Chapter 1
First Steps to Understanding The Harp

The harp is one of the oldest instruments in the world, and the harp as we know it today is a complex and flexible instrument in comparison to its predecessors from even two hundred years ago. Now, we have a modern instrument with mechanical developments that allow us to play in practically every key, make rapid key changes, and apply accidentals, all on the same strings. We will be covering all of these ideas soon, but first, we must delve into the foundational elements of harmony. Let us dive into the instrument with the first steps to understanding the harp.

- ❏ Notation

To begin, we will approach each of the harp's strings to learn the notation of music and how it translates to the instrument in front of us.

In Western music, pitches and frequencies are labeled with **musical notes**, beginning on the note name A, and the proceeding alphabetical letters through G. Once we get to G, the pattern restarts on A, so your musical notes can look something like this:

A B C D E F G A B C D E F G A B C D E F G

This pattern of musical notes repeats as we ascend. It is important to understand that the same pattern is in place in reverse order as you descend. When going down from A, you restart on G.

On the harp, we have a color coded framework that outlines some of the important musical notes. All of the red strings correspond with the note "C", and all of the blue/black strings with the note "F". To begin, find all of the red strings, and play them together. Then, play all of the F's.

Figure 1.1 - The strings of the harp.

If you follow the same musical note pattern from above on the strings, the string immediately next to C (to the right) is a D. The string between this D and the black/blue F string is an E. Ascending from the F to the next C, we have the remaining note names. After the G (immediately to the right of the F string), the pattern begins again on A, then we have B, and our next red string, C.

You may have also noticed that there are at least two different types of strings on the harp - wire strings and non-wire strings. The harp's lower strings are often wire-wound strings, and the higher strings are primarily made of gut or nylon. These different materials produce different sound qualities to meet the needs of their respective placements on the instrument. We will return to these materials and placements later in this chapter when discussing range.

Now that we've familiarized ourselves with the general framework of C's and F's, and all of the notes in between, let's start looking at how these strings and note names appear in music.

- ❑ The Musical Staff and Clefs

The **musical staff** has five lines, with four spaces between these lines. The **clef** at the beginning (far left) of a musical staff will dictate which pitches correspond with the lines and spaces. The language of music reads from left to right, and you will often have many notes stacked on top of one another on the staff, so fluency with reading both clefs is very important. Harpists read both the **treble clef** and **bass clef**. These two clefs are the most commonly used in Western music and a majority of our instrument's repertoire is written with these two clefs. To understand where pitches are on the staff, the clefs are our number one clue, even in their design.

Here is what the treble clef looks like:

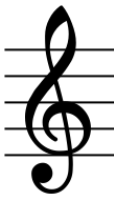


Figure 1.2 - The treble clef.

Notice how the treble clef wraps around the second line from the bottom. This second line is the line that the pitch G appears on when written on the staff, giving the treble clef the nickname of "G clef."

And here is what the bass clef looks like:

Figure 1.3 - The bass clef.

Now look at the bass clef - notice how the two dots surround the second line from the top. This line sandwiched by the two dots is the line where “F” appears in bass clef, giving it the nickname “F clef.” From these indications from the clefs themselves, we delineate and assign pitches above and below these lines. The diagram below shows the pitches assigned to each line and space on the staff in both clefs:

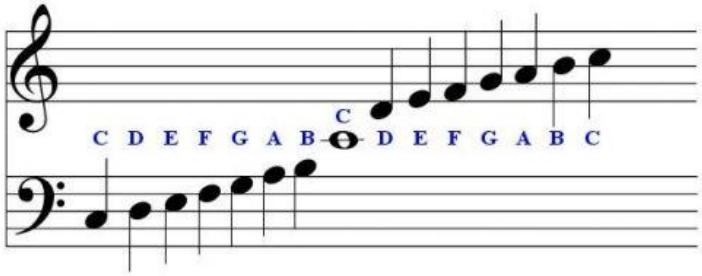


Figure 1.4 - The location of musical notes on both the bass and treble clefs.

