



Using the GarageBand Jam Pack: World Music Instruments

GarageBand Jam Pack: World Music contains over 40 new Software Instruments featuring sounds from around the globe. You can use these instruments to create your own world music compositions or add an ethnic flavor to songs in any style.

This document contains the following information about using the instruments included in World Music:

- “Introducing the World Music Instruments” on page 1
- “Performance Tips” on page 46

Introducing the World Music Instruments

World Music gives you a collection of instruments from around the world, including both traditional folk instruments and modern popular instruments. The instruments included in World Music span the musical cultures of Africa, Asia, India and the Middle East, Europe, and the Americas, including instruments in the following categories:

- *Bass*, featuring a Latin “baby” bass, Mexican guitarron, and Russian balalaika.
- *Choir*, featuring South African choral singers and voice effects.
- *Guitars*, featuring a Chinese ruan “moon guitar,” Hawaiian ukulele, European medieval lute, Spanish flamenco guitar, and two Turkish lutes: the oud and the saz.
- *Mallets*, featuring an African kalimba and marimba, an Indonesian gamelan ensemble, and a set of Tibetan singing bowls.
- *Pianos and Keyboards*, featuring an Afro-Cuban upright piano, polka accordion, and tango accordion.
- *Strings*, featuring a Celtic hammered dulcimer and harp, Chinese erhu violin and guzheng zither, Indian sitar, Irish bouzouki and fiddle, Japanese koto, and Persian santoor.

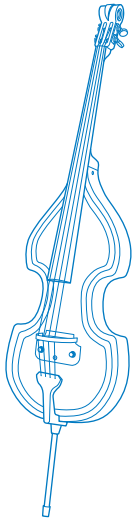
- *Woodwinds*, featuring a Celtic tin whistle, Chinese di zi and xiao flutes, Highlands bagpipes, Indian bansuri flute and shehnai oboe, Japanese shakuhachi flute, European medieval recorder, Native American flute, and Peruvian panpipes.
- *Drum Kits*, featuring African, Asian, European, Indian and Middle Eastern, and Latin percussion kits. Each kit contains a variety of instruments.

This document describes the software instruments included in World Music, lists controller information for each instrument, and provides some performance tips for using the instruments.

Bass

Every musical style based on harmony makes use of bass instruments to set the harmonic as well as rhythmic foundation. World Music includes two bass instruments from Latin America and one from Russia.

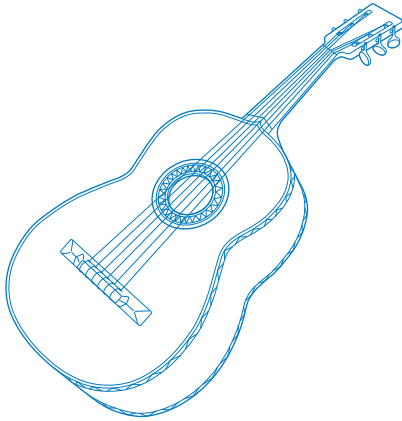
Latin Baby Bass



The Latin “baby” bass is an upright electric bass guitar with a compact body that has become widely used in salsa bands around Latin America, particularly in Cuba. The baby bass is played through an amplifier, but has a tone similar to an upright bass. Afro-Cuban music makes frequent use of cross-rhythms, and the punchy sound of the baby bass allows it to cut through as it interweaves with the drummer’s rhythms.

The baby bass is made of wood and metal, and uses metal strings tuned in the standard E-A-D-G bass guitar tuning.

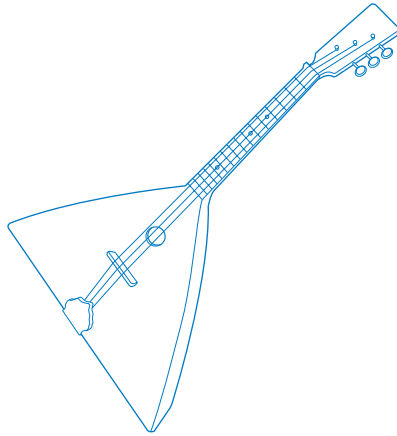
Mexican Guitarron



The guitarron (also called “chitarrone”) is used as the bass instrument in mariachi bands in Mexico and throughout Central and South America. It is a large, fretless bass guitar with very deep sides which create a large resonant chamber to amplify the sound. In addition to its traditional role, the guitarron has been used by pop and rock groups.

The open strings are usually tuned to the notes A-D-G-C-E-A, with the high A string tuned below the C string. This allows the bass line to be played in octaves, with the player’s thumb picking the lower note and the index and middle fingers alternately plucking the higher note. The three lowest strings are steel, while the higher strings are nylon. The action is quite high, requiring great strength to play the instrument.

Russian Balalaika



The balalaika is a Russian folk instrument with a long history. In the 19th century, the balalaika was expanded to include families of instruments in several sizes from soprano (called “prima”) to bass, and music was created for balalaika ensembles using innovative strumming and picking techniques. In 1888 the first balalaika orchestra debuted to popular acclaim, and the balalaika became a favorite of both the court and the public. Ensembles toured Europe and visited America in the early 20th century.

All balalaikas have a triangular body, with the top usually made of spruce or fir, and a long neck across which three strings are stretched. Prima and alto instruments are played with the fingers, while bass balalaikas are played with very thick leather picks. The Russian Balalaika Software Instrument includes both a bass and a prima instrument, enabling you to perform across the range of an entire balalaika orchestra.

Bass

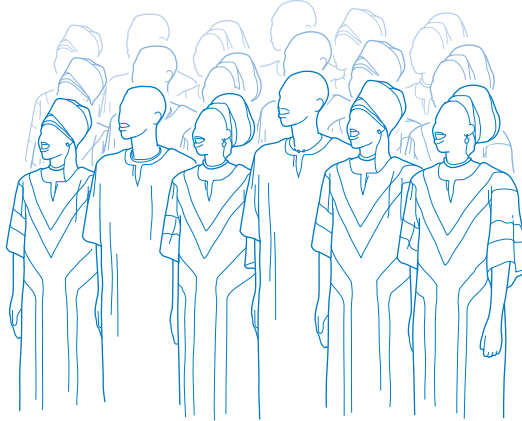
Instrument	Controller Info
Latin Baby Bass	<ul style="list-style-type: none">• Mod wheel adds vibrato.• Highest velocity adds slide up to note.
Mexican Guitarron	<ul style="list-style-type: none">• Mod wheel adds brighter tone.• Velocity increases attack and volume.
Russian Balalaika	<ul style="list-style-type: none">• Mod wheel adds tremolo to notes above A3.• Highest velocity adds slide up to note.

Choir

World Music includes two instruments featuring the sounds of a South African choir: one singing common syllables and the other performing voice effects.

South African Singers

South African Voice Effects



Music-making in Africa belongs to all people, and Africa's many musical styles are all folk styles that developed from local cultures. While its history is not recorded, the sound of the South African choir is believed to have developed in migrant labor camps in the early 20th century. It provided workers with one of the few means for both communal recreation and personal recognition. The singers often perform intricately choreographed dance steps along with the singing. In the past two decades, the sound of the South African choir has become known to Western audiences through its use by popular artists and in movie soundtracks.

Contemporary South African choral groups are usually divided into the standard four voice-parts: soprano, alto, tenor, and bass. The South African Singers Software Instrument features the voices singing four commonly used syllables; the South African Voice Effects instrument features three additional syllables, one in both long and short versions. In both instruments, the four parts are distributed and blended across the keyboard range.

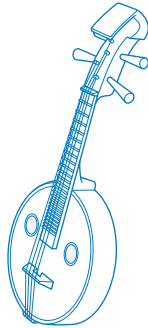
Choir

Instrument	Controller Info
South African Singers	<ul style="list-style-type: none">• Mod wheel gives four different syllables: "Ooh," "Hemm," "La," and "Ah."• Velocity increases volume.
South African Voice Effects	<ul style="list-style-type: none">• Mod wheel gives four different syllables: "Ti," "Timo," "Mo," and a short "Mo."• Velocity increases volume.

Guitars

World Music includes a Chinese ruan moon guitar, a Hawaiian ukulele, an Irish bouzouki, a Spanish flamenco guitar, and two Turkish lutes: the oud and the saz.

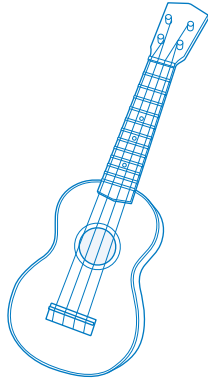
Chinese Ruan Moon Guitar



The ruan "moon guitar" (also called the yueqin) is a fretted stringed instrument that has been a part of Chinese music for more than 2000 years. The instrument is named for a fabled musician of the third century known as one of the "Seven Sages of Bamboo Grove," and has changed little since its ancient beginnings.

The ruan has a circular wooden body and a short neck that holds four strings. The neck has 24 frets divided into semitones, similar to a European guitar. The strings are tuned in fifths like those of a violin, commonly to the notes G-D-A-E or A-D-A-D. The ruan produces a delicate, mellow tone, and is used both for accompanying singers and as a solo instrument. In modern times, orchestras of ruan have been created with instruments of different sizes and ranges.

