

THE VOICE OF THE WHALE CURRICULUM GUIDE

APRIL 2008

CHAMBER TRIO *VOX BALAENAE*

The Chamber Trio *Vox Balaenae* formed in 1998 as the educational outreach of the American Music Festival and Chamber Music Wilmington. This dynamic trio has performed to standing ovations throughout the Southeast and have been invited for guest appearances at many venues, including the North Carolina Museum of Art. In addition to their performances for adult audiences, the trio travels throughout the state and performs for student audiences. The trio is comprised of three internationally acclaimed professional musicians:

- **Barbara McKenzie**, pianist, has performed throughout the world and has received a number of prestigious awards. She is currently an artist in residence for the North Carolina Arts Council, and Artistic Director of Chamber Music Wilmington.
- **Emanuel Gruber**, is the former principal cellist for the Israeli Chamber Orchestra. He has served as a faculty member at the Rubin Academy in Tel Aviv, Indiana University, and East Carolina University.
- **Elizabeth Ransom**, flutist, has traveled and performed throughout Europe. She has performed with several groups in North Carolina,



Photo by UNCW/Jamie Moncrief

including the Bolton Woodwind Quintet. She is currently a faculty member at the North Carolina School of the Arts.

The concert you are invited to attend is a performance of George Crumb's *Vox Balaenae*. This may be the first or only time students will hear a professional classical concert or a chamber ensemble.

Attending the concert will be a learning experience in itself, and one that lends itself to opportunities for further learning.

The materials and suggestions given throughout the curriculum guide are intended to assist you in preparing your students for this unique experience. If you choose to delve more deeply into the curriculum and help students make connections, we hope that the materials will be of help. In the curriculum you will find information about classical music, George Crumb, *Vox Balaenae*, and the Humpback Whale. The materials are intended to help students better understand the musical composition as well as see the natural connections to other areas of the curriculum.

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LITERATURE CONNECTION:

These children's books illustrate programmatic orchestral music:

Peter and the Wolf, retold and illustrated by Michele Lemieux—depicts the work by Sergei Prokofiev

The Farewell Symphony, by Anna Harwell Celenza & Illustrated by JoAnn E. Kitchel—depicts the work by Joseph Haydn

Pictures at an Exhibition, by Anna Harwell Celenza & Illustrated by JoAnn E. Kitchel—depicts the work by Modest Mussorgsky

CLASSICAL MUSIC

In the strictest sense, classical music refers to European art music written between 1750—1820, but we sometimes we hear the term “classical music” used in reference to music written anytime between the Middle Ages and modern times. In this sense, the term “classical music” refers to a particular style of artistic music that is often associated with the ballet, opera, or symphony orchestra. It is very complex and the listener is expected to appreciate subtle differences in the music. Classical music sounds more formal than much of the rock, country, pop, or rhythm and blues music heard on television and radio. You may have heard classical music used as background music for commercials, movies or cartoons.

Have you heard these examples?

- Beethoven—*Moonlight Sonata* in the cartoon *You're a Good man, Charlie Brown*.
- Rossini—*The Barber of Seville Overture* in the cartoon *Bugs Bunny "Rabbit of Seville."*
- Mussorgsky—*Night on Bald Mountain* in the movie *Fantasia*.

Classical music is a European tradition that has spread to the United States as well as many other parts of the world. Because the classical music tradition began in Europe, opera singers often sing in other languages, such as Italian or German, rather than in English. Many of the terms used in classical music are also Italian –

forte, piano, accelerando, soprano, etc.

The traditional orchestra instruments are divided into sections that include strings, woodwinds, brass, and percussion. These instruments may be used alone in the orchestra, to accompany dancing in the ballet, or to accompany singing in the opera. Many children take classical piano lessons, Suzuki Violin lessons, or study another instrument such as flute, oboe, clarinet, or trumpet.

Although the piano originated in the classical music tradition, it is sometimes used in other types of music and played in a different style. The same is true for many of the other instruments, although drum sets and electric guitars are not usually associated with classical musicians.

