Volume II

Chapters 11-16
A teacher’s guide featuring multi-cultural, cross-curricular lessons designed to support an integrated arts and academics program.

Contents Include:
Introduction • Lesson Guides • Extensions • Funsheets • References
Companion Audio CDs with Musical Examples & Play-Along Exercises

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# Roots of Rhythm

*World Drumming for All Ages*

*Volume II*

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Finally, Tommy Wiggins worked tirelessly as recording engineer on the Roots of Rhythm Companion CD, and thanks goes to Sara and Theo Woodson, who assisted with many of the photographs.
About the Author of *Roots of Rhythm: Volumes I and II*

Dr. Craig Woodson earned his doctorate in music from the University of California at Los Angeles, with specializations in music education, ethnomusicology, and ethnic musical instrument technology. He has been a percussion teacher, a performing and recording musician, college lecturer, a teaching artist in schools, and a music consultant for over 35 years. He has written articles and performed in videos on musical instruments, drumming, and the making of simple musical instruments from around the world.

After starting a small business making ethnic musical instruments in the 1970s he obtained twelve U.S. patents on musical instrument technology. In 1979, he started a three-year project as an invited researcher in Ghana, West Africa, assisting in the mass production of African instruments for Ghanaian schools. His writing includes computer transcriptions of jazz drummer, Tony Williams’ solos and African drumming and drum making.

He has been a music consultant to Walt E. Disney Enterprises, the U.S. State Department, Remo, Inc., and the Percussion Marketing Council. Dr. Woodson has presented educational concerts with organizations such as The National Symphony Orchestra, the Los Angeles Philharmonic, the Cleveland Orchestra and Kronos Quartet. In 2000, he was featured in a NASA video on music and space science, and was given a grant from the National Endowment for the Arts for educational programming.

Dr. Woodson has played drums in movies with Elvis Presley, performed on TV with Linda Ronstadt, and recorded with Ray Manzarek of the Doors. As a Columbia recording artist in 1968 he was a member of the celebrated electronic rock band, the United States of America. He was a consultant and Senior Director of Education at the Rock and Roll Hall of Fame and Museum.

From 2005 to 2013, he received support from the International Music Products Association (NAMM) and the NAMM Foundation through the Percussion Marketing Council to write and teach the Roots of Rhythm. Beginning in 2009, Dr. Woodson became Director of Roots of Rhythm, and has continued to teach RoR workshops around the United States and overseas.

In 2009-2010 Dr. Woodson traveled to Iraq and Indonesia for humanitarian work with a music therapist. At that time he started his non-profit, Drums of Humanity to assist with this effort. His work is recognized by an agency of the United Nations in the compendium, Music as a Natural Resource. He continues to work a teaching artist, performing musician, world music consultant, and writer. He has two grown children and lives in Chagrin Falls, Ohio.
Welcome!

*Roots of Rhythm: World Drumming for All Ages* takes teachers and students on a journey to explore different cultures, music and instruments from around the world and enjoy both listening to and playing rhythms using ethnically diverse percussive instruments, found or student-made instruments, or body percussion. *Roots of Rhythm* is the result of collaboration between the Percussion Marketing Council and the International House of Blues Foundation (IHOBF) and was created for use in IHOBF and other arts and educational programs. The curriculum, which combines music with history, social studies, geography and language arts, has been designed to support classroom teachers in integrating music, music-making activities and related cultural content into classroom curriculums. Content and activities align with state and national education standards.

*Roots of Rhythm* offers teachers and students an enjoyable and educational experience and can serve as a point of departure for exploring other rhythms and cultures, past and present, from around the world. By supporting music experiences outside of the music room and bringing them into the regular classroom, *Roots of Rhythm* creates opportunities for many more students to learn about music and participate in music-making activities.

The IHOBF is dedicated to bringing the arts to schools and communities through programs that promote cultural understanding and encourage creative expression. IHOBF was established in 1993 and has expanded to seven locations nationwide, including Anaheim, Chicago, Cleveland, Las Vegas, Los Angeles, New Orleans and Orlando. IHOBF programs teach about American culture and history through blues music and folk art, encourage exploration and appreciation of diverse cultures, emphasize the importance of creative expression and support youth participation in the arts. Core programs include the Blues SchoolHouse, Make An Impression, Visiting Artist programs, and Blues Ambassador Scholarships. Each IHOBF location also hosts an annual Dr. Martin Luther King, Jr. program and participates in local community cultural activities. Programs are offered at House of Blues venues as well as in school and community settings. To learn more about IHOBF mission and programs visit [http://www.ihobf.org](http://www.ihobf.org).

Formed in 1995, the Percussion Marketing Council is a trade organization made up of drum and percussion manufacturers, suppliers and dealers. It is governed by a board made up of a representative group of its members. The PMC’s goals are two-fold: 1) to expand the drum and percussion market by increasing the public visibility of all forms of drumming and by promoting
drums and drumming as a positive, healthy activity for all members of the public through a
variety of activities; 2) to unify the percussion industry by providing a forum for intra-industry
communication. In order to achieve the above goals, the PMC relies on funding in the form of
annual membership dues as well as financial contributions from music-related companies and
organizations.

How Teachers and Students Benefit from Roots of Rhythm

Teachers:

⊙ Learn about rhythms, drums and percussive instruments from around the world within their
respective cultural and historical contexts.

⊙ Gain ideas and resource materials for use in introducing Roots of Rhythm content into
classroom curriculums.

Students:

⊙ Learn about different countries and cultures (basic geography, social history, cultural and
musical traditions).

⊙ Gain awareness of how music reflects life conditions and experiences.

⊙ Increase their understanding of different cultural traditions and belief systems and of how
diverse cultures influence one another.

⊙ Learn names of and sounds made by different drums and other percussive instruments.

⊙ Learn about rhythms and musical styles from different cultures.

⊙ Learn to play and create rhythms.

⊙ Develop listening skills and music appreciation.

⊙ Have fun listening to and making music.
Introduction to Roots of Rhythm

*Roots of Rhythm: World Drumming for All Ages* is a curriculum that introduces ten percussion rhythms from around the world to teachers through chapters that place a specific instrument and its rhythm in the context of a particular country and culture. Each chapter begins with information about the country’s flag, size, population, geography and climate. This is followed by a description of the country’s background, history, and culture. The last sections present the “focus” instrument and related rhythms, how they are used in an ensemble, and their significance as a *Root of Rhythm*, all using a notation that can be understood by the non-music teacher. The curriculum comes with a CD that contains play-along music and examples of notated rhythms. Most foreign words are in italics and the text includes their phonetic pronunciations.

The *Roots of Rhythm: Volume II* adds six chapters to the *Roots of Rhythm* (RoR) curriculum and includes a special *Extensions* section that shows how all sixteen instruments compare and contrast with each other and similar instruments from other parts of the world.

The selected percussion instruments are based on the “Classification of Musical Instruments” set forth by Germans Curt Sachs and Eric M. Von Hornbostel in 1914 and translated into English in 1961. This system has become the standard for classifying musical instruments from around the world. The RoR lessons include seven membranophones (where the drumhead vibrates), two idiophones (where the instrument’s body vibrates), and one that combines these two types. The ROR chapters include four membranophones (where the drumhead vibrates), one idiophone (where the instrument’s body vibrates), and one electrophone, an instrument that requires electricity to amplify the sound. The sound of these instruments depends on three factors (shape, playing technique and modifier) as follows:

**Shapes:**
- Hourglass - usually with two drumheads and of variable pitch
- Goblet - one drumhead with a deep tone of fixed pitch
- Barrel - one or two drumheads
- Cylinder/cone - one or two drumheads
- Frame - a shallow hoop with one drumhead and a handle
- Kettle sets - one drumhead on a rounded kettle in a set of two, small and large

**Techniques:**
- Percussion - idiophones, in this case a xylophone struck with a beater
- Friction - membranophones rubbed to get a sound
- Shaken - in this case a drum that is hit and/or shaken to get a sound
- Concussion - idiophones, cymbals, two similar un-pitched parts struck together

**Modifier:**
- Jingles – attached to the drum body to get a jingling effect
- Snares – attached to the drumhead to get a buzzing or snap effect
- Center paste or bump – formed on the drum’s playing surface to render a pitch
- Electronics – electronic circuits that can modify an analog or digital signal
The choice of rhythms and instruments included in *Roots of Rhythm* was further based on a criteria established by the author, Dr. Craig Woodson, in conjunction with the Percussion Marketing Council. Choosing from the myriad types of rhythms and percussion instruments from around the world that included membranophones and idiophones was a daunting task. To narrow the selection, it was determined that the final choices had to fulfill six requirements. Each final rhythm and instrument had to represent:

1. One of the ten major types of rhythms found throughout the world (listed below).
2. Either one of the major sub-sections of membranophones: hourglass, goblet, barrel, cylinder, cone, one and two drumheads, variable tension, friction, modified with snare or rattle; or one of the major sub-sections of idiophones: concussion, metal, percussion, wood, pitched and non-pitched, and shaken.
3. A significant historical connection to the roots of rhythm from around the world.
4. Importance to people from the ethnic area represented.
5. Either an ancient rhythm dating between 500-3000 years ago or a modern rhythm dating between 100-500 years ago.
6. One of the diverse cultures from around the world, but limited to two countries each from the broad cultural areas of Africa, Asia, Europe, the Middle East and the Americas.

Choosing from the many types of rhythms and percussion instruments that might be extensions of the original Roots instruments for the Extensions chapters was difficult. To narrow the selection, it was determined that the final choices had to fulfill four additional requirements. The instrument or rhythm had to represent the following:

1. Another version of a RoR instrument either by migration or independent invention
2. A substantially different instrument for purposes of comparison
3. An importance to the people from each ethnic area represented
4. One of the diverse cultures from around the world

In the process of choosing the ten RoR instruments, a short list was plotted on a chart (see below) that compared various aspects of the instruments including their families, shapes or techniques, names, cultures, countries, and relative ages. The goal was to establish a baseline for choosing the final ten. A review of the chart shows that not all families of instruments are common in all cultural areas. For example, a shaken drum is not common in Africa and a xylophone is not common in the Middle East. It is apparent that a wider variety of percussion instruments are slightly more common in Africa and Asia than in the Middle East.

The chart shows the ten RoR focus instruments in bold font. An “M” refers to membranophones, and an “I” refers to idiophones. The seven categories marked “NC” mean that examples are not commonly found in that area. The “RC” stands for recently common within the last 100 years. Foreign terms are in italics and some diacritical marks like a macron (ā) are used when available.
## Chart for Roots of Rhythm Instruments & Cultures

<table>
<thead>
<tr>
<th>M</th>
<th>Type Name</th>
<th>Name</th>
<th>Age</th>
<th>Country</th>
<th>Shape</th>
<th>Technique</th>
<th>Modifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Hourglass Modern</td>
<td>Ghana</td>
<td>Dondo</td>
<td>Africa</td>
<td>Hourglass</td>
<td>Modern</td>
<td>NC</td>
</tr>
<tr>
<td>M</td>
<td>Goblet Modern</td>
<td>Guinea</td>
<td>Djembé</td>
<td>Asia</td>
<td>Goblet</td>
<td>Modern</td>
<td>NC</td>
</tr>
<tr>
<td>I</td>
<td>Percussion Ancient</td>
<td>Mali</td>
<td>Balaphon</td>
<td>NC</td>
<td>Goblet</td>
<td>Modern</td>
<td>NC</td>
</tr>
<tr>
<td>M</td>
<td>Barrel Ancient</td>
<td>Ghana</td>
<td>Atsimewu</td>
<td>NC</td>
<td>Barrel</td>
<td>Ancient</td>
<td>NC</td>
</tr>
<tr>
<td>M</td>
<td>Friction Ancient</td>
<td>Zaïre</td>
<td>Kwita</td>
<td>NC</td>
<td>Friction</td>
<td>Ancient</td>
<td>NC</td>
</tr>
<tr>
<td>I</td>
<td>Shaken Ancient</td>
<td>NC</td>
<td>Pakistan</td>
<td>NC</td>
<td>Shaken</td>
<td>Ancient</td>
<td>NC</td>
</tr>
<tr>
<td>M</td>
<td>Cylinder/Cone Modern</td>
<td>S. Africa</td>
<td>Isigubu</td>
<td>NC</td>
<td>Cylinder</td>
<td>Modern</td>
<td>NC</td>
</tr>
<tr>
<td>M</td>
<td>Frame Modern</td>
<td>Nigeria</td>
<td>Sakara</td>
<td>NC</td>
<td>Frame</td>
<td>Modern</td>
<td>NC</td>
</tr>
<tr>
<td>I</td>
<td>Concussion Ancient</td>
<td>Morocco</td>
<td>Qarqab</td>
<td>NC</td>
<td>Concussion</td>
<td>Ancient</td>
<td>NC</td>
</tr>
<tr>
<td>M</td>
<td>Kettle sets Ancient</td>
<td>Chad</td>
<td>Naas</td>
<td>NC</td>
<td>Kettle</td>
<td>Ancient</td>
<td>NC</td>
</tr>
</tbody>
</table>

The six RoR instruments in Volume II in alphabetical order are as follows:

1. **Pandeiro** – Brazil – Frame – Hit, shake – Jingles
2. **Snare drum** – Switzerland – Cylinder – Hit, rub – Snares
3. **Steel drums** – Trinidad – Cylinder – Hit, rub – Loaded bump
4. **Tabla** – India – Kettle – Hit, press – Loaded paste

### Lesson Format

Each RoR chapter lesson format is presented in specific sections—shown with a box border as below—and designed to help classroom teachers understand the country’s background and history, a specific culture, as preparation for a discussion of a specific instrument and its rhythm. What follows is a brief introduction to these sections.

**Instrument**, **Country**, and **Flag**;
Some countries are well known throughout the world, like the United States and Japan. Others are not as well known, like Romania and Thailand, but all are important to the Roots of Rhythm. The name of each instrument is followed by a short description. In most cases, there is a short story about the flag that helps set the stage for a discussion about the culture.
**Size and Population:**
Most countries are relatively small compared to the United States, around the size of various states in the U.S. Populations vary widely, from very dense like Japan with 873 people per square mile to sparse like the Lakota people at 8 per square mile in South Dakota.

**Geography and Climate:**
Geographies range from flat deserts in Egypt to mountains and forests in Romania. Island countries like Cuba and Japan contrast to the land locked Lakota. Climates vary among the countries from wide variations in Japan to mostly hot and humid in Ghana.

**Background and History:**
Some countries in these lessons like Egypt date back to the dawn of civilization, while others like the United States are only a few hundred years old. Countries like Portugal, Turkey and Japan amassed enormous empires but were later reduced to their original size, often by overextending their resources and through wars. The Lakota people started as part of a larger American Indian nation, which covered a wide area, but have been restricted by treaties to living on reservations with a fraction of the land that they once occupied. Countries like Cuba and the United States were in great part built under colonial rule and with immigrant and slave labor, while the people who built Romania, Ghana and Thailand emigrated from adjacent areas in ancient times.

**Cultures:**
Some cultures like those of Portugal and Turkey had almost global impact through conquest. On the other hand, Cuba and Japan were heavily impacted by other cultures. In fact, rhythms and instruments from Ghana, Thailand, Japan, Portugal, and Cuba came into their respective cultures from a source outside that culture. Some rhythms and instruments are played mainly by women, like those on the *adufe* and *sätig*, but most others are traditionally played by men. All rhythms and instruments represent part of the core of each musical culture.

**Music: Instruments & Rhythms**

**Instruments:** Most of the ten instruments are drums, since often idiophones perform a supporting role. A notable exception is the *ranāt ēk*, a xylophone used to conduct the ensemble. The *djembé* and *kakko* are drums that lead an ensemble, while others like the *dondo* and *sätig* play supporting rhythms in the group. Some instruments are familiar like the *djembé* and bongos, but others are not like the *buhai* and *naqqāra*.

**Rhythms:** The rhythms represent signal communication (*djembé*) and language (*dondo*), strict layered rhythm (*ranāt ēk*) and free rhythm (*kakko*), sacred singing (*adufe*), secular dance (bongos), military marching (*naqqāra*), heartbeats (Lakota Drum), polyrhythms (*sätig*), and animal sounds (*buhai*). Six are ancient rhythms and four are more recent examples. The following is an outline of the rhythms and examples by culture and country.

```plaintext
... ... ... ... ... ... ... ... ... ... ... ...
```
<table>
<thead>
<tr>
<th>Rhythm</th>
<th>Example</th>
<th>Culture/ Country</th>
<th>Instrument, Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talking</td>
<td>Speech on drums</td>
<td>Africa/ Ghana</td>
<td><em>Dondo</em>, an hourglass talking drum</td>
</tr>
<tr>
<td>Signal</td>
<td>Signal to play drums</td>
<td>Africa/ Guinea</td>
<td><em>Djembe</em>, a goblet-shaped signal drum</td>
</tr>
<tr>
<td>Layered</td>
<td>1, 2, 4, 8 counts</td>
<td>Asia/ Thailand</td>
<td><em>Ranāt ēk</em>, a xylophone conductor</td>
</tr>
<tr>
<td>Free</td>
<td>Bouncing ball</td>
<td>Asia/ Japan</td>
<td><em>Kākko</em>, a rhythmic conductor</td>
</tr>
<tr>
<td>Religious</td>
<td>For spiritual songs</td>
<td>Europe/ Portugal</td>
<td><em>Adufe</em>, a religious frame drum</td>
</tr>
<tr>
<td>Animal</td>
<td>Animal sounds</td>
<td>Europe/ Romania</td>
<td><em>Buhai</em>, an animal friction drum</td>
</tr>
<tr>
<td>Human</td>
<td>Heartbeat</td>
<td>Americas/ S. Dakota</td>
<td>Lakota Drum, rhythm of the heart</td>
</tr>
<tr>
<td>Dance</td>
<td>3/2 clave beat</td>
<td>Americas/ Cuba</td>
<td>Bongos, a drum set for dancing</td>
</tr>
<tr>
<td>Polyrhythm</td>
<td>2 against 3 counts</td>
<td>M. East/ Egypt</td>
<td><em>Sājāt</em>, ancient cymbals</td>
</tr>
<tr>
<td>Military</td>
<td>8 and 9 counts</td>
<td>M. East/ Turkey</td>
<td><em>Naqqāra</em>, military kettledrums</td>
</tr>
<tr>
<td>Dance</td>
<td>Samba</td>
<td>Brazil</td>
<td>Pandeiro, frame drum with jingles</td>
</tr>
<tr>
<td>Military</td>
<td>Swiss Rudiments</td>
<td>Switzerland</td>
<td>Snare drum, cylinder with snares</td>
</tr>
<tr>
<td>Melodic</td>
<td>Calypso</td>
<td>Trinidad and Tobago</td>
<td>Steel drums, pitched metal</td>
</tr>
<tr>
<td>Additive</td>
<td>Tal Rupak</td>
<td>India</td>
<td><em>Tabla</em>, kettledrums with a pitch</td>
</tr>
<tr>
<td>Friction</td>
<td>Scratch</td>
<td>U.S.A.</td>
<td>Turntables, electric friction sound</td>
</tr>
<tr>
<td>Meditation</td>
<td>Peace Building</td>
<td>Iraq</td>
<td>Frame drum with jingle modifier</td>
</tr>
</tbody>
</table>

**Listen & Play Along:**

This section is supported by the *Roots of Rhythm* Companion CDs and CD Notes. The CD provides musical examples for the focus lesson to support teachers and students in listening to and playing along with authentic music and also to provide a sound source for the notated rhythms in the Resources section. The CD Notes identify all sound tracks and provide valuable information about the recorded music. Use of the CD Notes is strongly recommended.

The notation of rhythms is intended for both the non-music and music teacher. It is based on a box system designed by Philip Harland in the early 1960s called Time Unit Box System or TUBS. It makes use of the boxes on graph paper to indicate the fastest counts of a slower rhythm, like millimeters are smaller units of centimeters. For example, if you have six boxes in a row, there are two slower even counts possible on one and four (see below). A notation in a box means that there is a hit on that count, and an empty box means rest for that count. Numbers and/or spoken phrases above each box are there to aid in counting the rhythm. When you read the TUBS rhythm through a few times, the sound should become clear, in a way similar to repeating phonetic spellings in a dictionary. TUBS notations, including percussion strokes for the right (R) or left (L) hand, are as follows:

- TUBS counting 1 2 3 4 5 6
- R or L = hit a high sound, on edge
- R or L = hit a low sound, in center
- R or L = hit rim of drum or wooden drum body to get click sound
- R or L = an extra loud hit or count
- X = clap your hands or hit cymbals together
- II, rr, rl, lr = fast double hits
- Graphic shapes = free or unmeasured rhythm (*buhai*, *kakko*, and Lakota Drum)
- c, d, e, f, etc. = a piano’s white notes

In most cases the authentic instruments will not be commonly available, but substitutes can be used. Students can use everyday items, like a phonebook or spoons, as percussion instruments. If there is a music teacher or program in your school, check to see if substitute musical instruments are available as follows:
1. guiro and maracas
2. bongos
3. congas or djembé
4. bass drum
5. tambourines and frame drums
6. tom-toms and cuica
7. xylophone, glockenspiel, bells or piano
8. cymbals and cowbell

Make Your Own Instruments: In many cases you can make your own homemade version of the instrument. As a model, children in Ghana, West Africa make drums by stretching strips of pure gum latex from a rubber tree around a can, then wrapping it around a small stick for a beater. Instead of rubber, you can stretch PVC packaging tape around a solid frame like a can or flowerpot, but it has to be wrapped in a certain way. To keep an even thickness, wrap the tape in a crisscross pattern pulling it medium tight in a vertical direction and then very tightly perpendicular to the first direction. The only exception is the *kakko*, which has an additional tension system: in this case the tape should be pulled loosely in both directions and then tensioned with the string tape.

There are five steps to making a drumhead on a can or frame. This begins with an “anchor,” or a piece wrapped around the can so that the drumhead has a good surface on which to stick.

1. Wrap the anchor around the drum body just below the opening or “mouth” of the drum.
2. Attach the first piece for making the drumhead across the middle of the drum’s mouth.
   NOTE: Pull each piece in four positions: stick the tape to the anchor (A), stretch it above the opening (B), pull it over to the other side (C), and stick it on the side’s anchor (D).
3. Finish taping the vertical direction with PVC tape following Step 2 for each piece.
4. Stretch the tape in the horizontal direction, but this time after first attaching the tape to the anchor, pull it very tightly over the opening (B) with each piece following Step 2.
5. For the beater, wrap a wad of tape around both ends of a chopstick, twig, or a ¼” by 9” long dowel then cover it with tape, like a wrapper on a small lollipop.

NOTE. For instrument-making projects, some uncommon items including the square *Adufe* frames, the shallow Lakota Drum frames, and PVC tape in various colors are available for purchase. Contact Ethnomusic, Inc. at 440-725-8767 or email: woodsonphd@gmail.com for more information.

Resources:
The last page of each lesson gives the reader a graphic reference for understanding the instrument, usually in the context of the percussion section with which it is associated. This page, which can be used as a student handout, shows the various rhythms in a TUBS, a graphic, or a dot notation, and includes descriptive notes on how to play the rhythm and instrument.
Extensions:

Extensions are a featured section of Roots of Rhythm: Volume II. These sections use text, graphic illustrations, charts, and photographs to compare and contrast each of the six instruments with other world percussion instruments; mainly the ten presented in the Roots of Rhythm. Each Extensions section begins with an expanded cultural/technological history of the instrument and its relation to instruments that either influenced it, were influenced by it, or simply share an important common physical or musical structure.

The Extensions sections include a discussion of how the featured instrument relates either directly, indirectly or coincidentally to other instruments. Direct relationships refer to cultural contact between two geographic areas where individuals have taken instruments or ideas from one place to another, and where that information has led to the development of a new instrument. Indirect and coincidental relationships refer to shared features that may not have developed through direct cultural contact, but can help demonstrate how instruments might have “generic” relationships to other percussion as independent inventions.

The following categories are used to determine and discuss the nature of these extended relationships and similarities among the world’s percussion instruments:

1. Design/Construction
2. Quality of Sound
3. Playing Techniques
4. Musical Application

Funsheets:

Funsheets are two-page worksheets that reinforce the educational content of each of the 16 Roots of Rhythm chapters. Funsheets can be used in conjunction with the Roots of Rhythm curriculum or as stand-alone worksheets by your students from the 1st through 6th grade levels and include in five types of activities:

1. Decorate Your Instrument
2. Make and Play Your Instrument
3. Facts and Opinions
4. Compare and Contrast
5. Fill It In

Roots of Rhythm is an innovative cross-curricular program that offers teachers and students an enjoyable educational experience. It provides an exploration of fundamental rhythms, both ancient and modern, from around the world. This approach expands on the experience of playing music, taking it outside of the music room into the general classroom with simple hands-on activities. Roots of Rhythm brings several developmental benefits including higher academic achievement, improved physical coordination, deeper concentration skills and greater self-discipline. The curriculum intends to enhance social skills, improve a student’s self-image and boost self-confidence. In the end, participants learn that people from diverse cultures are linked together through percussion music. Students and teachers experience the therapeutic, recreational, and even spiritual effect of playing rhythms on percussion instruments from around the world.
Instrument: Pandeiro, a Carnival tambourine

Country: Brazil

Flag: The green Brazilian flag features a large yellow diamond in the center with a blue celestial globe. Twenty-seven white five-pointed stars represent each of 26 states and the Federal District. The stars are arranged in the same pattern as the night sky over Brazil. The globe has a white equatorial band with the motto ORDEM E PROGRESSO which means Order and Progress in Portuguese.

Size and Population: Brazil is the largest country in South America. There is a total area of 3,286,488 square miles, making it slightly smaller than the United States. It occupies almost half of the subcontinent of South America, and it is the fifth largest country in the world.

As of July 2013 Brazil had an estimated population of 201,009,622, ranked 5th largest in the world. About three-fourths of Brazil’s population lives in urban areas and mostly along the coast. São Paulo, with over 7 million is the seventh largest city in the world. There is considerable diversity in the population including 55 percent white including Portuguese, Germans, Italians, Spanish, Polish, 38 percent mixed white and black, 6 percent black, and 1 percent others including Japanese, Arabs, Amerindians. Brazil's Indian population of over 200,000 live mainly in the northeastern Amazon region.