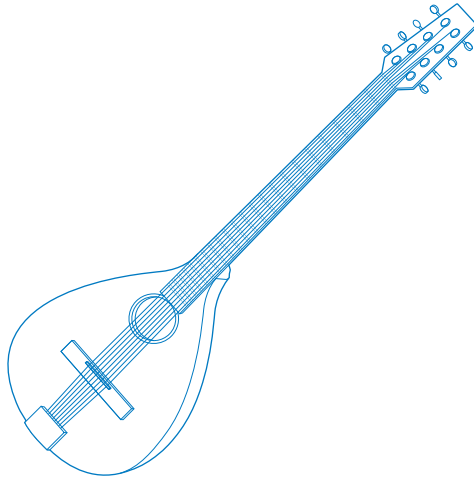
Hawaiian Ukulele



The ukulele was developed on the islands of Hawaii in the late 19th century, based on instruments brought to the islands by Portuguese immigrants. It quickly spread throughout the islands, and became Hawaii's most popular instrument. The word *ukulele* means "jumping flea," and some believe the name comes from the islanders' first impression of the player's hands flying across the fingerboard.

The shape of the ukulele is like a smaller version of a Spanish guitar, with a figure-eight body and a round sound hole behind the strings. Ukuleles exist in many different sizes, but the soprano and concert-sized ukuleles are the most common. Both are most often tuned to the notes G-C-E-A. The soprano is sometimes tuned a whole step higher, and other tunings, such as Bb-Eb-G-C, are sometimes used to enable the ukulele to accompany singers in different keys.

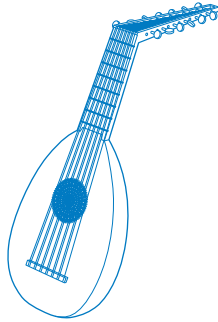
Irish Bouzouki



Although the bouzouki (sometimes called the octave mandolin) is of Greek origin, it is the modified Irish bouzouki that has become popular in the recent revival of Celtic music. Bouzoukis were introduced to Irish traditional music in the 1970s, and have become an important part of the contemporary Celtic sound. The bouzouki is often used to give definition to the lines below the melody.

The Irish bouzouki is a long-necked instrument with a pear-shaped body and three or four courses of metal strings. Bouzoukis are typically tuned to the notes G-D-A-E. The lower courses are tuned in octaves, while the upper courses are tuned in unison. The player frets notes with the left hand and plucks notes with a pick held in the right hand. The tone of the Irish bouzouki is penetrating and metallic.

Medieval Lute

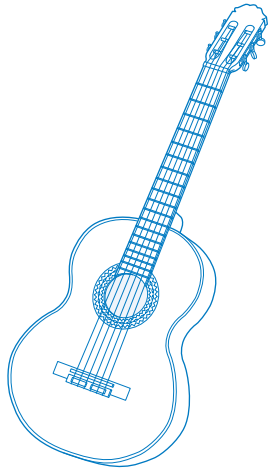


The European lute evolved from ancient Middle Eastern stringed instruments, and was widely used during the Medieval and Renaissance periods to accompany singers and as a solo instrument. The word *lute* derives from the same root as *oud*, an Arabic word meaning “wood.”

The lute is a plucked stringed instrument with a deep, pear-shaped body and a flat top. The top features a soundhole that is typically intricately carved in the shape of a knot or vine. The neck is made of light wood, and necks became wider as the lute developed to accommodate a greater number of strings. The strings are typically doubled, with each pair tuned in unison. The upper strings could be tuned in fourths, similar to a guitar, or could be tuned to the notes of a chord (for example, D-A-D-F). The lower courses were tuned in steps, allowing the player to play bass lines without having to fret each note.

The lute was originally played using a quill to pluck the strings. As European music became more polyphonic, players began to perform using their fingers, allowing greater freedom for playing counterpoint.

Spanish Flamenco Guitar



The passionate style of music and dance known as flamenco originated in Andalusia, at the crossroads of Gitano (Gypsy), Moorish, and Jewish cultures. Originally, flamenco consisted of unaccompanied singing, but soon the singers were accompanied by the guitar, as well as hand clapping, foot stamping, and dance. Today, traditional flamenco has absorbed influences from jazz, salsa, and popular music, leading to a new offshoot called “Nuevo Flamenco” (New Flamenco).

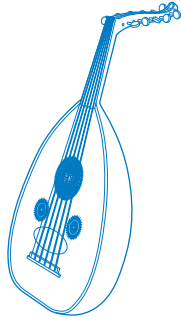
The flamenco guitar shares the same lineage as the Spanish classical guitar. Both evolved from earlier Arabian and Moorish instruments, and are made of wood, with a figure-eight shape and a central sound hole. Both use six gut or nylon strings tuned to the notes E-A-D-G-B-E.

However, the manner of performing flamenco is quite different from that of classical music. Rather than re-creating music composed in advance, flamenco players have room to improvise and express individual emotions. In order to express “the heat of the moment,” flamenco guitarists use a variety of playing techniques, including:

- *Picado*: Plucking the strings alternately with the index and middle fingers.
- *Pulgar*: Plucking the strings with the thumb.
- *Rasgueado*: Quickly strumming up or down the strings, sometimes with the index finger, sometimes with the right-hand fingers moving one after the other.
- *Tirando*: “Free stroke” with the first three fingers playing the upper strings and the thumb playing the bass notes.
- *Harmonics*: Stopping the string with one hand while plucking with the other to produce a higher harmonic of the note.

The Spanish Flamenco Guitar instrument gives you the ability to use all these playing techniques, accessed using different note velocities and the mod wheel.

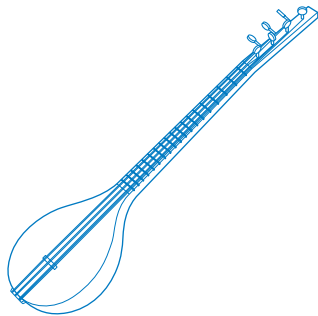
Turkish Oud Lute



The oud is a stringed instrument common to Turkish and Arabic civilizations. An ancient legend claims that the oud was created by one of Adam's grandsons. However, modern historians believe that it was invented in Mesopotamia in the second millennium B.C.

The front of the body is flat, with a central sound hole, while the back is pear-shaped, creating a resonant chamber to strengthen the sound. The neck is fairly short, and supports from five to eight sets of strings. Each string except for the lowest is doubled in unison. The player uses a pick (called the "mizrap" in Turkish), originally made from a bird's feather, to pluck the strings. There are four-, five-, and six-course ouds, each with its own tuning.

Turkish Saz Lute



The saz is descended from earlier long-necked lutes which can be traced back to Babylon and Sumeria. These instruments, including the kopuz and cogur, played a historic role in Turkish music. Today, the saz is the most commonly found folk instrument in Turkey, with distinct regional playing styles and techniques.

The saz has a long, thin neck and a teardrop-shaped body. The neck is traditionally made of fir and the body carved from a single piece of mulberry wood. Small soundholes are carved into the top and also sometimes the sides of the body. The strings are metal, usually steel or brass, and the player uses a long pick to pluck them. There are several sizes of saz, ranging from the smallest, the cura (with three sets of strings) to the medium-sized baglama (with six sets of strings) to the larger divan or meydan (with nine strings).

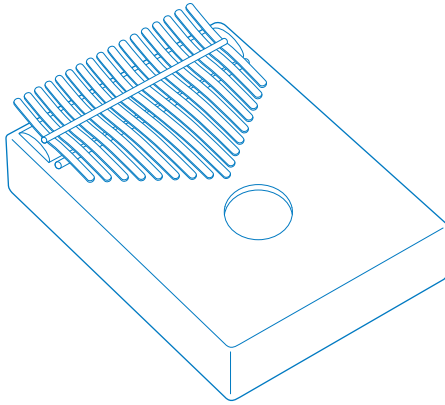
Guitars

Instrument	Controller Info
Chinese Ruan Moon Guitar	<ul style="list-style-type: none"> • Mod wheel adds a short tremolo. • Velocity increases attack and volume. • Highest velocity adds slide up to note.
Hawaiian Ukulele	<ul style="list-style-type: none"> • Velocity adds attack and volume.
Irish Bouzouki	<ul style="list-style-type: none"> • Mod wheel adds tremolo. • Velocity increases attack and volume. • Highest velocity adds slide up to note.
Medieval Lute	<ul style="list-style-type: none"> • Velocity adds attack and volume.
Spanish Flamenco Guitar	<ul style="list-style-type: none"> • Mod wheel adds harmonics an octave above the note played. • Velocity increases attack and volume; changes strummed chords on notes below B1. • Highest velocity adds slide up to note. • Notes below B1 play strummed chords; notes above B5 play body taps and knocks.
Turkish Oud Lute	<ul style="list-style-type: none"> • Mod wheel adds pull-off down to note. • Velocity increases attack and volume. • Highest velocity adds wavering to note.
Turkish Saz Lute	<ul style="list-style-type: none"> • Mod wheel adds tremolo. • Velocity increases attack and volume. • Highest velocity adds short trill to note. • Lowest octave plays the first, fifth, and octave.

