

More than...

101 Uses for Scales

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Scales of all sorts—and by extension arpeggios and chords—can be adapted to form exercises for many of the countless skills a flutist needs to acquire. Below is just a sampling of some of the uses for scales—certainly lots more than 101!

Colour Codes

The following indicates appropriate levels to *begin* studying these skills: the levels correspond roughly to the student levels given and outlined in the *Selected Repertoire Guide* prepared by the Pedagogy Committee 2009 (NFA), then Victoria Conservatory of Music Provincial Syllabus (VCM), and the Royal Conservatory of Music, Toronto examination syllabus (RCM). An exercise given for a particular level can also be studied at any higher level, possibly at earlier levels, and in some cases could become sources of on-going study as deemed appropriate by the teacher.

Green indicates level A/B NFA-- VCM Grade 1, RCM Grade 2

Blue indicates level C/D NFA-- VCM Grade 2/3, RCM Grade 4

Purple indicates Level E/F NFA-- VCM Grade 4-6, RCM Grade 6/8

Red indicates Level G/H NFA-- VCM Grade 7-8, RCM Grade 9

Orange indicates Levels I/J/K NFA-- VCM Grade 9+, RCM Grade 10/ARCT

Universal Truths

These are the skills all flutists must achieve in order to play the instrument at any and all levels. Use scales of a comfortable range and tempo, played from memory. Employ appropriate breathing. Create, exercise and review a mental checklist of what's to be put in place for each exercise. Modify the checklist as appropriate for each stage of development. Use external media as desired, i.e. mirror, tape recorder, video. Consider combining with other exercises below or using as a warm-up exercise.

- 1) **Posture** – carrying the body in a poised manner
- 2) **Breathing** – taking air into the body
- 3) **Blowing** – sending air out of the body
- 4) **Holding the flute** – using the hands to carry the flute into position to receive breath from the body
- 5) **Embouchure formation** – poising the lips to direct the breath into the instrument

Musicianship

These exercises are mostly intellectual and repetitive practical exercises. Begin at the earliest levels with major and *natural* minor scales only. Develop and present only those scales with which a student is able to work comfortably. At first, both major

and minor scales may be taught as 5-note, tonic to dominant patterns, progressing to full octave scales. Before moving on to more complex material, students should have mastered a majority of the previous skills and be able to demonstrate the them “on command.” All exercises may be studied via pencil-to-paper work, interval study (when appropriate), aural recognition, melodic playback, visual recognition, and verbally.

- 6) **Sound of major and (natural) minor scales** – aural recognition of two different scales.
- 7) **Spelling (note names)** – verbal, written notation with accidentals, as well as the tactile feel of finger movement. Emphasize the derivation of the word “scale” from the Italian word *scala* meaning ladder; insist on consecutive steps in both notation and letter patterns.
- 8) **Transposition** – establish how sound of scale is preserved even when changing starting pitch.
- 9) **Sharps and flats** – establish how accidentals are used and are required to preserve the sound of major and minor scales when the tonic note is transposed.
- 10) **Key signatures (major and natural minor scales)** – establish the number of sharps and flats, names of sharps and flats, name of the tonic note, and ensure interchangeability between these facts.
- 11) **Concept of relative minors** – identify pairs of major and natural minor scales which share a common key signature.

