



**Beautifying  
Tone  
& Intonation ~**  
*Tangible Strategies, Tips,  
and Activities for the  
Effective Band Director*

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*What we'll talk about today ...*

***A very brief overview:***

# Overview 1/4:

## **LONG-TERM GOALS & SOLUTIONS:**

Beyond our scope *for today*, but important to mention ...

- **Recruitment** (Balance/Matrix) and Retention
- **Equipment** / Upgrades\$\$ / your Facility
- **Modeling** (Demos/Recordings/Guests)



# Overview 2/4:

## SHORT-TERM GOALS & SOLUTIONS:

Not our main focus today, but let's take a brief stop here ...

- **Literature Selection:** Difficulty ~ Cross-cueing ~ Ensemble strengths/weaknesses ~ matching (range, skills, endurance, et al)
- **Seating Plans:** Guided by your students & facility more than by what you remember from college ~ the *sound* drives the seating plan, and that might be affected by the literature

# Overview 3/4:

## ***PERSONALIZED STRATEGIES:***

Along the way, we'll make some pit-stops for ...

... **Intonation Maps** (a pitch-tendencies “inventory”)

... **Alternate Fingerings/Positions** (*when* can you begin teaching *Theory* for harmonics, overtones, and intonation tendencies?)

... **Lesson Content** (Do you value Tone/Intonation in *every* session with students?)

... **Tech/App options**

# Overview 4/4:

## REHEARSAL STRATEGIES

will remain our *main focus* for today:

*“What can I do in rehearsals and lesson classes to help students develop their independence with TONE & TUNING?”*

- 
- 1. TONE** is Job #1 ... poor Tone limits tuning success.
  - 2. *Singing*** is a great pathway to improved Intonation.



So, let's make **TONE** the first stop:

## The Framework of "GIVENS"

1. *The Aural Concept*
2. *The Fundamentals*
  - *Posture & Positioning [Grip]*
  - *Breathing & Breath Control [Stroke]*
  - *Articulation [Stroke, Mallet Choice, Playing Area]*
  - *Listening & Awareness [Balance, Blend, Etc.]*
3. *The Equipment*
4. *And the Aural Concept*
5. *Oh and lest I forget: the Aural Concept!*



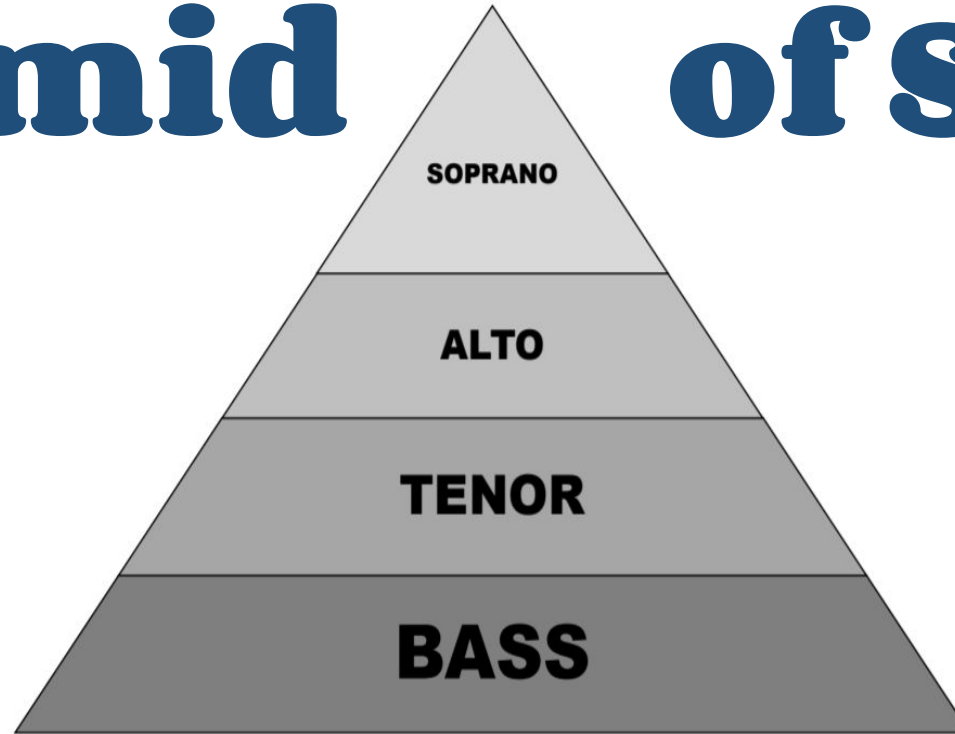
# Part 1:

# The Band's *SOUND*

*Tone Quality - Blend - Dynamics*  
*Ensemble Balance - Articulation*

*Caveat: We can't get to  
all of this in just one hour!*

# The Pyramid of Sound



*BUT REMEMBER: The Double-Pyramid ... The Pyramid Within the Section ... The Christmas-Tree Pyramid ...  
“Treasury of Scales” group suggestions ... Ed Lisk’s Groupings (“The Creative Director” series)*

**NOTE: Be flexible with the application of the pyramid concept.** As a “recipe” for warm wind-band tone, it should be adjusted for taste, and to reflect the musical needs of the composer, the composition, the excerpt, the performance venue, and many variables within the group.

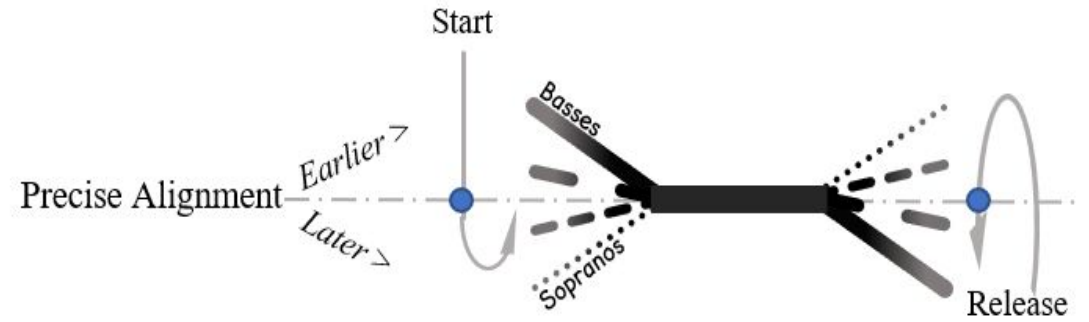
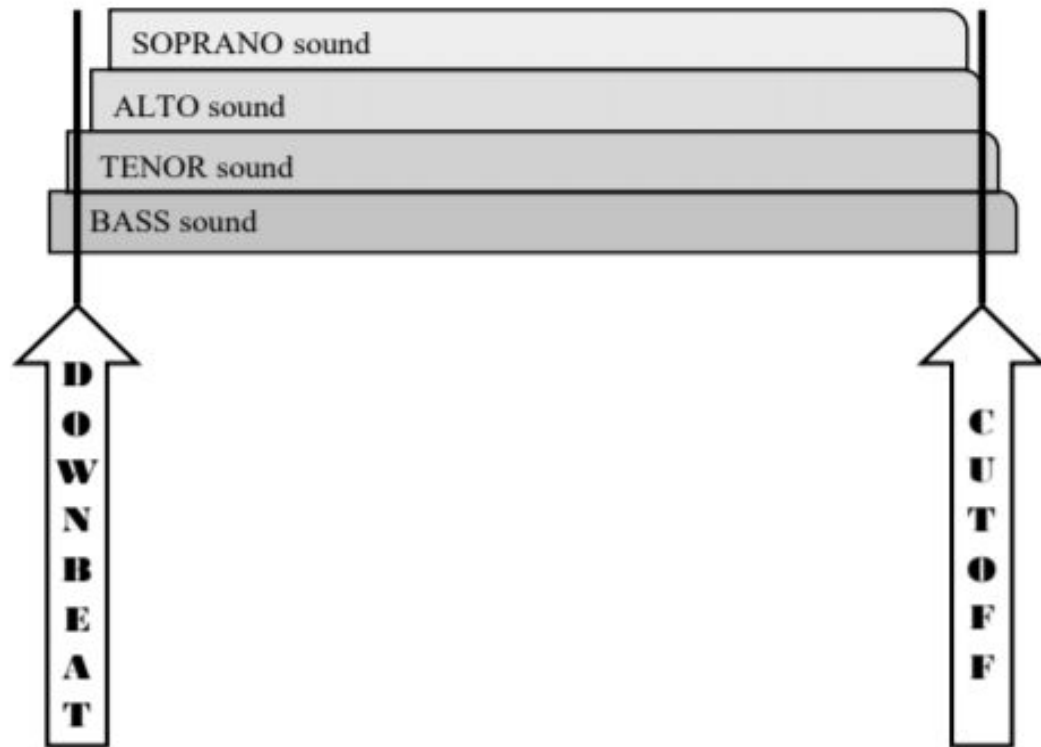
**A suggested exercise to develop the SATB Pyramid sound through layering** - Hear only the bass layer performing as a *Soli*, offering feedback to refine its blend and tone. Then, add Group III, with a single instruction: “Hear each other clearly, but hide inside the sound of the previous group. We should feel that you’re there, without overpowering the other group.” Continue through other layers. Training for this full-group skill can begin with unisons, scales and chorales, but students will transfer quickly to self-blending during repertoire passages; therefore, remember this process while rehearsing repertoire.