Geography and Climate: The landscape of Brazil is mostly flat with some rolling lowlands in north and some plains, hills, mountains, and narrow belt on the coast. The eastern side of Brazil faces the Atlantic Ocean and the country borders ten other countries: Argentina, Bolivia, Colombia, French Guiana, Guyana,
Paraguay, Peru, Suriname, Uruguay, and Venezuela. Brazil has the world’s largest rainforest that covers most of the north, which includes the enormous Amazon River that winds through the humid jungle. There are over 1000 rivers in Brazil. Mountains rise north of the forests and in the southeast. Across parts of northeastern Brazil there are dry plains, while the low plateaus of southern and central Brazil have fertile farmlands and ample grazing area. Along the Atlantic coast there are wide white beaches. Travel is restricted in the large interior, which remains mostly undeveloped.

The climate is mostly tropical, but it is temperate in south. The lowlands are generally warm, the mountains and plateaus are usually cool, and some coastal areas are cooled by sea breezes. Since rain falls heavily across Brazil, the country is one of the world’s largest crop-growing countries.

**Background and History:**

When Pedro Álvares Cabral, a Portuguese commander, landed in the area now known as Brazil in 1500, the land was populated by indigenous Indians, including the Guaraní and Tupinamba. After a treaty with Spain, Cabral claimed the area for his country, and this began three centuries of rule of under Portugal. At that time Brazil was named after certain trees or brazilwoods, because the wood looked like a glowing ember, called brasa in Portuguese.

With the arrival of colonists in the 1530s, settlements were established in the northeast and in southern Brazil. At first local Indians were enslaved to work these plantations. But in 1538, African slaves primarily from Angola were brought to replace the Indians who had died or were killed. The infusion of this almost free labor force had a profound influence not only on Brazil’s economic development in the world, but also on its cultural evolution notably through African influence in music and dance.

Though the Dutch invaded Brazil in 1630, they were driven out 24 years later. By the end of the 17th century, the discovery of diamonds brought thousands of Portuguese to the interior regions of Brazil and great riches to Portugal. In 1750, Portugal and Spain signed a treaty settling ruling areas in South America. By 1800, there were 3.5 million people in Brazil and half of this number were slaves. Beginning in 1808, the Portuguese royal family moved from Portugal to Rio de Janeiro, ruling both countries from Brazil’s capital.

In 1822, Brazil won its independence from Portugal. This began a period of great progress including the building of railroads and telegraph communication systems. By the mid-1800s there was a global demand for rubber products and coffee from Brazil. At this time, thousands of immigrants from Germany, Italy and other European nations began to arrive. When slavery was finally abolished in 1888, nearly 750,000 slaves were freed.

In 1889 Brazil became a republic and soon thereafter adopted a constitution. From that time through the 1930s two presidents were elected but ruled as dictators. After WWII, Brazil joined the United Nations, wrote a new constitution, and restored individual rights. In order to represent more of the interior of the country, the capital was moved from the coastal city of Rio de Janeiro to the modern inland city of Brasilia in 1960. In 1964, the military took over the government, a change that lasted for over 20 years; this was followed by a peaceful transition back to civilian rule. The current elected leader is President Dilma Rousseff (2011). Brazil continues to grow as the largest economic and regional leader in South America.
through industrial and agricultural growth and development of its interior. Assisting this is the vast natural resources in its interior and a larger labor pool. Brazil's economy is expanding its markets all over the world.

**Culture:**

Brazil shares many traditions with Portugal since it was a Portuguese colony for over 320 years. The Portuguese colonists also brought Roman Catholicism which is now the dominant religion in the country at around 80 percent. The remaining 20 percent is a mixture of other religions including Lutheran, Jewish, and Buddhist. Today, about 10 percent of Brazilians, mostly those with African heritage, practice *macuma* (mah-ku-mah) and *candomble* (con-dome-blay), a combination of African and Catholic spiritual beliefs.

While Portuguese is the official language, Spanish, English, and French are also spoken. About 80 percent of Brazil's adults can read and write. Public education is free, but many children in the rural areas leave school after the age 14 in order to work. The country's literature has revealed much about its past including poems about slavery and the Indian population.

Although there is a productive economy, a great difference exists between rich and poor, with a small minority living very well, some living comfortably, but the vast majority living under very poor conditions. Those with European backgrounds, often have better educational opportunities and have higher paying jobs than other ethnic groups. In spite of these social imbalances, there is much less racial discrimination in Brazil than in other multi-ethnic nations.

Brazilians take pride in many aspects of their culture and one important aspect is their music and dance. The focus of this chapter, a tambourine called *pandeiro* (pon-day-roh), has three important cultural connections: a martial art, Carnival and current events.

The martial art called *capoeira* (cah-pooh-eh-rah) uses several musical instruments including the *pandeiro* to accompany the performers. Around 400 years ago *capoeira* was brought by slaves from Angola, Africa and became a type of protection against their violent overlords. Disguised and hidden from slave owners as an entertaining non-threatening dance, it was performed with singing and musical instruments. After being outlawed for many years, in 1937, *capoeira* was legalized by Brazil's president in order to promote it as a Brazilian sport. Around this time the first legally-sanctioned *capoeira* academy opened in Salvador, Brazil. Today, this martial art is performed internationally both as an expressive remembrance of past harsh times and as an artistic competition sport.

Another application of the *pandeiro* is in the Brazilian samba music used in Carnival. This celebration dates back to Portuguese religious festivals around the time of Lent. After it changed into a masked ball in Rio de Janeiro, it became a procession with floats in 1850. Soon afterward, people paraded in costumes with musicians in large numbers. Samba music evolved out of the music called *choro* (chaw-roh), a European influenced music in Brazil. The first samba schools, or *Escolas de Samba* (es-koh-las day sahm-bah) started in the late 1920s in Rio de Janeiro. These were groups of blacks and others who wanted to make music and then parade during Carnival. They were called schools because performers would practice at a local school. In the
1930s the samba rhythm and dance became Brazil's official music. Some samba schools have 4,000 participants and more than 300 percussionists.

The pandeiro is also used in rural areas of Brazil as an accompaniment to singers who literally sing the news. The singer collects current events about a village, then moves on to the next village, stands in a central area and sings about the news he or she has collected. In the 1970s transistor radios became more available in areas without electricity, and there became less of a need for these musicians.

Music: Instruments and Rhythms

Instruments: Indigenous people of the Amazon rainforest in Brazil play whistles, flutes, horns, drums and rattles to maintain the traditions of their ancestors. When the Portuguese arrived in Brazil, missionaries introduced songs in the local Tupi (too-pee) language in order to convert the indigenous people to Christianity. They also brought many types of European instruments including the guitar, clarinet, accordion, and an early type of piano called the clavichord. Other instruments included the Spanish pandero (pon-day-roh), a round frame drum usually with no jingles, as well as the Spanish pandereta (pon-deh-ree-tah) and the Arabic, riqq (rick) both tambourines with jingles. The name pandeiro is related to the older Spanish instruments. The adufe brought from Portugal had a major influence on the development of the pandeiro. Many other instruments were brought to Brazil from Africa during the slave trade particularly from Angola. All of these instruments were blended into what became Brazilian instrumental music.

Capoeira was practiced with rhythms played on the musical bow, called berimbau (bee-rem-bow), the agogo (ah-goh-goh), a double bell, the atabaque (ah-tah-bah-keh), a large single-headed conga drum, and the pandeiro, a single-headed tambourine.

The musical instruments used for sambas in Carnival consist of a large ensemble of percussion instruments that included the following:

- **agogo**, a double bell
- **apito** (ah-pee-toh), a three-pitched whistle
- **repinique** (heh-peh-nee-keh), a medium double-headed drum and lead drum
- **surdo** (sir-doh), a large double-headed bass drum
- **rocas** (row-kas) or **ganzas** (ghan-zahs), metal or gourd shakers
- **cuica** (kwee-kah), a friction drum that can sound like an animal
- **timba** (tim-bah) a single-headed, cone-shaped drum
- **tamborim** (tom-bow-reem), a small single-headed frame drum
- **pandeiro**, a tambourine

The pandeiro, is a single-headed tambourine with five sets of jingles, with three jingles per set, not the usual two per set. Each set consists of two concave metal discs facing each other with a flat disc in between. The cupped discs have a very high dome, and this along with the flat disc dampens the ring, giving the pandeiro a short low "chuck" sound rather than the usual high ringing "ching" sound of many tambourines. Most pandeiros today have a tunable drumhead made from goat skin or more recently from a thin plastic film like Mylar. These drumheads might be transparent or have colorful designs. The instrument is hit or rubbed with one hand while the other one shakes the jingles and/or dampens the drumhead from underneath.
Rhythms: The three pandeiro rhythms presented here, capoeira, samba, and six-beat, each require specific combinations of high, medium, and low tones on the drum. High tones involve the slap and jingle shake, medium tones the finger or heel hit, and low tones the thumb stroke. Sometimes it is necessary to combine the motions of both hands, for example, when the left hand dampens the drumhead with a finger while the other hand hits with the thumb to produce a medium tone instead of a low tone. A more advanced technique is the finger or thumb buzz, which is created by lightly pressing the tip of a finger or thumb into the drumhead and moving it in an arch or circles so as to cause friction on the head.

In capoeira, the ginga (ging-gah), possibly translated as "swing," was the basic movement invented to disguise the movements as dance instead of a fight practice. The ginga is set to the rhythm of the berimbau and other percussion instruments or bateria (bah-the-ree-ah) to reinforce the idea of dance but mainly to teach a critical element in capoeira, the timing of their moves.

Choro rhythms of the 1800s led to invention the samba in the late 1800s. The greatest choro musician of all time was perhaps Pixinguinha (1897-1973). He was the first to incorporate percussion instruments into choro and the pandeiro is still the rhythmic base in traditional choro music. Some people call the choro "the musical soul of the Brazilian music." Jorginho do Pandeiro (hor-heen-ho doh pon-day-roh) is one of the most famous choro pandeiro players.

This lesson includes examples of the capoeira rhythms (8 counts) and the samba batucada (bah-too-kah-dah) rhythms (8 counts) on the pandeiro. While samba rhythms grew out of choro music in the early part of the 20th century, they have evolved into many types. The type featured here is samba batucada—the driving samba rhythm played during Carnival by large percussion ensembles (see rhythms in Resources below).

Listen & Play Along:

Note to teachers: if instruments are not readily available, consider having students make their own (a general activity for making drums can be found in the Roots of Rhythm: Extensions Introduction Section, and a specific activity for making pandeiro is described below) or encourage them to improvise - using everyday items such as buckets, containers, phonebooks, desktops, etc., as instruments. Rhythms can also be created with body percussion including handclapping, foot tapping, finger snapping, etc.

Listen to Tracks 1-7 of the Roots of Rhythm: Extensions Companion CD to hear the sound of the pandeiro. Now it’s time to play the pandeiro. You can also use a tambourine or other frame drum to play along with music on the Roots of Rhythm: Extensions Companion CD. Or, if you don’t have these instruments, make your own substitutes (see activity below for making homemade pandeiro).

Listen to Tracks 8-14 of the Roots of Rhythm: Extensions Companion CD and play along with the rhythms. To begin, just try to have fun. Read the box notation in the Resources section that shows each of the various rhythms, and begin again with the count and drum sounds.
Making Your Own Pandeiro: To make your own homemade *pandeiro*, hammer some holes in the rim of a sturdy pie tin with a nail, open the holes a bit wider with a screw driver, then fasten some metal washers through the holes with brass paper fasteners. Be sure to hammer flat any rough edges left from making the nail holes.

**Pandeiro and Performer:**

Chalo Eduardo

**The Pandeiro and Playing Techniques**

The six beginning strokes used in playing the *pandeiro* (shown in photographs) are as follows:

1. **Thumb Stroke** – a hit with the thumb that bounces off the drumhead near the rim allowing the tone to ring……………

2. **Fingers stroke** – a hit with the finger tips that press into the drumhead briefly, stopping the tone……

3. **Heel stroke** – a hit with the heel of the right hand near the rim of the drum……………………………………………...

4. **Slap** – a hit near the center of the drumhead with fingers spread apart and left briefly on the drumhead...........................................
5. **Drumhead finger damp** – press the middle finger of the hand holding the drum into the drumhead. L = dampen; _ = hold finger on drumhead; empty box = release finger from the drumhead (see photograph # 6)

6. **Shake** – this shows the undamped finger for # 5 and the following:
   (a) **twist** the *pandeiro* with a motion like opening a door knob to get two or more "chick" sounds from the jingles with each twist. 
      ◄► = a twisting shake.
   (b) **wave** the *pandeiro* up and down vertically like fanning someone else; this gets a jingle or "chick" on each wave.
      ▲ = a vertical shake up
      ▼ = a vertical shake down.

After practicing these strokes try the following *pandeiro* rhythms with the Companion CD. They are written for a right-handed drummer; simply switch hands for left-handed playing.

### Pandeiro Rhythms

**Capoeira #1** – Right hand only

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**Capoeira #2** – With left hand shake

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**Samba #1** – Right hand only

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### Samba #2 – With left hand damp

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### Samba #3 – Right hand slap

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### Samba #4 – With left hand shake

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### Six Beat Rudiment

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<td>R</td>
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<tr>
<td>2</td>
<td>Ba-tu-ca-da-ca-da</td>
<td></td>
<td>R</td>
<td>R</td>
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<td>3</td>
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<td></td>
<td>R</td>
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<tr>
<td>4</td>
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<td>5</td>
<td>Ba-tu-ca-da-ca-da</td>
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<tr>
<td>6</td>
<td>Ba-tu-ca-da-ca-da</td>
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</tbody>
</table>

22
The pandeiro is but one of many extensions of perhaps the oldest and most common type of drum in the world: the frame drum. As such, it is not only a direct extension of the two-headed, rattle-filled Portuguese adufe, it also has indirect connections to a host of single-headed frame drums and tambourines (frame drums with jingles), including, for example, the North American Lakota Drum, North African bendir, Middle Eastern tar and riqq, Indian kanjira, Irish bodhrán and central European tambourines.

While the history of the pandeiro is not entirely clear, it probably begins with the introduction of Portuguese frame drums into the area of Brazil possibly in the early 1500s. These drums were very portable and were probably brought on voyages to South America in many varieties from both Portugal and Spain, and even from Arabic countries. The drums might have included Spanish frame drums without jingles like the large round pandero, the square pandero cuadrado or Portuguese adufe, and the Basque frame drum (northern Spain), panderoa (pon-deh-roh-ah). There might also have been Spanish tambourines with jingles like the pandereta, and the Galician pandeireta and pandeiro, which shares its name with the Brazilian drum. The instruments might even have included the smaller Arabic riqq. Drummers may have used all types separately for some time but at some point, possibly in the late 1800s, one form and technique emerged as the pandeiro of today.

Records show that the adufe was recognized as a major influence in the beginning of samba around 1900. The development of the pandeiro may have been taking place long before that time and it simply became a better instrument for use in the music of parades as needed by percussionists. While there are many differences between the adufe and pandeiro, the similarities eventually dominated.
To begin with, the *adufe* is constructed very differently than the *pandeiro*. For example, the *adufe* has two drumheads, is square or rectangular, has bead rattles on the inside of the drum, and the rattles hit the drumhead itself. On the other hand, the *pandeiro* has one drumhead, is round, has rattles in the form of jingles on the frame, the rattles are metal and they don’t hit the drumhead but hit the frame instead.

The main connection between the two instruments seems to be that the *adufe* and the *pandeiro* are both instruments that can be played loudly and in large ensembles using a variety of hand and finger techniques. Other tambourines have a more subtle technique intended to be played smaller groups and are not particularly loud.

Another extension is that the *adufe* and *pandeiro* are both played in connection with religious and social events. These events are also commonly in motion rather than stationary, that is, with singing and dancing during a parade or procession.

<table>
<thead>
<tr>
<th>Musical Influences</th>
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</thead>
<tbody>
<tr>
<td><strong>Adufe/Portugal</strong></td>
<td><strong>Pandeiro/Brazil</strong></td>
</tr>
<tr>
<td>Root: rattle</td>
<td>jingles</td>
</tr>
<tr>
<td>Influence: accented ostinato</td>
<td>round</td>
</tr>
<tr>
<td>Construction: square</td>
<td>wood frame</td>
</tr>
<tr>
<td>Technique: shaken, fingers and hands</td>
<td>pitch change</td>
</tr>
<tr>
<td>Application: religious/social</td>
<td>popular</td>
</tr>
</tbody>
</table>

In addition to its direct influence by the Portuguese *adufe*, and the frame drums and tambourines that migrated to Brazil from other parts of the world, the design, playing techniques, quality of sound and musical application of the *pandeiro* also represent indirect extensions of several *Roots of Rhythm* instruments, including the Egyptian *sājāt*, finger cymbals, the Lakota single-headed frame drum from North America and the *djembé* from Guinea. These extensions show that the *pandeiro* is connected to other percussion instruments through its technology, rhythms/usage and history/culture.

- **Design/Construction Materials and Methods**
The *pandeiro* borrows its jingles from Spanish, Portuguese and Arabic tambourines. The idea of adding jingles to a frame drum most likely began in ancient Egypt when *sājāt* or *zils* (small metal cymbals) were fixed in openings on the frame so that they would make a rattling sound when the drum was struck. These tambourine jingles are therefore considered an extension of the original Egyptian *sājāt*, small finger cymbals discussed in *Roots of Rhythm*. Originally from Egypt and Assyria, it is most likely that the *sājāt*-style jingles were made with thinner metal and then loosely attached to an opening on the frame. Some drums like the *bendīr* from North Africa already had a snare, or gut cord, that buzzed on the drumhead, so the addition of small cymbals that rattled was probably would not have been considered unusual.
There are, however, three important differences in the pandeiro’s jingles and the standard jingles on a tambourine. First, those on the pandeiro can be made of steel as well as brass. Secondly, on the pandeiro a flat disc is placed in between the two outer discs. This has the effect of shortening the jingle sound to a low “chuck” tone instead of a “ching”, an important factor in the technique of fast shakes and strokes used on the instrument. And finally, while a standard jingle has several bends, the pandeiro has a dome shape for the exterior jingles and a flat shape for the interior one.

A side view of various jingles shows how the shape of the jingles changed over time first from the thick sājāt to thinner jingles and then from two curves (A) to one dome (B), and finally to a higher dome with a flat jingle in the middle as on the pandeiro (C).

### Playing Techniques

To understand how the pandeiro is an extension of frame drums like the Lakota Drum and others it is necessary to understand how a drumhead vibrates. On most drums the drumhead vibrates the greatest amount in the middle and to a lesser amount around the edges. This results in the lowest tones being near the middle of the head and the highest tones towards the edge. An important technique in playing both the Lakota Drum and the pandeiro is that of applying pressure to the drumhead from the underside. This technique causes a change in the way the drumhead vibrates. As shown below, the lower tone occurs when the drum is struck and the head moves freely. When the finger touches, the vibration changes to a shorter length and thus a higher tone. The pandeiro player applies this technique to great effect, although it requires considerable pressure to achieve.
Geographically and culturally, the *pandeiro* and the Lakota Drum developed thousands of miles apart, so it is unlikely that they influenced each other. However, the fact that they both use a similar technique shows that both drums share playing styles that are generic to this type of drum.

The sophisticated hand techniques used on the *pandeiro* include strokes/motions played on various parts of the drumhead with the fingers, heel, palm and wrist of one or both hands and are often performed while moving or dancing. Other hand drums from around the world share many of these techniques, for example, the *djembé*, *riqq*, conga drum, *kanjira*, bongos, *pakhawaj*, and *adufe*, although it is unclear how much the playing style of those instruments may have directly influenced the *pandeiro* and how much of the style was developed independently. In any event, the speed and dexterity displayed by *pandeiro* players— and their ability to perform fast, repetitive patterns (called ostinato) with just one hand— in *samba* and other musical styles is both challenging and impressive.

**• Quality or Type of Sound**

As previously mentioned, incorporating jingles into the general design and construction of the *pandeiro* allows it to share the basic sound quality of most tambourines. It is therefore an extension of these and other types of drums that use sound modifiers, including the *adufe*, the snare drum and even the Turntable. Another such instrument is the *djembé* from Guinea which has a sound modifier system that adds a buzz to the sound of the drum. The *djembé* rattles, called *sèssè*, are metal rings loosely fixed to metal sheets that are attached to the drum, but removable. The *pandeiro* is related to this rattling idea but its jingles are permanently attached to the body of the instrument. Because of this, the *pandeiro*’s jingles are always an integral part of the sound of the drum, whereas the *djembé* can be played with or without the *sèssè*.

Of course, one of the basic differences between the *pandeiro* and other tambourines is the specific type of sound its jingles produce due to their unique shape and material.

![Modifiers change the sound of a drum.](image)

**• Musical Style or Application**

The *pandeiro*’s use in a variety of popular, dance, religious and social situations connects it with many of the world’s percussion instruments, including the Turkish *naqqāra*, Trinidadian steel drums, the Guinean *djembé* and Japanese *kakko*. In fact, in much the same way that the *pandeiro* is closely related to the many types of frames drums that exist and continue to be developed, it also provides us with an excellent example of how all drums are at least distant relations of each other on one or more levels.
The pandeiro (pon-day-roh) is a tambourine or round frame drum with jingles played in Brazil. The drum came to Brazil when the Portuguese settled there in the year 1500. It is played by men in several types of music including capoeira (cah-poo-eh-rah) and samba. Capoeira looks like a dance but it is a type of martial art that was brought from Africa during slavery. The pandeiro accompanies the capoeira performers along with a musical bow, called the berimbau, (bee-rem-bow) and other percussion instruments. Samba rhythms are important in Brazil especially during Carnival, when they are played in large marching percussion ensembles. While performers dance or march in the festival parade, the pandeiro drummers play syncopated rhythms and display juggling and balancing tricks.

The original pandeiro was made with a wooden frame, metal jingles and an animal skin drumhead tacked on to the frame. Now, new materials are used including a metal frame, with tension screws for tightening the drumhead, and a plastic drumhead instead of skin. The instrument comes in many sizes and it is decorated with various designs including the flag of Brazil.

**The Pandeiro**

**The Flag of Brazil**

**Directions.** Think about other designs that could be drawn on the surface of a pandeiro. Consider other ways to represent the Carnival in Brazil, for example, a map, musical notes or a festival mask. First, list some of your ideas in the spaces below and then draw your designs on the two pandeiro shapes on the next page.

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ROOTS OF RHYTHM – CHAPTER 11. THE PANDEIRO FROM BRAZIL

Pandeiro #1

Map of Brazil

Pandeiro #2

Pandeiro drummer

Chalo Eduardo
**Instrument:**
Snare Drum, a double-headed, military drum

**Country:**
Switzerland

**Flag:**
The flag is a red square with a bold, equilateral white cross in the center that does not extend to the edges of the flag.

**Size and Population:**
The country has an area of 15,943 square miles with 523 square miles of inland lakes and rivers. Switzerland is landlocked and has a border of 1159 miles. It is slightly less than twice the size of New Jersey. As of July 2013 the population of Switzerland is estimated at 7,966,020; ranked 95th in the world.

**Geography and Climate:**
Located in central Europe, Switzerland borders Austria, France, Italy, Liechtenstein, and Germany. Over half of the country is covered by two mountain ranges, the Swiss Alps in south and the Jura Mountains in northwest. The beautiful Swiss Alps cover about 60 percent of the country but only one fifth of the population lives there. The highest elevation in the country is in the Alps on Monte Rosa at 15,203 feet. Four fifths of the population lives in between these two ranges in the central region called the Swiss Plateau. The area contains rolling hills, plains, and large lakes that were left when ancient glaciers moved through the area. This plateau has most of Switzerland's industries, rich farmlands, its largest city, Zurich, and the Swiss capital of Bern. Switzerland is landlocked and forms a crossroads for northern and southern Europe.

The climate is temperate, but varies widely according to altitudes in the country. The winters are cold, cloudy with rain and snow in the upper elevations, and summers that range from cool to warm, with clouds, high humidity, and occasional showers. Sometimes fog covers the Swiss Plateau like a cloud for up to 120 days a year but in the summer the area is warm and sunny.
**Background and History:**

The region of Switzerland today was occupied by Celtic people called the Helvetians in the centuries before the birth of Christ. In 58 B.C. Julius Caesar's armies conquered the area making it a Roman Province called Helvetia. By A.D. 400, Germanic tribes called Alemannians and Burgundians settled in the area, and by 500 the Germanic Franks had conquered these tribes, later expanding under the powerful rule of Charlemagne until around 800. By 962, most of this land became part of the Holy Roman Empire.

In 1291, three central Swiss states (now called cantons), Schwyz, Uri and Unterwalden joined in a defense agreement called the Perpetual Covenant, which became the beginning of the Swiss Confederation. This was a pact to help each other stay free of foreign rule, in light of the growing power of the Hapsburg family of Austria that controlled this area at that time. Switzerland later took its name from the canton of Schwyz.

From 1315 to 1388, Switzerland fought many wars for independence and finally defeated the Hapsburgs whose armies were ten times their strength. By the 1470s, Switzerland had a strong military and won new land and their independence from Hapsburg rule. During this period of expansion the Swiss Confederation added many new cantons; 13 by 1513. At this time, each canton governed itself without a central government. When the French defeated the Swiss two years later, the Swiss questioned the policy of territorial expansion and eventually adopted the stand of neutrality in times of war—a policy that has lasted to the present day.

During the 1500s, the Reformation in Switzerland spread quickly. The advance of the Protestant religious movement, however, split Switzerland into Protestant and Roman Catholic factions, and the two fought many times between 1529 and 1721. After the French Revolution brought military occupation to Switzerland in 1798, a new central government was established. This new system caused considerable confusion and in 1803 the cantons were reestablished by Napoleon of France. He created six new cantons, and reduced the central government's power. With Napoleon's defeat in 1815, the Congress of Vienna guaranteed Swiss neutrality for the whole of Europe.

By 1830, many of the Swiss demanded more freedom. Some cantons joined together to stop this movement but were defeated in a brief civil war in 1847. The next year Switzerland adopted a constitution that established federal democratic rule over the confederation. In 1863, the Red Cross was established, and later became the International Committee for the Red Cross. The flag of the Red Cross was adopted from that of Switzerland but the colors were reversed.

At the beginning of hostilities in World War I, Switzerland declared its neutrality which was respected by all nations. At the beginning of World War II, the Swiss again declared its neutrality and German forces did not invade. Over 100,000 refugees were given care by the Swiss during the war and it represented the U.S. and other Allies in Axis countries' negotiations.

In 1960, Switzerland helped form an economic organization of European countries called the European Free Trade Association. Three years later, Switzerland joined the Council of Europe,
which promotes unity among its members in human rights and social progress. In 1979, Switzerland created its 23rd canton called Jura. It was created to give French-speaking Roman Catholics their own canton, existing next to a canton with German-speaking Protestants. Switzerland continues to be a prosperous and stable economy with low unemployment and a highly skilled labor force supporting the country’s world-famous watch, banking and chocolate industries. In 2013, the President of the Swiss Confederation is Ueli Maurer.