- 12) **Reinforcing the importance of tonic (western tonal usage)** – establish the pull of the tonic note by always departing from and returning to name note of the scale over a 1^{8va} or 5-note pattern (tonic to dominant)
- 13) **Reinforcing the secondary importance of dominant (western tonal usage)** – establish the secondary pull of dominant by using it as structural point in small 5-note scale patterns in both major and minor keys. Sets the basic outline for arpeggios, which may be introduced at this time.
- 14) **Scale degrees by number and name** – establish common names of *tonic, supertonic, mediant, subdominant, dominant, submediant, subtonic* &/or *leading tone*, as well as scale-degree number. If working arpeggios, note how middle note of triad is the mediant note for both major and minor.
- 15) **Setting “the pattern”** – use scale patterns to act as a computer program for the brain and fingers at the start of a key area. Prepare each change of key signature with the related scale.
- 16) **Tetrachords** – show major scales to be constructed out of two matching halves, one starting on *tonic*, ending on *subdominant*, and the other starting on *dominant*, ending on *tonic*. A good precursor to introduction of circle of fifths and interval construction of major scales.
- 17) **Interval construction of scale patterns** – teach major, minor in three forms and chromatic scales using whole steps, half steps and augmented 2nds.
- 18) **Minor scales in three forms** – present standard alterations for forms of the minor scale, using both numerical degrees and interval construction.
- 19) **Circle of fifths** – chart the progression of keys up and down by fifth. Demonstrates foundation for closely related keys, and reinforces concept of relative major and minor keys.
- 20) **Enharmonic spellings** – show common fingerings for multiple notes as necessitated by ascending and descending variations of the chromatic scale in written form, and “over-lap” keys on circle of fifths.
- 21) **Double sharps/flats** – demonstrate alteration by whole step as found in some forms of certain minor scales. Double flats may be introduced in conjunction with double sharps, although not present in any major or minor scales.
- 22) **Concept of parallel major and minors** – – identify pairs of major and minor scales which share a common tonic note.
- 23) **Numerical interval names (unison, 2nd, 3rd, etc.)** – identify basic intervals by number. Intervals are to be learned up and down from tonic, as well as between different degrees of scale. May be used a reinforcement between different forms of the minor scale and to establish construction of triads. Memorization of these intervals is recommended.
- 24) **Foreign terminology** – apply various musical terms to the playing of scales. Begin with standard Italian musical terms, moving to other languages as desired.

- 25) **Less traditional scales** – experiment with church modes, pentatonic scales, blues scales, and other ethnomusicological or intellectually created scales or scales of limited transposition (chromatic scale, whole tone scale, diminished seventh chord, augmented chord, octatonic and nonionic scales). All may be learned using skills and techniques above, as appropriate.
- 26) **Interval qualities (diminished, major, minor, augmented)** – learn intervals by quality up and down from tonic, as well as between different degrees of scale. Use as a tool to reinforce difference between forms of the minor scale and establish quality of triads (major, minor, diminished, augmented).
- 27) **Naturally occurring seventh chords** – practice over major and harmonic or melodic minors. Build a chord on each degree of the scale, applying key signature and alterations for the minor scales. Name seventh chords by quality of triad plus quality of seventh interval, as well as by the common abbreviated names. The same exercise may be done earlier with simple triads.

Tone Development

These exercises rely on a continual refinement of the skills outlined under *Universal Truths* above. Scales for these exercises should be chosen from appropriate learned materials. Tempo should be selected according to the need and ability of the student, i.e. finger dexterity vs. breath requirements. Work through all registers of comfort, pressing on outsides of range as desired.

- 28) **Basic dynamics** – apply one dynamic level per scale, beginning only with general “softer” and “louder.” Add specific dynamic indications (*p* or *f*), outer extremes of dynamic or *mezzo* dynamics as appropriate to student ability. Use regular or random patterns, written out or not as desired.
- 29) **Block dynamic changes** – apply *p* or *f* indications to individual notes or groups of notes. Add outer extremes of dynamic or *mezzo* dynamics as appropriate to student ability Use regular or random patterns, written out or not as desired.
- 30) **Tonal inflections** – apply a variety of adjectives and adverbs to the scale in order to change its character. Use all varieties of descriptors including colours, tastes and timbres, as well as general adjectives and adverbs.
- 31) **Breath kicks (preparation for vibrato)** – apply a number of breath kicks to each note of a scale played one note per breath. Set metronome to 60 and measure the number and speed of kicks. Begin with one kick per beat, moving to 2, 3, 4 and finally 5 or 6 kicks per beat (the rough speed of the average vibrato).
- 32) **Ping-pong vibrato** – apply a series breath kicks to each note of a scale played one note per breath, where the breath kicks bounce slowly at first, gaining in speed until appropriate vibrato speed and quality is reached.