# Some Rehearsal Exercises for *TONE – BALANCE - BLEND*

1. “Copy My Sound”
2. SING! (a lot), discussing *vowels, resonance, articulation, etc.*
3. “Pass the F” (Bb) a.k.a. “F-Around-The-Room”
4. Invert the Pyramid (EQ)
5. Analogies / Descriptors (p. 62-64) incl. *The “Cake” analogies*
6. Comparative Recordings
7. Nesting boxes, Envelopes, and Russian Dolls
8. The Band’s *Environment*
9. Seating plan alternatives
10. Redistribution
11. Three components of “Blend” a.k.a. “Don’t stick out!”
12. Some GAMES (p. 63-66) Randomness ~ Playing in Trios ~ Isolation ~ *Your creativity*
13. A guideline for *Balance & Dynamics* – “*Hearing oneself and others*”
14. Some words about Breathing, Posture, *et al*



# “First-In, Last-Out” ~ A Concept for *Warmth*



Let's call it a “Resonant” release ... but *why??*

**Uh-oh!**

**What about ...**











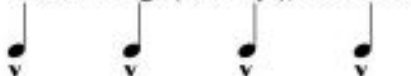

***ARTICULATIONS ??!***

**Just one minute on this source of  
many potential problems for Bands ...**

# Wind Articulation: Examples of how tones might “look”

“Strategies, Tips, and  
Activities for the Effective  
Band Director”, p. 74  
Routledge, 2021

## Selected common Articulation Markings *Pictorial demonstrations*

Slur or Tie		<i>Tongue only the first note of the phrase</i>	
Tenuto		<i>Lightly tongue each connected note</i>	
Unmarked		<i>Tongue each note in style: "r", "d", other</i>	
Staccato		<i>Tongue begins each detached note. Space...</i>	
Accent, Marcato		<i>Stronger consonant begins each tone.</i>	
Vertical Wedge ("Rooftop"), <i>Martellato</i>		<i>Heavy, deliberate consonant; lots of space!</i>	



# “Quick Fix” examples for Dynamics

- Describe **pp** as “*the softest sound you can play with good Tone*”, while **ff** is “*the loudest sound you can play with good Tone.*” Tone is the most important guiding principle.
- Teach with quantifiable labels which, compared to traditional letters, may be easier to conceptualize by younger students. Examples include the following:
  - Assign numbers 1-through-6 for dynamics, which can then be compared to **pp – p – mp – mf – f – ff**: “*Clarinets, please play at a level of ‘2’ here.*”
  - Assign numbers 1-through-10, which will align to most volume controllers: “*Low Brass, can you crescendo from a ‘5’ to an ‘8’ in just one measure?*”
  - Speak about percentages (0-100%) to align to other common measurement standards: “*Saxes, please play that accompaniment figure about 50% softer.*”
  - Make an analogy using weights: “*If you just played a ‘10-pound sound’, let’s make it ‘25 pounds’ instead.*”
  - We can even refer to density: For younger students, “*that’s a tiny cotton ball; we’ll need to make it a huge marshmallow.*” And for older, “*you’re playing with pumice; can you give me polished marble instead?*”
- Refine students’ awareness with behavioral descriptors:
  - “*When playing **pp-p** I strive to hear my neighbor better than I can hear myself.*”
  - “*At **mp-mf**, we sound very equal.*”
  - “*At **f-ff** I try to hear myself better than I can hear my neighbors.*”

# “Quick Fix” examples for Full Band TONE

- Turn it upside-down: Perform a short comparison with a full-band unison or chord. Alternate between the desired SATB balanced pyramid and its inversion. *“Sopranos please play **ff**, Altos **mf**, Tenors **mp**, and Basses **pp** ... Let’s hear that for a moment, and hopefully never again! ... On cue, reverse the dynamics so we’ll hear the warm tone we’re trying to build.”*
- Demonstrate balance parameters with EQ controllers: While the band is listening to any recording, manipulate the bands of the equalizer: increase Treble and decrease Bass. Compare to immature Band Tone and then, together, rebuild the favored sound. If possible, *display* the EQ controls.
- Regarding the SATB balance, try non-musical comparisons: *“In a cheerleading or acrobatic pyramid, we never put the heaviest person on top” ... “That sound is like a top-heavy building on sand; let’s put our bottom-heavy building firmly on bedrock.”*
- On dynamic control for Tone: *“Never softer than - nor louder than - beautiful.”*
- On blending into the ensemble’s Tone: *“We opened our can of beautiful blue paint, and we found some single drops of white lying right on top; let’s stir them in” ... “Don’t be the only thorn in our bouquet of roses” ... “You’re neon-green in our rainbow” ... “I was really looking forward to eating my big bowl of ice cream until I noticed just one tiny fly in it. Ugh.”* Follow with your own creative analogies.

**Part 2:**

***INTONATION  
&  
TUNING***



# ***Guiding Thoughts:***

- ▣ ***About the Tuner***
- ▣ ***About Listening***
- ▣ ***About Students' Skill-Development***
- ▣ ***Plus, some recommended Resources***

