as part of the Response to Intervention process.

Forms to collect data on speech sound production in English and Spanish from parents and teachers can be found in Appendix B.

Standardized Assessment of Articulation

Guidelines for Administering Standardized Assessments

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- It is important to follow the standardized instructions in the manual. Deviations from the standardized procedure must be reported and results interpreted in light of those modifications.
- The most common concern in test administration is children being unable to name the pictures; the most commonly used solution is to ask the child to imitate the word.
 - Differences between spontaneous and imitated words must be considered. Kresheck and Socolofsky (1972), Siegel, Winitz, and Conkey (1963), and Paynter and Bumpas (1977) all compared spontaneous naming and imitation of words without clear results as to a difference in how the child produces the word. However, Goldstein, Smith, and Iglesias (2004) identified minimal differences between spontaneous and imitated productions of bilinguals and determined that SLPs could incorporate both in their analyses. At a minimum, the SLP should record whether the utterance was spontaneous naming or an imitation of the word.

Guidelines for Transcribing Standardized Assessments

- Every word that has any articulation error should be transcribed in its entirety using either diacritical markings or an expanded phonetic alphabet.
- Words articulated without error need not be transcribed.

Guidelines for Completing the Test Protocol

- Complete all identifying information on the test form
- **Remember:** Percentiles, not standard scores, should be recorded for tests of articulation. Age-equivalency scores should also not be entered on the form.

Considerations for Selecting an Assessment

- Consider validity and reliability
- Validity refers to an estimate of whether a test measures what it says it measures and reliability refers to how consistently a test measures what it measures. A test must have high estimates of reliability in order to have high estimates of validity.

- Types of validity: face validity, content validity, criterion-related validity, predictive validity, concurrent validity, convergent validity, and discriminant validity.
- Types of reliability: test-retest, alternate forms, internal consistency estimates, and scorer responsibility.
- **Remember:** When selecting an assessment tool, consider the norm group in terms of representation, size, and relevance.

For English Language Learner (ELL) students, see the Cultural and Linguistic Diversity (CLD) Articulation Companion to this manual.

Current Standardized Assessments

Articulation

Goldman-Fristoe Test of Articulation, 3rd Edition (GFTA-3)
Arizona Articulation Proficiency Scale, 4th Edition (AAPS-4)
Clinical Assessment of Articulation and Phonology, 2nd Edition (CAAP-2)
Photo Articulation Test, 3rd Edition (PAT-3)
Diagnostic Evaluation of Articulation and Phonology (DEAP)
LinguSystems Articulation Test (LAT)
Structured Photographic Articulation Test, 3rd Edition (SPAT-3)
Secord Contextual Articulation Tests (S-CAT)

Phonological

Arizona Articulation and Phonology Scale, 4th Edition (AAPS-4 Phonology Scale)
Hodson Assessment of Phonological Patterns, 3rd Edition (HAPP-3)
Khan-Lewis Phonological Analysis-3rd Edition (KLPA-3)

Motor Speech Disorders (CAS, Dysarthria)

Kaufman Speech Praxis Test (KSPT)
Dynamic Evaluation of Motor Speech Skills (DEMSS)

Oral Motor

Marshalla Oral Sensorimotor Test (MOST)

Screening Forms

Fluharty Preschool Speech and Language Screening, 2nd Edition (FLUHARTY-2)
Preschool Language Scales-5th Edition Screening Test (PLS-5 Screening Test)

Spanish Bilingual Assessments

Contextual Probes of Articulation Competence, 3rd Edition, Spanish (CPAC-3)
Goldman-Fristoe Test of Articulation, 3rd Edition, Spanish (GFTA-3, Spanish)
Spanish Articulation Measures (SAM)

Information about Selected Standardized Assessments

Based on information provided by SLPs in Texas, the following two assessments appear to be the most widely used. Therefore, additional information is provided. These assessments are not endorsed by TSHA, and SLPs are encouraged to use professional judgment when selecting standardized assessments to use.

Goldman-Fristoe Test of Articulation-3rd Edition

- Can be used to help determine if an individual has a speech sound disorder and assess an individual's production of consonant and consonant cluster sounds, production of R sounds, production of vowel sounds, and production of speech sounds in single words and in connected speech.
- Three sections are included in the test: sounds-in-words, sounds-in-sentences, and stimulability.
 - Sounds-in-Words: 47 color pictures, 60 target words, used to elicit the production of 23 consonant sounds in the initial, medial, and final position of words as well as consonant clusters (i.e., 15 in initial position, 1 in medial position, and 1 in final position).
 - Sounds-in-Sentences: measures production of speech sounds in connected speech using a sentence repetition task in story format.
 - Stimulability: assesses the sounds that were misarticulated during administration of the Sounds-in-Words test and/or Sounds-in-Sentences test. For the misarticulated word, the examiner produces them in a syllable, word, and sentence, and the individual imitates the examiner's productions.

- Scoring:
 - Standard Scores: A standard score indicates the distance of the individual's raw score from the average, considering the variability of scores among examinees of that age.
 - Distribution of articulation errors across ages are greatly skewed and should not be used to determine eligibility.
 - A percentile rank indicates the percentage of individuals in the reference group who performed at or below the examinee's level (e.g., 5th percentile = child scored at or better than 5% of other children his/her age).
 - In the area of articulation, percentiles should be used as a more accurate way of representing a child's ability than standard score.

Arizona Articulation and Phonology Scale-4th Revision

- Can be used to analyze and describe an individual's level of speech sound production and overall speech intelligibility in single-words and connected speech, determine the extent to which phonological impairment may contribute to an individual's articulation deficits, and describe the specific types of phonological error patterns that are displayed.
- Three sections are included in the test:
 - Word Articulation: 41 color pictures, 46 target words, used to elicit the production of 67 target sounds, including initial consonants, final consonants, and vowels.
 - Sentence Articulation: 5 sample sentences, 27 target sentences, used to elicit 67 target sounds, including initial consonants, final consonants, and vowels.
 - Phonology: Additional 7 target words that test 14 target sounds that must be administered in order to code Phonology. These items are not included in the Word Articulation Total Score and do not have sound values.
- Administration of Word Articulation:
 - The pictures in the Test Easel are designed to be easily nameable by individuals of all ages. If an examinee does not respond or responds with a word other than the target word, attempt to elicit the target word by giving prompts. For example, if the target word is "pig," you could say, "It is an animal that goes 'oink, oink.' What do you call it?" If the examinee is still unable to name the pictures after prompting, then elicit the target word through imitation.

- Always attempt to elicit the full production, via prompting or imitation, before recording and scoring the production.
- The use of prompting or imitation does not affect the scoring procedures.
- Transcribe the entire word when administering to give a complete picture of single word productions.
- If administering only Word Articulation, stop administering items after sound number 67. If intending to code Phonology, continue administering the remainder of items through sound number 81
- Administration of Sentence Articulation:
 - Sentence Articulation can be administered via reading (the examinee reads the sounds aloud) or imitation (examiner reads the sentences aloud and the examinee repeats each sentence). When choosing a method, always choose the method that will produce the best test of the examinee's articulation abilities. Five sample sentences are provided to help decide whether to administer Sentence Articulation via reading or imitation.
 - Use the reading method only when you are certain that the examinee's reading ability will not interfere with testing his or her articulation ability.
 - If you begin the test via the reading, but it becomes clear the examinee is struggling with reading, switch to administration via imitation, and note the switch on the Record form.
- Scoring:
 - A standard score indicates the distance of the individual's raw score from the average, considering the variability of scores among examinees of that age.
 - Free online scoring is available.
 - A percentile rank indicates the percentage of individuals in the reference group who performed at or below the examinee's level (e.g., 5th percentile = child scored at or better than 5% of other children his/her age).
 - In the area of articulation, percentiles are a more accurate way of representing a child's ability than standard score and should be used.
 - On the Word Articulation and Sentence Articulation subtests, the Total (raw) Scores are weighted counts of correct responses. The raw score for Phonology is an unweighted count of errors. Therefore, a higher standard score for Word Articulation or Sentence Articulation corresponds to a higher Total (raw) Score

with more instances of correct articulation. A higher standard score for Phonology corresponds to a lower total raw score with fewer instances of phonological error patterns.

- See pages 38-40 in the Arizona-4 for specific information and ranges for standard scores, percentiles, and severity ratings.

Informal Assessment of Articulation

Rationale for Informal Assessment

Informal assessment should accompany formal testing to consider a child's performance at the conversational level, consistency of errors, effects of oral motor structures and functions, and emergence of phonemes.

Conversational samples reveal patterns of errors influenced by context and provide information regarding their impact on functional communication. It is important to compare a child's performance in single word productions to functional conversation to determine whether the results of formal testing with single word measures accurately reflect the child's functional communication. Conversational intelligibility, consistency of errors, analysis of phonological patterns, and stimulability of error sounds are important factors in making clinical decisions. Oral motor examination is also important to consider potential impact on a child's speech production. Measuring intelligibility and percentage of consonants correct can be used in conjunction with formal testing scores to determine severity and provide baseline measures from which to compare across treatment intervals when formal testing is not necessary.

