DESCRIPTIONS AND PLAYING TECHNIQUE

Bar Instruments

The **glockenspiel** has a clear, bright silvery sound that can be heard through a full background of other instruments. The refined steel STUDIO 49 bars last longer in sound than the wooden bars of a xylophone and are therefore less well suited for very fast passages. As with all bar instruments the sound quality can be varied by using different textures of mallets. As a rule the glockenspiel mallets are made of hard wood or rubber. We distinguish between soprano and alto glockenspiels, single row (diatonic) and double row (chromatic).

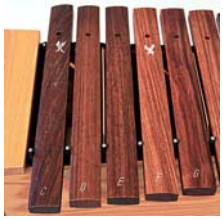
The **xylophone** has a distinctive gentle sound and is one of the most versatile instruments of all. We separate them into three voices: soprano, alto and bass, covering a range of almost four octaves. The most useful and suitable for childrens' voices is the alto xylophone with its compass of c^1 - a^2. It is a choice solo instrument but can also be used in unlimited numbers with all other instruments. In short it is the most ideal musical instrument for group music making, an instrument with rich, dynamic possibilities for expression with no problems of playing technique, suitable for all ages from preschool to senior citizens. The soprano xylophone sounds an octave higher, and has a somewhat sharper and drier sound. The bass xylophone is notated from c^1 - a^2, but sounds an octave lower (C - a^1.. Music is very often notated today in the bass clef "at pitch." The bass xylophone has a very important function in our "orchestra." It is the foundation, the sustaining basis on which all other instruments can build. It has a warm, full sound which is never forceful. It is not only its sound but also its imposing size that makes it one of the most loved instruments of children.
The **Metallophone** is the third and the youngest barred instruments. Their metal plates are of a high quality aluminium alloy that produces an unusually long-lasting, bell-like sound. This instrument is best used for longer notes, making full use of its enchanting sound. It takes time for a struck bar to develop its full sound, especially in the lower tones; single tones are apt to be blurred in fast-moving passages.
Metallophones, soprano, alto and bass, have the same pitch range and notation as xylophones.

All these barred instruments are available as **single-row (diatonic)** or **double-row (chromatic) instruments**. The basic key of all barred percussion is C Major.

The most frequently exchanged bars, F# and Bb, are included with the single-row instruments, along with a pair of suitable mallets. Half-tone bars may also be ordered

as necessary, making it possible to play in other keys. Unused bars can be removed or, on xylophones and metallophones, **turned upside down**. Removing bars, however, especially from the lower-pitched instruments, dulls the resonance. Therefore, for better resonance, it is best to turn the bars upside down.

1. Single tones can be identified by chalk or sticker, with colors used to distinguish two or more harmonies for those with less musical experience.



2. It is also possible to remove unplayed neighboring tones. For example, to play a C Major bordun with low C and G, the A next to the G can be removed. In the block of remaining bars, it is easy to find the C and G.

If the tones of E and G are required, the F bar may be removed or turned over. The two tones on either side of the space are the ones to be played.

This photograph shows bars turned over, clearly showing the hollowed-out surface to the player.

It is not necessary to exchange bars on the chromatic, double-row instruments, which are indispensable for more demanding and especially contemporary music.

Single-row instruments can always be converted to chromatic instruments by adding the necessary half-tone resonating box.

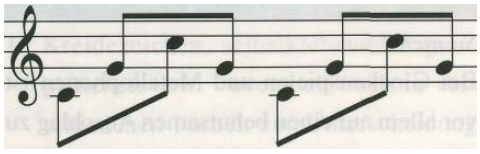
Many emphasize the easy playing technique for barred instruments. There are a few general rules that make music playing easier, give children a happy feeling while playing, and lead to a healthy, successful experience. First is a relaxed, loose posture. Arms and elbows should not be pressed against the body. The player should sit or stand only as far from the instrument as necessary to strike the **middle** of the bars comfortably while playing. The ideal height of the playing surface will be discussed later in the section on setting up the instruments.

There is no single correct way to hold mallets. What is important is to produce a full and resonant sound, which can be achieved with a relaxed short stroke. The principle is to bounce away from the bar instead of sticking to it, which produces a smothered sound. (Draw the sound out of the bar, don`t drive it into the bar). Well-chosen exercises in knee slapping (patschen), dispell stiffness and tension in children and, at the same time, prepare specific rhythms on the instruments.

