Unit 7: Pitch Memory Ideas

"Technique is Memory", William Primrose

This Unit begins with a quotation from one of the greatest violists and teachers who ever lived. Technique is Memory is the title of Primrose's book on viola technique, a book that stresses the importance of memory in music performance. This book is a valuable source of inspiration for any violist, or for any musician.

Viola Skills has three basic approaches to working with pitch in music

> **Pitch Memory,** also called "perfect pitch" or "absolute pitch". This is discussed here in **Unit 7 Pitch Memory Ideas** and then used in exercises in **Unit 8 Pitch Memory Scores**

> **Pitch Function,** also called "relative pitch". This will be introduced and discussed in **Unit 9 Pitch Function Ideas** and then used in exercises in **Unit 10 Pitch Function Scores**

> **Pitch Distance,** also called "interval recognition". This will be introduced and discussed in **Unit 11 Pitch Distance Ideas** and then used in exercises in **Unit 12 Pitch Distance Scores.**

For many violists the understanding and performance of pitch may be more difficult than the understanding and performance of rhythm. This would seem to be confirmed by the amount of time and the number of approaches devoted to aspects of pitch in this and other music learning programs. Success in performance, especially sight-reading requires a high level of mastery of pitch and rhythm as well as other aspects such as chords, tone color, form, performance practice, and style.

It is appropriate to begin the study of pitch with the concept of *pitch memory*, even though some musicians and psychologists insist that pitch memory, (also called perfect pitch or absolute pitch) is an inherited ability that manifests itself in early childhood. If this does not occur, some would claim, there would be very little possibility of learning it later. Other musicians and psychologists claim that any musician can develop absolute pitch with sufficient practice.

There is a position between these two extremes that says that <u>virtually</u> <u>every</u> musician can develop "<u>short-term</u> pitch memory." A rather simple example of short term pitch memory would if you hear two pitches, for example pitch A (the highest open string on the viola) and pitch D (the open string below it) and then the pitch A is played again, you can use <u>short term</u> pitch memory to identify that sound as pitch A. Short-term pitch memory can be gradually expanded and refined with practice to include more notes, and in some instances it may indeed become long-term pitch memory.

Robert Schumann recommended that whenever musicians hear a pitch – whether it is from a musical source or from another source like a doorbell or an animal sound – they should try to identify the pitch.

Another approach to developing pitch memory is to associate a particular pitch with its prominent use in a specific composition. For example, the pitch A could be associated with the opening of Beethoven's 7<u>th Symphony</u>, or, even more effectively, it could be associated with the A sounded by the oboe when the members of an orchestra tune their instruments.

An effective way to begin the development of pitch memory is to associate pitches with the open strings of the viola (C, G, D, A). For example, middle C played with the third finger on the G string may be related to the open C string. It is also possible to develop "short term" pitch memory by remembering pitches that have just been heard. For example, if the violist plays the pitch D, E, F, and G and then tries to remember the pitch D, this should be relatively easy.

For the study of pitch there are several important terms.
Staff refers to the five horizontal lines (or staff lines) on which notes are written.
Clef refers to a special sign used to indicate the staff line on which a certain pitch appears. This information is a ***key*** to understanding the music at the point. Indeed, the word clef means ***key*** in French. The ***viola clef*** or ***alto clef*** has two arches (or signs that look like backward letter C's) that mark the middle line of the five-line staff. The middle line of the viola clef is the pitch C. More specifically it is the pitch that

musicians call "middle C." This leads some people (especially violists) to claim that the viola is at the **center of the musical universe.**

Lesson 1: **Pitch Names and Other Terms.**

This lesson gives an extensive amount of information on pitch that may be treated as teaching material for some items or used as reference materials for other items, according to the student's knowledge and ability and the teacher's wishes.

Ex. 1 Open Strings shows the pitch names of the **open strings** of the viola -- A4, D4, G3, and C3. The letter indicates the name of the note; the number indicates the octave of the note. The term "**octave**" is used to describe the musical distance spanned by eight notes from one pitch to another pitch with the same letter name.

Ex. 2 Natural Notes Octave 3, and Ex. 3 Natural Notes Octave 4 introduce the most frequently used notes in most viola music. One way to understand "natural" notes is to point out that they are the white notes on a keyboard instrument like the piano or organ. Like the piano and other instruments, the viola uses the letters A B C D E F G to name the natural notes or pitches.

The lowest note on the viola is labeled as C3 at the beginning of Ex. 3 (bar 5). This note is produced on the lowest open string of the viola, the C string. The "3" in the designation "C3" indicates that there are three even lower Cs (C0, C1, and C2). These notes, however, are not normally played on the viola. The notes immediately following C3 are named D3, E3, F3, G3, A3, and B3. The note after B3 is C4, which is also called "middle" C not just by violists, but by all musicians. Notice that middle C is on the middle line of the viola clef or alto clef. The notes following middle C are named D4, E4, etc. The notes following C5 are named D5, E5 etc. and the highest note introduced in this lesson is C6. It is indicated in red here because it is considered to be out of the normal range. The viola is capable of producing even higher notes than C6, but in this Unit, we will not cover these notes.

