Dear Teachers,

Thank you for joining us for the Applause Series presentation of World of Rhythm, from the multinational drumming ensemble Drums United. With drummers representing seven different countries and their music traditions, Drums United is an explosive live band that not only gives the audience an opportunity to listen and watch leading percussion players, but also imparts the underlying message that people from widely varying nationalities can work well together.

We thank you for sharing this special experience with your students and hope that this study guide helps you connect the performance to your in-classroom curriculum in ways that you find valuable. In the following pages, you will find contextual information about the performance and related subjects, as well as a variety of discussion questions and activities. Some pages are appropriate to reproduce for your students; others are designed more specifically with you, their teacher, in mind. As such, we hope that you are able to “pick and choose” material and ideas from the study guide to meet your class’s unique needs.

See you at the theater,

Des Moines Performing Arts Education Team

GUIDE CONTENTS

About Des Moines Performing Arts
Page 3

Going to the Theater and Theater Etiquette
Page 4

Civic Center Field Trip Information for Teachers
Page 5

Vocabulary
Page 6

About the Performance
Page 7

The Instruments
Page 8

History of Drums and Percussion
Page 9

Drummers from Around the World
Pages 10-11

Pre-Show Exploration
Pages 12-13

Post-Show Assessment and Discussion
Page 14

Resources and Sources
Page 15

Support for Des Moines Performing Arts education programs and the Applause Series is provided by:


This study guide was compiled and written by Karoline Myers and edited by Michelle McDonald. Adapted in part from materials by the Ordway Center for Performing Arts.
Des Moines Performing Arts is a private, nonprofit organization and is an important part of central Iowa’s cultural community. It is recognized nationally for excellence as a performing arts center and is committed to engaging the Midwest in world-class entertainment, education, and cultural activities.

Des Moines Performing Arts presents professional touring productions, including theater direct from Broadway, world-renowned dance companies, family programming, comedy, and concerts.

Education and Community Engagement programs are core to Des Moines Performing Arts’ mission as a nonprofit performing arts center.

Public education programs allow audience members and local artists to make meaningful and personal connections to the art they experience on our stages. Guest lectures and Q&As with company members allow audiences to explore the inner workings of the performance. In addition, master classes, workshops, and summer camps taught by visiting performers give local actors, dancers, and musicians the chance to increase their skills by working directly with those who know what it takes to succeed on the professional stage.

Through its K-12 School Programs, Des Moines Performing Arts strives to ensure that central Iowa students have affordable access to high quality arts experiences as part of their education. More than 46,000 students and educators attend curriculum-connected school matinee performances through the Applause Series annually. In addition, Des Moines Performing Arts sends teaching artists into the schools to provide hands-on workshops and residencies in special opportunities that engage students directly in the creative process. And, through its partnership with the John F. Kennedy Center, Des Moines Performing Arts provides teachers with in-depth professional development training on how to use the arts in their classrooms to better impact student learning.

DID YOU KNOW?

More than 350,000 people visit Des Moines Performing Arts venues each year.

Des Moines Performing Arts opened in 1979.

Des Moines Performing Arts has three theater spaces:

- Civic Center, 2744 seats
- Stoner Theater, 200 seats
- Temple Theater, 299 seats (located in the Temple for the Performing Arts)

No seat is more than 155 feet from center stage in the Civic Center.

Nollen Plaza, situated just west of the Civic Center, is a park and amphitheater that is also part of Des Moines Performing Arts. The space features the Crusoe Umbrella sculpture by artist Claes Oldenburg.

As a nonprofit organization, Des Moines Performing Arts depends on donor funding to support facilities, programming, and education programs.

The Applause Series started in 1996. You are joining us for our 17th season of school performances.
GOING TO THE THEATER . . .

YOUR ROLE AS AN AUDIENCE MEMBER

Attending a live performance is a unique and exciting opportunity. Unlike the passive experience of watching a movie, audience members play an important role in every live performance. As they act, sing, dance, or play instruments, the performers on stage are very aware of the audience’s mood and level of engagement. Each performance calls for a different response from audience members. Lively bands, musicians, and dancers may desire the audience to focus silently on the stage and applaud only during natural breaks in the performance. Audience members can often take cues from performers on how to respond to the performance appropriately. For example, performers will often pause or bow for applause at a specific time.