The extent of informal testing needed will vary on several factors. For all ages, at minimum, a measure of conversational intelligibility, an oral motor examination, and stimulability testing/dynamic assessment should always accompany formal testing of articulation and phonological disorders. Intelligibility rating is a quick measure of spontaneous speech production and can be used in conjunction with formal testing scores to determine severity level. Oral motor assessment is necessary to rule out any deficits that may impact a child's speech production and is essential for making treatment decisions. Stimulability testing and dynamic assessment are important tools to measure emergence of sounds in error by observing a child's response to maximum cues and instruction to correct error sounds and can be used as a prognostic indicator and course of treatment.

Additional measures should be considered for preschool students or students with multiple articulation errors, phonological disorders, or motor speech deficits. For these students, measures such as phonological analysis, Point to Point analysis, and Percent Consonants Correct provide a complete analysis from which to make clinical decisions and provide a baseline of performance prior to treatment. For young students who also have other developmental delays, expressive language delay, or attention difficulties, formal testing may not be possible, and more extensive informal measures may need to be considered to give quantitative and qualitative information for use in determining eligibility and the need for articulation therapy. Informal measures are helpful, in conjunction with formal measures, to justify clinical decisions.

(American Speech-Language-Hearing Association [ASHA], *Speech Sound Disorders*, n.d.)

Informal Measures of Articulation

Oral Mechanism Examination

The oral mechanism examination evaluates the structure and function of the speech mechanism to assess whether the system is adequate for speech production. An optional oral mechanism evaluation form is provided in Appendix B.

Spontaneous/Connected Speech Sample

For preschool students, collect a spontaneous speech sample of at least 50 utterances during play, conversation, interaction with parent, and/or story tell/retell (depending on language abilities and age).

For school age students, collect a connected speech sample of 50 to 100 utterances. The examiner may elicit the connected sample by verbalizing a story illustrated by a series of pictures and asking the child to retell the narrative. The story should be age appropriate, should be presented using the mean length of utterance for the child's age/grade level, and should include most or all of the phonemes expected for age or grade level.

Rate Intelligibility

Conversational intelligibility ratings are an important informal measure of a child's ability to make him/herself understood by others, which is the primary goal of communication. Intelligibility ratings are subjective, but can be helpful as a baseline measure. A child's speech is expected to be nearly 100% intelligible by the time they are 4 years of age, and it is helpful to compare age expectations for intelligibility with the child's performance. Intelligibility ratings of a conversational sample are an efficient way to determine if further, more in-depth, informal assessment is needed.

Stimulability/Dynamic Assessment

Stimulability and dynamic assessment help determine emergence of error sounds as a prognostic indicator. Stimulability is a child's ability to correctly produce a previously misarticulated sound after the child watches and listens to the examiner's production. Dynamic assessment involves a quick lesson about how to produce an error sound and observing the child's ease with which he/she is able to learn to produce the sound.

When warranted, especially with preschool students, the following informal procedures may also be used.

Point-to-Point Comparison. This measure provides a quick, side-by-side glance at a student’s speech sound errors as reported by the parents, teachers, and the SLP, and comparing reported speech sound errors to a standardized measure and conversational speech sample.

Percentage of Consonants Correct (PCC). This measure is warranted when conversational errors and intelligibility are inconsistent with single word errors and percentile rank. PCC can also be used to help determine severity as well as serving as a baseline measure for future comparison across treatment intervals.

Determination of Need for Additional Informal Measures

The clinician should consider data collected from formal testing, oral motor, intelligibility, and stimulability. If a student scores above the range of concern on standardized articulation measure (e.g., >7th percentile), an intelligibility rating **and** comparison between word level productions and conversational sample is necessary. Parent and teacher accounts of sound errors should also be considered.

Instructions for Informal Evaluation Measures of Articulation

Intelligibility Ratings

The procedure for determining an intelligibility score includes tape recording a randomly selected 100 consecutive word sample from the student during contextual speech. The score is the percentage of words understood from the sample. For example, from a 100-word sample, 35 utterances appeared to be words, but were not understood by the listener. The intelligibility rating would be 65%, based on the fact that 65 of 100 words were understood.

- For this procedure, transcribe a recorded sample by writing down each intelligible word and indicating a blank () for each word that is not intelligible. Calculate the score by totaling the number of blanks and subtracting that total from 100, resulting in the percentage of intelligibility.
- Another possible method is to count syllables. If this procedure is used, each unintelligible syllable in the utterances would be indicated with a blank space. The intelligibility score would then be calculated on the basis of one syllable representing one word. In the sentence sample, “Me () () ball ()”, the three blanks would represent three unintelligible syllables or two unintelligible words. This procedure is most useful for young children with a high level of unintelligibility.
- According to Weiss (Weiss, Gordon, & Lillywhite, 1987), a student whose intelligibility score is more than 10 percentage points below expectations for their chronological age indicates a concern. If the intelligibility rating is below the age expected level and/or appears to be inconsistent with the attained percentile rank on single word standardized

testing, consider completing additional informal assessments (Point to Point Comparison, Percentage of Consonants Correct).

Weiss' Guideline for Analyzing Intelligibility Scores:

Intelligibility Score	Chronological Age Equivalent
25-49%	18 months
50-59%	24 months
60-74%	30 months
75-89%	36 months
90-99%	42 months
100%	48 months

An intelligibility score of 100% does not necessarily indicate perfectly normal articulation, but rather 100% understandable articulation even though articulation errors may be present.

Caution should be taken when using intelligibility ratings. Familiarity with the student affects intelligibility ratings. An unfamiliar listener and untrained listener should be used. Document if a trained or familiar listener is used to rate a student's intelligibility. Also document if context is known or unknown. For example, "Sam's speech intelligibility was judged to be 80% to a trained, unfamiliar listener with mostly known context."

Although not used as an intelligibility measure, parent and teacher estimates of intelligibility can be helpful. Report what percentage the parent and/or teacher understands a child's speech. For preschool students, also report what the parent estimates other, less familiar people understand the child's speech (Tyler, 2002; Tyler, Lewis, & Welch, 2003).

Stimulability/Dynamic Assessment

- Assess how well the child imitates the misarticulated sound in one or more contexts (e.g., isolation, syllable, word, phrase).
- Note the level of cueing necessary to achieve the best production (e.g., verbal model; verbal and visual model; tactile cues).
- Note whether the sound is likely to develop without specific intervention. For example, if the student is able to produce the sounds easily following a model, the sounds may emerge without specialized instruction. However, if the student is not able to produce

error sounds easily after a model, the sounds are not likely to emerge without specialized instruction.

- Similarly, consider dynamic assessment in which the clinician provides a brief lesson about a misarticulated sound to determine the ease with which the child is able to learn the skill across contexts.
- These measures may also help the clinician to determine which sounds are appropriate to target in therapy (Tyler & Tolbert, 2002).

(ASHA, *Speech Sound Disorders*, n.d.)

Point-to-Point Comparison

Point-to-point comparison is a quick, side-by-side glance at a student's speech sound errors as reported by parents, teachers, and the SLP, and comparing sound errors to a standardized measure and conversational speech sample. If differences are noted, more informal assessment may be indicated. Further, if an apparent difference is present between single words and connected speech, more extensive measures may be warranted.

Example: Sam scores in the 11th percentile on the GFTA-3, indicating skills above the range of concern. Parent and teacher indicate he cannot produce /r/, /l/, /st/, /sp/, /sk/, /str/, /sl/, /sw/, /skw/, /f/, /v/, and /θ/ (voiceless "th") phonemes. On the GFTA-3, he accurately produced the /f/ phoneme and /s/ blends. The single word test may not be an accurate measure of his number of errors in conversation.

- Record the sounds produced in error on the Single Word Articulation test.
- Record the sounds in error in the spontaneous word sample (SWS). The parent/teacher form can provide this data. Then compare the sounds in error for the two samples. If the same sounds are in error in single words and connected speech, the standardized test is a good representation of the sample. If the errors are not the same, the SLP completes one of the more comprehensive types of informal assessment.

A Point-to-Point form is available for use in Appendix B.

Percentage of Consonants Correct (PCC)

Percentage of Consonants Correct is a procedure that compares the number of correct consonants to the total number of consonants (correct and incorrect) in a conversational speech sample. PCC can be used to predict severity ratings for articulation/phonological delays and yields a percentage which can be compared to the speech of typically developing children. PCC is best used for children ages 3-6. Using a PCC may not accurately reflect a child's severity if a child is older and does not have language skills within normal limits.

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The following steps are completed to determine the percentage of consonants correct (PCC) as suggested by Shriberg and Kwiatkowski (1982).

- Tape record a connected speech sample of between 50 and 100 utterances or 5-10 minutes in length.
- Determine the meaning of each word to make certain that correct analysis can be completed.
- Calculate the Percentage of Consonants Correct as follows:

- Use only consonants, not vowels (syllabic /r/'s are considered vowels).

That is, /r/ is counted if it starts, or is not the only vowel in the syllable; e.g., “her” has an initial consonant and a vocalic /r/, which is not counted as a consonant; “hair” has an initial consonant, a vowel, and a final consonant /r/.