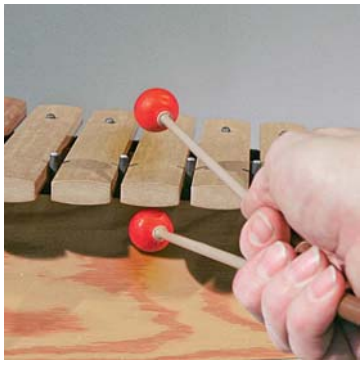
The best way to hold a mallet is with the back of the hand up, and along the handle toward the head of the stick. This avoids too much downward weight and allows a better bounce. One common error is placing the index finger along the stick, preventing it from bouncing.

With glockenspiels and metallophones a carefully controlled stroke is needed for the best sound. Barred instruments can be played with both mallets either simultaneously or alternately. In many examples of more advanced notation this alternation, called "sticking," is indicated with upward note stems for the right hand and downward stems for the left hand. In general the least awkward changes are recommended to make playing easier for a child and to ellicit flowing and pleasant sounding music.

In addition there are other special techniques that are used less often and may require a little more practice. They should, however, be tried because they present an interesting variation. There is, for example, the so-called cross stroke, in which one hand crosses the other. It is only with this technique that the larger intervals in a passage can be mastered. Even preschool children can play examples like the following and be pleased with their success:



Using the **fork-grip** each hand can play two notes simultaneously. Two sticks are held in one hand with the distance between the heads that of the interval to be played, usually a third or a fourth. The index finger is placed between the sticks.



With the fork-grip a **tremolo** can be played on one bar. This is not entirely professional but for children it is an exciting way to produce a tremolo. The two mallet heads are held above and below the extended section of the bar and moved quickly up and down (not for glockenspiels!).

A **glissando,** a sliding movement along several notes, can be produced on barred instruments by gliding the loosely held mallet along the required number of bars, usually from left to right from low to high. Obviously all of the bars included in the glissando must be in place. The final stroke (the last note of the glissando) is played by the other hand. For a glissando on a glockenspiel a metal bar is suitable as well as a triangle beater. For a gentle sound a small knitting needle might be used.

While different types of mallets are available, all STUDIO 49 barred instruments are delivered with the best mallets for the instruments' most typical sound. However, one should try mallets with harder or softer heads from other instruments. Hearing new sound colors delights players, motivating them to further experiments. Instruments have many different uses making for exciting possibilities in creative music making.

Setting up the instruments

The basic requirement is that the playing surface of the instrument be at the same

level as the player's elbow and that the forearm be horizontal while playing. Today there are **special tables** and **stands** that can be adjusted to all heights for playing while seated or standing. For those who must regularly transport instruments there are **moveable stands** for the larger and heavier ones. Even small children can then move a bass xylophone. Assembling STUDIO 49 stands is quite easy. When the stand has been extended to the required length the instrument is simply set in place. Screws and complicated assembly are not needed. The instrument is securely held and, if necessary, can be exchanged quickly with another of the same voice (e.g., alto xylophone/alto metallophone). The correct playing height can be adjusted with two knobs.

The table is another good possibility. There is room next to the instrument for a notebook, extra mallets and extra bars. Except for glockenspiels, instruments on stands have a special holder mounted on the resonating box for this purpose.

There are no rules, but the room for the instruments should be carefully arranged for ease in making music. One might want to make a half-circle with instruments of similar function in an arrangement of ascending pitch or simply group instru-ments that are played together.

Resonator bars

Much of what has been said about barred instruments may also be applied to the single-tone resonator bars of wood, metal or plastic. They can be used alone or combined with multitoned instruments providing a special step-by-step broadening of the tonal spectrum. A very practical storage and carrying case for holding complete sets is available. Many children can participate at the same time with these diatonic and chromatic sets. The chromatic tone rows lend themselves to various combinations of historical as well as modern scales and tonal material of different musical cultures. Simple children's music with the range of 2-5 tones can grow to more complicated tone rows through creative activities, even to experimental forms of music.

Resonator bars open endless possibilities limited only by the creativity of teacher and students.

Instruments with membranic heads

Timpani and various kinds of single and double-headed drums, tambourines and bongos comprise these most frequently used instruments.

The timpani, in the truest sense of the word, is the most "striking" of the skin instruments. Rhythm is combined with a tuneable pitch; tuning such a drum requires some skill and experience. Later we will discuss timpani that can be tuned with only a small rotation of the instrument. The following models are available.

