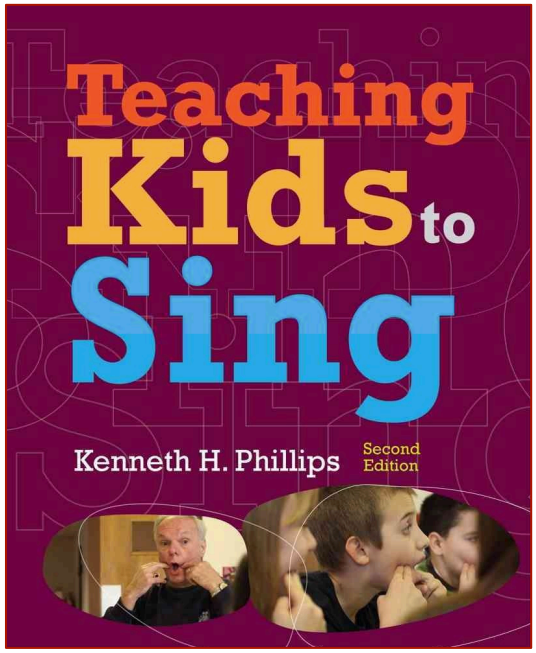
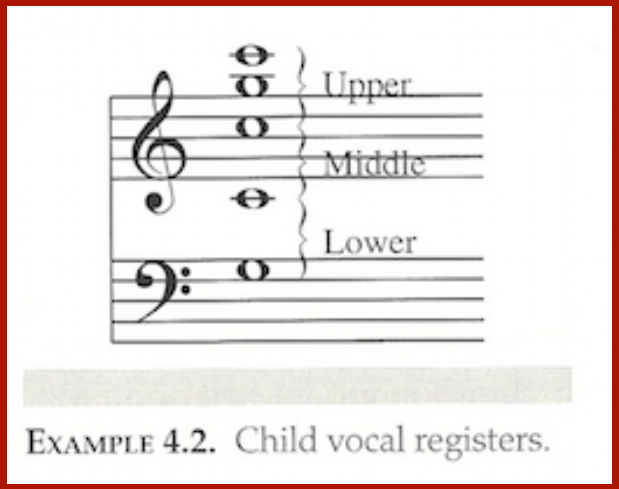




EXAMPLE 4.2. Child vocal registers.

Source: Phillips, *TKTS*, p. 91.

The Art of Choral Techniques

In-class Review of *Teaching Kids to Sing*:
Chapter 4 – The Child Singer

Source:

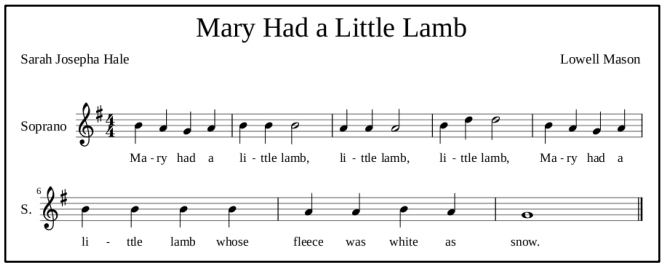
Phillips, Kenneth. *Teaching Kids to Sing* ***(TKTS)***, 2nd ed. U.S.: Schirmer CENGAGE Learning, 2014.

Vocal Development

- Beautiful singing does not come naturally to most kids – it is a **learned behavior**!
- Foundation begins in the preschool years w/ informal and non-structured vocal exploration.
- As infants are "programmed to learned," they might also be "programmed to sing."
- **"Musical babble"** (vocal play) should be encouraged and responded to by adults, for this is how infants learn to attach meaning to sounds.

Early Singing

- Period of play and experimentation followed by "approximation of singing" (**18 mos. To 3 yrs.**), with vocal chants, rhymes, etc.
- Provide an environment rich in musical experiences, including singing by and with adults.
- Singing skills, another form of language, should develop as well.
- **Age 3:** children w/many singing experiences begin to develop range, d1 to g1. Many sing in "speaking" or "chest" voice, but should be encouraged to **explore** "upper" or "head" range.