ABSOLUTE VS. PROGRAMMATIC MUSIC

Much of the instrumental classical music that we hear is absolute music. It does not have a specific meaning, but the organization of the sounds is pleasing or appealing. You might have heard absolute music like Johann Pachelbel's *Canon in D*, or Ludwig van Beethoven's *Fur Elise*. Absolute music can be highly structured and complex, yet the beauty is in the structure of the music, rather than a concrete meaning. This is a similar idea to the nonsense words in the poem *Jabberwocky* by Lewis Carroll.

Consider these words of the famous verse. The rhyme and meter somehow make them appealing, even though the words don't make sense. *Twas brillig, and the slithy toves Did gyre and gimble in the wabe; All mimsy were the borogoves, And the mome raths outgrabe.*

As Alice commented in *Through the Looking Glass, and What Alice Found There*: “Somehow it seems to fill my head with ideas—only I don't exactly know what they are!” (Wikipedia, 2008)

Unlike absolute music, *program* music is intended to musically convey an idea, such as a mood, a setting, or a story. You might be familiar with Prokofiev's *Peter and the Wolf*, which tells a story using the instruments of the orchestra, or with *Carnival of the Animals* by Camille Saint-Saens. Many ballet scores depict story through the music of the Symphony Orchestra. You might be familiar with Tchaikovsky's *Nutcracker Suite*, Prokofiev's *Cinderella Ballet*, or Stravinsky's *Firebird Suite*.

CHAMBER MUSIC

Much of the early classical music, written during the Middle Ages or Renaissance, was associated with the Roman Catholic church. Because singing was an important part of religious services, composers and choirs were very important in the early development of this tradition. During the Baroque period (1600 – 1750) instrumental music became more popular and classical music became associated with royalty as well as with the Catholic church. Orchestras were sometimes used at special events and parties for entertainment. During this time, small groups of instruments, or chamber ensembles, were sometimes used for entertaining in the homes of royalty.

A typical chamber ensemble used harpsichord and cello playing continuously

in the background while a soprano instrument such as flute, oboe, or violin played the melody. Over time, the piano replaced the harpsichord because the mechanism on the piano allowed the pianist to play both loud (*forte*) and soft (*piano*). The other instruments have evolved in complexity as well and have become an established part of chamber ensembles and orchestras.

The term chamber ensemble refers to any small combination of instruments playing in the classical tradition. Some common combinations include solos, duets, trios, quartets, or quintets with different combinations of instruments. In the case of *Chamber Trio Vox Balaenae*, we hear three instruments—piano, cello, and

flute.

Studying music in the classical tradition can be quite different from learning to play popular music. One of the important distinguishing factors of classical music is that the composer writes down every note of the music so that it can be played in exactly the same way each time. This was particularly important before the invention of recording technology because it allowed more complexity in the style of music composed. Because the music is complex, classical musicians usually take many years of private lessons as they learn to read and write music as well as play an instrument. This is quite different from the informal and rote way that many folk and popular musicians learn to play .

CHAMBER MUSIC COMBINATIONS:

Piano Trio

Piano, Violin, Cello

String Quartet

Violin I, Violin II, Viola, Cello

Woodwind Quintet

Flute, Oboe, Clarinet, French Horn, Bassoon

LITERATURE CONNECTION:

Read *Zin! Zin! Zin! A Violin* by Lloyd Moss & Illustrated by Marjorie Priceman

FOLK MUSIC IN CLASSICAL MUSIC

Some instrumental classical music incorporates folk songs from tunes that were well known at the time. In this setting, you are not likely to hear the words sung, but if you are familiar with the tune and the lyrics, it adds meaning to the music. Here are some famous examples:

- Aaron Copeland used the Shaker hymn *Simple Gifts* in the ballet score *Appalachian Spring*
- Peter Tchaikovsky used the both the French and Russian national anthems in the *1812 Overture*
- Wolfgang Amadeus Mozart used the French folk song *Ah! Vous Dirai-Je* in a set of variations for piano. You might recognize this same tune as *Twinkle, Twinkle, Little Star*; *Baa, Baa, Black Sheep*; or *The Alphabet Song*.

