



JEREMY CROSMER

Cellist, Composer

Scale Book

- NOTES -

This book is intended to provide an alternative way to teach and study scales and arpeggios. The emphasis is on two priorities for the left hand:

1. Hand Shape

Closed or Extended between 1st and 2nd finger

Changing hand shape when shifting

2. Shifting

Distance traveled in half-steps

Which fingers are replacing or being replaced

Coming in and out of thumb position

There are many fingering options presented, some of which are non-traditional. The purpose is to provide a way to comprehensively cover all hand shape and shifting parameters. Once understood, these parameters can be adapted to any scale fingering, and should be applied to etudes and repertoire.

The order of the scales and arpeggios is also presented as a non-traditional alternative. Instead of using the Circle of Fifths, the scales are ordered by range and difficulty. Teaching them in this order highlights certain similarities of shifts and hand positions, progressing to high range scales and eventually scales with many sharps and flats. While it may be counter-intuitive at first, the difficulty curve progresses at a much more constant rate than the Circle of Fifths. However, it is not necessary to teach or study the scales in arpeggios in this order.

- INDEX -

- Instructions - Symbol Guide
- 2 Octave Scales
- 2 Octave Arpeggios
- 3 Octave Scales - Simple Fingering
- 3 Octave Arpeggios
- 3 Octave Scales - Universal Fingering
- Auxiliary Scales:
 - 4 Octave Major
 - 3 Octave Alternate Major
 - Shift after 1st note, Shift after 2nd note
 - 4 Octave Harmonic and Natural Minor

Instructions

Symbolic Guide



Here is a simple guide to reading the fingerings for these scales.

x = extension. Typically it is between 1 x 2. The thumb should be underneath 2 when extending. Sometimes in thumb position or 5th, 6th or 7th positions, 3 x 2 x 1 will be marked. This just means that there is a whole step between each finger.

Boxes are included at each shift, and explain which direction and how far to shift:

- ↑+ Shift up so that 1st finger is one half-step above previous 4th finger.
- ↑++ Shift up so that 1st finger is two half-steps above previous 4th finger.
- ↓+ Shift down so that 4th finger is one half-step below previous 1st finger.
- ↓++ Shift down so that 4th finger is two half-steps below previous 1st finger.
- 4→2 Shift back so that 4th finger moves to 2nd finger place, then play the next note.
- 1→3 Shift forward so that 1st finger moves to 3rd finger place, then play the next note.
- 4x→2 Remain extended, and shift so that 4th finger moves to 2nd finger place, then play the next note.
(note: unless specified with an "x" like this, shifts are in closed positions rather than extended)

The bracket below a set of notes indicates those notes are in Thumb Position.

Before entering Thumb Position, bring the thumb up a whole step below the first finger on the last note before thumb position, then shift.

Examples:

(one half step between these notes)

D^b Major

(Shift up two half-steps, then remain in thumb position until the end of bracket)