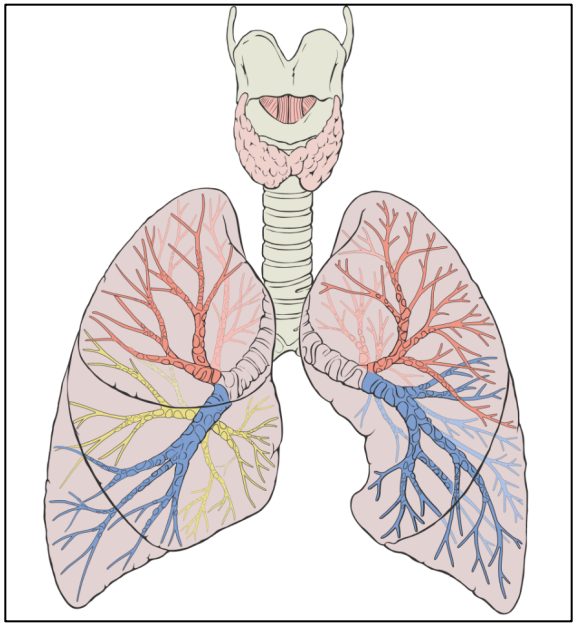


Avoid Lower Voice "Trap"

- Children can become trapped in lower voices at an early age; have them **discover top** w/o attempting to combine it with lower register by:
  - Singing lightly
  - Doing lots of individual singing
  - Listening to their own voices
  - Continuing to explore upper register in speech and song.
- Songs should generally be
  - **Short** and contain much **repetition** melodic and rhythmic patterns
  - Use **pentatonic** and **diatonic** patterns (don't avoid half-steps)
  - Use **descending minor 3rd**, quite popular for this age
  - **Enhance** singing with use of visuals, movements, and instruments
- These years are important for strong foundation of musical learning. Unfortunately, they are often neglected for regular music instruction.

Physiology of Young Singers

- Even by **first grade**, children's lungs are **not** fully developed; not capable of full, deep breathing.
- By **age 8**, lungs are in similar position to adults.
- Begin breathing exercises in the **second grade**.
- As child matures and speech develops, larynx descends, laryngeal cartilages strengthen, and lung volume increases. Gradual **process** that continues through puberty.
- **Limited ability** to increase intensity w/o impacting intonation; reduced capacity for vocalizations that are disproportionately long, agile, loud, high or rich in timbre.



The Elementary Singer

- Read this section (pp. 86-88) carefully; will assume much of this was covered in Elementary Methods.
- Children's singing is a **developmental process** that requires distinctive teaching strategies for students at multiple levels (experience), as well as songs/games for chanting/echoing in individual/group singing.
- Children should experience **unison** singing and, most importantly, need to exercise from upper register downward with **light head-tone** production.
- Don't suppress lower register as it **naturally emerges**, but keep singing in this area light to minimize its predominance.
- Keep range of songs **above middle C**, below where the chest voice typically takes over.

3rd and 4th Grades

- **Third grade** is pivotal year: no longer "babies" and "boy-girl distinctions" become clearer.
- Less confident singers can become further alienated by not being chosen for "select" choir.
- Careful of children thinking singing ability is determined by gender; it's something everyone can learn to do.
- By **fourth grade**, children beauty of tone blossoms. More demanding repertoire with longer phrases and wider ranges is possible; more attention can be paid to expression.
- Introduce singing in **harmony**, w/all students alternately singing melody and harmony parts (partner songs) in different selections.
- Dynamics can be increased, by **not above *mf***. Inaccurate singers should be given individual remedial help.

5th, 6th, and 7th Grades

- Vocal development and **purity peaks** in the 5th, 6th, and 7th grades.
- Range of up to **2 octaves** (g1-g2) is possible, with flute-like upper register, warm lower register (below middle C), and a middle register (c1-c2) that balances head and chest registers.
- Emphasize development of **vocal technique** by:

  (1) Habitual attention to posture, breath management, pitch accuracy, resonance and diction;

  (2) Focus on meaning and mood of song texts;

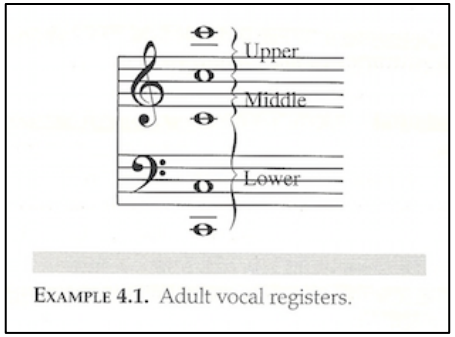
  (3) Encouragement of solo singing;

  (4) Opportunities to make discriminating judgment about vocal technique and quality;

  (5) Increasing dynamics to occasional forte, w/o sacrificing beautiful tone

  (6) Preparing students for eventuality of adolescent voice change.