- Do not score target consonants in the second or successive repetitions of a syllable (e.g., in “f-fish,” score only the first /f/).
- Do not score target consonants in the third or successive repetition of adjacent words unless articulation changes. For example, if the child said /tap/, /tap/, /tap/ for “stop,” only the first two words of the series would count. However, if the child said /tap/, /tap/, /stap/, all three would be counted.
- Do not score target consonants in words that are completely or partially unintelligible or whose gloss (target production) is highly questionable.
- Consider the following types of changes as incorrect:
 1. deletions of a target sound
 2. substitutions of another sound
 3. partial voicing of initial target consonant
 4. distortions, no matter how subtle
 5. additions of sounds
 6. Initial /h/, final /n/, and /ng/ deletions are scored as incorrect only when they are in stressed syllables. For example, in the word “lion,” deletion of the final /n/ is not scored as incorrect. In the word “line,” deletion of the final /n/ is scored as incorrect.
 7. Questionable articulation should be scored in the incorrect category.
 8. Words should be glossed for dialect or as they are said in conversation.

Example:

Word	Child's Production	Total Number of Consonants	Number of Consonants Correct
want	waØØ	3	1
peppa	pεØə	2	1
pig	pɪd	2	1

- The percentage of consonants correct is calculated by dividing the number of correct consonants produced by the total number of consonants produced and multiplying by 100.
- According to Shriberg and Kwiatkowsky (1982), PCC can be used to establish the severity level of the articulation disorder:

Range	Severity
≥ 85	Mild
65-85%	Mild-Moderate
50-65%	Moderate-Severe
< 50	Severe

- A number of studies have reported PCC for various ages. Several are included below to allow for comparison and consideration of diversity in acquisition of speech. Consideration should be taken for diversity in the populations studied.

Age	PCC
2:6	75%
2:9	82%
3:0	86%

(Watson & Scukanec, 1997)

Age	PCC
3:0	70%

(Stoel-Gammon, 1987)

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Age	PCC
3:0-3:11	82%
4:0-5:5	90.4%
5:6-7:0	95.9%

(Dodd, Holm, Zhu, & Crosbie, 2003)

Age	PCC in monosyllabic words	PCC in polysyllabic words
3:0-3:11	76.8%	76.4%
4:0-4:11	83.9%	82.5%
5:0-5:11	89.5%	88.4%
6:0-6:11	93.7%	90.8%
7:0-7:11	93.9%	90.9%

(James, van Doorn & McLeod, 2002)

Results of PCC can be reported as follows

Percent Consonants Correct (PCC) is a measure to account for all correctly produced phonemes relative to possible phonemes in a speech sample. According to Shriberg and Kwiatkowsky (1982), PCC can be used to reliably predict severity levels for articulation/phonological delays using a conversational sample. Sam's PCC was 59%, which is indicative of a moderate-severe delay. Additionally, PCC can be used to compare results with other children with normally developing speech and children with speech delays. Sam's PCC of 59% is below the expected performance of a child of 4:3 (~83%), according to James, van Doorn and McLeod.

A PCC form is available for use in the Appendix B.

Reporting Use of Informal Measures

Sample in which student would meet guidelines following informal evaluation

Summary: John's score was at the 11th percentile, which is within the range expected for his age by _____ ISD Guidelines. However, parents and teachers report John is more difficult to understand in connected speech than in single words. The Percentage of Consonants administered to determine if a discrepancy exists in the two contexts. Results indicate errors

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were consistent with a moderate-severe delay in conversational speech. Therefore, it is recommended the ARD Committee consider eligibility for John as a student with Speech Impairment due to an articulation disorder.

Sample in which student would not meet criteria following informal evaluation

Summary: Joe's score was at the 18th percentile, which is within the range expected for his age by _____ ISD guidelines. However, Joe's parents report he is more difficult to understand in connected speech than in single words. The Percentage of Consonants Correct was administered to determine the presence of a discrepancy in the two contexts. Results indicate PCC is in the Mild range more consistent with children with normally developing speech than with children with speech delays. Therefore, results of this assessment do not indicate Joe has an articulation disorder at this time. It is recommended he be referred if sounds do not develop in [period of time].

Sample in which student exhibits significant lateralization of sibilants

Summary: Joe's score was at the 18th percentile which is within the range expected for his age by _____ ISD guidelines. However, it was noted by parents and teacher Joe exhibits significant distortion during production of s, z, sh, ch, and j. These sounds were noted to be in error on standardized testing as well as during informal evaluation of conversational speech using the Point-to-Point comparison. Joe is producing these sounds with lateral air flow rather than frontal air flow, creating significant distortion of the sounds in connected speech. Therefore, it is recommended that the ARD Committee consider eligibility for Joe as a student with Speech Impairment (SI).

Eligibility Considerations

Eligibility Process

The determination of eligibility for IEP Services with a Speech Impairment is a three-stage process. Please see the Initial Eligibility Worksheet for Articulation or the Re-Evaluation Eligibility Worksheet for Articulation in Appendix B as you move through this process. The role of the SLP is to first, determine if there is a disability condition. If there is documentation of a communication *disorder* and documentation of an adverse effect on educational performance resulting from the articulation disorder, then there is a documented *disability*. The recommendation to the ARD Committee is to consider *eligibility* of Speech Impairment with an articulation disorder. After determination of a disability, the SLP considers whether to recommend the specialized services of the SLP to the ARD Committee. The three stages in the eligibility process are:

- Stage 1 – Is there a communication (articulation) disorder?
- Stage 2 – Is there an adverse impact on educational performance (academic achievement and/or functional performance) resulting from the communication (articulation) disorder?
- Stage 3 – Are specially designed instruction or related services and supports needed from the SLP to help the student make progress in the general education curriculum?

Stage 1 – Evidence of an Articulation Disorder

The first responsibility of the evaluation team is to determine whether or not the student presents with an articulation disorder. In determining the presence of a communication disorder in the area of articulation, the following data should be considered:

- Review:
 - Parent Data
 - Teacher Data
 - Student Opinion (if older elementary/secondary)
 - Work Samples (if available)
 - Cultural/Linguistic Factors (if applicable)
 - Results of Previous Interventions (if completed)
- Standardized Tests
- Informal Measures:
 - Speech Sample/Intelligibility Rating
 - Percentage of Consonants Correct, Point to Point (if available)
 - Stimulability
- Consideration of Special Factors
 - Motor Speech Disorder

- Oral Mechanism Integrity
- Lateralization
- Additional Disorders
- Language and/or Cognitive Level

The SLP should answer the following questions once all data gathered has been fully reviewed.

	Yes	No
Does the percentile obtained on the standardized test fall at least 1.5 standard deviations below the mean? (7 th percentile or lower)		
Does informal assessment completed (Intelligibility Ratings, Percent of Consonants Correct, etc.) support a concern?		
Does the student present with <u>two</u> or more consistent <u>single sound errors</u> falling outside of the range of typical development?		
Does the student present with one or more <u>phonological processes</u> falling outside of the range of typical suppression?		
Does intelligibility or sound error data provided by the parent support a concern?		
Does intelligibility or sound error data provided by the teacher support a concern?		
Is the student stimulable for only <u>some</u> or <u>none</u> of the errored speech sounds?		
Does the professional judgment of the speech-language pathologist support a concern?		
Is the student concerned about the way he or she produces speech sounds?		

If the answer to at least three of the above questions is “yes,” it is likely that the student presents with an articulation disorder.

Stage 2 – Adverse Impact on Educational Performance

Once it has been determined that an articulation disorder exists, the next step for the multidisciplinary team is to determine if there is an adverse impact on the student’s educational performance as a result of the articulation disorder.

An adverse impact on the student’s academic and/or functional performance may include (but is not limited to):

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- Academic:
 - Difficulties with phonological and phonemic awareness tasks
 - Difficulties with decoding when reading
 - Lack of letter-sound correspondence
 - Carryover of speech-sound errors into writing samples

- Functional:
 - Reluctance to participate in individual, small group, or whole group instruction
 - Being difficult to understand by teachers and/or peers
 - Embarrassment over the way he or she speaks
 - Being teased by his or her peers based on the way sounds are produced

Consultation among the parent, teacher(s), and SLP is essential in determining what, if any, impact the articulation disorder is having on the student. This determination can be achieved by consideration of the expected grade level curriculum, the Prekindergarten Guidelines (for preschool students), the Texas Essential Knowledge and Skills (TEKS), and the status of the student’s participation in the classroom and interactions with adults and peers as observed by the SLP and reported by parents and teachers. Data to support these statements may be gathered from parent/teacher data as well as student work records, observation, informal assessment including intelligibility ratings and student self-report.

	Yes	No
Is there a documented relationship between the student’s difficulties with articulation and academic achievement (e.g., reading, writing, phonological awareness, spelling)?		
Do articulation skills limit the student’s participation in self-care, social, or classroom routines?		
Is the articulation impairment noticeable across settings?		
Is the student stimulable for only <u>some</u> or <u>none</u> of the speech sounds which he or she should have acquired to this point?		
Is the student consistently unintelligible to parents, teachers, and peers beyond what is expected for his/her age?		

If the answer to at least two of the above questions is “yes,” it is likely that the student’s articulation disorder results in an adverse effect on the student’s educational performance

Note. The federal definition of a speech impairment includes both the identification of a disorder (Stage 1) AND as a result of the disorder, an adverse effect on educational/functional performance (Stage 2). When both an articulation disorder and adverse impact are documented, the federal definition of a speech impairment/disability condition is satisfied, and the SLP recommends consideration of the eligibility of Speech Impairment to the ARD Committee. Once

eligibility is established, the ARD Committee determines the need for specially designed instruction from an SLP (i.e. speech therapy services, frequency, location, duration) (Stage 3).