2 Octave Scales

Simple Fingering



C Major

0 1 3 4 0 1 3 4 0 1 2 4 0 1 2 1 0 4 2 1 0 4 3 1 0 4 3 1 0

D Major

1x2 4 0 1x2 4 0 1 3 4 0 1 3 4 3 1 0 4 3 1 0 4 2 x 1 0 4 2 x 1

E^b Major

2 4 0 1 x 2 4 0 1 x 2 4 1 x 2 4 1 2 1 4 2 x 1 4 2 x 1 0 4 2 x 1 0 4 2

↑+ 4→2 1→3 ↓+

F Major

4 0 1 2 4 0 1 2 4 0 1 x 2 4 1 2 1 4 2 x 1 0 4 2 1 0 4 2 1 0 4

↑++ ↓++

G Major

0 1 3 4 0 1 3 4 0 1 2 4 1 3 4 3 1 4 2 1 0 4 3 1 0 4 3 1 0

↑++ ↓++

A Major

1x2 4 0 1x2 4 0 1 3 4 1 3 1 2 1 3 1 4 3 1 0 4 2 x 1 0 4 2 x 1

↑++ ↑+ ↓+ ↓++

B^b Major

2 4 0 1 x 2 4 0 1 x 2 1 2 4 1 2 3 2 1 4 2 1 2 x 1 0 4 2 x 1 0 4 2

1→4 ↑++ ↓++ 4→1

D^b Major

1x2 4 1x2 4 1 2 4 1 2 4 1 3 4 3 1 4 2 1 4 2 1 4 2 x 1 4 2 x 1

↑+ 4→2 4→2 ↑++ ↓++ 1→3 1→3 ↓+

2 Octave Scales - Simple Fingering

E Major

2 4 1 2 4 1 3 4 1 3 0 1 3 1 2 1 3 1 0 3 1 4 3 1 4 2x1 4 2

F# Major

1x2 4 1x2 4 1 2 4 1 2 4 1 3 4 3 1 4 2 1 4 2 1 4 2x1 4 2x1

A^b Major

1x2 4 1x2 4 1 2 4 1 2 4 1 3 4 3 1 4 2 1 4 2 1 4 2x1 4 2x1

B Major

1x2 4 1x2 4 1 2 4 1 2 4 1 2 3 2 1 4 2 1 4 2 1 4 2x1 4 2x1

C Minor

0 1 2 4 0 1 3 4 0 1x2 4 0 1 2 3 1 4 4 2x1 0 4 2x1 0 4 2 1 0

D Minor

1 3 4 0 1x2 4 0 1 2 4 0 1 2 3 4 2x1 1 0 4 2 1 0 4 2 1 0 4 3 1

E Minor

2 4 0 1x2 4 1 1 3 4 0 1 3 2 3 1 2 1 0 4 3 1 0 4 3 1 0 4 2

F# Minor

1 3 4 1x2 4 1 2 4 0 1x2 4 2 3 1 4 3 1 0 4 2x1 4 3 1 4 3 1

2 Octave Scales - Simple Fingering

G Minor

0 1 2 4 0 1 3 4 0 1x2 4 1 3 4 2 x 1 4 2x1 0 4 2x1 0 4 2 1 0

A Minor

1 3 4 0 1x2 4 0 1 2 4 1 3 4 2 1 4 2 1 0 4 2 1 0 4 3 1

B Minor

2 4 0 1x2 4 1 2 4 1x2 4 1 2 3 4 2 x 1 3 1 4 3 1 0 4 3 1 0 4 2

C# Minor

1 3 4 1x2 4 1 2 4 1x2 4 1 2 3 4 2 x 1 4 2x1 4 2x1 4 3 1 4 3 1

E^b Minor

1 3 4 1x2 4 0 1 3 4 1 3 1 4 2 x 1 4 2x1 4 2x1 4 3 1 4 3 1

F Minor

4 0 1x2 4 0 1 2 4 1x2 4 1 3 4 2 x 1 4 2x1 4 2x1 4 3 1 1 0 4

A^b Minor

1 3 4 1x2 4 1 2 4 1x2 4 1 2 3 4 2 x 1 4 2x1 4 2x1 4 3 1 4 3 1

B^b Minor

1 3 4 1x2 4 1 2 4 1x2 4 1 2 3 4 2 x 1 4 2x1 4 2x1 4 3 1 4 3 1

2 Octave Arpeggios



C Major

D Major

E♭ Major

F Major

G Major

A Major

B♭ Major

D Major

2 Octave Arpeggios

E Major

4 1 4 2 1 4 2 4 1 2 4 1 4

↑+++ ↓+++

F# Major

4 1 4 2 1 4 2 4 1 2 4 1 2

↑+++ ↓+++

A \flat Major

1 4 2 1 3 2 3 1 2 4 1 1

↑+ ↑+++ ↓+++ ↓+

B Major

2 1 4 2 1 3 2 3 1 2 4 1 2

↑+++ ↑+++ ↓+++ ↓+++

C Minor

0 2 0 4 x 1 x 4 2 4 x 1 x 4 0 2 0

D Minor

1 4 1 0 1 x 4 2 4 x 1 0 1 4 1

1→2 2→1

E Minor

3 0 3 1 1 x 4 2 4 x 1 1 3 0 3

1→4 4→1

F# Minor

4 x 1 x 4 2 1 x 4 2 4 x 1 2 4 x 1 x 4

↑+ ↓+

2 Octave Arpeggios

G Minor

0 1 x 4 2 1 x 3 2 3 x 1 2 4 x 1 0

↑+ ↓+

Detailed description: This musical staff shows the G minor arpeggio in the bass clef. The notes are G2 (0), A2 (1), B2 (x), C3 (4), D3 (2), E3 (1), F3 (x), G3 (3), A3 (2), B3 (3), C4 (x), D4 (1), E4 (2), F4 (4), G4 (x), A4 (1), and B4 (0). Fingerings are indicated by numbers 1-4. Two boxes above the staff contain '↑+' and '↓+'.

