IMPROVING THE INTONATION OF YOUR STRING STUDENTS THROUGH SIGHT, SOUND, AND TOUCH

Dr. Charles Laux
Lassiter High School, Cobb County School District (GA)

HAL•LEONARD®
A Muse Group Company

www.OrchestraTeacher.net

OVERVIEW

- Philosophy
- Causes of intonation problems & strategies to correct
  - Aural
  - Technical
  - Physical
- Technology to assist

www.OrchestraTeacher.net

PHILOSOPHY

- Importance of intonation on performance
- Misconceptions of intonation problems
- Teaching aural skills from day one
- The teacher determines the expectation for intonation
- Students must understand the importance of good intonation and the means to improve

WHY DO WE **NEED** TO PLAY IN TUNE?

- We want to sound good!!
- Even a non-musician can still discriminate an out of tune performance!
- Establish a strong value for in tune playing
- *"A moral premise"* - Michael Alexander

DEGREES OF INTONATION

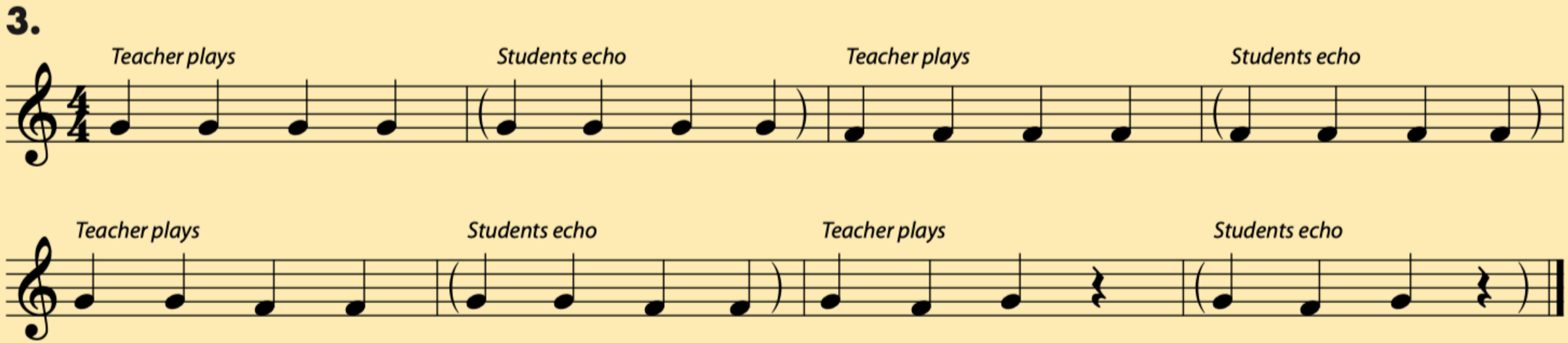
- In tune
- Very close (1-2 cents off)
- Out of tune
- Way out of tune
- Remember: A little out of tune is still out of tune!
- It only takes one person playing out of tune to make the entire section/ensemble sound bad!

TEACHING GOOD INTONATION…

- You CAN do this!!
- Takes planning, practice, and a lot of patience
- Set your standards high and don't accept anything but the very best from your students
- The reward from your hard work is BEAUTY!

SOUND

- *Audiation* (Gordon, 1993)
- "Say" note names
- Listen for what is correct & incorrect intonation
- Pitch matching & echoes from day one



Source: Essential Elements for Strings. © Hal Leonard Corporation. Used with permission.

REFERENCE PITCHES & DRONES

- Sustained pitches
  - Beat elimination – explain/demonstrate to students
- Tetrachords & Scales
- Tunes & Performance repertoire
- Improvisation
- Word of caution about **loud** reference pitches

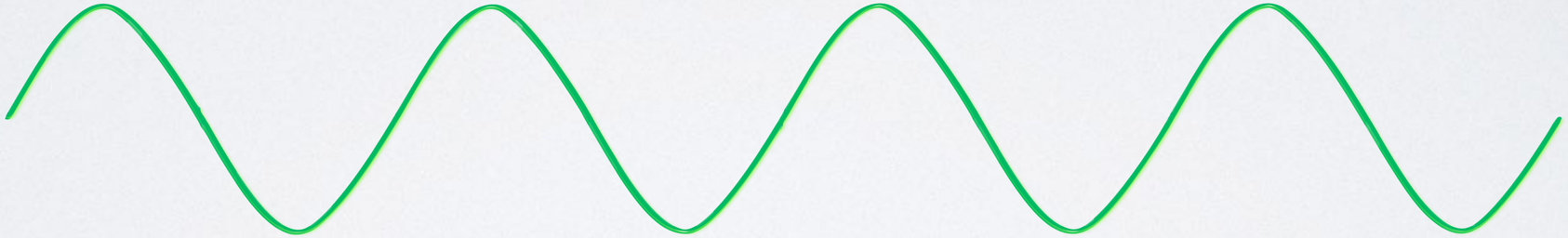
COMMERCIAL DRONE RECORDINGS

- ***Cello Drones*** by Navarro River Music
  - Also available to download on Apple Music, etc.
  - Adds other notes in harmonic series and provides a nice texture...
  - Listen: (D)

SIMPLIFIED EXPLANATION OF "BEATS"

When the waves are different lengths, they "clash," causing "beats".

When it's more out of tune, the beats increase in speed.



Next, draw another wave over the original.

This is an extremely simplified explanation, but

Students will get the idea. It's good to demonstrate

this way in class.

The waves align and all is good -- you hear only one pitch.

SOUND

- Accompaniments
  - Puts a melody in harmonic context
  - EEi, accompaniments with different harmonic analyses
- Instrument harmony
  - Double stops - checking with open strings
  - Partners "double stops"
- Listen for sympathetic vibrations/ringing of instrument
- Detune the instrument's open strings for scales/simple tunes

TUNING IN ORCHESTRA

- Tuning Sequence
- Build chords
  - Root, Third, Fifth (& Seventh)
  - Change chords
- Chorales
  - *371 Bach Chorales*, published by DeHaske, distributed by Hal Leonard
  - *Bach & Before*, published by Kjos
  - *Bach Chorales for Strings*, Southern Music