Mallets

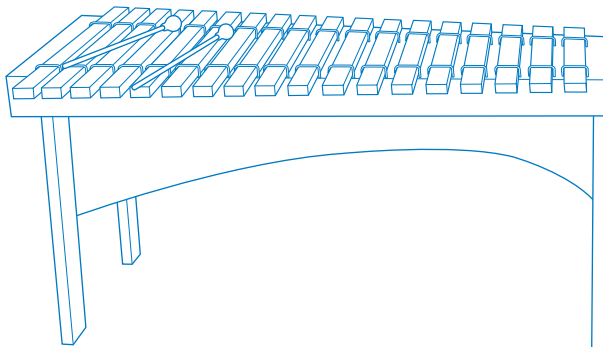
World Music includes mallet instruments from the African continent, the islands of Indonesia, and the mountainous nation of Tibet.

African Kalimba



The kalimba (also called the “thumb piano”) was invented by African slaves in the Caribbean, using ingenuity to create an instrument from extremely limited resources. It consists of a small wooden box with a central sound hole, with a row of metal bars suspended above. The player presses the bars with either thumb to sound different notes. The player can change the tone by changing the amount of pressure used to press the bars. Kalimbas can be found in a variety of sizes and tunings.

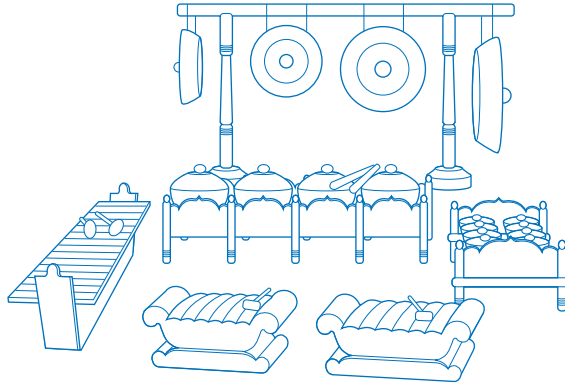
African Marimba



The marimba is a large instrument consisting of a set of wooden bars laid out like the keys of a piano. Below each bar is a resonating tube that amplifies its sound. The player strikes the bars using mallets—typically wooden sticks with heads made of felt, rubber, or other materials. The sound of the African marimba is richer and fuller than that of the concert version of the instrument.

The Indonesian islands are home to a unique form of ensemble music-making using mallet percussion instruments. The gamelan has fascinated composers and listeners since being brought to the West at the beginning of the 20th century.

Indonesian Gamelan

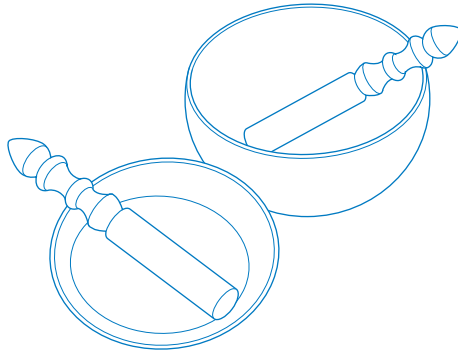


Gamelan is the name for the traditional music ensemble of Indonesia. Both Bali and Java have both produced distinctive styles of gamelan playing with histories extending over many centuries. The word *gamelan* means “ensemble” or “orchestra.”

The sound of a gamelan is produced by a combination of metallic percussion instruments, including the xylophone-like *gangsa* and sets of suspended gongs called *reyong*. Gangsa are struck with hammer-shaped mallets, while reyong are struck with wooden sticks wound with rope. Both instruments can be muted by the player’s free hand; with the Indonesian Gamelan Software Instrument, you can play ringing and muted notes on both the gangsa and reyong using the mod wheel.

The characteristic shimmering sound of the gamelan is produced by slight differences in tuning between instruments playing interlocking patterns. Another technique of gamelan performance involves playing the same melody at several different rates simultaneously, creating intricate, interweaving patterns.

Tibetan Singing Bowls



Tibetan singing bowls (also called “Himalayan bowls”) have been used by monks as part of Buddhist meditation for hundreds of years. The bowls, which are handmade of metal and come in a variety of sizes, are played by striking the edge or rubbing (or “stirring”) the inside surface. According to tradition, singing bowls produce no sound if they are played incorrectly, but, when played correctly, produce a smooth, relaxing sound that is beneficial to the chakras of both player and listeners.

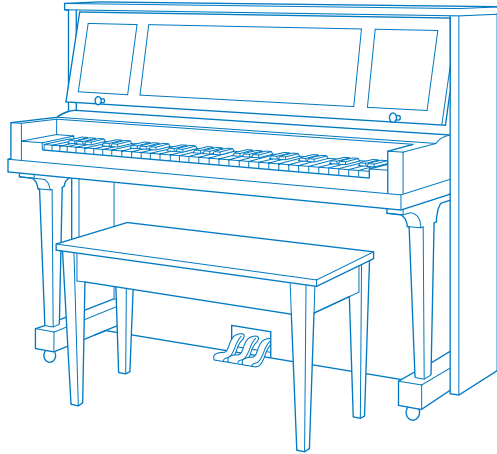
Mallets

Instrument	Controller Info
African Kalimba	<ul style="list-style-type: none">• Mod wheel adds vibrato.• Velocity increases attack and volume.
African Marimba	<ul style="list-style-type: none">• Mod wheel adds vibrato.• Velocity increases attack and volume.
Indonesian Gamelan	<ul style="list-style-type: none">• Mod wheel controls whether notes ring or are stopped.• Velocity adds attack and volume.• Notes below B1 play reyong gongs; B1 and above play gangsa.
Tibetan Singing Bowls	<ul style="list-style-type: none">• Mod wheel adds vibrato.• Velocity increases attack and volume.

Pianos and Keyboards

World Music includes an Afro-Cuban upright piano and two accordions: a polka accordion and a tango accordion.

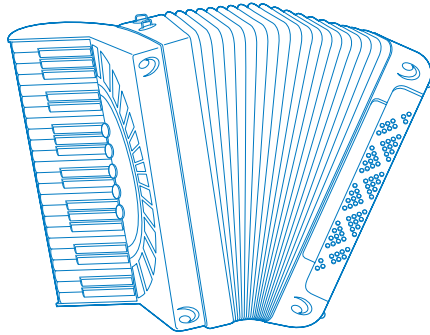
Afro-Cuban Upright Piano



Cuban music has long been an intense melting pot of cultures and styles, mixing Spanish and West African influences with those from France, Jamaica, the United States, and other countries. In the 1940s, Chano Pozo and Dizzy Gillespie brought the Afro-Cuban sound into the world of jazz, and this potent combination has given birth to a variety of new styles including salsa, merengue, son, mambo, and cha cha.

The Afro-Cuban Upright Piano instrument provides a brighter, sharper sound than the other pianos created for GarageBand, conjuring the sound of a well-worn piano heard in a late-night club setting.

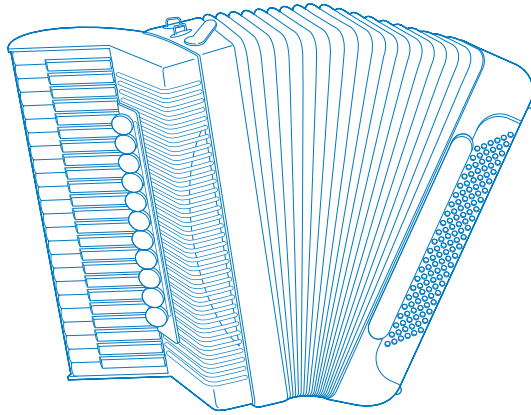
Polka Accordion



Polka is a form of dance music that originated in Bohemia (now part of the Czech Republic) in the 19th century. It quickly spread throughout Europe, Russia, and the Americas. Several distinctive styles have evolved in North America, including the "Polish style" with roots in Chicago, the "Slovenian style" associated with Cleveland, and the "Conjunto style" of Texas and Northern Mexico (also called "Norteno"). In the 1980s and 1990s, adventurous bands combined polka with contemporary rock styles, producing "punk polka" and "alternative polka." Polkas can be played on many different instruments, but the accordion is common to nearly all these polka styles.

The accordion (sometimes called the "squeezebox") was invented in Austria in the 19th century, and its use spread through Europe and the rest of the world along with the spread of the polka. The accordion consists of a bellows that the player expands and contracts to vibrate a set of metal reeds that produce the sound, and a keyboard that triggers which reeds to set in motion. Some accordions also have buttons used to play chords that accompany the melody. The instrument is held against the player's body with a strap, allowing the player to move freely while performing.

Tango Accordion



In addition to its use as a polka instrument (described in the previous section), the accordion has also been frequently used in performances of Argentine tango. Tango accordions are typically larger and have a tone quality and voicings different from polka accordions, but are constructed and played in the same manner.

