Triads Part II
INVERSIONS and how to use them

- Inversions Overview
- 1st Inversion
- 2nd Inversion
- Inversion Shapes & Suggested Fingerings
- How to Practice Inversions
- Using Inversions
  - For recognizing chords in music notation
  - Using lead sheets
    - melody RH, chords LH
    - harmonizing the melody in RH
Inversions Overview
An Inversion is simply a re-ordering of the notes of a chord. Here we will discuss the inversions of the triad

A ROOT POSITION TRIAD has the ascending note order: Root, 3rd, 5th.
For every triad there are three possible inversions, root position being the first. The naming of the inversions can be confusing, as Root Position is frequently mistaken as the first inversion. Think of the word inversion as “variation” and things will make more sense.
Root position, 1st inversion (variation), 2nd inversion (variation)

Here are the three inversions of C Major:

Root Position
1 3 5 (root, 3rd, 5th)

1st inversion
3 5 1 (3rd, 5th, root)

2nd inversion
5 1 3 (5th, root, 3rd)

Despite the different note orders, each inversion still sounds like the same chord, and this is where we will discover some powerful ideas about how to apply the concept of inversions towards our goal of a full, confident sound.

Interval Structure
In order to fully understand and recognize inversions quickly in sheet music and on the keyboard, it’s helpful to know the INTERVAL STRUCTURE of each chord inversion. Remember, an interval is simply the distance between two notes.

Every chord inversion (and every chord, for that matter) has what is called an interval structure, which means the sequence of intervals in a chord from the bottom note to the top note. In a triad, there are three intervals, the interval between the bottom and middle notes, the interval between the middle and top notes, and the interval between the bottom and top notes. For our purposes, we will only discuss the first two..

<table>
<thead>
<tr>
<th></th>
<th>1st interval (bottom &amp; middle notes)</th>
<th>2nd interval (middle and top notes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root Position</td>
<td>3rd</td>
<td>3rd</td>
</tr>
<tr>
<td>1st inversion</td>
<td>3rd</td>
<td>4th</td>
</tr>
<tr>
<td>2nd inversion</td>
<td>4th</td>
<td>3rd</td>
</tr>
</tbody>
</table>
The formula for a 1\textsuperscript{st} inversion triad is:
3 - 5 - 1 \( (3^{\text{rd}}, 5^{\text{th}}, \text{Root}) \).
The root is played up one octave from where it is in Root Position.
Think: “Root on Top”...

When moving through the inversions of a chord, it’s helpful to see that only one note is moving, as opposed to trying to build each inversion from scratch. For example, in a first inversion triad the root of the moves up one octave while the 3\text{rd} and 5\text{th} do not move.

The interval structure of a 1\textsuperscript{st} inversion triad is a 3\text{rd} on the bottom (the interval between 3\text{rd} and 5\text{th}) and a 4\text{th} on top (the interval between the 5\text{th} and the root). The interval between the 3\text{rd} and root is a sixth.

The interval structure of a 2\textsuperscript{nd} inversion triad is a 4\text{th} on the bottom (the interval between the 5\text{th} and the Root) and a 3\text{rd} on top (the interval between the Root and the 3\text{rd}).
### Inversion Shapes (see triad lesson) & Suggested Fingerings

#### Flatlands/Plateau Shape

**Root Position**

1 3 5 (root, 3rd, 5th)

<table>
<thead>
<tr>
<th>RH</th>
<th>1</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

**1st inversion**

3 5 1 (3rd, 5th, root)

<table>
<thead>
<tr>
<th>RH</th>
<th>1</th>
<th>2</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

**2nd inversion**

5 1 3 (5th, root, 3rd)

<table>
<thead>
<tr>
<th>RH</th>
<th>1</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Mountain Shape

**Root Position**

1 3 5 (root, 3rd, 5th)

<table>
<thead>
<tr>
<th>RH</th>
<th>1</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

**1st inversion**

3 5 1 (3rd, 5th, root)

<table>
<thead>
<tr>
<th>RH</th>
<th>1</th>
<th>2</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

**2nd inversion**

5 1 3 (5th, root, 3rd)

<table>
<thead>
<tr>
<th>RH</th>
<th>1</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Valley Shape

**Root Position**

1 3 5 (root, 3rd, 5th)

<table>
<thead>
<tr>
<th>RH</th>
<th>1</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

**1st inversion**

3 5 1 (3rd, 5th, root)

<table>
<thead>
<tr>
<th>RH</th>
<th>1</th>
<th>2</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

**2nd inversion**

5 1 3 (5th, root, 3rd)