Culture:
The Swiss are proud of their 700-year tradition of maintaining independence from foreign rule. While there is no standing army, all men receive military training each year, keeping their weapons, uniforms and musical instruments at home, and can be called up in an emergency. Since the country is located in the center of Europe, it reflects a mixture of European peoples. These include 65 percent Germans, 18 percent French, 10 percent Italian, and 1 percent Romansch, people who speak a language related to Latin and live in the western valleys. People of other cultural backgrounds make up 6 percent of the population. Religions also reflect those in Europe with Roman Catholic at 46 percent, and Protestant at 40 percent. Other religions combine at 5 percent, and 9 percent do not declare a religion.

All national laws are published in the three official languages German, French and Italian. The four official national languages are German spoken by 63.7 percent, French by 20.4 percent, Italian by 6.5 percent, Romansch by 0.5 percent, and other languages by 8.9 percent. The name of the original Celtic area, Helvetia, is the Latin name for Switzerland. Each language dominates the part of the country to which it is closest.

Swiss children are required by law in each canton to go to school but each region has its own age limits. Typically children from ages 6 to 14 must attend school and they study in the language of their region. If students choose to go on to college they need to attend one of three specialized high schools where they can choose between studies in Greek and Latin, modern languages, or math and science. Other students serve an apprenticeship in a trade or technical school. The University of Basel, founded in 1460, is the oldest Swiss university. Students do not pay tuition at any of the public universities.

Sports and the arts are important in Switzerland. Mountain sports are the most common with about one third of the nation being skiers. Other sports include bobsledding, climbing and hiking. Target practice is stressed by the military and as a result competitions have become very popular. Since the 1800s tourists have visited the country on vacation and today over 11 million visitors come each year. The arts in Switzerland include literature, visual arts, and music. One of the many famous Swiss books is a children’s classic, Swiss Family Robinson by Johann Wyss family. The art movement known as Dadaism began in Zurich in 1916, and Swiss artists of the 19th century include painter Paul Klee, sculptor Alberto Giacometti and architect Le Corbusier. The Orchestra de la Suisse Romande, conducted by Ernest Ansermet is world famous. Folk music includes dancing in colorful costumes, singing, yodeling and playing the Alphorn.

Over a period of 200 years, as the country sought independence from Austria, the military grew stronger. With these social and political changes, musical instruments associated with the
military including the fife, the bugle and the drum also gained in importance. The subject of this chapter is one such drum, the snare drum.

**Music: Instruments and Rhythms**

**Instruments:** Swiss musical instruments in the wind family include the fife, the Alphorn, a Neolithic wooden trumpet, the trumpet, trombone, reed and pipe organs, clarinets, saxophones, the bagpipes, the accordion, recorders, and the shawm (a medieval oboe). Stringed instruments include the hammer dulcimer, hurdy-gurdy (a mechanical violin), cittern (16th century guitar), violin and string bass. Percussion instruments include Swiss music boxes (a plucked idiophone), the cymbals, bass drum, timpani, and the snare drum.

The snare drum’s history begins in Medieval Europe around 1300 with a small, simple two-headed drum with a single strand snare called the **tabor**. The tabor (tay-bur) usually played an accompaniment to the three-hole flute. The idea of a round snared frame drum played for social events may have come from instruments like the North African **bendir** (ben-dear) through 8th century Muslim conquests in Spain and France. The use of a snare drum in the military, however, probably came directly from the snared **davul** and **naqqāra**, a Turkish snared bass drum and snared kettledrum set, respectively. These instruments were used in Janissary bands of the powerful Ottoman Empire’s armies. The Ottomans reached Vienna, Austria in 1529, likely influencing the Swiss drum makers and drummers.

In the 1400s, the early tabor increased in size and along with the flute was adopted by the Swiss military in fife and drum corps for giving signals. By this time, the European snare drum had migrated to many countries around the world. Similar drums were in use in England by the 1500s, although the name tabor was replaced with "drome" or "drume." Its larger size required the performer to carry the drum over his shoulder and it became known as a "side drum." This longer side drum was called a "field drum” and its drumheads were tightened by pulling a rope tension system—like lacing a shoe.

In the 1600s, new tension methods were developed that allowed the snares on field drums to be tightened with screws, changing the rattle of the snare’s gut cord to more of a "snap." Around 1837, screws also began to replace rope tensioning, enabling an increase in the tension on the drumheads and enabling drummers to play faster and more complex rhythms. By the 1850s, snare drums were being made of brass and reduced back to a tabor size for a brighter sound for their new use in the symphony orchestra. After 1900, the snare drum’s popularity continued to grow with drum and bugle corps that were privately sponsored outside of the military.

In the early 1900s, additional metal parts were developed to tighten the drumheads including the counter-hoops. Coiled wire came into use for the snares. Now, as the central drum in a set of drums, cymbals, and percussion instruments called "traps," drummers used it in a variety of musical applications, including silent movies, ragtime and jazz. Later, with the advent of rock and roll, many different sizes and types of snare drums were mass-produced and decorated with special finishes. Since the 1950s, the instrument has received enormous technological attention, including an expanded selection of plastic drumheads, improved drumsticks, and heavy duty accessories.
The first use of the snare drum in a classical orchestra was in 1706 by Marais, but many composers followed including Frederick Handel, Ludwig Van Beethoven, and Maurice Ravel. Rolf Liebermann's *Geigy Festival Concerto* in 1958 features the snare drum in the Basel style. The snare drum has thus developed from a local Swiss instrument to an international tradition.

Today, the snare drum consists of eight major parts.

1. The **body** or shell is traditionally made of laminated wood in a cylinder or barrel shape.
2. There are two **drumheads** of calfskin or plastic; the top or batter head is thicker than the bottom, or snare head, where the snares are stretched. The drumheads are wrapped around or tucked into wooden or metal hoops, called flesh hoops.
3. The drumheads are tightened with a **drumhead tension system** consisting of rope or screws (also called tension rods) attached to counter-hoops so that they can increase the tightness of the head by pulling down against its flesh-hoops. On modern drums the tension screws thread into lug nuts that are fastened to the shell.
4. The drum has multiple strands of **snares**, that create a snapping or buzzing effect. The snares, originally twisted catgut cords, are now usually coiled wire, cable, nylon cords or other variations, stretched underneath the top drumhead and/or below the bottom drumhead.
5. Originally the snares consisted of a single strand stretched across the batter head with no adjustable tension system. Today the **snare tension system** is an adjustable mechanical strainer that stretches the snares usually across the bottom drumhead. Relaxing the strainer releases the snares from the drumhead for an un-snared or tom-tom effect.
6. The snare drum today is played with a variety of **beaters**. The drumsticks are usually made of hickory, maple or oak, and consist of a bead or small oval at the beater end, a neck and shoulder, or gradual taper to the main shaft, and the butt end, or non-beaded end. Other beaters include brushes, felt-tipped mallets, and wrapped dowels.
7. The top drumhead often has a **muffling** system that dampens or muffles the sound of the drumhead. This can be a simple pad fixed to the head, or a mechanical, spring-loaded device.

8. The **stand** for the snare drum that was originally a thin cord or strap is now a heavy-duty floor stand, a shoulder strap, or a metal or molded fiberglass body harness.

**Rhythms:** The snare drum rudiments are rhythms and techniques that enable a drummer to perform a wide variety of patterns, somewhat like scales are performed on melodic instruments. The invention of the rudiments likely came from the Swiss as early as 1525 according to renowned Basel drummer, Dr. Fritz Berger. The Swiss mercenary regiments also record the first uses of fife and drum in 1332. Fifers and drummers had to play in unison and this required standardization of the rhythms. Drum notation started in Switzerland around 1620 and by 1660, the French had adapted these rudiments and sped them up to fit their faster marching pace. Later in Scotland and England the rudiments were adapted to fit the local styles. In the 16\(^{th}\) and 17\(^{th}\) centuries, the new American military followed the practices of the British which were mainly the fife and drum corps. During 18\(^{th}\) and 19\(^{th}\) centuries, military drum routines were issued in manuals in Europe and the U.S. The drummer gave calls to the troops, for example, using early rudiments called taps and drags, the rhythms could signal for the infantry, "to arms," as follows:

"To arms" - in six counts

```
1 2 3 4 5 6
tap drag tap tap tap drag tap tap
```

```
R LL R L  R LL R L
```

Very loud Soft

The first rudiment was the "long roll"; two right hand hits followed by two left hand hits in continuing succession. To gain speed and create a sustained sound, drummers had to learn to control the rebound of their sticks instead of merely using a wrist stroke for every tap on the drum. By gradually speeding up and slowing down, called "open, closed, open," the double-stroke roll, like all rudiments, was used by drummers to develop technical facility. Many rudiments were onomatopoeic as are the words "drum," "flam," "ruff," and "paradiddle."
The first listing of rudiments in America was in 1812 in a book intended for the United States Army and Navy. In 1886, the book *Trumpet and Drum* by John Philip Sousa was written to introduce the drum and bugle corps as a guide for all military service drummers and contained all of the drum rudiments practiced at that time. Lacking uniformity in a variety of published works, however, the rudiments were standardized by the newly formed National Association of Rudimental Drummers (N.A.R.D.) in 1932.

Today, the rudiments continue to be the rhythmic way to build technique for all styles of drumming, including popular music like jazz and rock and roll. Over the years, drum and bugle corps that began in the early 1900s have developed complicated rhythms and marching routines, based on the military drumming tradition.

**Listen & Play Along:**

*Note to teachers: if instruments are not readily available, consider having students make their own (a general activity for making drums can be found in the Roots of Rhythm: Introduction Section, and a specific activity for making snare drum is described below) or encourage them to improvise - using everyday items such as buckets, containers, phonebooks, desktops, etc., as instruments. Rhythms can also be created with body percussion including handclapping, foot tapping, finger snapping, etc.*

*Listen to Tracks 15-17 of the Roots of Rhythm: Extensions Companion CD to hear the sound of the snare drum. Now it’s time to play the snare drum. You can also use other percussion instruments to play along with music on the Roots of Rhythm: Extensions Companion CD. Or, if you don’t have these instruments, make your own substitutes (see activity below for making your own snare drum).*

*Listen to Tracks 18-29 of the Roots of Rhythm: Extensions Companion CD and play along with the rhythms. To begin, just try to have fun! Now read the box notation in the Resources section that shows each of the various rhythms and begin again with the count and drum sounds or rudiments. You could begin by saying the rhythm along with the CD then playing the rudiments.*

**Making Your Own Snare Drum:** Make your own snare drum with a coffee can, PVC tape, two rubber bands and two pencils. Follow the instructions for making a tape drumhead in the Introduction. Wrap several rubber bands around the can for snares.

**Traditional vs. Matched Grip:**
The original snare or side drum as carried in the military was held at an angle and required the so-called "traditional" grip with the left stick held underhand and the right stick held overhand. Around 50 years ago, new harnesses for marching drums, advanced drum stands and new drumming styles allowed drummers to use the so-called "matched grip," where both hands use the overhand position.
Using traditional grip

Craig Woodson

Using matched grip

Field snare drum

Concert snare drum

### Resources: Snare Drum Rhythms and Rudiments

#### Snare Drum Rhythms: Beginning Rolls and Strokes

1. **Single stoke roll**
   - Slow to fast to slow
   - Go faster here, then slower
   - R L R L R L R L R L R L R L R L R L

2. **Double stroke roll**
   - Slow to fast to slow
   - Go faster here, then slower
   - L L R R L L R L R L R L R L R L R L

3. **Buzz roll (multiple bounces per hand motion)**
   - Slow to fast to slow
   - Go faster here, then slower
   - L R L R L R L R L R L R L R L R L
4. Single paradiddle
   Count 1 2 3 4 5 6 7 8
   Say par-a-di-dle par-a-di-dle
   R L R R L R L L

5. Flam – four counts
   Count 1 2 3 4
   Say flam flam
   lR rL

6. Drag – in six counts
   Count 1 2 3 4 5 6
   Say drag drag
   lIR rrL

Snare Drum Rhythms: Swiss Rudiments

7. Tap Flam – in four counts
   Count 1 2 3 4
   Say tap flam tap flam
   R lR L rL

8. Pataflafla – in eight counts
   Count 1 2 3 4 5 6 7 8
   Say pa - ta - fla - fla
   R L lR rL

9. Swiss Army Triplets – in six counts
   Count 1 2 3 4 5 6
   Say flam tap flam tap tap
   lIR L R rL R L

10. Dragadiddle
    Count 1 2 3 4 5 6 7 8
    Say drag-a-di-dle drag-a-di-dle
    RR L R R LL R L L
Snare Drum Rhythms: Cadences

11. Cadence – in four counts

<table>
<thead>
<tr>
<th>Count</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Say</td>
<td>flam</td>
<td>tap</td>
<td>tap</td>
<td>flam</td>
<td>tap</td>
<td>tap</td>
<td>IR</td>
<td>LR</td>
</tr>
<tr>
<td>Say</td>
<td>flam</td>
<td>tap</td>
<td>tap-a</td>
<td>tap-a</td>
<td>tap</td>
<td>tap</td>
<td>IR</td>
<td>LR</td>
</tr>
</tbody>
</table>

12. Cadence – in six counts

<table>
<thead>
<tr>
<th>Count</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Say</td>
<td>drag</td>
<td>tap</td>
<td>tap</td>
<td>drag</td>
<td>tap</td>
<td>tap</td>
<td>IR</td>
<td>LR</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Say</td>
<td>drag</td>
<td>tap</td>
<td>tap</td>
<td>tap</td>
<td>tap</td>
<td>tap</td>
<td>IR</td>
<td>LR</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Say</td>
<td>drag</td>
<td>tap</td>
<td>tap</td>
<td>tap</td>
<td>tap</td>
<td>tap</td>
<td>IR</td>
<td>LR</td>
<td>LR</td>
<td>LR</td>
<td>LR</td>
<td>LR</td>
</tr>
</tbody>
</table>
Although the idea of a round, snared frame drum played for social events may have come from instruments like the bendīr through 8th century Muslim conquests of Spain and France, the modern snare drum primarily developed from two drums in the Ottoman Janissary bands, the snared drum set, the naqqāra, and the snared bass drum, the davul. These Turkish instruments became the models for the contrasting low field drum and high sounding snare drum sounds that evolved in Swiss military music and eventually found their way into many types of music throughout Europe and America.

Single or double gut snares or a thin stick used on Turkish percussion modified the sound by adding a high pitched buzz, allowing the sound to carry farther on the battlefield. Over time, the number of snares on a snare drum increased. Today, these snares can be made from coiled wire, cable and gut and may sometimes even extend beyond the drum shell to further increase their contact with the drumhead.
When the early snares were set off center, a larger area of the drumhead could vibrate which created vibrations that were slower and lower in pitch. When snares were moved to the middle of the drum, the head had faster vibrations and produced a higher pitched sound. The snares on many drums today can even be individually adjusted and, with tighter drumheads, the vibrations are very fast and high pitched. This allows the modern drums used in concert, field and pop music to project their sound above the other instruments.

<table>
<thead>
<tr>
<th>Changes in snare drum design focused and shortened its sound.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The naggāra’s single-head and kettledrum design</td>
</tr>
<tr>
<td>Long sustain and deep tone</td>
</tr>
<tr>
<td>The snare drum’s double-headed cylindrical shell</td>
</tr>
<tr>
<td>Short decay and high tone</td>
</tr>
</tbody>
</table>

Early in their history, snare drums were standardized in the round, cylindrical, double-headed configuration. This was likely due to the influence of other Turkish, Arabian or North African drums. The new design gave the drums a much more focused, higher-pitched sound that was probably preferred on the battlefields of Europe.

<table>
<thead>
<tr>
<th>Musical Influences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Naqqāra and Davul/Turkey</strong></td>
</tr>
<tr>
<td>Root</td>
</tr>
<tr>
<td>Design</td>
</tr>
<tr>
<td>kettledrum/cylinder</td>
</tr>
<tr>
<td>Rhythms</td>
</tr>
<tr>
<td>Construction</td>
</tr>
<tr>
<td>one drumhead</td>
</tr>
<tr>
<td>Technique</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Application</td>
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<td></td>
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</tbody>
</table>

In addition to its direct influence by Turkish drums such as the naggāra and davul, the snare drum also represents indirect extensions of many instruments, including Roots of Rhythm instruments such as the kakko of Japan and the djembé from Guinea as well as many types of cylindrical and frame drums from Europe, Africa, the Middle East and North and South America. This is due in large part to similarities in one or more of several Extension categories.
• Design/Construction Materials and Methods

Single-headed cylindrical drums, such as frame drums and tambourines, have an opening that allows lower or slower vibrations of the head. When a cylindrical drum has drumheads of the same tension and thickness at each end, the two heads “couple” or work together to help sustain the vibration. The *kakko* as well as western-style drums like the bass drum and tom-tom are examples of this effect. If the two heads are different thicknesses or pitches, as they are in the case the snare drum, this will uncouple the drumheads; resulting in the higher pitched, shorter sound that is characteristic of the snare drum.

• Playing Techniques

Like the Japanese *kakko*, the snare drum is struck with two beaded drumsticks. While snare drum sticks have evolved into a wide variety of shapes, sizes, weights and styles, *kakko* beaters, on the other hand, have remained the same over the centuries. The *kakko* makes use of the *mororai*, or buzz roll, and a fast left-right stroke on the *shōko* gong which is called a “flam” on the snare drum. The *katarai* (bouncing ball) or gradually accelerating rhythm of *kakko* performance is similar to the practice of the open-close-open (slow-fast-slow) rudimental snare drum style, although in the snare drum’s case this technique is primarily used to build dexterity and control of the instrument and not necessarily for performance.

![Kakko: katarai rhythm (slow to fast)](image)

![Snare Drum: open-close-open rhythm (slow to fast to slow)](image)

• Quality or Type of Sound

The snare drum’s sound modifier, or snares, create a “rattle” effect that might be considered an extension of other *Roots of Rhythm* instruments, for example, the *djembé*’s metal buzzer plates, the beans or beads inside the *adufe* and the Lakota Drum’s buzz technique. This quality of modified sound often represents the spirit or soul of the drum, particularly those of African origin.

• Musical Style or Application

As a signal drum, the snare drum can also be considered an extension of the *djembé*. While the snare drum and *djembé* share few similarities in areas such as design, playing techniques and sound, they do traditionally perform similar functions; that of giving rhythmic signals. The *djembé* is used to signal other musicians and dancers in close proximity whereas the snare drummer signals troops over a wide area. In addition, both the snare drum and *djembé* are used in ensembles where different types and sizes of drums cover the high, middle and low ends of the tonal spectrum. This approach is used in many cultures, including the Cuban and Brazilian percussion ensembles. The snare drum extends this idea by being the main drum in the contemporary drumset, also called a drumkit. The modern drumset is a set of high, medium and low pitched drums and cymbals that is played by one person using both hands and feet.
As direct extensions of the *naqqāra* and *davul*, the snare drum has specific connections to the instruments of the Middle East and Europe. Similarities to percussion instruments such as the *djembé*, *kakko* and other drums offer additional examples of how drumming is common to many world cultures. These extensions show that the snare drum has both directly and indirectly incorporated many technologies and techniques that have existed for centuries on drums and percussion in many other parts of the world.
The snare drum is a double-headed cylindrical drum, mostly played with two sticks, that has a special buzzing device called a snares. The snares are cords or coiled wires fastened so as to vibrate against the bottom drumhead making each stroke sound like "snap" or "buzz." This type of drum is played all over the world, but has its origins with a small snare drum called *tabor* that was used in Europe in the 1300s. Later drummers in Switzerland developed certain rhythms called rudiments for use as military signals. For example, the Swiss rudiment R-LLR-L meant get "your weapons." The Swiss rudiments are still very important today.

The Swiss learned about large snare drums from invading Turkish armies who used large groups of percussion instruments in their military or Janissary (jan-uh-sehr-ee) bands to inspire and signal their soldiers. These large drums were carried at an angle during battles and in camp so they were called "field drums" or "side drums." In the 1900s, large orchestras in Europe started using smaller snare drums made from wood and metal frames. Until the 1950's snare drums had calfskin drumheads and catgut snares. Now most have strong, hi-tech plastic drumheads and coiled wire snares. Today, drummers use many types of snare drums in jazz, rock, hip-hop, classical concerts, and drum and bugle corps.

*Directions.* Answer these questions about the snare drum.

1. How does the snare drum make a buzzing sound on each stroke?
   __________________________________________
   __________________________________________

2. List some materials for making a snare drum.
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
**Directions:** Use the facts about the snare drum that you have learned about in the paragraph and photographs, and complete the crossword puzzle.

**Across:**
1. Snare drummers play with two _____.
4. Swiss drummers learned from _____ armies.
5. _____ are usually on the bottom drumhead.
6. R-LLR-L on the snare drum is a Swiss_____.
7. A_____ is a small, old European snare drum.
8. Snares can be made of _____ wires.

**Down**
1. Turkish armies used snare drums for _____.
2. _____ is a country in Europe.
3. A_____ drum was carried during a battle.
5. Snares can sound like_____.

![The Field Drum and the Snare Drum](image)
**Instrument:**
Steel Drums, melodic metal for Calypso

**Country:**
Trinidad and Tobago

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**Flag:**
The flag is red with a white-edged black diagonal band from the upper (hoist) side to the lower (fly) side. The color red represents the strength of the land in Trinidad and Tobago, the friendliness and courage of its people, and the sun. Black represents the unity and vigor of the people, as well as the natural resources of the country. The white border represents the sea, the purity, and the equality of all people. Together, the colors represent water, Earth, and fire, which connect the nation's people to their past and future. The flag was designed in 1962 and was officially adopted that year when the two islands gained independence from Great Britain.

**Size and Population:**
The two-island nation called the Republic of Trinidad and Tobago covers an area of 1,980 square miles, smaller than the state of Delaware. Trinidad's rectangular shape measures 37 miles by 50 miles and has a total area of 1864 square miles. Tobago, shaped like a fish, measures 26 miles by 7 miles, and has an area of 116 square miles. The coastline around both islands together is 292 miles. As of July 2013, the population is estimated at 1,225,225; ranked 158th in the world. Ninety-five percent of the people live on Trinidad, the larger island. The major city, the capital, and the main port in Trinidad is Port of Spain. The largest city in Tobago is Scarborough.

**Geography and Climate:**
Trinidad and Tobago are located in the West Indies and consist of the southernmost islands of the Caribbean archipelago, a chain of islands between the Caribbean Sea and the North Atlantic Ocean. Geologically, the islands are an extension of the South American continent and Trinidad
ROOTS OF RHYTHM - CHAPTER 13: THE STEEL DRUMS FROM TRINIDAD AND TOBAGO

is separated from Venezuela by only seven miles. Tobago, the smaller island, is about 20 miles northeast of Trinidad and mostly consists of plains, hills, and low mountains. Trinidad is covered with tropical forests and fertile flat lands. The highest mountain is El Cerro del Aripo at 3,085 feet and the lowest areas are at sea level. Clays, sands, and gravels found in the southern lowlands come from prehistoric times and lie above rich oil and natural gas deposits discovered in the 19th century. Even though the islands are located close to South America, Trinidad and Tobago are often considered part of the North American continent, since they are a Caribbean country.

The country has a hot, humid tropical climate with temperatures ranging from 64° F to 92° F, with Trinidad being slightly warmer than Tobago. The annual rainfall ranges from 50 inches on Trinidad to 100 inches on Tobago. The rainy season is between June and December. Because of its southern location in the Caribbean islands and its proximity to cold waters in the Atlantic, the nation normally escapes hurricanes that are common in parts of the Caribbean.

**Background and History:**
During his third voyage to the Americas in 1498, Christopher Columbus landed on and claimed Trinidad for the Spanish Empire. The island was occupied by Amerindians, indigenous people that included the peaceful Arawak (are-oh-wok) as well as the fierce Carib (care-eb), Indians who resisted colonialization. The Carib tribal name was later taken for the name Caribbean. The Spaniards brought European diseases that killed most of these original inhabitants and those who did survive gradually assimilated into the Spanish culture. After the indigenous Indians died out, thousands of Africans were brought to work on the plantations as indentured servants, a type of slavery.

Although the Dutch settled the island of Tobago in 1632, Spain, Britain, France and the Netherlands fought for control of the island until Britain took control in 1814. Unlike other West Indian islands, Tobago changed hands 22 times during this period. The Spanish established the first permanent settlement in 1592, but the population did not begin to grow until Spain offered land grants to Roman Catholic settlers to develop the island’s economy in 1783. Planters from Haiti with French background came to Trinidad and established a sugar cane and cocoa plantations that prospered. By the end of the 18th Century, the British had captured Trinidad; they colonized it over the next 150 years. When the British abolished slavery on the islands in 1833, more than 150,000 Hindu and Muslim workers were brought in or came from India to replace the slave labor force.

Trinidad and Tobago became a single colony under British control in 1889. After decades of exploratory interest on Trinidad, the first commercial oil drilling started in 1901. Over next hundred years, an extensive oil industry developed and became the country's main source of income. Many in the country demanded greater control of the government and over the next twenty-five year, Britain slowly released its rule. During WW II in the early 1940s, the Americans negotiated an agreement with Britain to use land on Trinidad for a military base, further increasing the need for oil and oil refining.
In 1962, Great Britain granted independence to Trinidad and Tobago, and they joined the British Commonwealth as independent sovereign states. By the early 1970s, supporters of Black Nationalism protested the high unemployment, and social and economic inequalities. In 1976, the governments of these two islands merged to become the Republic of Trinidad and Tobago.

This Republic is one of the most prosperous island nations in the Caribbean thanks largely to petroleum and natural gas production and processing. These islands are the third leading exporter of oil in the Western Hemisphere. Trinidad's Pitch Lake is the world's chief source of asphalt, tar used for paving roads. Today, the nation of Trinidad and Tobago is an active member of the Caribbean Community known as CARICOM. In March 2013, President Anthony Carmona was elected. The head of government has been Prime Minister Kamla Persad-Bissessar since 2010.

**Culture:**
The island of Trinidad meaning "land of the Holy Trinity" received its name from Columbus. The origin of the name of Tobago is not clear but may have been derived from the word tobacco; Columbus originally named it "Bella Forma" or beautiful shape. Today the people of these islands are called Trinidadians and Tobagonians. Most of the country's people are from Africa (40 percent) or East India (40 percent). However, the population includes 18 percent mixed cultures, 0.06 percent white, with Chinese and others at 1.2 percent. Virtually all speak English, but a small percent speak Hindi, French patois (pa-twa) – combination of English, French, and Spanish, and several other dialects as well. About 95 percent of the people can read and write.

