

MUSIC THEORY FOR THE HAMMER DULCIMER

Music theory is the same for every instrument but how its implemented differs depending on the instrument. In general there are two types on instruments based on their tuning scheme, chromatic such as a piano or a guitar, or diatonic, such as a harmonica, penny whistle or most hammer dulcimers. The difference determines how you apply music theory as far as playing goes. This is written primarily centered on a hammer dulcimer and diatonic tuning and by no means is a complete discussion of music theory. There are any number of theory books available at a local library or most music stores should you wish to delve deeper into it. What is here is enough to take your playing way beyond just following the notes on sheet music stage. The mechanics of playing a hammer dulcimer are not addressed as there is any number of good books available that cover this in detail.

Diatonic and chromatic tuning --

First off, just what does chromatic and diatonic tuning actually mean? A chromatic tuned instrument will have all 12 notes available in sequence. For instance, on a piano starting with the two white keys together near the center of the keyboard to the left of two black keys, the right one is what's known as middle C. This is the same exact note you have to the left of the center marker on the bass bridge of a 15/14 hammer dulcimer. Each key in sequence on a piano going to the right gives the note sequence C C# D D# E F F# G G# A A# B and finally the next higher C. The pattern repeats across the entire keyboard. Each time you come to another C note the sequence just repeats. Each repeat going up or down is an octave. If you're going to the right the octaves are going up. The same note here will have exactly twice the frequency of the same note to the left. Going down in pitch or octave, the same note will be exactly half the frequency of the same note to the right. This is a chromatic sequence meaning all the possible notes possible are available in a linear layout. On a full piano keyboard you have exactly 88 notes. A guitar follows the same pattern of notes but the starting note depends on what the open string is tuned to. As a side note, most hammer dulcimers are chromatic over a given range except the note sequence is not laid out in a linear fashion like a piano or guitar.

Diatonic tuning is based on a different concept. To understand this you have to know what the term key really means from a music standpoint. In a nutshell, a music key normally uses only 8 notes of the 12. Which 8 are used is determined by the key of the song. Having just those 8 notes for the key together can make life far simpler. In reality a person actually plays a song in the given key using just the 8 notes of that key in an octave DIATONICALLY without even realizing it most of the time. So the reality of the two tuning methods is that the two are not all that different when it gets down to playing. What differs is in how you think about it.

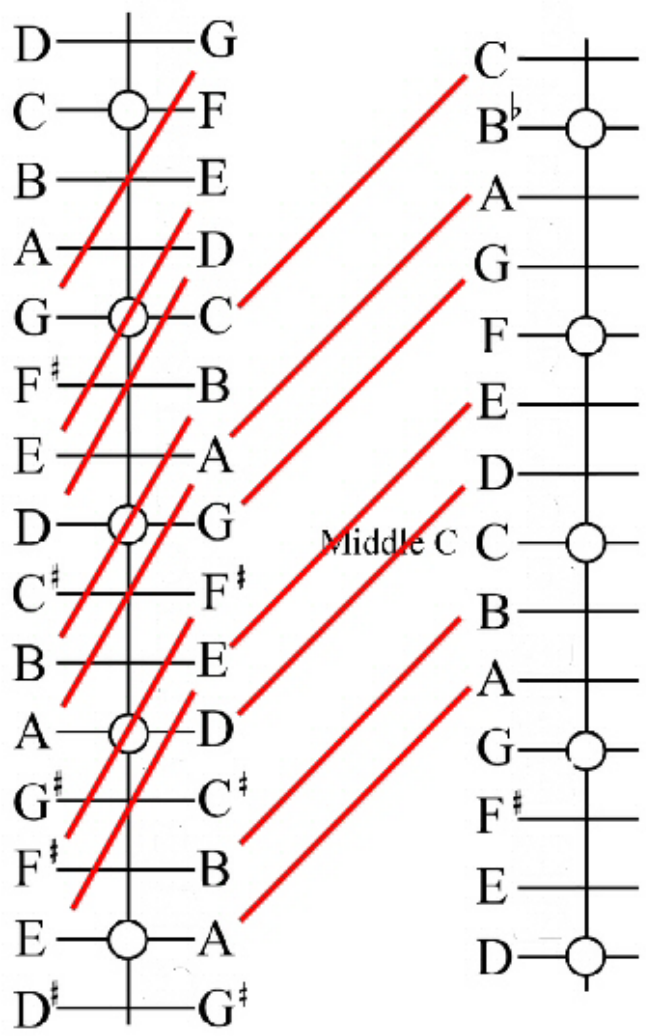
Music Keys -- The details

The sequence of notes C C# D D# E F F# G G# A A# B and finally the next higher C is based on a concept of what's known as half steps or tones. This discussion uses steps. Between any two notes in order above is a half step. Between three in order is two half steps or one whole step. The order of steps for a major key is W(whole step) W H(half step) W W W and finally H. Knowing that lets create a note sequence for a key of C. Looking at the sequence above the first note has to be a C as this note sets the key. The next note will be D as its two half steps or one whole step up from the C. We now have C and D. The next note has to be the E as it's a whole step above the D. We now have C D E. The next note has to be a half step up or the very next letter in the sequence. This is the F. Now we have C D E F. The next whole step is the G. The next whole step is the A and the next whole step is the B. To complete the key out is another half step, the next higher C. All together a C key scale looks like this – C D E F G A B C. Look at the notes starting on the second marker down on a 15/14. To the right of that marker is the C. Going up to the next marker you have D E F. Look to the left of the marker you have G A B and finally C to the left of the next marker. Couldn't be easier. A little investigating will show that those two half steps occur directly below the markers. Try creating the note sequence for the key

of D before going on. Remember the sequence starts with the key letter and follows the pattern of W W H W W W H. You should have D E F# G A B C# and D. That's all there is to keys. If you really understand this then you can easily construct the correct note sequence for any major key.