Stage 3 – Need for Specialized Services

The ARD Committee determines whether the specialized skills of an SLP are required for the student to make progress in improving articulation skills. Although classroom teachers are trained and adept at instruction in phonemic awareness and assisting children in learning sound-symbol connections, it is often the case with a student with an articulation disorder that the specific training needed for a child to learn reduction of phonological processes or the skills needed to produce specific sounds are not skills directly addressed in the classroom. However, when the student is stimulable to produce error sounds with some ease, the classroom teacher and parent may be the best intervention providers.

The SLP should mark the statement which best applies to the student based on the data reviewed in Stage 1 and Stage 2.

The student presents with an articulation disorder <u>and</u> there is an adverse impact on educational performance.	Specialized services provided by an SLP through special education are indicated.
The student presents with an articulation disorder but <u>does not</u> present with an adverse impact on educational performance resulting from the articulation disorder	Specialized services provided by an SLP through special education are not indicated, but services provided through RTI or a home program <i>may</i> be warranted.
The student <u>does not</u> present with an articulation disorder but presents with an adverse impact on educational performance.	Specialized services provided by an SLP through special education are not indicated, but services provided through RTI or a home program <i>may</i> be warranted.
The student <u>does not</u> present with an articulation disorder and the student <u>does not</u> present with an adverse impact on educational performance.	Specialized services provided by an SLP are not indicated. Dismissal from speech/language therapy services is recommended.
The student has reached a plateau in his or her progress and/or lacks the motivation to continue to improve his or her speech sound production, at this time.	Specialized services provided by an SLP are not indicated. Dismissal from speech/language therapy services is recommended.

Guidance on Service Delivery for Articulation

There are several possible service delivery options for students who present with difficulties in the area of articulation including (but not limited to):

- Services provided through RTI which may be teacher-led (with SLP guidance) or SLP led. These services are often short-term in frequency and duration and may be provided for students with articulation difficulties which minimally impact educational performance. The decision to provide services and supports for articulation through RTI is a decision made at the district level and may vary from district to district.
- It should be noted that if services are provided through RTI by an SLP, these students may only be seen with special education peers if the students receiving special education services are provided speech therapy for articulation in the general education environment and at least 51% of the group are not placed in special education. Therefore, it is recommended that if speech/language RTI services are provided for articulation, these be provided in a separate group from other students receiving special education services.
- A student should not be provided RTI speech/language services in lieu of special education services if a disability is present, and there is an adverse impact on educational need.
 - Services provided through RTI may be recommended:
 - Prior to considering an evaluation for students who present with minimal speech sound errors and are stimulable for sound production
 - If the student has made significant progress and only needs support to carry-over learned speech sounds into the general education environment.
 - If the student needs a “refresher” on articulation following dismissal from speech/language therapy in order to support carry-over.
 - If the student presents with a single sound error and educational impact is minimal or not established.
 - If the student does not present with a disability in the area of articulation, but there are significant concerns from the parent and/or teacher regarding the student’s speech sound production.
- A home program may be provided to the parent, but it is recommended that the SLP provide parent training in how to cue the student.
- The SLP may consider the use of traditional pull-out services in which the student attends speech therapy either individually or in a group in a special education location. Many

times, these services are provided in 30-minute increments in a small group in the speech therapy room; however, the frequency and duration of services should be individualized based on the student's needs.

- A “Drill-Burst” approach may be used in which the student is seen in short bursts of time (5-10 minutes) for several days per week. These services may be delivered in the special education or general education environment.
- Inclusion or Consultation services for articulation may also be warranted, especially when the student is working to carry-over learned speech sounds beyond the speech room.

For students who have articulation difficulties in addition to functional impairments or other disabilities (e.g., students with autism or intellectual disabilities), the SLP will need to consider whether or not the student will be able to benefit from articulation therapy.

- Is the student's level of language or cognition sufficient to benefit from articulation therapy?
- Is the student primarily a verbal communicator?
- Does the student attempt to communicate verbally rather than using an augmentative communication system?
- Is the integrity of the oral mechanism such that the student is able to produce verbal speech?

Service Delivery Considerations and Degree of Impairments

Degree of Impairment	May Include:	Service Delivery Consideration
Mild	1-2 Single Sound Errors 1 Phonological Process Frontal Lisp Minimal Impact on Intelligibility	RTI Drill Burst Home Program Inclusion Consultation
Moderate	More than 2 Single Sound Errors More than 1 Phonological Process Lateral Lisp Intelligibility is Impacted	Drill Burst Traditional Pull-Out (1-2 times per week) Consultation and/or a Home Program may be warranted

Severe	Multiple Single Sound Errors Multiple Phonological Processes Significantly Unintelligible May have Motor Speech Difficulties or Vowel Distortions	Traditional Pull-Out (2-4 times per week) with Home Program or Consultation
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The degree and type of services provided to a student with difficulties in the area of articulation should be individualized to meet that student's needs. Students may need variable service delivery models to succeed in meeting their goals and generalizing production. No singular model will be successful for all students.

Dismissal Considerations

According to IDEA 2004, dismissal considerations should mirror eligibility considerations. Therefore, the same questions from Stages 1, 2, and 3 should be asked when making a recommendation about whether or not a student needs speech therapy services for articulation.

- Stage 1 - Does the student continue to exhibit a communication (articulation) disorder?
- Stage 2 - Does the communication disorder continue to adversely impact academic achievement and/or functional performance?
- Stage 3 - Does the student continue to require specially designed instruction from the SLP to be involved in and make progress in the curriculum?

Determination of continued eligibility is to be made by the ARD committee upon consideration of the reevaluation data presented by the SLP. The following information should be considered in addition to the data gathered in Stages 1 and 2 when considering recommending dismissal to the ARD committee.

- How long has the student received speech/language therapy services?
- What service delivery models have been attempted with the student?
- What is the student's current level of accuracy with his or her speech sound goals and objectives?
- What level of support does the student need to be successful?

	Independent	Minimal	Maximum
What level of support does the student need to be successful?	The student communicates effectively most of the time. Only periodic reminders of what to do are needed.	The student needs more cues, models, explanations, or assistance than other students. The student may need instructional accommodations.	The student does not perform effectively most of the time despite modifications and supports. The student requires intensive instruction and/or interventions.
Considerations	Consider dismissal from speech/therapy services.	Consider what is needed to promote generalization and who the best service provider may be (parent, teacher, SLP, other professionals, etc.).	Consider continuing speech therapy services.

After gathering and reviewing the data on the student's present levels of performance in the area of articulation as well as the student's history of service delivery, the following

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questions should be considered when making a recommendation for dismissing a student from speech therapy services for articulation.

	Yes	No
Has there been a plateau in the student's progress in speech therapy?		
Does the student lack motivation to work on speech sound production?		
Has the student been working on the same speech sound / process for longer than one year with <u>minimal</u> progress?		
Is the child showing signs of generalization in connected speech tasks to at least 75% accuracy he or she currently produces in error?		
Is the student willing to participate in class discussions and/or presentations?		
Have at least <u>three</u> service delivery models been tried with minimal success?		
Is the student able to communicate effectively most of the time?		
Does the student know what to do most of the time, only requiring periodic reminders?		
Does parent and/or teacher data support the need for dismissal?		
Does the professional judgment of the speech/language pathologist support the need for dismissal?		
Does formal and/or informal evaluation data support the need for dismissal?		
Is the student stimuable for the production of <u>all</u> developmentally appropriate speech sounds?		
Is the student currently functioning at the "independent" or "minimal" levels of support?		

If the answer to at least five of the above questions is "yes," the SLP may wish to recommend dismissal from speech therapy services to the ARD committee.

Presenting Dismissal Recommendations to the ARD Committee when Intervention is no Longer Appropriate, though the Communication Disorder still Exists

- Provide documentation of the consistent lack of progress.
- Educate IEP team members, particularly parents, about the nature of the speech/language issue and how the associated structural or medical factors, or primary disability, impact the child's ability to benefit from continued SLP services.
- Encourage discussion of the relative value of continued work on speech-language issues versus shifting focus to other educational needs. Often parents and teachers are responsive to discussion about the efficiency of use of instructional time for the student. It may be that it is in the best interest of the student for time spent with the SLP to be eliminated, allowing for more time to be spent in the general or special education classrooms.
- Provide documentation that a variety of evidence-based practices have been attempted in therapy with little or no success.
- Explore and discuss all possibilities for a continuum of support services, which may include direct services, inclusion services, SLP consultation that is gradually reduced in frequency and duration, or education and recommendations to parents and teachers to be carried over in environments other than the speech therapy setting.
- If, upon review of the data, the IEP team determines the student no longer exhibits a communication disorder, or the communication disorder no longer adversely affects academic achievement and/or functional performance, or no longer requires specialized instruction from the SLP, the student is not eligible and can be dismissed from speech-language pathology services.