The simplest and most economical is the **timpani on fixed legs**. Tuning is accomplished by tightening or loosening the skin with the screws around the edge of the instrument, turning each screw equally in sequence with the one directly opposite. It is difficult to say how many turns are needed for a particular pitch. One needs a special sensitivity for this, and time to reach the exact tuning that will hold for a strong and clear sounding drum beat.

A more highly developed form is the **rotating drum**, which has a central tuning mechanism that provides an exact tightening or loosening. The screws are for fine tuning that may be necessary from time to time, for instance, with brand new instruments. This drum is the ideal instrument for kindergarten and schools.

Even more exacting, and also more expensive, is the **kettle drum**, which, from the standpoint of sound, can hardly be distinguished from the professional orchestral tympani. The principle of its sound production is a head stretched over a hemisperical metal bowl. In comparison to the softer sounding rotating drums or those with hand screws that are open underneath, the kettle drum has more volume, richer over tones and smoother dynamics. The powerful sound of the kettle drum must always be carefully balanced with other instruments.

Timpani are usually used in pairs of different sizes. The pitch range of timpani cannot be determined exactly. It depends on humidity, temperature. the age of the skin, etc. What follows serves simply as standards. Timpani are made with either natural or plastic head. Plastic sounds somewhat drier, less full, but has the advantage of not going out of tune as quickly and not being as sensitive to temperature and humidity as natural skin. The typical timpani tuning of a fifth (fourth in the inversion) comes from the first and fifth notes in all keys. The timpani are set up with the lowest and largest to the left, the higher and smaller to the right, the same as the arrangement of the bars on melodic instruments and keyboards. (This differs from professional orchestras in some European countries.) Children should get used to this arrangement of all instruments. Timpani are usually played with a soft felt mallet striking the head about a hand's width from the edge. The softer the mallet head, the rounder and softer but also more indefinite, the tone. What is important is an absolutely relaxed wrist: the stick bounces by itself from the head. Dividing the beats between left and right is similar to the practice of playing barred instruments. Timpani contribute to the shaping of rhythmic motives.

The **bass drum**, a favorite instrument of young children, is double-headed and can be adjusted to a higher or lower timbre by means of screws. It motivates a child to play rather intensely and to establish the rhythm. The drum is struck about half way between the outer edge and the center with a large felt or lamb's wool mallet that allows playing from very soft to very loud. Smaller stricks of wood and jazz brushes are often used for special effects.

The **hand drum** or frame drum is one of the most used, even in the smallest of instrumentaria. It comes in various sizes. For the preschool the smaller, lighter-weight is recommended although a variety of different sizes offers a broad sound spectrum. The frame drum is good for playing basic beats as well as the faster, more complicated rhythms it is especially good in movement and dance accompaniment. Of the many playing techniques two are especially well suited for children: the **finger stroke** and the **thumb stroke**. The latter is also for the more experienced player. With the **finger stroke** the drum is held in the left hand near the middle of the body. It hangs vertically on four fingers, with the thumb pressing lightly from above.

The outstreched fingers of the right hand strike the upper edge of the skin near the left hand. The movement for this stroke comes from the whole arm above the drum.

As with all instruments the general rule also applies here: **spring away from the head after each beat draw the sound out**, **do not drive it into the head!** In this way the drum sounds bright and pleasant with full resonance. The **thumbstroke** sounds loud and without resonance. It is a diagonal movement from above, striking near the center of the head with the thumb and ball of the hand. An interesting and richly contrasting sound is produced by alternating finger and thumb strokes accented and unaccented beats. It also produces a smooth movement of the arm. Some "non-professional" advice for very small children: the loud sound of the thumb stroke can be made simply with the fist striking the middle of the head. The drum head will endure such a beating by a child of this age!

Volumes have been written about techniques with new sounds discovered by players again and again by imporvising and experimenting. The drum can be held between the knees and struck with both hands or with one or two felt beaters. It can also be scratched, brushed with finger tips, tapping and making circular movements, stroked with a metal brush imitating rain and wind. Hand drums can make many useful sounds. Tightening the drum head controls higher or lower sounds during music making. For longer periods of storage when they are not being used the drum head should be looseened a bit to protect the skin and maintain its elasticity. Hand drums are also fitted with natural or plastic heads. See above for advantages and disadvantages in the description about timpani.




Tambourine – Bongos – Congas

The **tambourine** is actually a frame drum with built-in pairs of jingles and is played in the same manner. The jingles can be made to sound by themselves by shaking the drum or with a careful diagonal stroke to the frame. The more jingles a tambourine has, the richer and fuller the sound. An especially strong sound combination of head and jingle is produced by striking the drum against the knee.