Minor keys work exactly the same except the sequence is W H W W W H W. all that changes is the first whole step get shifted to the right end. As an example an E minor key is E F# G A B C# D and E. You wont find a marker for any minor key on your hammer dulcimer. Moving UP one course off a marker shifts the whole half step pattern up, automatically moving the first whole step to the end. Try creating the A minor scale from the pattern. To check it look at the note sequence starting on the course directly above the G marker just as you do for a major key. By the way, the E minor starts above the D marker. Below is a tuning chart for a typical 15/14. Yours may vary somewhat in the last note or two on the high end of both bridges. Note that duplicate notes are connected with red lines. Knowing where the duplicated notes are can make playing many songs easier by going sideways instead of up and down to get the note. The idea is to keep the note selection movements to as much of a minimum as possible.

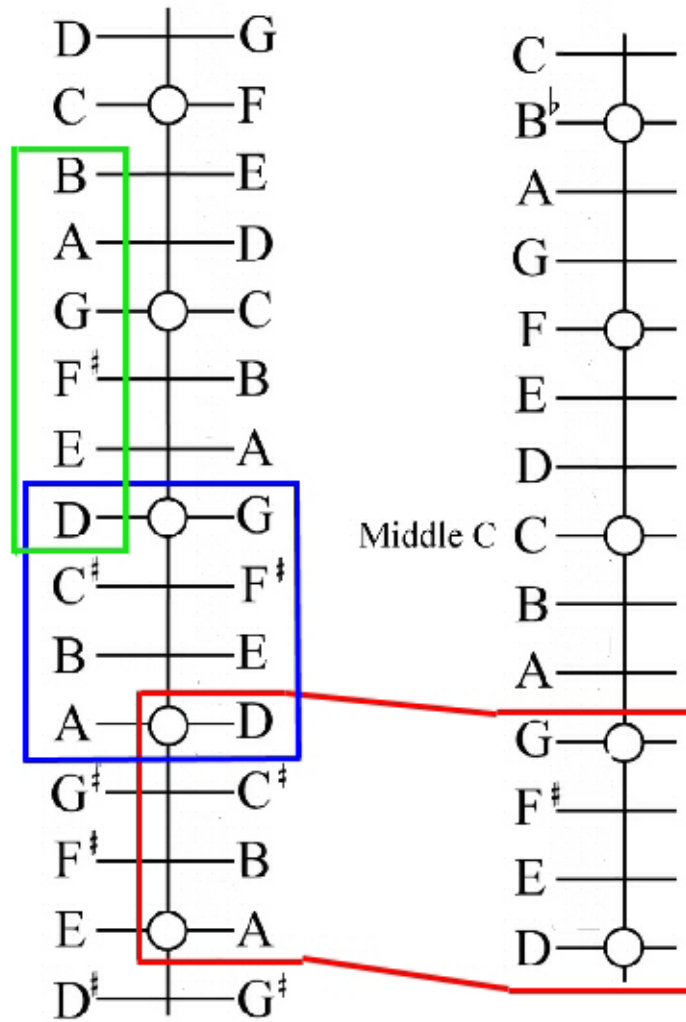
15-14 Tuning Chart



Octaves in the keys --

Now that the concept of a key is understood, the next thing to consider is how to find all the notes in the key across the hammer dulcimer as the most commonly used keys of D G and C usually cover most, if not all, of three octaves. The less commonly used keys, A and F, cover a more limited octave range, usually one and possibly parts of two more. The example below is for the Key of D. First look at the area bordered in blue. This is the area on the treble bridge where the middle octave of the key of D is located. Notice that the first 4 notes of the key of D, the D E F# and G are on the right of the bridge and the high 4, A B C# and the next higher D are to the left side directly across from the low 4. This is what many tutorials and how to play books call the box. Now notice the area bordered in red.

15-14 Tuning Chart



Its the same 8 notes in the same relationship with 2 differences. The first is there is no bridge separating the two groups of 4 notes. If you look closely at a hammer dulcimer there is sort of a valley about halfway between the two bridges formed by the wires. Think of this low spot as a virtual bridge and the note relationship is exactly the same as the one on the treble bridge. The other difference is this block of the key of D is one octave lower than the one blue. Notice the D in the upper left corner is the same exact note as the first D in the octave range in blue. Now notice the area in green. It starts with the high D from the middle octave but it is not a

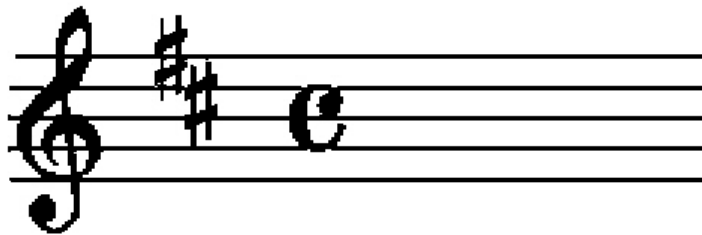
complete octave due to the missing C# above the B. If you happen to have a hammer dulcimer that has that C# added with a side bridge then the full 8 note octave is available by using that C# and the D immediately above the C. The result is on a 15/14 without any side bridges is you have 2 and 3/4 octaves of the key of D. A close look at the notes in the blue box and the 2 notes directly the G to the right will show the lower left 2 notes in the box are duplicates of each other.