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Appendix A

Other Considerations

Use of Developmental Norms for Determining an Articulation Disorder

McCleod and Crowe (2018) conducted a cross-linguistic review of acquisition of consonant phonemes across 27 languages. Results indicated children acquired approximately 93% of consonants in their native language by the age of 5:0. However, it was noted that individual variability should also be considered. Reviewing developmental norms is useful when discussing articulation expectations with parents and teachers, and considering them in determining steps to remediation. Developmental norms should not be the sole factor used in the determination of an articulation impairment.

Considerations for Exceptions to Standard Procedures for Evaluating Articulation Disorders

*Note. These exceptions are not required, but are recommendations of the TSHA Eligibility Guidelines developers. Individual districts may choose to accept or add other exceptions.

Vowel errors. If parent data, teacher data, and/or SLP opinion indicate errors with production of vowel sounds, then alternative methods of standardized testing should be considered for preschool and elementary students. For example, the GFTA-3 and the AAPS-4 consider vowel error analysis on the Sounds-in-Words subtest.

Lateral production of sibilant sounds (s, z, sh, ch, j). Lateral production of sibilants does not occur in typically developing children and will most likely not improve on its own without intervention. Therefore, it is possible a student's performance on standardized testing may not be considered "in the range of concern," but an articulation disorder may exist when this error is present. The SLP should carefully consider all informal information about the significance or impact of the distortion or lateralization on classroom performance as well as social implications. Since the SLP typically has a more sensitive ear for even slight distortions, caution should be used when identifying children with slight lateralized production of sibilants as children with a disability. Informal testing should be completed to support the consistency of lateralization at the conversation level. Stimulability testing should also be considered.

Dentalized productions of sounds (s, z, l, n, d, t). Dentalized production of sounds occur because of incorrect tongue placement. The tongue may be sticking out between the front teeth, or the sides of the tongue may not be high enough or tense enough in the mouth. Dentalization of /l, n, d, t/ is less common and professional judgment should be used to determine whether an articulation disorder is present if a child demonstrates dentalization of these sounds. Dentalization occurs naturally when in alveolar sounds before dental sounds (e.g., tenth) and are not produced in error. In young children, dentalization of /s/ and /z/ is often a developmental distortion and may improve on its own as a child develops new sounds. If a child has not mastered these sounds by ages 5-6, articulation is considered to be in the range of concern.

Difficulty with /r/ and/or vocalic /r/. If a child has not mastered these sounds by 6-7 years of age, articulation is considered to be delayed and in the range of concern. The SLP should determine the percentage of incorrect usage of these sounds and consider error productions occurring more than 30% of the time to be of concern.

Resonance. Resonance disorders can be caused by a variety of conditions, including obstruction of one of the cavities (i.e., oral, nasal, pharyngeal) or velopharyngeal dysfunction (VPD). An obstruction in one of the cavities can cause hyponasality, or cul-de-sac resonance, whereas VPD can cause hypernasality and/or nasal air emission. Nasal emission can be present when too much air escapes during production of consonant sounds that require a buildup of air (plosives, fricatives, affricates) and causes speech to sound distorted. Nasal emission can range from being soft and barely audible to loud and distracting.

Cleft lip/palate. The signs and symptoms associated with a cleft lip/palate depend on several factors, including the type of structures involved, severity, and whether both the lip and palate are involved. Evaluation of a child with a history of a cleft lip/palate should include an oral mechanism exam, formal assessment, and conversational speech sample. One of the impacts of a cleft lip/palate may include obligatory errors and/or compensatory (learned) errors.

Velopharyngeal dysfunction (VPD). VPD can impact articulation and cause obligatory errors and/or compensatory errors. Obligatory errors exist when a structural abnormality is present and are not likely to improve until the structural cause is addressed through physical management. Compensatory articulation errors likely develop due to anatomical inability to close the VP port, inability to generate adequate intraoral air pressure for consonant production, and/or the presence of anterior structural anomalies. Obligatory errors can include: hypernasality (i.e., vowels, liquids, glides), articulation errors secondary to dental malocclusions, and nasal air emission due to VPD or fistula that occurs across oral pressure consonants (i.e., stops, fricatives, affricates). Compensatory articulation errors are learned errors that are primarily related to placement of articulators or direction of airflow.

Evaluation from an ENT is required prior to therapy to determine if a structural abnormality persists beyond initial physical repair. Therapy will be ineffective until physical management is addressed. (Kummer, 2006).

Dysarthria. Children with a dysarthria typically present with articulation that is distorted, labored, imprecise, and/or slow. A comprehensive evaluation including a hearing screening, case history (including medical and birth history), oral mechanism examination, speech sound assessment (single-word testing and connected-speech sampling), language assessment, dynamic motor-speech assessment, and literacy assessment as indicated, should be completed. Typically, children with dysarthria have a medical diagnosis prior to being referred to a speech-language pathologist. However, if a dysarthria is suspected and the child has not received a medical diagnosis, evaluation by a physician is usually warranted. Dysarthria can be congenital or acquired and may be part of a disease process that is stable or degenerative. The etiology and progression of a dysarthria must be considered and will impact recommendations for treatment.

Childhood apraxia of speech. A child suspected of having Childhood Apraxia of Speech (CAS) should undergo a comprehensive evaluation including a hearing screening, case history, oral mechanism examination, speech sound assessment (single-word testing and connected-speech sampling), language assessment, dynamic motor-speech assessment, and literacy assessment, as indicated. In addition, an evaluation of movement accuracy is key in providing a differential diagnosis. A change in performance across tasks of varying complexity may indicate motoric difficulty with speech. Some examples of tasks could include non-speech oral postures versus real words and sounds, automatic common phrases versus novel phrases. Additionally, measuring the difference in speech production in syllables, multisyllabic words, phrases, and sentences.

On these tasks the evaluator should also be noting any other features or characteristics common in children with CAS and motor planning-based difficulties of speech. Please see ASHA website for a list of common characteristics for Childhood Apraxia of Speech.

Dynamic assessment is a vital source of information in identifying CAS. Measuring how a child responds to different cues and prompts will help in determining the severity and level of cueing needed to facilitate clear communication.

It should also be noted that it can be difficult to provide a differential diagnosis of Childhood Apraxia of Speech from other severe phonological disorders or articulation delays without first measuring the child's response to treatment. In these cases, a working diagnosis of "suspected of having CAS" may be appropriate.

Please see the ASHA website for further information on Childhood Apraxia of Speech and Assessment. (ASHA, Childhood Apraxia of Speech, n.d.)

Orofacial myofunctional disorders (tongue thrust). Tongue thrust falls under the classification of orofacial myofunctional disorders (OMDs) which are patterns involving the oral and orofacial musculature which interfere with normal growth, development, or function of the orofacial structure or call attention to themselves. OMDs may reflect learned behaviors, physical/structural variables, genetic factors, or environmental factors. Tongue thrusting is reported to occur in 33% to 50.5% of school aged children. Prevalence estimates are highest in pre-school and young school age children and lowest amongst adolescents.

Signs and symptoms of tongue thrusting or other orofacial myofunctional disorders include but are not limited to:

- Open mouth resting posture
- Structural abnormalities (e.g.: overjet, open bite, restricted lingual frenulum)
- Abnormal resting posture of the tongue
- Distorted productions of /s, z/ and/or abnormal placement for /t, d, l, n/, "ch", "sh", "j", "zh"
- Drooling or poor oral control past two years of age

In the assessment of tongue thrust, ASHA recommends that SLPs consult and collaborate with other professionals which may include but is not limited to dentists, orthodontists, otolaryngologists, physicians, and physical therapists. Case history should include information on oral habits, respiratory habits, medical history impacting oral function, dental/orthodontic history, and feeding history. Assessment should include a comprehensive oral mechanism examination; observation of swallowing of saliva, liquids, and foods; and a comprehensive examination of a student's articulation skills. (ASHA, Orofacial myofunctional disorders, n.d.).

Phonological processes. Some articulation errors can be categorized into patterns called phonological processes, error patterns that are expected to be eliminated from a child's speech with maturity.

Process	Description	Student Example	Age of Suppression*
Assimilation	A sound changes in similarity to a neighboring sound in a word (e.g., “guck” for “duck.”)		3
Pre-vocalic voicing	A voiceless consonant is changed to a voiced consonant prior to vowel (e.g., “pig” for “big”).		3 - 6
Final Consonant Deletion	The final consonant of a word is deleted (e.g., “cu-” for “cup”).		3 – 3:6
Stopping	A fricative /f, v, s, z, ð, ʃ/ or affricate /tʃ, dʒ/ is replaced with a stop consonant (e.g., “pour” for “four,” “doo,” for “zoo” “tew” for “chew”).		3 /f, s/ 4 /v, z/ 5 /ʃ, tʃ, dʒ, ð/
Velar Fronting	A velar sound /k, g, ŋ/ is substituted with a sound made on the alveolar ridge /n, t, d/ (e.g., “do” for “go”).		3:6 - 4
Deaffrication	An affricate /tʃ, dʒ/ is replaced with a fricative or stop (e.g., “ship” for “chip”).		4
Vocalization	A word final liquid or syllabic liquid (e.g., /l/ or /ɫ/) is replaced		4 – 4:6

	with a vowel (e.g., “flowa” for “flower”).		
Palatal Fronting	Palatal or affricate sounds are replaced with a more frontal sound (e.g., “fis” for “fish”).		3:6 - 4
Weak Syllable Deletion	The weak syllable in a word is deleted (e.g., jamas” for “pajamas”).		3:6 - 4
Cluster Reduction	A consonant cluster is reduced to a single consonant (e.g., “p-incess” for “princess”).		4 4 - 5 with /s/
Gliding	A liquid /r, l/ is replaced with a glide /w, j/ (e.g., “wabbit” for “rabbit”).		/l/ by 6 /r/ by 6 - 7
Initial Consonant Deletion	The initial consonant of a word is omitted (e.g., “-up” for “cup”).		Non-developmental phonological process; typically seen in more severe phonological process disorders
Backing	Alveolar sounds /t, d/ are replaced with velar sounds /k, g/ (e.g., “kake” for “take”).		Non-developmental phonological process; typically seen in more severe phonological process disorders

Note. *Norms vary widely in the literature and across individuals as reflected by the age ranges in the chart. Clinicians should not rely solely on the age of suppression for eligibility but rather use this as a guide when considering overall intelligibility (ASHA, Selected Phonological Processes, n.d.; Bauman-Waengler, 2020; Grunwell, 1981; Khan & Khan-Lewis, 2015).