As you experience the performance, consider the following questions:

* What kind of live performance is this (a play, a dance, a concert, etc.)?
* What is the mood of the performance? Is the subject matter serious or lighthearted?
* What is the mood of the performers? Are they happy and smiling or somber and reserved?
* Are the performers encouraging the audience to clap to the music or move to the beat?
* Are there natural breaks in the performance where applause seems appropriate?

A SPECIAL EXPERIENCE

Seeing a live performance is a very special experience. Although it is not required, many people enjoy dressing up when they attend the theater.

THEATER ETIQUETTE

Here is a checklist of general guidelines to follow when you visit the Civic Center:

* Leave all food, drinks, and chewing gum at school or on the bus.
* Cameras, recording devices, and personal listening devices are not permitted in the theater.
* Turn off and put away all cell phones, pagers, and other electronic devices before the performance begins.
* Do not text during the performance.
* Respect the theater. Remember to keep your feet off of the seats and avoid bouncing up and down.
* When the house lights dim, the performance is about to begin. Please stop talking at this time.
* **Talk before and after the performance only.** Remember, the theater is designed to amplify sound. Other audience members and the performers on stage can hear your voice!
* Use the restroom before the performance or wait until the end. If you must leave the theater during the show, make sure the first set of doors closes before you open the second — this will keep unwanted light from spilling into the theater.
* Appropriate responses such as laughing and applauding are appreciated. Pay attention to the artists on stage — they will let you know what is appropriate.
* Open your eyes, ears, mind, and heart to the entire experience. Enjoy yourself!

GOING TO THE THEATER information is adapted from the Ordway Center for the Performing Arts study guide materials.
Thank you for choosing the Applause Series with Des Moines Performing Arts. Below are tips for organizing a safe and successful field trip to the Civic Center.

**ORGANIZING YOUR FIELD TRIP**

* Please include all students, teachers, and chaperones in your ticket request.
* After you submit your ticket request, you will receive a confirmation e-mail within five business days. Your invoice will be attached to the confirmation e-mail.
* Payment policies and options are located at the top of the invoice. Payment (or a purchase order) for your reservation is due four weeks prior to the date of the performance.
* The Civic Center reserves the right to cancel unpaid reservations after the payment due date.
* Tickets are not printed for Applause Series shows. Your invoice will serve as the reservation confirmation for your group order.
* Schedule buses to arrive in downtown Des Moines at least 30 minutes prior to the start of the performance. This will allow time to park, walk to the Civic Center, and be seated in the theater.
* Performances are approximately 60 minutes unless otherwise noted on the website and printed materials.
* All school groups with reservations to the show will receive an e-mail notification when the study guide is posted. Please note that study guides are only printed and mailed upon request.

**ARRIVAL TO THE CIVIC CENTER**

* When arriving at the Civic Center, please have an adult lead your group for identification and check-in purposes. You may enter the building though the East or West lobbies; a Civic Center staff member may be stationed outside the building to direct you.
* Civic Center staff will usher groups into the building as quickly as possible. Once inside, you will be directed to the check-in area.
* Applause seating is not ticketed. Ushers will escort groups to their seats; various seating factors including group size, grade levels, arrival time, and special needs seating requests may be used to assign a group’s specific location in the hall.
* We request that an adult lead the group into the theater and other adults position themselves throughout the group; we request this arrangement for supervision purposes, especially in the event that a group must be seated in multiple rows.
* Please allow ushers to seat your entire group before rearranging seat locations and taking groups to the restroom.
* As a reminder, children under the age of three are not permitted in the theater for Applause performances.

**DIRECTIONS AND PARKING**

* Directions: From I-235, take Exit 8A (Downtown Exits) and the ramp toward 3rd Street and 2nd Avenue. Turn onto 3rd Street and head south.
* Police officers are stationed at the corner of 3rd and Locust Streets and will direct buses to parking areas with hooded meters near the Civic Center. Groups traveling in personal vehicles are responsible for locating their own parking in ramps or metered (non-hooded) spots downtown.
* Buses will remain parked for the duration of the show. At the conclusion, bus drivers must be available to move their bus if necessary, even if their students are staying at the Civic Center to eat lunch or take a tour.
* Buses are not generally permitted to drop off or pick up students near the Civic Center. If a bus must return to school during the performance, prior arrangements must be made with the Civic Center Education staff.