OPEN STRING TUNING

- 1. Listen
- 2. Internalize
- 3. Tune

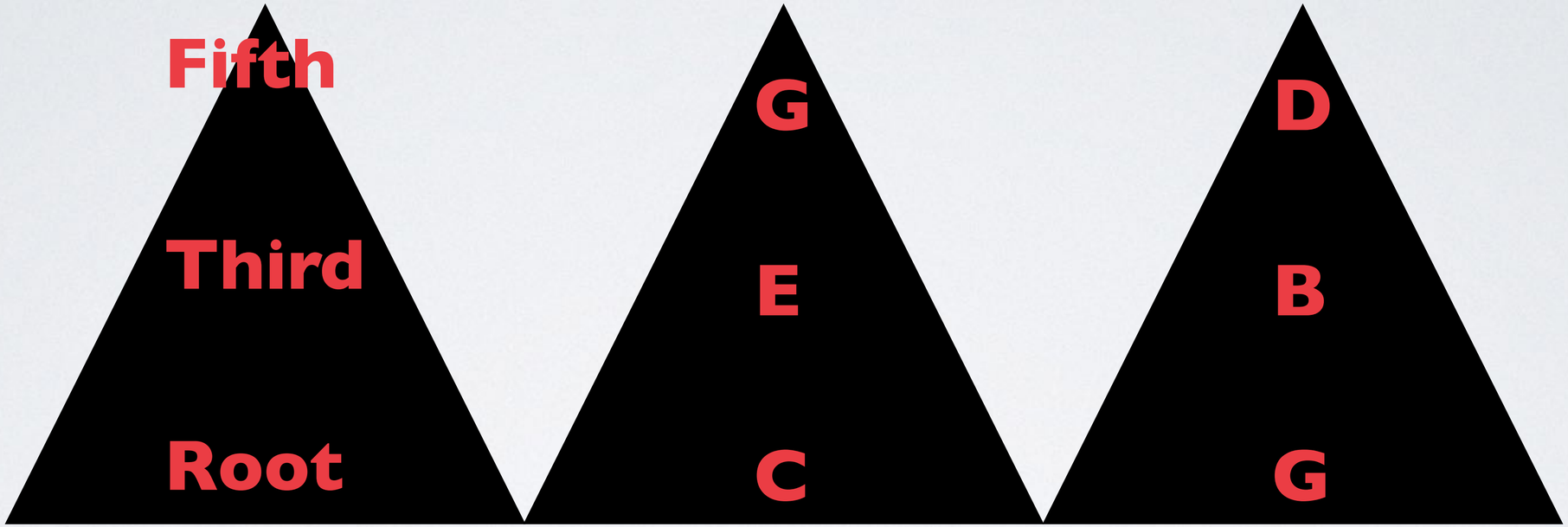
CROSS TUNING

- Use after tuning individual strings
- Helps students understand P5 tuning
- Allows more time for students to tune
- Allows for harmonic tuning, more helpful for some students
- Locks in tuning across the orchestra

CROSS TUNING PROCEDURE

- Two groups: All Violins and Cello/Viola/Bass
- (Basses tune with harmonics)
- 1. All play open A. Give them time to adjust.
- 2. Cellos/Viola group tunes D while violins play A.
- 3. C/V group plays A, violins tune D.
- 4. V group plays D, C/V group tunes G, etc.

TUNING CHORDS



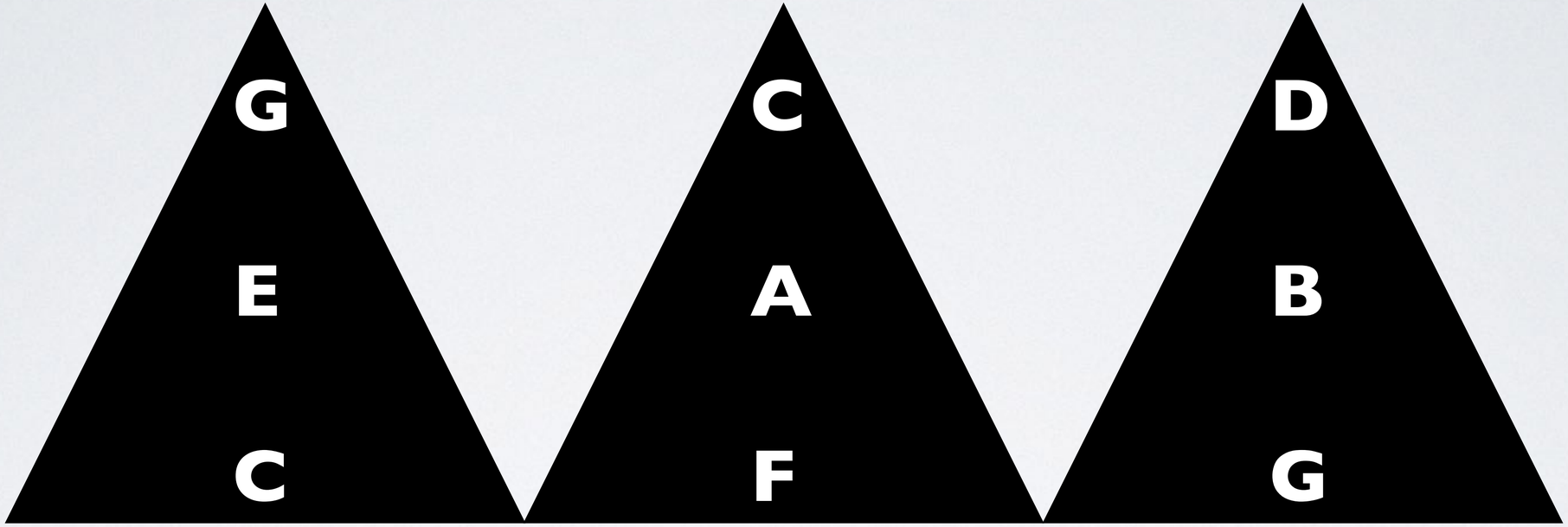
Tonic

Dominant

www.OrchestraTeacher.net

TUNING CHORDS

Understanding **Chord Changes**



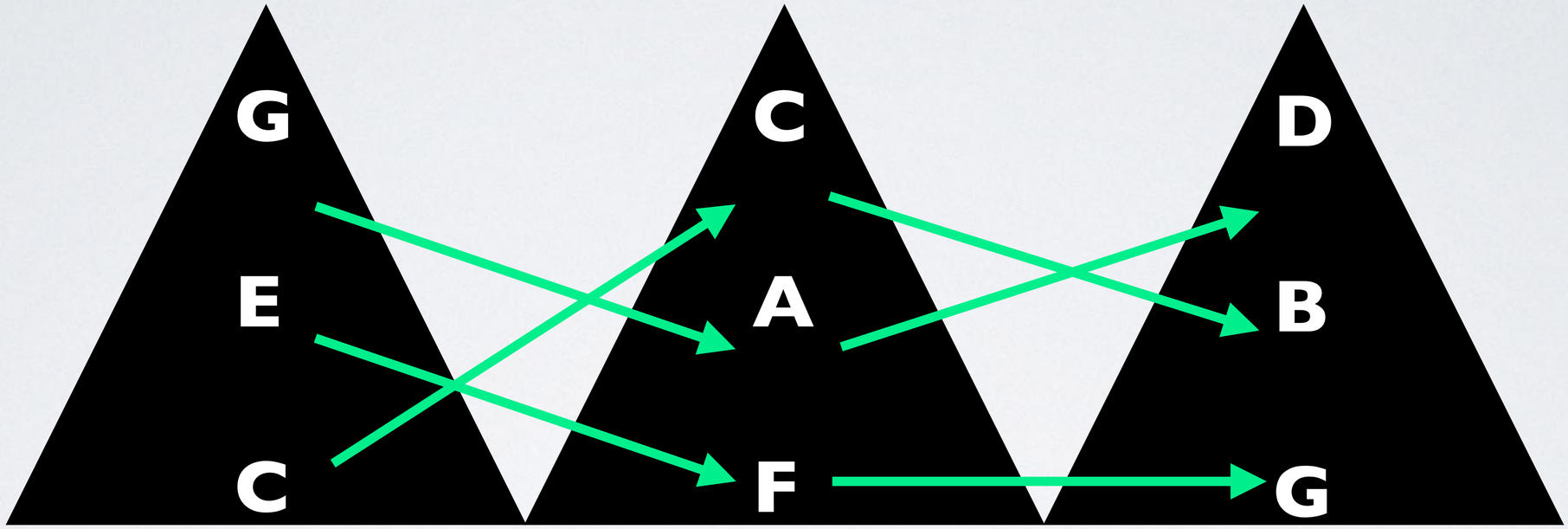
Tonic (I)

Subdominant (IV)

Dominant (V)

TUNING CHORDS

Understanding simple **Voice Leading**



Tonic
(I)

Subdominant
(IV)

Dominant
(V)

YAMAHA HARMONY DIRECTOR KEYBOARD (HD-300)

- Multiple voices/timbres
- Ability to play in equal temperament or just pitch/pure intonation
- Ability to balance chords, change volume, pitch of individual notes
- Metronome, etc. built in

AURAL THEORY TRAINING

- Intervals
  - Higher/lower game
  - Half/whole step identification
  - Advanced interval identification
  - “Interval of the week” - theoretical and aurally

TECHNICAL ISSUES

- Posture
- Instrument position
- Left Hand
- Right Hand

INSTRUMENT POSITION

- Violin/Viola
  - "The Frankenstein" – too far forward
  - "The sagger" – instrument not parallel to ground
- Cello/Bass
  - Endpin/instrument too low
  - Neck too far away from head

VIOLIN/VIOLA LEFT HAND

- Straight wrist
- Left hand shape sequence
  - 1. turn head, 2. bend first finger, 3. twist
- Left arm position
  - Swing, maintain hand shape

CELLO LEFT HAND

- First finger placement/touch
  - reach back to nut with first finger
- Finger spacing - "hand in hand" strategy
- Left elbow (too high or too low)
  - Bridge taps
  - Flying pizzicato
  - "Grab a Coke"

DOUBLE BASS LEFT HAND

- Left hand shape
  - "Inhale and hold"
    - Fingers over face, thumb in ear
- Left elbow height
  - Bridge taps
  - "Grab a Coke"

TO TAPE OR NOT TO TAPE?