Oral Mechanism Evaluation

ASHA states: “The oral mechanism examination evaluates the structure and function of the speech mechanism to assess whether the system is adequate for speech production. This examination typically includes assessment of:

- Dental occlusion and specific tooth deviations;
- Structure of hard and soft palate (clefts, fistulas, bifid uvula); and
- Function (strength and range of motion) of the lips, jaw, tongue, and velum” (ASHA, Speech sound disorders, n.d.)

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Report Writing Considerations

General Considerations

The evaluation report should provide a comprehensive picture of the child's articulation skills. In addition to charts and/or tables documenting specific speech sound errors or the presence of phonological processes, a narrative section should be included to adequately analyze the results of testing completed in the area of articulation. The following pieces of data should be documented in the written evaluation report when available:

- **Standardized Testing Results**
 - Results should be reported using percentile ranks, not standard scores
 - Raw scores *may* be reported
 - Age-Equivalents should not be used
 - An interpretation of standardized measure should be completed. The reporting of scores alone is not sufficient.

- **Informal Testing Results**
 - Information from Parent and Teacher
 - RTI Results
 - Conversational Intelligibility
 - Stimulability
 - Developmental acquisition data may be referenced in order to justify the need for service delivery but should not be the sole determining factor of an articulation impairment.
 -

- **Recommendations**
 - Indicate functional implications of the articulation impairment.
 - Provide suggestions for recommended goals/objectives as well as next to target skills following mastery of the initial recommended goals.

Appendix B

Forms and Charts

Classroom Considerations and Articulation Intervention Recommendations

Student Name: _____

Date: _____

General Considerations	✓ if Attempted	Results
Has the student's hearing been checked within the last 3 months?		
Is more than one language spoken in the home?		
Has the speech-language pathologist conducted an observation of the student?		
Has data from parents and teachers been gathered (e.g., parent data forms, teacher data forms, health data forms, articulation observations)?		
Strategy	✓ if Attempted	Results
Model and correct speech sound productions containing target sounds as they occur.		
Strategies for sound production provided to parent and/or classroom teacher.		
Provision of a home program for the parents to address specific speech sound errors. Activities suggested <i>may</i> include: <ul style="list-style-type: none"> • Ask the student to cut pictures from magazines or draw pictures of words containing the error sound(s). • Make the student a list of words containing the error sound(s) to read for practice. • Use words from the student's reading material, spelling lists, and daily vocabulary to practice. 		
Implementation of an intervention program based on the student's speech sound error(s) implemented by the general education teacher .		
Implementation of an intervention program based on the student's speech sound error(s) implemented by the SLP .		

Parent and Teacher Observations of Articulation

Student: _____ **Date Completed:** _____

Person Completing the Form: _____

Relationship to the Student: Parent Teacher Other: _____

Circle the sounds you know the student is able to produce correctly

Early	/p/	/b/	/t/	/d/	/m/	/w/	/n/
	/h/	/k/	/g/	“ng”	/f/	“y”	
Middle	/l/	“j”	“ch”	“sh”	/s/	/z/	/v/
Late	/r/	“zh”	“th”				
Blends	/s/ blends (st, sk, sm, etc.)		/l/ blends (pl, gl, fl, etc.)		/r/ blends (gr, br, pr, etc.)		

I understand what the student says about _____% of the time.

Others understand what the student says about _____% of the time.

The student speaks: Rapidly At a Normal Rate Slowly

Question	Yes	No
Is the student’s difficulty with articulation adversely impacting his or her educational success in reading or writing?		
Is the student’s difficulty with articulation adversely impacting his or her social interactions with teachers, family members, or peers in the school or home setting?		
Does student show any signs of frustration related to his or her difficulty producing speech sounds?		
Do you have concerns beyond the student’s ability to produce age-appropriate speech sounds?		

If yes, in what areas:

Observaciones de Padres y Maestros de la Articulacion

Estudiante: _____ Fecha en que llena esto: _____

Persona que llena el formulario: _____

Relación con el estudiante: Padre Maestro Otro: _____

Encierre en un círculo los sonidos que usted sabe que el estudiante puede decir correctamente:

Temprano	/p/	/t/	/k/	/m/	“ñ”	/l/	“ch”
Medio	“ng”	“zh”	“j”	/g/	/n/	/b/	/f/
	/x/	“th”	/w/	“r”			
Tarde	“rr”	/s/	“v”				
Combinaciones	Combinaciones con /l/ (pl, gl, fl, etc.)				Combinaciones con /r/ (gr, br, pr, etc.)		

Entiendo lo que dice el alumno sobre el _____% del tiempo.

Otros entienden lo que el estudiante dice cerca del _____% del tiempo.

El estudiante habla: Rápidamente A un ritmo normal Lentamente

Pregunta	Sí	No
¿La dificultad del alumno con la articulación afecta su éxito educativo en lectura o escritura?		
¿La dificultad del alumno con la articulación afecta negativamente sus interacciones sociales con los maestros, miembros de la familia o compañeros ya sea en la escuela o en el hogar?		
¿Muestra el alumno algún signo de frustración relacionado con su dificultad para producir sonidos del habla?		
¿Aparte de la capacidad del estudiante para producir sonidos del habla que son apropiados para su edad, tiene usted alguna otra preocupación?		

Si contestó que **sí**, en qué áreas:

Oral Mechanism Evaluation Form

Student Name: _____

Age: _____ : _____
 Years Months

Examiner: _____

Date: _____

Pertinent History

	Yes	No
Does the student have a history of thumb sucking?		
Does the student have a history of using a pacifier?		
Does the student have a history of sleep apnea?		
Does the student have a history of feeding difficulties?		
Has the student had orthodontic work completed or in progress?		
Has the student had any major surgeries to his or her mouth?		

Other Pertinent History: _____

Oral Mechanism Evaluation

Observe the face at rest.

	Symmetry	Abnormal Movements	Mouth Breathing
Face	<input type="checkbox"/> Normal <input type="checkbox"/> Bilateral Weakness <input type="checkbox"/> Unilateral Weakness (Right) <input type="checkbox"/> Unilateral Weakness (Left)	<input type="checkbox"/> None <input type="checkbox"/> Grimaces <input type="checkbox"/> Spasms <input type="checkbox"/> Groping	<input type="checkbox"/> Present <input type="checkbox"/> Absent

Other Observations: _____

Tell the student to open and close their mouth.

	Range of Motion	Symmetry	Movement
Jaw	<input type="checkbox"/> Adequate <input type="checkbox"/> Reduced	<input type="checkbox"/> Normal <input type="checkbox"/> Veers to Right <input type="checkbox"/> Veers to Left	<input type="checkbox"/> Adequate <input type="checkbox"/> Groping <input type="checkbox"/> Involuntary <input type="checkbox"/> Slow <input type="checkbox"/> Asymmetrical

Other Observations: _____

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Tell the student to open and close their mouth. Tell the student to smile.

Teeth	Teeth	Arrangement	Occlusion	Hygiene
	<input type="checkbox"/> All Present <input type="checkbox"/> Teeth Missing:	<input type="checkbox"/> Normal <input type="checkbox"/> Cramped <input type="checkbox"/> Spaces <input type="checkbox"/> Misaligned	<input type="checkbox"/> Normal <input type="checkbox"/> Overbite <input type="checkbox"/> Underbite <input type="checkbox"/> Cross Bite	<input type="checkbox"/> Good <input type="checkbox"/> Adequate <input type="checkbox"/> Poor

Other Observations:

Tell the student to pucker their lips and smile. Press tongue depressor against lips. Ask student to puff cheeks and hold air – for this task, note any nasal emission or if air escapes through lips.

Lips	Range of Motion	Symmetry	Movement	Strength
	<input type="checkbox"/> Adequate <input type="checkbox"/> Reduced	<input type="checkbox"/> Normal <input type="checkbox"/> Droops Bilaterally <input type="checkbox"/> Droops Right <input type="checkbox"/> Droops Left	<input type="checkbox"/> Adequate <input type="checkbox"/> Groping <input type="checkbox"/> Involuntary <input type="checkbox"/> Slow	<input type="checkbox"/> Adequate <input type="checkbox"/> Weak

Other Observations:

Tell the student to open mouth.