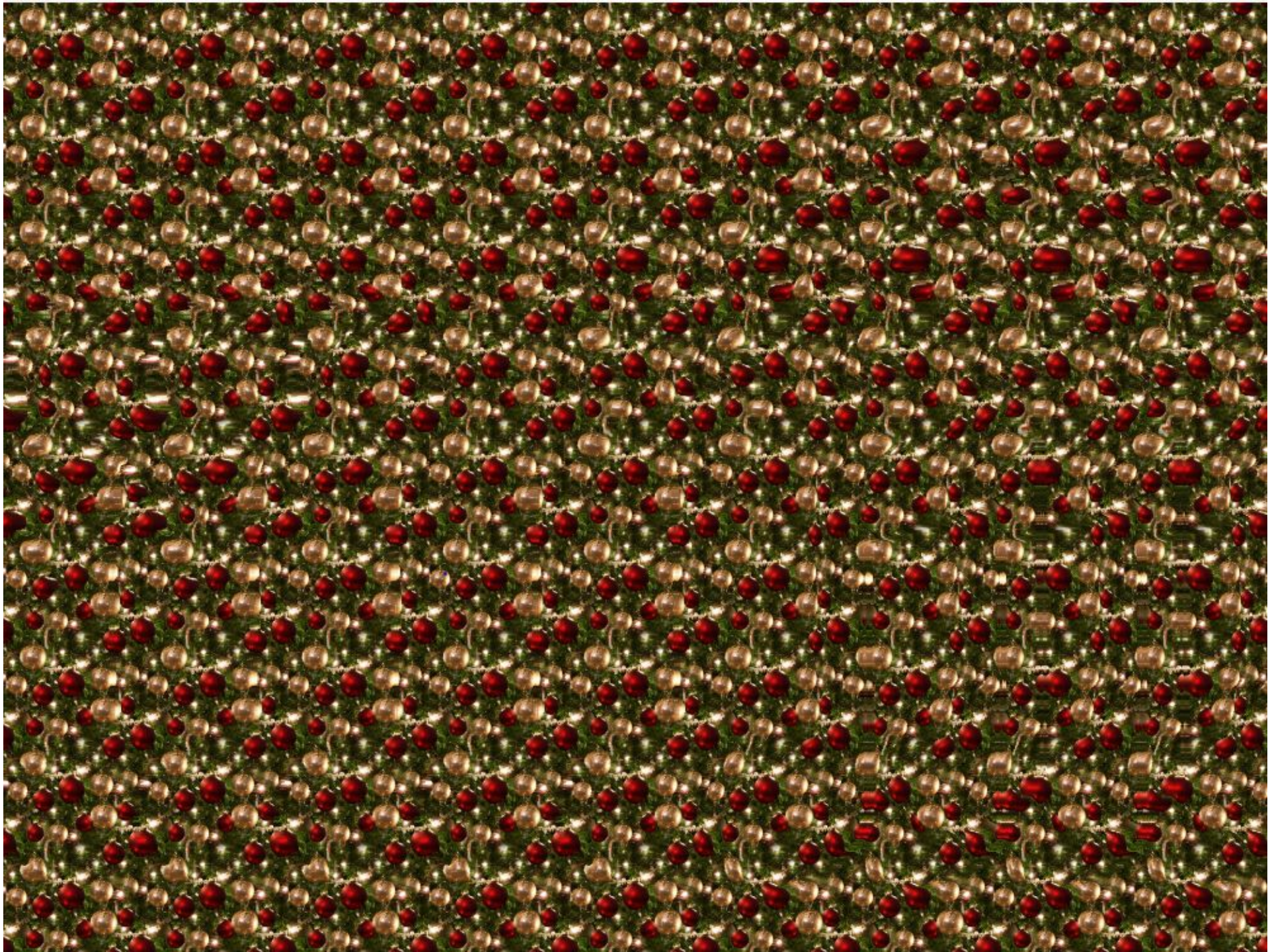
***First, students must hear it***

# **INTONATION & TUNING**

***Section I:***

***About Hearing the  
Intonation***

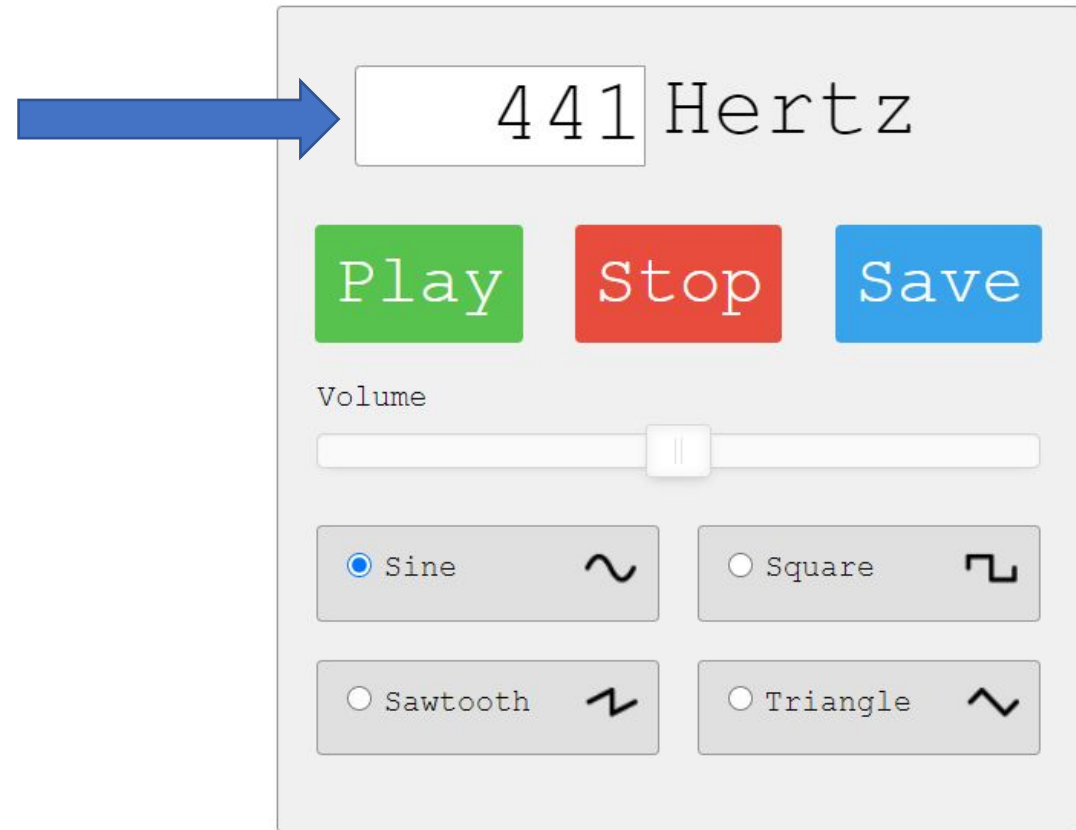
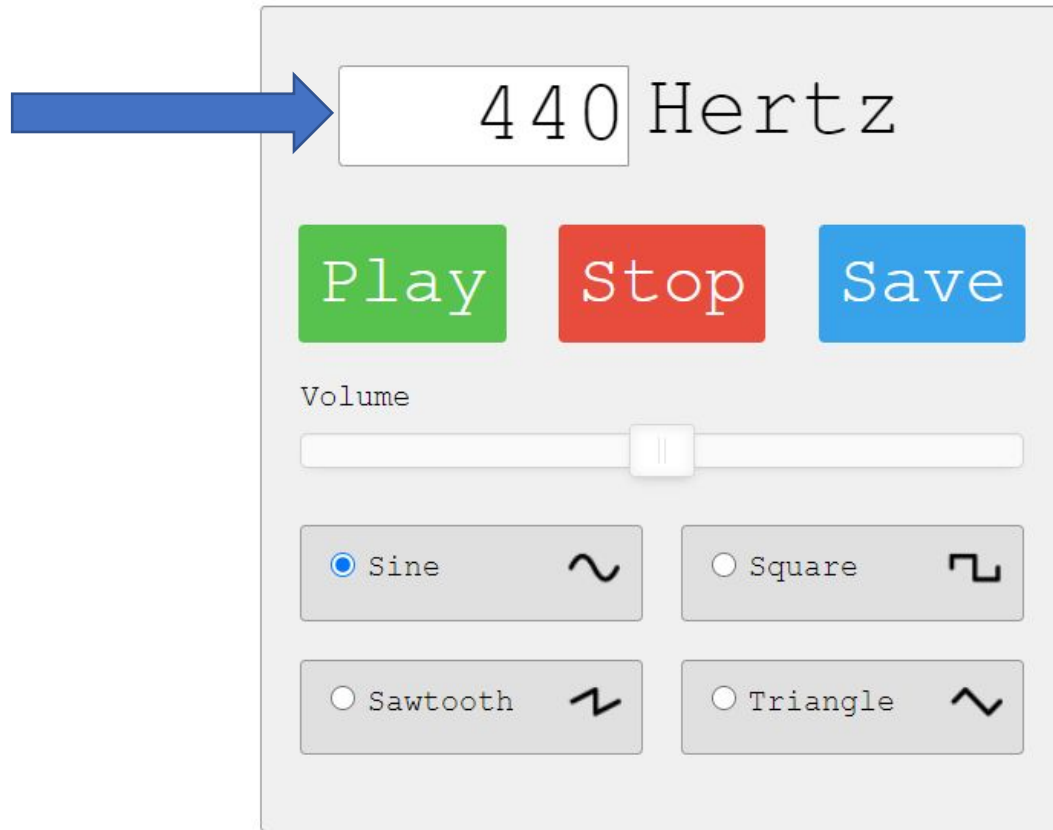






# TWO tabs using “Online Tone Generator”

<https://onlinetonegenerator.com/>



**Then USE THIS KNOWLEDGE with practical applications:**  
*Playing in “Trios” ... Pitch-Bending ... Measurable Games ... Randomness Activities*

- Home
- Pitch Shifter
- Time Stretcher NEW
- Voice Generator
- Sweep Generator
- Instrument Tuning
- Subwoofer Testing
- Hearing Test
- Noise Generator
- Binaural Beats
- 432Hz Frequency
- DTMF Signals
- The Pips

# Online Tone Generator

Free, Simple and Easy to Use.