The right hand will play the treble clef, as the treble clef contains a majority of the strings that the right hand will be playing. The same concept applies to the left hand, as it plays the notes in the bass clef. As harpists, we will read and play off of both clefs simultaneously, and for notational clarity, the two clefs are often beamed together with a brace. The resulting braced clefs are referred to as the **grand staff**.

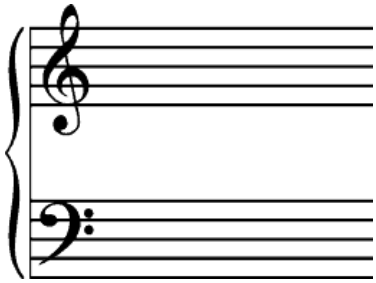


Figure 1.5 - The grand staff with its brace.

Now that we have an understanding of what each line and space in both clefs will mean, let's start translating these pitches over to the harp.

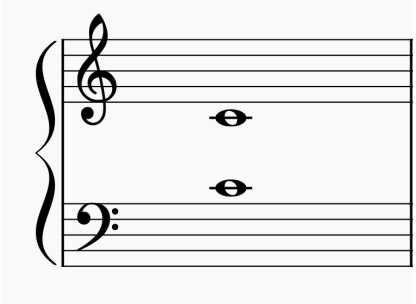


Figure 1.6 - Middle C in both clefs.

This note, C, is the middle C (red) string of the harp.

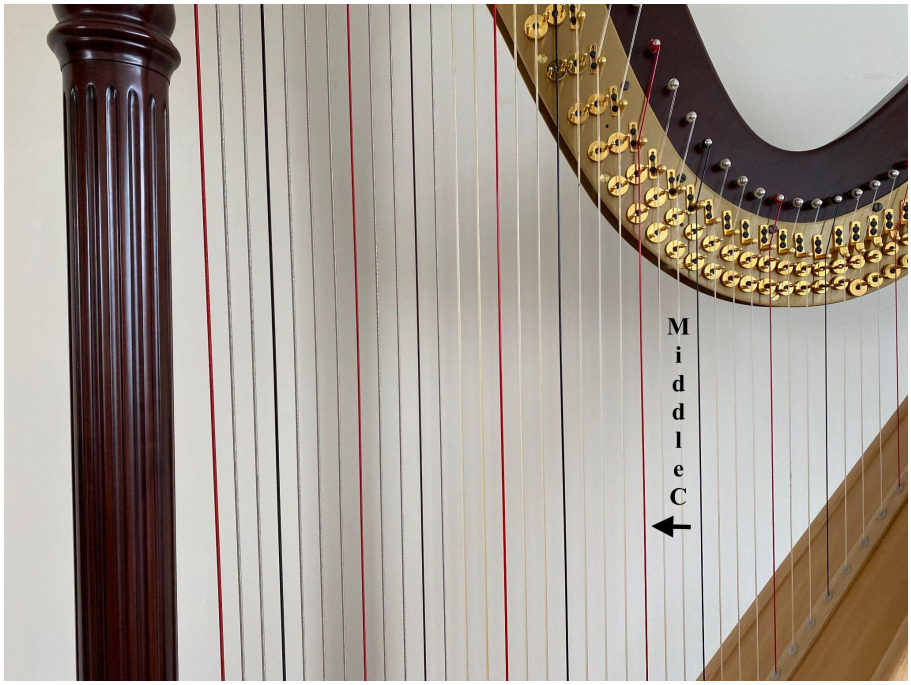
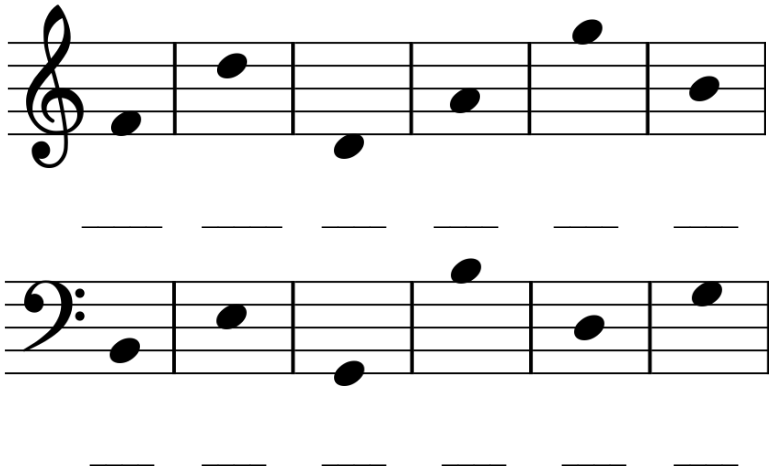


