**WHY FUNDAMENTALS TIME?**

What is the difference between school orchestra and youth orchestra?

In youth orchestra, the individualized instruction is left, almost entirely, to the private teacher.

**KEY CONCEPT #1:**

In School Orchestra, **ALL STUDENTS**—not just the ones taking lessons—deserve sequential, comprehensive technical instruction that enables them to learn the musical and performance skills that upper-level orchestral works require, so that every student **CAN MAKE GREAT MUSIC.**

When should we review and teach advancing string skills to upper-level students?

If Orchestra Directors want to teach great orchestral repertoire to their students—and have their students play this music well—they must devote part of their rehearsal to teaching students the fundamental and advancing skills these pieces require. **Fundamentals time** is the classroom rehearsal time that you devote to improving student skills and technique. We spend time at the beginning of rehearsals, but also time embedded within the rehearsal to teach and reinforce good technique that improves student performance.

**CHALLENGES:**

Teaching advancing string technique in an orchestra rehearsal has its challenges.

1. Most of us were never taught how to embed technical instruction into a rehearsal.
2. Our programs are so individualized that most sequential method books don’t seem to fit what our students need to learn.

What will you take away from this session?

Today, we will identify tools and strategies that can be used during fundamentals time to help students learn the aural and technical skills that are required for playing string instruments in tune. We will identify the challenges that cause our students to struggle with intonation, and we will look at exercises and strategies for correcting these problems.
Why Do Upper-Level Middle and High School String Students Play Out of Tune?

1. Their instruments are out of tune
   a. Students must learn to tune themselves; insist on quality instruments
   b. Students must learn to listen and use a “tuning tone”
   c. Cross-tuning is required

2. Poor hand position and instrument position increase the difficulty of an instrument that is already challenging to play in tune
   a. Increase strategies: Constantly look for new, better ways to teach technique; keep adding to your bag of tricks
   b. Decrease tolerance of poor position (zero tolerance is a good goal to have)

3. Finger patterns don’t agree with the key signature
   a. Student fingers are not familiar or comfortable with the finger patterns;
      solution: spend more time on finger patterns—including cello extensions—to increase muscle memory and aural awareness and skills to differentiate between the patterns
   b. Students are not cognitively aware (or paying attention to) to the key/key signature;
      solution: spend more time studying 4th and 7th scale degrees in each key

4. Students lack fine tuning skills and experience
   a. Sing
   b. Tuning Canon and Chords
   c. Chorales

5. Range—higher registers pose new challenges with the above mentioned skills
   a. Shifting
   b. Scales, Arpeggios, and Thirds
   c. More study of Higher Positions

THINK FOR A MOMENT:
Why do your students play out of tune?
What can you do to correct that?
1. Tuning Our Instruments

Tuning strings (and notes) begins with TONE.
Teach “Tuning Tone”: Using a soft, transparent tone allows students to hear the correct pitch while they tune their strings.

Cross Tuning for Classes Comfortable Tuning Themselves

1. The leader plays the A; the students listen for 5 seconds and then tune their A string at the tip of the bow. Once the A is in tune, the leader turns off the A and instructs the class to “tune up” the rest of their strings. The class tunes their instruments quietly using the tip of the bow and stops playing when they are finished.

2. Even accomplished high school orchestras are still a little out of tune at this point, and the student leader should then take the class through the Cross-Tuning procedure.
   a. Everyone plays their A string again to make sure it is perfect.
   b. Violin/bass play their A strings while violas and cellos tune their D strings.
   c. Players “switch.” Violas/cellos play their A while violins/basses tune their D.
   d. Violins/basses continue to play their D; violas and cellos cross over and tune their G string.
   e. Players “switch;” viola/cellos play their D while violin/basses tune their G string.
   f. Violins and basses continue to play their G string; violas and cellos cross over and fine tune their C string.
   g. Finally, violas and cellos play their A string, while the violins tune their E string. Then, violas and cellos drop out, and basses tune their E string to the violins. Basses may take few extra seconds to double check their tuning using harmonics.

2. Instrument Left Hand Position

Allocate fundamentals time in rehearsals for reviewing hand, body, and instrument position and technique.

- Have upper instruments stand up; it’s easier for them to play, and for you to see and correct problems.
- Get off the podium and move around the room.
- Use calisthenics and maintain zero tolerance for position problems and flaws—don’t be an enabler by allowing poor positions.
3. Isolated Finger Patterns—Getting Each Pattern in Tune

Use exercises that focus on specific patterns to develop muscle memory.

Basics: Highs, Lows, Extensions

16. Forward Extension Exercises *

17. Scale and Arpeggio Forward Extensions

18. Extension Etude

Tetrachord Etude

The purpose of the Tetrachord Etude is to efficiently focus on finger patterns.