- 35) **Ready-steady vibrato** – apply vibrato to each note of a scale played one note to breath.
- 34) **Mature vibrato** – apply vibrato to scales of varying speeds, played under a slur, focusing on connecting the vibrato between notes.
- 35) **Vibrato control** – add or remove vibrato on individual notes of a slowly played scale. Modify speed or depth of vibrato on individual notes of a slowly played scale.
- 36) **Definition of low and high register** – select and apply a good technique for each register.
- 37) **Raw sound (resonance work)** – eliminate all elements but the absolute response of the tone production mechanisms by applying tongueless attacks to single notes of scale.
- 38) **Registral flexibility** – play scales in intervals of up to one octave, i.e. up a 4th, down a 3rd. Play slowly, all-slurred, breathing as necessary, but repeating the previous note after breath.
- 39) **Gradient dynamics** – apply patterns of crescendo and diminuendo to single notes, full octaves, double octaves or full ranges of scale.

Rhythms

Scales for these exercises should be chosen from appropriate learned materials. All exercises should be performed with metronome or appropriate kinesthetic medium. They may be performed with or without applied meters. Apply constant and consistent mental counting, using an appropriate system of syllabication. Support with appropriate notation materials. Rhythms may be played across moving notes or as repeating patterns on a single note. Patterns of slurs and tongues may be applied if desired.

- 40) **Setting basic beat** – coordinate single tones with steady beat. Set metronome at various tempos and play single notes on each click.
- 41) **Setting basic subdivisions** – coordinate subdivisions of 2, 3 or 4 even notes within a beat. Start with repeated subdivisions on a single pitch, following with short segments of moving notes only as competence is gained. May alternate 1 beat full, 1 beat subdivided: n.b. in this manner triplet outlines tetrachords; quartet outlines tonic/dominant when used on first 5 notes of scale; duple outlines triad when played over the first 5 notes of then scale and if mediant is repeated.
- 42) **Hold-over notes** – hold notes over for a measurement of time more than one beat (full beats only!)
- 43) **Basic rests** – incorporate patterns with rests, emphasizing the hold of the previous note up to the start of the rest.
- 44) **Simple syncopations** – combine the skills of subdivision and holding over.
- 45) **Basic dotted rhythms (partial beat)** – combine the skills of subdivision and holding over.

- 46) **Switching basic subdivisions** – alternate beats of even subdivisions: 2:4, 2:3, 3:4, 2:3:4
- 47) **Uneven rhythms, interior to the beat** – create various combinations of subdivisions without requiring hold-overs.
- 48) **Counter-rhythms** – drag a series of notes across a set number of beat using uneven subdivision. Let metronome keeps steady beat while flutist plays the required number of notes across, foot marks the pattern repeat. Begin “easy” with 3:2 and 2:3, moving on to 4:3 and 3:4, 5:2 and 2:5, 7:2 and 2:7 as skills develop.
- 49) **Extended syncopations** – play syncopations which maintain off beat status for the duration of the exercise.

Meter

Scales for these exercises should be chosen from appropriate learned materials. All exercises should be performed with metronome or appropriate kinesthetic medium. Apply constant and consistent mental counting, using an appropriate system of syllabication. Support with appropriate notation materials. These exercises work best when prepared with movement sequence and appropriate verbalization