**IN THE THEATER**

* In case of a medical emergency, please notify the nearest usher. A medical assistant is on duty for all Main Hall performances.
* We ask that adults handle any disruptive behavior in their groups. If the behavior persists, an usher may request your group to exit the theater.
* Following the performance groups may exit the theater and proceed to the their bus(es).
* If an item is lost at the Civic Center, please see an usher or contact us after the performance at 515.246.2355.

**QUESTIONS?**
Please contact the Education department at education@desmoinesperformingarts.org or 515.246.2355. Thank you!
VOCABULARY

bandleader: the conductor of a band, commonly used to refer to a leader of a dance band. Drums United’s bandleader is Lucas Merwijk.

dynamics: variation in volume of music or how loud or soft music is. Drums United will vary dynamics to convey different feelings with their music.

mallet: a tool used to strike drums and other percussion instruments. Drum mallets vary in size and material, depending on the sound a percussionist wishes to produce.

multicultural: referring to or the combination of many cultures. World of Rhythm is a multicultural performance.

percussionist: a musician who plays percussion instruments including: drums, bells, cymbals, etc.

rhythm: the recurrence of pattern of contrasting sounds; the organization of music in time.

rumba: a family of rhythms, song and dance that combines African and Spanish musical traditions; the name derives from the word rumbo, meaning ‘party’ or ‘spree.’

solo: a performance by just one performer. World of Rhythm will feature drum solos.

united: to join together into a whole; combine. World of Rhythm will demonstrate unity through their music.

unison: the same movement or series of movements performed at the same time by more than one performer. World of Rhythm will feature times when the drummers play in unison.

Here are some words to get you started, as you prepare to experience the performance.

A team of rowers synchronize their movements in order to row in unison. Can you think of other examples where people perform actions in unison? Image courtesy of profimedia.si.

World of Rhythm will demonstrate unity through their music.
ABOUT THE PERFORMANCE

World of Rhythm is an exciting performance from the drumming ensemble, Drums United. The performance brings together percussionists from around the world to create a multicultural music experience.

Run Time: Approx. 60 minutes

WHAT YOU WILL EXPERIENCE
The performance includes many types of drums from around the world (see drum list on page 8) as well as various musical styles and traditions. Audiences will experience top players combine African drums, hip hop, Indian tabla, Cuban rumbas and more.

“A really amazing journey through the many paths of drums, percussion, and world music. Five stars all the way!”
-Horacio Hernandez

THE MUSICIANS
The eight members of the band come from seven different countries: Bangladesh, Senegal, Spain, Germany, the Netherlands, Surinam, and Venezuela.

The musicians are:
- Lucas Van Merwijk: drums
- Nils Fischer: percussion
- Pape Thiam: talking drum
- Gianna Tam: percussion, vocals
- Mathias Holzner ‘DJ Collin Spectre”: electronics
- Aly N’Diaye Rose: percussion
- Niti Ranjan Biswas: percussion, tabla

MESSAGE OF UNITY
In World of Rhythm, the performers combine musical traditions from around the world to create a thrilling united sound. One of their goals is to show that people from different backgrounds and cultures can unite and make music.

Talk about it:
What does unity mean?

SPOTLIGHT ON:
LUCAS VAN MERWIJK
Lucas van Merwijk is the bandleader of Drums United. He has been voted best Latin drummer and best fusion drummer in the Benelux Countries (Belgium, Netherlands and Luxembourg) multiple times. He has also been the bandleader of other groups including Cubop City Big Band and Drumix.
ABOUT THE INSTRUMENTS

Djembe: The djembe (pronounced jem-bay) is made out of a carved wooden shell in the shape of a goblet. It stands about two feet high and is attached to the body of the player with a cloth strap. The player typically stands while playing the djembe. The primary notes of the djembe are bass, tone, and slap. The slap is a high and sharp sound, the tone is a fuller sound, and the bass is a low sound.

Donno (talking) drum: A drum from Africa, the talking drum is played by pulling the outer strings while the drum is beaten. This controls the pitch the drum makes to mimic the tone and rhythm of human speech. It has an hour-glass shape and uses a curved mallet.

Drum set: A drum set is a collection of drums, cymbals, and other percussion instruments. The individual instruments on the drum kit are hit by either sticks, brushes, or mallets that are held in the player’s hand.