GEORGE CRUMB & VOX BALAENAE

COMPOSITIONS THAT INCORPORATE RECORDED WHALE SONG:

*And God Created
Great Whales*
Alan Hovaness

Hovaness is an American composer who integrated recorded whale songs with original orchestral music. The music is composed and written down so that it can be performed the same way each time.

Whales Alive!
Paul Winter &
Paul Halley

This unusual album combines poetry reading, recorded whale songs, and saxophone, organ, and other improvised instruments to create music with an environmental theme. This music uses improvisation, meaning that not every note is written down. The musicians make creative choices throughout the composition.

[George Crumb](#) is an American composer, born in 1929 in Charleston, West Virginia. He is a classically trained composer, holding a Bachelor's degree from Mason College of Music, a Master's Degree from the University of Illinois, and a Doctor of Musical Arts from the University of Michigan. He was a professor and composer at the University of Pennsylvania for over thirty years.

Crumb's music is performed frequently all over the world and has received a number of prestigious awards, including a 2001 Grammy for *Best Contemporary Composition*, and a 2004 Musical America *Composer of the Year*. His music is unique because it integrates many elements of traditional classical music with hymns, folk music, and nonwestern music.

George Crumb composed *Vox Balaenae (The Voice of the Whale)* in 1971, several years after hearing a tape recording of the singing of the humpback whale. Crumb uses flute, cello, and piano to create music that imitates the song of the humpback whale. The title *Vox*

Balaenae is Latin for "Voice" and "Whale" and references the Latin classification of baleen whales which includes the humpback whale. Five of the *Variations on Sea Time* are named after Geological Eras that represent the evolution of the whale from the beginning of time through extinction: *Archeozoic, Proterozoic, Paleozoic, Mesozoic, and Cenozoic*.

Originally performed by the *New York Camerata*, the composition is scored for amplified flute, cello, and piano. Like many of Crumb's other works, *Vox Balaenae* uses



Photo by UNCW/Jamie Moncrief

programmatic elements, symbolism, and theatrical effects. The score indicates that *Vox Balaenae* should be performed in the dark and the musicians should be wearing half masks, representing the impersonal forces of nature.

AUDIENCE ETIQUETTE

Classical music or chamber music is intended to be listened to in much the same way that you might listen to literature that is read aloud. Chamber music was traditionally played in a large private home or castle, and overall the music was not loud.

The audience is expected to listen carefully and remain focused on the subtle details of the music. You will not see a polite audience talking, whispering, or moving around during the performance, or even clapping, singing, or dancing along with the music. It is also considered impolite to clap between movements. Here are some suggestions for concert etiquette:

- 1) Enter the auditorium quietly. This sets the tone for the rest of the performance.
- 2) Once you are seated, you should stay seated until the end of the performance. You should not leave to go to the restroom or get a drink of water.
- 3) Everything should be completely silent when the performers enter the stage. Do not talk, laugh, or make unnecessary movements during the performance.
- 4) Clapping is traditionally saved for the end of each composition. The audience should not clap between the various movements of the same composition.

THE PIANO



Originally invented for use in classical music, the piano is a versatile instrument that has become quite common in many types of music. It took years to perfect the design of the piano, which is similar to early keyboard instruments like the clavichord, the harpsichord, and the organ. Although the piano is normally played by striking the keys, the inside of the piano is similar to the harp, containing eighty-eight strings of various lengths. When a key on the piano is played, a small hammer strikes a string on the inside of the piano allowing the string to vibrate. This de-

sign allows the pianist to play multiple notes or chords at the same time.