- 50) **Elementary concept of meter** – play on beats, slurring in repeating patterns of 2, 3 or 4. Count 1 2 (3) (4) with “1” always falling on first note of slur. Tongued patterns may also be used, applying stress to “1.”
- 51) **Patterns of Strong/weak beats within meter** – exaggerate strong beats, gradually reducing the stress to accepted levels.
- 52) **Grouping of beats within a meter signature** – in fast tempos, combine groups of beats into single pulse, i.e. 3 beats felt 1-to-the-bar, cut-time, fast vs. slow compound meter. Let metronome maintain smaller beat while kinesthetics maintain larger beat.
- 53) **Simple changes of meter** – playing on the beat only, group together random groupings of beats under a slur: this simulates changing numbers of beats in a bar while maintaining consistent pulse.
- 54) **Simple mixed meters (5/8 7/8 8/8)** – played as above with patterns of 2 or 3 notes slurred according to meter. Metronome maintains steady pulse, kinesthetics reinforce “peg-leg” stresses.
- 55) **Simple exchanges of meter (3/4 to 6/8; 4/4 to 8/8)** – alternating bars of simple and compound meter. Metronome maintains subdivision, kinesthetics reinforce larger stresses.
- 56) **Random meters** – diminish or increase the length of each successive scale note by one subdivision note. Metronome maintains subdivision, kinesthetics reinforce larger pulses.
- 57) **Truly random meters** – play individual notes of scale for one full bar of any meter, mixing up meters with as much complexity as possible.

Fingering

Chose scales from learned materials in good keys to reinforce the desired finger patterns. Employ appropriate speed. Apply articulation patterns as desired. Use external media reinforcement as necessary, but do not rely on these to indicate correctness – muscles and ears, and maybe eyes, must tell you this. Apply “circular” patterns at certain strategic points within the scale to drill desired fingerings.

- 58) **Establish default fingerings** – work with the primary fingerings of each note.
- 59) **Learning the fingering chart** – use chromatic scale to learn to read the fingering chart. Keep to tactile response at this point, rather than notation reading.
- 60) **Correct fingering problems** – drill troublesome fingerings such as LH1 and RH pinky.
- 61) **Correct awkward movement of fingers** – drill for smooth, clean movement of fingers up and down from the base joint, avoiding buckling, dragging down, rod-resting, squeezing and kick-back of LH thumb.
- 62) **Close finger work** – strive for engage-and-release motion of the finger muscles, keeping fingers relaxed and arched over the keys. Practice very slowly.
- 63) **Three fingerings of B^b/A[#]** – select the fingering for B^b/A[#] that brings about the smoothest transition.
- 64) **“Lazy” fingerings** – employ extra fingers down to stabilize flute on some open-fingering notes. Apply to slowish scales, but note application to faster passagework and carry-over into dexterity studies.
- 65) **“Useful” fingerings** – work the more responsive fingerings for awkward notes (primarily high register). Robert Dick, *The Other Flute*, Altès, *Méthode Complète*, and Pellerite *Guide* are among the good sources for these fingerings.
- 66) **“Bright” tones** – employ fingerings which provide an increased brightness to the tone colour and thus increased carrying power. Not all scales work, but many can be derived using Robert Dick’s, *The Other Flute*.
- 67) **“Diffuse” tones** – employ fingerings which offer fewer overtones in the sound and thus decreasing carrying power. Not all scales work, but many can be derived using Robert Dick’s, *The Other Flute*.
- 68) **Quartertones** – employ fingerings for quartertone scale for both open-hole and closed-hole flute using Robert Dick’s, *The Other Flute*.
- 69) **Comfort assistance** – apply “alternate” fingerings for assistance in controlling dynamics and pitch at extreme levels.

Articulation

Scales for these exercises should be chosen from appropriate learned materials. Tempo should be selected according to the need and ability of the student relative the requirements of the exercise. Many exercises may be performed either by repeating

the pattern on a static note for a prescribed period of time or number of repetitions OR performed across a series of constantly moving notes. Every effort should be made to be consistent with terminology in describing the following techniques. Support with appropriate notation materials in order to establish correlation between printed notation and ideal sound response.