Simply enter your desired frequency and press play. You will hear a pure tone sine wave sampled at a rate of 44.1kHz. The tone will continue until the stop button is pushed.

The tone generator can play four different waveforms: Sine, Square, Sawtooth and Triangle. Click on the buttons to select which waveform you would like to generate.



**Please always make sure headphones/speakers are set to a low volume to avoid damage to hearing or equipment.**

440 Hertz

Play Stop Save

Volume

Hertz

Sine   Square 



- 3 Easy Steps**
1. Click "Start"
  2. Start Download
  3. Browse The Web

Wave Browser

The best “Tuner”  
in your bandroom  
is ...

*the well-trained ear!*

- ✓ “Can you hear the *beats* when you’re playing out of tune?” *Train them!*
- ✓ “Have you learned skills to *raise* and to *lower* badly-tuned notes to improve intonation?” *Practice pitch-bending, alternate fingerings, embouchure control, etc.*
- ✓ “Do you know about your instrument’s bad notes and other factors so you can *predict* intonation problems before they happen?” *Complete intonation maps*

Give students shorthand marks to identify bad pitches;  
*Suggestions ...*



Somewhat Flat  
*"Shade" upward*



Flat  
*Raise slightly*



Quite Flat  
*Raise significantly*



Very Flat  
*Raise a lot*

Basic:                      More Specific:                      Multi-Test:

Test #1	+20
Test #2	+16
Test #3	+10
Test #4	+4



# *The "Tuning Map"*

These are only suggested possibilities:  
 Remember also to evaluate pitches at *pp – mf – ff*



**INTONATION & TUNING**

***Section 2:***

***About Teaching  
Intonation***

***( Individuals & Smaller Groups )***

SUSTAINED  
Targeting  
*“as heard by the musical ear”*  
in a melodic line

FLASH Targeting  
*as “prepped” by the musical ear*

A Two-Tuner  
Approach:  
as “heard”,  
then “seen”.

**TUNER-BASED**  
***“Targeting”***  
**Strategies**

# Some exercises utilizing *Drones* ...

**Slowly**

Instrumentalist:

Drone:

Tune the Unisons

Check the 4th

Check the 5th

Tune the Octaves

Tune the Octaves

The image shows two musical staves. The top staff is labeled 'Euphonium Soloist' and contains five measures of music in bass clef, 4/4 time. Above the staff are five notes: 'R' (Root), '5' (5th), '2' (2nd), '4' (4th), and '3' (3rd). The bottom staff is labeled 'Perfect 5th Drone' and contains two staves with two notes per staff, also in bass clef, 4/4 time. The notes are connected by slurs across the five measures.

- Do (Root)*** – Tunes as a unison with the bottom of the drone, and a 5<sup>th</sup> from the top
- Sol (5)*** – Tunes as a 5<sup>th</sup> above the bottom of the drone, but a unison with the top
- Re (2)*** – Tunes as a Major 2<sup>nd</sup> above *Do* while also a Perfect 4<sup>th</sup> below *Sol*
- Fa (4)*** – Tunes the Perfect 4<sup>th</sup> above *Do* and a Major 2<sup>nd</sup> below *Sol*, plus it helps students hear the typical voice leading as it drops to ...
- Mi (3)*** – This becomes the first step to helping students hear a *tempered* 3<sup>rd</sup> in a Major chord. In order for this tone to sound “in tune”, it must be played slightly lower than normal, and students can hear *beats* if it’s left too high. To sound in tune, the “D” here must align with the slightly-flat D found as the fifth partial in the harmonic series on B-flat.



Instrumentalist

The image shows a musical score for two parts: 'Instrumentalist' and 'Perfect 5th Drone'. Both parts are in 4/4 time and the key of D major (one sharp). The 'Instrumentalist' part is written on a treble clef staff. The first measure contains a quarter note D4, followed by an eighth note E4, an eighth note F#4, and a quarter note G4. The second measure contains a quarter note A4, a quarter note B4, and a quarter note C5. The third measure contains a quarter note D5 with a fermata. The fourth measure contains a quarter note C5 with an upward-pointing arrow below it. The fifth measure contains a quarter note B4 with a downward-pointing arrow below it. The sixth measure contains a quarter note A4 with a fermata. The seventh measure contains a quarter note G4 with a fermata. The 'Perfect 5th Drone' part is written on a bass clef staff. The first measure contains a whole note chord consisting of D2 and G2. The second measure contains a whole note chord consisting of D2 and G2. The third measure contains a whole note chord consisting of D2 and G2. The fourth measure contains a whole note chord consisting of D2 and G2. The fifth measure contains a whole note chord consisting of D2 and G2. The sixth measure contains a whole note chord consisting of D2 and G2. The seventh measure contains a whole note chord consisting of D2 and G2.

Perfect 5th  
Drone

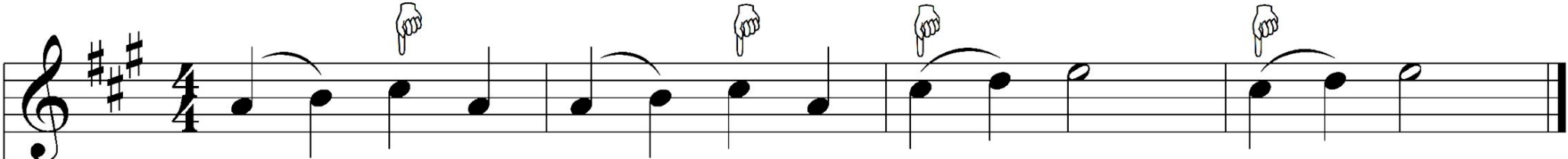


*Sustaining a Target for a "problem" pitch (here, the Clarinetist's Throat A)*

The image displays a musical score with two staves. The top staff, labeled "Clarinet Student", is in treble clef with a key signature of one flat (Bb) and a common time signature (C). It contains four measures of music. The first measure has a half note followed by a quarter note. The second measure has a quarter note followed by a quarter note. The third measure has a quarter note followed by a quarter note. The fourth measure has a quarter note followed by a quarter note. Above the staff, there are seven hand icons pointing to specific notes: the first two in the first measure, the next two in the second measure, one in the third measure, and one in the fourth measure. The bottom staff, labeled "Sustained Target", is in bass clef with a key signature of one flat (Bb) and a common time signature (C). It contains four measures, each with a single half note. A long slur covers all four notes. The notes are: G2 (first measure), F2 (second measure), E2 (third measure), and D2 (fourth measure). The fourth measure has a sharp sign (#) above the note.

# Using a Piano to spot-check a problem pitch

Alto  
Saxophone  
Student



Musical notation for Alto Saxophone Student. The staff is in treble clef, key signature of two sharps (F# and C#), and 4/4 time. The melody consists of quarter notes: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4, C4. There are four hand icons pointing to the notes B4, C5, F#4, and E4, indicating a pitch check for these notes.

Piano



Musical notation for Piano. The staff is in treble clef, key signature of two sharps (F# and C#), and 4/4 time. The accompaniment consists of quarter notes: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4, C4. The notes B4, C5, F#4, and E4 are underlined, corresponding to the pitch check points in the saxophone part.