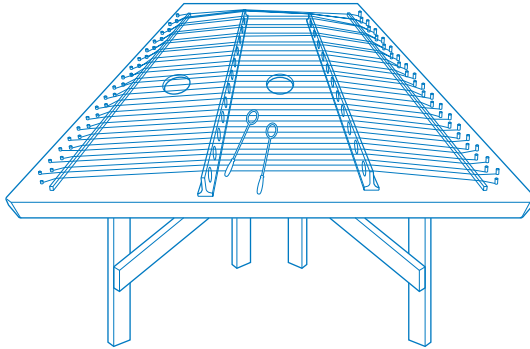
Pianos and Keyboards

Instrument	Controller Info
Afro-Cuban Upright Piano	<ul style="list-style-type: none">• Velocity adds attack and volume.
Polka Accordion	<ul style="list-style-type: none">• Pitchbend controls volume.• Velocity controls speed of attack.
Tango Accordion	<ul style="list-style-type: none">• Pitchbend controls volume.

Strings

Stringed instruments are common to all musical cultures, and both bowed and plucked strings can be found in nearly every corner of the globe. Variations of the two types of plucked instruments, the lute (with a neck projecting from the body that holds the strings) and the zither (with a large trapezoidal body across which the strings are stretched) likely came into being as different cultures traveled and intermingled. Examples include the oud, the lute, and the bouzouki (all lute-like instruments), and the guzheng, santoor, and hammered dulcimer (all zithers).

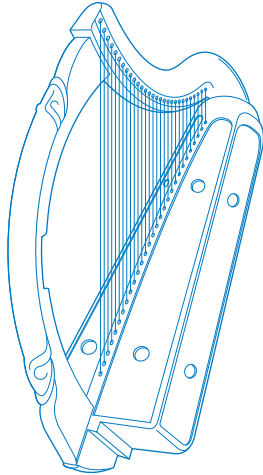
Celtic Hammered Dulcimer



The gentle sounds of the hammered dulcimer are familiar to fans of Celtic music and the folk music of the British Isles. The name comes from a Latin phrase meaning “sweet sound.” Its origin is uncertain, but it has been widely used as a folk instrument throughout Europe for more than six centuries. Recent decades have seen a revival of interest in both the building and playing of the instrument.

The hammered dulcimer consists of a trapezoidal sounding board made of wood, with the strings stretched across bridges mounted on the top. The player strikes the strings with hammers held in both hands. Hammered dulcimers exist in a variety of sizes, which are distinguished by the number of strings that cross each bridge.

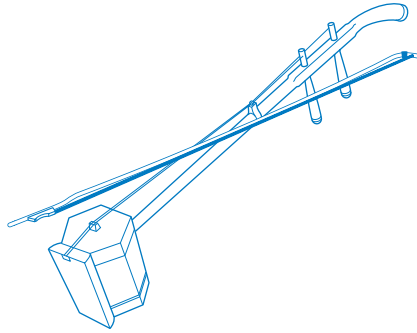
Celtic Harp



The history of the Celtic harp extends back many centuries. Early forms of the harp were widespread throughout Ireland, Scotland, and Wales as early as 1000 A.D., and visitors to the area often commented on the natives' skill in performance. The harp was popular both in court and country villages, where virtuoso harpists were revered and their instruments prized and highly decorated.

The tone of the Celtic harp is softer and brighter than that of a concert harp. It is smaller but shares a similar triangular shape. The strings are made of wire, and are stretched from the top to the bottom of the instrument. The player plucks them with both hands, and can use the pad of one or both hands to mute strings as well. Each harp is tuned to a particular key. Celtic harps do not use pedals, but contemporary instruments have small knobs, used to retune the strings between songs, across the top of the body.

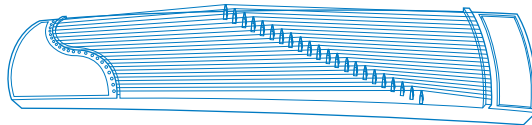
Chinese Erhu Violin



The erhu violin developed from earlier string instruments, including the huqin. Little is known about its history before it was popularized in the early 20th century by the musician Liu Tianhua, who composed many original pieces for it.

The erhu is a bowed instrument with two strings stretched over a long neck. The base of the neck is attached to a resonator that consists of a hollow wooden box covered by an animal skin (traditionally the skin of a python). The tip of the neck can be ornately carved, sometimes in the shape of an animal's head. The strings are tuned in fifths, often to the notes D-A or C-G. The player never lifts the bow from the strings, but instead passes it between them, producing a hypnotizing, voice-like sound. The instrument's playing technique includes bending notes up and down, and the Chinese Erhu Violin Software Instrument gives you this playing style, accessed using the mod wheel.

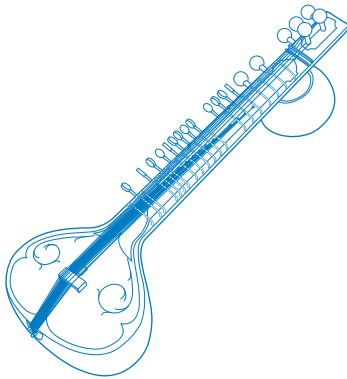
Chinese Guzheng Zither



The guzheng (sometimes called the “zheng”) is a traditional Chinese instrument dating back to the Qin and Han dynasties. It was historically associated with the Qin state, from which it migrated to many other parts of China. Ancient poems and stories relate the instrument's popularity and the pleasing effect its tone produced on audiences. It is the parent instrument of the Japanese koto.

The guzheng has a semi-circular wooden base over which a set of strings is stretched. It has twelve or thirteen strings, which are commonly tuned to the notes of the pentatonic scale, covering a range of four octaves. Players pluck the strings with picks attached to their right-hand fingers while touching the strings with their left hand. Playing techniques include bending notes and strumming the strings; the Chinese Guzheng Zither Software Instrument includes both techniques, accessed using velocity and the mod wheel.

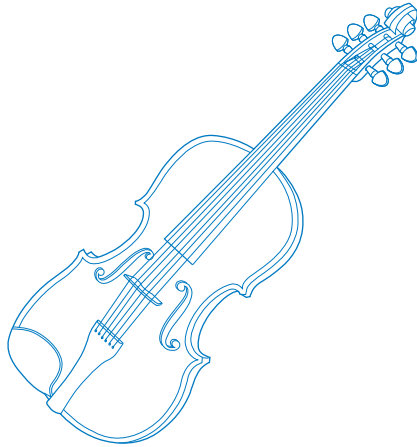
Indian Sitar



The sitar is one of the most familiar instruments in Indian classical music. It developed from earlier Indian and Persian instruments in the 18th century. Its singing tone made it ideal for the Hindu style of playing extended, improvised melodies known as “raga.” The word *raga* literally indicates the scale being used, but can also imply a piece with a particular mood, intended for a particular purpose, or even meant to be played at a specific time of day.

The sitar consists of a deep curved body, usually made from a gourd, and a long neck. It has two sets of strings, one for playing melodies and one that vibrates in sympathy with the played notes. Players pluck the melody strings with their right hand while pressing them against the raised frets with their left hand. The sympathetic strings below the frets resonate with different notes, giving the sitar its characteristic lush sound. An instrument can have six or seven melody strings and twelve sympathetic strings, and has a range of three octaves. The tuning of the melody strings can vary, but usually consists of fifths, fourths, and octaves, for example: C#-G#-C#-F#-G#-C#. The sympathetic strings are tuned to fit the notes of each raga.

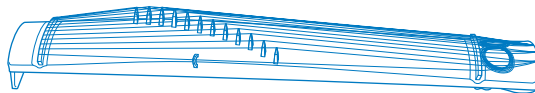
Irish Fiddle



The fiddle has long been one of the chief instruments of traditional Irish folk music. It is ideally suited to playing the long, lilting melodies characteristic of the style, and to the reels, jigs, and other lively dance pieces played throughout the British Isles. Over the centuries a rich tradition of fiddle-playing developed, with recognizably different styles in different regions of the country. Today, those regional styles have merged together into the modern Celtic style of playing.

The Irish fiddle is identical in construction to a concert violin, but is played using a slightly different bowing technique that produces a louder, harder sound. The strings are tuned to the standard G-D-A-E concert tuning. The playing style includes a wide variety of trills and ornaments; the Irish Fiddle Software Instrument gives you both upper and lower trills, accessed using the mod wheel.

Japanese Koto

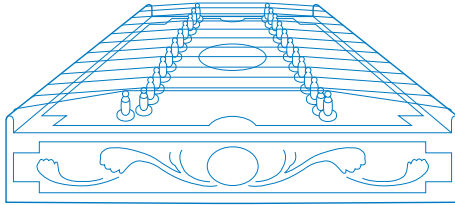


The koto came to Japan from China, and is likely descended from the Chinese guzheng. It was originally played exclusively in the royal court, but in the 17th century was popularized by a virtuoso who played both original compositions and popular melodies on it.