- It can be used as a daily warm-up or in a rehearsal to review the problematic finger pattern and transfer the pattern to the music.
- The etude is to be learned and performed on one string. Cellos shift between two positions in a way that is common for them; basses will shift through three positions and use bass pivot fingerings.

19. Tetrachord Etude

Tuning Notes (Dorian Tetrachord)  Etude

After learning the Etude with the Dorian tetrachord above, play it with one of the other tetrachords below.

Tetrachords:

<table>
<thead>
<tr>
<th>Major</th>
<th>Dorian</th>
<th>Phrygian</th>
<th>Lydian</th>
<th>Major (half pos.)</th>
</tr>
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<tbody>
<tr>
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Tetrachord Etude Strategies

1. Set the tuner to a low E pedal tone and begin with the Dorian pattern written below.
2. Students should learn one measure at a time while listening and adjusting their fingertips to finely tune the notes in the pattern.
3. After students can play the Tetrachord Etude with the Dorian pattern, teach them the other patterns. A “pedal C” on the tuner works better for Phrygian and Lydian patterns.
4. After all the patterns have been learned, have students perform them one after another to help them hear and understand the differences.
5. To practice changing modes in quick succession, omit measure one (tuning notes), and perform only measures two and three after each repeat.
6. Have students perform the etude on other strings or in higher positions to perfect the intonation and tone quality of all other notes on the instrument.

Teaching Velocity

Use velocity exercises to develop finger speed and accuracy while maintaining a relaxed left hand. This Velocity Etude also improves bow management and tone production.

- Once the Major pattern is learned, teach the Minor and Phrygian patterns.
- Perform the etude with all three patterns in succession as a group without stopping. This is Variation A; the other variations can be taught the same way.
- Find the students’ maximum relaxed tempo; write down this “speed limit” and make it a goal to extend this limit during the course of the year. Always check for relaxed left hands (especially thumbs). Relaxation is a key component of these exercises, as tension slows fingers down.

48. Velocity Etude in Higher Positions

Perform as written first, and then perform with the different finger patterns (#2. F♯ and #3. E♭) shown below.

Finger Positions

Velocity Etude Variations
4. Changing Finger Patterns — Key Signature Agreement

- Which notes do string players miss most? What are we doing about it?
- Most pitch problems in school orchestras occur on the 4th and 7th scale degrees where keys and finger patterns change first.

Use exercises that raise student awareness about the 4th and 7th scale degrees.

15. Dominant Etude

Teaching and Reviewing Keys and Key Signature Awareness

Use exercises that focus on the 4th and 7th scale degrees of the key you want to teach.

78. Dominant Arpeggio

Dominant Arpeggios give students the opportunity to hear the leading tones in a given key; the better they learn the sound and “feel” of the key (and leading tones in that key) the better they will identify and correct the problem notes in their music.

- We use dominant arpeggios to teach any and all 12 major and 12 minor keys/modes.
- Slow practice, identifying 4th and 7th scale degrees; listen and adjust fingertips.
- Reviewing a dominant arpeggio right before rehearsing a piece saves time and improves intonation significantly.
5. Teach Students How to Finely Tune Their Fingers

Tuning Canons, Chords and Chorales teach students to listen, blend, and finely tune the notes and chords in each key. For overall balance, the lower instruments should be louder than the upper instruments, and no one should play so loudly that they cannot blend and finely tune their notes with the players around them. The tuning canon is a good way to begin class; as a warm-up, students can focus on performing with good pitch and good tone.

120. Tuning Canon

121. Tuning Chords

194. Chorale #3: Pavane from Capriol Suite  \( \text{\( \downarrow \) = 88} \)

201. Chorale #10: Chorale from Emperor Concerto, Movt. 2  \( \text{\( \downarrow \) = 42} \)
6. Teaching Range through Shifting, Units on Upper Positions and Alternate Clefs, and Scales

7. Range – Shifting and Position Work

Teach students about the different kinds of shifts: Both Same and Different Finger Shifts.

26. Shifting to a Different Finger

* The diamond is the destination of the shifting finger; it is a silent shifting note that should be hidden, not heard.

Use shifting exercises that develop skills throughout the entire range of the instrument. These exercises also help students develop well-balanced instrument positions to shift easily and correctly.

40. E♭ Major Scale and Arpeggio - on One String

Use different etudes to teach different kinds of shifting patterns

29. Etude in E Minor  Mark the silent shifts with a dot or a diamond.

45. Etude in G Major  (Finger Replacement)

Higher Positions

Take time to teach students how to play in higher positions. “Just figure it out yourself” and “Go ask your private teacher” are NOT teaching strategies.
Upper Register and Thumb Position
To reach higher positions, bring the elbow and arm around the instrument, and the thumb around the neck.