This makes it possible to run up the right side of the bridge for the first 6 notes then drop back down 4 notes then pick up the last 2 notes to the left of the bridge. If you look at the 6 notes in the green box they are in a straight line going up. These are the same notes, but an octave higher than the 6 straight up starting on the D in the lower right corner of the blue box. It may be easier to do the first 6 straight up than the 4 and 4 pattern. It all depends on the notes needed in a song. The keys the markers represent is one of the few things that I consider absolutely necessary to memorize. Knowing the key stating locations is the very core of how to play a hammer dulcimer. There is only 10 of them so this is not difficult at all. All the rest of the note locations will, over time, be memorized also in the course of playing a hammer dulcimer.

For the keys of G and C, just simply slide these 3 boxes up, keeping the same relationship between them, to start on the G or C marker on the right or bass bridge. You will discover the keys of G and C are more limited but there is at least 2 octaves of each. the key of F is only 1 octave and a partial of the next highest octave. The only location on a 15/14 for the key of F starts from the F marker on the bass bridge just like the low octave of D does. The only other major key on the 15/14 is the key of A. If you ignore the red box above and slide the blue and green ones down to start on the A marker on the treble bridge you have 1 and 3/4 octaves in A. For the E minor scale move the boxes up where the lower right corner of the blue box is over the E directly above the the D. Move the other two boxes up just 1 position too. The result is the E minor octaves. All the other minor keys work exactly the same even with the 6 and 2 offset as described for the major keys. You might want to construct all the major and minor keys as described above then locate them on the hammer dulcimer to get a better understanding of the scale mapping for all the keys.

Dynamic range --

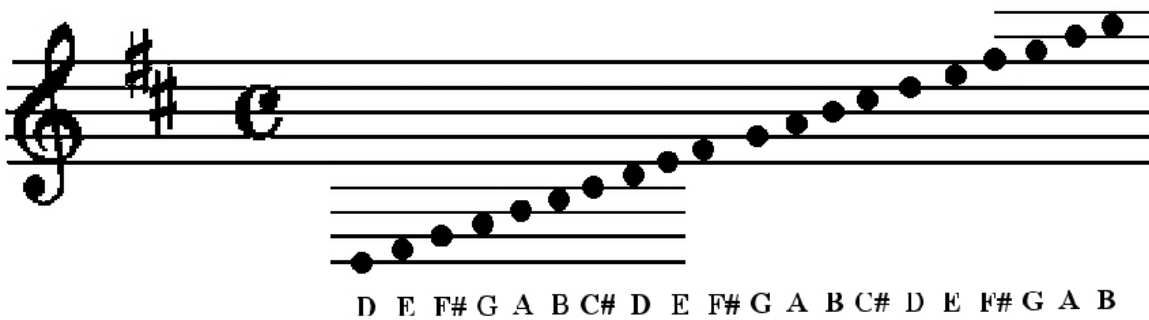
The dynamic range of the 15/14 is not as limiting as it first sounds because nearly all music rarely exceeds 2 octaves with most being about 1 1/2. The proof of this lies in sheet music. To understand this lets look at the most common music staff, the treble sometimes called the G staff. There are 2 more but they are very rarely used with a hammer dulcimer. A typical treble staff on sheet music will look like the picture below. For now the only things of interest is is the funny looking symbol to the left, the sharp signs (#) if any, as these tell you what key the song is in, and the 5 lines, and the 4 spaces between the lines. Each of the lines and spaces represent a note going up from low on the bottom to high on the top. The actual note names are starting on the bottom line are E F G A B C D E F in that order. Note that this is 1 note over an entire octave. An easy way to keep track of the note values for the spaces is the word FACE with F in the bottom space. From there, its easy to figure out the line values. For keys where there are sharp notes the line for the natural or non-sharp line is used and they are notes as naturals but are played as sharps based on the key signature.



Look closely at the symbol to the far left near the bottom of it. You will see what looks like an almost complete circle with a vertical line and a horizontal line at the center. Why this is often called the G clef is because the horizontal line is the G note line. Notice where the 2 sharp signs are, they are on the C and F upper note positions and apply to all the C# and F# notes no mater where they are, unless notated otherwise. The

sharps means its in a key that has a C# and an F#. If you go back and look through all the notes in the keys there is only one that has these two sharp notes in it, the key of D. There's even an easier way to figure out what key the song is by simply looking at the notes to the right of the treble bridge markers. It works like this: skip the top marker for the partial key of F. The next one is the key of C. There are no sharps in the key of C so if there is no shapes or flats (they look like a b) then the song is in the key of C. Play it in the key of C, the one starting on the middle of the bass bridge, to play it in the indicated octave. You can also play it using the C on the Treble or left bridge But the actual notes will be an octave higher than as written. One sharp is the key of G, using the G key on the treble bridge most of the time. Two is the key of D, normally starting on the treble bridge. Three sharps is the key of A. So the easy way is to skip the top marker and start counting DOWN markers from the C one in a 0 1 2 3 fashion. Couldn't be any easier as the cheat sheet is right there in front of you and you don't even have to think about it or even memorize the key signatures!

Now lets look deeper into those lines. If you need lines for notes above and below these normal 5, just draw a short line in the corrects place. There are called ledger lines As an example lets assume you need an A higher in pitch than the A that would be indicated by a note in a line above the G line, simply add a short line above the normal 5. For a C you would need 2 lines above even though nothing will be on the added A line. This has to be done this way to clearly identify the added line positions. The figure below maps out every note on a standard 15/14 hammer dulcimer in the key of D using the added ledger lines. Notice that every F and C here is a F# or C#. The line they're on will be either the F or C line and almost always the sharp sign will be missing.