Figure 1.7 - The lower strings of the harp with middle C labeled.

In Figure 1.7, the lower strings of the harp are displayed. Counting up from the lowest red string, middle C is the fourth C string from the bottom of the instrument. Some harps have less strings at the bottom of the instrument, so another way to find the middle C string is by finding the second non-wire string from the bottom of the instrument.

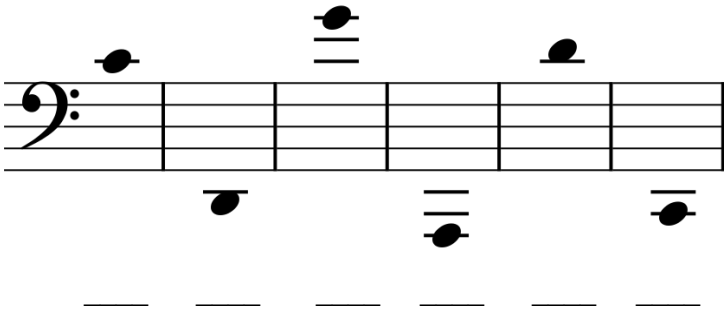
Fluency in both clefs is extremely important, as all of the repertoire for the harp requires both treble and bass clef. Practice the following exercises before moving on.

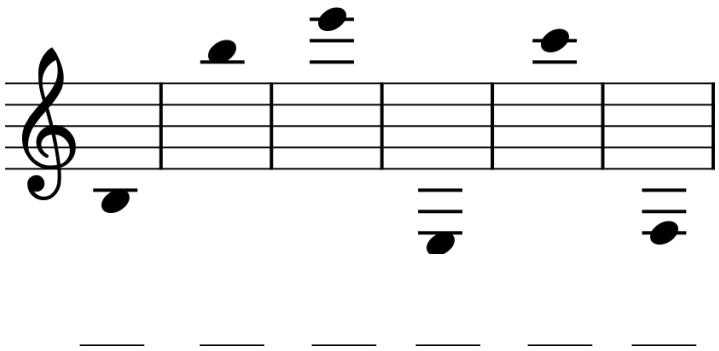
Exercises 1.1 -Label each note on the space below.



You may have noticed that there are many strings that you haven't played yet. The clefs are both limited to their five consistent lines and spaces. However, there are notes that reach above and below each clef. Instead of adding lines for the entire staff, individual **ledger lines** are added above the staff to accommodate the higher/lower pitches. The "middle" C, notated with one line below the treble clef, and one line above the bass clef, is an example of a note placed on a ledger line. The same rule of ascending or descending order applies to notes on ledger lines. Below are exercises in reading notes above or below the clefs.

Exercises 1.2 - Label each note on the space below.





❑ Range

Labeling different strings of the same pitch name on the harp requires knowledge of the harp's **range,** which is the total distance in pitch covered on the instrument. The concert grand pedal harp has a total of 47 strings.