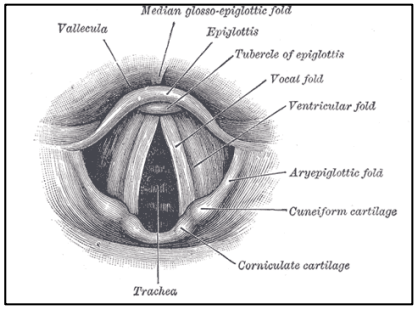
Vocal Parameters

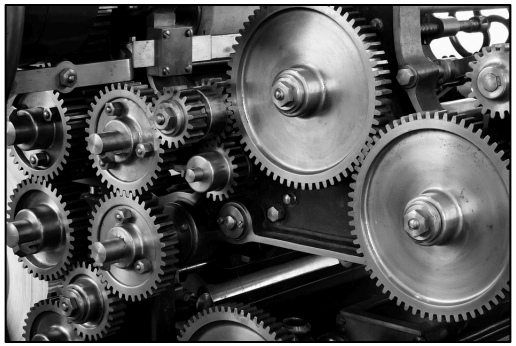


EXAMPLE 4.1. Adult vocal registers.

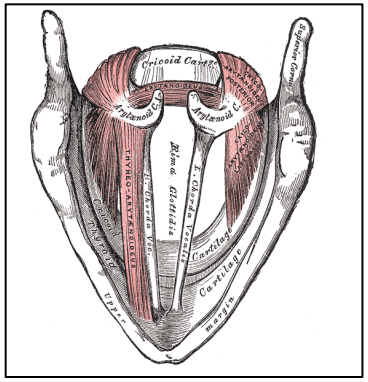
Source: Phillips, *TKTS,* p. 89.

- **Vocal registers**
  - Trained adult voice average vocal range is **3 octaves**
  - Range is divided into **registers**, defined as "a group of like sounds or timbres (tone qualities) produced by a special kind of mechanical (muscular) action.
  - *I think of them as **"vocal gears,"** where negotiating registers means learning how to "shift" or "blend" smoothly from one "gear" to the next, using breath management and resonance as you would the "clutch" and "accelerator" to help change the "gears" (vocal folds) most successfully (smoothly).*





Physiology



- Three vibratory patterns of the vocal folds are responsible for three vocal registers:

  (1) **Inner edges** of the vocal folds vibrate in the upper or **head** register.

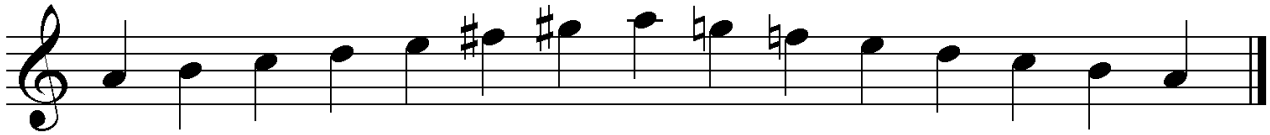
  (2) **Full width and length** of the fold vibrate for the lower, or **chest** voice.

  (3) Two mechanicals **overlap** in the **middle** vocal register.

- It is the goal of voice training to produce a **uniform** vocal production that sounds like it made up of one vocal register.

- ***Goal:*** *consistent sound from top to bottom of range, where quality of sound is more important than quantity of sound.*

- Nevertheless, physiological evidence for three vocal registers has been well established!