The koto has a long, hollow wooden body. The strings, traditionally made of silk, are stretched over bridges that the player moves to produce different notes. The koto typically has thirteen strings that are tuned to the notes of the particular song, and that the players pluck using picks attached to their fingers.

The playing technique for the koto includes the “tsuki” style, in which the string is plucked, pressed, and then released, causing the note to first bend up then return to its original pitch. Another common technique uses double-struck notes, with the string forcibly plucked in alternate directions. The Japanese Koto Software Instrument includes both these playing styles, with the “tsuki” style produced at the highest note velocity level and double-struck notes played using the mod wheel.

Persian Santoor



The santoor (the name comes from a Sanskrit phrase meaning “100-stringed lute”) is a classical music instrument of Persia and Arabia, and was also played in India by Sufi sects founded by the poet Rumi. Many musical cultures have similar instruments, including the santour in Iran, Iraq, and Turkey, and the santoori in Greece.

The wooden body is trapezoidal, with narrow sides and a wide soundboard. The strings are stretched across wooden bridges that sit on top of the soundboard. On the right side of the instrument are tuning pins which the player uses to retune the strings. In the instrument’s upper and middle range there are three strings for each note; all three are always struck together. In the lower range each note has two strings, and the lowest notes have only a single string. The strings are struck with angled mallets held in both hands. The notes are allowed to ring and are not muted.

The playing technique of the santoor includes a tremolo attack, in which the mallet is bounced across the strings producing quick repetitions of the note, adding intensity, and also includes a longer tremolo that is often played softly. The Persian Santoor Instrument gives you both of these styles, accessed using the mod wheel.

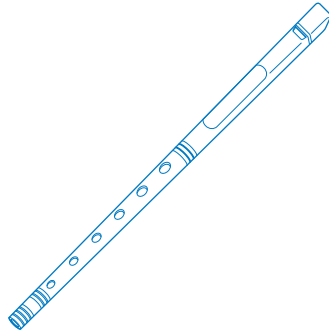
Strings

Instrument	Controller Info
Celtic Hammered Dulcimer	<ul style="list-style-type: none">• Mod wheel at mid setting adds tremolo; at high setting strums the first, fifth, and octave.• Velocity adds attack and volume.
Celtic Harp	<ul style="list-style-type: none">• Velocity adds attack and volume.
Chinese Erhu Violin	<ul style="list-style-type: none">• Mod wheel at mid setting adds slide up to note; at high setting adds slide down to note.• Highest velocity adds trill to note.
Chinese Guzheng Zither	<ul style="list-style-type: none">• Mod wheel at mid setting adds bend down to note; at high setting plays strums.• Velocity adds attack and volume.• Highest velocity adds bend up then down.
Indian Sitar	<ul style="list-style-type: none">• Mod wheel adds vibrato.• Velocity adds slide up to note.• Notes C-1 and C#-1 sound tampura drone; notes D-1 to B0 sound tampura notes; notes above C5 sound sympathetic strings.
Irish Fiddle	<ul style="list-style-type: none">• Mod wheel at lower mid setting adds upper trill; at upper mid setting adds trill down; at high setting plays vibrato.• Velocity adds attack and volume.• Notes sustain with change of bow direction.
Japanese Koto	<ul style="list-style-type: none">• Mod wheel plays double-struck notes.• Velocity adds attack and volume.• Highest velocity adds “tsuki” bend up and down.
Persian Santoor	<ul style="list-style-type: none">• Mod wheel at mid settings adds a short tremolo; at high settings adds a continuous tremolo.• Velocity adds attack and volume.

Woodwinds

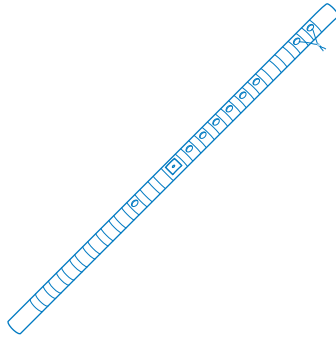
Producing musical tones by blowing into a reed or tube is one of the oldest forms of music-making and is found in nearly every culture. At first each tube yielded only a single note (as on the panpipes), but then holes were cut so the player could produce different notes, and the first flutes and whistles came into being. As wind instruments developed, some had their mouthpiece on the end (such as the tin whistle, the recorder, and the Chinese xiao); on others the mouthpiece was along the side of the instrument (such as the Indian bansuri and the Chinese di zi). End-blown and side-blown flutes produce somewhat different kinds of tone, and also involve different playing techniques.

Celtic Tin Whistle



The tin whistle (also called the “pennywhistle”) is a small whistle often made of tin, brass, or another inexpensive material. It typically has six finger holes and a metal or plastic mouthpiece. The tin whistle is widely used as a melody instrument in Irish traditional music. The holes in the sides of the tin whistle produce the notes of a diatonic scale, but a player can produce accidentals by half covering them. Tin whistles exist in a variety of sizes and keys, the most common key being D (above middle C). Fingerings are often referred to in relation to the D instrument. Although a simple instrument, in the hands of a skilled player the tin whistle can play trills, fluttertonguing, and highly ornamented melodies.

Chinese Di Zi Flute

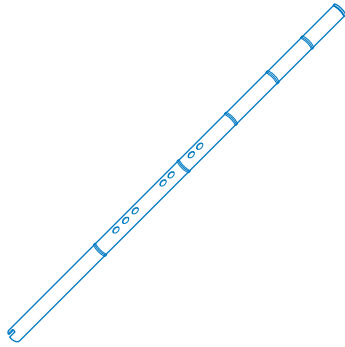


The Chinese di zi (also sometimes called “ti-tzu” or “hengdi”) is a transverse flute, like the Western classical flute. It has been used in both court and folk music, and is prized for its simplicity, small size, and beauty of sound. Di zi are commonly made of bamboo, but can also be made using other types of wood and even stone, including jade.

Di zi typically have a range of two and a half octaves. Each instrument is tuned and played in a specific key, so a player may have several instruments in order to play different songs. In addition to the finger holes used to play notes, the di zi has a special hole called “Muo kong,” over which a very thin piece of bamboo is stretched, creating its characteristic penetrating tone. The Muo kong adds to the brightness and loudness of the instrument, and also adds harmonics which make the sound more nasal.

Playing techniques for the di zi include vibrato and non-vibrato playing, fluttertonguing, and a rapid unpitched trill used as an ornament at the beginning of notes. The Chinese Di Zi Flute Instrument gives you all of these playing styles, accessed using the mod wheel.

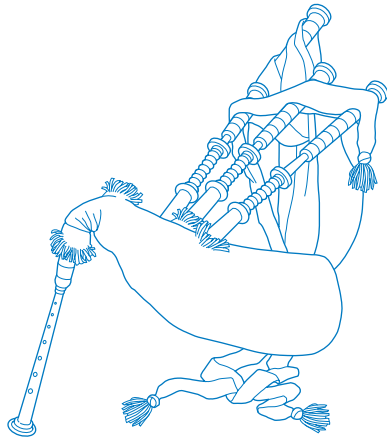
Chinese Xiao Flute



The xiao (also called “Di xiao” or “Dong xiao”) has been used in Chinese music for over 2000 years both as a solo instrument and in small chamber ensembles. Some historians believe the xiao was the predecessor to the Japanese shakuhachi flute.

The xiao is an end-blown flute made of bamboo, with six finger holes pitched to the notes of the pentatonic scale. Its tone is softer and lower than the di zi, and is suited to expressing peaceful or melancholy moods.

Highlands Bagpipes

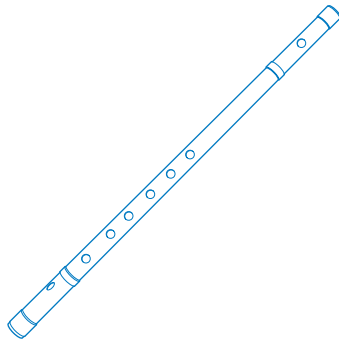


The bagpipe has a long and varied history. It is thought to have originated in ancient Mesopotamia and traveled to early Greece and Rome as well as east to Persia and India. It is part of the musical heritage of many European countries, including Spain and Croatia, but is primarily associated with Scotland and Ireland.

The bagpipe is a a single or double reed instrument that uses a bag, traditionally made from animal skin, to hold the air used to vibrate the reeds. Players press the bag with their arm, sending the air through a reed or reeds on a fingered pipe called a chanter to produce the notes.

The bagpipe can also produce a drone, usually a bass note two octaves below the chanter's keynote, which provides a harmonic background for the melody. Some bagpipes can produces multiple drones in octaves, fourths, or fifths; a few even include keyed pipes (called regulators) by which the player can sound a countermelody or accompanying chords.

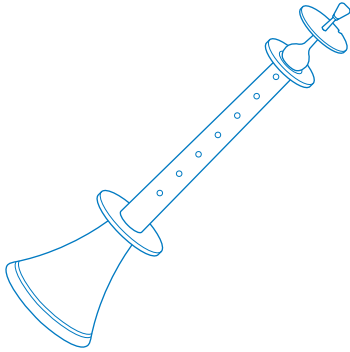
Indian Bansuri Flute



The flute is one of the oldest instruments in the Hindu tradition, and the god Krishna is often shown playing a side-blown flute. The bansuri was originally a folk instrument, but later joined the sitar as one of the main melody instruments used in North Indian classical music.