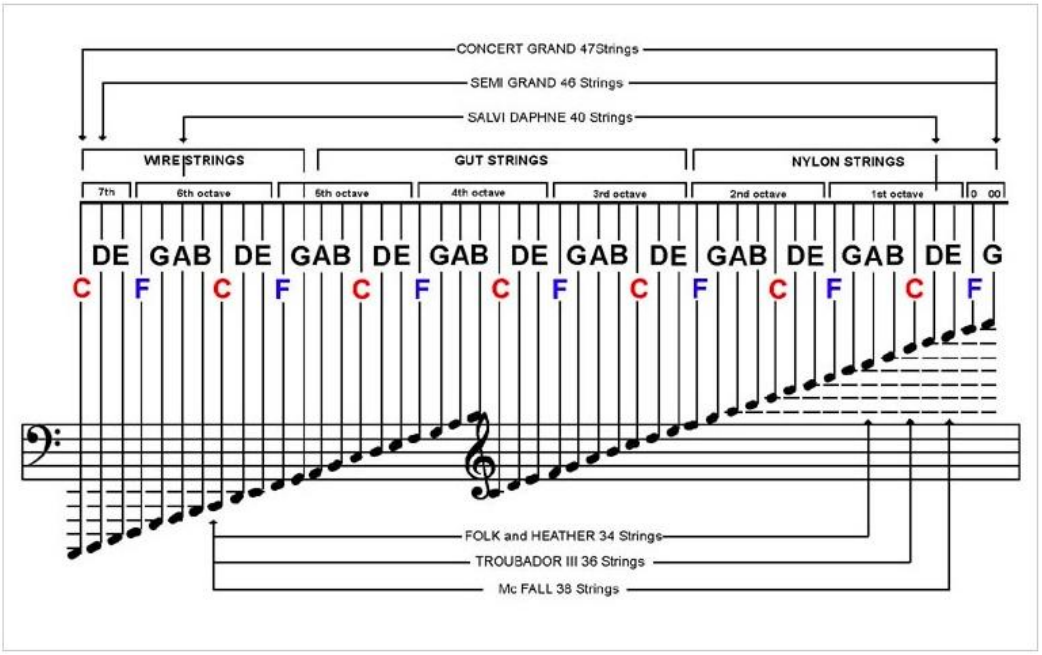


Figure 1.8 - The total range of the harp with each string's respective location on the grand staff.

To begin discussing range, we need to learn about our first interval. An **interval** is the measurement of distance between pitches. Intervals can occur simultaneously, or disjointly, and are used to describe relationships between pitches. An **octave** is an interval that measures the distance between one specific musical pitch to the next occurrence of the same pitch, either above or below the initial pitch/string. An octave spans the space of eight strings on the harp - for example, the space between one C to the next C covers a total of 8 strings.

On the harp, we refer to different octaves and strings within an octave with an order unique to our instrument's range. Rather than organizing the octaves of the harp from A to A, or C to C, we organize octaves from E to E.

Looking at the range chart, notice that the first octave begins on the top E string (neighbor to the top black F string) of the harp, and restarts on the E below. Our topmost strings are labeled as the zero (0) octave strings. The patterns downward, ranging a span of six and a half total octaves, from zero (0) octave G to seventh (7th) octave C.

The chart also shares some insights on what the strings of your harp may be made of. Starting at fifth (5th) octave G and below, wire strings are utilized, while fifth (5th) octave A and higher are usually gut or nylon. The uppermost strings of the harp are frequently strung with nylon strings, as these strings may last longer than gut strings. The preference is completely personal, as each player has different string needs or expectations.

Another term that is often used at the harp is register. **Register** refers to a smaller range within the harp, and typically there are three categories - upper, middle, and lower registers. These labels refer to the general span of the upper, middle, and lower octaves of the harp. In the general musical sense, register refers to the range of an instrument or voice, so it is important to note that the harp is often regarded as having these three general registers.

