

# Speech Sound Development

The chart below illustrates the typical developmental progression of individual speech sounds. The sounds within each number indicate the age by which 85% of children have mastered production of that sound. For example, by age 6, 85% of children have mastered production of the “l” sound.

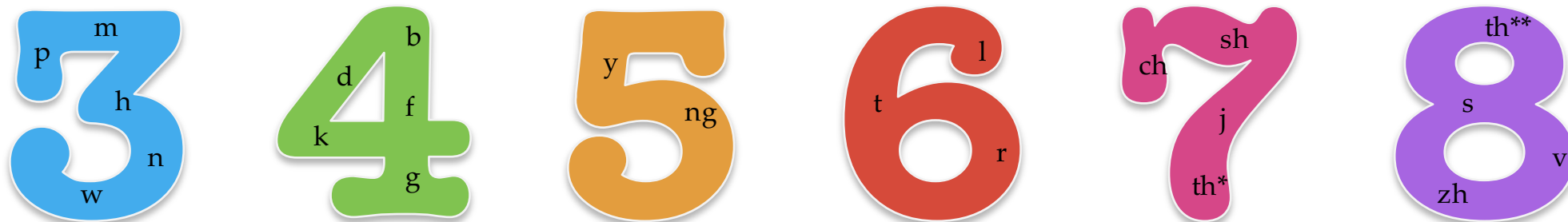


Chart adapted from the following sources: Sander (1972) and Goldman & Fristo (2000)

\*voiceless “th” as in “think” and “thing”      \*\*voiced “th” as in “the” and “those”

The following chart illustrates examples of speech sound patterns or phonological processes. These errors are often seen during typical speech development; however, should be phased out by the following ages:

Process/Pattern	Example	Developed out by...
Initial Consonant Voicing	Pat→bat	3;0
Final Consonant De-Voicing	Big→bick	3;0
Stopping of “f” & “s”	Fish→tish, soap→doap	3;0
Final Consonant Deletion	Duck→du, Bus→bu	3;3
Fronting	Cat→tat, Goat→doat	3;6
Stopping of “v” & “z”	Vote→tote, zoom→boom	3;6
Weak syllable deletion	Elephant→efant, Banana→nana	4;0
Cluster Reduction	Spoon→poon, Clap→cap	4;0
Deaffrication	Chore→shore, Jug→dug	4;0
Stopping of “sh” “j” & “ch”	Shop→dop, jump→bump, choo→too	4;6
Gliding	Run→wun, Leg→weg	5;0
Stopping of voiced and voiceless “th”	Them→dem, thing→ting	5;0
Prevocalic Voicing	Came→game, tag→dag	6;0

Chart adapted from Bowen (1998)

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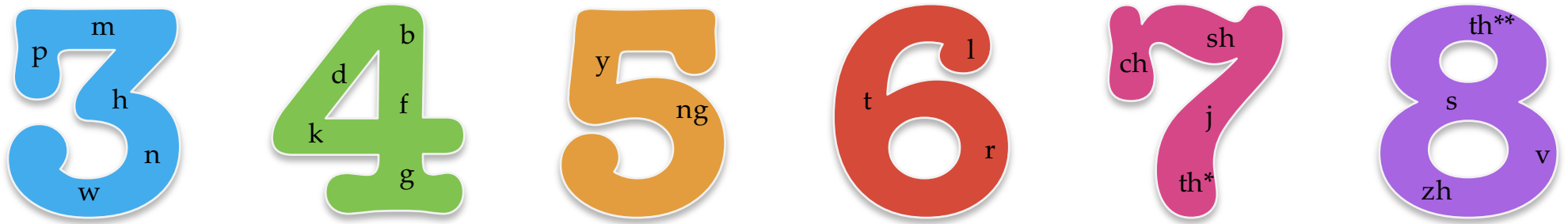


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\*Voiceless “th” as in “think” and “thing”