- 70) **Basic tongue stroke** – releasing the air with “T” (tongue behind or at the teeth), or “Thp” (tongue through the lips), or both according to taste.
- 71) **Simple staccato** – light separation of notes without stopping air with either tongue or glottis.
- 72) **Legato/slur** – smooth carriage of air between two notes of different pitch. Initiated by basic tongue stroke. May also be used to reinforce breath length.
- 73) **Single tongue with different consonants** – releasing the air with a variety of consonants. Use “K” and “D” as part of routine performance practice (N.B. “G” not recommended because of the location far back and down in the throat.) For special effect use: “H” for solid starts in soft to moderate dynamics; “L” for rapid ululation—may come out as extremely fast double tongue; “N” for nudges to mimic a slur when a little help is needed; “Thp,” if not presented earlier, as a possible default articulation; “P” for single note starts on sustained notes in moderate to very soft dynamics—delay introduction so that start can be controlled with air/support, not the lip. May practice as simple, slow alteration of “T” and “K” in preparation for multiple tonguing. May apply all above along with patterns of slurs if desired.
- 74) **Simple Louré (slur over dots combination)** – initiating the figure with crisper tongue stroke, enunciating interior notes with less defined stroke for a combination of smoothness with slight separation. Compare to the same notation as realized by string instruments.
- 75) **Accent mark** – using the air in conjunction with the tongue to add strength to start of note. May incorporate a lift prior to start of accented note.
- 76) **Coordinated on-sets** – practice tongueless attacks for the purpose of coordinating the start of the air with the start of the sound, as well as to ensure that all attack originate with the air not the tongue.
- 77) **Double tonguing** – to be entered into ONLY after great single tongue is established (all techniques described above). Perform over moving notes as well as repeating patterns of 2, 4, 8, 16 and 32 on single pitches of scale.
- 78) **Triple tonguing** – to be entered into ONLY after great single tongue is established (all techniques described above). Perform over moving notes as well as repeating patterns of 3, 6, 12, 24 on single pitches of scale. Any pattern of “T” and “K” may be used according to taste and practice.
- 79) **Vowel colouration** – experiment with a full range of vowel shapes inside the mouth.
- 80) **Standardized patterns of slur and tongue** – use articulation patterns for 3, 4 and 6 note groups as given in sources such

as Taffanel-Gaubert, *18 Exercices Journaliers*. Practice in moderate to quick tempos. May set metronome goals if desired.

- 81) **Fluttertongue** *** – employ over long slurs and individual note starts. *May be learned much earlier.*
- 82) **Variations on staccato** – staccatissimo and accented staccato (carat)
- 83) **TeRe** – on quick dotted rhythms in duple and triple subdivision. The closest English pronunciation equivalent is TooDoo.
- 84) **Clipped TK (or KT)** – on over-dotted rhythms in duple and triple subdivision.
- 85) **Legato as opposed to merely slurred** – bump-free, easy and in complete control.
- 86) **Variations on loured** – tenuto marks or accents superscripted by slur in order to produce varying kinds of undulating effects and weeping characters.
- 87) **Composite note starts** – attacks which combine elements of dynamic, tongue stroke and tone colour: *forzando*, *sforzando*, *rinforzando*, elongated accent mark or *chevron*, and *forte-piano*. Practice with full range of dynamics, keeping each in the overall dynamic context.

Dexterity and Range Extension

The following exercises may be used to gain more ease and fluidity over the full range of the flute. Before embarking on these exercises, all scales—major, minor in three forms, chromatic and perhaps whole tone—are required to be learned over a minimum 2^{8va} range.

- 88) **Speed** – with metronome set at 60, play each scale, two octaves, one note per beat, one breath per octave. Follow with two notes per beat, one breath per two octaves. Follow with three, then four, then five notes and so on to eight notes per beat, one breath per full scale. On first go around, it is unlikely that students will reach 8 notes per beat on all or even on any scales: count 4 or 5 notes per beat as good. Eventually work to 12 notes per beat (perhaps skipping 11). Scales with lower tonics tend to be easier than those with higher ones. Scales in 3, 5 or 6 notes per beat will require turn-around note at the bottom.
- 89) **Range Extension** (extended scales) – select a key and play 2^{8va} segments in that key, beginning on the lowest note in the key available on the instrument (low B, C or C#). Move starting note up to next note in scale and repeat. Continue the process until the highest note available in the key on the instrument is reached (as desired): work eventually into the 4th octave. Flip the scale upside-down and return to the bottom by the same method. Use metronome at a comfortable tempo that allows for only one breath per segment. The easiest practice pattern is to move keys up or down through the circle of fifths. Use major and harmonic minor scales. An easier form of this exercise may be performed by using only 1^{8va} segments of each scale.