The smallest and highest sounding drums are the **bongos**. Compared to frame drums, they have a deeper body and come in pairs of different sizes. They are held between the knees or attached to a special stand. With a special tuning device they can be tuned high or low. Pressure rings and tension screws are under the edge of the skin because the bongos are played mainly with the fingers on the head and edge simultaneously. Different textures of sound can be made by striking with single fingers or finger tips, or by keeping the fingers on the skin after beating, etc. Also one hand can muffle the head with pressure while the other plays with a finger stroke.

The **congas** have their origins in Africa where a skin was streched over the hollowed-out end of a tree trunk. The instrument was then hung by a leather thong over the shoulder with the head about waist high. Today congas are attached to a stand and are vertically upright to the player. Tension rings can be adjusted for different degrees. The stroke is with the fingers or the whole hand. Here are some kinds of basic strokes:

1. A closed beat on skin and edge in which the hand remains on the instrument.
2. A "ringing" (open) beat in which the hand is pulled away.
3. Closed and open beats to the center of the skin.
4. The muffled beat in which one hand strikes, the other damps, eventually altering the tension of the drum head.

Professional conga technique is, of course, rather varied and much richer - a science in itself!

Rhythm Instruments

The third group of Orff Instruments includes all the rhythm instruments known in orchestral, folk and popular music and in pedagogical circles. They are mainly used to broaden and decorate, to bring out the specific rhythm of a melody in countless different combinations and layers of sound. Of course they can also be played as solo instruments. They are highly motivating for rhythmic practicing, movement accompanying and ear training, giving accents to songs and instrumental pieces.

The most well-known and universal of wooden instruments are the **rhythm sticks**.

They are played in pairs and come in different sizes. The larger the size, the greater the sound and the weight. For very small children we recommend the smaller ones and for continuing "percussionists" the larger Latin American **claves**. Two ways of playing are recommended in teaching: the first in which both sticks are held loosely between the thumb and one or two other fingers of both hands and then struck together.

The second in which one stick is laid on the fingers and ball of a partically open fist - creating a resonance chamber - and struck with the other loosely held stick. Holding the sticks tightly, unfortunately often the case with children, should be avoided.

Another well-known instrument is the **woodblock.** Its characteristic sharp, dry sound can be precisely rhythmic. The woodblock is struck right over the slit with a small mallet. It can also be mounted on a universal stand from STUDIO 49. Playing is thus easier for children who may tend to dampen the sound if the woodblock is hand held.

The **tubular woodblock**, as with many other woodblocks, has two seperate tones Ñon the woodblock they are produced from the two slits, and on the tubular woodblock from the two sections connected in the middle. Both instruments are used for the same purposes. For the preschool child, the tubular woodblock is somewhat easier to handle, held with two fingers and thumb between the two wooden tubes.

Temple blocks are especially rich sounding small wooden instruments, usually assembled in sets of three to five and mounted on a stand. Temple blocks - hollowed out wood-blocks - have a greater resonance than woodblocks and therefore a deep and mellow sound. The mallets may be somewhat larger than those for wood-blocks. For children the temple blocks have a special fascination.

Similar in sound to the temple blocks but with more volume and depth is the **"Zungentrommel"** - literally a **"drum with tongues"** - called log drums or slit drum. Its warm, full sound also results from a large hollow box responsible for resonance. The "tongues" are tuned to different pitches and generally played with a felt mallet.

Castanets are manufactered in different forms. The best known for schools are those fastened to a stick and shaken. Rhythmic precision is difficult to achieve here unless the stroke is made against the open hand. Otherwise this instruments is mainly used for a castanet "roll." Considerably more exacting and easier to play are the "table-castanets" two castanets mounted on a board. Their shells remain open automatically. They can be played with both hands or with single fingers (piano technique) and are well-suited to complicated, fast rhythmic passages.

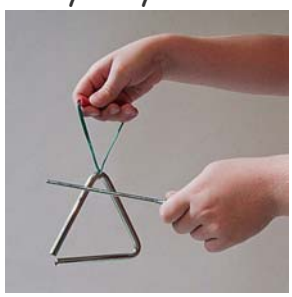
Cymbals come in different sizes. The size of the cymbal is important for its quality and the duration of its sound. This is especially true for the **suspended cymbal** - held with a leather loop - (too difiicult for small children!) or hanging loosely on a special stand. It is struck from above near the edge with a soft felt mallet. Interesting sound effects can be produced by using jazz brushes, wooden or metal sticks, drum sticks, etc. Two cymbals struck together are best for strong accents. Their use must be prudent and not in undesirable competition with the rest of the "orchestra." There are two main ways to play them:

1. The open cymbal stroke - striking them together and allowing them to sound or suddenly stopping the sound by pressing them against the body - for especially strong accents.