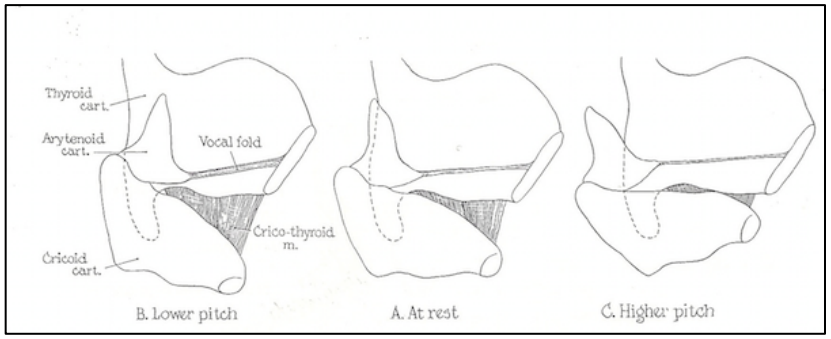
Goal: An Even Scale with Larynx "at rest" for Singing

- One should be able to pass from one register to the next **w/o noticeable breaks or unevenness** of vocal quality.
- Not only must the physical action of the folds coordinate at the moment of transition between registers (called **"lifts"**), but the resonators also must acoustically tune to the shift in registration.
- *Note: This is what the **functional unity** is all about: coordinating all aspects of singing for the most smooth, efficient, and successful operation of the voice!*
- Untrained singer raises larynx as pitch rises due to insufficient breath pressure, which produces tension and results in **"pressed"** phonation. High larynx also closes throat, diminishes quality of sound, and hampers ability to negotiate registers smoothly.
- A laryngeal **"at rest"** position should be maintained while singing to stabilize larynx and create the necessary resonating space.

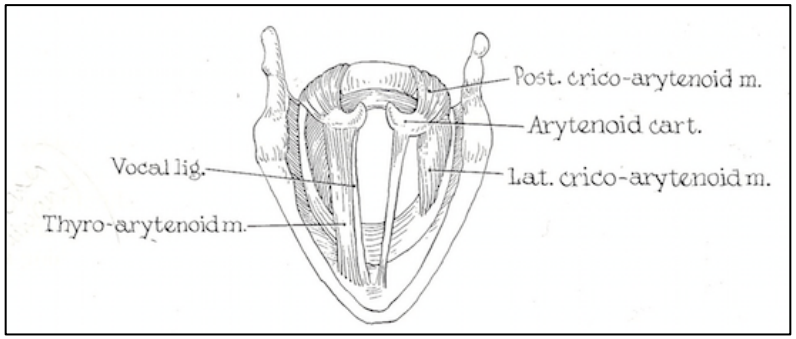
Child Vocal Registers

- **Head Voice** (**CT** (*cricothyroid*)-dominant) = CT muscles cause folds to lengthen and become thinner.
- **Chest Voice** (**TA** (thyroarytenoid)-dominant) = TA muscles are within the vocal folds and cause them to shorten and become thicker.
- **Middle Voice** is produced by contraction of both sets of muscles (**TA/CT**) to varying degrees of vocal fold adjustment.

CT = *Cricothyroid* muscles = Head Voice



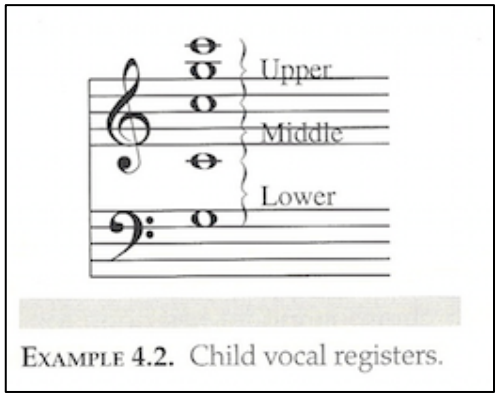
TA = *Thyroarytenoid* muscles = Chest Voice



Common Problems

- How to **shift** registers when ascending in pitch?
- Children who sing predominantly in chest register have intonation problems and often dramatically change vocal tract by **pushing** out lower jaw.
- Children who are able to use the head register have greater registration **options**. Vocal ranges often vary depending upon capacity to move from lower (TA-dominant) to upper (CT-dominant) register.
- Singing **exclusively** in either CT- or TA-dominant registers in **middle voice** is **discouraged**. Encourage students to seek more ease of production over loudness *[Tone **quality over quantity** of sound!]*

Three-Register Approach



EXAMPLE 4.2. Child vocal registers.