- 90) **Catch-breaths** – begin slowly increasing speed as comfort increases. Use tongueless attack, breathing in between every pair of notes and striving for maximum amount of air out on each note. Aim for equal “sharpness” to note attack and breath. Scales played this way at a quick tempo set up a panting motion and may be played almost endlessly.
- 91) **Flourishes** – use simple and complex “standard” patterns. Play with metronome and cover full range of the instrument either in one go or in tonic-to-tonic segments. Use altered fingerings as desired.
- 92) **Fluidity** – extended grace note runs as given in Trevor Wye, *Practice Book 5*. Go both to and from top note, as well as to and from bottom note. Use major, all minor, chromatic and whole tone scales.
- 93) **Flexibility at high speed** – tonic trills as given in Marcel Moyse, *Grands Liaisons*. Practice both measured and unmeasured using metronome to dictate placement of moving note. Practice 1^{8va}, 2^{8va} or full range. Use tonic from any and all registers. Use major, all minor, chromatic and whole tone scales from any tonic.
- 94) **Baroque figuration** – Adapt most figuration patterns in 3, 4 and 6 note groupings to performance on a scale. Move patterns consecutively up a scale through either single groups or repeated groups per pitch. With each pattern, practice as written for each pitch OR keep single note stationary while moving triolet OR keeping triolet stationary while moving single note.

Ornamentation

Use major and melodic minor scales for these exercises: chromatic scales also work for grace notes, mordents, grupetti and straight trills. Modify the rhythms as applicable and necessary, otherwise slow and sustained is best. Apply altered fingerings as desired. Directional ornaments may be inverted as you cross the top or not, if desired. Ensure equality of tone and fingering on all notes of the figure.

- 95) **Single grace notes (before the beat)** – from above or below
- 96) **Double grace notes (before the beat)** – à la trill and straight up or down.
- 97) **Triple grace notes (before the beat)** – à la turn and straight up or down.
- 98) **Double grace notes (between notes)** – small connecting steps either up or down depending on direction of scale.
- 99) **Measured trills** – each note trilled according to requirements of the key signature.
- 100) **Unmeasured trills** – each note trilled according to requirements of the key signature.
- 101) **Standard mordents** – small, one alteration trills to the note above in the key, on the beat, holding out the duration of the note value.
- 102) **Inverted mordents** – small, one alteration “trills” to the note one half-step below, on the beat.

- 103) **Single appoggiaturas** – stressed on the beat, moving up or down according to the direction of the scale.
- 104) **Grupetti in duple subdivision** – standard placement between notes. Turns moving both up first and down first. May apply standard accidentals.
- 105) **Grupetti in triple subdivision** – standard placement between notes. Turns moving both up first and down first. May apply standard accidentals.
- 106) **Grupetti placed atop principal note** – direct from the principal, as well as from above or from below.
- 107) **Composite ornaments** – add upper appoggiatura to unmeasured trills and mordents, lower appoggiatura to unmeasured trills and inverted mordents.
- 108) **Composite trills with a variety of termination** – add upper or lower appoggiaturas and either turn, rhythmic anticipation or stopped anticipation to unmeasured trills
- 109) **Coulé** – apply to scales in thirds
- 110) **Tremolos** – perform tremolo of varying intervals (3rd, 4th, 5th and 6th) on each note of scale: same interval for full scale, accommodating key signature throughout. Not all scales work for all intervals, but appropriate scales can be sought out using sources such as Pellerite, *A Modern Guide to Fingerings on the Flute*.
- 111) **Constant trills** – play scale at quick tempo under single slur, trilling each note. Perform with and without connecting turns.
- 112) **Preludes** – make up small, one-breath prelude figures to carry from one note to the next of a scale.
- 113) **Agogic accents** – simple duple and quarto inégale

Extended Techniques

Select scales from learned materials, in a register and key conducive to studying these skills. Even though shown here for middle-level study, it is possible to introduce these skills very early in flute study—some skills are possible even in the first lessons (marked ***). Early introduction provides an opportunity for these techniques to become a familiar part of the total technique of the instrument. Use scales at a slowish tempo and employ metronome only once ease of response is achieved. Emphasize tone and musicianship, not the technique. These skills make great icebreakers for transfer students.