A Minor

1 1 x 4 2 1 x 3 2 3 x 1 2 4 x 1 1

1→4 ↑+ ↓+ 4→1

Detailed description: This musical staff shows the A minor arpeggio in the bass clef. The notes are A2 (1), B2 (1), C3 (x), D3 (4), E3 (2), F3 (1), G3 (x), A3 (3), B3 (2), C4 (3), D4 (x), E4 (1), F4 (2), G4 (4), A4 (x), B4 (1), and C5 (1). Fingerings are indicated by numbers 1-4. Four boxes above the staff contain '1→4', '↑+', '↓+', and '4→1'.

B Minor

2 1 x 4 2 1 x 3 2 3 x 1 2 4 x 1 2

↑+ ↑+ ↓+ ↓+

Detailed description: This musical staff shows the B minor arpeggio in the bass clef. The notes are B2 (2), C3 (1), D3 (x), E3 (4), F3 (2), G3 (1), A3 (x), B3 (3), C4 (2), D4 (3), E4 (x), F4 (1), G4 (2), A4 (4), B4 (x), C5 (1), and D5 (2). Fingerings are indicated by numbers 1-4. Four boxes above the staff contain '↑+', '↑+', '↓+', and '↓+'.

C# Minor

1 4 1 4 x 1 x 4 2 4 x 1 x 4 1 4 1

1→3 3→1

Detailed description: This musical staff shows the C# minor arpeggio in the bass clef. The notes are C#3 (1), D#3 (4), E#3 (1), F#3 (4), G#3 (x), A#3 (1), B#3 (x), C#4 (4), D#4 (2), E#4 (4), F#4 (x), G#4 (1), A#4 (x), B#4 (4), C#5 (1), D#5 (4), and E#5 (1). Fingerings are indicated by numbers 1-4. Two boxes above the staff contain '1→3' and '3→1'.

E♭ Minor

1 4 1 4 x 1 x 4 2 4 x 1 x 4 1 4 1

1→3 3→1

Detailed description: This musical staff shows the E-flat minor arpeggio in the bass clef. The notes are E♭3 (1), F♭3 (4), G♭3 (1), A♭3 (4), B♭3 (x), C♭3 (1), D♭3 (x), E♭4 (4), F♭4 (2), G♭4 (4), A♭4 (x), B♭4 (1), C♭4 (x), D♭4 (4), E♭5 (1), F♭5 (4), and G♭5 (1). Fingerings are indicated by numbers 1-4. Two boxes above the staff contain '1→3' and '3→1'.

F Minor

4 x 1 x 4 2 1 x 4 2 4 x 1 2 4 x 1 x 4

↑+ ↓+

Detailed description: This musical staff shows the F minor arpeggio in the bass clef. The notes are F2 (4), G2 (x), A2 (1), B2 (x), C3 (4), D3 (2), E3 (1), F3 (x), G3 (4), A3 (2), B3 (4), C4 (x), D4 (1), E4 (2), F4 (4), G4 (x), A4 (1), and B4 (x). Fingerings are indicated by numbers 1-4. Two boxes above the staff contain '↑+' and '↓+'.

A♭ Minor

1 1 x 4 2 1 x 3 2 3 x 1 2 4 x 1 1

1→4 ↑+ ↓+ 4→1

Detailed description: This musical staff shows the A-flat minor arpeggio in the bass clef. The notes are A♭2 (1), B♭2 (1), C3 (x), D3 (4), E3 (2), F3 (1), G3 (x), A♭3 (3), B♭3 (2), C4 (3), D4 (x), E4 (1), F4 (2), G4 (4), A♭4 (x), B♭4 (1), and C5 (1). Fingerings are indicated by numbers 1-4. Four boxes above the staff contain '1→4', '↑+', '↓+', and '4→1'.

B♭ Minor

2 1 x 4 2 1 x 3 2 3 x 1 2 4 x 1 2

↑+ ↑+ ↓+ ↓+

Detailed description: This musical staff shows the B-flat minor arpeggio in the bass clef. The notes are B♭2 (2), C3 (1), D3 (x), E3 (4), F3 (2), G3 (1), A3 (x), B♭3 (3), C4 (2), D4 (3), E4 (x), F4 (1), G4 (2), A4 (4), B♭4 (x), C5 (1), and D5 (2). Fingerings are indicated by numbers 1-4. Four boxes above the staff contain '↑+', '↑+', '↓+', and '↓+'.