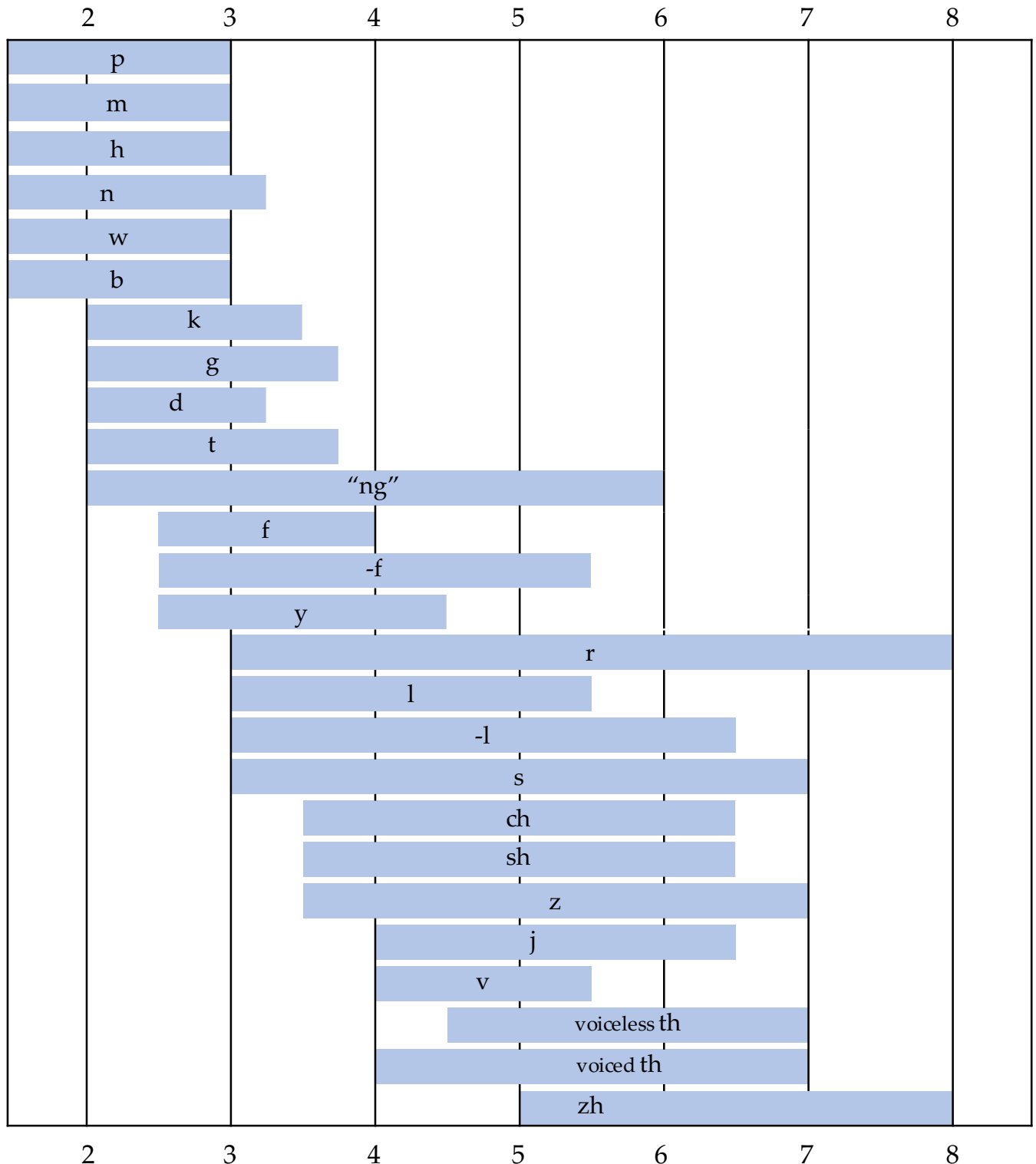
\*\*Voiced “th” as in “the” and “those”

Goldman, R., & Fristoe, M. (2000). *Goldman-Fristoe 2 Test of Articulation*. Minneapolis, MN: Pearson Assessments.

Sander, E. K. (1972). When are speech sounds learned? *Journal of Speech and Hearing Disorders*, 37(1), 55–63.

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The following chart depicts typical speech sound development. The start of each bar indicates the age by which at least 50% of children have mastered a particular sound and the end of the bar indicates when 90% of children have mastered the sound. For example, by age 3, 50% of children will have mastered production of “r” and by 8 years 90% of children will have mastered the sound. Age in years is represented across the top and bottom. Adapted from Sander (1972), Grunwell (1981) and Smit et al. (1990).



Grunwell, P. (1981). The development of phonology. *First Language* , iii, 161-191.

Sander, E. (1972). When are speech sounds learned? *Journal of Speech and Hearing Disorders*, 37, 55-63.

Smit, A., Hand, L., Freilinger, J., Bernthal, J., & Bird, A. (1990). The Iowa articulation norms project and its Nebraska replication. *Journal of Speech and Hearing Disorders*, 55, 779-798.

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## Phonological Processes

The following chart illustrates examples of speech sound patterns or phonological processes. These errors are often seen during typical speech development; however, should be phased out by the following ages:

Process/Pattern	Example	Developed out by...
Initial Consonant Voicing	pat→bat	3;0
Final Consonant De-Voicing	big→bick	3;0
Stopping of “f”	fish→tish	3;0
Stopping of “s”	soap→doap	3;0
Final Consonant Deletion	duck→du, bus→bu	3;3
Fronting	cat→tat, goat→doat	3;6
Stopping of “v”	vote→tote, zoom→boom	3;6
Stopping of “z”	zoom→boom	3;6
Weak syllable deletion	elephant→efant, banana→nana	4;0
Cluster Reduction	spoon→poon, clap→cap	4;0
Deaffrication	chore→shore, jug→dug	4;0
Stopping of “sh” “j” & “ch”	shop→dop	4;6
Stopping of “j”	jump→bump	4;6
Stopping of “ch”	chew→too	4;6
Gliding	run→wun, leg→weg	5;0
Stopping of voiced and voiceless “th”	them→dem, thing→ting	5;0
Prevocalic Voicing	came→game, tag→dag	6;0

Chart adapted from Bowen (1998)

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