While not shown above, there are 2 additional notes on a 15/14 hammer dulcimer above that last B, a C natural and another D. The D scale is the largest scale note wise on the dulcimer.

A G scale is similar but starts on the first G, 4 notes to the right of the first D above and continues 2 notes past the far right B. It will have only 1 sharp for the key signature and that will be centered on F# line. The sharp note is just the F#.

The C scale starts at the C# position shown above and continues 2 note past the far right B. There are no sharps in the C scale and there will be nothing where the key signature is.

The A scale starts on the first A and runs to the F# on the far right. The key signature has three sharps in it, a C#, an F# , and a G#. The range is more limited but is still wide enough to be quite useful.

The F key is limited to just 1 octave and runs from the middle F to the far right G. There will be what looks like a b, the flat sign, for the key signature. There are no sharps here either but there will be a Bb or B flat.

The minor keys a hammer dulcimer is capable of playing will not be discussed here because they are rarely used in most popular music. If you wish to delve into the minor keys and their relationship with the majors, just about any good music theory book will cover this. The practical side of playing minors is exactly the same as playing major keys, just start in the correct spot and the patterns are exactly the same as the majors.

Now the big question, how do you know where the tones or notes are located in relation to other interments. Seems every theory book wants to use a piano as the reference instrument so using that there is a key just about

the middle of the keyboard, the C key that is called the middle C for obvious reasons. That note is exactly the same note as the string to the left of the middle marker on the bass bridge. If you don't happen to have a piano available, a lap dulcimer tuned to DAd will produce the same note as the string to the right of the D marker on the treble bridge if the high D is plucked unfretted, or open. The low D string open will produce the same note as the D marker on the bass bridge also. Many tuners such as the popular CA 30 will also produce tones. The A tone on these is the same note as the top A on the bass bridge and the A above the G marker on the treble bridge. On sheet music the middle C is the first added ledger line below the bottom of the normal staff. With just this much theory you can take just about any piece of sheet music around and pick out the correct notes, without regard to timing, on a hammer dulcimer as long as its in one of the keys above. Try it and see for yourself.

Chords --

All music is based on something called chords. This is nothing more than a group of 2 or more notes played together at the same time or one after the other. The most common chords are 3 notes. In the purest sense of the definition about the only instrument capable of playing a true chord is a keyboard. But if you can hit those three notes fast enough one after another on any instrument it will sound like a true chord. This is exactly what happens on any string instrument. The chord sound is due to the fact the strings keep on vibrating for a period of time after they're picked or strummed as on a guitar. If you think about it some, even with a guitar there is a very small time between each string that is strummed.

This may sound overly picky about the definition but it is very important in regard to chords on a hammer dulcimer as you have only two hands. Think about it for a bit and it becomes obvious there is no possible way to hit three strings all at the same time with the usual hammers, nor can you move fast enough to get that millisecond difference in going from one string to another either. You're forced to rely on the after ring or sustain to get a three or more note chord. This is one of many things about a hammer dulcimer that gives them the unique sound they have. Doing the three notes one at a time fast produces a chord sound distinctly unique to a hammer dulcimer. Its even possible to vary the chord sound by changing how fast you hit the three notes or in what order.

To get a feel what chords are hit the D note besides the D marker on the treble bridge then quickly hit the E directly above the D then both notes together. That makes a funky somewhat unpleasant sound doesn't it? Now do the same with D and F#. A far more pleasing sound in general to most people. Repeat the same thing using the D each time along with the rest of the notes one after the other all the way to the high D. Notice that many sound bad and many make a good sound. Why? It has to do with what's known as intervals. This is nothing more than the spacing between the notes. 2 notes right next to each other in a key rarely sound good together to most people. If a note or more is skipped between the notes the result is a more pleasing sound. This spacing is called an interval in music terms. The first example above was an interval of 2, the second was an interval of 3 and so on all the way to 8 for the two Ds. Why this works is due to the way the tones interact. Certain spacing between the notes of a key produce a very nice sound that is a mix of all the notes involved in the chord. Turns out the most common chords uses 3 notes spaced out using every other note over a 5 note spread.

On a hammer dulcimer chords are easy to do without even knowing what the notes used actually are. Also out of the possible three note ones only three or four are used in most songs. There is a relationship between keys and chords. Chords are made using the notes of the key you are playing in and each start on a specific note of that key. The actual notes will change depending on the key but the position within the note sequence of the key remains constant no matter what key you are using. Its the same with any instrument. These 4 chords are called the 1 (I) or root chord, the 4 (IV) chord, the 5 (V) chord, and sometimes the 6 (vi) chord. Notice the roman numerals here as they are often used in music theory and avoid confusion with the normal numbers. We will use the key of D as an example of how to work out the actual notes of the chords for the key of D. First

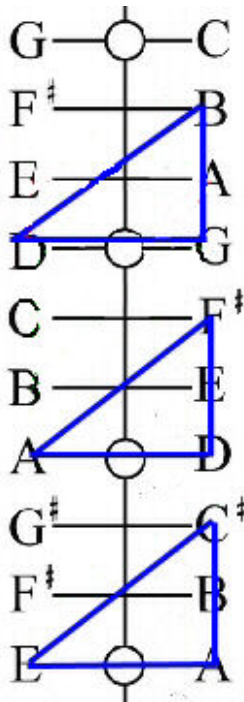
write out the notes in order as in the first line below, then write out the other 2 lines as shown. For any of the other keys all that will be different is the top row of note letters. Notice the last note is the same as the first as the note sequence wraps around on the ends.