3 Octave Scales

Simple Fingering



C Major

0 1 3 4 0 1 3 4 0 1 2 4 0 1 2 4 1 2 4 1

↑++ ↑++

↓++ ↓++

D Major

1 x 2 4 0 1 x 2 4 0 1 3 4 0 1 3 4 1 3 4 1

↑++ ↑++

↓++ ↓++

E♭ Major

2 4 0 1 x 2 4 0 1 x 2 4 1 x 2 4 1 2 4 1 2 3 1

↑+ 4→2 ↑++ ↑++

↓++ ↓++ 1→3 ↓+

F Major

4 0 1 2 4 0 1 2 4 0 1 x 2 4 1 2 1 2 1 2 1

↑++ 1→4 1→3 1→3x

3x→1 3→1 4→1 ↓++

3 Octave Scales - Simple Fingering

G Major

0 1 3 4 0 1 3 4 0 1 2 4 ↑++ 1 ↑++ ↑++

2 3 2 1 3 2 1 ♯ 4 3 1 4 2 1 0 4 3 1 0 4 3 1 0

↓++ ↓++ ↓++

Detailed description: This block shows the G Major scale (one sharp) for three octaves. The bass clef part starts on G2 (0) and goes up to G5 (1). The treble clef part starts on G4 (1) and goes up to G7 (1). Fingerings are indicated by numbers 1-4. Boxed annotations include '↑++' for upward jumps and '↓++' for downward jumps. A fermata is placed over the final G5 note.

A Major

1 x 2 4 0 1 x 2 4 0 1 3 4 1 ↑++ ↑+ ↑++ ↑++

2 3 2 1 3 2 1 3 2 1 3 2 1 4 3 1 0 4 2 x 1 0 4 2 x 1

↓++ ↓++ ↓+ ↓++

Detailed description: This block shows the A Major scale (two sharps) for three octaves. The bass clef part starts on A2 (1 x 2) and goes up to A5 (1). The treble clef part starts on A4 (1) and goes up to A7 (1). Fingerings are indicated by numbers 1-4. Boxed annotations include '↑++', '↑+', and '↓++'. A fermata is placed over the final A5 note.

Bb Major

2 4 0 1 x 2 4 0 1 x 2 1 2 4 ↑++ ↑++ 1→3 1→3x

2 3 2 1 2 1 2 1 3 2 1 4 2 1 2 x 1 0 4 2 x 1 0 4 2

3x→1 3→1 ↓++ ↓++ 4→1

Detailed description: This block shows the Bb Major scale (two flats) for three octaves. The bass clef part starts on Bb2 (2) and goes up to Bb5 (1). The treble clef part starts on Bb4 (1) and goes up to Bb7 (1). Fingerings are indicated by numbers 1-4. Boxed annotations include '↑++', '1→3', '1→3x', '3x→1', '3→1', '↓++', and '4→1'. A fermata is placed over the final Bb5 note.

Db Major

1 x 2 4 1 x 2 4 1 2 4 1 2 4 1 3 4 ↑++ ↑++

2 3 2 1 ♯ 3 2 1 4 3 1 4 2 1 4 2 1 4 2 x 1 4 2 x 1

↑+ 4→2 4→2 ↓++ ↓++ 1→3 1→3 ↓+

Detailed description: This block shows the Db Major scale (three flats) for three octaves. The bass clef part starts on Db2 (1 x 2) and goes up to Db5 (1). The treble clef part starts on Db4 (1) and goes up to Db7 (1). Fingerings are indicated by numbers 1-4. Boxed annotations include '↑+', '4→2', '↓++', '1→3', and '↓+'. A fermata is placed over the final Db5 note.