# MENS BANDS

## Intonation Map for

The intonation map consists of 27 musical staves arranged in three columns and nine rows. Each staff features a treble clef and a three-column box for notes 1, 2, and 3. The notes and accidentals are as follows:

Row	Column 1	Column 2	Column 3
1	C4	C4	C4
2	C4	C4	C4
3	C4	C4	C4
4	C4	C4	C4
5	C4	C4	C4
6	C4	C4	C4
7	C4	C4	C4
8	C4	C4	C4
9	C4	C4	C4
10	C4	C4	C4
11	C4	C4	C4
12	C4	C4	C4
13	C4	C4	C4
14	C4	C4	C4
15	C4	C4	C4
16	C4	C4	C4
17	C4	C4	C4
18	C4	C4	C4
19	C4	C4	C4
20	C4	C4	C4
21	C4	C4	C4
22	C4	C4	C4
23	C4	C4	C4
24	C4	C4	C4
25	C4	C4	C4
26	C4	C4	C4
27	C4	C4	C4



# ABOUT INTONATION MAPS ...

<https://goo.gl/AykLD6>



A Sample project for you to revise:

<http://www.cherokeebluffband.com/uploads/2/1/1/9/21192838/pitch-tendencies-and-intonation-mapping.pdf>

- From Cherokee Bluff Bands, GA

## Intonation Tendencies

R. Linaberry

Before completing this chart, make sure you are generally *IN TUNE* with a tuner, whether you use concert B-Flat, A or F (or all of them!). Then, play carefully through your entire range against a tuner. Mark your own pitch-tendencies, using "+25" for twenty-five cents sharp, or "-10" for ten-cents flat. I recommend letting a friend do the markings for you while watching the tuner so you won't be tempted to adjust. Once you have your chart finished, check it often while also making sure you're addressing the BAD notes. Anything more than 5-10 cents out-of-tune must become part of your personal performance memory. Then, come up your "repairs" for those problematic notes (alternate fingerings, airstream, embouchure changes, covering', etc.).

Good luck!

A musical score for intonation mapping, consisting of six staves. The first three staves are for Tuba, Bassoon, and Trombone/Euphonium, and the last three are for Horn, Clarinets, Trumpet, Sax/Oboe, and Flute. Each staff contains a sequence of notes with corresponding empty boxes for marking intonation tendencies. The notes are: C2, C#2, D2, D#2, E2, E#2, F2, F#2, G2, G#2, A2, A#2, B2, B#2, C3, C#3, D3, D#3, E3, E#3, F3, F#3, G3, G#3, A3, A#3, B3, B#3, C4, C#4, D4, D#4, E4, E#4, F4, F#4, G4, G#4, A4, A#4, B4, B#4, C5, C#5, D5, D#5, E5, E#5, F5, F#5, G5, G#5, A5, A#5, B5, B#5, C6, C#6, D6, D#6, E6, E#6, F6, F#6, G6, G#6, A6, A#6, B6, B#6, C7, C#7, D7, D#7, E7, E#7, F7, F#7, G7, G#7, A7, A#7, B7, B#7, C8, C#8, D8, D#8, E8, E#8, F8, F#8, G8, G#8, A8, A#8, B8, B#8, C9, C#9, D9, D#9, E9, E#9, F9, F#9, G9, G#9, A9, A#9, B9, B#9, C10, C#10, D10, D#10, E10, E#10, F10, F#10, G10, G#10, A10, A#10, B10, B#10, C11, C#11, D11, D#11, E11, E#11, F11, F#11, G11, G#11, A11, A#11, B11, B#11, C12, C#12, D12, D#12, E12, E#12, F12, F#12, G12, G#12, A12, A#12, B12, B#12, C13, C#13, D13, D#13, E13, E#13, F13, F#13, G13, G#13, A13, A#13, B13, B#13, C14, C#14, D14, D#14, E14, E#14, F14, F#14, G14, G#14, A14, A#14, B14, B#14, C15, C#15, D15, D#15, E15, E#15, F15, F#15, G15, G#15, A15, A#15, B15, B#15, C16, C#16, D16, D#16, E16, E#16, F16, F#16, G16, G#16, A16, A#16, B16, B#16, C17, C#17, D17, D#17, E17, E#17, F17, F#17, G17, G#17, A17, A#17, B17, B#17, C18, C#18, D18, D#18, E18, E#18, F18, F#18, G18, G#18, A18, A#18, B18, B#18, C19, C#19, D19, D#19, E19, E#19, F19, F#19, G19, G#19, A19, A#19, B19, B#19, C20, C#20, D20, D#20, E20, E#20, F20, F#20, G20, G#20, A20, A#20, B20, B#20, C21, C#21, D21, D#21, E21, E#21, F21, F#21, G21, G#21, A21, A#21, B21, B#21, C22, C#22, D22, D#22, E22, E#22, F22, F#22, G22, G#22, A22, A#22, B22, B#22, C23, C#23, D23, D#23, E23, E#23, F23, F#23, G23, G#23, A23, A#23, B23, B#23, C24, C#24, D24, D#24, E24, E#24, F24, F#24, G24, G#24, A24, A#24, B24, B#24, C25, C#25, D25, D#25, E25, E#25, F25, F#25, G25, G#25, A25, A#25, B25, B#25, C26, C#26, D26, D#26, E26, E#26, F26, F#26, G26, G#26, A26, A#26, B26, B#26, C27, C#27, D27, D#27, E27, E#27, F27, F#27, G27, G#27, A27, A#27, B27, B#27, C28, C#28, D28, D#28, E28, E#28, F28, F#28, G28, G#28, A28, A#28, B28, B#28, C29, C#29, D29, 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**INTONATION & TUNING**

***Section 3:***

***About Teaching  
Intonation***

***( In the FULL BAND Setting )***



? ... but how should I tune the sand ...

?

“TUNING BY THE NUMBERS”  
*(some philosophical opinions)*

<https://goo.gl/kiEqq8>



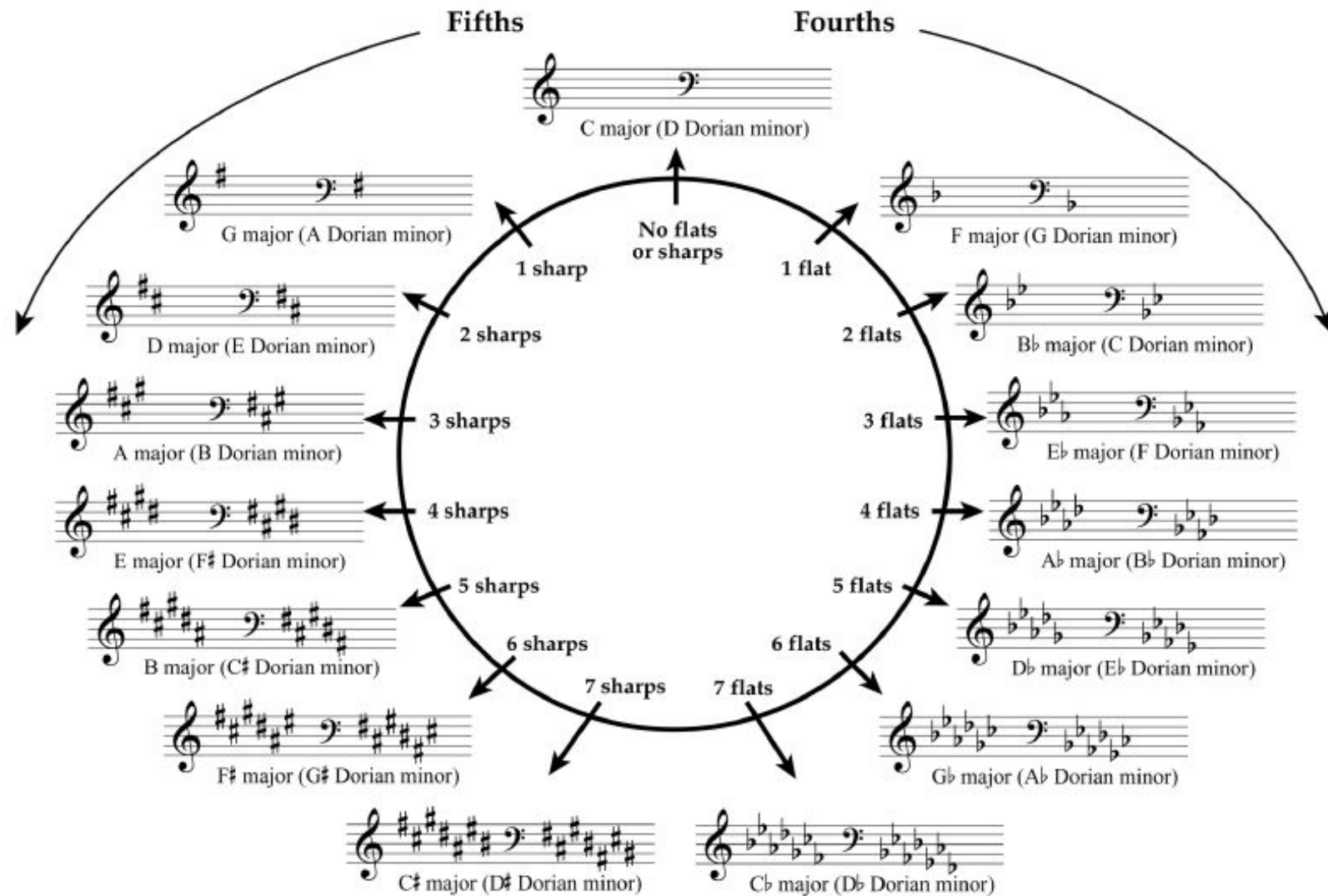
# Extracted from “Tuning By The Numbers”