How many? How thick? For how long?

What is the **real** purpose of finger tapes?

THE RIGHT HAND

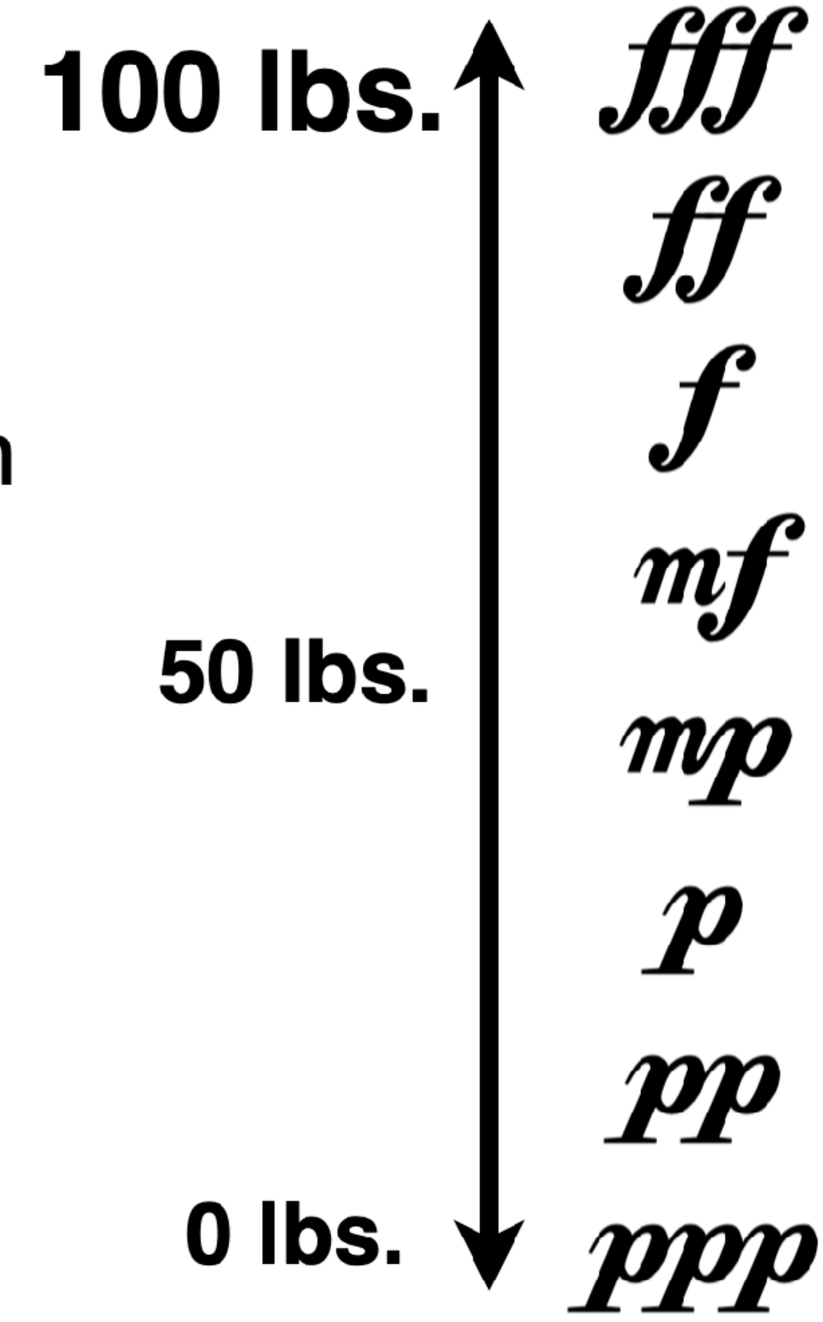
- **The bow effects intonation too! This is often overlooked!**
- Improper balance of the bow's point of contact, speed, weight, etc.
- Bowing "PAWS" or "WASP squared"

Memorize the factors of string instrument **sound production** using

WASP^2

Weight

- *the amount of pressure you put on the bow
- *use first finger to push the stick into the bow hair - “bite” the string
- *measured with “pounds”



Angle of Bow Hair

(adjust by tilting the stick of the bow)

FLAT HAIR

HALF HAIR

“ONE HAIR”

Violin/Viola:
Tilt stick ***away*** from your body.

Cello/Bass:
Tilt stick ***toward*** your body.

Speed

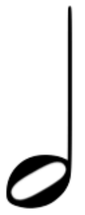
* the speed of the bow
* measured in “miles per hour”

Generally:

* the *longer* the note, the *slower* the bow stroke
* the *shorter* the note, the *smaller* the bow stroke

10 MPH
“Super Duper Slow Bow”

20 MPH
“Super Slow Bow”



25 MPH
“Slow Bow”

50 MPH
“Walk”

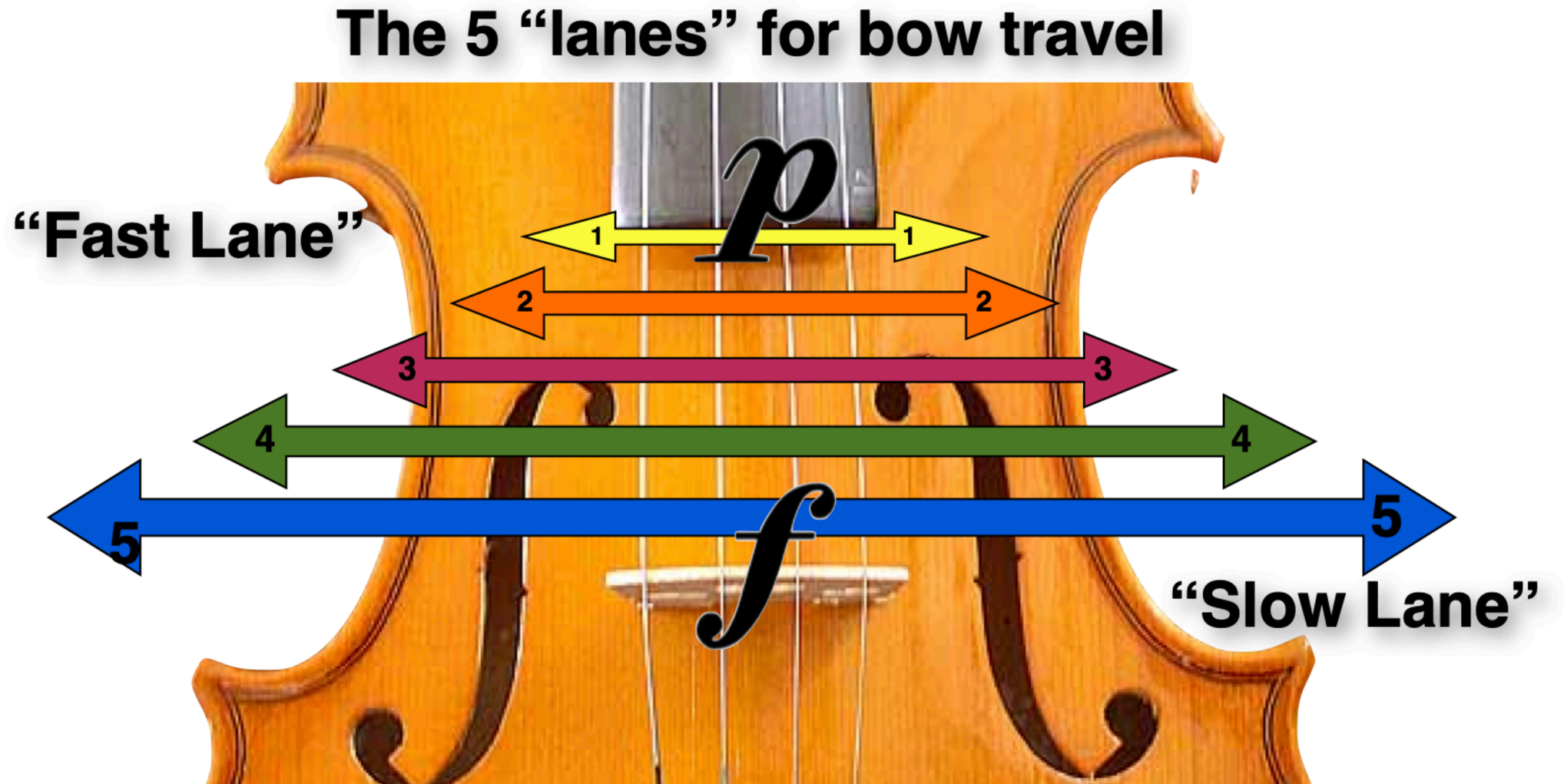
100 MPH
“Running”