D	E	F#	G	A	B	C#	D
I	ii	iii	IV	V	vi	vii	I
1	2	3	4	5	6	7	1

Now lets find the actual notes used in the key of D that make up these 3 note chords. First is the 1 chord, often called the root chord. Look at the little table above and notice the roman numerals I in the middle row. That's where this chord starts. From above, the chord is every other note across a 5 note spread starting with the note directly above the 1, so starting at D we get the 3 notes D F# and A. Next is the 4 or IV chord. Doing exactly as we did for the root chord but starting above the IV is a G so the chord is G B and D. The 5 or V key starts with the letter above the V. That's A so the chord is A C# and E. Chords are normally played from the low note to the high note so that E in the V chord should come from the octave above the one where the root chord was played. The 6th or vi chord starts above the vi. In this case its B D E. The last 2 notes should normally come from the next higher octave also. As the chords go up in number the overall sound of them should do the same even though by definition any three correct notes from anywhere on the hammer dulcimer are a correct chord the overall sound doing this may not sound right in a song. Notice that some of the roman numerals are upper case and some are lower case. The upper case ones are major chords and the others are minor chords. If you remember from the key discussion above, a major key will always start on a marker and minors start one note above a marker. Major and minor chords work exactly the same. That fact makes finding the starting points far easier. Its not even necessary to re member any of this about chords on a hammer dulcimer as its all mapped out right in front of you on the hammer dulcimer once you learn how to "read" it. I recommend you do memorize this as its invaluable knowledge if you happen to be working with other players who don't know chord theory or playing some other instrument.

Here is how it all maps out on a hammer dulcimer. First off a normal three note major chord is possible by starting on the marker for the first letter of the chord skip the next course up and play 3rd course. Next go back to the marker and play the course to the left of the starting marker. That's notes 1 3 and 5, just like in the table above. It is possible to go straight up 5 notes on the same side but I don't recommend doing this until you understand the basic chord patterns. These patterns are one of the neatest things about playing a hammer dulcimer. They allow you to do chords without knowing any of the above chord theory other than what note each starts on. For a D major chord play the D on the D marker, skip the E above play the F#, drop down to the marker and play the A on the other side. If you mentally stack the left 4 notes on top of the right 4 it becomes obvious you're playing straight up 5 notes but skipping the 2nd and 4th notes. This is exactly how that D chord is constructed in the table above. The pattern you create is a triangle with one side running up parallel to the bridge, another side running straight across, and the third side connecting the 3rd and 5th note. Doesn't matter where you start, the same pattern will always produce a three note chord with the proper note spacing! Some will be rather strange sounding though. Normally you should start on a marker or on the next course above a marker.

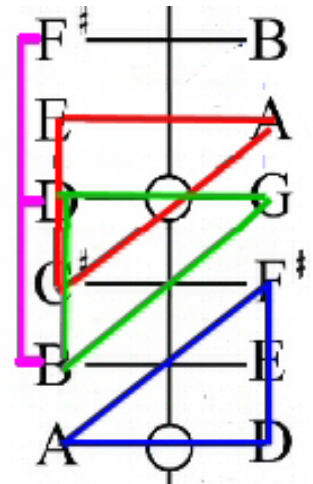
So how do you know what the proper 4 chords are for the keys on a hammer dulcimer and where to play them? There are two ways. One is to spend many hours memorizing all the possible chord locations and which ones to use for a given key. That's a lot of work and for many will kill the fun of playing. There's a better way and you have very little to memorize too. Study the small part of a tuning chart above a bit with the chord notes in mind for the key of D. They're in the second paragraph above.



Look closely at the chart to the left using the D key. The key starts on that D marker. So does the root or I chord, played using the 1st note, the 3rd one and finally the 5th one, making a triangle pattern. This is the blue triangle with a corner setting on the D. This is the standard way of making a three note chord. The 4 or IV chord starts at the next marker up from the key marker. In D that the G marker. As before, notice the blue triangle, the same pattern as for the D chord. The 5 or V chord starts on the first marker below the key marker. In this case that would be the A marker and is played the same. Note the blue triangles. The naming note of the chord is the note at the lower right corner. All three chords are played exactly the same way as the blue triangles show. As chords should go up in overall sound playing the A key here will produce the correct chord by definition but it usually won't sound right as far as the scale goes. Also note the large movements you have to make to play the chords this way.

There is a better way to do the chords. This works because of the diatonic tuning and note layout on a hammer dulcimer. Look at the small section of the tuning chart below.

The root or I chord is played as above, the blue triangle. The 4 or IV chord is played as shown by the green triangle, similar to the blue one but rotated 180 degrees. The 5 or V chord is the same exact pattern as the 4 chord but just shifted up one course from where the 4 chord is played. Its the red triangle. The 6th or VI chord is also playable by using a triangle pattern starting on the upper B to the D above the B and then back to the F# across from the B using the same triangle shape as the D chord. This is not shown because there is a better way that minimizes hammer movements. Play it straight up the left side starting on the lower B skipping every other note. This is the pink pattern. Note that all the movement needed is just left and right across the bridge and up and down across only 6 courses. Sometimes there will be a 2nd or ii chord also. This is not shown but its the same blue triangle just shifted up one course starting on the E above the D marker. They are normally played in a low to high note order, right to left fashion. If you memorize just this small amount of movement and positions it works for any key on the hammer dulcimer, including using the bass bridge markers. In that case you're not crossing a bridge but the valley between them. Just start with the key marker at the lower right corner of this pattern.