3 Octave Scales - Simple Fingering

E Major

2 4 1 2 4 1 3 4 1 3 0 1 x 2 4 1 3 1 2 3 1

2 3 2 1 3 2 1 3 1 4 2 x 1 4 2

Fingering: 4→2, ↑++, 4→2, 3→1, ↑+, ↑+, ↑++

F# Major

1 x 2 4 1 x 2 4 1 2 4 1 2 4 1 3 4 1 2 1 2 1

2 3 2 1 2 1 2 1 4 3 1 4 2 1 4 2 x 1 4 2 x 1

Fingering: 4x→2, 4→2, 4→2, ↑++, ↑++, 1→3, 1→3x

A♭ Major

1 x 2 4 1 x 2 4 1 2 4 1 2 4 1 3 4 1 2 1 2 1

2 3 2 1 2 1 2 1 4 3 1 4 2 1 4 2 x 1 4 2 x 1

Fingering: ↑+, 4→2, 4→2, ↑++, ↑++, 1→3, 1→3, ↓+

B Major

1 x 2 4 1 x 2 4 1 2 4 1 2 4 1 3 4 1 2 1 2 1

2 3 2 1 2 1 2 1 3 2 1 4 2 1 4 2 x 1 4 2 x 1

Fingering: 4x→2, 4→2, ↑++, ↑++, ↑++, 1→3, 1→3x

3 Octave Scales - Simple Fingering

C Minor

0 1 2 4 0 1 3 4 0 1 x 2 4 0 1 2 4 0 1 2 4 1 x 2 4 1

2 3 x 2 x 1 4 2 1 4 2 x 1 4 2 x 1 0 4 2 x 1 0 4 2 1 0

↑+ ↑++

D Minor

1 3 4 0 1 x 2 4 0 1 2 4 0 1 2 4 0 1 2 4 1 3 4 1 2 4 1

2 3 x 2 x 1 4 2 1 4 2 x 1 0 4 2 1 0 4 2 1 0 4 3 1

↓+ ↓++ ↑++ ↑++

E Minor

2 4 0 1 x 2 4 1 1 3 4 0 1 x 2 4 1 3 4 1 2 1 3 4 1 2 1

2 3 x 2 x 1 2 1 4 3 1 4 2 1 0 4 3 1 0 4 3 1 0 4 2

4→2 1→2 ↑+ ↑++ 1→3x

F# Minor

1 3 4 1 x 2 4 1 2 4 0 1 x 2 4 1 2 4 1 2 4 1 x 2 3 1

2 3 x 2 x 1 3 x 2 x 1 4 2 x 1 4 3 1 0 4 2 x 1 4 3 1 4 3 1

4→2 4→2 ↑++ ↑+ ↑++

↓+ ↓+ ↓++ 1→3 1→3

3 Octave Scales - Simple Fingering

G Minor

0 1 2 4 0 1 3 4 0 1 x 2 4 ↑+++ 1 ↑+++ ↑+++

↓+ ↓+++ ↓+

2 3 x 2 x 1 ↓+ 3 x 2 x 1 ♯ 4 2 x 1 4 2 x 1 0 4 2 x 1 0 4 2 1 0

A Minor

1 3 4 0 1 x 2 4 0 1 2 4 1 ↑+++ ↑+ ↑+ ↑+++

↓+ ↓+ ↓+++ ↓+++

2 3 x 2 x 1 3 x 2 x 1 2 1 4 2 1 4 2 1 0 4 2 1 0 4 3 1

B Minor

2 4 0 1 x 2 4 1 2 4 1 x 2 4 ↑+++ ↑+++ ↑+++ 1→3x 1→3x

4→2 ↑+ 4→1 ↓+++ ↓+++

2 3 x 2 x 1 3→1 3x→1 ↓+++ 4→1 3 ↓+++ 1 4 3 1 0 4 3 1 0 4 2

C# Minor

1 3 4 1 x 2 4 1 2 4 1 x 2 4 ↑+++ 4→2 4→1 ↑+++ ↑+++

↓+++ ↓+ 1→4 1→3 ↓+++

2 3 x 2 x 1 ♯ 3 ↓2 1 4 2 x 1 4 2 x 1 4 3 1 4 3 1

3 Octave Scales - Simple Fingering

E \flat Minor

F Minor

A \flat Minor

B \flat Minor

3 Octave Arpeggios

Universal Fingering



C Major

D Major

E♭ Major

F Major

G Major

A Major

B♭ Major

D Major

3 Octave Arpeggios - Universal Fingering

E Major

F# Major

A♭ Major

B Major

*Note: The minor arpeggios have extensions in all positions.

i.e. 5th, 6th, 7th and Thumb positions all have a whole step between 1, 2 and 3: 1 x 2 x 3