The bansuri is a side-blown flute made of bamboo or reed, with six or seven finger holes tuned to the notes of the diatonic scale. Each bansuri has a range of slightly over an octave. The Indian Bansuri Flute Software Instrument includes samples of several instruments of different sizes, allowing it to be playable over the entire keyboard range. Playing techniques for the bansuri include both vibrato and non-vibrato playing, fluttertonguing, and a short unpitched trill used as an ornament at the beginning of notes. The Indian Bansuri Flute Software Instrument gives you all of these playing styles, accessed using the mod wheel.

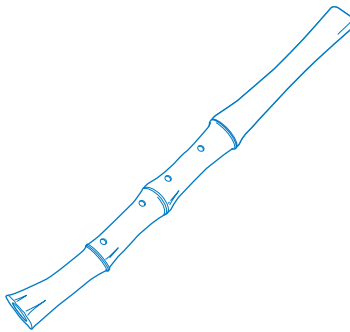
Indian Shehnai Oboe



The shehnai is descended from the nay, found in ancient Persia and Egypt. In India it was historically used in royal music ensembles. The shehnai is believed to bring good luck, and so is widely used in North India today for weddings and festivals, as well as in Hindu temples.

The shehnai is a double-reed instrument (similar to a Western oboe) with a wooden body and a brass bell. The reeds are attached to a brass tube which is wrapped with string. The instrument can have from six to nine finger holes, some of which can be stopped with wax. Like the oboe, the tone can be varied by controlling the player's breath.

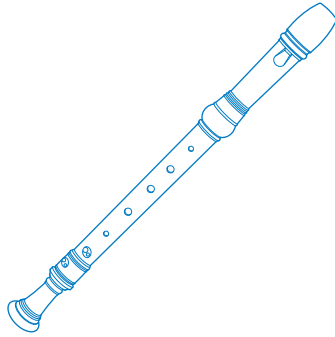
Japanese Shakuhachi Flute



The shakuhachi is historically associated with Zen Buddhist monks (called "komuso") who used it for meditation and spiritual development. When the komuso were granted special travel privileges by the shogun (the Emperor), their skill in playing the shakuhachi was often used as a test of a monk's authenticity. As a result, they developed a high degree of technical excellence and created many virtuoso pieces for the instrument.

The shakuhachi is a bamboo end-blown flute (the name refers to the size of the instrument, although now instruments can be different sizes). The finger holes are pitched to the notes of the pentatonic scale, but skillful players can bend notes and partially cover the holes to produce additional notes and extend the instrument's range, and can blow into the mouthpiece at an angle to add inflection to notes.

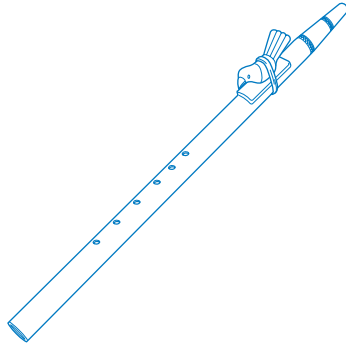
Medieval Recorder



The recorder (called "Blockflöte" in Germany, "flûte à bec" in France, and "flauto dolce" in Italy) is believed to have developed in the Medieval period from whistles and other simple flutes. In the Renaissance, recorders of many different sizes were made and played together in recorder ensembles as well as with other instruments. Further developments in the Baroque period led to virtuoso players and a large repertoire of solo music for the instrument.

The recorder is an end-blown flute with a range of around two octaves. Traditionally, recorders are carved from wood, but today they can also be molded of plastic. There are seven finger holes on the front of the instrument, and one hole on the back stopped by the player's thumb. Each instrument is pitched in a particular key, the most common keys being C and F.

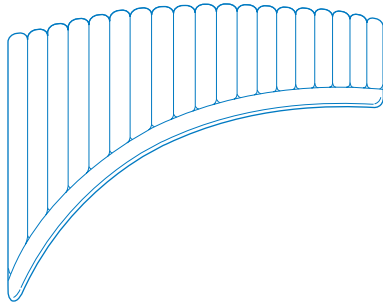
Native American Flute



Native American tradition holds that music was given to people as a way of communicating with the supernatural, and Native American folk music was mainly used to convey a spiritual meaning, to pray for good luck, and to relate stories of heroes. The origins of the Native American flute are unknown, but some believe it was developed by the ancient Pueblo peoples who used it for meditation, courtship, and religious rituals. The instrument saw a revival in the 1960s, and has since been widely used in New Age and ambient music styles.

The Native American flute is the only flute with two air chambers. A wall inside the flute separates the top and bottom chambers; the finger holes are on the bottom. The top chamber acts as a second resonator and gives the flute its distinctive sound. A carved bird is tied to the top of the flute, forming a thin, flat airstream for the whistle hole. Native American flutes can have either five or six finger holes, pitched to the notes of the pentatonic scale, often to the keys A or D. Modern Native American flutes typically span a range of 3 1/2 octaves.

Peruvian Panpipes



The panpipe (also called “panflute” or “syrinx”) is an ancient musical instrument, found in Europe, Asia, and South America. Its name reflects its association with the god Pan by the ancient Greeks, for whom the panpipe was a popular folk instrument. Panpipes have long been a part of the music of Peru and other Andean cultures, and have seen renewed interest in the world music and New Age movements.

The panpipe consists of a series of reeds of increasing length which are tied together in a row. Each pipe sounds a single note; players move the instrument across their mouth, placing the pipe for the desired note in front of their lips. Panpipes come in variety of sizes, usually with ten or more pipes.

Woodwinds

Instrument	Controller Info
Celtic Tin Whistle	<ul style="list-style-type: none">• Mod wheel gives vibrato, non-vibrato, and a short slide up to the note.
Chinese Di Zi Flute	<ul style="list-style-type: none">• Mod wheel gives vibrato, non-vibrato, and a short trill.• Velocity increases volume.
Chinese Xiao Flute	<ul style="list-style-type: none">• Mod wheel gives vibrato, non-vibrato, and a short trill.• Velocity increases volume.
Highland Bagpipes	<ul style="list-style-type: none">• Velocity increases volume.
Indian Bansuri Flute	<ul style="list-style-type: none">• Mod wheel gives vibrato, non-vibrato, a short slide up to the note, and fluttertonguing.• Velocity increases volume.
Indian Shehnai Oboe	<ul style="list-style-type: none">• Mod wheel gives long or short notes.• Velocity adds a slight wavering to notes.• Highest velocity adds a short trill to notes.
Japanese Shakuhachi Flute	<ul style="list-style-type: none">• Mod wheel gives vibrato, non-vibrato, and a short trill down to the note.• Velocity increases volume.
Medieval Recorder	<ul style="list-style-type: none">• Mod wheel gives vibrato, non-vibrato, a short slide up to the note, and fluttertonguing.• Velocity increases volume.

Instrument	Controller Info
Native American Flute	<ul style="list-style-type: none"> • Mod wheel gives vibrato, non-vibrato, and a short slide up to the note. • Velocity increases volume.
Peruvian Panpipes	<ul style="list-style-type: none"> • Mod wheel gives soft and hard attack, short slide up to the note, and fluttertonguing. • Velocity increases volume.

Drum Kits

World Music includes African, Asian, Indian and Middle Eastern, European, and Latin drum kits. Each drum kit contains a selection of percussion sounds, with each note on the keyboard producing a different sound, featuring both common and exotic instruments for each region.

Organization of Drum Kit Sounds

In the Drum Kit instruments, each note on the keyboard sounds a different instrument or different version (playing method) for an instrument. The instruments are organized across the keyboard using the layouts listed below.

African Kit

The African Kit includes a variety of African percussion instruments, including the djembe, conga, log drums, talking drums, and sabar.