Bongo drums: Bongos are a small portable pair of drums that are attached to each other of African descent. The drums are different sizes to produce different tones.

Box cajon: A box cajon is a wooden box that is played by a percussionist sitting on top of it. This instrument is of Peruvian origin, but there is also a Spanish version that has snares to make a different sound.

Conga drum: A conga drum is a tall drum that tapers toward the bottom and is played with both hands. Traditionally, conga drums are made of wood. Today, many conga drums are made of fiberglass.

Timbales: Timbales generally consist of two metal drum heads, referred to as the male and female due to their different sounds.

Indian tabla: a drum that comes in pairs. The dominant hand uses the small drum (dayan) and the off hand uses the larger drum (bayan).

Sabar: this west African drum is similar to the djembe in shape and is played using your hand and a stick. It is very rarely used as a solo instrument.

Adapted from Ordway Center for the Performing Arts World of Rhythm Study Guide.

Des Moines Performing Arts World of Rhythm Curriculum Guide
HISTORY OF DRUMS AND PERCUSSION

FIRST INSTRUMENT
It is thought that percussion instruments have been around since 6000 B.C. With the exception of the human voice, this means percussion instruments are considered to be the very first type of instrument ever invented.

Drums and percussion instruments have long been used worldwide, largely due to their simplicity. The first type of drumming was a series of clapping the hands and hitting the chest and knees with open hands. Various rhythms were created using this method. However, the volume one could achieve was rather limited by this method as creating higher volume was painful. To overcome this problem, drums were invented.

Early drums were made of natural materials. Hollowed out logs made the base of the drums, and animal skins covered the top. Early drums did not use drum sticks or mallets. Instead, people used their hands to play the drums.

USES FOR DRUMS
Drums were originally used as a form of communication over long distances or to send signals.

Drums have often been used by militaries in times of battle. They were also used to celebrate battle victories.

Drums were also used for entertainment and in times of celebration, such as harvest festivals.

MODERN DRUMS
Eventually, drums made the leap from being used as marching instruments to the orchestra. As music trends have changed, more percussion was needed to accompany the new music and dance styles.

Today, drum sticks and new materials are being used to produce a wider variety of percussion sounds. Musicians may incorporate a mix of drum styles from around the world, are creating new ways to tune drums, and are even incorporating new music technologies to expand percussive possibilities.
The musicians in World of Rhythm are from 7 different countries, as shaded on the map above. They are:

1. Venezuela
2. Suriname
3. Senegal
4. Spain
5. Netherlands
6. Germany
7. Bangladesh

Learn more about the countries represented in World of Rhythm.

1. VENEZUELA
Venezuela is a South American country with wide beaches and sharp mountains; a booming oil industry and a struggling working class; ages-old cultures and a yearning for modernization.

- Population: 26,749,000
- Capital: Caracas
- Language: Spanish
- Currency: Bolivar

Andes Mountains in Venezuela.
Photograph by David Evans. National Geographic.

2. SURINAME
Suriname is a South American country that is a former colony of the Netherlands. The country is known for kaseko music — a fusion of styles from Europe, Africa, and the Americas.

- Population: 447,000
- Capital: Paramaribo
- Language: Dutch (+others)
- Currency: Surinamese dollar

A waterfall in a Suriname rain forest.
Photograph by Robert Caputo/Getty Images.
3. SENEGAL
Senegal is a West African country. It is well known for its tradition of storytelling done by griots, who have kept its history alive for thousands of years through words and music.

Population: 11,658,000
Capital: Dakar
Language: French (+others)
Currency: CFA franc

A memorial in Senegal to Africans who lost their freedom due to the slave trade. Photograph by Gordon Gaahan. National Geographic.

4. SPAIN
With vibrant, historic cities and sunny beaches, Spain is a top visitor destination in Europe. Important industries include mining, shipbuilding, and textiles.

Population: 45,200,737
Capital: Madrid
Language: Spanish
Currency: Euro

Matadors in Spain are considered to be both artists and athletes. Photograph by Albert Moldvay. National Geographic.

5. NETHERLANDS
There are three times as many bicycles as cars in this European country, where city residents use bicycles for transportation. The Dutch also produce billions of tulip bulbs a year.