In addition to letter names, the pitch of natural notes (i.e. notes without accidentals) may also be indicated by the syllables **Do Re Mi Fa So La**

and **Ti**. These so-called "Solfeggio" or "Solfege" syllables were derived from the opening syllables of the lines of an 8th century hymn to St. John, and they are widely used in musical training. There are two approaches to using these syllables. In this Unit we will use the so-called "fixed-Do" approach in which the syllables <u>always</u> refer to the <u>same specific letter-name</u> pitches. The "movable do" approach will be introduced in Unit 5, Pitch Function.

The fixed-do Solfeggio names are shown in Table 2

Table 2

Letters	**C**	D	E	F	G	A	B	C'
Solfeggio	Do	Re	Mi	Fa	So	La	Ti	Do

In this Unit we will use the fixed-Do Solfeggio system to help develop <u>pitch memory</u> for listening and performing. Other systems besides pitch memory will be used in other Units.

"Midi" numbers may also used to designate pitches. Midi stands for **M**usical **I**nstrument **D**igital **I**nterfac*e* and it is used for the production and performance of electronically generated music. Midi numbers show the musical distance between two consecutive pitches. If the distance between two Midi numbers is 1, this means there is a <u>half step</u> between the two pitches. If the distance between two midi numbers is 2, there is a <u>whole step</u> between the two pitches

On the viola the distance between E and F or between B and C is a half step. This means that the two fingers playing each pair of notes (EF or BC) are close together. The distance between the pitches C and D, D and E, F and G, or A and B is a <u>whole step</u>, which is <u>twice </u>the width of a half step.

One of the most important characteristics in the performance of pitch is to know what <u>position</u> should be used. Position Names are defined as the location of the left hand fingers on the instrument. In **Table 3** Position Names are shown in the first column.

Position Names are used frequently, but there may be slight differences among violists and teachers as to how the Position Names should be

determined. This has led to the development of another set of names that some music theorists call Location Names to distinguish them from Position Names. Location Names are not used as frequently as Position Names, but there may be greater clarity in the way the names are used. Teachers and students may wish to study and use both naming systems. However in *Viola Skills* we will use only **Position Names.** Teachers and students may also wish to experiment with **Location Names,** but they will not be used in lessons**.**

Table 3: Position Names and Location Names

Position Names	Location Names	C String	G String	D String	A String
Pos1	Loc0	C	G	D	A
Pos1	Loc1	C#	G#	D#	A#
Pos1	Loc1	Db	Ab	Eb	Bb
Pos1	Loc2	D	A	E	**B**
Pos1	Loc3	D#	A#	F	C#
Pos2	Loc3	Eb	Bb	F	C
Pos2	Loc4	E	B	F#	C#
Pos3	Loc5	F	C	G	D
Pos4	Loc6	F#	C#	G#	D#
Pos4	Loc6	Gb	Db	Ab	Eb
Pos5	Loc7	G	D	A	E
Pos5	Loc8	G#	D#	A#	E#
Pos5	Loc8	Ab	Eb	Bb	F
Pos6	Loc9	A	E	B	F#
Pos6	Loc10	A#	F	C	G
Pos7	Loc10	Bb	F	C	G
Pos7	Loc11	B	F#	C#	G#

Lesson 2: C Major Scale in Position 3

Lesson 2 begins the study of pitch with a C major scale in Pos3 on the G and D strings, rather than beginning in Pos0 on the C and G strings as some methods do. There are several advantages to beginning in Pos3.

1. The exercises begin in C major rather than in D major; they do not involve accidentals in the beginning lesson.

2. The player can locate the pitch C with the first finger by comparing it to the open C string. The player can then locate pitch D with the second finger, by comparing it with the open D string. The pitch E may found as being a whole step (or major second) above the pitch D. For additional help the notes C D E C may be played and compared with the opening notes of "Frére Jacques"("Brother John"). The pitch F can found as a half step above E. The fourth finger is placed next to the third finger.
If a student has difficulty with finger placement the teacher could demonstrate this and then assist the student in finding proper placement

3. The left hand does not have to reach out as far away from the body to reach third position) as it would to reach first position. This can be especially important for young violists with relatively short arms.

4. The distance between the fingertips in Third Position on the viola is similar to the distance that would be found on the <u>violin</u> in a passage beginning on an open string in First Position. This could be especially helpful for players who are switching from violin to viola.