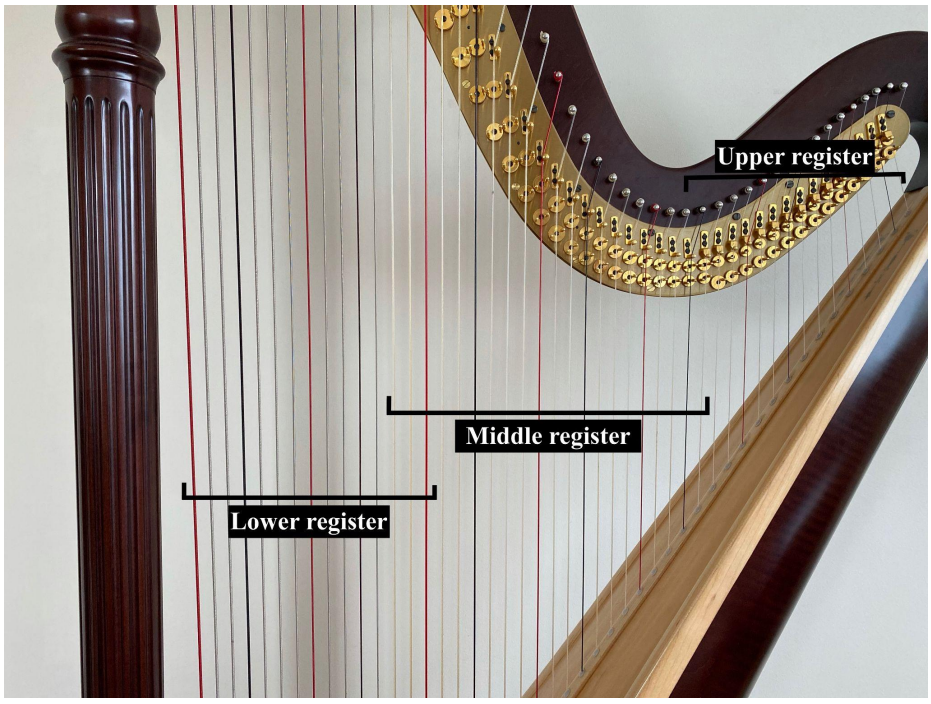


Figure 1.9 - Loosely labeled registers of the harp.

☐ Pedals and Pitch

Now that we understand how to find different pitches on the strings of the harp, we can begin to look at the pedals on the harp and how the mechanism of the instrument allows us to play three pitches per string.

The pedal harp has seven pedals, and similar to the system used for naming all of the pitches of the musical scale, each pedal coincides with a pitch in the musical scale.

A B C D E F G

The order is presented in a different manner in the pedals themselves - from left to right, the pedals are organized in a pattern that we will explore more in chapter 2.

D C B | E F G A

Figure 1.10 - The pedals of the harp.

Looking at the harp pedals and the pedal box, you see that there are three different notches for the pedals. The three different notches are organized from top to bottom as **flat**, **natural**, and **sharp**. These adjectives are used in musical language to describe **accidentals** on a string or pitch. Let's take a look at how the pedals are used to modify the pitches of the strings.

The next intervals we will explore are **half and whole steps**. **Half steps** are the smallest intervals that can be created on the harp, as they typically fall between two musical notes. For example, take the pitches C and D. There is a pitch that falls between these two notes - either C sharp, or D flat. **Whole steps** are intervals that comprise two consecutive half steps. Half and whole can be abbreviated as "W" and "H" when describing intervals.

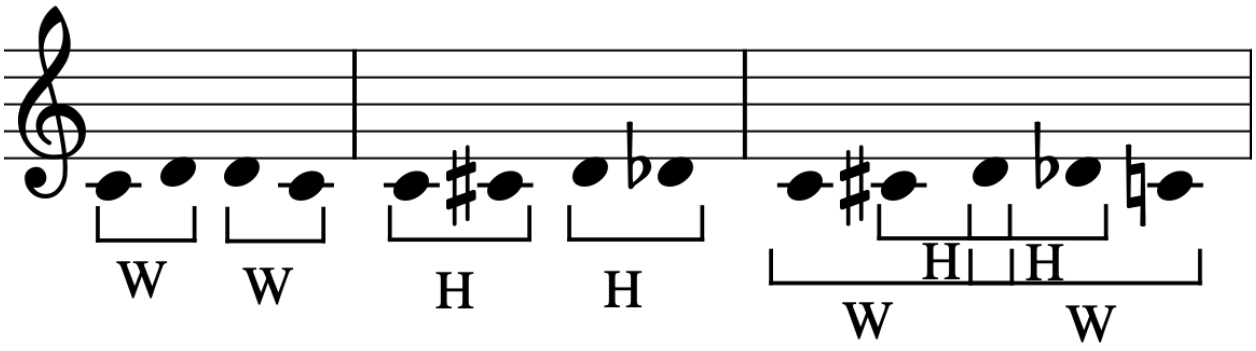


Figure 1.11 - Whole and half steps between C and D.