Population: 16,783,092
Capital: Amsterdam
Language: Dutch, Frisian
Currency: Euro

Bicycles line a canal in Amsterdam. Image courtesy of chowtimes.com.

LEARN MORE
Learn more about the countries of the World of Rhythm drummers. Find books about each country at your school or community library or research the countries online.

As you research, learn what you can about the country’s music traditions. You may see influences from the different countries during the performance.
1) MAKE YOUR OWN DRUM

Suggested for: Grades K-5

Goals:
◊ To gain an understanding of how a drum works;
◊ To learn about musical and geometric patterns;
◊ To exercise creativity in making a drum;
◊ To explore rhythms and rhythms in music.

Explanation: In this activity, students will create a drum out of common materials and use it to explore rhythm creation.

Materials:
◊ Art supplies, such as crayons, colored pencils, markers
◊ Construction Paper
◊ Cylindrical cardboard food container, such as coffee or oatmeal containers (Tip: find containers of various sizes so drums can make different sounds.)
◊ Balloons, large enough to stretch over the top of the chosen containers (2 per drum)
◊ Heavy duty rubber bands
◊ Tape or glue
◊ Scissors

Activity:

Part 1: Make Your Drum
1. Ask students to create a pattern using colors and shapes either by drawing or cutting out pieces of paper. They can make diamonds, squares, or draw pictures.
2. Ask students to cut the top and bottom of the food container out, creating an open cylinder.
3. Wrap the piece of patterned paper around the cardboard cylinder. Adhere the paper with either tape or glue.
4. Ask students to choose a balloon. Have students cut off the small end.
5. Stretch the balloon across one of the openings in the cylinder.
6. Secure with a rubber band.
7. Repeat steps 4-6 on the other side of the drum.

Part 2: Play Your Drum
1. Ask the students to experiment with the different ways to make noise with their drum. What different tools can you use on the drum? What kind of sounds can you make? What rhythmic patterns and phrases can be created with the drum?
2. After the students have experimented, ask them to split into two groups.
3. Explain to the students that they are going to be playing call and response rhythms with their drums. Ask group A to start a beat.*
4. Ask group B to respond to group A’s beat with the same beat; then ask group A to start a beat and group B to respond to it.

Follow-up Questions:
1. How can different rhythms convey different themes, moods, or ideas?
2. How can rhythm influence dance?
3. How do you think the drum produces sound?
4. How did the sound change depending on the size of the container you used to make your drum?
5. What other factors or elements affect what your drum sounds like?

*You may want to collaborate with your school’s music specialist for this part of the activity.
2) CULTURES THROUGH MUSIC

**Suggested for:** Grades 6-12

**Goals:** To understand music’s unique role in a culture.

**Explanation:** In this pre-show activity, students will research and present their findings on another culture’s music traditions.

**Activity:**
1. Ask students to research (in groups or alone) the history, construction, and purpose of the drum or other percussion instruments from around the world. For example: the *tabor* of the middle east, the steel drums or pans of the Caribbean, gourd rattles, iron bells, pressure drums, *bata* drums or the *atumpan*.
2. Use the following questions as a guide:
   - In what cultures does the drum exist?
   - How does the drum differ between cultures?
   - Is it used for the same or different purposes?
   - With what materials is it made?
   - How does the instrument work?
   - How does the size of the instrument make a difference in its sound?
   - Is the drum tied to any cultural history or religions?
   - What does your research tell you about the culture from which your instrument originated?
   - Is it featured in any stories or myths?
3. Use students’ research findings to create a class musical piece. Have students include a drawing or photo of the drum with their research findings.
4. Ask students to present their research to the class. If possible, allow students to share audio clips of the instrument being played, either solo or as part of an ensemble. Conduct a discussion about the significance of music in culture.

**Follow-up Questions:**
1. How do different forms of music enhance understanding of a culture or historical tradition?
2. What can we learn about a culture through its music? How does it change our perception of that culture?
3. Has the importance or symbolism of the drum increased or decreased for the culture you are studying over time? How might you explain these changes?

3) RHYTHM EXPLORATION

**Suggested for:** Grades K-12

**Goal:** To understand the concept of rhythm and to hear the rhythm that exists around us.

**Explanation:** Rhythm and sounds are a part of life in every culture. Students will create their own rhythms with their bodies and other instruments they find in the classroom.