C Minor

D Minor

E Minor

F# Minor

3 Octave Arpeggios - Universal Fingering

G Minor

0 1 x 4 2 1 3 2 1 2 3 2 1 2 3 1 2 4 x 1 0

A Minor

1 1 x 4 2 1 3 2 1 2 3 2 1 2 3 1 2 4 x 1 1

B Minor

2 1 x 4 2 1 3 2 1 2 3 2 1 2 3 1 2 4 x 1 2

C# Minor

1 1 x 4 2 1 3 2 1 3 2 3 1 2 3 1 2 4 x 1 1

E♭ Minor

2 1 x 4 2 1 3 2 1 3 2 3 1 2 3 1 2 4 x 1 2

F Minor

2 1 x 3 2 1 3 2 1 3 2 3 1 2 3 1 2 3 x 1 2

A♭ Minor

1 1 x 4 2 1 3 2 1 2 3 2 1 2 3 1 2 4 x 1 1

B♭ Minor

2 1 x 4 2 1 3 2 1 2 3 2 1 2 3 1 2 4 x 1 2

3 Octave Scales

Universal Fingering



C Major

D Major

E♭ Major

F Major

3 Octave Scales - Universal Fingering

G Major

1 x 2 4 1 x 2 4 1 2 4 1 2 3 1 2 3 1 2 3 ♯ 1

4x→2 4→2 ↑++ ↑++ ↑++

2 3 2 1 ♯ 3 2 1 3 2 1 3 2 1 4 2 1 4 2 x 1 4 2 x 1

↓++ ↓++ ↓++ 1→3 1x→2

A Major

1 x 2 4 1 x 2 4 1 2 4 1 2 3 1 2 3 ♯ 1

↑+ 4→2 ↑++ ↑++ ↑++

2 3 2 1 ♯ 3 2 1 3 2 1 3 2 1 4 2 1 4 2 x 1 4 2 x 1

↓++ ↓++ ↓++ 1→3 ↓+

B♭ Major

1 x 2 4 1 x 2 4 1 2 4 1 2 3 1 2 3 ♯ 1

4x→2 ↑++ ↑++ ↑++

2 3 2 1 ♯ 3 2 1 3 2 1 3 2 1 4 2 1 4 2 x 1 4 2 x 1

↓++ ↓++ ↓++ ↓++ 1x→2

D♭ Major

1 x 2 4 1 x 2 4 1 2 4 1 2 3 4 1 2 3 ♯ 1

↑+ 4→2 4→2 ↑++ ↑++

2 3 2 1 ♯ 3 2 1 4 3 1 4 2 1 4 2 x 1 4 2 x 1

↓++ ↓++ 1→3 1→3 ↓+

3 Octave Scales - Universal Fingering

E Major

1 x 2 4 1 x 2 4 1 2 4 1 2 4 1 2 3 1 2 3 1

4x→2 ↑++ 4→2 ↑++ ↑++

↓++ ↓++ 1→3 ↓++ 1x→2

F# Major

1 x 2 4 1 x 2 4 1 2 4 1 2 4 1 2 3 1 2 3 1

4x→2 4→2 ↑++ ↑++ ↑++

↓++ ↓++ ↓++ 1→3 1x→2

A^b Major

1 x 2 4 1 x 2 4 1 2 4 1 2 3 1 2 3 1

↑+ 4→2 ↑++ ↑++ ↑++

↓++ ↓++ ↓++ 1→3 ↓+

B Major

1 x 2 4 1 x 2 4 1 2 4 1 2 3 1 2 3 1

4x→2 ↑++ ↑++ ↑++ ↑++

↓++ ↓++ ↓++ ↓++ 1x→2

3 Octave Scales - Universal Fingering

C Minor

0 1 2 1 x 2 4 1 2 4 1 x 2 4 1 2 3 4 1 2 3 1

Technical markings: 1→4, 4→2, 4→1, ↑++, ↑++, ↓++, ↓+, 1x→2, 1→3, 4→1

D Minor

1 3 4 1 x 2 4 1 2 4 1 x 2 4 1 2 3 1 2 3 1 2 3 1

Technical markings: ↑++, 4→2, 4→1, ↑++, ↑++, ↓++, ↓+, 1x→2, 1→3, ↓++

E Minor

1 3 4 1 x 2 4 1 2 4 1 x 2 4 1 2 3 1 2 3 1 2 3 1

Technical markings: 4→2, 4→2, ↑+, ↑++, ↑++, ↓++, ↓+, 1x→2, ↓++, 1→3

F# Minor

1 3 4 1 x 2 4 1 2 4 1 x 2 4 1 2 3 1 2 3 1 2 3 1

Technical markings: 4→2, 4→2, ↑+, ↑++, ↑++, ↓++, ↓+, ↓+, 1→3, 1→3

3 Octave Scales - Universal Fingering

G Minor

4→2 4→2 ↑+ ↑++ ↑++

1 3 4 1 x 2 4 1 2 4 1 x 2 x 3 1 2 3 1 2 3 φ 1