The one exception is the F key as the second course above the Bb marker is missing. In this case the 6th chord has to be played elsewhere and the note above the Bb may be tuned to another note. The 5th chord may have to be played elsewhere also. Its not a great inconvenience as the F key is rarely used.

Practice this pattern enough times and you will do it automatically without giving it any real thought. The real beauty of this is if you know the key of the song and can hear the chord changes you can play almost any song you will hear even if you never heard it before!

There are also some chord inversions and 4 note chords among other things. If you wish to investigate these they are covered in a good music theory book. They are all based on what was presented above and are not presented in a way that easily relates to a hammer dulcimer. If you truly understand what's here then translating one to how a hammer dulcimer works is no real problem.

Some suggestions on playing chords --

Generally chords should be in the same octave as the song is being played in. Unless your playing lead or doing a break, its better to stay either in the same octave or below whoever is doing lead. If your the only hammer dulcimer playing your going to stand out anyway because of the totally different sound no matter what you do so it becomes more important to minimize the effect as much as possible by staying in the same octave, or below whoever is doing lead. If there's several or mostly hammer dulcimers playing the overall sound is better by shifting to a different octave. Which way to go is a matter of choice but staying under the lead is almost always better. If nobody is playing base in a jam a trick that works especially good is to get in as low octave as possible and just do chords like a base player. If you watch a base player and listen closely what they often do is just pluck the low then the high note of a 3 note chord in the proper key.

The big surprise with most guitar style instruments is that many players don't really play the notes of a song, they grab a chord and strum it in time with the song. Early on I brought up the fact that a chord done this way is impossible on a hammer dulcimer. There is 2 ways around this problem. The first and most difficult is triple or quadruple timing a song to get a chord to match up right. Hard to do right and definably can wear you out. A better choice is to do the chord notes one after the other in time with the beat. The sustain on the average hammer dulcimer is long enough for this to work nicely except on real slow tunes. If you find yourself missing a beat doing this, then just use the first and last notes of the chord. The difference in the sound is almost unnoticeable and usably nobody picks up on it other than another player. As an example, a song that has four beats in a bar and at the same time the chord is just one bar long, you have 4 beats and there is no way a 3 note chord will fit. You could do the first 3 beats and skip the 4th beat or fill the last beat by hitting the first and last notes of the chord together. Another possibility is to do the first and last notes of the chord together for the 4th beat to fit perfectly. For a different effect, just pause for that 4th beat.

Chord progressions --

Now that you know where the correct chords are for any key available on a hammer dulcimer are the next part of theory relating to chords is something called chord progressions. This is independent of what key you may be playing in and is nothing more than the order the chords are played in a typical song.

Most sheet music will also have the chord letters above the music staff. For Amazing Grace in D, one chord pattern that works nice is the chord sequence D G D D A D G D D A A. You could memorize that chord sequence but the problems start if somebody wants to play it in say G or C. The chords you memorized in D wont be the correct ones. The actual chords will be different. You could always play it in D or spend a bunch of time memorizing the chords for all the other keys. There is a better way to be able to play it in any key.

This is what chord progressions are all about. Instead of memorizing the actual chord names, memorize the chord NUMBERS! Lets work out the chord numbers for Amazing Grace in D. Notice the first chord is a D chord, the root chord or the 1 chord. The next one is G. That's the 4 chord in D. Next is 2 D chords. So at this point the chord sequence is 1 4 1 1. Now there's an A chord which is the 5 chord in D then another D. Now the chord progression 1 4 1 1 5 1. Completing out the sequence gives 1 4 1 1 5 1 4 1 1 5 5. Notice there is only 3 chords in the total song. Play just this sequence of chords in D, one note for each beat somewhat slow and listen closely. Don't even think about the actual notes in the chord but use the chord patterns developed in the previous section. It will most likely sound a bit different than a version you have on a CD but you will recognize it.

Now do the same thing in a different key, for instance G. The chord sequence of 1 4 1 1 5 1 4 1 1 5 5 remains the same. All that really changes is just where you start it. You play it using exactly the same series of positions relative to the key marker. Amazing Grace is a song done in 3/4 time meaning its 3 beats a bar so 3

note chord fits perfectly through the entire song! Now get out the sheet music for your favorite song and work out the chord progression for it and try it in various keys just for fun.

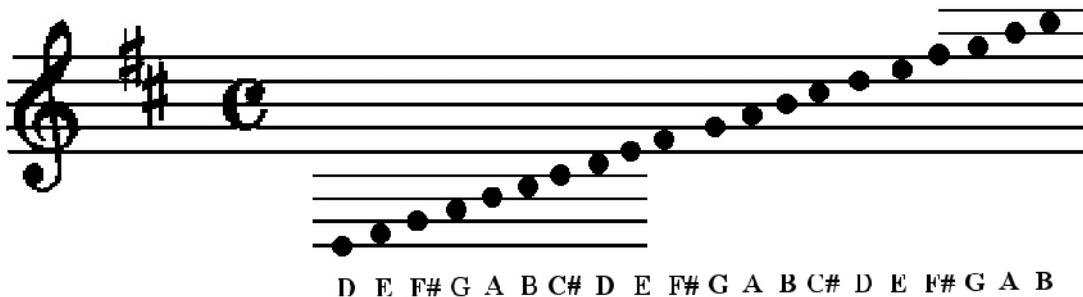
This way of playing may different than the way you started playing so it will most likely take time to learn to use it. Spend some time doing chord progressions using the chord progression numbers for various songs in different keys and very quickly it will be come almost automatic.