- Complete dismissal of lower register is NOT advocated, but instead a 3-register approach: **upper/CT**…**lower/TA**…and **middle/CT-TA**.
- Middle register bridges transition from lower to upper voice; results in 50-50 balance of registers at c. **f#1**. Middle voice uses less vocal-fold width as pitch ascends.
- When pitches are produced in the **correct** register, the sound is robust, pleasing, and healthy.

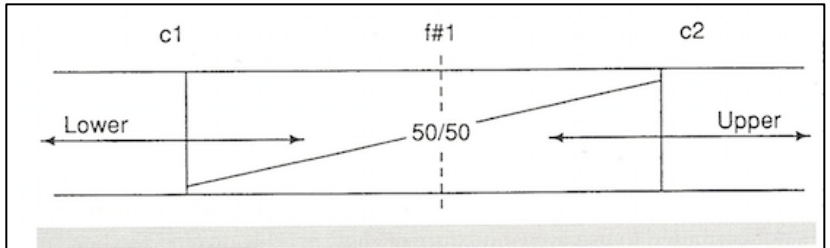


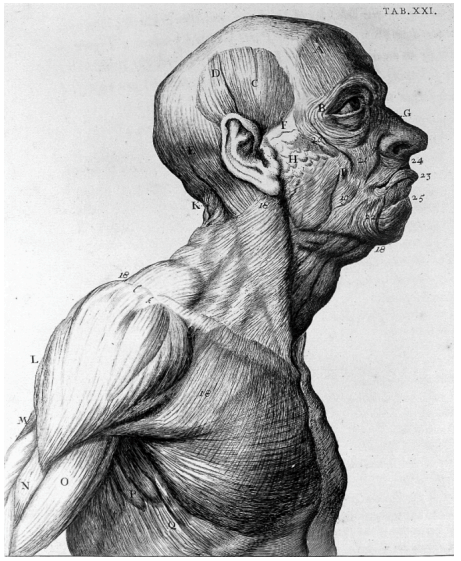
FIGURE 4.1. Shared vocal registers (TA/CT) for child's middle voice.

Don't Strip the Low Gear!

- Child's lower register is quite **elastic** and can be used to sing above middle C, but it sounds harsh and strained.
- It's also potentially **damaging** to the vocal folds, like driving a car at 60 mph in low gear: the transmission is not built to withstand such abuse, and neither are the vocal folds.
- Read about the English choirboy model that basically eliminates use of chest voice, resulting in pure upper-voice approach. Not balanced, especially in middle voice. How does "European" or "Continental" sound differ?
- However, TKTS does **not** totally reject this approach.

Blend "Head" and "Chest"

- When lower register is permitted to **join** the upper, the voice maintains ringing, robust quality.
- **Blend** must be accomplished from the **top downward**; vocalises begin in the upper voice and move downward into the middle register (c2 down to c1).
- This permits the **gradual sharing** necessary for balance of vocal fold vibration in the middle voice.
- Again: technique of **blending registers** is best learned from the **top down**!



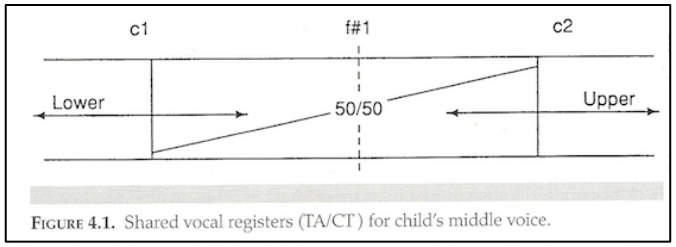


FIGURE 4.1. Shared vocal registers (TA/CT) for child's middle voice.

f#1 is Pivotal Note!

- The pitch **f#1** (evenly divided between lower and upper) is the **pivota**l note in balancing the middle register.
- Young singers can be taught to **listen** for *[and **feel** in their own singing]* the changing balance of qualities in the middle register. Surprising how sophisticated their ears can become through this process. Results in fuller tone that students find appealing.
- Developing registers in this way exercises **total** voice and prepares way of adolescent voice change. Strive for cultivation of three registers traversed in a **smooth vocal line** without perceptible breaks.
- Avoid simply **loud** singing; results in **exclusively** lower registration.