200 MPH
“Sprint”

RATIOS:
“Twice as fast,”
3:1, etc.

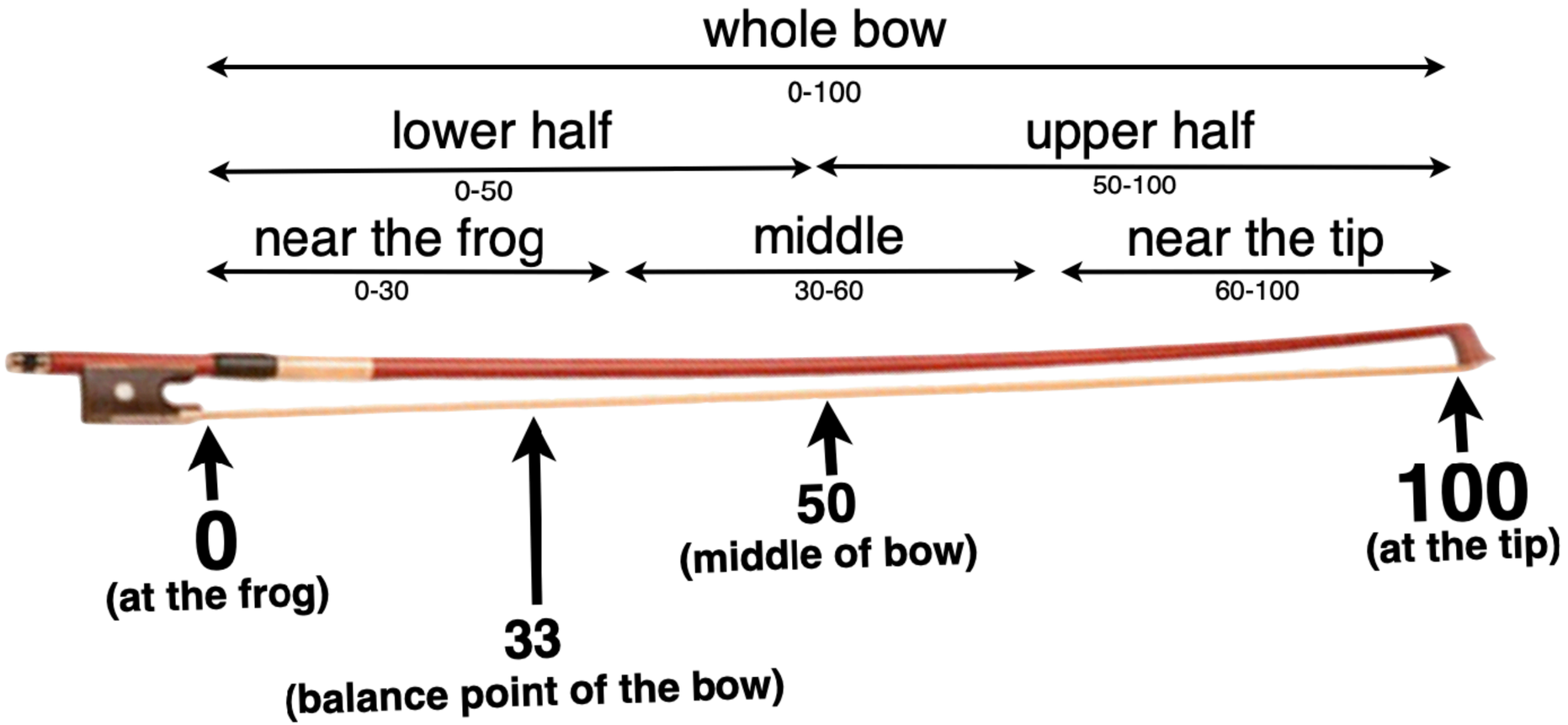
Point of Contact 1

(placement on the string)



Point of Contact 2

(placement on the bow)



MECHANICAL PROBLEMS

OMyS3O9!!

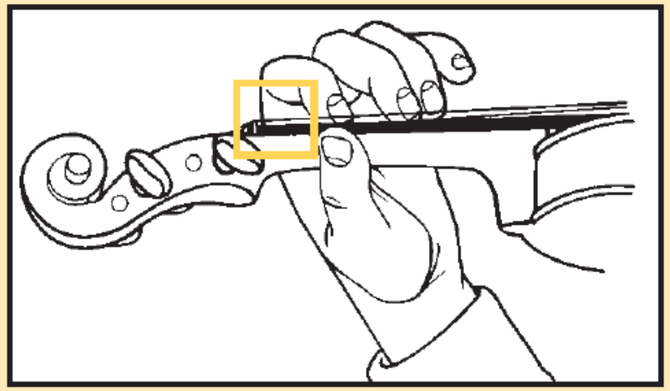
- Fine Tuners – lubricate or replace
- Pegs - lubricate
- False Strings – compare with kid's sneakers
- Environmental factors

PITCH ADJUSTMENT

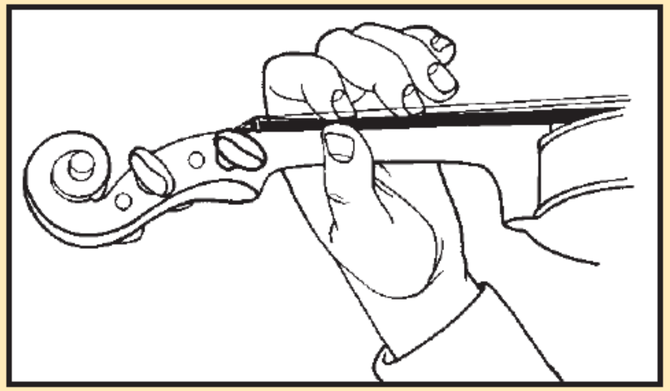
- Students must understand how and when to physically adjust a pitch on the fingerboard
- Pitch adjustment exercises
  - "Hands together"
  - Pitch bending - use a sustained tone on a keyboard and pitch bend wheel
  - "Follow me"
  - One finger tetrachords/scales
- Strategies to enhance listening: 1. Eyes Closed, 2. Play softer

BLOCK FINGERING

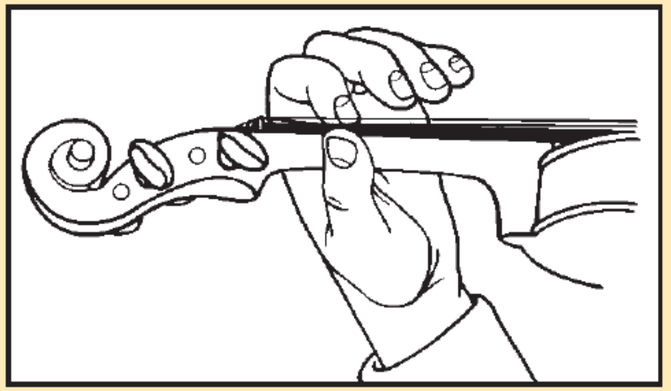
G is played with 3 fingers on the D string.