- 1 – **Tubas:** B<sup>b</sup>. Match the *given* pitch, then match each other to reach a beatless unison. Hold. Continue to hold. When you pass out, keep holding.
  - 2 – **Baritone Sax (G), Bass Clarinet (C), Contra-Alto Clarinet (G).** Test, adjust and hold.
  - 3 – **Trombones, Euphoniums:** Check B<sup>b</sup>, then F. Adjust as needed, then hold *one*. **Tenor Sax:** Check low G, high G, and C, adjusting as needed. Hold *one*. **Bassoon:** Slur downward B<sup>b</sup> – A – G – F. Adjust for F, then hold B<sup>b</sup> or F.
  - 4 - **Alto Sax:** Check low G, then high G. Adjust as necessary. Then check both middle and low D (adjust embouchure or fingerings to tune D's, but don't re-tune). Hold G.
  - 5 - **Horns:** Play the following four notes slowly (watch the conductor) - G – A – B – C. When you pass A, the band will have a major chord for the first time. When you arrive at C, test *both sides* (open = F Horn; Thumb = B<sup>b</sup> Horn), then adjust the main & B<sup>b</sup> /F tuning slides to get C in tune equally on both sides. Hold either C, keeping the right hand in proper position.
  - 6 - **Clarinets:** Open G (adjust at the barrel), then Clarion G & Chalumeau C (adjust at the middle joint), then Clarion C (adjust at the bell joint). Test Altissimo C (adjust the embouchure). Hold any C or G.
  - 7 - **Oboes, Flutes:** B<sup>b</sup> (adjust for tuning), then F (further adjust as necessary). Important – Test *both octaves*. Hold B<sup>b</sup> or F.
  - 8 - **Trumpets:** On cue, play “Sol-La-Ti-Do” or “G-A-B-C”. Use both the G and the C to adjust the main tuning slide. Note: be careful to tune in the register in which you’ll play most of your music.
- Percussion:** At any time during the process, add softly-rolled B<sup>b</sup> and/or F at the marimba and/or vibes. Timpani can also check the low F (probably “heel down” on the 29” open drum) and B<sup>b</sup> (probably “heel down” on the 26” open drum). When those are tuned, raise the 29” to match the sound of B<sup>b</sup>, and check/adjust the letters on the tuning gauge, if the instruments have gauges. Raise the 26” to high F, and check/adjust the gauge.









Jamey Aebersold (How to Play and Improvise Jazz) – “The Circle or Cycle of Fourths” – *Used by permission*



## The "Circle of Keys", *unwrapped* ...

=Db	=Gb	=Cb										=C#	=F#	=B
<b>C#</b>	<b>F#</b>	<b>B</b>	<b>E</b>	<b>A</b>	<b>D</b>	<b>G</b>	<b>C</b>	<b>F</b>	<b>B<sup>b</sup></b>	<b>E<sup>b</sup></b>	<b>A<sup>b</sup></b>	<b>D<sup>b</sup></b>	<b>G<sup>b</sup></b>	<b>C<sup>b</sup></b>
F#	F#	F#	F#	F#	F#	F#		B <sup>b</sup>	B <sup>b</sup>	B <sup>b</sup>	B <sup>b</sup>	B <sup>b</sup>	B <sup>b</sup>	B <sup>b</sup>
C#	C#	C#	C#	C#	C#	1 Sharp		1 Flat	E <sup>b</sup>	E <sup>b</sup>	E <sup>b</sup>	E <sup>b</sup>	E <sup>b</sup>	E <sup>b</sup>
G#	G#	G#	G#	G#	2 Sharps			2 Flats	A <sup>b</sup>	A <sup>b</sup>	A <sup>b</sup>	A <sup>b</sup>	A <sup>b</sup>	A <sup>b</sup>
D#	D#	D#	D#	3 Sharps				3 Flats	D <sup>b</sup>	D <sup>b</sup>	D <sup>b</sup>	D <sup>b</sup>	D <sup>b</sup>	D <sup>b</sup>
A#	A#	A#	4 Sharps					4 Flats	G <sup>b</sup>	G <sup>b</sup>	G <sup>b</sup>	G <sup>b</sup>	G <sup>b</sup>	G <sup>b</sup>
E#	E#	5 Sharps						5 Flats	C <sup>b</sup>	C <sup>b</sup>	C <sup>b</sup>	C <sup>b</sup>	C <sup>b</sup>	C <sup>b</sup>
B#	6 Sharps							6 Flats	F <sup>b</sup>	F <sup>b</sup>	F <sup>b</sup>	F <sup>b</sup>	F <sup>b</sup>	F <sup>b</sup>
7 Sharps								7 Flats						

The Flats appear in Key Signatures in this order: **B E A D G C F**

Notice that the Sharps appear in exactly the opposite, or *BACKWARDS*, order: **F C G D A E B**

### Figuring out the name of a Major Key when you can see the *Key Signature* :

- 1) For SHARP keys, *the last sharp in the Key Signature is Ti*. Go up 1/2 step to the very next line or space to find the name of the Major Key.
- 2) For FLAT keys, *the last flat in the Key Signature is Fa*. Count down four notes - "*Fa-Mi-Re-Do*" - to find the name of the Major Key.

NOTE: Coincidentally, the *next-to-last flat* IS the name of the Major Key. This only works with Flat keys!!

### Figuring out the Key Signature when you know the name of the *Key or Scale* :

- 1) First, determine if it's a SHARP Key or a FLAT Key. Notice that "F" is the only Flat key without a flat in its name!
- 2) Next, use the "Musical Alphabet" to create a basic scale before adding the Key. Example: "EFGABCDE"
- 3A) Now, if it's a Sharp key, remember that "the last sharp in the Key Signature is Ti". Add a sharp to the 7th note, or "Ti".

Using the order of the sharps, simply keep adding sharps until you've reached the last sharp on "Ti". See above: E F# G# A B C# D# E

- 3B) If it's a Flat key, remember that "the last flat in the Key Signature is Fa". Add a flat to the 4th note, or "Fa".