Trinidad and Tobago have two major folk traditions: Creole and East Indian. Creole is a mixture of African elements with Spanish, French, and English colonial culture. Trinidad's East Indian culture came to the islands after 1833 mainly from northern India to fill a labor shortage created by the emancipation of the African slave. East Indians have retained much of their traditional way of life, including Hindu and Muslim religious festivals and practices.

Roman Catholics form the largest religious group at 29 percent while Hindus are the next most populous at 23.8 percent. Others include Anglicans at 10.9 percent, Muslims at 5.8 percent, Presbyterian 3.4 percent, and other combined faiths at 26.7 percent. These diverse cultural and religious backgrounds foster many festivals and ceremonies throughout the year.

The focus of this chapter, the steel drum, has two important cultural associations: calypso and Carnival. Calypso was born on the islands in the early 1900s as a way for musicians to satirize politics and society in song. This music probably started during slavery when Africans, often forbidden to communicate with each other, used music to forge a sense of community and mock their overlords. What is called the Golden Age of Calypso began with the first recordings in 1914 and the first major Calypso artists became known in the 1930s. After World War II, calypso, a popular tool of political criticism, was associated with the People's National Movement in Trinidad. The most well-known calypso song, "Banana Boat Song," was written in 1956 by Jamaican-born Harry Belafonte. It was the first record of any kind to sell more than a million copies.
The origin of Trinidad and Tobago's Carnival is probably found in a mixture of several traditions. Beginning in 1785, during British rule, the French settled in Trinidad bringing with them the tradition of Carnival, a pre-Lent celebration. The celebrations included elaborate indoor masked balls, which, of course, were not to be attended by the enslaved Africans. As a result, black inhabitants of the islands started festivals in their backyards and streets. After the emancipation of slaves in the 1830s, former slaves took to the streets to claim areas they were previously denied. Carnival may also be tied to the word, canboulay (or cambroulay) a reference to burning sugar cane. This practice, called "cannes brulée" (cahn brew-lay) in French, was employed by slaves during a rebellion. In the 1880s, when Carnivals became increasingly raucous, the British attempted to suppress the event; resulting in riots. Despite this turmoil, Carnival continued as a celebration that was intended to overload the senses.

Today, Carnival expresses several characteristics of society in Trinidad and Tobago. It is a time to be free or a time to break away from the routine of life. While the actual festival lasts for around five days, the Carnival season extends from Christmas to Lent. Some say Carnival really takes place throughout the year, and simply reaches a peak during one week.

The focus instrument of this chapter, the steel drum, contains elements of music from Europe, East India, Africa, Trinidad, and America. One example of these multicultural connections is soca music started by calypso musician, Lord Shorty, who joined this East Indian music and musical instruments with African rhythms.

### Music: Instruments & Rhythms

**Instruments:** Steel drums, or “pans,” are one of the major unique metallophones (metal percussion instruments) and were invented in the 20\(^{th}\) century. Beginning with simple homemade instruments in the 1930s, they are now made with advanced technology and played in many venues from concert halls to school classrooms. Because steel drums have become an international success and gone far beyond the borders of the birthplace in Trinidad, it is important to understand how they developed over the past 75 years.

Steel drums probably originated in Laventille, an economically depressed suburb of Port of Spain that was settled by freed African slaves in the mid-1800s. African and East Indian drumming evolved over the years into percussion ensembles of young, often unruly men, who paraded in the streets during Carnival and other celebrations beating mainly skin-headed drums. In 1884, when the British banned drumming during Carnival parades, these drummers turned to hitting bamboo tubes. Called Tamboo Bamboo, the performers were thought of as drummers because the word "tamboo" is the patois pronunciation of the French word, tambour, "drum." Some competing bands became violent and fought using the bamboo as weapons forcing the British to outlaw their use in parades in 1935.

Also during this time, Carnival marchers had been using garbage cans and other metal pans as a substitute for skinned drums. After bamboo was prohibited in 1935, metal cans remained part of the parade and eventually were incorporated into large percussion ensembles. These instruments included garbage can lids, automobile brake drums, pots and pans, dustbins, and biscuit tins (large square cookie cans). Known as "steel bands" by 1935, these groups had the distinct
advantage of being much louder than bamboo bands. Often percussionists would push the bottom of the can out, making it convex and producing a better sound when hit with a mallet.

Although the invention of most musical instruments cannot be traced back to specific individuals, two people had a profound influence on the development of the steel drum: Winston Spree and Elliot "Ellie" Mannette. In 1937, at age 7, Winston was experimenting with creating multiple notes on convex cans. At the same time, at age 10, Ellie Mannette began examining Winston's ideas. When a friend returned a loaned drum to Ellie it was beaten so hard that the can's bottom was now concave. As he began hitting the can's bottom back to a convex shape with a small stone, each time he hit the dent it would make a pitch or musical note. In this way he learned to first form the concave shape, now called "sinking," and then tune convex notes with opposite hits. Since the dents sounded like "ping" and "pong," the instrument became known as ping-pong, the first of Ellie’s many designs.

Though Carnival was banned during WW II, steel drum work continued and in 1946 Mannette demonstrated his 14-note ping-pong at the first post-war Carnival. This was the first melodic steel pan, which now gave steel bands the ability to play songs.

Mannette began using discarded 55-gallon oil drums to make pans, hammering them concave, but then heating the metal to make it stronger and hammering the underside to make each note convex for true pitches. By 1947, Mannette had a steel drum with 16 notes and led The Invaders, one of the first organized steel bands. By 1948 the 55-gallon drums had replaced the smaller biscuit pans and chromatic notes had been added.

In 1951, an all-star band that included Spree and Mannette traveled to London with a wide range of their instruments and a repertoire that included classical European music. Their innovations along with their European tour brought the steel pan to worldwide attention. In 1963, Trinidad started the National Steel Band Panorama competitions. In 1968, Ellie Mannette moved to the United States to perform and conduct instrument-making workshops, further influencing the steel drum art and industry.

Over the next 35 years steel drum making continued to evolve and gain international popularity. One innovation designed by Denzil Fernandez uses holes or "bore holes" around each note to improve the sound (see Tenor example below). In 2000, Europe held its first Steel Band Festival. That year Trinidad and Tobago held a conference on the science and technology of the instrument and a number of articles and books were written about the pan.

Today's steel band can have the musical range of almost an entire piano. Currently, there are hundreds of bands in Trinidad and Tobago and more than 1000 in other countries, including several hundred each in the U.K. and the U.S. Today, in addition to Trinidad and Tobago, at least nine countries manufacture pans. Steel bands have performed in some of the world's most prestigious venues including Carnegie Hall, the Kennedy Center, and Royal Albert Hall.

Other percussion instruments in steel bands can include congas, maracas, scrapers, brake drums, the standard drum kit, and occasionally a bass guitar. Together these instruments are called the
"engine room" providing the rhythmic pulse of the group. In addition to pans, other melodic instruments in Trinidad include flutes, the guitar, violin, the cuatro (kaw-trow), a small percussive guitar from Venezuela, and the bass-box, a cord connected to a stick that is pressed on a wooden box. Electric amplified instruments also have been added to steel bands.

**Rhythms:** Steel band rhythm is usually based on calypso syncopations but can make use of many types of rhythms from around the world. These other rhythms include Jamaican reggae, American jazz, rock and hip-hop, West African traditions, South American music (especially from Venezuela), European classical music, and Asian rhythms (especially from North India).

One player can perform on one pan with 29 or more notes, or play many pans at the same time, for example, a nine-pan bass. The pan player can hit one note with one mallet or hit two notes with two mallets. He or she can also "roll"—a rapid alternation of right and left mallets to sustain the sound—on one or two notes lasting one count or many counts. The basic calypso syncopation and variation are often a two-count pulse or measure with subdivided accents in a pattern of 3+3+2, as follows:

<table>
<thead>
<tr>
<th>Calypso rhythm</th>
<th>Count</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snare + bass drum</td>
<td>or</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Tenor pan</td>
<td>Syncopated pattern</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The play-along exercises shown below consist of these types of syncopated calypso rhythms based on the music of David Rudder, called "High Mas." His original music is performed by the steel drum ensemble, Panic, on the *Roots of Rhythm: Extensions* Companion CD, track 33.

**Listen & Play Along:**

*Note to teachers: if instruments are not readily available, consider having students make their own (a general activity for making drums can be found in the Roots of Rhythm: Introduction Section, and a specific instrument-making activity is described below) or encourage them to improvise - using everyday items such as buckets, containers, phonebooks, desktops, etc., as instruments. Rhythms can also be created with body percussion including handclapping, foot tapping, finger snapping, etc.*

Listen to Tracks 30-33 of the Roots of Rhythm Companion CD to hear the sound of the steel drums. Now it is time to play along. If you do not have a steel drum, see below for instructions on how to make your own steel drum, or use instruments from the music classroom as substitutes: you can make a steel pan ensemble (see Resources section) using cowbells, glockenspiel (bells), conga drum, and bass drum.

Listen to Tracks 34-45 of the Roots of Rhythm Companion CD and play along with the rhythms. As you listen to the CD, have student groups clap the various rhythms from the TUBS notation below. Now play these rhythms along with the CD.
**Make Your Own Steel Drums:** You can make a steel drum in two ways and either version can be used to play a melody.

A. Tape together various sizes of tin cans that make a sound you like, or
B. "Sink" one end of a can with a hammer then push dents back out to make notes.

**Steel drums and Performers:**

**Panic Steel Band**

**Six Bass and Double Tenor**

**Nhkruma Potts-Tenor**

**Tenor mallets**

**Bass Mallets**

**Triple Cello**

**Tenor – Bore Pan**
**Resources: The Steel Drum Ensemble and Rhythms**

Calypso Rhythms and Melody from "High Mas" by David Rudder

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tbody>
<tr>
<td><strong>Tenor</strong>*</td>
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<td></td>
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<td></td>
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<tr>
<td>1.</td>
<td></td>
<td>Eb</td>
<td>Eb</td>
<td>Eb</td>
<td>Eb</td>
<td>Eb</td>
<td>Eb</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
<td></td>
<td>Eb</td>
<td>Eb</td>
<td>Eb</td>
<td>Eb</td>
<td>Eb</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>D</td>
<td></td>
<td></td>
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<td>4.</td>
<td></td>
<td>Eb</td>
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</tr>
<tr>
<td><strong>Double Tenor</strong>*</td>
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Calypso "Engine Room" Rhythms:

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**NOTE:**

- Tenor pan = soprano voice or lead
- Double tenor pans = alto voice
- Cello pans = Tenor voice**
- Bass pans = Bass or baritone voice

** - The Tenor and Double Tenor pans use a roll, or fast alternating strokes (RLRLRL), in this rhythm. The symbol for the roll is an arrow ———.**

** - The Cello pan uses two mallets to play two notes as harmony. At the time that you hit the Eb you should also hit a Bb (below Eb). When you hit the D you should also hit an F (below D) at the same time.
Extensions:

Because they were invented separately from the rest of the world’s drums and percussion—developing primarily from the metal pans and cans that were played in Trinidad’s parades and Carnival—the physical form of the steel drums has little direct relationship to the other percussion instruments that have been covered in the *Roots of Rhythm* and *Roots of Rhythm: Extensions*. Therefore, steel drums can be considered a root instrument and as such have evolved to an advanced state while spreading their influence to drummers and drum makers around the world.

However, even though their design and development may have no direct connection to earlier instruments, steel drums do have much in common with the technology of pitched instruments such as the ranāt ēk (xylophone) and khōng wong yai (set of tuned gongs) from Thailand as well as the syncopated rhythms of the Egyptian sājāt and African djembé. Such indirect extensions show the steel drums to be a mixture of cultures, which include features related to Asian instruments, European melodic scales and African and Middle Eastern rhythms.

- **Design/Construction Materials and Methods**

  The indirect connection between the making of the steel drums and the ranāt ēk relates to the idea that a bump and a hollowed out area can help the sound. The bump or load on the ranāt ēk’s keys adds weight and focuses the pitch, while the shape of the bump on the steel drums does the same thing. Hollowing out the material on both instruments thins it, which focuses the vibration more efficiently. In the case of the ranāt ēk the keys or wooden bars are often tuned with bumps of thick paste on each end of the bar, and the center is carved out to make it thinner. These procedures help define the pitch of each note.

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*The history of the steel drums began with their invention on the Caribbean island of Trinidad almost 75 years ago.*

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Using “bump” technology to define pitch.

- **Ranāt ēk**
  - Bumps on ends of bars

- **Khōng wong yai**
  - One bump on each flat surface

- **Steel drum**
  - Many bumps on one concave surface

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53
The steel drum can also be considered an indirect extension of the bump technique of the không wong yai. The không wong yai’s notes are made with single kettles for each note and their single bump in the middle of each kettle helps make the pitch more definite. On this instrument, however, each gong has only one note and all notes are positioned individually on a rack. The steel drum extends this idea by grouping many notes with bumps of various sizes on a single concave surface.

### Playing Techniques
The steel drums, ranát ĕk and không wong yai are all played using two mallets and the performer can hit with one mallet, the other mallet or both mallets at the same time. Also, performers on these instruments can roll (fast alternating strokes) with both mallets. The melodic scale on the Thai instruments moves from left to right on the ranát ĕk in a straight line and on the không wong yai in a circular motion. The steel drum performer indirectly extends these ideas often moving in a crisscross pattern back and forth. A scale on each instrument from low to high is as follows:

#### Top View

![Scale Diagrams](image)

- **Ranát ĕk scale**
- **Không wong yai scale**
- **Steel drum scale**

= low to high pitch

### Quality or Type of Sound
While the designs and materials used to make steel drums create a unique sounding instrument, the drums are tuned to European scales originally brought to the island on musical instruments by colonial rulers. Instruments like the violin and the clavichord, an early type of piano, set the stage for the development of melodic instruments like the steel drums, so in this way the steel drums can be considered an indirect extension of those classical stringed instruments. On the first steel drums in the 1930s, however, there were only a few notes for playing simple songs. As pan makers like Ellie Mannette and Winston Spree experimented, they added more notes eventually making it possible to play complicated songs and musical arrangements. More recently, pans have been tuned with electronic equipment to international standards making it possible for this unique musical instrument to join other pitched instruments, including large symphony orchestras.

### Musical Style or Application
The calypso rhythms played on steel drums might be considered a direct extension of rhythms in the Middle East and in West Africa. These ancient rhythms came with African slaves to Trinidad and likely became the foundation for calypso. For example, compare the syncopated calypso rhythm with that of a sâjât rhythm and a djembé rhythm as follows:
While music has historically been used in many different ways, for example in religious rituals, military maneuvers, royal ceremonies and dancing, the music played on the steel drums is popular in nature.

As an invention of the twentieth century within its own unique culture, the steel drum can be considered a root instrument. On the other hand, it also demonstrates coincidental connections to the technology, construction and music of ancient world percussion such as the ranāt ēk, khōng wong yai, sājāt and djēmbē. These examples show how pans, like many percussion instruments, are the result of a mixture of different influences and ideas. In addition, the steel drum is an excellent example of how commonly available local materials, in this case oil drums, are often used to create instruments that eventually become accessible to players and audiences around the world.
FUNSHEET - FIND FACTS AND OPINIONS: THE STEEL DRUMS

The steel drums are tuned metal cans or "pans" that can be used to play melodies. They were invented on the two-island nation of Trinidad and Tobago in the 1930s. Mainly used in an annual festival called Carnival, these instruments are now used for playing different types of music all over the world. At the time of their invention, musicians in the festival's parade were using bamboo tubes to make rhythms, by hitting them and stomping them on the ground. However, they were not very loud. Some young boys would play on metal cans to get a louder sound.

Around the time of World War II, one young boy named Winston Spree, found that dents in the bottom of a metal can would make different pitches, and this allowed him play melodies. He and another boy named Elliot "Ellie" Mannette, along with others, experimented as they grew up and improved the pan design. Oil had been discovered on the islands in the 1800s and, because they lived near a military shipyard, there were lots of empty oil drums around. These young steel drum makers began to use the oil drums and learned that the dents in the bottom of the can had to be separated and placed in certain positions. Ellie Manette found that hammering the bottom of the can into a bowl shape made it easier for the performer to play. So pan makers would "sink," or hollow out the surface before placing the notes and tuning them. They also discovered that it helped the sound if they cut off the pan below the playing surface and heated it over a fire.

A rhythmic percussion group called the "engine room" accompanies the melodic pans in the steel drum band. These performers use the drum set, bells, and other metal sounds. The main rhythm for the steel band is called calypso.
Directions: Read each of the following sentences and draw an X in the box to tell whether it is a fact or an opinion.

1. The steel drums can be used to play melodies. □ Fact □ Opinion
2. The steel drum ensemble consists of tuned metal oil drums and other percussion instruments. □ Fact □ Opinion
3. The nation of Trinidad and Tobago should be called just one name, Trinidad. □ Fact □ Opinion
4. Steel drums bands should include some guitars. □ Fact □ Opinion
5. The climate on Trinidad and Tobago is too hot. □ Fact □ Opinion
6. Winston Spree was a young boy when he started to make steel drums. □ Fact □ Opinion
7. The main rhythm in steel bands is called calypso. □ Fact □ Opinion
8. I think that steel drum bands should play very fast and very loudly. □ Fact □ Opinion
9. It must be difficult getting from the island of Trinidad to the island of Tobago. □ Fact □ Opinion
10. The steel drums are still made from empty oil drums, by "sinking" and heating the metal. □ Fact □ Opinion

Tenor Pan – Side View  Tenor Pan - Top View
**Instrument:**
Tabla, classical kettledrums for meditation

**Country:**
India

**Flag:**
The flag has three equal horizontal bands with saffron, a subdued orange, on the top, white in the middle, and green at the bottom. A blue *chakra* (sha-krah) or 24-spoked wheel is centered in the white band.

**Size and Population:**
The country has an area of 179,744 square miles with 1,858,243 square miles of land surface and 196,500 square miles of water. India has 4375 miles of coastline and is slightly more than one-third the size of the US. The population of India is estimated at 1,220,800,359 as of July 2013; ranked 2nd in the world.

**Geography and Climate:**
India’s landscape contains great variety including a desert, tropical forests, lowlands, mighty rivers, fertile plains and the world’s highest mountain ranges, the Himalayas. With the enormous wall of the Himalayas on the north, the triangular-shaped subcontinent of India borders the Bay of Bengal to the east, the Arabian Sea to the west, and the India Ocean to the south. From the Chinese border on the north, India extends 2000 miles to its southern tip, where the island nation of Sri Lanka is located. Going northeast of the Himalaya mountain range, India’s borders constrict to a small channel that passes between Nepal, Tibet, Bangladesh, and Bhutan, then spreads out again to meet Burma in an area called the “eastern triangle.” India’s western border is with Pakistan.

India has three main land regions: the Himalaya, the Northern Plains, and the Deccan or Southern Plateau. The Himalaya curves for about 1,500 miles along the northern border of India.
and can reach 200 miles wide. The Northern Plains lie between the Himalayas and the southern peninsula and have an average width of 200 miles. This area includes the important and sacred Ganges River that begins in the snow capped Himalayas. The soil in these plains is some of the most fertile in the world and is where most Indian people live. The Deccan is a huge plateau that forms most of the southern peninsula, and slants upward to the west where it meets the Western Ghats mountain range.

There are three seasons in India: cool, hot, and rainy. From October through February, the cool season brings snow in the mountains, but Southern India stays quite warm. During the hot season from June through September the northern plains can rise above 120°F but the coastal plains stay around 85°F. The northern mountains are cool or cold depending on the altitude. The rainy season from June through September brings the monsoons, winds that pick up moisture over the ocean and deliver sometimes too much or too little rain for good crops. Some sloping regions get an average of 450 inches per year, while the desert gets only 2 inches annually.

**Background and History:**

The history of India begins with the Indus River Valley civilization (now Pakistan and western India), one of the oldest civilizations in the world, as it dates back at least 4,500 years. Aryan tribes, a light skinned people, invaded this area from the northwest about 1500 B.C. and merged with the earlier inhabitants creating the classical northern Indian culture. They created the Sanskrit language and a way of writing it. The Dravidians, the existing dark-skinned people in India traded with the Aryans and advanced south to become the ancestors of present-day southern Indians. Based on the ancient Vedic texts, the religion of Hinduism began about the time of this early civilization. Later in India around 531 B.C., Siddhartha Gautama founded the religion of Buddhism, becoming the first Buddha.

In 325 B.C., Alexander the Great, a ruler from the area of Greece, conquered what is now northern India. These conquests linked areas of Europe and Egypt to India’s northern Punjab region. The Golden Age of India also began around that time under the Gupta Dynasty, Indian rulers who unified the country and brought a rebirth of Hindu culture, beautiful cities and new universities. This era lasted from 320 B.C. to A.D. 500. In the south, another great civilization flourished and spread Indian culture into Southeast Asia.

Beginning around A.D. 700, Muslims invaded India from Arabia, Persia, and Afghanistan. In the early 1500s, Babar, a descendant of Genghis Khan invaded from central Asia, conquered much of northern India and established the Mogul Dynasty which lasted for almost 200 years. From the 11th to the 15th centuries, southern India was dominated by Hindu Dynasties. During this time, the two prevailing systems—Hindu and Muslim—mixed, leaving cultural influences on each other that have lasted until today.

Vasco da Gama, the Portuguese explorer reached India in 1498 and soon after established ports on India's western coast in order to control important sea routes. For hundreds of years India was a land of mystery and excitement to European travelers. The first British outpost in South Asia was established in 1619 on the northwestern coast of India in competition with the Portuguese. Later in the century, the British East India Company opened permanent trading stations at Madras, Bombay, and Calcutta. In 1857, a rebellion in north India caused the British Parliament
to transfer all political power from the East India Company to the British royal leadership in 1858. By the 19th century, Britain had assumed political control of virtually all of India, but this resulted in violent revolt against British rule.

Begun in the 1920s, the protest techniques of nonviolent resistance and non-cooperation with British colonialism practiced by Mahatma (mah-hat-mah) Gandhi and Jawaharlal (jah-wah-harl-lal) Nehru led to India’s independence from British rule in 1947. After independence, the Congress Party, the party of Gandhi and Nehru ruled India under the influence of Nehru, then his daughter Indira Gandhi and then his grandson Rajiv (rah-geef) Gandhi, with the exception of two brief periods in the 1970s and 1980s. Indian government in the 1990s brought gradual liberalizations, which in turn brought India into the global market place. Today, with New Delhi as the capital, the Republic of India, commonly known as India, has 28 states.

Fundamental social and political concerns in India include an ongoing dispute with Pakistan over Kashmir, massive overpopulation, environmental degradation, extensive poverty, and ethnic and religious strife—all this despite large gains in economic investment and output. The current President, elected in July 2012, is President Pranab Mukherjee.

**Culture:**

A wide variety of classical and folk arts in India began even before the first century A.D. Some of the oldest Buddhist monasteries and shrines demonstrate the oldest forms of Indian architecture. When the Muslims invaded India in the 8th century, they brought Islamic religion and art. While the Hindu religion allowed people to carve human figures like Buddha, the Muslims were forbidden carve such images by their teachings, so Muslims expressed their art by highly decorating their mosques—places of worship—and other buildings. An example of this is the Taj Mahal, the tomb of an Indian ruler built in the mid-1600s.

There are two main types of paintings in India: wall paintings and miniatures. Wall paintings, developed early by Buddhists, wrap around a room and often tell a story. Miniature paintings done on paper attained technical excellence for several centuries beginning around 1500. These miniatures depict India’s ruling classes and Hindu legends.

There are over 16 major languages and 1000 minor languages in India, and each language has its own literature. Classical works in the ancient Sanskrit language date from around 1500 B.C. Of these works, the *Rig-Veda* (rig-veda) is the earliest collection of hymns ever made and the two epic poems, the *Ramayana* (rah-mah-yah-nah) written around 200 B.C., and *Mahabharata* (mah-hah-bah-rah-tah) written around 1200 B.C., are legendary. Recently, many Indian classics have been translated into English. The English language enjoys special status and it is the most important language for national, political, and commercial communication. Hindi is the national language and primary tongue of 30 percent of the people, but there are 14 other official languages.

There is great disparity in living conditions in India, in part due the ancient Hindu caste system. Though outlawed after independence in 1947, for over 2000 years Indian society was based on an individual’s social level at birth. From highest to lowest were religious officials, rulers and warriors, farmers and merchants, and servants or peasants. As a result some people have great
wealth but many others still live in abject poverty. Some ways of life have stayed the same for hundreds of years, and existed side by side with modern civilization.

Religion is central to Indian culture, and its practice can be seen in virtually every aspect of life in the country. Hinduism is the dominant faith of India, serving about 81 percent of the population. Twelve percent are Islamic, and about 4.5 percent are Sikhs and Christians; the rest (around 45 million) are Buddhists, Jains, Bahais, and others. It is impossible to speak of any one Indian culture, although there are deep cultural continuities that tie its people together.

The music of India has legendary links to the origins of India itself including the Vedas, ancient scripts of the Hindus. The diversity of Indian music seems to have been a result of many cultures coming into contact and influencing each other. Vocal music, instrumental music and dance are the three art forms that make up sangeet (sang-geet), the foundation of Indian music. Today this music is based on rag (rog) or melodic scale and tal (tol) or timekeeping. Both rag and tal range from simple to very complex patterns and variations, and they vary in different parts of India. A basic distinction between rag and tal is in the artistic traditions of the north or Hindustani sangeet and the south or Carnatic sangeet. The main difference is in the way each is written and performed.

The focus of this chapter is on the North Indian tradition of the tabla (tah-blah), two kettledrums that combine Hindu and Muslim traditions. The tabla drums are considered classical instruments in North India and are associated with meditation because of the many modes of the culture’s melodic scales and rhythms.

**Music: Instruments and Rhythms**

**Instruments:** The tabla is a set of two small, pitched kettledrums. While they are the most common type of drums used today in the north, one also finds the pakhawaj (pah-kow-wudge), a barrel-shaped drum with two drumheads and a center paste on each head. The two drums of the tabla set consist of a tall wooden kettledrum on the right called tabla dāyaṅ (die-yon) or "right tabla," and a shorter usually metal kettledrum on the left called tabla bāyaṅ (bah-yon) or "left tabla." Both tabla drums have a small, circular black paste on the drumhead that adds to the characteristic definite pitch.