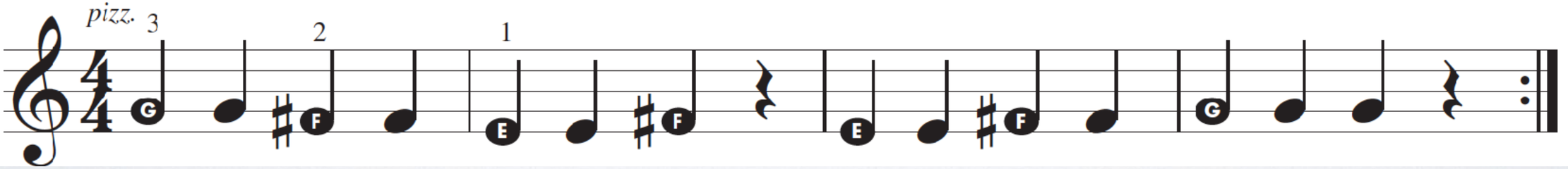
F♯ is played with 2 fingers on the D string.



E is played with 1 finger on the D string.

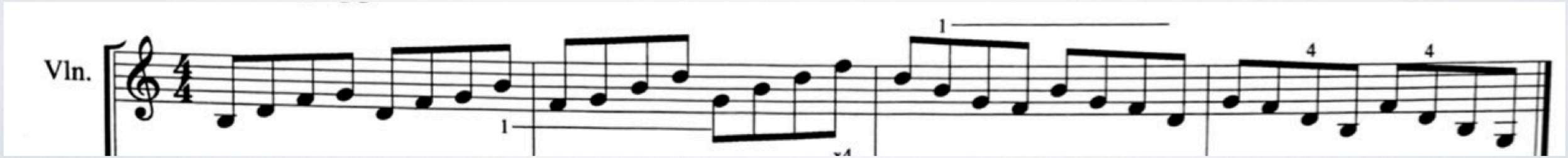


15. WALKING SONG

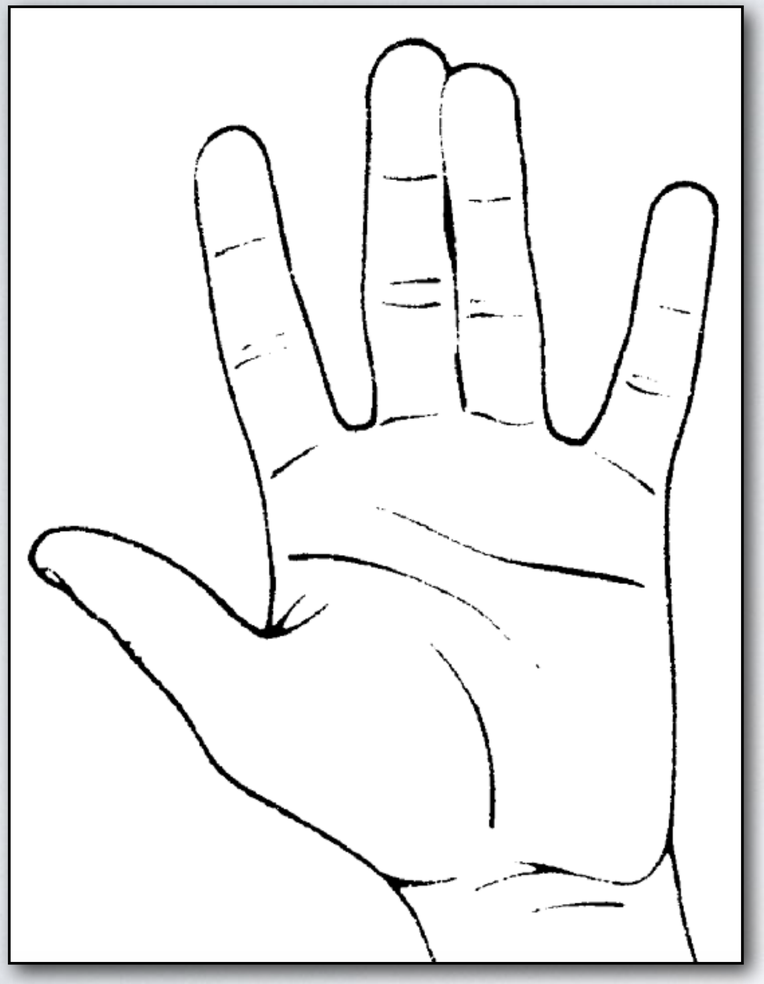


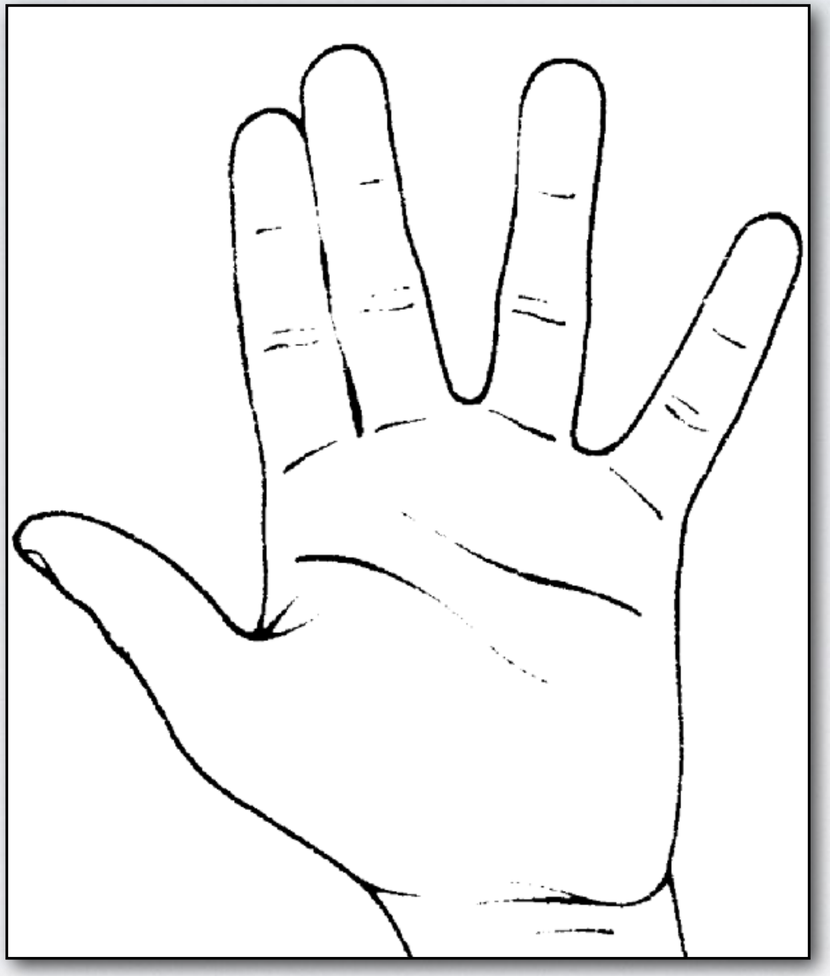
INDEPENDENT FINGERING

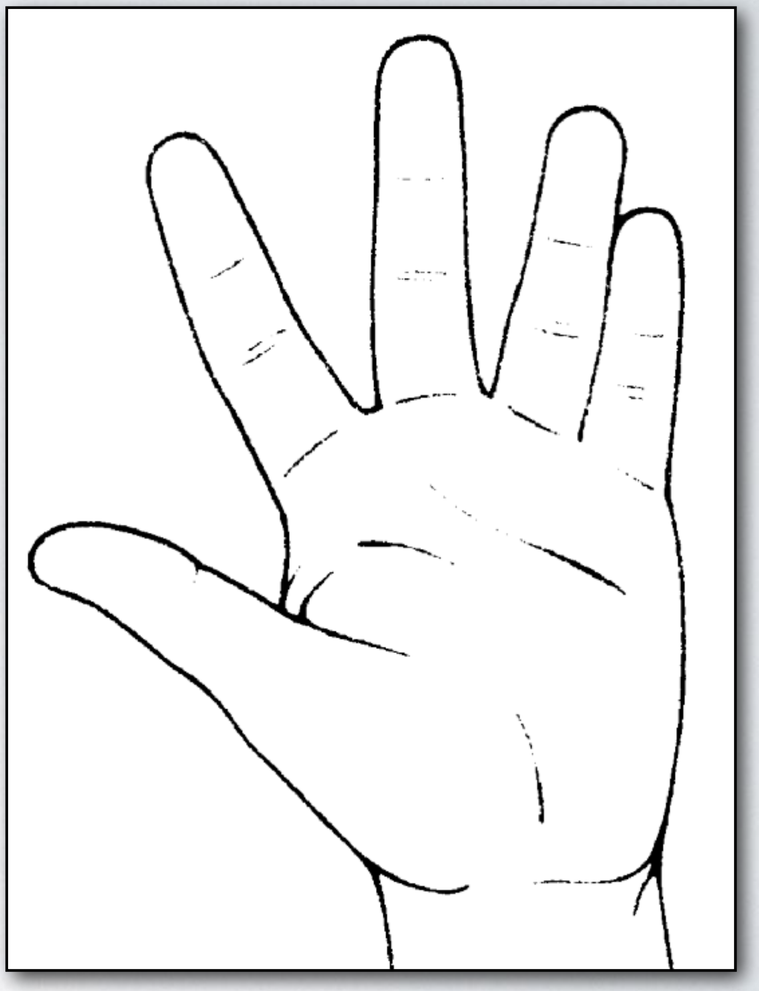
- At the latest, start when you approach the teaching of "low 2"
- Opens up the door for vibrato
- Students will then begin to understand when to use block fingering and when to use independent fingering