Note range	Instrument	Playing method
C-1	FronTonFrom	Blanket
C#-1	FronTonFrom	Open Bass
D-1	FronTonFrom	Open
D#-1	FronTonFrom	Open Hand
E-1	FronTonFrom	Stick Mute
F-1	FronTonFrom	Stick
F#-1	FronTonFrom	Shell Sticks Left
G-1	FronTonFrom	Shell Sticks Flam
G#-1	Low Djembe	Open
A-1	Low Djembe	Closed
A#-1	Hi Djembe	Open
B-1	Hi Djembe	Closed
C0	Berkete	Open
C#0	Berkete	Closed
D0	Sabar	Bass (Processed)
D#0	Sabar	Bass
E0	Sabar	Open Slap Flam

Note range	Instrument	Playing method
F0	Low Djembe	Bass Left (Processed)
F#0	Low Djembe	Closed Slap
G0	Low Djembe	Open Left
G#0	Afro Conga	Open Hand
A0	Hi Djembe	Open Right
A#0	Afro Conga	Slap
B0	Hi Djembe	Closed Bass (Processed)
C1	Hi Djembe	Bass Left (Processed)
C#1	Hi Djembe	Closed
D1	Hi Djembe	Open Right
D#1	African Metal Shaker	
E1	Hi Djembe	Slap + Grace
F1	Talking Drum	Low
F#1	Y-Rattle	
G1	Talking Drum	Medium
G#1	Y-Rattle	Roll A
A1	Talking Drum	Medium High
A#1	Y-Rattle	Roll B
B1	Talking Drum	High A
C2	Talking Drum	High B
C#2	African Metal Shaker	
D2	Talking Drum	High C
D#2	Oghene 2	Open
E2	African Metal Shaker	Roll
F2	Oghene 2	Mute
F#2	African Wooden Shaker	
G2	Alo 2	
G#2	Gankoqui 2	Open
A2	Alo 2	Sidestick
A#2	Gankoqui 2	Mute
B2	Alo 1	Open
C3	African Bongo	High
C#3	African Bongo	Low
D3	Afro High Cajon	Slap
D#3	Afro High Cajon	Open Slap
E3	Afro Low Cajon	Open Left

Note range	Instrument	Playing method
F3	Sakara High	Open
F#3	Sakara Low	Open
G3	Gankoqui High	Open
G#3	Gankoqui Low	Open
A3	Shekere 1	
A#3	Shekere 2	
B3	Oghene 3	FX
C4	Oghene 1	FX
C#4	Ekipiri	Roll A
D4	Ekipiri	Roll B
D#4	Sabar	Stick Closed
E4	Sabar	Open Hand
F4	Sabar	Stick Open
F#4	Talking Drum	Bend Down
G4	Talking Drum	Bend Up
G#4	Oghene 2	Mute
A4	Oghene 2	Open
A#4	African Small Shaker	
B4	Udu	Slap Left
C5	Udu	Slap Left
C#5	Udu	Open 1
D5	Udu	Open 2
D#5	African Bombshell	
E5	Log Drum	Low
F5	Log Drum	Hi A
F#5	Log Drum	Hi A
G5	Log Drum	Hi B
G#5	Log Drum	Hi B
A5	Log Drum	Hi C
A#5	Log Drum	Hi C
B5	Log Drum	Hi C
C6	Log Drum	Hi C
C#6–A6	Log Drum	Hi C

Asian Kit

The Asian Kit includes a variety of percussion instruments found throughout the Far East, including several sizes of taiko drum, Chinese cymbals, and Chinese and Indonesian gongs.

Note range	Instrument	Playing method
B0	Taiko Tom Low	Open
C1	Large Taiko	Open
C#1	Large Taiko	Shell Stick
D1	Shimi Daiko	Rim Stick
D#1	Ensemble Claps 1	High 1
E1	Ensemble Claps 2	Low 1
F1	Taiko Tom Low	Open
F#1	Chinese Cymbals Hi Hats	Stick Closed
G1	Taiko Tom Low	Open
G#1	Chinese Cymbals Hi Hats	Open Stick
A1	Taiko Tom Medium	Open
A#1	Chinese Cymbals Hi Hats	Open Stick
B1	Taiko Tom Medium	Open
C2	Taiko Tom High	Open
C#2	Chinese Wind Gong	Soft/Medium/Hard
D2	Taiko Tom High	Open
D#2	Medium Gong	Stick Open A
E2	Medium Gong	Mallet Open
F2	Medium Gong	Stick Open B
F#2	Chang Chang	Open
G2	Chinese Gong	Open Brush/Stick
G#2	Chinese Temple Block Low	Mallet
A2	Chinese Cymbals Large	Marching Strike
A#2	Chinese Tam-Tams	Brush Roll
B2	Chinese Gong	Open Mallet/Stick
C3	KenDang Small	Closed
C#3	KenDang Small	Flam
D3	KenDang Large	Slap
D#3	KenDang Large	Edge Hit
E3	KenDang Large	Open
F3	KenDang Small	Edge Hit
F#3	KenDang Small	Open

Note range	Instrument	Playing method
G3	Indonesian Tuned Gong	Mute Stick
G#3	Indonesian Tuned Gong	Mute Stick
A3	Chinese Cymbals Medium	Closed/Open
A#3	Chinese Cymbals Small	Closed/Open
B3	Chinese Cymbals Small	Open
C4	Chinese Cymbals Medium	Closed
C#4	Wood Frog Medium	Scrape/Hit
D4	Wood Frog Large	Scrape/Hit
D#4	Wood Frog Small	Scrape/Hit
E4	Chinese Temple Block High	Stick
F4	Chinese Temple Block Low	Stick
F#4	Indonesian Small Gong 1	Soft Mallet/Rubber Mallet/Edge Hit
G4	Indonesian Small Gong 2	Soft Mallet/Rubber Mallet/Edge Hit
G#4	Chinese Hard Gong 1	Stick
A4	Chinese Hard Gong 2	Stick
A#4	Chang Chang	Closed
B4	Chinese Hard Gong 3	Brush Open
C5	Chinese Tam-Tams	Open Roll Crescendo
C#5	Chinese Tam-Tams	Open
D5	KenDang Large	Flam
D#5	Chinese Tam-Tams	Mallet Open
E5	Shimi Daiko	Stick Mute
F5	KenDang Large	Closed
F#5	KenDang Large	Bass Tone
G5	KenDang Small 2	Open
G#5	KenDang Small 2	Slap Mute
A5	Chang Chang	Ruff
A#5	Chinese Tam-Tams	Roll Long/Short
B5	Shimi Daiko	Open
C6	Ensemble Snaps 1	Open

European Folk Kit

The European Folk Kit includes a variety of percussion instruments used throughout Europe, including timpani, the waterphone, several tambourines, sleigh bells, bodhran, wind chimes, and darbuka.

Note range	Instrument	Playing method
E-1	Waterphone	Bowed
F-1	Waterphone	Bowed
F#-1	Waterphone	Bowed
G-1	Waterphone	Bowed
G#-1	Waterphone	Bowed
A-1	Waterphone	Bowed
A#-1	Waterphone	Bowed
B-1	Concert Bass Drum 36	Open
C0	Concert Bass Drum 28	Open
C#0	Concert Snare Drum 1	Side Stick
D0	Concert Snare Drum 1	Open
D#0	Concert Tenor Drum	Open
E0	Concert Snare Drum 1	Short Press Roll
F0	Timpani	E Open
F#0	Power Toms	Open 1
G0	Timpani	A Open
G#0	Power Toms	Open 2
A0	Timpani	G Open
A#0	Timpani	C Open
B0	Bodhran	Open
C1	Tapan	Open
C#1	Bendir	Bass Mute
D1	Mediterranean Tambourine	Open
D#1	German Tambourine	Open
E1	Mediterranean Tambourine	Finger
F1	Concert Tom Low	Open
F#1	Concert Cymbal	Stick Closed
G1	Concert Tom Low Medium	Open
G#1	Concert Cymbal	Extended Stick
A1	Concert Tom Medium Low	Open
A#1	Concert Cymbal	Open
B1	Concert Tom Medium	Open

Note range	Instrument	Playing method
C2	Concert Tom Medium High	Open
C#2	Suspended Cymbal Small/ Medium	Open
D2	Concert Tom High	Open
D#2	Suspended Cymbal Medium	Stick Ride
E2	Thunder Sheet	Side Hit
F2	Suspended Cymbal Large	Stick Bell
F#2	Darbuka Large	Shell Hit
G2	Concert Cymbal	Closed/Open/Mute
G#2	Wah Wah Bell	Wah
A2	Egg Shakers	Long Roll 2
A#2	Tambourine	Shake Roll
B2	Suspended Cymbal Small	Stick/Jclaw
C3	Darbuka Small	Small/Finger
C#3	Darbuka Small	Open
D3	Darbuka Large	Finger
D#3	Darbuka Large	Mute
E3	Darbuka Large	Bass Tone
F3	Bendir	Finger
F#3	Bendir	Open
G3	Brake Drum	Edge
G#3	Brake Drum	Open
A3	Egg Shaker Medium	Shake
A#3	Egg Shaker Small	Shake
B3	Ratchet	Short
C4	Racket	Long
C#4	Whiny Tube Small	Sus
D4	Whiny Tube Large	Sus
D#4	Bones	Open
E4	Boom Wacker Hi	Open
F4	Boom Wacker Low	Open
F#4	Italian Tambourine	Mute
G4	Italian Tambourine	Open
G#4	Air Tank 1	Open
A4	Air Tank 2	Open
A#4	Egg Shakers	Roll

Note range	Instrument	Playing method
B4	Sleigh Bells 1	Shake
C5	Sleigh Bells 2	Shake
C#5	Thunder Sheet	Cres/Mid Hit/Top Hit
D5	Large Frame Drum	Mute
D#5	Thunder Sheet	Bowed
E5	Tapan	Stick
F5	Large Frame Drum	Finger Mute
F#5	Large Frame Drum	Finger
G5	Bodhran	Mute
G#5	Bodhran	High Mute
A5	Italian Tambourine	Slap
A#5	Wind Chimes	Up/Down
B5	Large Frame Drum	Open
C6	Mediterranean Tambourine	Mute
C#6	Wind Singer 1	Wurl
D6	Wind Singer 2	Wurl

Indian and Middle Eastern Kit

The Indian and Middle Eastern Kit includes a variety of percussion instruments found in India and on the Arabian peninsula, including large and small tabla, ankle bells, kanjira, dumbek, udu, and elephant bells.