Using the order of the flats, simply keep adding flats until you've reached the last flat on "Fa". Using the key of Ab: Ab Bb C D<sup>b</sup> Eb F G Ab

### Some guidelines for figuring out *Transpositions* :

"C" instruments play the "Concert" Key. If asked for "Concert Ab Major", simply play Ab Major.

"F" instruments play a Perfect 5th above Concert Key. **Subtract 1 b, or add 1 #: go 1 Key to the LEFT, above.** "Ab" becomes Eb.

"Bb" instruments play a whole-step above Concert Key. **Subtract 2 b's, or add 2 #'s: go 2 Keys to the LEFT.** "Ab" becomes Bb.

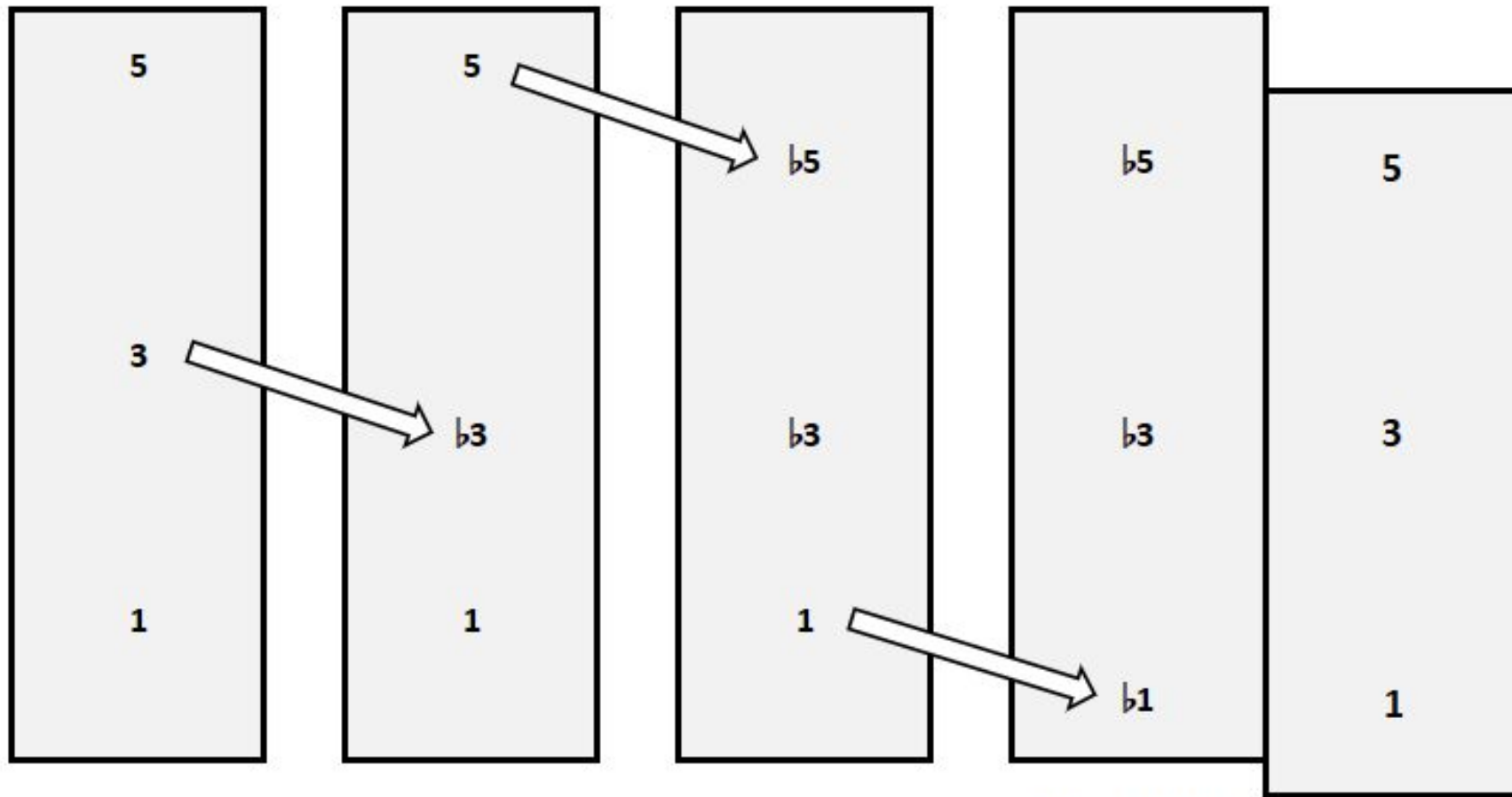
"Eb" instruments play a Major 6th above Concert Key. **Subtract 3 b's, or add 3 #'s: go 3 Keys to the LEFT.** "Ab" becomes F.

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**RW 5.2**



Major

Ex:  $B^b - D - F$

minor

$B^b - \underline{D}^b - F$

diminished

$B^b - D^b - \underline{F}^b$

New Major,  
a semitone  
lower

$\underline{B}^{bb} - D^b - F^b =$

Renamed ~  
start again

$A - C^\# - E$



With scale degrees (*numbers*) or Solfege (*syllables*), musicians can perform simple melodies or even full *Chorales* in any Key

