



# TOOLS for SCHOOLS



## THE SOUNDS of Speech

### English Consonants

Adapted from Ling, Daniel (1976) *Speech and the Hearing Impaired Child: Theory and Practice*

| Consonant   | 1st Formant | 2nd Formant | 3rd Formant | 4th Formant |
|-------------|-------------|-------------|-------------|-------------|
| /p/         |             |             | 1,500–2,000 |             |
| /t/         |             |             | 2,500–3,000 |             |
| /k/         | 300–400     |             | 2,000–2,500 |             |
| /d/         | 300–400     |             | 2,500–3,000 |             |
| /b/         | 300–400     |             | 2,000–2,500 |             |
| /g/         | 200–300     |             | 1,500–2,500 |             |
| /m/         | 250–350     | 1,000–1,500 | 2,500–3,500 |             |
| /n/         | 250–350     | 1,000–1,500 | 2,000–3,000 |             |
| /ng/ (wing) | 250–350     |             |             | 4,500–6,000 |
| /f/         |             |             |             | 4,000–5,000 |
| /s/         |             |             |             | 5,000–6,000 |
| /sh/        |             |             | 1,500–2,000 | 4,500–5,500 |
| /th/ (thin) |             |             |             | 6,000       |
| /h/         |             |             | 1,500–2,000 |             |
| /v/         | 300–400     |             |             | 3,500–4,500 |
| /z/         | 200–300     |             |             | 4,000–5,000 |
| /TH/ (that) | 250–400     | 1000-1,500  | 2,000-3,000 |             |
| /ch/        | 200–300     |             | 1,500–2,000 | 4,000–5,000 |
| /dg/ (jot)  | 200–300     |             | 2,000–3,000 |             |
| /l/         | 250–400     |             | 2,000–3,000 |             |
| /r/ (err)   | 600–800     | 1,000–1,500 | 1,800–2,400 |             |

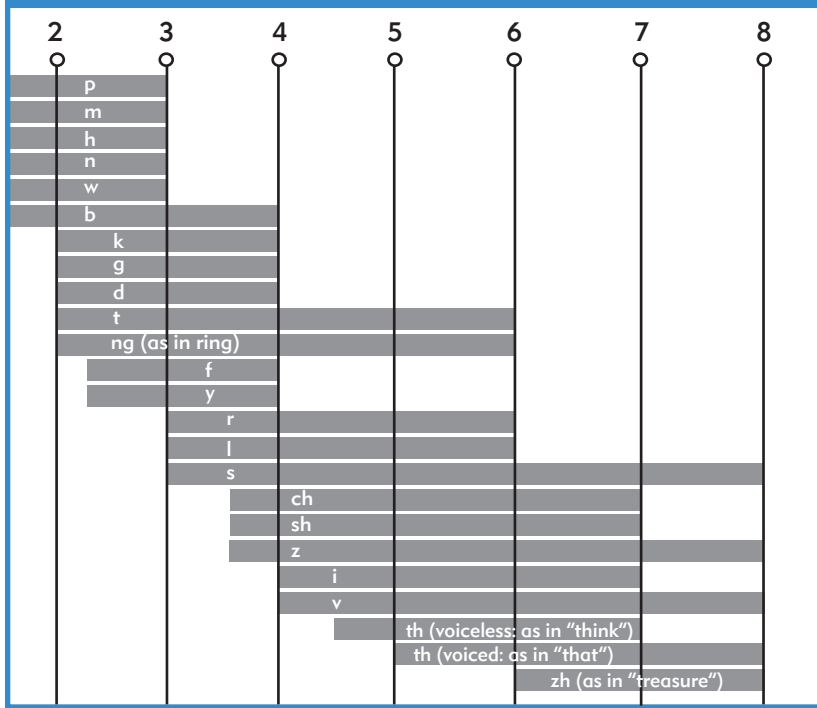
### Vowels

Adapted from Ling, Daniel (1976) *Speech and the Hearing Impaired Child: Theory and Practice*

| Vowel | Example | 1st Formant | 2nd Formant |
|-------|---------|-------------|-------------|
| /i/   | bee     | 370         | 3,200       |
| /I/   | bit     | 530         | 2,730       |
| /ε/   | bet     | 690         | 2,610       |
| /æ/   | bat     | 1,010       | 2,320       |
| /a/   | box     | 1,020       | 1,750       |
| /ə/   | bail    | 600         | 1,680       |
| /U/   | book    | 540         | 1,410       |
| /u/   | boot    | 430         | 1,170       |
| /ʌ/   | but     | 850         | 1,590       |
| /ɜ/   | bird    | 560         | 1,820       |

### English Consonants—Age of Acquisition

Adapted from Sanders 1972 and Templin 1957



### Tips for using The Sounds of Speech charts and tables

1. These charts and tables with vowel and consonant formant information are designed to assist you during therapy.
2. If the child doesn't have access to the sound(s) auditorily, he/she can not be expected to produce and/or imitate them. Review the child's audiogram to determine what sounds he/she is able to detect.
3. Remember to review the English Consonants—Age of Acquisition table before planning therapy goals for a young child.
4. It is important to note not only the first formant of the target sounds during therapy, but also the subsequent formants as well.