Note range	Instrument	Playing method
C0	Tar	Finger
C#0	Tar	Harmonic Mute
D0	Tar	Edge Mute
D#0	Tar	Slap Mute
E0	Tar	Edge
F0	Tar	Harmonic Open
F#0	Tabla Large	Finger Mute
G0	Tabla Large	Slide 2
G#0	Tabla Small	Tet
A0	Tabla Large	Ka
A#0	Tabla Small	Na
B0	Tonbek	Bass Tone Open
C1	Udu	Bass Tone Open
C#1	Tonbek	Extended Technique

Note range	Instrument	Playing method
D1	Gaval	Slap
D#1	Daf	Side Hit
E1	Gaval	Edge
F1	Tabla Large	Slide
F#1	Tala Large	Closed
G1	Tabla Large	Ga
G#1	Tala Small	Closed
A1	Tablas	Dhin
A#1	Tala Large	Open
B1	Tablas	Dha
C2	Tabla Small	Tun
C#2	Indian Ankle Bells	Shake
D2	Tabla Small	Tin
D#2	Elephant Bell	Open
E2	Daf	Side Hit 2
F2	Elephant Bell 2	Open
F#2	Riq	Jingle
G2	Daf	Quick Shake
G#2	Riq	Bass Tone
A2	Riq	Slap Mute
A#2	Riq Small	Jingle/Open
B2	Riq	Side Hit
C3	Kanjira Small	Mute
C#3	Kanjira Medium	Mute
D3	Kanjira Small	Open Mute
D#3	Kanjira Medium	Open
E3	Kanjira Small	Open
F3	Daf	Finger Edge
F#3	Daf	Bass Tone
G3	Riq Small	Finger Edge
G#3	Riq	Finger Edge
A3	Indian Ankle Bells	Shake
A#3	Indian Ankle Bells Low	Shake
B3	Riq Small	Edge Jingle
C4	Riq Small	Jingle Open
C#4	Riq Small	Mute Ruff

Note range	Instrument	Playing method
D4	Dumbek	Ruff
D#4	Dumbek	Slap Mute
E4	Dumbek	Bass Tone Open
F4	Dumbek	Bass Tone Extended
F#4	Dumbek	Finger Mute
G4	Dumbek	Finger Edge
G#4	Tala	Closed
A4	Tala	Open
A#4	Riq Small	Jingle Mute
B4	Gaval	Edge Hand
C5	Elephant Bell	Open
C#5	Tar	Open
D5	Pakawaj	Din
D#5	Pakawaj	Open Tone
E5	Udu	Slap Mute
F5	Udu	Bass Tonbe Bend
F#5	Pakawaj	Tin
G5	Pakawaj	Closed
G#5	Pakawaj	Tak
A5	Tar	Harmonic Slide
A#5	Indian Ankle Bells Low	Long Shake
B5	Gaval	Open
C6	Rig	Jingle Mute

Latin Kit

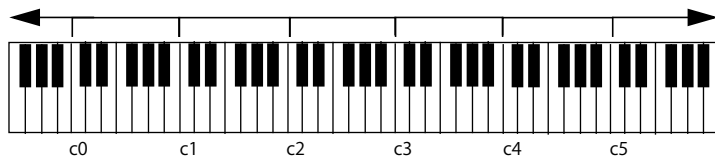
The Latin Kit includes a variety of percussion instruments from both Spain and Latin America, including the surdo, bongos, timbales, agogo, guiro, Brazilian whistles, and large and small berimbau.

Note range	Instrument	Playing method
C0	Repique De Mao	Mute
C#0	Repique De Mao	High Edge
D0	Repique De Mao	Open
D#0	Repinique	High Edge Finger
E0	Repinique	Stick Open
F0	Repinique	Open Hand
F#0	Zabumba	Stick
G0	Zabumba	Mute
G#0	Zabumba	Open
A0	Small Surdo	Open
A#0	Small Surdo	Mute
B0	Snare Cajon	Bass Mute
C1	Snare Cajon	Bass Open
C#1	Repique De Mao	Shell
D1	Snare Cajon	Slap + Grace
D#1	Repinique	Rim Open
E1	Snare Cajon	Mute Slap
F1	Latin Roto Tom	F
F#1	Small Recko Recko	Up
G1	Latin Roto Tom	E
G#1	Small Recko Recko	Accent
A1	Latin Roto Tom D	D
A#1	Large Recko Recko	Accent
B1	Latin Roto Tom C	C
C2	Latin Roto Tom B	B
C#2	Large Recko Recko	Open A
D2	Latin Roto Tom A	A
D#2	Flexitone	Up
E2	Pandeiro	Roll
F2	Flexitone	Up
F#2	Tambourine	
G2	Flexitone	Down

Note range	Instrument	Playing method
G#2	Cowbell	
A2	Large Recko Recko	Open Vibrato
A#2	Vibraslap	
B2	Small Recko Recko	Open Vibrato
C3	Bongo	High
C#3	Bongo	Low
D3	Low Conga	Mute Slap High
D#3	Low Conga	Open High
E3	Afro Conga	Open
F3	Timbale	Open High
F#3	Timbale	Open Low + Mute
G3	Agogo	High
G#3	Agogo	Low
A3	Cabasa	
A#3	Maracas	
B3	Brazilian Hi Whistle	Short
C4	Brazilian Low Whistle	Long
C#4	Guiro	Short
D4	Lo Guiro	Long
D#4	Claves	
E4	Afro-Latin Woodblock	High
F4	Afro-Latin Woodblock	Low
F#4	Cuica	High
G4	Cuica	Low
G#4	Triangle	Mute
A4	Triangle	Open
A#4	Caxixi	Medium
B4	Pandeiro	Heel
C5	Pandeiro	Open
C#5	Pandeiro	Slap
D5	Large Surdo	Mute
D#5	Large Surdo	Open
E5	Rebolo	Open
F5	Rebolo	Stick Hand Left
F#5	Rebolo	Mute
G5	Large Cajon	Bass Mute

Note range	Instrument	Playing method
G#5	Large Cajon	Mute Slap
A5	Small Berimbau	Buzz Strike
A#5	Large Berimbau	Buzz Strike
B5	Large Berimbau	High Open
C6	Large Berimbau	Low Open Vibrato
C#6	Small Berimbau	High Open
D6	Small Berimbau	Low Open
D#6	Small Berimbau	Low Open Vibrato

The following diagram gives a reference of the range of the keyboard.



Note: On most smaller music keyboards, you can access higher and lower octaves using the keyboard's octave up and octave down controls. See the instructions that came with your keyboard.

Performance Tips

The Software Instruments and Apple Loops in World Music represent the state of the art in sample-based digital audio technology. They are designed to provide an extremely high level of sound quality while using your computer's processor, memory, and hard disk resources as efficiently as possible. By their nature, however, high-quality samples like the ones in World Music require a certain level of processor power, available memory, and hard disk speed for optimal performance.

This document provides tips on how to get the most out of the World Music instruments and loops, and tells you what aspects of your computer setup might produce the greatest effects on performance, depending on how you use World Music.

Add Memory

In general, Real Instrument loops (blue) are extremely efficient and require the least amount of resources from your computer. The Software Instruments and Software Instrument loops (green) in World Music require more processing power, as the sound is being processed in real time. This is why Software Instruments and Software Instrument loops require a computer with at least a G4 processor, and why Apple recommends you have at least 1 GB of RAM to use World Music.

The simplest way to increase performance—that is, to be able to play songs with more tracks and with more Software Instruments—is to install more RAM in your computer. For GarageBand and Logic users, adding RAM is an affordable investment that will improve the performance of the high-quality instruments in World Music.

Convert Software Instrument Loops to Real Instrument Loops

As stated above, Software Instrument loops require more processing power than Real Instrument loops. If your computer has 512 MB or more of memory, the performance impact of using Software Instrument loops is much higher than with Real Instrument loops. Whenever you use Software Instrument loops that you don't intend to edit later, converting them to Real Instrument loops can increase performance.

You can convert a Software Instrument loop to a Real Instrument loop by Option-dragging it from the loop browser to the timeline. You can change the default behavior in GarageBand Preferences so that Software Instrument loops are always converted to Real Instrument loops when you drag them from the loop browser to the timeline.

Lock Tracks

When you lock a Software Instrument track, the track is rendered to your computer's hard disk. Playing the rendered track requires less processing power and less memory than playing the Software Instrument track. By locking tracks, you trade processor usage for hard disk usage. This can provide an increase in performance (especially on computers with slower processors, or when you are using many instruments or effects, which consume processing power), but locking many tracks can have an impact on performance, especially on laptops or other computers with slower hard disk speeds (or on computers with nearly full hard disks).