However, in order to play every pitch between musical notes, harpists rely on the pedal mechanism to create the **accidentals** needed to play every pitch on the instrument. An **accidental** is any modification made to a pitch, by either raising or lowering the pitch by a half step. The harp's unique mechanical system allows for a harpist to play each string in any of these accidentals - **flat, natural,** or **sharp**. This distance between each pitch is that of a half step, as we cannot make adjustments in the strings' pitch smaller than what the pedal mechanism allows for.

At the harp, we can play any string with these three pitch modifications - **flat, natural**, or **sharp**, ordered by half step relationships and requiring a single pedal change to move from pitch to pitch.

The pedal mechanism of the modern harp relies on a series of pedals, springs, rods, linkage cables, and discs to lower or raise the pitch on a string. Looking at the mechanism of the harp, you will see two **discs** cradling almost every string, with the string running up from the soundboard of the instrument, between the discs, and to the tuning pin. The two discs will turn and apply pressure to the string when the respective pedal is engaged. Any time that the string length is shortened or lengthened, we will hear a different pitch from the string. When the pedal is in the uppermost position (flat), neither disc is making contact with the string and we have the lowest pitch possible on that string.

Figure 1.12 The C discs and pedal disengaged.

Once we engage the pedal into the middle (natural) position, the first disc will turn and press into the string, shortening the string length and raising the pitch.

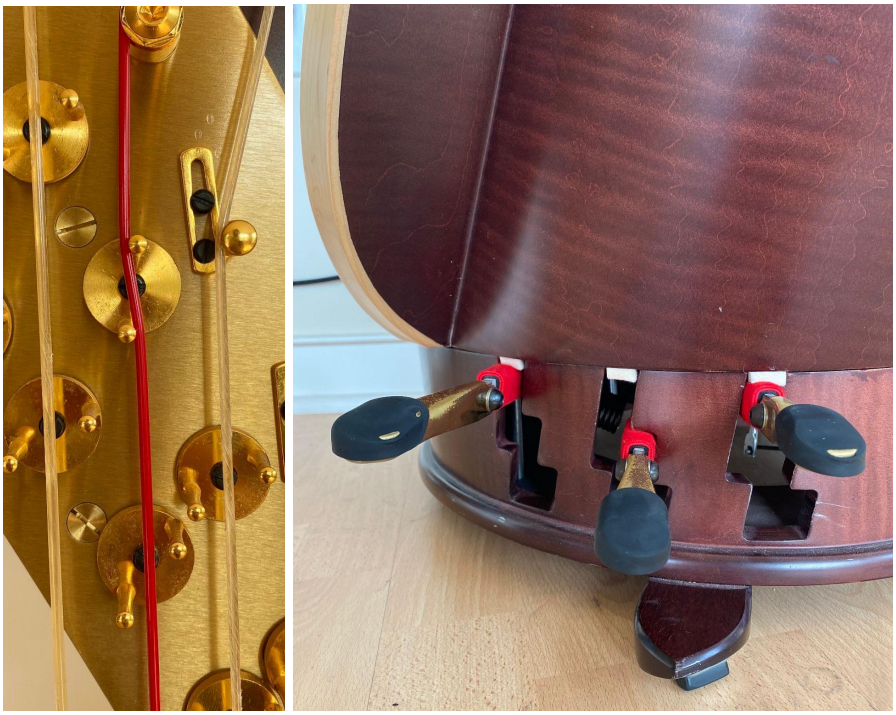


Figure 1.13 - The C pedal engaged in the natural position (right), turning the first disc against the C string and raising the pitch (left.)

If we lower the pedal into the bottom (sharp) position, both discs are pressing into the string and raising the pitch to the highest occurring pitch.