In Ex. 2 the violist plays 6 patterns based on the pitches C D E and F. To find these pitches, there are several approaches violists could use depending on their level of performance and musicianship. Advanced violists could simply play through the six patterns in a moderate tempo and then move on to the next exercise. For students who are not at this level of performance and musicianship, they may need a step-by-step approach that could include such things as:

1. Listen to each bar alone with computer generated sound or have the teacher play it. Then play this bar.
2. Sing the notes of a pattern on syllables Do Re Mi Fa and then play it.

3. Listen to the teacher or advanced student partner play each pattern and then play it.

After playing several times through the 6 examples in Ex. 2 the student should be ready for a short Quiz. This involves the steps shown below.

1. One of the measure patterns that have just been studied and performed is chosen by the teacher or a student partner and sounded.

2. The student plays or sings the note names, or writes the notes of the pattern.

3a. The teacher or student partner judges the accuracy of the student response. If the student makes too many errors the exercise is repeated

Ex. 3. Finding Fingers on the D string involves "steps" or "seconds" in Position 5.

Ex. 4 is similar to Ex. 2 but now pitches are on the D string.

Ex. 5 involves playing 4 pitches on the G string and then 4 pitches on the D string. This collection of 8 pitches is called the ascending C major scale. The last two bars are the same C major scale but now with the pitches in descending order.

Ex. 6 presents pitches in thirds; Ex. 7 presents pitches in fourths, and Ex. 8 presents pitches in fifths. Thirds, fourths and fifths are called interval name and these will be studied in detail in Unit 4: Pitch Distance.

The general exercise plan discussed above will apply to every lesson in this Unit. When all of these lessons have been mastered, the student should have a solid foundation in the music theory aspects involved, a solid foundation in pitch memory (especially short-term pitch memory), and a solid foundation in pitch performance.

Lesson 3: **Natural Notes in Position 3**

This Lesson uses the same techniques as Lesson 2, but now in Position 1

Lesson 4: **The F Pentatonic Scale in Position 3**

Ex. 1 in Lesson 4 is the beginning of one of the most famous viola solos in the string quartet literature – the opening of the Dvořák String Quartet in F Major, the so-called "American Quartet". This quartet is written in F Major and has a key signature indicating that the note B is changed to Bb throughout the movement. However, the note Bb never appears in this excerpt, nor does the note E; in other words this excerpt is actually written using a <u>five-note scale</u> F G A C D, rather than a <u>seven-note scale</u> F G A Bb C D E.   This five-note scale is called a ***pentatonic*** scale and it is used in many folk melodies. Dvořák used it in the beginning of the American Quartet to represent American Indian music he heard when he visited the United States.

The F pentatonic scale uses the solfeggio syllables shown in **Table 2D.** As in other scales the first note of the scale is repeated an octave higher as the last note of the scale.

Table 2D

Notes	F	G	A	C	D	F
Syllables	Fa	So	La	Do	Re	Fa

Lesson 5: **F# Pentatonic Scale Patterns and Chromatic Scale Patterns in Fourth Position**

This lesson is based on the F# pentatonic scale in position 6 and follows the same presentation and drill procedures as Lessons 3 and 4. The **F#** pentatonic scale uses the solfége syllables shown in **Table 2E.** As in other scales the first note of the scale is repeated an octave higher as the last note of the scale

Table 2E

Notes	F#	G#	A#	C #	D#	F#
Syllables	Ke	Vi	Be	Na	Go	Ke

Table 2F shows the syllables of the pentatonic scale added to the syllables of the C major scale. This produces what is called the <u>chromatic</u> scale.

<div align="center">Table 2F</div>

Notes	C	C#	D	D#	E	F	F#	G	G#	A	A#	B	C
Syllable Names	Do	Na	Re	Go	Mi	Fa	Ke	So	Vi	La	Be	Ti	Do

These pentatonic scale syllable names were chosen for two reasons.
1. They use consonant first letters (N G K V B) that are easy to sing and that do not duplicate the consonants in <u>solfege</u> – D R M F S L T.
2. They make it possible to create twelve syllables by using 3 pitch names on each of the vowels A, E, I, and O.
The vowel sound "Ah" (as in "ma "and "pa) is used in Na Fa La.
The vowel sound "Ay" (as in "say" and "day") is used in in Re Ke Be.
The vowel sound "Ee" (as in "tree" and "see") is used in Mi VI Ti.
The vowel sound "Oh" (as in "go" and "snow") is used in Do, Go, So.

The first syllables – Do Na Re Go – were used to give a name to the complete set of syllables – **Donarego** . This name will be used throughout this Unit .   The association of the names of the syllables with the sound of the pitches can help students develop their sense of <u>pitch memory</u>. The basic concept for the **Donarego** System was developed by Lee Humphreys and the author.

Lesson 6: **F# Pentatonic Scale Patterns in First Position**

This lesson uses the same five sharp notes as Lesson 5, but now the lesson is in First Position and it starts on C# (Na).