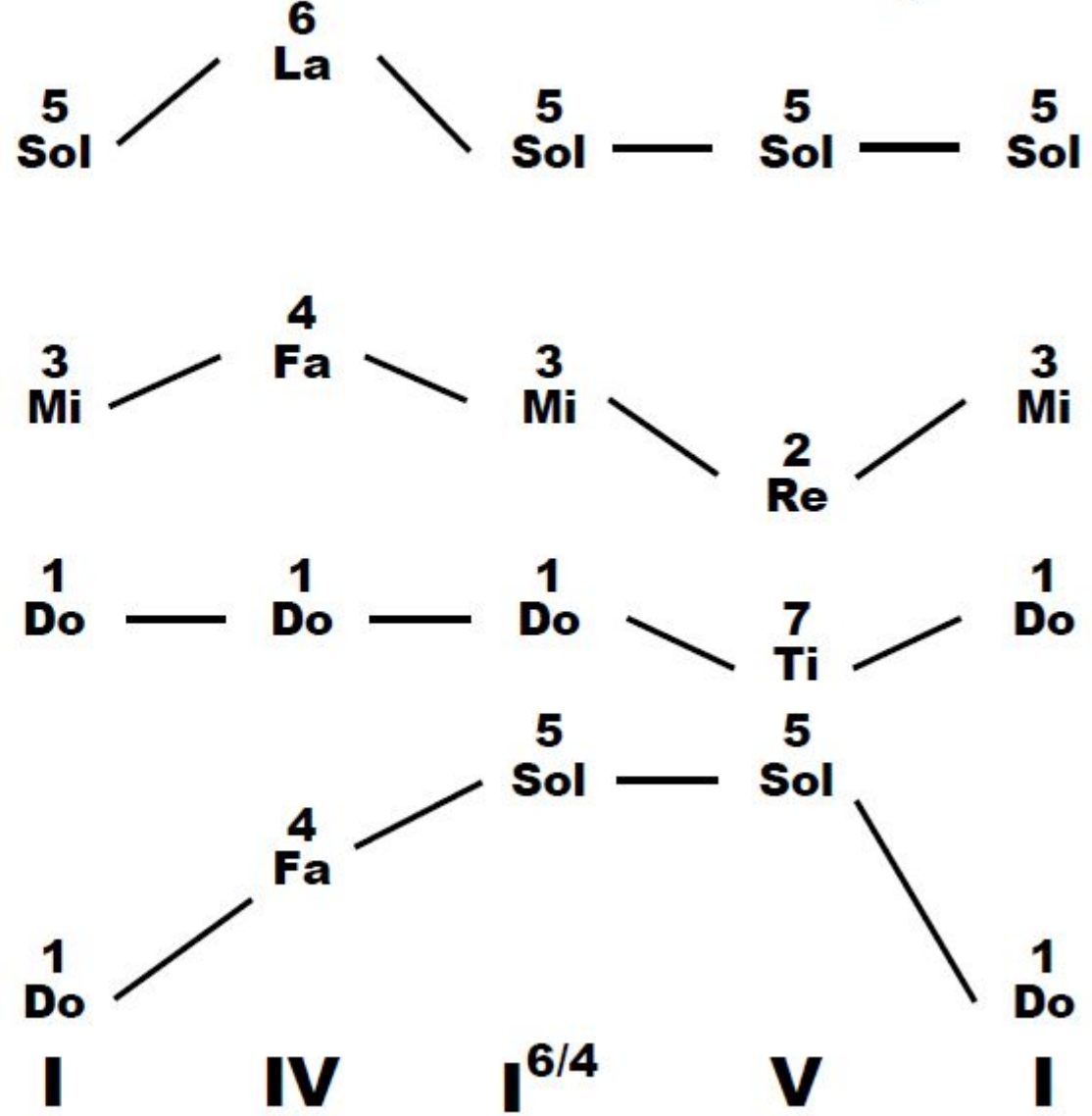
**Numbers for *Scale Degrees*:**

Soprano:	5	6	5	5	5
Alto:	3	4	3	2	3
Tenor:	1	1	1	7	1
Bass:	1	4	5	5	1

**Solfege (*Sing it too!*):**

Soprano:	Sol	La	Sol	Sol	Sol
Alto:	Mi	Fa	Mi	Re	Mi
Tenor:	Do	Do	Do	ti	Do
Bass:	Do	Fa	Sol	Sol	Do

**GRAPH - Full Chorale information and Analysis:**



Group 1: Play the entire Scale

Group 2: Arrive and hold "Sol"

Group 3: Arrive and hold "Mi"

Group 4: Hold "Do"

The musical score is written for piano in 4/4 time with a key signature of one flat (B-flat). It consists of four staves. The first staff (treble clef) contains a scale starting on G4 and ascending to G5. The second staff (treble clef) has a whole note G4 in the second measure, which is held across the third and fourth measures. The third staff (bass clef) has a whole note G3 in the second measure, which is held across the third and fourth measures. The fourth staff (bass clef) has a whole note G2 in the second measure, which is held across the third and fourth measures. The piece concludes with a double bar line at the end of the fourth measure.

# A method to improve a *specific chord*

1. Identify the *problematic chord*
2. Move pitches to the “Comfort Zone”: best Octave, and *mezzo* Dynamic
3. *Tune the chord carefully*
4. Gradually (one-by-one, perhaps) move players back to the pitches in the problem setting

The image shows a musical score for a chord in 4/4 time. The score is written on a single staff with a bass clef and a 4/4 time signature. The chord is marked *fff* (fortissimo). The notes are distributed among several instruments:

- Euphonium: G2 (two ledger lines below the staff)
- Trombone: G2 (two ledger lines below the staff)
- Tuba: G2 (two ledger lines below the staff)
- 1st Clarinet: G3 (below the staff)
- Flute & Piccolo: G3 (below the staff)
- Eb Clarinet & Alto Saxophone: G3 (below the staff)
- 1st Cornet: G3 (below the staff)

The notes are represented by whole notes with stems pointing down. The dynamic marking *fff* is placed below the staff.

This chord (above) happens at the “climax” moment in “*Elegy For A Young American*” (Lo Presti).

*These are the printed pitches!!*

***Section 4:***

***A Variety of Additional  
Strategies to Teach,  
Support,  
and Improve  
Intonation***



# Targeting Common Tuning Problems: *More Drone Examples*

"Three Blind Mice" To help the young Flutist learn to tune the C#/Db

Flute Student

Piano options

As a drone: As a standard Accompaniment:

Using a D Major scale to check the Trumpeter's use of the 3rd valve slide:

Trumpet in Bb

Sustained Drone / Reference

Tune the Trumpet's D before going on

Add 3rd valve slide

3rd VS

Using the F Major scale to tune the Trombonist's upper F

Trombone

Sustained Drone / Reference

Tune unison F before continuing

Adjust upper F as needed

Remember & repeat the adjustment

# *A random sampling of Quick-Fix Ideas:*

1. “The *faster* the beats, the further out-of-tune” (*and vice-versa*)
2. Demonstrate beats with amplified strings (Guitar/Bass). Add a ‘wet’ snare to enhance the effect.
3. Try a 90-degree shift in viewing the Tuner’s display (“up” = sharp; “down” = flat)
4. Sustain a “straight-line” sound ~ make the tuner’s display stay motionless
5. “*When in doubt, pull it out.*” However. ...
6. ... watch students (and instruments) carefully for irregularities.
7. *Hum* the tuning pitch before playing. Try Plugging one ear while playing (what?!!)
8. “*Sing (loo) the note of your chord*” ... “*now play it*”
9. “*Pause after that fermata: now think of the next sound*” (*audiate*) ... “*let’s sing it before we play it.*”
10. Use *Parallel* 4ths-5ths to hear the beatless open interval (Scales; Fugue Subjects; *alma mater*; etc.)
11. Recording-playback strategies (e.g. L-R microphones isolating two different students; multi-tracking)
12. *Transpose* for improvement (i.e. when the “D Major” chord sounds bad, tune the “D-flat Major” chord instead, and then move the well-tuned sound up a semitone)
13. Use *resonance* in the recipe for better tuning (e.g. sympathetic vibration of Piano strings; Timpani & DoubleBass tuning; ‘detune’ percussion to avoid room-rumble)
14. Train a *few* students (e.g. Section Leaders) to be *Tuner Mentors*: they’ll teach others how to use Tuners
15. Create an ‘Instant Chorale’ in the accompaniment instruments (“Sustain Beat 1 for the whole measure”) to focus on allowing *Melody Instruments* to tune over the basic chord-progression

# A word about alternate fingerings *(and slide positions, of course)*

Trumpet in B $\flat$



0

1  
2

3

***But what about the instruments?!***

*Equipment / Valve-Slides / Repair-Maintenance / Clarinet Joints / Temperature / Fatigue*

*etcetera ad infinitum ...*

# Two highly-recommended resources:

- ***Tuning for Wind Instruments:***

- ***A Roadmap to Successful Intonation***

**Shelley Jagow, Ph.D.** (2012, Meredith Music Publications)

**This publication offers (among other strengths):**

- Outstanding fingering charts, marked with Intonation Tendencies
- Blank Intonation Charts (the “maps”)
- Lists of instrument-specific tuning processes
- A guide to tuning Brass Instrument valves
- An innovative listing of “Tuning Truths”
- And a wide variety of well-researched charts and scientific/acoustical information

- ***The “Tonal Energy” App***

<https://www.tonalenergy.com/>



# Additional Recommended Reading

**“Building Balance, Taming Tone, and Making Cents of Intonation (*blog essay – Dr. Shelley Jagow*)**

<https://banddirectorstalkshop.com/building-balance-taming-tone-and-making-cents-of-intonation/>

**“Escaping the Pyramid” (*from the SBO Magazine archives*)**

<https://sbomagazine.com/51escaping-the-pyramid-trap-reconstructing-conceptions-of-balance/>

**“Tone, Intonation, and The Young Band” (*A Midwest Clinic presented by Chip De Stefano*)**

<http://www.mccrackenband.com/resources/articles/beyond2.shtml>

**“The Power of UNISON” (*A Kjos Webinar presented by David Newell*)**

<https://www.youtube.com/user/KjosMusicPublishing/videos>

*Ultimately, of course ...*

**A band can't sound  
*great* without  
something more;  
something "*intangible*"**

**...**

t h isi squ iteas im plesen ten cebu ti...tsh ar d tore ad

= *This is quite a simple sentence but it's hard to read.*



Students will need to understand *note-grouping*, *phrasing (breathing)*, *tension-release concepts*, *style & “feel”*, *imagery*, *emotional connections* (moods/colors/textures/temperatures/etc.), and *so much more*.

**AND, they need to do it all independently.**

That's an entire presentation! Sometime soon, look for...

**“Teaching the Intangibles, *TANGIBLY!*”**



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me!**

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***Thank you for  
attending!***