Vox Balaenae was composed in 1971 just as synthesizers and digital pianos that produce sounds electronically were becoming common. To create unusual sound effects, George Crumb uses a traditional acoustic piano that has been amplified with a microphone. In addition to a more traditional method, the pianist uses a number of very nontraditional techniques on the inside the piano, such as strumming the strings, sliding a chisel along the strings, holding a paper clip to the vibrating strings, and sliding a glass rod along the strings.

THE CELLO



The cello is a stringed instrument usually found in chamber music or the symphony orchestra, although it is becoming better known through the solo recordings of world renowned cellist Yo Yo Ma. It is the third largest of the four string instruments in the orchestra, and in many ways it is similar to the violin, the viola, and the string bass.

In contrast to the piano, the cello has only four strings. To produce additional tones, the cel-

list uses the fingers on the left hand to press the strings at different points, shortening the portion of the string that vibrates. The cellist is usually seated, balancing the cello between his or her legs so that the right hand can pluck the strings or play them with a bow.

Like the piano and the flute, the cello is amplified throughout *Vox Balaenae* to help create an other world setting. In addition to more traditional sounds, the cellist uses sliding harmonics to create a sound similar to seagull cries, and even whistles the *Sea Theme for the end of time*.

THE FLUTE



The flute is a member of the woodwind family, although the modern orchestral flute is made from silver or metal rather than wood. Sound is produced when air is blown through the opening in the mouthpiece, and the pitch can be changed by pressing various finger key combinations that shorten or lengthen the bore.

The traditional sound of the flute is generally high pitched, lyrical, and song like, and it of-

ten plays very fast passages. In addition to amplification, the flutist uses a number of unusual techniques in *Vox Balaenae*. These techniques are most noticeable in the opening *Vocalise for the beginning of time* when the flutist sings into the flute while playing. At times the singing and playing are identical, and at other times they are different. To create drama, a flutter tonguing technique is used. This technique sounds somewhat like rolling the letter *r* on the tongue while blowing through the flute.

SOUND EXPERIMENTS:

Autoharp— The autoharp is similar to both the harp and the piano because each string is slightly longer than the next. Try the techniques George Crumb used in *Vox Balaenae* on the autoharp: strum the open strings, depress a chord and then strum all of the strings, pluck the strings, place a paper clip or other object on a vibrating string, and slide a chisel, glass rod, or other object along the strings. Can you think of other unusual ways to create sound on the autoharp?

Recorder— The recorder is a woodwind instrument like the flute. In fact, many of the fingerings are the same for recorder and flute. Try these techniques the flutist uses in *Vox Balaenae*: sing a song and play it at the same time, sing one sustained note while you play a song, or flutter your tongue quickly while playing a single note. Can you think of other creative ways to produce sound on the recorder?

TRADITIONAL WHALING SONGS

Greenland Whale Fishery

A traditional whaling song recorded by folk artists Judy Collins; Peter, Paul, & Mary, and the Jolly Rogues.

Blow Ye Winds in the Morning

A traditional whaling song recorded by folk artists Dan Zanes & Festival Five Folk

Farewell to Tarwathie

A traditional whaling song rewritten and recorded by folk artist Judy Collins & accompanied by recordings of the whale song

THE HUMPBACK WHALE

Whales are classified as cetaceans, or "large sea animals, an order which includes whales, dolphins, and porpoises. Whales are further divided into baleen whales and toothed whales, based on the way they catch their food. Baleen whales have a large plate called a baleen that grows from the jaw, allowing them to filter plankton, krill, and small fish from the water.

Whales are warm blooded mammals with an average body temperature of 98.6, just like that of humans. Because they spend a great deal of time in very cold waters, their large body size and high percentage of blubber, or body fat, helps them stay warm.

Unlike fish, whales have lungs and breathe oxygen. Humpback whales will typically remain on the surface of the ocean for three to six minutes

taking in oxygen and storing it throughout their bloodstream so that they can spend up to fifty minutes below the surface of the water. When they return to the surface to breathe, they exhale or "blow" a steam of carbon dioxide through blow holes on the top of their heads. Humpback whales are known for "breaching" or jumping high out of the water and then diving back down.