Lesson 7: **Gb Pentatonic Scale Patterns in First Position**

This lesson is based on the Gb pentatonic scale in Position One and follows the same presentation and drill procedures as Lesson 5. The Gb Pentatonic scale and the F# Pentatonic scale are *enharmonic* scales. That means they have the same <u>sounds</u>, but they have different <u>letter</u>

<u>name spellings</u>. Notice that the same **Donarego** syllables are used for both the F# and Gb pentatonic scales as shown **in Table 2G**

Table 2G

# Notes	F#	G#	A#	C#	D#	F#
Syllables	Ke	Vi	Be	Na	Go	Ke
b Notes	Gb	Ab	Bb	Db	Eb	Gb

Table 2H shows the complete set of **Donarego** syllables

Table 2H

Natural and **Sharp** **Names**	C	**C#**	D	**D#**	E	F	**F#**	G	**G#**	A	**A#**	B	C
Syllables	Do	Na	Re	Go	Mi	Fa	Ke	So	Vi	La	Be	Ti	Do
Natural and **Flat** **Names**	C	**Db**	D	**Eb**	E	F	**Gb**	G	**Ab**	A	**Bb**	B	C

There is another system for naming pitches known as Mod12 or (Modulus12). It consists of the numbers 0 through 12 that are matched to the pitches of the chromatic scale. Like **Donarego** syllables and pitch names Mod12 numbers apply to pitches regardless of the octave they are in. **Table 2I** shows Mod12 numbers in comparison to Pitch Names, Donarego syllables and Midi Numbers in a <u>descending</u> octave from C5 to C4 (middle

Table 2I

Mod12 Numbers	Pitch Names	Donarego Syllables	Midi Numbers
0	C	DO	60
11	B	TI	59
10	A# Bb	BE	58
9	A	LA	57
8	G# Ab	VI	56
7	G	SO	55
6	F#	KE	54
5	F	FA	53
4	E	MI	52
3	D# Eb	GO	51
2	D	RE	50
1	C# Db	NA	49
0	C	DO	48

Lesson 7: Gb Pentatonic Scale Patterns in First Position

 This lesson is based on the Gb pentatonic scale in position 6 and follows the same procedures as lessons 5 and 6.

Lesson 8: Gb Pentatonic Scale Patterns in Position

This lesson is based on the Gb pentatonic scale in position 1 and follows the same procedures as lessons 5, 6, and 7.

Lesson 9: Two Octave Scales: Ascending and Descending (Major, Pentatonic, and Chromatic)

This lesson is both a review of Unit 2 and also a look ahead to Unit 3.

Ex. 1 presents the C Major Scale Ascending and Descending
Ex. 2 presents the Pentatonic Scale, Ascending and Descending. The scale is presented first in F# Pentatonic and then in Gb Pentatonic. These two scales are enharmonic. They are written differently, but they sound the same.

Ex 3 presents the 12-note Chromatic Scale, ascending with sharp notes and descending with flats. This is customary in the spelling of the chromatic scale.

***Lesson 10*: Chromatic Scale with Letter Names, Range (High, Mid, Low) and DoNaReGo Syllables**

This is a challenging exercise, and teachers and students may prefer to do these exercises in small segments with other materials in between. Each staff contains four quarter-note beats. Each beat is divided into two eighth notes with the same pitch. Each "pitch pair" is designated below the staff with a pitch letter name and an octave number enclosed in brackets. For example Ex. 1 is marked **(C 3) (C# 3) (D 3)**.

The teacher announces that one of the four pitch pairs in Ex. 1 will be played, and then plays (for example) the two pitches in the third beat of bar of Ex. 1). If the student identifies this as (**D 3),** the teacher indicates that this is correct. If the student chooses another answer**,** the teacher indicates that this incorrect and replays the example until the student identifies it correctly. The teacher and student repeat this process for all of the four note pairs in Ex. 1 with at least two of the note pairs repeated. This process is then repeated for Ex. 2 and Ex. 3. Then the teacher and student repeat this process for all remaining Exercises. Then the teacher plays pitch pairs from various Exercises in random order and the student identifies them.
Finally the teacher plays pitch pairs from various Exercises in random order and the student <u>performs</u> them on the <u>viola</u>.

Lesson 11 is basically the same as ***Lesson 10***, but now the identification consists of a word (Low, Mid, High) indicating the range, and a ***Donarego*** syllable (**Do, Na, Re, Go, Mi, Fa, Ke, So, Vi, La, Be, Ti)** indicating the pitch. Testing procedures can be the same as in Lesson 10, or teacher and student may explore other approaches.

Lesson 12 uses Donarego syllables in groups of three, based on vowel sounds Do, Na, Re, Go.

Lesson 13 presents one-octave scales in Positions 0 to 6 with pitch names, donarego syllables, and fingerings.