**Activity:**
1. Create a simple clapping rhythm for the class to echo. As they master each rhythm, make a new complex rhythm for students to repeat. You can expand from just clapping to stomping your feet, snapping your fingers, or gently slapping the knee or chest.
2. See if you can make a class song using these different rhythms. Divide the class into groups and have each group come up with their own rhythm. Have them perform them in varying orders or all together.
3. Next, have your students look around the classroom for ordinary objects that can be used to create new sounds. For example, scrunching or shaking a trash bag, opening and closing of a pencil box or backpack, tapping a pen on the desktop, etc.
4. Have students create a short rhythm that they would like to make with their chosen “instrument” and write out a notation that they can read corresponding to their rhythm.*
5. Arrange these notations in different orders to create a class musical piece.

*You may want to collaborate with your school’s music specialist for this part of the activity.

**Follow-up Questions:**
1. What is rhythm?
2. Where can you find rhythm? Do you have your own rhythm?
3. Can you see rhythms? What do they look like?
4. How can you recreate the sounds you hear in everyday life (rain falling, walking over a bridge, brushing your teeth) with percussion instruments? How do these sounds differ?
DISCUSSION

Rhythm
1. How can different rhythms convey different themes, moods, or ideas?
2. How can rhythm influence dance or movement?

Instruments and Performance
1. What instruments did you see in the performance?
2. Which was your favorite instrument from the performance? Why?
3. Were there any instruments or sounds that surprised you? Why?
4. Do you remember any of the countries that the different instruments or types of rhythms were from?
5. What adjectives would you use to describe the energy of the musicians?
6. If you could ask the performers about the show, what would you ask?
7. Were there any specific moments in the performance that stood out to you? Why?

Unity
1. What does it mean to be “united”? How did you see Drums United promote the idea of unity during the World of Rhythm performance? Were there times when they didn’t seem unified? Explain your answer.
2. How do you see unity promoted in your classroom, school, or community?
3. Are there instances, actions or events, that don’t promote unity or that intend to divide? Describe.
4. What are the positive outcomes of creating unity? Are there any negative outcomes? If so, describe.

POST-SHOW ASSESSMENTS

1) WRITE A REVIEW
Ask students to imagine that they are a critic for the school newspaper. They are going to write a review of World of Rhythm to inform others about what they experienced. They should describe with detail: what they saw; what they heard; how the performance made them feel; what the performance reminded them of; and what their favorite part was and why. Remind students that they must paint a picture of the experience with their words so that others who did not see the performance can imagine it.

2) YOUR ARTISTIC IMPRESSION
Create your own artistic impression of the performance. Using shapes, lines, colors, patterns and other artistic elements from your imagination, draw or paint a picture that expresses how the music made you feel. Use art to interpret your impression of the performance and qualities of the dance.

3) WRITE TO THE MUSICIANS
Once you have seen the performance and you and your students have had a chance to discuss what you saw and heard, write to the Drums United musicians.

Letters may be sent to:
Education Department
Des Moines Performing Arts
221 Walnut Street
Des Moines, IA 50309

4) DESIGN A CD COVER
Ask students to imagine that Drums United has asked them to design a CD cover for their next album. They want the CD design to celebrate how they use percussion to show that people from around the world can work together. Have students think about important ideas and images that come to mind when they think about the concert and use those ideas to guide their design. Students should also create a title for the album. After students have create their cover using art materials, have them imagine that they are going to present their design to members of Drums United (played by the teacher). Ask students about the elements they included in their design, why they made those design decisions, the title they gave the album, and what the design communicates about Drums United’s music and message.
RESOURCES AND SOURCES

CLASSROOM RESOURCES

Web Resources:

- Drums United Videos. [http://www.youtube.com/playlist?list=PL4747541F743F26E5](http://www.youtube.com/playlist?list=PL4747541F743F26E5)
- “Percussion Instruments and Pitch.” ArtsEdge. Kennedy Center.  
  [http://artsedge.kennedy-center.org/educators/lessons/grade-3-4/Percussion_Instruments_And_Pitch.aspx](http://artsedge.kennedy-center.org/educators/lessons/grade-3-4/Percussion_Instruments_And_Pitch.aspx)  
  Interactive resources and lesson plans on what makes percussion instruments sound higher or lower.

Print Resources:


STUDY GUIDE SOURCES