

## Appendix A

### Basic String Instrumental Technique

Technique Category	Violin/Viola	Cello	Bass
<b>Posture</b>	<p>Instrument is held level to the ground (or angled upwards slightly). Instrument is supported by head and jaw and resting on collarbone without compromising angle of head in a normal sitting/standing posture. Instrument is pointed roughly at a 45 degree angle from center line of body. Shoulders, wrist, and neck are generally relaxed and free of tension. Wrist is not bent inward to support the violin, nor hyper-extended in the opposite direction. Hand placement in 1st position has the thumb at the 1st finger tape and the 1st finger contacting the top of the fingerboard at the point where the finger meets the palm. Left elbow is directly below instrument in 1st position and makes an even plane between the scroll and the nose.</p>	<p>Instrument is held securely between both legs, with the endpin on the floor. The body of the cello is contacting the player in the middle of the sternum and the C peg is located behind the left ear. Left elbow is elevated so that the wrist remains straight and relaxed. Thumb contacts the back of the neck opposite the fingerboard right across from where the 2nd finger is placed. Hand shape is rounded as if holding a soda can or ball</p>	<p>Whether sitting on an elevated stool or standing, the left side bout of the instrument should rest against the stomach. End pin is extended so that the nut is around forehead level when standing. Left elbow is elevated so that the wrist remains straight and relaxed. Thumb contacts the back of the neck opposite the fingerboard right across from where the 2nd finger is placed. Hand shape is rounded as if holding a soda can or ball</p>
<b>Bow Hold</b>	<p>Bow hold (French Grip) is relaxed and balanced. Thumb is directly across from the middle finger. Thumb is bent so that the knuckle sticks out, and is pointed upwards pushing on the underside of the stick, and resting against the thumb rest. It should not sit inside the U-shaped crook of the frog. Middle fingers are together and draped far enough over the stick so that the thumbnail would fall into the first crease of middle finger if bow stick was absent. Pointer finger is relaxed and not grabbing, able to slide on the surface of the stick. Hand is rounded as if a ping pong ball could fit into the palm. Pinky should sit lightly on top of the bow stick</p>	<p>Bow hold (French Grip) is relaxed and balanced. Thumb is directly across from the middle finger. Thumb is bent so that the knuckle sticks out, and is pointed upwards pushing on the underside of the stick, and resting against the thumb rest. It should not sit inside the U-shaped crook of the frog. Middle fingers are together and draped far enough over the stick so that the thumbnail would fall into the first crease of middle finger if bow stick was absent. Pointer finger is relaxed and not grabbing, able to slide on the surface of the stick. Hand is rounded as if a ping pong ball could fit into the palm. Pinky should drape over the top of the bow stick</p>	<p>French bow grip is relaxed and balanced. Thumb is directly across from the middle finger. Thumb is bent so that the knuckle sticks out, and is pointed upwards pushing on the underside of the stick, and resting against the thumb rest. It should not sit inside the U-shaped crook of the frog. Middle fingers are together and draped far enough over the stick so that the thumbnail would fall into the first crease of middle finger if bow stick was absent. Pointer finger is relaxed and not grabbing, able to slide on the surface of the stick. Hand is rounded as if a ping pong ball could fit into the palm. Pinky should drape over the top of the bow stick.</p>

			German bow grip. Requires a German bow. Frog rests against palm, thumb goes on top of the bow stick, pointer and middle finger are curved and rest against side of the bow, ring finger floats, pinky contacts the ferrule.
<b>Left Hand Finger Technique</b>	Fingertips contact the string and push down firmly enough to reach the fingerboard surface. Both knuckles are not collapsed and resemble a tabletop in the middle. Thumb is not squeezing the side of the neck, and is positioned by the first fingertip. Hand shape is rounded, flexible, and balanced between the first and fourth finger.	Fingertips contact the string and push down firmly enough to reach the fingerboard. Pinky finger is angled towards the bridge. Hand is open and relaxed, and knuckles are curved, as if holding a soda can or ball. Thumb is lightly contacting the back of the cello across from the 2 <sup>nd</sup> finger. Hand is rounded, flexible, and balanced between the first and fourth finger.	Fingertips contact the string and push down firmly enough to reach the fingerboard. Pinky finger is angled towards the bridge. Hand is open and relaxed, and knuckles are curved, as if holding a soda can or ball. Thumb is lightly contacting the back of the bass across from the 2 <sup>nd</sup> finger. Hand is rounded, flexible, and balanced between the first and fourth finger.
<b>Bow Technique</b>	Bow is kept primarily parallel to the bridge. Sounding-point resides primarily halfway between the edge of the fingerboard and bridge. Right arm for extends from elbow in the upper half of the bow, opening and closing like a book. In the lower half, the arm is propelled by the elbow and bicep/tricep area. When crossing strings, wrist, forearm, elbow and upper arm move as a unit, like an elevator changing floors so that the basic bow stroke motion remains consistent on all strings.	Bow is kept primarily parallel to the bridge. Sounding-point resides primarily halfway between the edge of the fingerboard and bridge. Right arm for extends from elbow in the upper half of the bow, opening and closing like a book. In the lower half, the arm is propelled by the elbow and bicep/tricep area. When crossing strings, wrist, forearm, elbow and upper arm move as a unit, like an elevator changing floors so that the basic bow stroke motion remains consistent on all strings.	Bow is kept primarily parallel to the bridge. Sounding-point resides primarily halfway between the edge of the fingerboard and bridge. Right arm for bassists is nearly straight, swings like a pendulum. When crossing strings, wrist, forearm, elbow and upper arm move as a unit, like an elevator changing floors so that the basic bow stroke motion remains consistent on all strings.