The drums are played with the fingers and palms of both hands, sometimes both on one drum, but mostly with the right hand on the tabla dāyaṅ and the left hand on the tabla bāyaṅ. The drums are carefully tuned by hitting drumhead's supporting hoop or wooden pegs with a hammer—down to tighten and up to loosen. The tabla drumheads have three basic parts for sound production: the main drumhead area or maiden (may-den), the chat (chot), the edge of the drumhead, and the syahi (see-yah-hee), a thin black paste located exactly at (tabla dāyaṅ) or near (tabla bāyaṅ) the center of the drumhead. The syahi provides extra weight to the drumhead and enables the drum to have a definite pitch.Tabla players use talcum powder to prevent sweat from building up on the drumhead, which can ruin the paste and thus the sound. Today, tabla drummers play sitting on the ground with the two drums positioned on round cloth-filled rings called chutta (chew-tah). Also varying sizes of tabla dāyaṅ placed in a circle of 12-16 drums can be used to play melodies. This is called tabla tarang, or literally tabla "waves."
Other North Indian instruments include the strummed sarod (sar-ode), the struck santur (saun-toor) and the bowed sarangi (sar-ang-ghee). The most famous string instrument in northern India is the sitar (sih-tar), made world famous by Ravi Shankar in his association with the Beatles and George Harrison in the 1960s. Northern wind instruments include the bansuri (bon-sur-ee), a side-blown flute, the shehnai (sha-nigh), a double reed instrument, and the harmonium (har-mo-ne-um), a hand-pumped reed organ. Idiophones found in North India include ghungharu (gung-gar-ru), or angle bells and manjira (mon-jeh-rah) or talas (tol-is), small cymbals.

Rhythms: Timekeeping for the tabla is called tal or “clapping.” Handclapping along with waving the hands (like a "shoo-fly" motion) is the main way that young Indian musicians begin to keep time. For example, when keeping a 16-beat rhythm the pattern would be as follows:

Clap, 2, 3, 4, Clap, 6, 7, 8, Wave, 10, 11, 12, Clap, 14, 15, 16

There are three lengths of rhythm in North India. From short to long they are as follows: the beat, the measure and the cycle. The beat or matra (mah-trah) is the shortest type of rhythm and the same as in Western music, a steady pulse. The measure or vibhag (vih-bog), the medium length rhythm, is made up of various combinations of two, three, and four beats. A measure might have, for example, 7 beats counted, 1, 2, 1, 2, 1, 2, 3. Cycles or avartan (ah-var-ton) are the longest type of rhythm. For example, if a 7-beat measure is used, it will continue through that particular piece of music. Within the cycle, the first beat, called sam (sum) is very important. It is the place where all musicians come together in their music. It should also be noted that the rhythms of North Indian music are characteristically based on combinations of even and odd numbers that, while common to those who grow up around it, often sound extremely complex to listeners who are unfamiliar with the style.

Performers pronounce various strokes on the tabla as syllables, called bols (bowls). Each stroke has an assigned syllable and all rhythms use those syllables. It is therefore important to say the bol as you perform the sound and rhythm on the drums. While there are many types of bols, only a five will be used in this chapter. Some of the sounds on the tabla resonate while others do not. The sounds here will be the resonating type. We will use three basic bols and two combinations of these, totaling five bols as shown below.

The rhythms illustrated below are five of the basic types for the tabla: Tal Tintal (tol teen-tol) 16 beats, Tal Jhaptal (tol jep-tol) 10 beats, Tal Dadra (tol dah-drah) 6 beats, Tal Dipchandi (tol dip-chon-dee) 14 beats, and Tal Rupak (tol ruh-pok) 7 beats.

Listen & Play Along:
Note to teachers: if instruments are not readily available, consider having students make their own (a general activity for making drums can be found in the Roots of Rhythm: Introduction Section, and a specific activity for making tabla is described below) or encourage them to improvise - using everyday items such as buckets, containers, phonebooks, desktops, etc., as instruments. Rhythms can also be created with body percussion including handclapping, foot tapping, finger snapping, etc.
Listen to Tracks 46-53 of the Roots of Rhythm Extensions Companion CD to hear the sound of the tabla and the tabla tarang or melody on drums. Now it is time to play the tabla. You can also use bongo drums or other percussion instruments to play along with music on the Roots of Rhythm Extensions Companion CD. Or, if you don’t have these instruments, make your own substitutes (see activity below for making homemade tabla).

Listen to Tracks 54-58 of the Roots of Rhythm Extensions Companion CD and play along with the rhythms. To begin, just try to have fun! Now read the box notation in the Resources section that shows each of the various rhythms, and begin again with the count and drum syllables or bols. You could begin by counting the rhythm then clapping it with a wave for the silent count. Have someone else count and clap while you play the rhythm on the tabla. Move down the list of various rhythms in the same way.

Making Your OwnTabla: Make your own set of tabla with two cans, the large “number ten” can and a medium juice can. For the tabla bāyān, use the rubber lid that comes with the can. For the tabla dāyān sound hit the metal bottom of the can with a dowel. Safety Note: When you remove the bottom metal end be sure to flatten any sharp edges with a hammer or pliers. You can hit the cans with either your fingers, with 10-inch long dowels (1/4 inch diameter), or new pencils (eraser end). Aim for the correct places on the cans that correspond to the tabla strokes shown below.

Tabla and Performer:

Tabla with tuning hammer and powder

Tabla in playing position - Front View

Performers: Abhiman Kaushal

Photographs by Craig Woodson.
Resources: The *Tabla* Playing Techniques and Rhythms

**Tabla Playing Techniques**

There are three strokes and two combinations used in the five *tabla* rhythms shown below. The *tabla bāyān* has one stroke, the *ge* which is often used in combination with the two *tabla dāyān* strokes shown here. The five beginning strokes are as follows:

1. *Taa/Naa* - right index finger hits a rim tone on the *chat* of the *tabla dāyān*  
   *Taa/Naa = R*

2. *Tin* - right hand index finger strikes the *tabla dāyān maidan* softly but with resonance.  
   *Tin = R*

3. *Ge* - left hand’s middle finger strikes the *tabla bāyān* between *syahi* and *chat* on the *maidan*.  
   *Ge = L*

* - The *naa* and *taa* are interchangeable terms and represent the same sound. All illustrations are shown from the audience’s perspective.

**Combination strokes**

4. *Dhaa* - the right hand hits *Taa/Naa* and the left hand hits *Ge* at the same time.

5. *Dhin* - the right hand hits *Tin* and the left hand hits *Ge* at the same time.
Tabla Rhythms

1. **Tal Tinta** (16 beats 4+4+4+4)
   - Count: 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
   - Say: Dhaa Dhin Dhin Dhaa Dhin Dhin Dhaa Naa Tin Tin Taa Taa Dhin Dhin Dhaa
   - Taa/Naa: R R R R R R R R
   - Tin: R R R R R R R R
   - Ge: L L L L L L L L

2. **Tal Jhaptal** (10 beats 2+3+2+3)
   - Count: 1 2 1 2 3 1 2 1 2 3
   - Say: Dhin Naa Dhin Naa Dhin Dhin Naa Dhin Naa Dhin Naa Dhin Naa
   - Taa/Naa: R R R R
   - Tin: R R R R R R R R
   - Ge: L L L L L L

3. **Tal Dadra** (6 beats 3+3)
   - Count: 1 2 3 1 2 3
   - Say: Dhaa Dhin Naa Dhin Naa Tin Naa
   - Taa/Naa: R R R R
   - Tin: R R R R
   - Ge: L L L L

4. **Tal Dipchandi** (14 beats 3+4+3+4)
   - Count: 1 2 3 1 2 3 4 1 2 3 1 2 3 4
   - Say: Dhaa Dhin Dhaa Dhin Tin Tin Taa Tin Dhaa Dhaa Dhin Dhin
   - Taa/Naa: R R R R R R R R
   - Tin: R R R R R R R R
   - Ge: L L L L L L L L

5. **Tal Rupak** (7 beats 3+2+2)
   - Count: 1 2 3 1 2 1 2
   - Say: Tin Tin Naa Dhin Naa Dhin Naa
   - Taa/Naa: R R R
   - Tin: R R R R
   - Ge: L L

R R R R R R R R
R R R R R R R R
L L L L L L L L
The tabla as we know it evolved over a period of around 250 years. While there are several stories about the origin of the tabla, the instrument probably comes from a combination of two different types of drums, the pakhawaj (pah-kow-wudge) common in northern India and Turkish military kettledrums called nagada or naqqāra. This transformation, which took place over hundreds of years, began around 1590. At that time the dominant Hindu drum was the mrdang (mur-dung), another name for the pakhawaj. It was a barrel-shaped drum with two drumheads of different pitches and a paste in the center of each drumhead that enhanced the tone. In this case, the drummer usually used the right hand to play a high sound on the right end of the drum and the left hand to play a low sound on the left end. It was usually played carried at waist level with a strap around the drummer’s neck or played horizontally seated on the ground. This position dates back to sculptures that depict the technique around 900.

At some point, performers began to stand the mrdang on its end and play two drums but at one end only. This change is shown in sculptures and paintings from around 1590. Now, instead of playing on both ends of one drum, the drummer was playing on one end of two drums. The inspiration for playing the mrdang this way may have come from seeing Arabic performers play on the kettledrums brought to India by the Turkish invasions of Babar (also called Babur) between 1523-1530. Babar seized the major city of Delhi in 1526 and by his death in 1530 controlled most of India, establishing the Mughal (Mongol) dynasty in the area of India. It appears that over these important decades, drummers were changing the way that they were playing the drums and inventing new drums in the process. These drums became the tabla. Further proof of the Turkish/Arabian influence comes from the fact that the word “tabla” in Arabic means drum in the general sense.

Beginning around 1590, the ancient and traditional Indian drum, the mrdang, as well as Indian drummers were influenced by naqqāra drums that were used by invading armies from Turkey and Arabia—becoming the tabla drums over more than 250 years of changes and musical evolution.
While it is clear that the tabla were directly influenced by the naqqāra, the tabla can also be considered indirect extensions of other percussion instruments due to their similarities in one or more of several Extensions areas.

- **Design/Construction Materials and Methods**
  The tabla dāyān is made from a hollowed out log but the tabla bāyān is made from a metal bowl. Both drums incorporate an animal skin drumhead that is tensioned using a rope and wooden tuning peg system, which makes them a part of the very large family of single-headed, tunable membranophones. These designs, materials and construction methods are among the most common throughout the drumming world and therefore do not necessarily indicate a direct influence from another culture or drumming style.
It is also interesting to note that the tabla and the naqqāra both utilize the kettledrum design which is open at the top of the drum and closed at the bottom. This type of container reflects the sound waves back to the drumhead, reducing the lowest vibrations and increasing the highest vibrations. The reflections allow the tone to sustain longer, giving the kettledrum its long, characteristic tones. One example of this is the orchestral timpani with its large kettle and thin drumhead. The timpani are considered an European extension of the Middle Eastern naqqāra.

• **Playing Techniques**
Similar to the tabla, RoR instruments such as the bongos and djembés are played with the fingers and hands. However, neither bongos or djembés require the same levels of digital dexterity as the tabla.Tabla technique is much closer to that of the frame drum and doumbek or darabouka; playing styles that may have also migrated to India from the Middle East over the centuries.

• **Quality or Type of Sound**
Because of the tabla’s ability to produce both fixed and variable pitches, it bears two important similarities with the dondo, an hourglass shaped “squeeze” drum from Ghana, West Africa, and the không wong yai (kong wong yai), which is a set of tuned gongs, suspended on a frame, played with mallets and used in the ranát ek court ensemble from Thailand.

First, the tabla is similar to the dondo in that both drums have a musical pitch. For the tabla, pitch comes from the circular black paste that adds weight or a “load” to the drumhead in order to focus the head’s vibration. The pitch of the dondo comes from the hourglass shape of the body of the drum. The air in the narrow middle of the drum speeds up when one head is struck and this helps the drumhead vibrate to create a definite pitch.

The “load” in the center of the tabla heads is also like the dome or “boss” on the top of the không wong yai that gives the gongs their musical pitch. In musical acoustics, the dome and black paste are called a “load” since they add weight to the drumhead, slow its vibration and focus its pitch.

Second, the left tabla drum of the set, or tabla bāyān, can be played with a glissando effect, that is, changing the pitch of the drumhead during the performance. The pitch changes when the tabla drummer presses the heel of the left hand down on the drumhead as he or she is playing. In this way the tabla drummer can actually play a melody. The same effect is possible on the dondo by squeezing the cords connecting the two drumheads to tighten them. The performer squeezes the cords connecting the two drumheads, instantly tightening the skin. When the cords are relaxed the skin is loosened. The tight skin gives a high pitch and the loose skin gives a low one. In both types of drums there are many pitches in between high and low that can be played.
The tabla tarang version of tabla playing can be considered another extension of the khōng wong yai. Like the khōng wong yai, the tabla tarang is a set of from 12 to 16 tabla dāyāns placed in a semi-circular position for playing melodies. Both instruments have about the same number of notes and the pitches; all going from low on the performer’s left to high on the performer’s right. Yet although the tabla tarang and the khōng wong yai are both used to play melodies, they are made from different materials and thus have contrasting tonal qualities or timbres.

**Musical Style or Application**

As direct extensions of the naqqāra, the tabla have specific connections to the instruments of the Middle East. These connections show how the tabla expanded the rhythms and technology of drumming as the instrument became used for meditation in North Indian culture. Similarities to other percussion instruments such as the bongos, dondo and the khōng wong yai, offer examples of how drumming is common to many world cultures, including those of Asia, Africa and North and South America.
The tabla (tah-blah) is a set of two small kettledrums from India. By playing the head of each drum with the fingers and hands, the drummer can quickly change the pitch of each drum. Drummers use syllables for tabla sounds in a type of “drum” language. The syllable "naa" sounds like "naa" on the drum. One important 16-count rhythm is *Tal Tintal* (tol teen-tol). It is played to accompany singing and dancing in concerts and is used for meditation.

India, a country in South Asia, is over one-third the size of the United States and it has a population of over 1 billion. The climate can be cold, hot, or rainy depending on the area. India has some of the most fertile soil in the world. The blue wheel in the center of the flag symbolizes the idea human chakras, or centers of energy in the body. The area of North India was first invaded in 1500 B.C., but rule by outsiders ended when India gained its independence from Great Britain in 1947.

The dondo (done-doh) is an hourglass-shaped drum from Ghana. By squeezing the cords connecting the two drumheads under the left arm and hitting one head with a stick, the performer can quickly change the drum's pitch. Dondo drummers use this technique to talk on the drum. The lead drummer will call to the other drummers with his "talking drum," and say, "come and perform." One important 12-count rhythm is *Adowa* (ah-doh-wah). It is played to accompany singing and dancing, and is performed at social events, official ceremonies, and even funerals.

Ghana, a country in West Africa, is slightly smaller than the state of Oregon and it has a population of almost 21 million. The country has a tropical climate and has the world's largest artificial lake. The black star on the country's flag symbolizes African freedom. European countries colonized the country beginning in 1471, ending with the British in the 1900s. In 1957, Ghana became the first African country to gain independence colonial rule.
The Tabla

Flag of India

A Venn Diagram for the Tabla and Dondo

The Dondo

Flag of Ghana
**Instrument:**
Turntable, an urban, electric friction idiophone

**Country:**
United States

**Flag:**
There are 13 equal horizontal stripes of red alternating with white and a blue rectangle in the upper left-hand corner with 50 white, five-pointed stars. The 50 stars represent the 50 states, and the 13 stripes represent the 13 original colonies. The flag's design and colors, known as Old Glory, have been the basis for a number of other flags, including Chile, Liberia, Malaysia, and Puerto Rico. This version of the flag was adopted July 4, 1960.

**Size and Population:**
The United States, including the 50 states and the District of Columbia, has an area of 3,618,770 square miles with 12,383 miles of coastline. It is about half the size of Russia, about three-tenths the size of Africa, and is slightly larger than Brazil. The U.S. is the world's third-largest country by size after Russia and Canada. Mt. McKinley in Alaska at 20,320 feet is the highest point in North America and Death Valley at 282 feet below sea level is the lowest point on the continent. It borders two nations Canada (including Alaska) and Mexico. As of July 2013, the estimated population of the United States is 316,668,567. It has the world's third largest population after China and India.

**Geography and Climate:**
Excluding Alaska and Hawaii, the United States borders the North Atlantic Ocean on the east and the North Pacific Ocean on the west, and has seven geographic regions.

1. The Appalachian Highlands have many rugged mountain ranges beginning in the northern tip of Maine and extending south to Alabama. The Blue Ridge Mountains are some of America's oldest.
2. The Coastal Lowlands begin in southeastern Maine and extend southeast to Texas. Along the Gulf Coast there are rich soil deposits from the Mississippi River and other rivers that create fertile farmlands.

3. Interior Plains Region, the largest geographical area, consists mainly of an area carved by glaciers during the Ice Age. The effect was to strip topsoil and deposit it southward, and gouge out many lakes, including the five northern Great Lakes.

4. The Ozark-Ouachita Highlands is a small region of rugged terrain with deep gorges, forested hills, and fertile land along river valleys located mostly in Missouri, Arkansas, and Oklahoma.

5. Rocky Mountains, the largest mountain system in the U.S., cover a continuous range from northern Alaska to northern New Mexico. Here there are many peaks over 14,000 feet high, and the Continental Divide, an imaginary line that separates water flow to the east and west.

6. The Western Plateaus, Basins and Ranges are west of the Rocky Mountains, extending south from Washington to the Mexican border. The Columbia Plateau in the region includes the spectacular Grand Canyon and some of the nation's most unusual land formations. The Basins and Ranges regions include Death Valley and the Great Salt Lake.

7. The Pacific Ranges and Lowlands Region occupies western Washington and Oregon, and most of California. On the east are the northern Cascade Mountains, home of two active volcanoes, and the southern Sierra Nevada Mountains, a range made almost entirely of granite. West of these areas are wide fertile valleys and the Coastal Ranges that include the San Andreas Fault, a break in the earth's crust that causes occasional earthquakes.

Alaska has rugged mountains and broad river valleys and Hawaii has mainly a volcanic topography.

The climate in the U.S. is mostly temperate, but tropical in Hawaii and Florida and arctic in Alaska. West of the Mississippi River the Great Plains are semiarid while the Great Basin in the southwest is arid. Low temperatures during winters in the northwest are warmed occasionally by winds in January and February from the Rocky Mountains. Natural disasters include hurricanes and flooding along the Atlantic and Gulf of Mexico coasts, tornadoes in the mid west and southeast, mud slides in California, and forest fires across the west. The average annual temperatures range from 9° F. in Barrow, Alaska to 78.2° F. in Death Valley, California. Annual rainfall varies from 2 inches in Death Valley to 460 inches in Hawaii.

**Background and History:**

*Since the turntable is the only electric percussion instrument in the Roots of Rhythm, this section will focus on the background and history of electricity, sound recording and playback as it developed first in other countries and then in the United States. These discoveries and inventions along with American population growth and urbanization led to the use of the turntable as a musical instrument.*

Around 1600, early experiments with electricity by Englishman, Dr. William Gilbert showed that amber and magnets interacted. He was the first to use the word "electric" and his studies proved to be pioneering work for later developments in electricity. An English scientist, Stephen Gray, in 1729, discovered that some substances conducted electricity while others did not. In 1752, Benjamin Franklin proved that lightning and the spark from rubbing amber was one and the same thing with his famous and dangerous kite experiment. *(The first British settlement of Jamestown had about 100 colonists in 1607, but by 1753, the mostly rural colonies had a total population growth to 1,328,000.)*

The music box, invented by Antoine Favre in Geneva in 1796, could play music mechanically. In 1806, Thomas Young in Britain recorded a tuning fork on a rotating wax drum, but there was no way
to play it back. Around this time, Alessandro Volta showed that electricity could travel from one place to another by wire. *(By 1783, the U.S. population was 3,125,000 with 4 percent living in the cities.)*

Important technological developments in electricity between 1820 and 1849 included the first successful telegraph, thus beginning mass communication through electricity. In 1827, the German teacher, Georg Ohm, worked out the law of electrical resistance. By 1831, the English scientist, Michael Faraday found the first method of generating electricity by means of motion in a magnetic field, the first electric generator. In 1857, the phonoautograph, developed by French researcher Leon Scott de Martinville, used a horn to record sound vibrations as a wavy line on a sooty surface. *(During this period, the U.S. population had over tripled to 22,488,000, and urban dwellers had risen to 15 percent.)*

Advances in electricity between 1870 and 1916 included the invention of the telephone in 1876 and the electric light in 1878. The phonograph's invention by Thomas Edison in 1877 was significant because it developed into the electric phonograph and later into the turntable, the subject of this chapter. This first phonograph, powered by a hand-cranked spring, recorded sound on a small metal cylinder and played it back. This same year, the loudspeaker was invented in Germany, but was not yet operated by electricity. In 1885, wax cylinders replaced the metal ones, and two years later, Edison's new Grammaphone used shellac discs. Recently, the Library of Congress recognized that three cylinders, the Edison Exhibition Recordings of 1888-1889, were the birth of commercial sound recording. *(The U.S. population in 1864 had grown to 38,925,000 with 25 percent living in the cities.)*

In the 1880s, scientists found that electrons are part of atoms, and invented vacuum tubes showing that electrons could be dislodged from atoms. This led to invention of the radio and television in the following decades. In 1887, Edison updated the phonograph with solid wax cylinders and a battery driven electric motor to give a constant pitch, but the cylinders could record only 2-4 minutes of music. This same year the player piano was invented, which was later considered to be the forerunner of the 1927 jukebox. Italian Guglielmo Marconi invented the radio, a spark transmitter with antenna in 1894, and in 1898, Danish scientist Valdemar Poulsen built the first tape recorder. The first electronic amplifier is made by Lee DeForest in 1911.

The first electrically recorded phonograph discs appeared in 1925, and by this time phonographs used electric motors and amplifiers, improving the quality of sound. Charles Brush sold the first piezoelectric stylus in 1926 and eventually this type of phonograph was used to play recordings of jazz, ragtime and opera that turned at 78 rpm. *(By 1920, almost half of the U.S. population of 100,000,000 lived in the cities.)*

Other 20th Century inventions in sound reproduction included magnetic tape in the 1930s, the transistor in 1947 and the vinyl (Polyvinyl Chloride) long-play 33 1/3 rpm record in 1948; followed soon after by the 45 rpm record. In the 1940s the first DJs emerged as entertainers for troops overseas, and by 1949 in Jamaica, large sound systems were developed for playing 45 rpm recordings. Radio DJ Alan Freed's successful radio program, "Moondog Rock and Roll Party" in 1952 introduced black urban music to mainstream white teenagers. Single channel monaural records began to give way to two-channel, high-fidelity stereophonic records, and loudspeakers enclosed in boxes which become the standard in 1958. Crystal cartridges changed to stereo moving magnets between 1933 and 1955.

The art and technology of sound reproduction was rapidly changing during the 1960s. In 1963, the first audio cassette was developed by the Phillips Company. New musical sounds and sampling became available on the synthesizer invented by Charles Moog in 1965, and by the late 1960s all new
phonographs and records were stereophonic with the rapidly expanding record industry making use of advances in electronic technology. Also in the 1960s, scientists discovered a way to integrate many transistors on a single silicon crystal. These complete electronic circuits, or integrated circuits, led to the development of the microprocessor, which in turn led to the development of the home computer and home recording.

In the 1970s digital recording was developed by an American engineer, Thomas Stockton, and this led to the introduction of compact discs and players in 1983. Electronic percussion devices were invented around 1980 by Englishmen Dave Simmons (electronic drumset) and Roger Linn (studio drum machine). From the late 1950s onward diamond styluses became the standard. (Today, the U.S. population is 295,734,134, and over 75 percent live in the cities.)

These collective technological developments over the past 150 years in the U.S. and other countries have evolved in the context of American culture, and provide background for a discussion of the popular culture known as hip-hop.

**Culture:**

The United States has one of the world's most varied national cultures. As a land of immigrants, almost every major culture is represented in the population. While America is often referred to as a "melting pot" of cultures, many citizens take pride in their origins, preserving traditions of clothing, food, arts and language. In many urban areas, there are separate neighborhoods of particular ethnic groups that celebrate their heritage with festivals, parades and other cultural events.

America's diversity can be seen in its population, religions, language and food. The population of the United States is 81.7 percent white (including 9 percent Hispanic), 12.9 percent black, 4.2 percent Asian, 1 percent Amerindian and Alaska native, 0.2 native Hawaiian and other Pacific islander (2003 estimate). While urban areas cover less than 2 percent of the land, over 75 percent of the population lives in the cities. Religious affiliations included 52 percent Protestant, 24 percent Roman Catholic, 2 percent Mormon, 1 percent Jewish, 1 percent Muslim, 10 percent other, and 10 percent do not record a religious preference (2002 estimate). While there is no official American language, English is spoken by 82.1 percent, Spanish by 10.7 per cent, Indo-European by 3.8 per cent, Asian and Pacific island by 2.7 percent and others represent .7 percent (2000 estimate). The variety of available food types also reflects the America's growing diversity in urban centers and to lesser degree in rural areas.

Americans have one of the best education systems in the world and a diverse arts community. There are over 74,000 elementary schools, 25,000 high schools, 6,800 combined elementary and high schools, and 3,300 colleges, universities, and community colleges. Over 97 percent of the population is literate. American artworks include the colonial portraits of John Copley, cowboy paintings of Charles Russell, Kachina dolls of Hopi Indians, abstract paintings of Jackson Pollack, and the architecture of Frank Lloyd Wright.

Art and recreation in urban centers, especially for youths in the late 1960s and early 1970s, saw the growth of disco nightclubs and with them the use of recorded music being preferred over live musicians. Disc jockey's at this time, made use of the considerable amount of popular music that had been recorded and those recordings were preferred over renditions by local musicians. This became the setting for the use of turntables as a musical instrument, called "DJing" and "turntablism" within the youth arts movement called "hip-hop."
The Roots of Hip-Hop Culture:

Hip-hop DJs trace their roots to black DJ personalities of the 1950s and 1960s who would "talk through" or talk over the music being played in the studio to a radio audience. The "mobile" or "street" DJs of the 1970s, however, were outdoors with make-shift sound systems and played to a local live audience. DJing is considered the first of the four expressions of hip-hop culture that also include MCing (rapping), b-Boying (break dancing) and graffiti art. Developed in the early 1970s in the Bronx area of New York City, DJing became the musical soul of street dance parties, events in parks and community centers. It is important to remember that this unique, artistic expression grew out of a condemned community, the South Bronx, that had become a national symbol of urban blight. Given little or no assistance to recover from abject poverty, urban youths created their own art and community outside of the mainstream. Youths would hook up an improvised turntable and sound system to electricity from a streetlamp outside a school or an abandoned building, and with makeshift parts create their own visual art (graffiti), dance (break dance), and song form (rapping) to a local DJs music. Several DJs emerged as pioneers, inventing many of today's established turntable techniques.