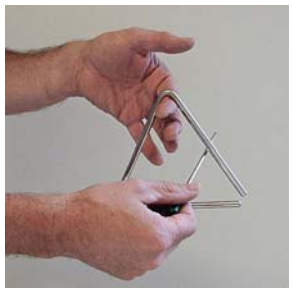
2. The gliding stroke - alternating up and down for a steady repeated rhythm and less volume.

The smallest are the **finger cymbals**. Their gentle, modest sound has made them one of the most loved of smaller instruments.The "sliding stroke" producing a sound that is almost ethereal, is made by lightly touch-ing the cymbals together on the outer edge. The cymbals hang freely from rubber loops. They are more rhythmically pronounced when they are held on the thumb and index finger and struck together. This way of playing is used often with dancing.

The **triangle** has a bright, penetrating sound. It comes in different sizes and forms which determine the different qualities of sound. Triangles are played with a metal beater of steel or brass.They may also be mounted on a stand making it easier to play several at the same time. One problem for children is keeping the triangle from turning while playing. This happens when the instrument is struck with a hard, unrelaxed stroke on the side instead of on the perimeter. It is better to practice a loose stroke from the wrist and not from the whole arm.



If that does not work, try striking the triangle on the lower horizontal bar, that prevents the instruments from turning. The best sound is produced by striking the triangle on the closed side near the holder at the top. One typical triangle effect is the roll produced by a fast back-and-forth movement inside the upper angle. (see photos)

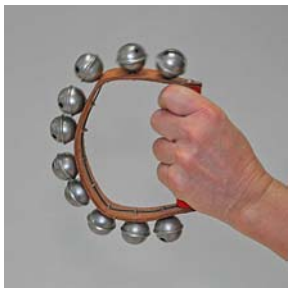


Rattles - There is a long list of various metal and wooden rattles all of which are shaken, or for more precise rhythms, struck with the other hand.

1. The stroke can be made with the whole hand (loud)
2. or with one or two fingers (soft, gentle)

The sistrum is a **rattle with pairs of jingles** fastened to a handle. The **jingle ring**, a tambourine without skin, has a richer sound and is especially lovely when made with many pairs of hard-wood jingles. Sleigh bells have been known throughout the ages from the time of the first metal workers. The bells were made of hollowed-out spheres of bronze or tin with a small slit, inside which a small ball rolls around. These bells were also used for costumes on festive occasions. In music classes they are used frequently to illustrate the sound of a joyful sleigh ride.

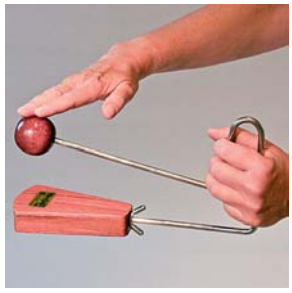
Also well known are **jingle** and **bell** "wreaths" attached to a handle. In preschool and kindergarten, **bell straps** are well liked: A row of bells fastened to a leather band which can be tied to the wrist or ankle with laces or elastic. They are an ideal accompaniment for movement activities.



Maracas. the softest sounding of all rattles, are also shaken or struck. An uninterrupted roll can be played by rotating the maraca.

Scrapers - These primitive instruments from native people were notched sticks of wood, bone, bamboo or gourd. Of the innumerable instruments belonging to this group-which also includes ratchets of all kinds - the **reco-reco (guiro)** is the one that found its way into the Orff Instru-mentarium. There are two holes underneath the instrument for holding with the thumb and middle finger. It is played with a wooden scraper enabling many nuances of sound color. The guiro comes from Latin American music.

Other Latin American instruments are the **wooden agogos** (a mixture of tubular woodblock and reco-reco), **cow bells** (modified from the originals), **agogos** (double bells of iron),



vibra slaps (woodblocks with a vibrating ball on a spring), **cabaza** (an artifical imitation of a large gourd rattle) and other less well known percussion instruments.

Photos with permission Schott Music Mainz, Micaela Grüner "Orff-Instrumente und wie man sie spielt" ISBN 978-3-7957-0746-0 Photos: Michael Widmer