- 114) **Harmonics** – play top octave scales using only harmonic fingerings for notes OR play low octave scales in sustained notes, playing full harmonic series available on each note.
- 115) **Harmonic series washes** – employing fundamental fingerings and rush of air to produce successive layers of harmonics present in the tone of individual notes.
- 116) **Multiphonics using harmonics** – use fingerings from B⁰ to E^{b2} and play scales in simultaneous double octaves. Use chromatic scale, and full or partial major/minor scales as range allows. Same technique may be applied to playing 2nd and 3rd partials OR 3rd and 4th partials simultaneously.

- 117) **Slow Vibrato** – employ deliberate vibrato of both steady and variable speeds, either pushed on top of the pitch or sagged underneath.
- 118) **Whistle tones ***** – use light wispy tones produced with minimal air and complete embouchure control. Begin with top octave fingerings and play scales from top down.
- 119) **Timbral trills ***** – employ any fingerings for microtone trills on individual notes of any scale. Use any source of fingerings for this.
- 120) **Key clicks ***** – slap selected fingers onto the keys in order to produce percussive tone. Practice with or without covered embouchure hole, with or without coordinated tone, with or without coordinated articulation.
- 121) **Sing-and-play ***** – sing into the instrument while playing specified notes. Practice sparingly and use good, safe vocal technique as far as you are able. Sing in unison/octave with flute pitches in the 1st or 2nd octave, or allow one voice to hold pedal note while other voice performs scale. **Take on 3rd octave fingerings only as this technique develops.**
- 122) **Pitch bending ***** – use all tone producing mechanisms and embouchure flexibility to bend pitch up, down or in wavering fashion.
- 123) **Jet whistles** – employ a force of air on individual notes of a scale.
- 124) **Blow Darts (Hub-T)** – employ a determined, tongueless attack and close off the end of the note with hard tongue. Perform with or without sounding tone.
- 125) **Flute Pizzicato** – spit quick bursts of air from mouth only.
- 126) **Microtone Scales** – employ a variety of fingerings to fill in the multitude of small fractional pitches between notes of the standard scale.
- 127) **Fingered glissandi** – employ a fingerings to glide pitch up or down through minute changes of pitch. May need to perform in very small scale segments, moving on to longer scales
- 128) **High-pressure washes** – employ a combination of harmonic series washes and sing-and-play techniques to produce colourful wash of expanding harmonics.
- 129) **Shakuhachi** – remove headjoint and play standard instrument as an end-blown flute using body only
- 130) **Circular breathing** – the ultimate in continuous scales!

Ensemble playing

Select scales which are familiar to all ensemble players. Scales are best played in thirds or sixths rather than unison unless intonation is the specific skill being studied, and even then unison is somewhat down the road. One leader is designated (may be rotated) to direct ensemble changes by using body, face or any other non-verbal cues. The dimension of requiring the leader to hold onto any one figure until s/he is convinced that

the entire ensemble is playing with uniformity may be applied to any of these exercises.

131) Follow the leader – scales played in 3rds and 6ths with a full sound, being aware of the variety of clues given by the individual players as to their expectations and intentions. Practice cuing entrances and exits, tempo, rubato, dynamics and musical character, using only non-verbal clues.

132) Intonation – using series of suspensions, players can focus on creation and resolution of dissonances. Perform the scales with full tone, placing player with the strongest tone on the bottom note. Overlap the rhythms so that the suspensions are created and resolved: either voice may move first. For smooth flow, do not repeat the top note of the scale.