Tongue	Surface Color	Abnormal Movements	Size
	<input type="checkbox"/> Normal <input type="checkbox"/> Abnormal:	<input type="checkbox"/> Absent <input type="checkbox"/> Jerky <input type="checkbox"/> Spasms <input type="checkbox"/> Fasciculations	<input type="checkbox"/> Normal <input type="checkbox"/> Small <input type="checkbox"/> Large

Other Observations:

Tell the student to protrude their tongue. Apply opposing pressure with tongue depressor. Ask the student to move tongue in and out.

Protrusion/ Retraction	Range of Motion	Excursion	Frenulum	Strength	Resting Position	Rate
	<input type="checkbox"/> Adequate <input type="checkbox"/> Reduced	<input type="checkbox"/> Normal <input type="checkbox"/> Deviates Rt <input type="checkbox"/> Deviates Left	<input type="checkbox"/> Normal <input type="checkbox"/> Short	<input type="checkbox"/> Adequate <input type="checkbox"/> Reduced	<input type="checkbox"/> Protruded <input type="checkbox"/> Retracted <input type="checkbox"/> Adequate Posture	<input type="checkbox"/> Adequate <input type="checkbox"/> Reduced

Other Observations:

Tell the student to move the tongue from right to left. Apply opposing pressure with tongue depressor.

Lateralization	Range of Motion	Excursion	Strength	Rate
	<input type="checkbox"/> Adequate <input type="checkbox"/> Reduced	<input type="checkbox"/> Normal <input type="checkbox"/> Incomplete <input type="checkbox"/> Gropping	<input type="checkbox"/> Adequate <input type="checkbox"/> Reduced	<input type="checkbox"/> Adequate <input type="checkbox"/> Reduced

Other Observations:

Tell the student to move the tongue up and down.

Elevation	Range of Motion	Movement	Rate
	<input type="checkbox"/> Adequate <input type="checkbox"/> Reduced	<input type="checkbox"/> Normal <input type="checkbox"/> Gropping	<input type="checkbox"/> Adequate <input type="checkbox"/> Reduced

Other Observations:

Tell the student to open his or her mouth. A light may need to be used.

Palate	Color	Palatal Arch Height	Palatal Arch Width	Growths	Clefting	Fistula
	<input type="checkbox"/> Normal <input type="checkbox"/> Abnormal	<input type="checkbox"/> Normal <input type="checkbox"/> High <input type="checkbox"/> Low	<input type="checkbox"/> Normal <input type="checkbox"/> Narrow <input type="checkbox"/> Wide	<input type="checkbox"/> Absent <input type="checkbox"/> Present	<input type="checkbox"/> Absent <input type="checkbox"/> Present	<input type="checkbox"/> Absent <input type="checkbox"/> Present

Other Observations:

Tell the student to open his or her mouth. A light may need to be used.

Tonsils	Status	Uvula	Status
	<input type="checkbox"/> Normal <input type="checkbox"/> Absent <input type="checkbox"/> Enlarged		<input type="checkbox"/> Normal <input type="checkbox"/> Bifid <input type="checkbox"/> Deviates Right <input type="checkbox"/> Deviates Left

Other Observations:

Ask the student to repeat each statement or read them from a list. Assess for nasal emissions by placing a mirror under the nose. Mark observations in the appropriate column.

Statement	Typical Production	Hypernasality Observed	Nasal Emission
Pick up the puppy.			
Buy baby a bib.			
Suzy sees the sky.			
Chase the chilly cherry.			
Go give Kate cake.			
Cookie, cookie, cookie.			
Puppy, puppy, puppy.			
I like cookies.			
I like puppies.			

Ask the student to repeat each statement or read them from a list. Mark observations in the appropriate column.

Statement	Typical Production	Hyponasality Observed
Mr. Nelson knows my nana.		
Coming home is fun.		
My nose never runs.		
Hammer nine nails.		

Time the number of seconds it takes for your student to produce each task for 20 repetitions. Averages and standard deviations for ages 6 to 13 are presented in the table.

Table A

Task	# of Seconds	6	7	8	9	10	11	12	13
puh		4.8	4.8	4.2	4.0	3.7	3.6	3.4	3.3
tuh		4.9	4.9	4.4	4.1	3.8	3.6	3.5	3.3
kuh		5.5	5.3	4.8	4.6	4.3	4.0	3.9	3.7
	Standard Deviation	1.0	1.0	0.7	0.7	0.6	0.6	0.6	0.6

Time the number of seconds it takes for your student to produce each task for 20 repetitions. Averages and standard deviations for ages 6 to 13 are presented in the table.

Table B

Task	# of Seconds	6	7	8	9	10	11	12	13
puhtuhkuh		10.3	10.0	8.3	7.7	7.1	6.5	6.4	5.7
	Standard Deviation	2.8	2.8	2.0	2.0	1.5	1.5	1.5	1.5

Note. Reprinted from *Diadochokinetic Syllable Rates Worksheet*, retrieved from http://courses.washington.edu/sop/assessing_diadochokinetic_syllab.htm

Conclusions

Mark the appropriate statement(s).

<input type="checkbox"/>	Oral structure appears adequate for speech production.
<input type="checkbox"/>	Oral function appears adequate for speech production.
<input type="checkbox"/>	Deviations in structure and/or function do not appear to impact speech production, at this time.
<input type="checkbox"/>	There are deviations in structure and function which <u>may</u> impact speech production.
<input type="checkbox"/>	There are significant deviations in structure and function which are <u>likely</u> to impact speech production.

Clinical Impressions: _____

Adapted from:

ASHA, *Comprehensive assessment for cleft lip and palate*, n.d.

ASHA, *Orofacial myofunctional disorders*, n.d.;

Fletcher, 1972, Copyright by the American Speech-Language Hearing Association. Reprinted with permission;

ShIPLEY and McAfee, 2004.

Disability Determination Worksheet

Student Name: _____

Age: _____ : _____
 Years Months

Data Reconciliation

Standardized Testing:

Percentile Rank (Single Words)	
Percentile Rank (Sentences/ Connected Speech, if used)	
Percentile Rank (Phonological Measure)	

Single Sound Errors:

Mark the single sound errors with which the student consistently presents:

	Sounds
Phonemes	p, b, m, n, w, j, h, d, t, k, g, ŋ, f, l, ʃ, dʒ, tʃ, s, z, v, r, ʒ, ð, θ
Vocalic /r/	er, air, ire, or, ear, ar
Blends	/s/ blends, /l/ blends, /r/ blends

Phonological Processes:

Mark whether the phonological process is present or absent within the student's speech sound system. A present process is considered to be one that occurs at least 40% of the time.

Age of Suppression	Process	Present	Age of Suppression	Process	Present
3:0	Assimilation		4:0 – 5:0	Cluster Reduction	
3:0 – 6:0	Pre-vocalic Voicing		3:6 – 4:0	Palatal Fronting	
3:0	Stopping of /f/ or /s/		5:0	Stopping of /ʃ/, /dʒ/, /tʃ/, or /ð/	
3:0 – 3:5	Final Consonant Deletion		4:0 – 4:6	Vocalization	
4:0	Stopping of /v/ or /z/		6:0 – 7:0	Gliding	
3:6 – 4:0	Velar Fronting			Initial Consonant Deletion	
4:0	Deaffrication			Backing	
3:6 – 4:0	Weak Syllable Deletion				

Intelligibility

Parent %	Teacher %	SLP %

Stimulability

	All	Some	None
Is the student stimulable for the production of speech sounds which he or she should have acquired to this point?			

Previous Services/Interventions

Has the student previously received speech/language therapy in the area of articulation? If “yes,” for how long?	
Has the student participated in RTI for articulation? If “yes,” was progress adequate or inadequate?	

Special Factors

	Yes	No
Does the student appear to present with a disorder of motor speech and/or vowel distortions or errors?		
Did the student’s oral mechanism examination reveal deviations in structure and/or function which appear to impact the student’s ability to produce speech sounds?		
Does the student present with lateralized production of fricatives or affricates?		
Does the student speak a language other than English and/or use a dialect of English which may result in deviations in speech sound production from Standard American English?		
Does the student present with a disorder in the area(s) of receptive language, expressive language, voice, or speech fluency?		
Is the student’s level of language or cognition insufficient to benefit from speech therapy in the area of articulation?		

Stage 1: Evidence of Disorder

	Yes	No
Does the percentile obtained on the standardized test fall at least 1.5 standard deviations below the mean (7 th percentile)?		
Does informal assessment completed (Intelligibility Ratings, Percent of Consonants Correct, etc.) support a concern?		
Does the student present with <u>two</u> or more consistent <u>single sound errors</u> , falling outside of the range of typical development?		

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Does the student present with one or more <u>phonological processes</u> falling outside of the range of typical suppression?		
Does intelligibility or sound error data provided by the parent support a concern?		
Does intelligibility or sound error data provided by the teacher support a concern?		
Is the student stimulable for only <u>some</u> or <u>none</u> of the errored speech sounds?		
Does the professional judgment of the speech-language pathologist support a concern?		
Is the student concerned about the way he or she produces speech sounds?		

If the answer to at least three of the above questions is “yes,” it is likely that the student presents with a disability in the area of articulation.