Jamaican-born Clive Campbell known as Kool Herc, considered the first major innovative DJ, used a very large sound system and relatively unknown records. Also, instead of just talking to the crowd he would recite rhymes while mixing and would add electronic effects. Adapting techniques from DJs in his native Jamaica, he was the first to use two turntables to continue a short percussion solo on a record called a "break" dovetailing or "mixing" back and forth between two identical records with the audio mixer. This was particularly enjoyed by certain dancers during the breaks who became known as "break dancers," "break boys" or "b-boys."

This technique, also called "cutting" was perfected by Joseph Saddler, known as Grand Master Flash. Along with a cueing system with headphones, he was able to find an exact groove on a record. Most importantly, Saddler was the first to record scratching, the art of moving a record back and forth with the needle on the record, on his 1981 recording, Adventures of Grand Master Flash on the Wheels of Steel. This was the first recording of the turntable as a musical instrument. With his group the "Furious Five," Saddler recorded "The Message" in 1982, a pivotal rap because of its focus on urban social issues. In 2002 this recording was chosen to be included in the Library of Congress.

Afrika Bambaataa Aasim, also known as the "Godfather of Hip-Hop," had a wide influence on DJs particularly with his diverse choices of records that he mixed. He pioneered the fusion of synthesized techno-pop with the funk styles, for example, in his computer synthesized "Planet Rock" in 1982. Grand Wizard Theodore learned from these older DJs and mastered the art of repeating breaks, expanding the technique of scratching. Grand Mixer DXT studied these techniques and was a featured DJ during a performance of Herbie Hancock's "Rockit" on TV which brought the technique of scratching to a much larger audience.

World-wide competitions in the mid-1990s through the International Turntablism Federation, provided a way for new artists to advance the art form. The innovations of DJ Kool Herc, Grand Master Flash, Afrika Bambaataa, and Grand Wizard Theodore along with many others transformed the use of turntables into an art form that is now taught in schools and colleges around the United States.
Music: Instruments & Rhythms

Instruments: The musical instruments in traditional American culture include brass (trumpets and trombones), woodwinds (clarinets and flutes), strings (violin and viola), and percussion (cymbals, kettledrums, xylophones, and a variety of drums). Electronic musical instruments invented in the 1800s and developed in the 20th century including the synthesizer, electric guitars and, over the past fifty years, the turntables used in hip-hop for scratching. Along with the development of the turntable as a musical instrument, the mixer has developed as a separate unit that controls the all aspects of sound for both turntables.

First used to play phonograph records, this electronic equipment has become a tool for creating music, by precise control of forward and reverse movement of the needle in the grooves of a record and manipulation of the mixer's volume, tone, and fader controls. The boombox, a large portable stereo radio/cassette player/recorder, was common on the streets in urban areas beginning in the early 1970s and provided an battery-operated mobile rhythm section as background for break-dancers, MCs and graffiti artists. Along with this came the technique of "beat boxing," or using mouth sounds to imitate the sound of a rock drum set, often amplified with a microphone and sound system.

One turntable consists of several parts: the platen that supports the record, the electro-mechanical system that turns the platen at an exact speed, the arm that holds the needle in the correct position, the needle or stylus that picks up the vibration from the record, and the electronic system that amplifies the signal from the needle. The mixer controls the loudness of the turntable so that two turntables can be used, left (L) and right (R).

Rhythms: Rhythms on the turntable are created by a wide variety of techniques. The most basic is the scratch, a manual movement of the record when the turntable's motor and amplification are turned on. The record slips on a thin disc of plastic placed between the record on the platen A second technique is using the fader or volume knob to control the loudness of a particular section as the record is moving. The third technique is a combination of the first two and requires considerable dexterity and coordination. Rhythms get increasingly complex when two records are used and mixed simultaneously.

There are dozens of scratching techniques all with their own rhythms. At times a quick motion will result in the vocalization "wow," a baby cry or a scared cat sound. Slow motions of the record will give a low growl sound or bass drum sound hit while fast motions give a high-pitched screech or snare drum hit. In most hip-hop music there are four counts with an accent on two and four, and at times two, three or four subdivisions on each count. Counts one and three are often bass sounds and two and four are treble sounds. Syncopations or accents off of a count might fall on the second beat of a two beat subdivision, for example, counting 1, 2, 3, 4 an and resting on count 4.
Listen & Play Along:
Note to teachers: if instruments are not readily available, consider having students make their own (a specific turntable-making activity can be found in the next section) or encourage them to improvise using everyday items that have a bumpy, textured surface such as sandpaper, book covers, plastic take-home containers, etc., as instruments. Rhythms can also be created with body percussion including hand clapping, foot tapping, finger snapping, and mouth sounds used in "beat box."

Listen to Tracks 59-64 of the Roots of Rhythm: Extensions Companion CD to hear the sound of the turntables. Now it’s time to play the turntable! Play your homemade turntable along with the musical example on Tracks 65-73 of the Roots of Rhythm: Extensions Companion CD.

Make Your Own Turntable: Use a plastic take-home container that has a bumpy, textured surface, and scratch that area with your finger nails or finger tips to get a friction sound like the turntable. Use the volume and tone control with a CD player turned on to practice the fader techniques, and the speaker cover to practice your scratching.

Turntable and Performers:

Turntable (right) and Mixer (left)

MC Ace Boogie (center)

DJ Simplee (left) and DJ Drama (right)
Resources: Turntable Playing Techniques and Rhythms

Turntable Playing Techniques & Notation

Basic scratch is a push forward – an up arrow ↑ and a pull backward – a down arrow ↓.  
Soft scratching is a short motion – a short thin arrow ↑.  
Loud scratching is a long motion quick – a long thick arrow ↓.  
Fader technique using a CD player’s volume control and tuned to noise between stations,  
make a burst of sound from soft to loud to soft quickly – an arrow in an inverted V / \  
Low pitch – is a slow drag across the surface – an angled arrow →.  
High pitch – is a fast, long motion – a long arrow ↑.

Turntable Rhythms

The turntable rhythms below can have one, two or three beats per count.

A dot means to rest on one of the double beats. ● ❌. An empty box means rest for one count.

1. **Basic scratch**
   
<table>
<thead>
<tr>
<th>Count</th>
<th>1 2 3 4 1 2 3 4 1 2 3 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Say</td>
<td>up down up down up down up down up down up down</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. **Basic scratch – with syncopation**
   
<table>
<thead>
<tr>
<th>Count</th>
<th>1 2 3 4an 1 2 3 4 1 2 3 4an 1 2 3 4an</th>
</tr>
</thead>
<tbody>
<tr>
<td>Say</td>
<td>syn-co-pate rhy-thm rhy-thm syn-co-pate rhy-thm syn-co-pate</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. **Fills – getting louder and softer**
   
<table>
<thead>
<tr>
<th>Count</th>
<th>1 2 3 4 1 an 2 an 3 an 4 an 1 2 3 4 1 an 2 an 3 an 4 an</th>
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<tr>
<td>Say</td>
<td>softest louder louder loudest loudest softer softer softest</td>
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80
4. **Fader technique** – use the CD player’s volume control
   
   Count: 1 2 3 4 1an 2an 3an 4an 1 2 3an 4 1an 2 3an 4
   
   Say: fade fade fade fa-der fa-der fa-der fade fade fa-der fade fa-der fade fa-der

5. **Stab**
   
   Count: 1 2 3 4 1an 2 3 4 1an 2 3an 4 1 2 3an 4
   
   Say: stab stab stab stab re-cord stab re-cord stab stab re-cord stab

6. **Scratching** – with continuous 8\textsuperscript{th} notes
   
   Count: 1an 2an 3 4 1an 2an 3 4 1an 2 3an 4 1an 2 3an 4
   
   Say: dou-ble dou-ble dou-ble dou-ble dou-ble dou-ble dou-ble dou-ble

7. **Drags**
   
   Count: 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8
   
   Say: dra - g scratch dra - g scratch

8. **The Transformer** – slow drag of record with quick fader
   
   Count: 1an 2an 3an 4an 1e a 2 e a 3 e a 4 1an 2an 3an 4an 1e a 2 e a 3 e a 4
   
   Say: T F T F T F T F T F T F T F T F T F T F TFM TFM TFM scratch T F T F T F T F T F T F T F T F T F T F T FM TFM TFM scratch
   
   T F = "trans-form" TFM = "trans-for-mer"

9. **Crab**
   
   Count: 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
   
   Say: pinky ring middle index pinky ring middle index
At first glance, the Turntable might seem to be an unusual choice for inclusion in this presentation of world percussion instruments. However, as a friction idiophone, the Turntable represents a valuable addition to the family of global percussion and the *Roots of Rhythm* program. Combining common playing techniques with advanced electronic technology, the instrument has spread in popularity and become recognized as a valid means of artistic expression; making it an ideal example of how the world’s drums and drumming styles continue to influence one another and evolve to create new kinds of percussion instruments for new types of music.

The Turntable can be considered an extension of many traditional instruments as well as a number of electronic instruments that have become increasingly prominent in today’s music. These extensions stem from both the Turntable’s classification as a friction instrument and its electronic capabilities.

**Musical Influences**

<table>
<thead>
<tr>
<th>Root</th>
<th>Influence</th>
<th>Extension</th>
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<tbody>
<tr>
<td><em>Buhai/Romania</em></td>
<td>friction drum</td>
<td>Turntable/U.S.A.</td>
</tr>
<tr>
<td><em>Cuica/Brazil</em></td>
<td>friction drum</td>
<td>Turntable/U.S.A.</td>
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<tr>
<td><em>Dondo/Ghana</em></td>
<td>variable pitch</td>
<td>Turntable/U.S.A.</td>
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<tr>
<td><em>Guiro/Cuba</em></td>
<td>scraping sound and technique</td>
<td>Turntable/U.S.A.</td>
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<tr>
<td><em>Snare drum/Switzerland</em></td>
<td>sound modifier</td>
<td>Turntable/U.S.A.</td>
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<tr>
<td><em>Djembe/Guinea</em></td>
<td>application in dance</td>
<td>Turntable/U.S.A.</td>
</tr>
<tr>
<td><em>Steel drum/Trinidad</em></td>
<td>application in popular music</td>
<td>Turntable/U.S.A.</td>
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The development of the Turntable in the United States during the last half of the 20th century was the result of influences and changes in music and musical instruments throughout the world.
• Playing Techniques
The Turntable extends the technique of playing friction drums in several ways. On the *buhai* friction occurs when the thumb and forefingers first pinch and then pull down a bundle of horsehair, away from the drumhead. This, as well as the squeezing techniques used on the African *dondo*, are considered large or “gross” motor skills. Creating friction on the Turntable involves a fine motor skill when subtle motions controlling direction, speed and pressure produce a variety of friction sounds as the needle rubs against the grooves of a vinyl record. Another important extension takes place when the Turntable performer creates friction by moving in two directions (forward and backward) instead of just one direction as on the *buhai*; similar to the back and forth rubbing motion used on the *cuica*.

![The Turntable extends friction drum technology.](image)

• Quality or Type of Sound
Modifying the basic sound of an instrument is a common practice among the percussion family, for example, the snares of a snare drum or the beads in an *adufe*. The Turntable’s sound can be modified both manually by the performer and electronically by electronic controls including volume and tone as well as through other effects like reverb and echo. With sampling and electronic editing, the final sound can be noticeably changed from the record’s original sound.

The Turntable can also be considered an extension of the *dondo*. While both instruments can vary the pitch of the instrument, the *dondo* has a slower increase in pitch and takes slightly longer to return to the lower pitch. The Turntable scratch, on the other hand, is faster on the rise in pitch and returns more quickly to the original pitch. The following diagram shows the glissandos or sliding effects of pitches on the two instruments plotted in time.

![Fine motor skills allow more precise control of pitch variation.](image)
The Turntable DJ more often uses friction in the grooves to make various non-pitched scratching sounds rather than pitched melodic sounds. This is similar to the type of sound created by rubbing a stick against the grooves of a Cuban *guiro*.

While traditional friction instruments and the Turntable are capable of creating many pitches, the Turntable extends these capabilities to produce a wider variety of sounds through the combination of physical control, electronic effects and the selection of the type of sounds contained on the record, itself. Furthermore, one vinyl record can have hundreds of grooves to choose from for the friction effect.

- **Musical Style or Application**
  The Turntable is a musical invention by today’s urban youth intended specifically for music created and performed in the hip-hop culture. It incorporates many cultural influences and technological advances, yet it used to express individual styles and techniques. In this way, the Turntable represents important connections to a variety of past and present African, European and American cultures.
The turntable is used today as a musical instrument in urban popular music to get friction sounds called scratching. Beginning with the discovery of practical ways to use electricity in the early 1800s and the invention of the phonograph by Thomas Edison in 1877, advances in recording and amplification in the 1900s allowed the turntable to become a musical instrument. In the 1970s urban young people mainly in New York City began to set up their own turntables in parks to have their own dance party. From this was born the four elements of Hip Hop: the DJ, MC, Break Dancing and Graffiti art. The early pioneers of DJing or "turntablism" were DJ Kool Herc, Africa Bambaatta, Grand Master Flash, and Grand Wizard Theodore, each of whom contributed a new element to the art of scratching on the turntables.

**Homemade Turntable Scratching Rhythms**

**Directions.** You can create scratching rhythms on any bumpy surface, like a take-out tray (see illustration above). As you rub, use your fingernails to get a loud sound and your fingertips to get a softer sound. After you experiment with this for a while, compose your own rhythms using the box notation below. For one direction use an up arrow ↑ and for the other direction use a down arrow ↓. Angled lines → are for continuing a sound. Now play your rhythm that you wrote. Remember, you can use any permissible bumpy surface. For example,

1. Title ______ Back Scratch

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## Roots of Rhythm - Chapter 15: The Turntable from the United States

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**Instrument:**

_Daf_, a Kurdish frame drum for spiritual ceremonies and peace-building.

**Country:**

Iraq

**Flag:**

The Iraqi flag has three equal horizontal bands of red, white, and black; the Takbir (Arabic expression meaning “God is great”) in green Arabic script is centered in the middle white band. The flag's design comes from the Arab Liberation colors. The Iraqi government's new Council of Representatives approved this flag as a temporary replacement for Iraq’s Saddam Hussein-era flag.

**Size and Population:**

Iraq's land area is 167,556 sq mi (433,970 sq km). The estimated population of Iraq as of July 2013 is 31,858,481. The capital and largest city, Baghdad, has a population of 5,772,000. Nearly three-quarters of Iraq's population lives in the flowing plains that extend southeast from Baghdad to the Persian Gulf.

**Geography and Climate:**

Iraq borders Iran, Jordan, Kuwait, Saudi Arabia, Syria and Turkey. The country's landscape slopes from mountains over 11,800 feet high along Iran and Turkey's borders to marshes in the southeast at sea level on the Gulf Coast. While much of the land is desert, there are hilly, fertile valleys that provide much needed rich farmland. The enormous Zagros mountain range that begins in the Balkans runs into southern Turkey, northern Iraq, Iran, and Afghanistan and finally ends in the Himalayas. The highest point of these mountains in Iraq is Cheekah Dar ("Black Tent") at 11,847 feet (3,611 m).

The Zagros mountains have a total length of 954 miles (1500 km) from western Iran, on the border with Iraq, to the southern parts of the Persian Gulf. Deposits in this geologic environment, a collision of the Eurasian and Arabian tectonic plates, brought about the formation and trapping of petroleum making the Zagros region an important part of the Persian Gulf's oil production.

Temperatures in northern Iraq range from higher than 48°C (120°F) in July and August to below freezing in January. Most of the small amount of rainfall occurs from December through April and averages between 4 to 7 inches (10-18 cm) per year. Northern Iraq's mountains receive considerably more precipitation than the central or southern desert region.
**Special Focus: Kurdistan**

Kurdistan literally means “the land of Kurds.” Also known as the Kurdistan Region or the Kurdish Autonomous Region, the Kurdish section of northern Iraq comprises 30,888 sq mi (80,000 sq km) and has a population of 7,000,000 as of July 2008. It roughly encompasses the Zagros and the eastern Taurus mountain ranges. Lake Dukan is the largest lake in the Kurdistan Region.

In Iraq, Kurds represent about 23% of the population, living mostly in the vicinity of cities such as Dahuk (Dohuk), Mosul, Erbil, Kirkuk, and Sulaymānīyah. In addition to those living in Iraq there are another 28 million Kurds in eastern Turkey, northwestern Iran and smaller parts of northern Syria and Armenia (see map, below).

The Kurdish people have their own flag within the countries of Iraq, Turkey and Iran. First appearing during the Kurdish independence movement in the 1920s, today it represents the Kurdistan Regional Government and its citizens.

The main characteristic of the Kurdish flag is its bright golden sun centered in the white band but touching an upper red band and lower green band. The sun has ancient religious and cultural symbolism among the Kurds. The sun disk of the emblem has 21 rays of equal size and shape. This number is very important in Yazidi, an ancient religious tradition in Kurdistan.

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**Kurdish Areas in Iraq, Syria, Turkey, and Iran**

map source: Perry-Castañeda Library Map Collection at The University of Texas at Austin

**The Kurdish Flag**

map source: Perry-Castañeda Library Map Collection at The University of Texas at Austin
Background and History:
The geographic area known today as Iraq was called Mesopotamia (“between two rivers”—the legendary Tigris and Euphrates) by the Greeks. This region is also considered the location of the biblical Garden of Eden and “cradle of civilization” beginning with the Bronze Age (4000 BCE).

Between 3500-539 BCE, history's first known civilization, Sumer, was established in the area of present-day southeastern Iraq. The ancient cities of Ur and Babylon were located in Iraq and it is the place where the patriarch Abraham is said to have lived between 2000-1825 BCE. Abraham is considered the father of monotheism, the belief in one God that forms the basis of three major religions: Judaism, Christianity, and Islam. In 539 BCE the Persians conquered Mesopotamia and in 331 BCE Alexander the Great seized the area.

The Sassanian Dynasty (224-651 CE) covered the areas of what today is Iran, Iraq, Armenia, western Afghanistan, eastern parts of Turkey, and parts of India, Syria, Pakistan, Caucasus, Central Asia and Arabia. Called Eranshahr or “Empire of the Iranians”, this era witnessed some of the highest achievements in Persian history and constituted the last great Iranian Empire before the advent of Islam in the 7th century. At the time, the Persian and Roman civilizations were considered equal.

The first Islamic Empires (570-632 CE) overthrew the Sassanids in 637 CE. Islam, in Arabic meaning “surrender to God”, ultimately became the principal religion throughout much of this part of the world.

In 1258 the Monguls invaded and controlled Mesopotamia followed by the Ottoman Turks at the end of that century. From that time until the 20th century, the areas of Iraq and Iran were part of the Ottoman Empire (1299-1923). Iraq's current borders were drawn after World War I (1923), when the victorious European powers carved the former Ottoman empire into several states, with the British in control of the area of Iraq.

Iraq attained its independence as a state in 1932, ending the British mandate, and the same year the country was admitted into the League of Nations. After several decades of tumultuous leadership, army officers overthrew the government in 1958. It was ruled by a series of military leaders until 2003, the last being Saddam Hussein.

Following a series of territorial disputes with Iran and Kuwait, the US-led invasion of Iraq in 2003 and the subsequent overthrow and capture of Saddam Hussein’s regime, full governmental authority was transferred to the Iraqi Interim Government in 2004. The next year Iraq's permanent constitution was approved and Jalal Talabani was elected president of the country. In 2006 the 275-member Council of Representatives was elected as Iraq's first constitutional government in nearly a half-century. In the last election March 2010, Jalal Talabani was reelected. The next election will be in 2014.

President Jalal Talabani
Photograph by Eric Draper, White House Press
Special Focus: Kurdish Background & History

The term “Kurd” comes from the Latin word Corduene and is related to the ancient Kingdom of Corduene, which became a Roman province in 66 BCE. Early Kurdish dynasties begun under Islamic control (900-1100) culminated with the Ayyubid dynasty, founded in 1174 by the revered leader and perhaps most famous of all Kurds, Salahuddin Ayyubi (1138-1193). Better known as Saladin in medieval Europe, he was a strict Kurdish Sunni Muslim who led the opposition to the Third Crusade and eventually recaptured Palestine.

The Kurdish capital city of Irbil, known in Kurdish as Hewlêr. Irbil (also written Arbil or Erbil), was established around 2300 BCE and is believed by many to be one of the oldest continuously-inhabited cities in the world. It is also one of the largest cities in Iraq. The major city of Sulaymāniyah was founded in 1784 by a Kurdish prince known as Ibrahim Pasha Baban who named it for his father Sulaiman Pasha. It has become the cultural center of the Kurds, an important economic center for Kurdistan and a center for Kurdish nationalism.

Since the fall of the Ottoman Empire in 1923, the Kurds have struggled to resist subjugation by other nations. Due to the fact that they remained the largest ethnic group in the world without a separate, autonomous nation-state, the Kurds had to fight long and hard for freedom and independence. The hardships, torture and even genocide committed against them during this period have been called among the worst human tragedies in the past century or more.

Major events in the past 100 years of Kurdish history have included:

- **1923** - The newly formed nation of Turkey denies Kurdish autonomy, resulting in decades of conflict between the Turks and the Kurds.
- **1946** - The Kurdistan Democratic Party (KDP) is founded by the legendary leader Mustafa Barzani (1903-1979) and dedicated to the creation of an independent Kurdistan.
- **1975** - Jalal Talabani (b. 1933) abandons the KDP to start the Patriotic Union of Kurdistan (PUK).
- **1979** - Iran's Islamic revolution brings additional Kurdish conflict within that country.
- **1988** - Following the Kurds support of Iran during the Iran-Iraq war (1980-88), Saddam Hussein retaliates by slaughtering over 182,000 Kurdish civilians and forcing the mass exodus of over one million Kurds to the mountains and other countries.
- **1991** - After the Persian Gulf War, Iraqi Kurds are encouraged to rise up against Saddam Hussein, however Iraq stops the rebellion, killing thousands. U.N. forces fail to the aid the Kurds, but eventually establish a no-fly zone in the area.
- **1998** - The PUK's Talabani and the KDP's Masud Barzani (b. 1947), son of KDP founder Mustafa Barzani, sign a peace agreement, ending their four-year conflict.
- **2002** - The Kurdish regional parliament meets for the first time in six years.
- **2003** - The Kurds join U.S. and British forces in defeating Saddam Hussein's regime. Four Kurds are appointed to the Iraqi Governing Council, including Barzani and Talabani.
- **2005** - After many decades of struggle, the Kurdistan Regional Government is recognized by the Iraqi government as having autonomy and full sovereignty. With its international recognition as an autonomous region, Kurdistan becomes a sub-national region with special powers of self-rule.
- **2010** - National elections were held.
Culture:
The people of Iraq are primarily Arabs (75-80%) but other populations include Kurdish (15-20%) and others (5%), including Turkomans, Assyrians, Chaldeans, Persians, and Armenians. Arabic is the most common language and very different from Kurdish, which is spoken in the north. Also spoken are Assyrian and Armenian.

Around sixty-five percent of Iraqi Muslims are members of the Shi'a sect (Shi'a means “followers” or “members of party”). The remaining thirty-five percent are Sunni (Sunni comes from sunna meaning “customary practice, tradition”). In addition to the majority (97%) Islamic population of Arabs and Kurds in Iraq, there are small communities of Christians, Jews, Bahais, Mandaesans, and Yazidis.

About one-third of Iraq's population live in the country and farm for a living. Some raise cattle but many tend goats and sheep. Rural buildings in the north are made of stone, while in other regions they are made of mud and brick. City buildings have increasingly been built from concrete with office and housing construction very active today. Industries include petroleum, chemicals, textiles, leather, construction materials, food processing, fertilizer and metal processing. Natural resources include petroleum, natural gas, phosphates and sulfur. The currency in Iraq is the local dinar, though these days U.S. dollars are also commonly used.

The arts in Iraq have been primarily influenced by ancient Persian culture although after conversion to Islam in the 8th century, there has been a greater Arabic influence.

The rhythmic focus of this chapter relates significantly to spiritual enlightenment and peace that are expressed in Islamic mysticism called Sufis or tasawwuf, meaning “to dress in wool”, referring to the clothing of one who has taken the vow of poverty or a non-material life. Sufism is generally understood to be the inner, mystical, or psycho-spiritual dimension of Islam. Sufis work to bring people together, bridging different cultures.
Ethnically close to the Iranians, the Kurds were traditionally nomadic herders but are now mostly semi-nomadic or sedentary. The majority of Kurds are Sunni Muslims. The Kurdish people have their own language which is not related to Arabic. One of the two principal dialects is Sorani, which is spoken in Iraq and parts of Iran. The other dialect is called Kurmanji (Kurd+man+cî means “those Kurds who remained in their places” or not moved like others) but is only spoken today in Dohuk and Turkey.

It is interesting that although most Kurds are now Sunni Muslims, recent scientific studies show that the Kurdish people are genetically more closely related to Jews than to Semitic-speaking Arab populations. Over the centuries, religious conversions have mixed the two cultures. For example, royalty in a Kurdish area called Adiabene converted to Judaism. The capital city of Adiabene was Arbela, which is known today as the Arabic, Irbil. Therefore, it seems clear that the biological, religious, political and cultural histories of Kurds are interconnected with that of both Arabs and Jews.

In the area of the arts, censorship gradually grew throughout Iraq following the political changes at the end of WWII. With the rise of Saddam Hussein and his regime, any type of artistic expression deemed subversive could cause the artist to be arrested and even executed. Fortunately in recent years, Kurdish artists and musicians again enjoy creative freedom and are supported by the Kurdistan Regional Government, which has encouraged many artists to return to Kurdistan and resume their work.
Music: Instruments & Rhythms

Instruments:

Music throughout the Kurdish region of Iraq, which is a focus of this lesson, features a wide variety of musical instruments. The most common string instruments are the **oud** (ood), a twelve-string plucked lute, the **kamanche/kemençe** (com-on-cheh), or **cûzele** (koo-sla), a bowed **rebab** (reh-bob), the **santur** (sahn-tour), a trapezoidal hammer dulcimer, the **tar**, a lute with adjustable frets and three sets of strings, the **tanbur**, a pear-shaped lute with gut frets, and the **setar**, a delicate sounding lute preferred by the Sufis.

There are several types of wind instruments from the area, including the **bilûr** (beh-loor), a sheppard's short, fipple flute, the **ney** (neigh), an end-blown tubular flute, the **şimşal** (zem-zal), a long flute, the **duduk** (dah-dook) a small diameter, single reed, and the **balaban** (bah-la-bon), a cylindrical tube with wide double reed.