## Appendix B

### Suggested Instrumental Techniques by Level in Relation to the Standards

TECHNIQUE	NOVICE Elementary	INTERMEDIATE Middle	PROFICIENT High, Gr 9-10	ACCOMPLISHED High, Gr 11-12
<b>Bow Strokes</b>	<ul style="list-style-type: none"> <li>-Detache</li> <li>-Legato</li> <li>-Staccato/Martele</li> <li>-Bow Lifts</li> </ul>	<p>Mastery of Novice plus</p> <ul style="list-style-type: none"> <li>-Slurred bowings</li> <li>-Hooked Bowings</li> <li>-Spiccato</li> <li>-Flautando/Ponticello</li> </ul>	<p>Mastery of Novice and Intermediate plus</p> <ul style="list-style-type: none"> <li>-Portato</li> </ul>	<p>Mastery of Novice, Intermediate and Proficient plus</p> <ul style="list-style-type: none"> <li>-Sautille</li> <li>-Ricochet</li> </ul>
<b>Left Hand Finger Patterns</b>	<p>Violin/Viola- Basic Hand position (1, High 2, 3, 4<sup>th</sup> Finger)</p> <p>Cello- Basic Hand Position (1, 3, 4)</p> <p>Bass- Basic Hand Position (1, 2, 4)</p>	<p>Mastery of Novice plus</p> <p>Harmonics on all instruments</p> <p>Violin/Viola- Low 2<sup>nd</sup> finger, Low 1<sup>st</sup> finger, High 3<sup>rd</sup> Finger, Low 4<sup>th</sup> Finger</p> <p>Cello- Low 1<sup>st</sup> fingers, Extended position for cello: 2nd finger stretches to where the 3rd finger is normally placed. thumb moves behind new 2nd finger placement.</p> <p>Bass-Finger Extensions</p>	<p>Mastery of Novice and Intermediate plus</p> <p>Chromatic Scale Fingerings and double stop finger patterns on All Instruments,</p> <p>Violin/Viola-Finger extensions, irregular finger patterns in higher positions</p> <p>Cello and Bass Thumb Position: Thumb barred across fingerboard</p>	<p>Mastery of Novice, Intermediate and Proficient plus</p> <p>Violin/Viola- Double, triple, quadruple stop finger patterns. Large extensions up to 10ths</p> <p>Cello- Double, triple, quadruple stop finger patterns, Big extensions that include the thumb (e.g. octaves)</p>
<b>Shifting</b>	<p>ALL INSTRUMENTS</p> <p>The entire hand moves together as a unit, and hand shape integrity is maintained from first position through the upper positions. Motion is smooth, and uninterrupted from location to location. Finger pressure is relieved upon shifting and</p>	<p>Violins/Viola- Up to 3<sup>rd</sup> Position and the 1<sup>st</sup> natural harmonic.</p> <p>Cello- up to 3rd and 4th Position and 1st natural harmonic</p> <p>Bass -from half position to 5th position and 1st natural harmonic</p>	<p>Mastery of Intermediate plus</p> <p>Violin/Viola- Half position through 6<sup>th</sup> position</p> <p>Cello half position, 5<sup>th</sup>-7<sup>th</sup> position, and the start of thumb position</p>	<p>Mastery of all positions</p>