↓++ ↓+ ↓+ 1→3 1→3

2 3 x 2 x 1 φ 3 2 1 3 x 2 x 1 3 x 2 x 1 4 2 x 1 4 3 1 4 3 1

A Minor

↑++ 4→2 ↑+ ↑++ ↑++

1 3 4 1 x 2 4 1 2 4 1 x 2 x 3 1 2 3 1 2 3 φ 1

↓++ ↓+ ↓+ 1→3 ↓++

2 3 x 2 x 1 φ 3 2 1 3 x 2 x 1 3 x 2 x 1 4 2 x 1 4 3 1 4 3 1

B Minor

4→2 ↑++ ↑+ ↑++ ↑++

1 3 4 1 x 2 4 1 2 4 1 x 2 x 3 1 2 3 1 2 3 φ 1

↓++ ↓+ ↓+ ↓++ 1→3

2 3 x 2 x 1 φ 3 2 1 3 x 2 x 1 3 x 2 x 1 4 2 x 1 4 3 1 4 3 1

C# Minor

↑++ 4→2 4→1 ↑++ ↑++

1 3 4 1 x 2 4 1 2 4 1 x 2 4 1 2 3 4 1 2 3 φ 1

↓++ ↓+ 1x→2 1→3 ↓++

2 3 x 2 x 1 φ 3 2 1 4 2 x 1 4 2 x 1 4 2 x 1 4 3 1 4 3 1

3 Octave Scales - Universal Fingering

E \flat Minor

1 3 4 1 x 2 4 1 2 4 1 x 2 4 1 2 3 1 2 3 1

4→2 ↑+++ 4→1 ↑+++ ↑+++

↓+++ ↓+ 1x→2 ↓+++ 1→3

2 3 x 2 x 1 φ 3 2 1 3 x 2 x 1 4 2 x 1 4 2 x 1 4 3 1 4 3 1

F Minor

1 3 4 1 x 2 4 1 2 4 1 x 2 4 1 2 3 1 2 3 φ 1

4→2 4→2 ↑+ ↑+++ ↑+++

↓+++ ↓+ ↓+ 1→3 1→3

2 3 x 2 x 1 φ 3 2 1 3 x 2 x 1 4 2 x 1 4 2 x 1 4 3 1 4 3 1

A \flat Minor

1 3 4 1 x 2 4 1 2 4 1 x 2 x 3 1 2 3 1 2 3 φ 1

↑+++ 4→2 ↑+ ↑+++ ↑+++

↓+++ ↓+ ↓+ 1→3 ↓+++

2 3 x 2 x 1 φ 3 2 1 3 x 2 x 1 3 x 2 x 1 4 2 x 1 4 2 x 1 4 3 1 4 3 1

B \flat Minor

1 3 4 1 x 2 4 1 2 4 1 x 2 x 3 1 2 3 1 2 3 φ 1

4→2 ↑+++ ↑+ ↑+++ ↑+++

↓+++ ↓+ ↓+ ↓+++ 1→3

2 3 x 2 x 1 φ 3 2 1 3 x 2 x 1 3 x 2 x 1 4 2 x 1 4 2 x 1 4 3 1 4 3 1

Auxiliary Scales

these scales can be adapted for any key



D Major - 4 Octave Universal Fingering

4th octave *

*Note: 4th octave is 1 2 1 2 1 2 3, coming down 3 2 1 2 1 2 1
 Generally the 4th octave is done for scales that start on the C string.
 For scales that start on the G string, the highest notes can be past the fingerboard.

E \flat Major - 3 Octave Universal Fingering Alternate #1

shift after 1st note

F Major - 3 Octave Universal Fingering Alternate #2

shift after 2nd note

Auxiliary Scales

Harmonic Minor has a low 6th note and a high 7th note, creating an augmented 2nd interval.

D Harmonic Minor - 4 Octave Universal Fingering

The diagram shows the D Harmonic Minor scale in four octaves across three staves. The first two staves show the ascending and descending lines with various fingering patterns and interval markers in boxes. The third staff shows the descending line with additional fingering and interval markers. The key signature has one flat (Bb).