FINGER PATTERNS

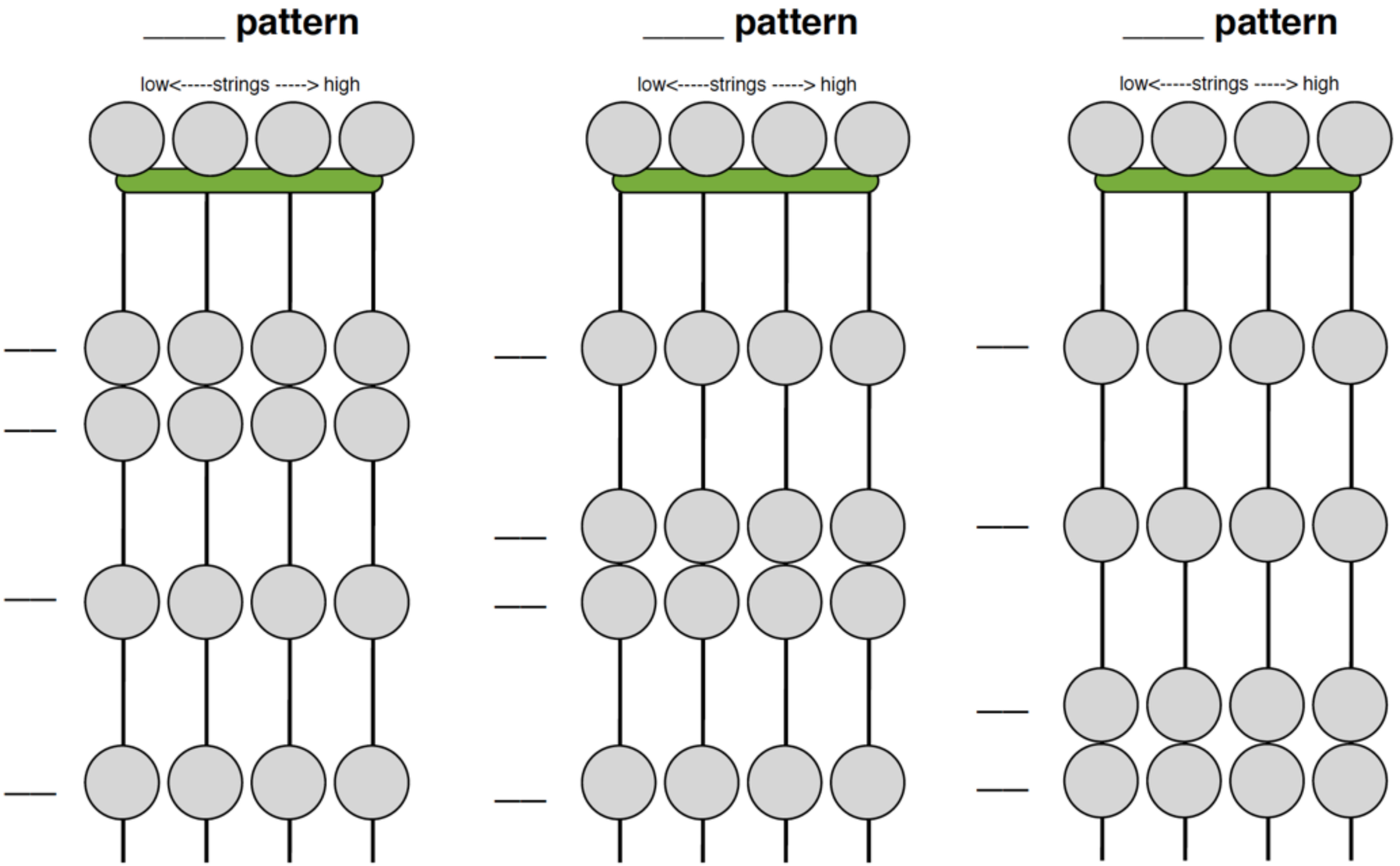




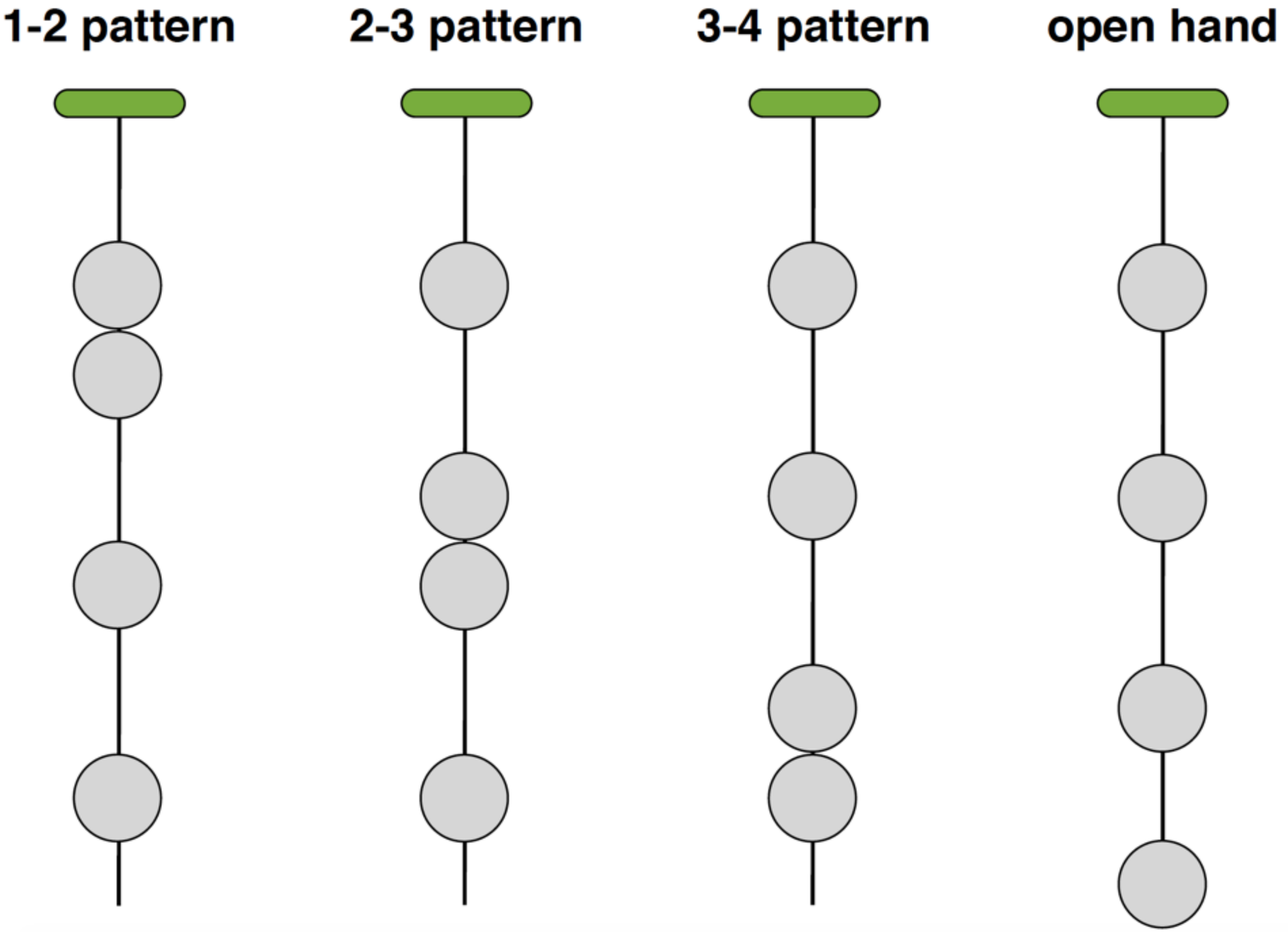


UNDERSTANDING FINGERBOARD “GEOGRAPHY”

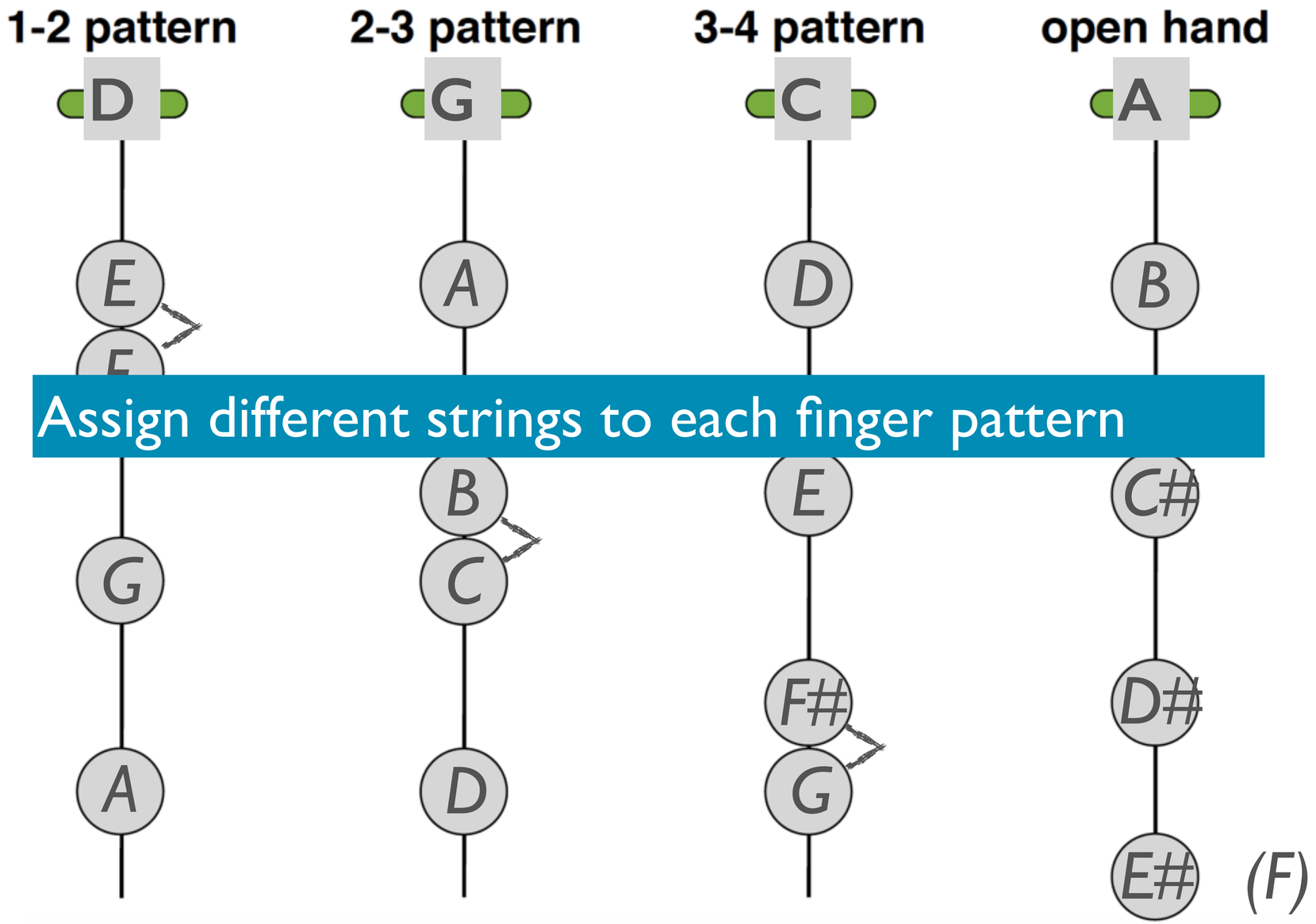
Violin & Viola Finger Patterns



Violin & Viola Finger Patterns



Violin & Viola Finger Patterns



LEARNING TOUCH

- For position work, students need to learn what it feels like to play in that position
- One strategy is to remove the sense of sight by having students close their eyes
- Every instrument is different in this regard so this is why I promote students using the same instrument all the time.