If you happen to be somewhere where people may come by and doing nothing more than random progressions in different keys don't be surprised to see some stop and listen for a while. Sometimes they will even ask for the name of the song your playing too!

A hammer dulcimer is one instrument that you can play both melody and harmony at the SAME time. Melody is just playing the individual notes on sheet music while harmony is doing chords in time to those notes. This is not all that easy to do and takes a lot of practice. If you want to try it I suggest you use the left hand for the chords and the right for the notes. If your left handed then just reverse the hands. Watch a piano player sometime and this is exactly what most do, chords with the left hand and melody with the right hand. On some organs there is even chord buttons to the left or above the main keyboard.

Sheet music –

Before looking into how music really works, you need to understand how to read a minimal amount of sheet music because most of it is better understood if looked at in a graphical fashion. As a quick review of what was said earlier about sheet music here's that note position drawing again for easy reference.



Now lets take a look at the sheet music for the firs few bars of Wildwood Flower, an old song made popular by the Carter Family. This is often played in many jams in various keys.



The first thing is to look at is the clef sign to see if this is music is playable in the tone range of your dulcimer. As that clef is a treble clef it is. Next is to check the key signature. Two sharps there means this is in D and the relative note positions means the the octave is the D on the treble bridge if played as written. You could do it using the low D octave on the base bridge also but all the notes would be an octave lower than shown in the music. Before we figure out the timing lets take a look above the staff. There are letters there showing what chords will work as harmony. As this song is in D the first chord is a D chord or the root chord. Most will start this way.

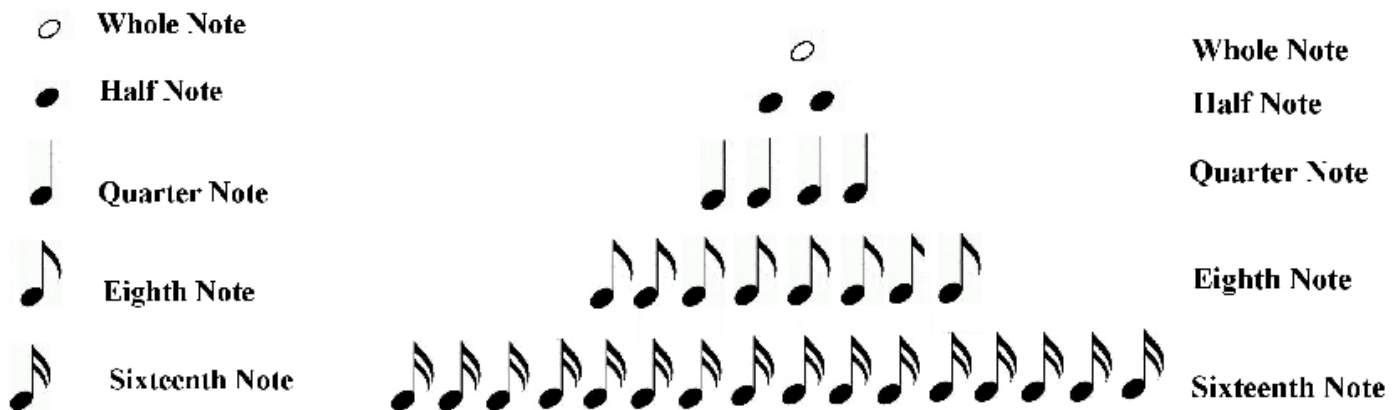
Sometimes there wont be anything where the key signature is. In that case the song is in C and should normally be played in the C area on the bass bridge. It is playable any of the keys on a hammer dulcimer but the other

interments playing range and capabilities should be considered. For example, if there's a mountain dulcimer or two tuned DAd around then playing in D works great. They are also diatonic instruments and usually cannot play in any key other than D without either retuning or using some trick to change the key of the tuning. If in doubt, just ask the player what he can do.

The timing information is in 3 parts. The first part is right after the key signature. Here it is a letter C, often used instead of the 4/4 that is often here. 4/4 is a very common timing and the C is just the first letter of the word Common. The next part has to do with the vertical lines across the staff. These are called bar lines. The upper number of a time signature is the number of beats in a bar. If you look at this music you notice there are 3 notes in each bar and your first thought is most likely a beat for each. Done that way the notes are played with timing that sounds almost the same as the tick of a slow clock. It is recognizable played like that but it can get boring real fast.

Look closely at those notes and you see they are different looking so its obvious they shouldn't be played the same as far as timing goes. A hint about timing just happens to be available in this score. Notice the notes are not spaced out with equal spacing and some have a - between them. That indicates there is a different amount of time between the notes. As each bar has 4 beats from the time signature you could easily just hit the notes and do nothing for the - in a steady unchanging beat. This is the actual timing.

Timing done this way is not the standard way of doing it but it does make it real easy to visualize. The standard way has to do with the note shapes. The standard way uses only the note values in the tables below without any regard to the visual spacing.



The table above is the note values. Starting with the open circle for the whole note each change to it cuts the time value in half in the order shown. First is just the open circle or body of the note. The half note has the body filled in. To make a quarter note just add the line called the staff. Next is the eighth note. Just add the flag at the top to the quarter note. To make a sixteenths note just add another flag and so on. The value relationships are shown in the chart. Each line has exactly the same timing value. Sometimes you need a note time value that don't fit this pattern. If you add a small dot after the note it adds an additional half value of the note. For example if you needed a 3/4 note for some reason, its not one of the standard notes so write a half note followed by the period for a total time of 3/4. Sometimes you will find several of the notes that normally use flags tied together with lines where the flags would be. This is just a shorthand way of doing them and just treat the group as individual notes.