Drums in northeastern Iraq include the **dola** (doh-lah)/**duval** (dah-vull), a double-headed bass drum played with a switch and mallet, the chalice-shaped **tonbak** (ton-bok), so-named for its two sounds “ton” and “bak”, the goblet-shaped **dumbek** (doom-bek) or **tablah** (tah-blah) and the **tas** (tahs), a pair of small, copper kettle drums used by Sufis in their residence, or **khaniqah** (con-e-kah), during their Zikr-e-Ghiyam (Zu-kur-e-Guy-yum) ceremonies. All these instruments can be played along with the **daf** (dahf) frame drum.

**Daf, Tonbak and one Tas**

*Photograph by Craig Woodson*

The focus instrument of this chapter is the **daf**. Early bas-relief stonework during the Sassanid period (224-651 CE) in western Iran shows that the **daf** was being used long before the rise of Islam (700-1300 CE), and possibly even before the time of Christ. Along with the **daf** there is a square drum shown in this relief stonework.

The **daf** is a large, shallow, round, hardwood frame drum 21-22.5 inches in diameter and 2 inches deep with over 300 brass rings (3/4 inch diameter) loosely fastened to over 70 staples and fitted on the inside of the hoop. When the drum is even slightly moved, shaken or struck the rings hit the head or frame and produce a wide variety of sizzle or white noise effects. **Daf** performers produce both deep and high drum tones along with coordinated noise effects created by shaking the drum's rings against the inside of the drumhead.

A goatskin drumhead is fastened to the frame by staples and decorative tacks. Recent versions of the **daf** have Mylar drumheads and elaborately painted Kurdish images and/or designs on them.
The *daf* is used as a solo instrument in both popular and classical music in Iran, Iraq, Syria, Azerbaijan, Kurdistan, parts of Tajikistan and other countries of the Middle East. The *daf* appears in similar form with a similar names, for example, *daf* in India, *tef* (tehf) in Turkey, *duf* (duhf) in Arabic cultures and *dap* (dahp) in the Uyghuristan province of China.

Frame drums such as the *daf* have long been played by men and women in Kurdish ceremonies. Master *daf* drummers in the 20th century include the Sufis Ostad Haj Khalifeh Karim Safvati, Ostad Haj Khalifeh Mirza Agha Ghosi and Masha-Allah Bakhtiyari. Notable Iranian *daf* performers include Khalifeh Rahmeh and the group Safahan.

**Rhythms:**

In one type of Kurdish music, melodic structures called *maqams* (mah-khams) and rhythms have been passed down by oral tradition for generations and place a heavy emphasis on improvisation during performances. A second type of Kurdish rhythm is part of structured melodies called *gouranis* (gor-ah-nees). Before Islam, the Kurds used *gouranis* in worship rituals for a Zoroastrian supreme god of fire, the sun and moon.

*Gouranis* also refers to spiritual songs that are accompanied by instruments or clapping, used by Sufi mystics in western Iran. *Gourani* songs and rhythms are in various categories, for example, those for children (simple rhythms), festive occasions (strong, exciting rhythms), and war (rhythms to inspire nationalistic pride). The *daf* is the main drum for Sufi rituals, for example, the whirling, trance-inducing Dervish *zikr* (zeh-kur) known as *sama* (“hearing”). One example of such a rhythm is Geryan in 16 counts (see below).

After the rise of Islam, new songs and rhythms were composed to worship Allah, for example, the *zekr* or *zikr* or “remembrance of Allah”.

Though difficult to trace historically, many of today’s *daf* rhythms probably came from the western Kurdish areas of Iran and date back possibly thousands of years. In the past, *Daf* rhythms have mostly been associated with religious and spiritual practices but today the instrument is also used for entertainment. This chapter features ten important *daf* rhythms from the Kurdistan area, most of which are related to the Sufi spiritual tradition. These include 4, 6, 8, 10, 12, 14, 16, and even a modern 37 count rhythm.

**Listen & Play Along:**

*Note to teachers: if instruments are not readily available, consider having students make their own using the *daf*-making instructions found below or encourage them to improvise, using everyday items such as buckets, containers, phone books, desk tops, etc. as instruments. Rhythms can also be created with body percussion including hand clapping, foot tapping, finger snapping, etc.*

Listen to Tracks 1-6 of the Musical Examples for this Roots of Rhythm chapter to hear the authentic sound of the *daf*. (Track 2 is an important rhythm in 10 counts, and played on a *dumbek* instead of a *daf*.) Use the instructions below to make a *daf*, then practice getting a high sound (edge) and a low drum sound (center) with your hands or sticks. You can also use other percussion instruments (such as a tambourine) to make these sounds.
Once you become proficient at making the high and low sounds on your drum, you can learn to play the \textit{daf} rhythms demonstrated on \textit{Tracks 7-47} of the \textit{Play-Along Musical Examples}. These traditional Kurdish rhythms are shown in the box notation in the Resources section.

\textbf{Making Your Own Daf:} You can make a \textit{daf} with found objects or by using simple tools and materials. Here are a few suggestions:

a. Kleenex box. (\textit{photo: Biryar Hikmet using a Kleenex box to demonstrate a Dervish rhythm.})

b. Pizza box. A very simple type of \textit{daf} can be created using pizza box with beans inside to create a “buzz”.

c. You can make a \textit{daf} using a 9 to 12-inch diameter, 2-inch deep cardboard hoop, some PVC packing tape and two sizes of paper clips. Cut twelve, one-eighth inch slots around the drumhead side of the hoop. Open one leg of the small paper clips and place one in each in the slots so that the open leg is on the outside of the hoop. Wrap PVC tape around the hoop to hold the clips in place. Use the tape to make the drumhead in a crisscrossed pattern as suggested in the Introduction of the \textit{Roots of Rhythm} guides. Make sure the second layer of tape is pulled tightly across the hoop. Wrap one final piece of tape around the hoop to hold everything in place. Sprinkle a teaspoon of talcum powder on the sticky side of the drumhead to allow the rattle effect. Finally, slide three large paper clips on each small one. Now your \textit{daf} is ready to play. (\textit{photos: Houman Pourmehdi playing the homemade daf. Christine Stevens adjusting her paperclip design on the underside.})
**Daf and Performer:**

Houman Pourmehdi

Photos by: Craig Woodson

**Resources: The Daf Techniques, Sounds and Rhythms**

**Hand Positions**

Hold the daf in front of your body with the thumb of the left hand balancing the drum at the 6 o’clock position and the right hand at the 3 o’clock position. The rings will face towards the drummer and the playing side of the drumhead faces away.

The three beginning strokes used in playing the daf are described and shown in photographs, below. The strokes produce the three basic sounds for this instrument: the “dum” or bass tone (right hand), “tak” or high pitched tone (right hand) and a “ka” sound also high pitched (left hand) but slightly softer and muted.

1. **Dum Stroke** – The “dum” stroke (D) is played by the right hand (R). While the thumb holds the hoop at the 3 o’clock position, the fingertips are kept together in a slight arc and hit the drumhead with all tips hitting at the same time. The stroke is made towards the center of the drumhead and bounces off the head which allows the deep tone to ring. The thumb pivots on the rim in a door-knob-twisting motion.

2. **Tak Stroke** – The “tak” stroke (T) is played by the right hand (R). Hit the drum with four fingers spread slightly spread apart near the edge of the drumhead with a rebound motion.

3. **Ka Stroke** – The “ka” stroke (K) is played by the left hand (L). Hit with four fingers spread slightly spread apart near the rim of the drumhead using a twist of the wrist, pivoting on the thumb with an upward, door-knob-twisting motion.
Advanced strokes:

4. **Slap** – When the Tak or Ka strokes are played with extra force, the sound might be described as a ‘slap.’ In this case the fingers separate slightly and stay on the drumhead momentarily.

5. **Shake** – The *daf* can be shaken up and down pivoting from the left arm’s elbow with the drum tilted slightly away from the body. This can take place in variety of ways but to start with, the motion can be on every other box or count, for example, 1, 3, 5 and 7 in an 8-count rhythm.

After practicing these strokes try the following *daf* Sufi rhythms. They are written for a right-handed drummer; simply reverse hands for left-handed playing.

**Rhythms**

**NOTES:**

1. Dum = low drum tone (center), Tak and Ka = high tones (edge)
2. R and L = Right and Left
3. ll means a fast tak-ka (pronounced Da-Ka), RL or LL
4. “Handings” are shown for a right-handed person.
5. “D”, “T” and “K” (upper case) are loud, “d”, “t” and “k” (lower case) are soft
6. Each TUBS box is one count.

After listening to the authentic *daf* tracks (1-6), play-along with rhythms 7-17 (*Tracks 7-47*), below:

7. **Daem/Daim** (doh-eem) - “The Beloved Is Forever” - 8 counts

<table>
<thead>
<tr>
<th>Hands</th>
<th>R</th>
<th>L</th>
<th>R</th>
<th>L</th>
<th>R</th>
<th>L</th>
<th>R</th>
<th>L</th>
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</thead>
<tbody>
<tr>
<td>Count</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>8</td>
</tr>
<tr>
<td>7A (7)</td>
<td>D</td>
<td>T</td>
<td>K</td>
<td>D</td>
<td>T</td>
<td>K</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7B (8)</td>
<td>D</td>
<td>T</td>
<td>K</td>
<td>D</td>
<td>K</td>
<td>T</td>
<td>K</td>
<td></td>
</tr>
<tr>
<td>7C (9)</td>
<td>D</td>
<td>T</td>
<td>K</td>
<td>T</td>
<td>K</td>
<td>T</td>
<td>K</td>
<td></td>
</tr>
<tr>
<td>7D (10)</td>
<td>D</td>
<td>K</td>
<td>T</td>
<td>K</td>
<td>D</td>
<td>T</td>
<td>K</td>
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8. **Haddada/Hadaadi** (hah-toh-dee) - A very old Sufi rhythm - 8 counts

<table>
<thead>
<tr>
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<th>R</th>
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<th>L</th>
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<tr>
<td>8A (11)</td>
<td>D</td>
<td>D</td>
<td>T</td>
<td>T</td>
<td>K</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8B (12)</td>
<td>D</td>
<td>D</td>
<td>K</td>
<td>T</td>
<td>T</td>
<td>K</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8C (13)</td>
<td>D</td>
<td>K</td>
<td>D</td>
<td>K</td>
<td>T</td>
<td>T</td>
<td>K</td>
<td></td>
</tr>
<tr>
<td>8D (14)</td>
<td>D</td>
<td>D</td>
<td>K</td>
<td>T</td>
<td>K</td>
<td>T</td>
<td>K</td>
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9. **HayAllah/Hey Allah** (hi-yeh-loh) - “Allah Is Present” - 8 counts

<table>
<thead>
<tr>
<th>Hands</th>
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<th>R</th>
<th>L</th>
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<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9A (15)</td>
<td>D</td>
<td>D</td>
<td>T</td>
<td>T</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9B (16)</td>
<td>D</td>
<td>D</td>
<td>K</td>
<td>T</td>
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<td>9C (17)</td>
<td>D</td>
<td>k</td>
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<td>T</td>
<td>T</td>
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</tr>
<tr>
<td>9D (18)</td>
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<td>D</td>
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<td>K</td>
<td>T</td>
<td>K</td>
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</table>
ROOTS OF RHYTHM - CHAPTER 16: THE DAF IN IRAQ

10. **Hal Gertan/Hel Gortan** (hal ger-ten) - A Kurdish Sufi rhythm - 16 counts

<table>
<thead>
<tr>
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<th>14</th>
<th>15</th>
<th>16</th>
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<tbody>
<tr>
<td>R L L</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<td>16</td>
<td></td>
</tr>
<tr>
<td>R L L</td>
<td>R L L</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
</tbody>
</table>

10A (19) | D | K | D | T | T | K | D | T |
10B (20) | D | K | D | T | T | K | D | T |
10C (21) | D | K | T | K | T | T | K | T |
10D (22) | D | k | k | T | k | T | k | T |

11. **Zekr-e-Dovvom/Zekr Dovom** (zek-reh doh-voom) - “Second Time” - 16 counts

<table>
<thead>
<tr>
<th>Hands</th>
<th>Count</th>
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<tr>
<td>R L R</td>
<td>R L R</td>
<td>1</td>
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<td>3</td>
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<td>14</td>
<td>15</td>
<td>16</td>
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11A (23) | D | T | D | T | D | T | T |
11B (24) | D | T | K | D | T | K | D | T |
11C (25) | D | K | T | K | D | k | T | K |
11D (26) | D | K | T | K | D | K | T | K |

12. **HayAllahAllah/Hey Allah, Allah** (hi-eh-loh eh-loh) - “Allah Is Present” (reprise) - 10 counts

<table>
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<tr>
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<tbody>
<tr>
<td>R L R</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>R L R</td>
<td>R L R</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</table>

12A (27) | D | T | D | T | D | T |
12B (28) | D | K | T | D | T | T |
12C (29) | D | K | T | D | K | T |
12D (30) | D | K | T | D | K | T | K |

13. **Maddahi/Madahi Noey Aval** (mah-doh-he noh-eh ah-vol) - “Asking For Help From The Beloved, First Time”- 12 counts

<table>
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<tr>
<td>R L R</td>
<td>R L R</td>
<td>R L R</td>
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13A (31) | D | D | T | K | D | T | T |
13B (32) | D | D | T | K | D | T | T | T |
13C (33) | D | T | K | T | K | D | T |
13D (34) | D | T | T | K | D | K | T | K |

14. **Maddahi/Madahi Noey Degr** (mah-doh-he noh-eh deh-gar) - “Asking For Help From The Beloved, Second Time” - 16 counts (note handings)

<table>
<thead>
<tr>
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<th>3</th>
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<td>R L R</td>
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<td>R L R</td>
<td>R L R</td>
<td>1</td>
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</tbody>
</table>

14A (35) | D | K | D | K | T |
14B (36) | D | K | D | K | T | T |
14C (37) | D | K | D | K | T | T | T |
14D (38) | D | K | D | K | T | T | T | T |

98
15. *Saghghezi/Seh Guzi* (sok-geh-zee) - Rhythm from the city of Saghghez - 12 counts (note handings)

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<tr>
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<table>
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<th>Variation</th>
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<tr>
<td>15B (40)</td>
<td>D k k T K T k k D K</td>
</tr>
<tr>
<td>15C (41)</td>
<td>D k k T K T k k T K</td>
</tr>
<tr>
<td>15D (42)</td>
<td>D k k D K T k k D k T</td>
</tr>
</tbody>
</table>

16. *Garyan/Geryaan* (gedi-un) - “Person Who Is Crying”- 14 counts (note handings)

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<th>R</th>
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<tbody>
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<td>2</td>
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<table>
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<tr>
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<th>Hands</th>
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<td>16A (43)</td>
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<td>16B (44)</td>
<td>D K D T T K D T</td>
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<td>16C (45)</td>
<td>D K D T T K D K T</td>
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<tr>
<td>16D (46)</td>
<td>D K D T T K D T K</td>
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17. *Daf* composition by K. Alimohammadi - opening rhythm in 37 counts (10+10+10+7)

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<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Alt. Count</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variation</th>
<th>Hands</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 (47)</td>
<td>D D T K K T K K</td>
</tr>
<tr>
<td></td>
<td>D D T K K T K K</td>
</tr>
<tr>
<td></td>
<td>D D T K K T K K</td>
</tr>
<tr>
<td></td>
<td>D D T K K</td>
</tr>
</tbody>
</table>

*NOTE: This is the first of many polyrhythms in this composition.*

Variations:
1. Fill in empty boxes with a soft tak or ka to fill out the rhythm
2. Shake the drum side to side or vertically to activate the sizzle sound.
Extensions:

The *daf* is an important drum in the history of drums for many reasons: its simplicity of construction, complexity of rhythms, challenging technique and innovative use of sound modifying rings, and connection to spirituality and peace-making. Early artwork during the Sassanid period in Iran shows that the *daf* was being used long before the rise of Islam. More recently, the *daf* was involved with religious practices in Iran before its association with Sufis. Even today, the *daf* remains an important part of traditional music in Kurdistan, Iraq and Iran and is highly popular among young people.

Being one of the earliest “standardized” frame drums, and centrally located in an influential and well-traveled part of the world, it is certain that the *daf* migrated throughout the region over the centuries. A *daf*, at one time called the *dap* (dahp), has long been used in festivals and for Iranian classical music and the drum appears in similar forms with a similar names in many other regions, for example, *daf* in India, *tef* (tehf) in Turkey, *duf* (duhf) in Arabic cultures and *dap* in Uyghuristan, China. The *daf* is also closely related to the form of the *ghaval* of Azerbaijan and *dayereh* of Iran, both smaller frame drums with fewer rings. The Moors brought the *daf* to Spain as well as to medieval Europe. The Ottomans brought it again to Europe in the 1600s.

One can also see the influence of the *daf* design and playing techniques in the Indian *tabla*, Portuguese *adufe*, Central European tambourine and Brazilian *pandeiro*.

*Over the course of hundreds, if not thousands, of years, the design, technique and application of the *daf* has traveled from the Middle East to the four corners of the world. Today it has become an instrument of peace in the land where it was first developed and popularized.*

• Design/Construction Materials and Methods

The *daf* has evolved as a highly portable drum, excellent for playing indoors and out. It is made from a large (21-22.5” diameter) hardwood or plywood frame and goatskin drumhead with hundreds of metal rings attached to the inside of the frame below the drumhead in 1+1+2 sets (*inset*).
Considering the technology required to make a large frame drum like the daf, one theory of the drum’s development involves its possible connection to the invention of the wheel. Clay tablets found in Ur, an ancient city in Mesopotamia (modern day Iraq), show a diagram of a potter’s wheel that dates back to 3500 BCE. Some believe that wheels were used in industry and manufacturing such as pottery before they were used for transportation. However, the first wheels used for transportation on carriages also appear in Mesopotamia, in present day southern Iraq, and pre-date wheels with spokes that developed in Egypt around 2000 BCE and in Europe around 1400 BCE. This technology likely made it possible to produce frames for drums like the daf.

By combining the relative age of the daf with known historical/cultural events and technological innovations, four distinct periods of development can be determined that show how the drum might have changed and survived over the centuries:

<table>
<thead>
<tr>
<th>Era</th>
<th>Babylonian (2300 BCE-224 CE)</th>
<th>Sassind/Islamic (224-1299 CE)</th>
<th>Ottoman (1299-1923 CE)</th>
<th>Modern (1923-Present)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>dappu</td>
<td>ghaval, dayereh, daffa</td>
<td>daf</td>
<td>daf</td>
</tr>
<tr>
<td>Frame</td>
<td>thin wood/clay</td>
<td>thicker, bigger</td>
<td>thicker, bigger</td>
<td>plywood</td>
</tr>
<tr>
<td>Head</td>
<td>goat</td>
<td>goat</td>
<td>goat</td>
<td>goat or plastic</td>
</tr>
<tr>
<td>Buzz</td>
<td>gut or jingles</td>
<td>jingles &gt; rings</td>
<td>iron/brass rings</td>
<td>brass rings</td>
</tr>
<tr>
<td>Made By</td>
<td>performer</td>
<td>drumsmith</td>
<td>artisans</td>
<td>mass produced</td>
</tr>
</tbody>
</table>

• Playing Techniques

Techniques for the daf involve intricate and coordinated control of the hands, fingers, wrists and arms. The wrists, hands and fingers are used to simultaneously hold the drum and play it while the arms raise, lower and shake the drum to create interaction between the drumhead and the internal rings. This makes the drum difficult to play properly since the slightest motion produces a sound.

The technique for playing the drum in both hands involves a twist of the wrist. For the most part the right hand pivots on the thumb which is pressed to the frame, but on occasions, the hand can slide into the center of the drum or be taken completely off the drum for dramatically loud slaps or bass tones. In this case the drum has to be held with extra force with the left hand. These hand and finger techniques produce a wide variety of tonal and rhythmic variations.

There are few other percussion instruments that involve so many complex skills and require so much physical dexterity. From a technical standpoint, the Brazilian pandeiro, Irish bodhran, Indian tabla and African shekere (a large shaker with external beads) are the closest and all can be considered related, either closely or distantly, to the daf.
• Quality or Type of Sound
While the daf’s drumhead is very large, the frame is very shallow, giving the instrument a wide range of dynamic and pitch capabilities. The daf also has one of the most extravagant modifier systems in all of percussion. A modifier is a part of an instrument that is added on to change the basic sound of a drum. As noted in other Roots of Rhythm chapters a modifier often creates a buzzing effect that increases the power of the sound to project above other instruments and over large distances. In the case of the daf, the addition of rings makes the drum sound like several drums are being played. The buzzing is sometimes thought of as a link to the spiritual world. For example, in some cultures in Africa it is referred to as the voice of ancestors.

With the daf’s rings falling close to the frame, the buzz adds to the high pitch of the drum. When the daf is shaken vertically or side to side there is almost a continuous buzz effect, somewhat like an African shekere. That sound can be utilized to great effect by a skilled performer.

Other Roots of Rhythm drums with modifiers include:
- The Lakota drum has a controllable buzz with the finger against the drumhead.
- The adufe uses beans or pebbles to produce the most basic of the buzzing sounds.
- The pandeiro has jingles or small cymbals attached to the frame.
- The djembé’s sese effect can be turned on or off.
- The snare drum with its more evolved, coiled wires pressed against the bottom drumhead.

• Musical Style or Application
The daf generally played in a group in unison, in group improvisation or as a solo instrument. In groups, entire compositions can be led by a master drummer who uses standard rhythms as an indication of what to play. This is comparable to many African, Afro-Cuban and Brazilian drum ensembles and is also the role of the modern drumset in jazz, rock and R&B styles.

Since the daf is one of the oldest frame drums in the world it is likely that it has influenced many other drums. This type of drum has traveled to or at least exists in almost all parts of the world so there are many interesting comparisons and conclusions that can be made. For example, the intricate and very fast hand and finger techniques of the daf are quite similar to those of the tabla in India and the pandeiro in Brazil.

Today, the daf continues to travel the world. It is played in the Japanese rock band called Mucc and there are numerous contemporary daf performers in the United States, including Iranian-born Pezhham Akhavass, Kourosh Moradi, Mehrdad Arabi Fard, and Pejman Hadadi as well as American daf player, Rowan Storm.

One of today’s most prominent and internationally-acclaimed daf artists is Iranian-born Houman Pourmehdi, whose interest in the spiritual path of Sufis introduced him to the Ghaderi Sufi order’s virtuoso daf players, such as Haj Agha Sadeghi, Mirza Agha Ghosi, and Darvish Karim, with whom he studied the heart-to-heart traditional techniques of playing daf.
The *daf* is a large single-headed frame drum from Kurdistan/Iraq that dates back over 2000 years. It has over 300 rings loosely attached to the inside of the frame so that when the drum is struck or shaken the rings vibrate against the drumhead producing a very loud, sizzling sound. The drum has three sounds, two produced by the right hand, called *Dum* (low/center) and *Tak* (high/edge), and one by the left hand, called *Ka* (high/edge). The *Dum* and *Tak* are played at the 3 o'clock position when looking at the back of the drum and the *Ka* is played at 6 o'clock.

**Directions.** Make your own *daf* from a pizza box or simply play on the cover of book. If you want to make an actual frame drum you will need a two-inch deep by nine-inch diameter cardboard hoop. Pull wrapping tape around the outside of the hoop, then tape across the hoop all going in one direction. Add a second layer of tape on top of the first layer at 90 degrees, pulling the tape as tight as possible. When done, wrap one final piece of tape around the hoop to secure the taped drumhead. The tape easily breaks by popping it like a balloon with a pencil.