COMMERCIAL DRONE RECORDINGS

- ***Cello Drones*** by Navarro River Music
  - Also available to download on iTunes
  - Adds other notes in harmonic series and provides a nice texture...
  - Listen: (D)

COMMERCIAL DRONE RECORDINGS

- ***The Tuning CD*** by Richard Schwartz
- Available on Amazon and iTunes
- Synthesized
- Listen: (D)

TECHNOLOGY

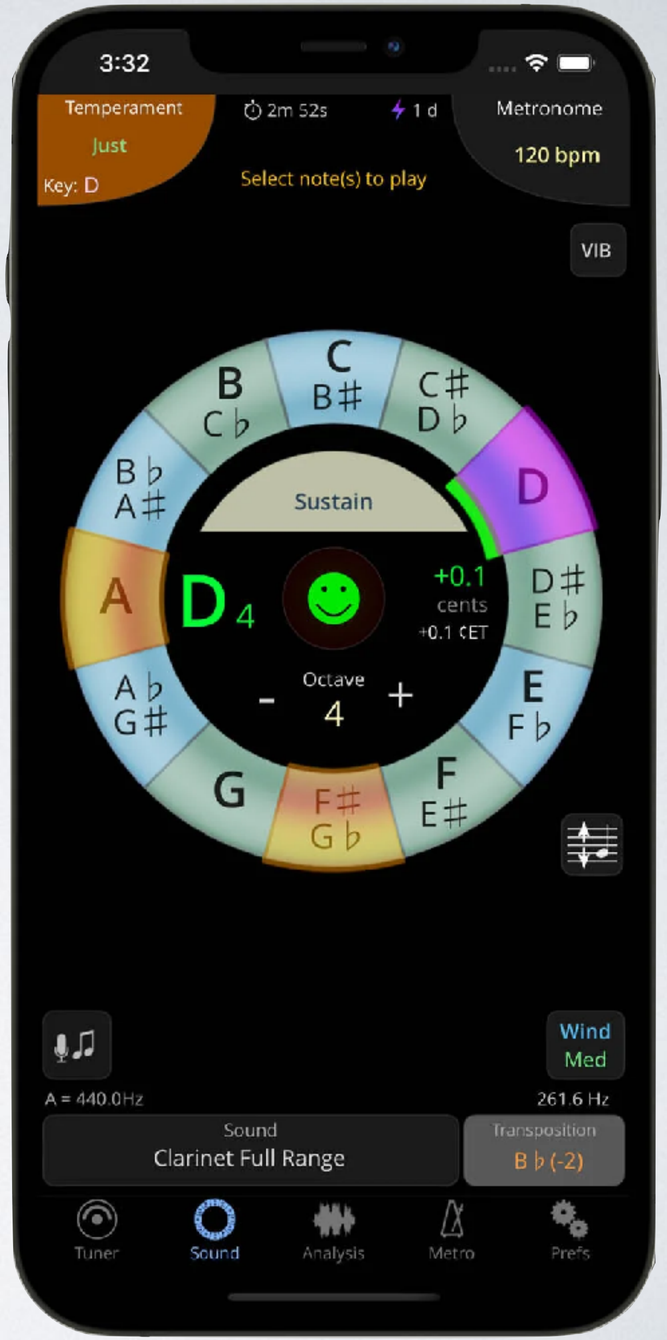
- Tuners
- Visual Aids
- Aural Aids

CLEAR TUNE APP

- ~$4
- Simple
- Easy to read

TONAL ENERGY TUNER

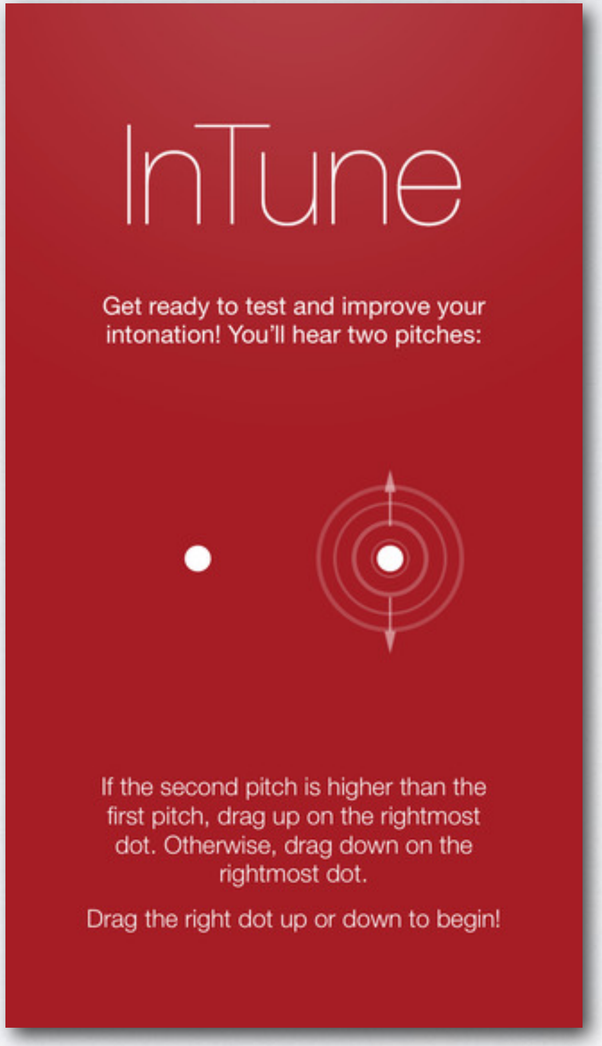
- ~$5 for mobile, $10 for Mac/PC
- Many functions!
  - Tuner
  - Drones
  - Pitch Analysis
  - Thorough Metronome
  - Pure or Just Intonation options

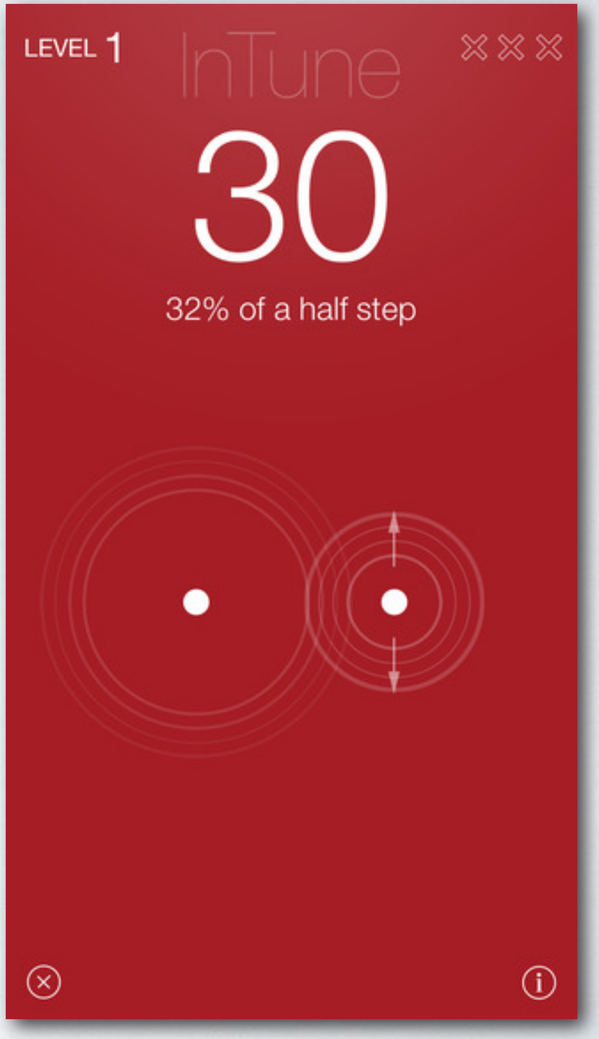


INTUNE APP

"IMPROVE AND TEST YOUR INTONATION"

- iOS App for iPhone
- Higher/Lower
- $.99





SPECIAL THANKS...

HAL•LEONARD®
A Muse Group Company

D'Addario

EASTMAN

COBB COUNTY SCHOOL DISTRICT

Lassiter ORCHESTRA

CONTACT ME!

Charles@OrchestraTeacher.net

@TheOrchestraTeacher

www.OrchestraTeacher.net

The Orchestra Teacher Podcast