Figure 1.14 - The C pedal engaged in the sharp position (right), turning the first and second discs against the C string and raising the pitch (left.)

In short, the distance from C flat to C natural is a half step, and the same applies to the distance between C natural and C sharp. This same concept applies to every string on the harp, as every string has three potential pitch alterations.

Due to each string having three possible pitch alterations, there is overlap between certain pitches between two different strings. **Enharmonicism** is the overlap of pitches between strings, where two strings can create the same pitch by altering the pitch of one string with the pedals to match the other string. This creates a huge palette that composers love to work with when writing **glissandi** (the popular effect where a harpist plucks a large swath of the strings in a single motion by drawing a finger/fingers across the strings.)

To create an **enharmonic** relationship, both strings need to be capable of achieving the same desired pitch. For example, it is not possible to create a G natural enharmonic relationship on the harp, as only the G strings can achieve the pitch of G natural.

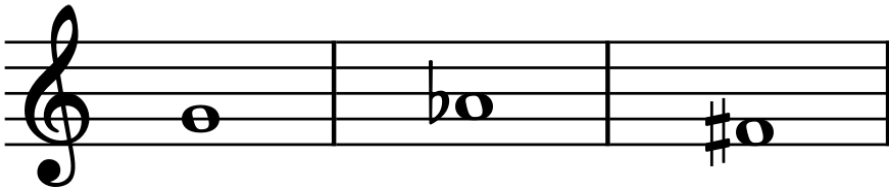


Figure 1.15 - G natural, A flat, and F sharp.

As demonstrated in the above example, there are no other pedal settings that can create two G naturals. The highest pitch possible on the F strings is F# (a half step too low to be enharmonic to G natural), and the lowest string possible on the A strings is A flat (a half step too high to be enharmonic to G natural.)

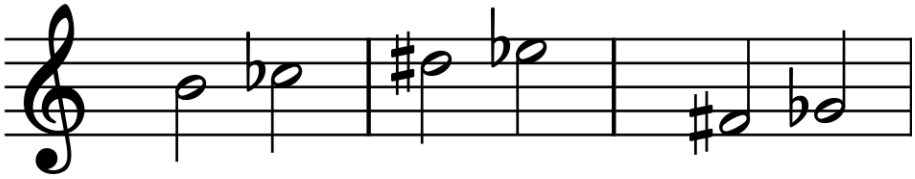


Figure 1.16 - Examples of enharmonic relationships between B natural / C flat, D sharp / E flat, and F sharp / G flat.

Oftentimes, flat and sharp pitches will have the most enharmonic flexibility, as a neighboring pitch can often be altered to match. In Figure 1.15, a set of common enharmonic pairs are provided. Note how the higher pitches are notated as the neighboring letter name, but create the same pitch as the first note in each measure. These unique relationships at the harp allow for an incredible coloristic feature that composers love to utilize.

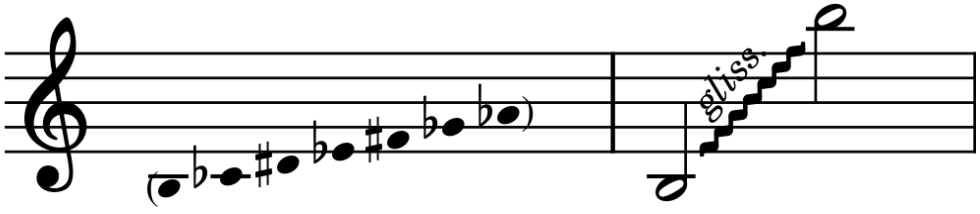


Figure 1.17 - C flat major glissando with enharmonics.

A **glissando** is one of the most characteristic elements of playing the harp, as the sweeping effect creates a beautiful, shimmering sound that resonates within the whole instrument. Following the small notes in the first measure, set the pedals to these indicated pitches, and then play a glissando on the strings by using a single finger to play through the strings. Glissandi are notated with either a straight line between two notes, or a wavy line (as

utilized in this example.) Composers will oftentimes notate any accidentals in parentheses prior to the glissando, but otherwise, the glissando will have no alterations in pitch.