<table>
<thead>
<tr>
<th>RH</th>
<th>1</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Cliffs Shape - B Major

Root Position
1 3 5 (root, 3rd, 5th)

1st inversion
3 5 1 (3rd, 5th, root)

2nd inversion
5 1 3 (5th, root, 3rd)

Cliffs Shape - Bb Major

Root Position
1 3 5 (root, 3rd, 5th)

1st inversion
3 5 1 (3rd, 5th, root)

2nd inversion
5 1 3 (5th, root, 3rd)
Using Inversions

• Using Chord Inversions to Read Music

• Using Chord Inversions and Lead Sheets
Using Chord Inversions to Read Music

Remember on pages 3 and 4 of this lesson how we used the INTERVALLIC STRUCTURE in each chord inversion to help us memorize them? This is how most pianists learn to read chords quickly, by reading the interval structure.

**Root Position Interval Structure:** 3\(^{rd}\) on bottom, 3\(^{rd}\) on top / root on bottom

**1\(^{st}\) Inversion Interval Structure:** 3\(^{rd}\) on bottom, 4\(^{th}\) on top / root on top

**2\(^{nd}\) Inversion Interval Structure:** 4\(^{th}\) on bottom, 3\(^{rd}\) on top / root in middle

See if you can identify each chord inversion for the bass clef chords using their interval structures. The chord names are provided above the staff:

Try the same thing for the Treble Clef:
Random Triad Inversions

See if you can identify each triad and what inversion it is in:

\[
\begin{align*}
\text{Am} & \quad / \quad Dm & \quad / \quad G \\
\text{Ab} & \quad / \quad Db & \quad / \quad Fm & \quad / \quad Bb \\
\text{F#} & \quad / \quad B & \quad / \quad E & \quad / \quad F \\
\text{Bm} & \quad / \quad Dm & \quad / \quad C & \quad / \quad F
\end{align*}
\]
Triads are frequently played with more than 3 notes by doubling either the root, 3rd, or 5th. Doubling one of the notes creates a bigger, fuller sound, and helps to emphasize the top voice, which is usually the melody.

In these types of structures, the chord is framed by an octave, with the other chord tones in the middle. If you look closely you’ll see that these structures contains two chord inversions.

If you learn to see simple inversion shapes by quickly recognizing 3rds and 4ths, you will be able to read larger chord shapes more easily over time.

Even if you can’t identify the chord, if you can at least see the interval structures, and know what key you are reading in, you’ll be able to play these larger shapes confidently with a little practice.
Recognizing Melodic Intervals and Chord Inversions in Melodic Lines.

Most melodies use chord tones extensively, and sometimes even exclusively, as in our examples below. See if you can identify the chord and its inversion for each measure:

1

2
Chord Inversions and Lead Sheets

A **Lead Sheet** is a shorthand version of a song. Instead of including a full arrangement for left and right hand like you would find for most classical music, a lead sheet only includes the melody (usually written in treble clef) and **chord symbols** written above the staff. This is the modern version of **Figured Bass** notation, which was used during the Baroque era (Bach, Handel, Vivaldi).

![Chord Inversions and Lead Sheets](https://via.placeholder.com/150)

In order to use a lead sheet, a musician must have a thorough knowledge of chords and their shorthand notation, or **Chord Symbols**. For a thorough review of triads, refer to **Lesson 2: Triads**.

Below are the most common chord symbols and formulas for the five triad types:

<table>
<thead>
<tr>
<th><strong>Major Triad</strong></th>
<th><strong>Minor Triad</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Formula:</strong> 1 3 5</td>
<td><strong>Formula:</strong> 1 b3 5</td>
</tr>
<tr>
<td><strong>Chord Symbol:</strong> C, A, Bb, F#</td>
<td><strong>Chord Symbol:</strong> Cm, Am, Bb-, F#-</td>
</tr>
<tr>
<td>When you see the note name (the root of the chord) with nothing else after it, the chord is a Major Triad</td>
<td>When you see a small “m” or a dash “-” after the root, the chord is a Minor Triad</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Augmented Triad</strong></th>
<th><strong>Diminished Triad</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Formula:</strong> 1 3 #5</td>
<td><strong>Formula:</strong> 1 b3 b5</td>
</tr>
<tr>
<td><strong>Chord Symbol:</strong> C aug, A+, Bb aug, F#+</td>
<td><strong>Chord Symbol:</strong> Cº, A dim, Bbº, F# dim</td>
</tr>
<tr>
<td>When you see “aug” or “+” after the root, the chord is an Augmented Triad</td>
<td>When you see “dim” or a superscript “O” after the root, the chord is a Diminished Triad</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Suspended Triad</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Formula:</strong> 1 4 5 (1 2 5 for Sus 2 triad)</td>
</tr>
<tr>
<td><strong>Chord Symbol:</strong> C sus, A sus, Bb sus 2, F# sus 2</td>
</tr>
<tr>
<td>When you see “sus” after the root, the chord is a Suspended Triad</td>
</tr>
</tbody>
</table>
Basic Lead Sheet Method RH