	reapplied on the new note unless the portamento is intended to be heard. Thumb begins to come around the neck for violin/viola 6 <sup>th</sup> position and above, and cello/bass 5 <sup>th</sup> position and above. Fingers are closer together the higher up the neck traveled.		Bass 6 <sup>th</sup> and 7 <sup>th</sup> position and the start of thumb position	
<b>Vibrato</b>	<p>ALL INSTRUMENTS:</p> <p>Vibrato should be loose and relaxed. Wrist, forearm, and knuckle joint all contribute to the motion.</p> <p>Violin/Viola: Starting from the intended pitch frequency, the pitch gets primarily bent backwards towards the scroll of the instrument with a tiny bit of upward pitch bend. Arm vibrato from the forearm impulse, wrist vibrato, and knuckle flexibility play a role in the vibrato tone. Vibrato should move in the direction of the fingerboard/strings/neck, akin to shaking an egg shaker.</p> <p>Cello/Bass. Starting from the intended pitch frequency, the pitch gets primarily bent backwards towards the scroll of the instrument with a tiny bit of upward pitch bend. Forearm motion is akin to shaking a soda can, wrist rocks back and forth towards the scroll. Knuckle flexibility also plays a role. Vibrato should move in the direction of the fingerboard/strings/neck</p>	Vibrato impulse is learned and practiced. Utilized especially on long held notes, and easier fingers (2 <sup>nd</sup> or 3 <sup>rd</sup> finger)	<p>Mastery of Intermediate plus</p> <p>Vibrato is comfortable on all fingers.</p> <p>Factors of Speed and width of vibrato for expressive quality is introduced.</p>	<p>Mastery of Intermediate and Proficient plus</p> <p>Student is able to control the speed and width of vibrato in any capacity to express the mood/context of the music.</p>

## Appendix C

### Suggested Literacy Milestones by Level in Relation to the Standards

TECHNIQUE/SKILL	NOVICE Elementary	INTERMEDIATE Middle	PROFICIENT High, Gr 9-10	ACCOMPLISHED High, Gr 11-12
<b>Rhythms</b>	<ul style="list-style-type: none"> <li>-Quarter Notes/Quarter Rests</li> <li>-Paired 8<sup>th</sup> notes</li> <li>-Half Notes/Half Rests</li> <li>-Whole Notes/Whole Rests</li> </ul>	Mastery of Novice plus -8 <sup>th</sup> Notes/8 <sup>th</sup> Rests -16 <sup>th</sup> notes, 16 <sup>th</sup> rests -Augmentation Dot applied to half, quarter notes -8 <sup>th</sup> note triplets	Mastery of Novice and Intermediate plus  -Syncopations -Dotted 8 <sup>th</sup> notes -Quarter note triplets -1 beat groupings of notes greater than 4 (quintuplets, sextuplets etc.)	Mastery of Novice, Intermediate and Proficient plus  -Polyrhythms -32 <sup>nd</sup> notes
<b>Time Signatures</b>	4/4, 2/4	Mastery of Novice plus -3/4, 6/8,	Mastery of Novice and Intermediate plus -Changing time signatures -Cut time 2/2 -12/8, 9/8, 3/8	Mastery of Novice, Intermediate and Proficient plus -Any time signature -Irregular groupings of subdivisions (e.g. 7/8 2+2+3)
<b>Pitches and Key Areas</b>	D Major- One Octave (Possible A major for Violin only groups)	Mastery of Novice plus  D major-2 Octaves G major-2 Octaves C major-2 Octaves A major- 2 Octaves D minor- 2 Octaves	Mastery of Novice and Intermediate plus  Relative minor keys of all listed scales  E major- 2 Octaves F major- 2 Octaves Bb Major- 2 Octaves Eb Major 2 Octaves Ab Major 2 Octaves	Mastery of Novice, Intermediate and Proficient plus  3 Octaves, All key areas major and minor

<b>Clefs</b>	Violin-Treble Viola-Alto Cello/Bass-Bass	Violin-Treble Viola-Alto Cello/Bass-Bass	Violin-Treble Viola-Alto and Treble Cello/Bass-Bass and Tenor	Violin-Treble Viola-Alto and Treble Cello/Bass-Bass, Tenor, and Treble
<b>Accidentals</b>	Sharps, flats, naturals	Sharps, flats, naturals	Sharps, flats, naturals, double sharps, double flats	Sharps, flats, naturals, double sharps, double flats
<b>Dynamic Markings</b>	Forte, piano	Mastery of Novice plus  Mezzo forte, mezzo piano, crescendo, decrescendo	Mastery of Novice and Intermediate plus  fortissimo, pianissimo,	Mastery of all dynamic markings
<b>Articulations</b>	Staccato, ties	Mastery of Novice plus  Slurs, accents, sforzando, tenuto, fermata	Mastery of Novice and Intermediate plus  Carrot accents, grace notes, appoggiatura, portamento  Interpretation of articulation (e.g. staccato, slur, tenuto, grace note) markings based on stylistic/genre context	Mastery of all articulations, informed by style/genre/context