Now lets take another look at the time signature. Its 4/4. the top number is the note that gets one beat and the bottom number is the number of beats in a bar. With say 3/4 you have 3 beats to the bar but quarter notes still get one beat. A straight forward timing using only quarter notes gets a clock steady tick tick feel. Now look at 6/8 for a bit.. The top number says 6 beats a bar and the 8 says an eighth note gets one beat. So a bar with just 6 eighth notes in it would give the same feel as above but the ticks would be about twice as fast.

Now we have all the information needed to play this song - almost. Look at the first two notes. They're both quarter notes but its an incomplete bar as far as timing goes. If you look at the last bar on a song with this incomplete bar at the first, the 2 together will fill out the timing perfectly. These are often called the lead-in. Now lets look at the notes for the remaining information needed to play this song. Starting with the very first note you have an F# quarter note. That's both the timing info and the actual note. The position on the staff gives the actual note. The shape of the note along with the time signature gives the timing.

Its not often addressed in theory books but the bars themselves represent a fixed amount of time. If they didn't then the overall speed could be anything you want and still fit the time signatures. The average beat timing for a 4/4 song is about 120 beats a min or 2 per second. So using that the bar represents about 2 seconds of real time. The song can be a bit slower or faster though. to get an idea of how long the song is count the number of bars and for a 4/4 song and divide by 30. Other timings work the same but ill leave the values to you to figure out. There is a lot of sheet music symbols not addressed here such as repeats, rests (quiet spots) and so on but with just this there is an amazing amount of songs available that are usable. To learn more on reading sheet music check your local library for a good book on reading sheet music. Look in the music theory area. There is a huge amount on the net on just reading sheet music also. Many music stores carry books on reading sheet music. Some are in the 5 to 10 dollar range and having one is a good investment If you want to try out some arrangements done for a full orchestra.

Putting it all together --

Now lets put it all together and learn how music really works. Lets get that piece of Wildwood Flower where its easy to look at.

Look at the notes and chords for a bit. Notice anything about the relationships between them? The first chord is a D chord. What are the notes in a D chord? D F# and A. The chords played as shown start after the two lead-in notes so lets forget those for now. The chord starts on the first beat of the first full bar and played one note at a time in time with the three notes. This gives some two note relationships. The first pair of notes is the D from the chord and the a from the staff. Notice anything yet? Those 2 notes are the low and high notes of the D chord! That gives a sound almost the same as a true 3 note D major. In the drawing below I have added the D chord notes to the staff with a red dot where each of them would be played. The chord notes for this bar notated properly would look like the red note to the far right but that does not reflect the true chord (harmony) note and the sheet music (melody) relationships.

Now lets look at the next pair, the F# from the chord and a B from the staff. This combination is a bit strange so lets look closer. Chords, often called harmony, are normally played lower than the notes on the staff so where is that D chord played on the staff? The first note of the chord is a D so if that D was noted on the staff it would be in the space below the bottom line. That puts the F# from the chord right on the the next space up. Notice the space-line-space layout and from chord theory a chord is every other note. So the next pair of notes

is B on the top and F# on the bottom. The distance between them is 5 notes one way and 3 the other counting the notes. What is the spacing on a 3 note chord? 1 3 and 5. You get another 2 note chord! As the low note is the naming chord it has to be a B chord, B F# with out the A that would be there in the full chord.

Last is the A from the D chord and the D from the staff. The a from the chord is the lower note of the pair. The A from the chord will fall on the staff exactly where that quarter note A is. Now count the lines and spaces including the 2 notes to get the interval. You have an interval of 4. Put another way there is two notes between them that are not there. This pair is a variation of an A chord. Before moving on try each of those 3 note combinations by hitting the chord notes with the left hand and the melody notes with the right exactly together. Then move the D chord to the bass bridge and do it again for a completely different sound. With a bunch of practice it becomes easy to do BOTH the melody and harmony at the same time.

If you would like the complete sheet music of Wildwood Flower where these parts came from, its available in a PDF, It's available at everythingdulcimer.com in the tabs section.

I doubt very few people would see or understand the relationship between chords, the harmony part, and the staff notes, the melody, if all they did was play by ear or some variation of a tab. Sheet music makes it very easy to add harmony if its missing and you want it or to work out a melody line from just a chord progression. Adding harmony is fairly easy if you know the notes of the chords. Start with the obvious and try some using the notes on the sheet music. Sometimes a chord will jump right out, other times you have to look into one that will produce odd intervals for one sound and another to get even intervals. Start with the root chord of the key as the first chord then look at the 2 4 5 6 chords. Chords can go over any number of bars too but they must always start at the start of a bar.

Making up a melody line from a chord progression is similar. Just write down the the notes in the chord in order to start with. From there move some notes up or down to get the sound you like.

In closing --

The number 1 rule is KEEP IT FUN!

If you're bored or lost about what to do during your practice time try some of what's been presented here or get a bit deeper into some parts of music theory. What was presented here is only the beginning of theory and just this much alone can make a world of difference in how you approach playing.

Rule number 2 is keep a balance between theory and just playing.

Both are parts of learning music but the best way is a balance between the 2. Neither should be neglected and what a workable balance is for you to decide.

Feel free to use this attempt at translating some basic music theory to a hammer dulcimer any way you wish as long as it remains intact and with proper credit.

HAMMER ON!!!!!