Introduction:

There are many school-age children who have articulation problems. Some children have difficulty with one sound, while other children have difficulty with a whole group of sounds. Many people ask Why? Believe it or not, all children have misarticulations while their language is developing. These normal speech errors are known as phonological processes. Some children do not outgrow these processes, and they develop articulation disorders.

Normal Speech Sound Acquisition:

There are many opinions on when sounds should be acquired and mastered. Here is a general guideline:

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Sounds to Acquire</th>
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<tbody>
<tr>
<td>36 months (3 years)</td>
<td>/n/, /m/, /p/, /h/, /t/</td>
</tr>
<tr>
<td>40-44 months (3.4-3.8 years)</td>
<td>/f/, /w/, /ng/, /b/, /g/</td>
</tr>
<tr>
<td>48 months (3.6 years)</td>
<td>/s/, /j/, /d/</td>
</tr>
<tr>
<td>48+ months (up to 6 years)</td>
<td>/r/, /l/, /sh/, /ch/, /z/, /v/, /j/, /th/</td>
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</table>

While children are developing these sounds, it is common to replace a more difficult sound with an easier sound. Children also shorten words that have many syllables, and change word structure.

Phonological Processes:

Now that we know the basic norms for sound development, we can take a look at the natural process that this development involves.

Processes that disappear by age 3:

1. **Unstressed syllable deletion.** Children will leave out the unstressed syllable. For example, telephone for telephone.
2. **Final Consonant Deletion.** Children will leave off the last consonant of a word. For example, boo for book.

3. **Consonant Assimilation.** One consonant in the word influences another. For example, beb for bed, or coke for coat.

4. **Reduplication.** The child repeats the first syllable twice. For example, baba for bottle, or mamam for mommy.

5. **Velar Fronting.** The phonemes /k/ and /g/ which are made in the back of the throat or the velum, are substituted for sounds made in the front. For example, tookie for cookie or doat for goat.

**Processes persisting after 3 years:**

1. **Cluster Reduction.** A consonant in a cluster is omitted. For example, Santa Caus for Santa Claus or back for black.

2. **Epenthesis:** A vowel is misplaced or inserted in a word. For example, balack for black.

3. **Gliding:** /r/ and /l/ are replaced by /w/. For example, wun for run.

4. **Vocalization:** Consonants are replaced by vowels. For example, boyd for bird.

5. **Stopping:** Fricative (ongoing) sounds are replaced by stops. For example, toup for soup or pit for peach.

By the first grade, or by age 7, these processes should be resolved. The most common processes that persist are stopping, gliding, and cluster reduction. When these processes persist speech therapy is indicated. The theory of therapy when these processes are involved, is that practice of one sound will carryover to a whole group of sounds. Sometimes this does work while other children need to work on sounds individually.

First and second grade teachers should pay special attention to these processes since they may still occur later than they should.