Healthy "Annie" Voice?

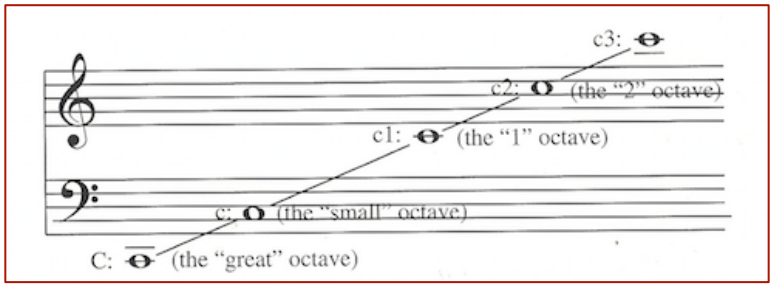
- Much pop music is **"belted,"** that is, production predominantly in chest-voice registration.
- Given vocal damage is likely to occur if children push this voice into the higher range, they should be taught to **modify the chest register** in the middle voice to **thin** the vocal folds to minimize slamming together of folds.
- Robert Edwin believes in **"safe belting"** (**"cross training"**), where upper and lower registers **mix in the middle**.
- Good and healthy belting is a **mix of TA and CT** muscle activity combined with **resonance coupling** that does not overload or tax the instrument.
- It is **your** responsibility to keep children from ruining their voice by loud and intense chest-voice belting. **Healthy** = singing in all three registers (CT, TA and CT/TA)

Vary Timbres/Intensities for Balance

- Children should sing in a **variety of styles**, using the correct vocal registration.
- Pivotal factor: **intensity** of TA voice in middle register. The greater the intensity, the more the chest voice takes over. The less the intensity, the more the head voice emerges.
- A true register balance at about **f#1** is the key to blending the CT and TA registers into one sound from top to bottom of child's singing range.

Child Vocal Quality

- Very **subjective**! *You're in charge of this important aspect of your choir's performance.*
- General American quality: bell or nasal-pharyngeal resonance, "**full-throated**" singing with relaxed larynx, jaw, tongue, and pharyngeal constrictors to maximize pharyngeal resonance and the "**open throat**" feeling.
- Singers feel the illusion of singing **above the throat**, high in the soft palate, as if one sang without any throat at all.
- Avoid high larynx (faulty technique).
- Strive for **uniform vowel** enunciation, support and focus. Developing **smooth transition** between all registers is key.



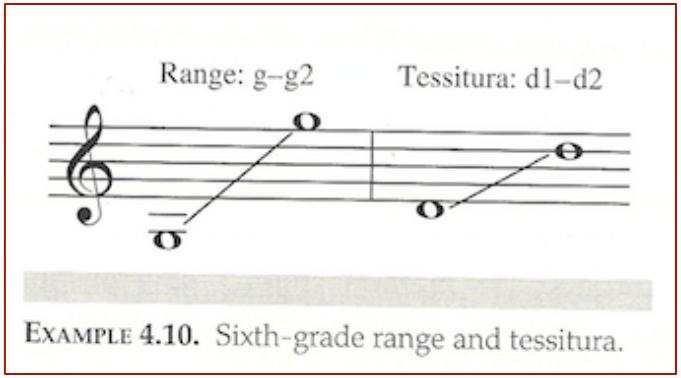
Negotiating Registers

- Untrained voices: either loud/boisterous or thin/whisper like, both of which show faulty technique. Teach children/adolescents **vitalization** and **coordination** of the body in singing.
- Well-produced child's voice is "choirboy" **flutelike** in upper register (c2 - c3).
- Very loud or very soft dynamics should be **avoided** through childhood; call for vocal technique beyond their maturity.
- **Slightly breathy** quality occurs when children combine upper (TA) and lower (CT) registers in **middle voice** (c1 - c2); sound will still be full and robust. Pitch f#1 is critical!
- **Top Down:** Exercises and vocalises must begin from upper register and move down to permit emergence of lower voice.

Chest-Voice Registration

- Later, voice can be exercised from bottom up to teach **subtle shifting** to upper voice on ascending lines.
- Lower chest-voice register has **warm**, **vital quality** if sung easily.
- Chest voice should **never be pushed**; results in harsh and undesirable sound.
- Children's voices do **not** sound like mature voices, but greater warmth and richness are possible with the larynx **at rest** to maximize the pharyngeal resonator.