• RH plays Melody note on top, adding two one, two, or more notes underneath melody note to complete the triad.
• Melody note is almost always the highest note
• Choose closest available chord tones underneath the melody!

Example #1 melody

Example #1 harmonized with 1 chord tone
Example #1 harmonized with 2 chord tones

Now that we know all about intervals, chord inversions, and how to harmonize a melody, it’s time to take all of this information and create two handed arrangements.

In the next chapter we will learn how to take a harmonized melody in the RH, and play supporting structures in the LH.

Go over the next two pages with your teacher and then practice the following exercises until you can play each well.

Once you’ve completed this lesson, try working with a lead sheet provided by your teacher!
PUTTING IT ALL TOGETHER

Just harmonizing a melody in the RH is usually not enough to make a piece of music come to life. To fully realize the potential of a lead sheet the pianist must use the melody, the harmony, and the rhythmic feel of a song. Here we will work on a basic two handed method for doing this. Once you’ve mastered this lesson, move on to more challenging songs (a list is included at the end of the lesson).

Working Out Your Own Style
To play a song well, you must:
1. Clearly state the melody
2. Play chord tones and accompaniment parts clearly, making sure to balance the volumes properly
3. Know the form of the song, including intros and endings
4. Play all parts with rhythmic accuracy
5. Use dynamics (volume and phrasing) to create the dynamic/narrative arc that propels the song forward

Both hands must function together as one, and this is where the magic comes together when reading lead sheets and making up your own arrangements on the spot. It takes a lot of concentration to do well, but once you start getting good at it the possibilities are virtually endless in terms of improvising arrangements.

The main point is to figure out how you are going to deal with the three main variables: Melody, Harmony, and Rhythm/Feel.

Right Hand
• The melody is typically voiced on TOP of the RH, usually with the 4th or 5th finger.
• The lower fingers of the RH play chord tones underneath the melody.
• It’s important to learn to control these two separate functions of the RH, as sometimes the melody note and chord don’t change at exactly the same time. In these instances lower notes in the RH (chord tones) will follow the LH chord, while the top note of the RH (the melody) will play either before or after the chord, depending on the situation.

Left Hand
• The left hand provides three very important functions:
  • It defines the chords by establishing the bass and filling out support tones (some combination of root, 5th, and octave most commonly)
  • It makes chords sound full by adding support tones
  • It helps define the rhythmic character and feel
LEFT HAND STRUCTURES AND APPLICATIONS

For this lesson, the left hand will use one of four structures. Understand that there is no limit to what the left hand can play, but it’s better to start with basics here. These structures are the most commonly used in all styles of western music.

**Root** – used for sparse arrangements, and for when the melody note is low enough to necessitate fewer voices in both hands

**Root & 5th** - a strong, clean sounding support structure appropriate in most situations. Good for simple rhythms.

**Root & Octave** - Not as full as a 5th, but gives clear direct roots/bass tones, and can also provide pure bass power at any volume. Good for simple rhythms.

**Root, 5th, Octave** - a fuller version of the root & 5th. Connects the LH to the RH usually very well. Very good choice for adding simple rhythmic patterns

**Root, 1st or 2nd inversion chord** - for a full, compact sound. Good for chords being played no lower than an octave below middle C (SAY THIS BETTER)

**Low Interval Limits for LH**
-Certain chords sound muddy and dissonant when played too low, so when harmonizing low melody notes it is sometimes necessary to omit notes from either the RH or LH (usually the 3rd of the chord); or to transfer notes from RH to LH.
Here is an 8 measure song with melody and chord symbols included. LH chords have been provided in root position for reference.

Melody #2 with chords LH

Get familiar with this song and then move on to the next page...
BASIC RH HARMONIZATION:

Melody harmonized with 2 chord tones underneath

RH harmonization with LH root position triads. Notice RH chord voicing adjustments for lower melody notes.
Another treatment, using root position triads and “root-5th-octave” support structure LH. Again, notice RH adjustments to accommodate for LH.

The exact same RH and LH structures, but with motion added to the LH