**Play and Compose Daf Rhythms.** There are many traditional rhythms for the *daf* in several different counts, for example, 8, 10, 12, and 14 (see the box notation on the reverse side). Hold the drum so that the *daf*'s drumhead faces away from you, balance the drum on your left hand, with the thumb holding the drum's frame securely. Play the rhythm shown on the upper line then compose your own variation by adding a “D” for *Dum*, “T” for *Tak* or “K” for *Ka* on the lower line.
1. Daem Rhythm - 8 counts (4+4)

Count 1 2 3 4 5 6 7 8

```
| D | T | D | T | K |
```

2. Haddadi Rhythm - 8 counts (4+4)

Count 1 2 3 4 5 6 7 8

```
| D | D | K | T | T |
```

3. HayAllahAllah Rhythm - 10 counts (3+2+2+3)

Count 1 2 3 4 5 6 7 8 9 10

```
| D | K | T | D | T |
```

4. Maddahi Rhythm - 12 counts (4+4+4)

Count 1 2 3 4 5 6 7 8 9 10 11 12

```
| D | D | T | K | D | T |
```

5. Garyan Rhythm - 14 counts (3+2+2+3+2+2 or 7+7)

```
| D | K | D | T | T | D | T |
```
Roots of Rhythm: Volume II Companion CD
Notes for Listen and Play Along Musical Examples

Please note: The CD Notes should be used to support the Listen & Play Along section in the related chapters of the Roots of Rhythm: Volume II Guide. Notation for recorded music on most of the play-along CD tracks can be found in the Resources section of the related chapters and can be read by students as they listen to and play along with the music.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Music and Description</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pandeiro</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listening 1:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Pandeiro solo from Brazil</td>
<td>&quot;Dance with Tambourines&quot; presents a solo pandeiro performer playing the samba rhythm from slow to fast (from a CD titled Songs and Dances of Brazil on Smithsonian Folkways, FW 6953, track 11)</td>
<td>1:06</td>
</tr>
<tr>
<td>2. Pandeiro in capoeira ensemble from Brazil</td>
<td>&quot;Capoeira in San Francisco&quot; is an example of capoeira, master teacher Mestre Acordeon and students, and the pandeiro (from a CD titled The Music of Capoeira—Mestre Acordeon on Smithsonian Folkways, FE 4332, track 5)</td>
<td>1:33</td>
</tr>
<tr>
<td>3. Pandeiro with samba ensemble from Brazil</td>
<td>&quot;Choro: A Tempo de Samba – instrumental&quot; demonstrates a samba ensemble with pandeiro (from a CD titled Songs and Dances of Brazil on Smithsonian Folkways, FW 6953, track 15)</td>
<td>1:16</td>
</tr>
<tr>
<td>4. &quot;Pandeiro in 12/8&quot; recorded for RORE by Chalo Eduardo 2005</td>
<td></td>
<td>1:21</td>
</tr>
<tr>
<td>5. &quot;Partido Alto Pandeiro&quot; recorded for RORE by Chalo Eduardo 2005</td>
<td></td>
<td>1:04</td>
</tr>
<tr>
<td>6. &quot;Capoeira Pandeiro&quot; recorded for RORE by Chalo Eduardo 2005</td>
<td></td>
<td>1:54</td>
</tr>
</tbody>
</table>

Play Along 2:

8. Capoeira – Right hand only.                                                     0:27
9. Capoeira – With left hand shake.                                                0:30
10. Samba – Right hand only.                                                        0:26
11. Samba – With left hand damp.                                                    0:26
12. Samba – Right hand slap.                                                        0:25
13. Samba – With left hand shake.                                                   0:26
14. Six beat Rudiment.                                                              0:23

Pandeiro Total Time 11:37

---

1 All musical examples are used with permission from the issuing authority or artist.
2 “Play Along” tracks of pandeiro, snare drum, and tracks 38-45 of steel drums were recorded by Dr. Craig Woodson. "Play Along" tracks of tabla were played by Abhiman Kaushal, and steel drum tracks 35 was played by Story Rhinehart and tracks 34, 36, 37 were by Kelvin Cadiz. Track 45 is a mix of tracks 34-43. Tommy Wiggins was the recording engineer.
2. Snare Drum

Listen:
15. Snare drum from Switzerland
"Prim," is an example of the classical snare drum, first with snare effect off and then on (from a CD titled *Drumming* by Evelyn Glennie, on Catalyst 09026-68195-2, BMG Classics Music, 1996, and © 2001 World copyright by Editions BIM, Switzerland (www.editions-bim.com), used with permission)………………1:33

16. Snare drum from Switzerland
"007" is an example of military drumming in a drum and bugle corps with a full percussion section including melodic percussion (from a CD titled *The Cavaliers – The Championship Years* by Jeff Fiedler, director, Bret Kuhn, percussion composer on Champion CD, 2004 (www.cavaliers.org) track 6)…………….…….1:38

17. Snare drum from Switzerland
"Thank You Mr. Williams" by Steve Smith, is an example of the snare drum used in a jazz drum set, this piece in remembrance of Tony Williams' drumming (from a DVD titled *Drumset Technique/History of the U.S. Beat* by Steve Smith, courtesy of and copyrighted by Hudson Music)…………………………...………….1:53

Play Along:
18. Single stroke roll - Slow to fast to slow .................................................................0:27
19. Double stroke roll – Slow to fast to slow .........................................................0:29
20. Buzz roll – slow to fast to slow........................................................................0:27
21. Single paradiddle..................................................................................................0:25
22. Flam – in four counts .........................................................................................0:27
23. Drag – in six counts ..............................................................................................0:27
24. Tap flam – in four counts ..................................................................................0:27
25. Pataflafla – in eight counts .................................................................................0:33
26. Swiss Army Triplets – in six counts ..................................................................0:28
27. Dragadiddle .........................................................................................................0:27
28. Cadence – in four counts....................................................................................0:32
29. Cadence – in six counts......................................................................................0:54

Snare Drum Total Time 11:08

3. Steel Drums

Listen:
30. Tamboo Bamboo from Trinidad
"Calypso Tent: Bamboo Tamboo Session" represents the use of bamboo tubes as percussion instruments in Carnival before steel drums were invented (from a CD titled *Calypso Lore and Legend – Afternoon with Patrick Jones* on Smithsonian Folkways SF C5016, track 6)……………………........................................1:32

31. Steel drum music from Trinidad
"Top Cat Mambo" is a combination of Calypso and mambo rhythms played by a steel drum band (from a CD titled *Sounds of Our Times – The Champion Steelbands of Trinidad* on Smithsonian Folkways Cook: C-106, track 8).………………1:33
32. Steel drum music from Trinidad

"Love is a Many Splendored Thing" represents an American pop tune from the 1950's when steel drum music was becoming well known internationally (from a CD titled Sounds of Our Times - Champion Steel Bands of Trinidad on Smithsonian Folkways Cook: C-106, track 4)…………………………………….. 1:33

33. Steel drum music from Trinidad

"High Mas" by David Rudder, a contemporary calypso composer (from a CD titled Panic - Inside Out on a self-produced album, track 12)…………………………………….. 2:03

Play Along:
34. Tenor – 1-4…………………………………………………………………….……0:26
35. Double Tenor – 1-4………………………………………………………………… 0:26
36. Cello – 1-4…………………………………………………………………….…… 0:26
37. Bass – 1-4…………………………………………………………………….…… 0:25
38. Bell #2 - angle iron ………………………………………………………… 0:27
39. Bell #1 - cowbell…………………………………………………………………… 0:27
40. Cymbal (bell)…………………………………………………………………… 0:27
41. Hi-hat………………………………………………………………………………. 0:25
42. Snare drum…………………………………………………………………………. 0:26
43. Bass drum………………………………………………………………………… 0:25
44. Engine room ensemble…………………………………………………………...… 0:21
45. Steel drum ensemble ………………………………………………………………2:01

Steel Drums Total Time 11:43

4. Tabla

Listen:
Tabla from India
Abhiman Kaushal demonstrates five basic tabla rhythms and variations on those rhythms, the same rhythms presented in the exercises except here played with improvisations (recorded live at UCLA, performed by Abhiman Kaushal and recorded on June 29, 2005 by David Martinelli)

46. “Tal Tintal”………………………………………………………………………………1:10
47. "Tal Jhaptal"…………………………………………………………………………. 0:57
48. "Tal Dadra" …………………………………………………………………………. 0:38
49. "Tal Dipchandi”……………………………………………………………………….1:01
50. "Tal Rupak”………………………………………………………………………… 0:48
51.Tabla from India

"Lesson Forty-Two - Rela" represents the three speeds of a tabla rhythm, slow, medium and fast (from a CD titled "Forty-Two Lessons onTabla" with Ustad Keramatullah Kahn playing tabla, on Smithsonian Folkways FM 8369, track 6)….1:08

52.Tabla Tarang andTabla from India

“Raag Deen Todi” provides the sound of the tabla tarang melodic set of tablas which are joined by tabla near the end of the track (from a CD titledTabla Tarang – Melody on Drums, with Pandit Kamalesh Maitra – tabla tarang and Trilok Gurtu – tabla, on Smithsonian Folkways, SF40436 track 7)………………..1:33
Play Along:
53. *Tabla* sounds – here on Tracks 53-58 (recorded at UCLA for RORE, performed
by Abhiman Kaushal on June 29, 2005 by David Martinelli)

"Taa, Tin, Ge, Dhaa, Dhin" .................................................................0:36
54. "Tal Tintal " .................................................................0:40
55. "Tal Jhaptal" .................................................................0:28
56. "Tal Dadra" .................................................................0:20
57. "Tal Dipchandi" .............................................................0:35
58. "Tal Rupak" .................................................................0:23

*Tabla* Total Time 10:17

5. Turntable

Listen:
59. Turntable from the United States
"Soul City" is a turntable break in a rap music, (from a CD titled *Ace Boogie*, on
NuClassic Entertainment, track 8) ....................................................1:47
60. Turntable from the United States
"Understand Me Now" is a turntable break in a rap music, (from a CD titled *Ace
Boogie*, on NuClassic Entertainment, track 14) .................................1:10
61. Turntable from the United States
"Like That Girl" is an example of turntable breaks in contemporary popular music
(from a CD titled *House of Fatty Koo*, on Sony BMG Music Entertainment CK
91256, 2005 track 5) ........................................................................1:33
Three examples of music used in learning how to play the turntable (from a CD
titled *Turntable Technique – The Art of the DJ* by Stephen Webber, distributed
by Numark and Hal Leonard, 2004 tracks 1-3)
62. "One!" .................................................................................0:32
63. "Techno Miles" ......................................................................0:32
64. "Savage Skratch Substance" .....................................................0:32

Play Along:
65. "Basic scratch" .....................................................................0:13
66. "Basic scratch with syncopation" .............................................0:13
67. "Fills" .................................................................................0:12
68. "Fader work out" ....................................................................0:12
69. "Stab" ..................................................................................0:12
70. "Scratching with continuous eighth notes" ..............................0:12
71. "Scratching with continuous eighth notes – drag" .....................0:12
72. "Scratching with continuous eighth notes – transformer" ..........0:12
73. "Crab" ..................................................................................0:09

*Turntables* Total Time 7:53

Total CD Time 53:12
Contact information for musical examples:

<table>
<thead>
<tr>
<th>Name</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ace Boogie</strong>, for musical examples of the turntable</td>
<td>Website: <a href="http://www.aceboogie.com">www.aceboogie.com</a></td>
</tr>
<tr>
<td><strong>Chalo Eduardo</strong>, for musical examples of the <em>Pandeiro</em></td>
<td>Email: <a href="mailto:ceduardo@remo.com">ceduardo@remo.com</a></td>
</tr>
<tr>
<td><strong>Fatty Koo</strong>, for a musical example of the turntable</td>
<td>Website: <a href="http://www.fattykoo.com">www.fattykoo.com</a></td>
</tr>
<tr>
<td><strong>Jeff Fiedler</strong>, for a musical example of the snare drum</td>
<td>Website: <a href="http://www.cavaliers.org">www.cavaliers.org</a></td>
</tr>
<tr>
<td><strong>Evelyn Glennie</strong>, for a musical example of the snare drum</td>
<td>Website: <a href="http://www.evelyn.co.uk">www.evelyn.co.uk</a></td>
</tr>
<tr>
<td><strong>Abhiman Kaushal</strong>, for musical examples of the <em>tabla</em></td>
<td>Email: <a href="mailto:abhimank@arts.ucla.edu">abhimank@arts.ucla.edu</a></td>
</tr>
<tr>
<td><strong>Steve Smith</strong>, for a musical example of the snare drum</td>
<td>Website: <a href="http://www.vitalinformation.com">www.vitalinformation.com</a></td>
</tr>
</tbody>
</table>
| **Smithsonian Folkways**, for musical examples of the *pandeiro*, steel drums, *tabla* | Studies  
Smithsonian/Folkways Records  
Center for Folklife Programs and Cultural Studies  
955 L’Enfant Plaza, Suite 2600,  
Smithsonian Institution  
Washington DC 2056 |
| **UCLA Ethnomusicology Archive**, for assistance with musical examples of the *tabla* by Abhiman Kaushal. | Ethnomusicology Archive  
P.O. Box 951616  
University of California  
310-825-1695 |
| **Stephen Webber**, for musical examples of the turntables | Email: swebber@berklee.edu |
| **Tommy Wiggins**, CD recording engineer. | Email: thestudioguy@adelphia.net |
| **Dr. Craig Woodson**, for musical examples of the *pandeiro*, snare drum, and steel drums | Email: woodsons@adelphia.net  
Website: www.craigwoodson.net |
Roots of Rhythm: Volume II
THE DAF IN IRAQ

Notes for Listening and Play-Along Musical Examples

Please note: These Notes should be used to support the Listen & Play Along section in this Roots of Rhythm: Volume II. Notation for the recorded music on the play-along tracks can be found in the Resources section of this guide and can be read by students as they listen to and play along with the music.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Music and Description</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Special Edition. Daf</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. <em>Daf</em> and song from Kurdish Iraq</td>
<td>“Qazele Nali” is sung by a male singer who is playing the <em>daf</em>. (from a CD titled <em>Kurdish Folk Music from Western Iran</em>, recorded by Dieter and Nerthus Christensen, originally issued in 1966 by Folkways Records, reissued on Smithsonian Folkways FE 4103, track #6)</td>
<td>1:30</td>
</tr>
<tr>
<td>2. Oud with dumbeck song from Kurdish Iraq</td>
<td>“Taqsīm Maqām Kurd” is performed by Rahim Alhaj, oud and Souhail Kaspar, dumbeck. It begins with <em>Taqsīm Maqām Kurd</em> and ends with the rhythmic mode called <em>Jurgānā</em>, then the <em>oud</em> joins and plays the Iraqi song &quot;Oh, My Heart, Be Sick and Melt Away&quot; (from Smithsonian Folkways SFW CD 40533, track #4)</td>
<td>1:30</td>
</tr>
<tr>
<td>3. <em>Daf</em> with ney, end blown flute, and <em>balaban</em>, cylindrical double reed</td>
<td>&quot;Kenîşke Kalekem” is played by Biryar Hikmet with a Kurdish ensemble from Erbil in northeastern Iraq recorded during a cultural festival in the area, showing how the <em>daf</em> is used to accompany in a traditional Kurdish ensemble (from Dengê Hewraman - Dilsoz Kemneyi by Kurdish Heritage Institute, Sulemany City, Iraq, track #6)</td>
<td>1:30</td>
</tr>
<tr>
<td>4. <em>Daf</em> solo</td>
<td>“Fire Temples of Love”, played by Houman Pourmehdi, is an improvisation comprised of two parts to express rhythm and meter and, at the same time, create an entirely new work for <em>daf</em> based on tradition. (from Lian Records Disc 1, track #3)</td>
<td>1:30</td>
</tr>
<tr>
<td>5. <em>Daf</em> with singers</td>
<td>“Ecstasy (Sufi’s Remembrance Zekr)” is played by Houman Pourmehdi. <em>HayAllah</em> is a standard form of Zekr (remembrance) in the Ghaderi Sufi houses in Iran, to stress the states of trance. (from Lian Records Disc 1, track #4)</td>
<td>1:30</td>
</tr>
<tr>
<td>6. <em>Daf</em></td>
<td>“The Song of Unity” (Poem by Rumi), played by Houman Pourmehdi, is a composition for <em>daf</em> and voice based on the rhythms and melodies heard in the Sufi houses in Iran. This work includes various rhythmical figures found in the Ghaderi Sufi order ceremonies, as well as poem by Rumi. (from Lian Records Disc 1, track #7)</td>
<td>1:30</td>
</tr>
</tbody>
</table>

1 All musical examples in the “Listen” section are used with permission from the issuing authority.
Play Along:
7. Daem/Daim (Tracks 7-11) ................................................................. 1:40
8. Haddadi/Hadaadi (Tracks 11-14) ................................................................. 1:42
9. HayAllah/Hey Allah Tracks (15-18) ................................................................. 1:45
10. Hal Gertan/Hel Gortan (Tracks 19-22) ............................................................ 2:31
11. Zekr-e-Dovvom/Zekr Dovom (Tracks 23-26) ...................................................... 2:40
12. HayAllah/Hey Allah, Allah (Tracks 27-30) ......................................................... 1:47
13. Maddahi/Madahi Noey Aval (Tracks 31-34) ....................................................... 2:16
14. Maddahi/Madahi Noey Degar (Tracks 35-38) ...................................................... 1:42
15. Saghghezi/Seh Guzi #1 (Tracks 39-42) ............................................................. 2:13
16. Garyan/Geryaan (Tracks 43-46) ................................................................. 2:10
17. Daf composition (Track 47) ........................................................................... 1:06

Daf Total Time 30:32

Contact information for musical examples:

Smithsonian Folkways, for musical examples on tracks 1 and 2. Smithsonian/Folkways

Houman Pourmehdi, for musical examples on tracks 3, 4, 5.  P.O. Box 25481, LA, CA 90025
Phone (310) 699-0455 Website: www.lianrecords.com.

Biryar Hikmet, for musical example on track 6 on his CD. Biryar@hotmail.com.

Craig Woodson, for play-along tracks 7-47.
Phone: 440-725-8767

2 All “Play-Along” examples were recorded by Dr. Craig Woodson with Tommy Wiggins, recording engineer.
References

Introduction

The research for the *Roots of Rhythm: Volume II* was based on references that included books, articles, websites, DVD’s, CD’s, and personal interviews. This list is not intended to be a comprehensive bibliography, but instead a practical mix of sources. The project was also based, in part, on the experience of the author in the field of world percussion for over forty years. Some works were out of print and in the author’s library, while other references were common in the fifth and sixth grade school library. Websites were used when considered authoritative or otherwise important for the project. Those sites with photographs, maps, art, musical notation, and/or sound samples are noted at the end of the address, otherwise the address only has descriptive information. For some instruments, sounds can be heard either as sound samples online or in some cases, on CD’s or DVD’s available in stores, online and/or purchased directly from individual performer(s) or groups. There were several interviews and contacts with experts in the field that were extremely helpful and I wish to extend my gratitude for their kind assistance.

Books and Articles


Websites by Instrument

Pandeiro:
http://www.answers.com/topic/pandeiro
http://www.brazilbrazil.com/historia.html
http://www.braziltourism.org/music.shtml
http://www.maria-brazil.org/mpb3.htm
Snare Drum:
http://www.dci.org
http://www.en.wikipedia.org/wiki/Fife_(musical_instrument)
http://www.mathcs.duq.edu/~iben/snare.htm
http://www.rudi-pad.com/drum_links.html

Steel Drums:
http://www.en.wikipedia.org/wiki/
http://www.en.wikipedia.org/wiki/Calypso_music
http://www.en.wikipedia.org/wiki/Trinidad_and_Tobago
http://www.hotpans.se/pan/tuning/
http://www.mannettesteeldrums.com/
http://www.musikmuseet.se/pan/tuning/
http://www.pantrinbago.com and www.seetobago.com,
http://www.panyard.com/
http://www.trinidad-tobago.net/
http://www.wikimirror.com/Trinidad_and_Tobago

Tabla:
http://www.chandrakantha.com
http://www.drumdojo.com/world/india/tablatals.htm

Turntables:
http://www.b-boys.com/hiphoptimeline
http://www.hip-hop.com
http://www.inventors.about.com
http://www.turntablelab.com
http://www.turntablism.com
http://www.skratchpiklz.com

Additional Resources

http://www.cia.gov/cia/publications/factbook
http://www.worldflags101.com

Interviews and Contacts

Eduardo, Chalo. Pandeiro performer, drum maker, teacher and writer. Los Angeles, California.
Kaushal, Abhiman. Tabla performer and teacher. Los Angeles, California.
Fiedler, Jeff - Snare Drum, teacher, director of Cavaliers Drum and Bugle Corps. Rosemont, Illinois
Van Lear, Robin - Steel Drum, manager of PANIC Steel Drum Ensemble. Cleveland, Ohio.
References

Introduction

The research for the Daf chapter for Roots of Rhythm was based on references that included books, articles, websites, DVD’s, CD’s and personal interviews. This list is not intended to be a comprehensive bibliography, but instead a practical mix of sources. The project was also based, in part, on the experience of the author in the field; specifically during a trip to Sulaymānīyah, Iraq in October 2008 when considerable information was available, including lessons and instruments.

Some of the works listed are out of print and in the author’s library, while other references are common in the fifth and sixth grade school library. Websites are listed below when considered authoritative or otherwise important for the project. Those sites with photographs, maps, art, musical notation, and/or sound samples are noted at the end of the address, otherwise the address only has descriptive information.

Some recordings were obtained in Iraq and are difficult to get in the United States but may now be viewed on YouTube and other websites. Commercial recordings are available but sounds of those instruments can also be heard either as sound samples online or in some cases on CD’s or DVD’s available in stores, online and/or purchased directly from individual performer(s) or groups. There were several interviews and contacts with experts in the field that were extremely helpful and the author wishes to extend his gratitude for their kind assistance, as listed below.

Books and Articles


Roots of Rhythm: Volume II
THE DAF IN IRAQ


Websites by Category

[DAF]

[DAF performances]
http://www.youtube.com/watch?v=1-Fcr45la50&feature=related - daf duet by Lulian Ensemble
http://www.youtube.com/watch?v=yOqlIrTZYENw - solo daf by Keivan Alimohamadi
http://www.youtube.com/watch?v=f01JZqCTtNM&feature=related - female daf ensemble
http://www.youtube.com/watch?v=CzGqsL9hYW&feature=related - Daf lesson 2 of many

[Flag]

[Iraq]
http://www.infoplease.com/ipa/A0107644.html
http://www.nationmaster.com/country/IZ-iraq
http://www.nationmaster.com/index.php

[Kurds and Jews]
http://www.freerepublic.com/focus/f-news/1626606/posts

[Kurdish Area]

[Kurdish Music]
http://www.nationmaster.com/encyclopedia/Kurdish-music - Kurdish music
http://nasehpour.tripod.com/peyman/id97.html - extensive site on daf.
http://www.kamkars.net - on Kurdish music by master musician H. Kamkar
http://wapedia.mobi/en/Kurdish_music - on Kurdish music
THE DAF IN IRAQ

Sufi
http://www.uga.edu/islam/Sufism.html - paper by Dr. Alan Godlas
http://www.iranyellowpages.net/en/about_iran/Culture/other/sufism.shtm
http://www.mapsofworld.com/iran/culture/sufi-music-iran.html
http://www.uga.edu/islam/Sufism.html

Interviews and Contacts

Belli, Remo, founder and CEO, Remo, Inc. Los Angeles, California.
Hikmet, Bryar, Iraqi percussionist. Sulaymānīyah, Iraq.
Nasepour, Peyman. Iranian musician. Iran
Pourmehdi, Houman. Iranian musician. Los Angeles, California.
Sabar, Ariel, author and journalist. Washington, DC.
Stevens, Christine, author and music therapist. Los Angeles, California.
Witter, Melinda, conflict-mediation specialist. Sulaymānīyah, Iraq

Roots of Rhythm author Dr. Craig Woodson
leading a drum circle at Darband-i Khan, Iraq youth center.

Photo by: Constantine Alatzas
Chapter 11. The Pandeiro
Ideas for decorating the Pandeiro:

- Map of Brazil
- Hand on drumhead
- Musical notes
- Festival ribbons/confetti
- The word "capoeira"
- Flag of Brazil
- The word "samba"
- The word "pandeiro"
- The word "Carnival"

Chapter 12. The Snare Drum
1. With wire snares that vibrate against the drumhead
2. Wood frame, brass frame, plastic drumheads, calfskin drumheads, catgut snares, coiled wire snares

Crossword:

1. Across - sticks
2. Down - signals
3. Switzerland
4. Turkish
5. Across - snares
6. rudiment
7. tabor
8. coiled

Notes
Each of the five types of RoR Funsheets have one or more descriptive paragraphs based on chapters in the teacher's guide. Each two-page Funsheet might include maps, photographs, or diagrams. They can be used as stand-along projects or used after a review of the chapter. There are five types of Funsheets as follows:

- Decorate Your Instrument – These are short art projects that students complete with pencils and markers (adufe and kakko).
- Make and Play Your Instrument – Using simple materials the student makes a simple musical instrument and then compose rhythms to perform (bongos and sâjât).
- Find Facts and Opinions – After reading the paragraph, students determine which statements are based on facts or opinions (buhai and naqqâra).
- Fill It In – Students fill in statements and complete a crossword puzzle based on the material provided (djembé and ranât êk).
- Compare and Contrast – Using a Venn diagram, student compare two instruments as to similarities and differences (dondo and Lakota Drum).
Chapter 13. The Steel Drum
1. Fact
2. Fact
3. Opinion
4. Opinion
5. Opinion
6. Fact
7. Fact
8. Opinion
9. Opinion
10. Fact

Chapter 14. The Tabla
Tabla vs. Dondo
Tabla differences
1. Set of two drums
2. Kettledrums
3. One head on two drums
4. Plays with non-drums
5. Played with fingers
6. Push head = pitch change
7. Flag has a circle
8. Large population

Similarities
1. Can change pitch
2. Pitch change is quick
3. Cords tighten heads
4. Imitates speech
5. Accompanies dancing
6. Accompanies singing
7. Flag has three stripes
8. Was British colony

Dondo differences
1. One drum
2. Hourglass shaped body
3. Two drumheads, one drum
4. Plays with many drummers
5. Played with a stick
6. Squeeze cords = pitch change
7. Flag has a star
8. Medium population

Chapter 15. The Turntable
For example,
1.
2.
3.
4.
5.
6.
## Roots of Rhythm Workshop Evaluation Form

Please take a few moments to help us improve the Roots of Rhythm program by filling out and returning this evaluation form.

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### What sections of the Roots of Rhythm did you use?
- [ ] Introduction
- [ ] Lessons
- [ ] CD
- [ ] CD Notes
- [ ] References
- [ ] Notation Paper
- [ ] Student Funsheets

### Which lesson(s) did you use?
- [ ] Adufe (Portugal)
- [ ] Dondo (Ghana)
- [ ] Ranāt ēk (Thailand)
- [ ] Tabla (India)
- [ ] Bongos (Cuba)
- [ ] Kakko (Japan)
- [ ] Sājāt (Egypt)
- [ ] Turntable (U.S.)
- [ ] Lakota Drum (Americas)
- [ ] Naqqāra (Turkey)
- [ ] Snare Drum (Switzerland)
- [ ] Steel Drum (Trinidad & Tobago)
- [ ] Djembé (Guinea)
- [ ] Pandeiro (Brazil)

### Did you use the “Listen and Play Along” sections of the lessons and the related musical examples?
- [ ] Listen and Play Along
- [ ] Companion CD
- [ ] Online Musical Examples

### Did you reproduce the “Resources” section of the lessons as student handouts?
- [ ] yes
- [ ] no

### Did you reproduce the “Student Activity” pages as student handouts?
- [ ] yes
- [ ] no

### Did you follow the instructions in the lessons to make your own instruments?
- [ ] yes
- [ ] no

### Did you use or purchase commercially available percussion instruments?
- [ ] yes
- [ ] no

### Was the Roots of Rhythm material easy to use?
- [ ] yes
- [ ] no

### Was the content appropriate for 5th and 6th grades?
- [ ] yes
- [ ] no

### Was the content adaptable for other grade levels?
- [ ] yes
- [ ] no

If yes, please explain: ____________________________________________________________

### Did you use the Guide to integrate arts education into other subjects?
- [ ] yes
- [ ] no

If yes, please explain: ____________________________________________________________

(continued...)
Do you feel that this program has increased your students’ interest in music?  ○ yes  ○ no
Do you feel that this program has increased your students’ interest in drumming?  ○ yes  ○ no
Would you recommend this resource to other teachers?  ○ yes  ○ no
Would you be interested in attending a *Roots of Rhythm* workshop?  ○ yes  ○ no
What is the name of your local music dealer? _______________________________________________________

How could the *Roots of Rhythm* program and resource materials be expanded or improved?
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________

Please feel free to provide any additional comments you may have.
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________

*please return this form to:*
Dr. Craig Woodson
c/o The Percussion Marketing Council
PO Box 33252, Cleveland, OH 44133
phone: 440-725-8767 or email: kbdustman@aol.com

*Roots of Rhythm* and *Roots of Rhythm: Extensions* are produced and presented by:
The Percussion Marketing Council (PMC), The International House of Blues Foundation (IHOBF) and the International Music Products Association (NAMM)

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# Roots of Rhythm

TUBS Notation for Six and Eight Counts and Free Rhythm

## Six Counts

### One Part

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### Two Parts

|   |   |   |   |   |   | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

### Three Parts

|   |   |   |   |   |   | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

### Four Parts

|   |   |   |   |   |   | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

## Eight Counts

### One Part

|   |   |   |   |   |   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

### Two Parts

|   |   |   |   |   |   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

### Three Parts

|   |   |   |   |   |   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

### Four Parts

|   |   |   |   |   |   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

## Free Rhythm

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