52. Upper Register Patterns

54. D Major Scale and Arpeggio

(194. Chorale #3: Pavane from Capriol Suite - continued)
Where Do Scales and Arpeggios Fit In?

The purpose of studying scales and arpeggios is to improve intonation and tone by learning patterns and technique required in different keys across the entire range of the instrument.

Introducing New Scales and Arpeggios to Students of Different Levels

Students of different levels can learn and perform scales at the same time. Those performing more octaves should begin their scale first, as shown below.

Use Differentiated Instruction to teach students of different levels at the same time:

1. Set the classroom tuner to drone the tonic note of the key.
2. Everyone plays the one-octave scale and arpeggio to get familiar with the new tonality and patterns.
3. Next, more advanced students can move on to the two-octave scale; one-octave students stay on the one-octave scale. When teaching multiple levels, the students performing more octaves should begin their scale first.
4. Next, three-octave students can move to the three-octave scale, while the other students stay on the number of octaves appropriate for their level. Again, students performing more octaves begin their scale first.

Differentiate Instruction to Accommodate Instrument Differences

The difficulty of a scale can vary depending on the instrument. In a high school class, for example, violin students will likely be ready to learn a three-octave B-flat scale long before their lower string peers. We recommend differentiating instruction to make scale levels appropriate for everyone.
Major Scales, Arpeggios, and Thirds

C Major

65. Tuning Canon

66. Tuning Chords

67. Scales and Arpeggios - One Octave

Two Octaves

Three Octaves

68. Dominant Arpeggio

69. Thirds - Lower Octave

Upper Octave
Additional Scale Studies

A chromatic scale is made entirely of half steps.

185. Two Octave Chromatic C Scale

Mixolydian and Blues Scales

186. B♭ Mixolydian

Blues Scale and Arpeggio

Rehearsal Strategies for Finely Tuning Concert Music

1. Select concert music that does not require unfamiliar patterns or positions. Use technical exercises to introduce and practice backward or forward extensions, shifting and higher positions. Then—after students can comfortably play these patterns in tune—show students how to apply these familiar skills in their concert music.

2. Heighten student sensitivity to out of tune notes. Most intonation problems are the result of a student’s lack of attention. They aren’t tone deaf—they just aren’t paying attention.

3. Teach students to get comfortable practicing slowly—as in, REALLY slow. If a note is out of tune, stop and correct it. Expect students to listen and adjust their fingertips.

4. After individual sections—violin 2, cello, viola—are in tune with themselves, expect them to listen and tune to other sections. Slow down the concert music until you and the students can hear EACH CHORD, and work on playing each chord in tune—just like they do with their tuning canon, chords and chorales.

5. Finally, playing in tune begins and ends with TONE. Expect students to listen and blend their tone (agreeing on timbres) and intonation—these two elements are inextricably linked.

END GOAL: When each section sounds like one instrument, and the sections are listening and tuning all chords correctly to each other, the resulting resonance is magical. Achieving this resonating intonation is our goal—THAT is what we mean when we say, “It’s IN TUNE.”

Students will play as poorly as teachers allow them to play, and they will only play their best when teachers give them NO OTHER CHOICE.
Dr. Christopher Selby is author of Habits of a Successful Orchestra Director, and co-author of the Habits of a Successful String Musician series, a collection string method books for middle and upper level orchestras published by GIA. He is an active clinician and conductor, and he has presented sessions at the Midwest Clinic, the 2016 NAfME National Conference, four American String Teacher Association (ASTA) National Conferences, and numerous state conferences across America. He currently directs the high school orchestras at the School of the Arts in Charleston, SC, where he led the school’s Symphony Orchestra to win the 2016 ASTA National Orchestra Festival’s top award of Grand Champion in the competitive public school division.

Dr. Selby earned his music education degree from the Hartt School of Music in Connecticut, and his Master’s and Doctorate of Musical Arts degrees in Orchestral Conducting from the University of South Carolina. Before taking his current job at the Charleston School of the Arts, Dr. Selby taught orchestra in traditional elementary, middle, and high schools for eighteen years. He was Orchestra Coordinator in Richland School District Two from 2001–2012, where he taught high school and supervised the district’s orchestra curriculum and instruction.

Dr. Selby guest conducts at Regional and All-State Orchestras, and he currently serves on the Council for Orchestral Education in the National Association for Music Education (NAfME). From 2012–2014, he was Chair of the ASTA Committee on School Orchestras and Strings. Dr. Selby was Executive Board President of the South Carolina Music Educators Association (SCMEA) from 2011–2013, and he is currently serving a second term as President of the state’s Orchestra Division. He was named the South Carolina ASTA Orchestra Teacher of the Year in 2009, and has written articles for NAfME and in ASTA’s American String Teacher.
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