*Note this scale has a 3-half-step shift.

Natural Minor follows the key signature. It is the same as the descending Melodic Minor scale. (Ascending, the 6th and 7th notes of the Melodic Minor scale are raised, but not in Natural Minor)

E Natural Minor - 4 Octave Universal Fingering

The diagram shows the E Natural Minor scale in four octaves across three staves. The first two staves show the ascending and descending lines with various fingering patterns and interval markers in boxes. The third staff shows the descending line with additional fingering and interval markers. The key signature has two sharps (F# and C#).

Auxiliary Scales

These are the same scales without the fingerings.
Only the shifts are printed.

D Major - 4 Octave Universal Fingering

↑+ 4→2 4→2 ↑++ ↑++ ♪ ↑++ 1→3 1→3x

3x→1 3→1 ↓++ ♪ ↓++ ↓++ 1→3 1→3 ↓+

E \flat Major - 3 Octave Universal Fingering Alternate #1

shift after 1st note

1→3 4→2 4x→2 ↑+ ↑++ ♪ 1→3

3→1 ♪ ↓++ ↓+ 1x→2 1→3 3→1

F Major - 3 Octave Universal Fingering Alternate #2

shift after 2nd note

4→1 ↑++ 4→2 ↑++ ↑+ ♪ ♪

↓+ ♪ ↓++ 1→3 ↓++ 1→4

Auxiliary Scales

D Harmonic Minor - 4 Octave Universal Fingering

↑++ 4→3 4→1 4x→2 ↑++ 1→4 ↑+++

↑+ ↑+ ↓+ ↓+ ↓+++ 4→1

↓++ 1x→2 1→4 1→2 ↓++

E Natural Minor - 4 Octave Universal Fingering

4→2 ↑++ 4x→2 ↑+ ↑++

↑++ 1→3x 1→3 3→1 3x→1 ↓++

↓++ ↓+ 1x→2 ↓++ 1→3

Auxiliary Scales

These are the same scales without fingerings or shifts.
This time, only a slash is written where the shifts are.

D Major - 4 Octave Universal Fingering

Musical notation for D Major - 4 Octave Universal Fingering. The scale is written in 4/4 time, starting in the bass clef and moving to the treble clef. The key signature has two sharps (F# and C#). The notation shows the scale ascending and then descending, with a slash indicating a shift after the first note of the second octave in both directions. The final note of the descending scale is marked with a fermata.

E \flat Major - 3 Octave Universal Fingering Alternate #1

shift after 1st note

Musical notation for E \flat Major - 3 Octave Universal Fingering Alternate #1. The scale is written in 4/4 time, starting in the bass clef and moving to the treble clef. The key signature has two flats (B \flat and E \flat). The notation shows the scale ascending and then descending, with a slash indicating a shift after the first note of the second octave in both directions. The final note of the descending scale is marked with a fermata.

F Major - 3 Octave Universal Fingering Alternate #2

shift after 2nd note

Musical notation for F Major - 3 Octave Universal Fingering Alternate #2. The scale is written in 4/4 time, starting in the bass clef and moving to the treble clef. The key signature has one flat (B \flat). The notation shows the scale ascending and then descending, with a slash indicating a shift after the second note of the second octave in both directions. The final note of the descending scale is marked with a fermata.

Auxiliary Scales

D Harmonic Minor - 4 Octave Universal Fingering

The image shows the D Harmonic Minor scale in 4-octave universal fingering across three staves. The first staff is in bass clef, the second in treble clef, and the third in bass clef. The key signature has one flat (Bb). The scale is written in a sequence of eighth notes. The first staff shows the ascending scale from D2 to D3. The second staff shows the descending scale from D3 to D2. The third staff shows the ascending scale from D3 to D4. The notes are: D, E, F, G, Ab, A#, B, C, D. The fingering is indicated by numbers 1-4 above the notes.

E Natural Minor - 4 Octave Universal Fingering

The image shows the E Natural Minor scale in 4-octave universal fingering across three staves. The first staff is in bass clef, the second in treble clef, and the third in bass clef. The key signature has one sharp (F#). The scale is written in a sequence of eighth notes. The first staff shows the ascending scale from E2 to E3. The second staff shows the descending scale from E3 to E2. The third staff shows the ascending scale from E3 to E4. The notes are: E, F, G, A, B, C, D, E. The fingering is indicated by numbers 1-4 above the notes.