Stage 2: Adverse Impact on Educational Performance

	Yes	No
Is there a documented relationship between the student’s difficulties with articulation and academic achievement (ex: reading, writing, phonological awareness, spelling)?		
Do articulation skills limit the student’s participation in self-care, social, or classroom routines?		
Is the articulation impairment noticeable across settings?		
Is the student stimulable for only <u>some</u> or <u>none</u> of the speech sounds which he or she should have acquired to this point?		
Is the student consistently unintelligible to parents, teachers, and peers beyond what is expected for his/her age?		

If the answer to at least two of the above questions is “yes”, it is likely that the student’s articulation disorder results in an adverse effect on the student’s educational performance.

When there is documentation of an articulation disorder and documentation of adverse impact on educational performance resulting from the articulation disorder, the disability condition for Speech Impairment with an articulation disorder has been established. The SLP recommends that the ARD Committee establish eligibility for special education services.

Following eligibility determination, the ARD Committee considers the need for specialized services for the student on the basis of Speech Impairment.

Stage 3: Need for Specialized Services

Check the statement which best applies to the student.

	The student presents with an articulation disorder <u>and</u> , there is an adverse impact on educational performance.	Specialized services provided by an SLP through special education are indicated.
	The student presents with an articulation disorder but <u>does not</u> present with an adverse impact on educational performance.	Specialized services provided by an SLP through special education are not indicated, but services provided through RTI or a home program <i>may</i> be warranted.
	The student <u>does not</u> present with an articulation disorder but presents with an adverse impact on educational performance.	Specialized services provided by an SLP through special education are not indicated, but services provided through RTI or a home program <i>may</i> be warranted.
	The student <u>does not</u> present with an articulation disorder, and the student <u>does not</u> present with an adverse impact on educational performance.	Specialized services provided by an SLP are not indicated.

Signature of the Speech-Language Pathologist

Date Completed

Re-Evaluation Disability Determination Worksheet

Student Name: _____

Age: _____ : _____
 Years Months

Data Reconciliation

Standardized Testing:

Percentile Rank (Single Words)	
Percentile Rank (Sentences/ Connected Speech, if used)	
Percentile Rank (Phonological Measure)	

Single Sound Errors:

Mark the single sound errors with which the student consistently presents:

	Sounds
Phonemes	p, b, m, n, w, j, h, d, t, k, g, ŋ, f, l, ʃ, dʒ, tʃ, s, z, v, r, ʒ, ð, θ
Vocalic /r/	er, air, ire, or, ear, ar
Blends	/s/ blends, /l/ blends, /r/ blends

Phonological Processes:

Mark whether the phonological process is present or absent within the student's speech sound system. A present process is considered to be one that occurs at least 40% of the time.

Age of Suppression	Process	Present	Age of Suppression	Process	Present
3:0	Assimilation		4:0 – 5:0	Cluster Reduction	
3:0 – 6:0	Pre-vocalic Voicing		3:6 – 4:0	Palatal Fronting	
3:0	Stopping of /f/ or /s/		5:0	Stopping of /ʃ/, /dʒ/, /tʃ/, or /ð/	
3:0 – 3:5	Final Consonant Deletion		4:0 – 4:6	Vocalization	
4:0	Stopping of /v/ or /z/		6:0 – 7:0	Gliding	
3:6 – 4:0	Velar Fronting			Initial Consonant Deletion	
4:0	Deaffrication			Backing	
3:6 – 4:0	Weak Syllable Deletion				

Intelligibility

Parent %	Teacher %	SLP %

Stimulability

	All	Some	None
Is the student stimulable for the production of speech sounds which he or she should have acquired to this point?			

Previous Services/Interventions

How long has the student previously received speech/language therapy in the area of articulation?	
---	--

What service delivery models have been attempted with the student?	Type	Yes	No	For How Long?
	Traditional Pull-Out			
	Drill Burst			
	Inclusion			
	Home Program			
	Teacher Carryover Activities			
	Consultation			

What is the student's current level of accuracy with his or her speech sound goals and objectives?	Target Sound / Process	Word Level	Sentence Level	Connected Speech

Special Factors

	Yes	No
Does the student appear to present with a disorder of motor speech and/or vowel distortions or errors?		
Did the student's oral mechanism examination reveal deviations in structure and/or function which appear to impact the student's ability to produce speech sounds?		
Does the student present with lateralized production of fricatives or affricates?		
Does the student speak a language other than English and/or use a dialect of English which may result in deviations in speech sound production from Standard American English?		
Does the student present with a disorder in the area(s) of receptive language, expressive language, voice, or speech fluency?		
Is the student's level of language or cognition insufficient to benefit from speech therapy in the area of articulation?		

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Stage 1: Evidence of Disorder

	Yes	No
Does the percentile obtained on the standardized test fall at least 1.5 standard deviations below the mean (7 th percentile)?		
Does informal assessment completed (Intelligibility Ratings, Percent of Consonants Correct, etc.) support a concern?		
Does the student present with <u>two</u> or more consistent <u>single sound errors</u> falling outside of the range of typical development?		
Does the student present with one or more <u>phonological processes</u> falling outside of the range of typical suppression?		
Does intelligibility or sound error data provided by the parent support a concern?		
Does intelligibility or sound error data provided by the teacher support a concern?		
Is the student stimulable for only <u>some</u> or <u>none</u> of the errored speech sounds?		
Does the professional judgment of the speech-language pathologist support a concern?		
Is the student concerned about the way he or she produces speech sounds?		

If the answer to at least three of the above questions is “yes”, it is likely that the student presents with a disability in the area of articulation.

Stage 2A: Adverse Impact on Educational Performance

	Yes	No
Is there a documented relationship between the student’s difficulties with articulation and academic achievement (e.g., reading, writing, phonological awareness, spelling)?		
Do articulation skills limit the student’s participation in self-care, social, or classroom routines?		
Is the articulation impairment noticeable across settings?		
Is the student stimulable for only <u>some</u> or <u>none</u> of the speech sounds which he or she should have acquired to this point?		
Is the student consistently unintelligible to parents, teachers, and peers beyond what is expected for his/her age?		

If the answer to at least two of the above questions is “yes”, it is likely that the student’s articulation disorder results in an adverse effect on the student’s educational performance.

Stage 2B: Considerations for Dismissal

	Independent	Minimal	Maximum
What level of support does the student need to be successful?	The student communicates effectively most of the time. Only periodic reminders of what to do are needed.	The student needs more cues, models, explanations, or assistance than other students. The student may need instructional accommodations.	The student does not perform effectively most of the time despite modifications and supports. The student requires intensive instruction and/or interventions.
Considerations	Consider dismissal from speech/therapy services.	Consider what is needed to promote generalization and who the best service provider may be (parent, teacher, SLP, other professionals, etc.).	Consider continuing speech therapy services.

	Yes	No
Has there been a plateau in the student's progress in speech therapy?		
Does the student lack motivation to work on speech sound production?		
Has the student been working on the same speech sound / process for longer than one year with <u>minimal</u> progress?		
Is the child showing signs of generalization in connected speech tasks to at least 75% accuracy for the sounds he or she currently produces in error?		
Is the student willing to participate in class discussions and/or presentations?		
Have at least <u>three</u> service delivery models been tried with minimal success?		
Is the student able to communicate effectively most of the time?		
Does the student know what to do most of the time, only requiring periodic reminders?		
Does parent and/or teacher data support the need for dismissal?		
Does the professional judgment of the speech/language pathologist support the need for dismissal?		
Does formal and/or informal evaluation data support the need for dismissal?		
Is the student stimulable for the production of <u>all</u> developmentally appropriate speech sounds?		
Is the student currently functioning at the "independent" or "minimal" levels of support?		

If the answer to at least five of the above questions is "yes", the SLP may wish to recommend dismissal from speech therapy services to the ARD committee.

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Stage 3: Need for Specialized Services

Check the statement which best applies to the student.

The student presents with an articulation disorder <u>and</u> there is an adverse impact on educational performance.	Specialized services provided by an SLP through special education are indicated.
The student presents with an articulation disorder but <u>does not</u> present with an adverse impact on educational performance.	Specialized services provided by an SLP through special education are not indicated, but services provided through RTI or a home program <i>may</i> be warranted.
The student <u>does not</u> present with an articulation disorder but presents with an adverse impact on educational performance.	Specialized services provided by an SLP through special education are not indicated, but services provided through RTI or a home program <i>may</i> be warranted.
The student <u>does not</u> present with an articulation disorder, and the student <u>does not</u> present with an adverse impact on educational performance.	Specialized services provided by an SLP are not indicated. Dismissal from speech/language therapy services is recommended.
The student has reached a plateau in his or her progress and/or lacks the motivation to continue to improve his or her speech sound production at this time.	Specialized services provided by an SLP are not indicated. Dismissal from speech/language therapy services is recommended.

Signature of the Speech-Language Pathologist

Date Completed

**Point to Point Comparison of Single Word Articulation Errors
and Spontaneous Speech Sample Errors**

Student Name: _____ **Date:** _____

	SINGLE WORD ARTICULATION TEST (SWA)	SPONTANEOUS WORD SAMPLE (SWS)	ERRORS CONSISTENT BETWEEN SWA AND SWS
INITIAL POSITION ERRORS			
MEDIAL POSITION ERRORS			
FINAL POSITION ERRORS			

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