Range and Tessitura



EXAMPLE 4.10. Sixth-grade range and tessitura.

- **Range:** number of pitches, or distance between the highest and lowest a person can sing.
- **Musical Range:** musical tones that can be matched correctly.
- **Tessitura:** general region of a vocal part within most pitches fall.
- Tessitura must be checked to determine if majority of pitches remain **too high or too low**.
- You must monitor the **comfortable tessitura** of singers at various ages to **choose appropriate literature**.

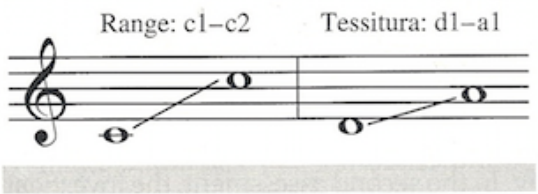
Research on Range

- Young children's **spontaneous** singing ranges are wider than traditionally reported, maybe up to 2 octaves. In musical context, specific pitches/patterns may not be in their vocabulary. Wider range possible with teaching of both upper and lower registers.
- Songs should be pitched from **c1 – a1**, which gradually expands as children mature.
- Choose songs with limited ranges, small skips, and prevalent descending melodic lines.
- Young children may not be able to attend to words and pitches simultaneously. Consider **neutral syllable [lu]** for kindergarten and first grade for more in tune singing.

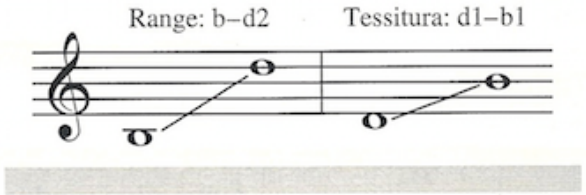
Child Voice: Ranges and Tessituras

- Remember: tessituras are **comfort zones** where the majority of pitches are located. Don't follow trend of lowering vocal ranges.
- Limited range in primary grades gradually expands to two full octaves in sixth grade based upon three-register approach. (next slide)
- Remember how to teach a song from Elementary Methods?

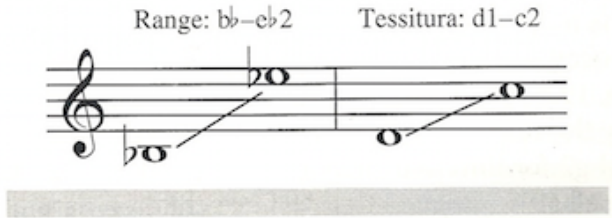
Elementary School Ranges and Tessituras



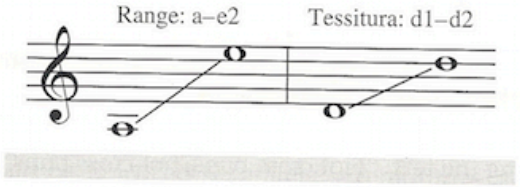
EXAMPLE 4.5. First-grade range and tessitura.



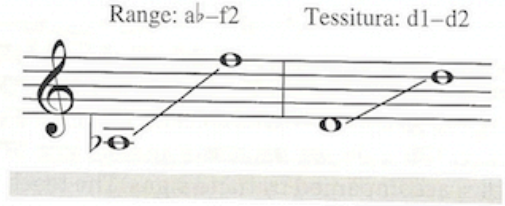
EXAMPLE 4.6. Second-grade range and tessitura.



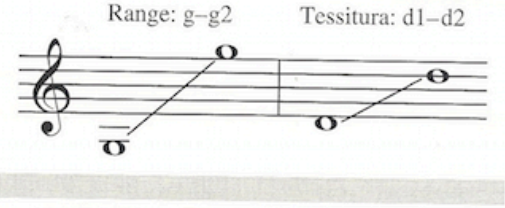
EXAMPLE 4.7. Third-grade range and tessitura.



EXAMPLE 4.8. Fourth-grade range and tessitura.



EXAMPLE 4.9. Fifth-grade range and tessitura.



EXAMPLE 4.10. Sixth-grade range and tessitura.