Humpback whales travel or migrate in pods of approximately three to four. They head to cooler regions at the North or South Pole to feed during the summer, and return to warmer regions near the equator to breed during the winter. The gestation period for whale calves is approximately twelve months. Young calves are born underwater and nursed on a diet of whale milk that

contains 45% - 60% fat.

Whales have been hunted for thousands of years for their meat and for their oil. Humpback whales have been easy targets because they swim slowly and near the shore. Traditional hunting with a harpoon boat was quite dangerous for the hunter, and a great deal of folklore surrounds this activity. Listen to the traditional whaling songs listed on the left to learn more about whale fishery.

As the demand for whale products increased, technology advanced to make the process safer for humans. This led to near extinction of the whales. In 1966, the International Whaling Commission called for a moratorium on whale hunting, although illegal kills still happen. See the reference list on page 12 to learn more.

WHALE SONG

Whales are highly intelligent creatures, but the humpback is the only whale known for singing. Both male and female humpbacks sing, although the males are known to produce the sustained tones. Recently it has been discovered that whale calves sing, although their songs are different from those of the adult humpbacks.

Whale song is comprised of a series of unusual screeches, moans, and sustained tones.

The songs are complex and contain patterns and sequences lasting as long as twenty minutes and often repeated many times over several hours. These songs are sung in unison by the pod and change slightly with each migratory season.

Humpback whales are found in all the oceans of the world, and the songs they sing are common to a geographic region, yet distinctive from

those in other parts of the world. Scientists are unsure of the purpose of the whale songs, although it is believed they might be for communication, to attract mates, or even to challenge other whales.

Recordings of the singing humpbacks made in the late 1960s inspired an awareness of the endangerment of the whale and several musical compositions including *Vox Balaenae*.

TIPS FOR GUIDED LISTENING

- 1) **Set the tone**—The teacher sets the tone for the lesson. If you approach listening with an open-minded and curious attitude, the students will likely do the same. If the teacher is distracted, the students will follow this lead.
- 2) **Allow an honest reaction**—Music is intended to stir the emotions, and children react honestly to their emotions. They may not think they like a piece of music the first time they hear it, and they might even laugh because it is unfamiliar. This doesn't mean that it is not a positive learning experience. Encourage them to talk about their reactions to the music, both positive and negative. You might find that a certain piece of music will “grow on them” after it becomes more familiar and they begin to understand it.
- 3) **Pace the listening**—Don't put the students on overload by doing too much at one time. You may have more success if you spread the unit over several lessons. If you are a music teacher, your class time with the students is probably limited to once or twice per week, so your schedule will naturally pace the activities. If you are a general classroom teacher, consider spending fifteen to twenty minutes per class period listening to the music, and then use this as an introduction to a science or language arts lesson that is thematically connected. This is a great time to learn more about the endangered whale! Remember that you don't have to do everything. Pick and choose your favorite activities.
- 4) **Teach active listening**— You can teach children to *actively* listen and think critically about the things they hear by scaffolding the instruction. Listen to short segments and focus listening on something specific. You may need to listen several times so that children can focus on the many things that are happening simultaneously. Each time they listen to a section, prompt the children to listen for something new *before* you play the recording. Consider using an overhead projector so there is no need to talk while the music is playing.
- 5) **Facilitate discussion**— Discussion is very important for the learning process. Try to let the students talk about and describe the things they hear rather than always telling them what they will hear. You can always summarize or reinforce major ideas after the discussion.

LISTENING TO ENVIRONMENTAL SOUNDS

- 1) **Listen**—Listen to the sounds of the humpback whale on the [Ocean Alliance](#) website:
 - a) Describe the timbre, or vocal quality of the whale song.
 - b) Listen for changes in pitch. Can you tell when the song is “getting higher” or when it is “getting lower?”
 - c) Listen for rhythm. Do you hear long or short sounds? Is there a steady beat?
 - d) Now listen for pattern and repetition in the whale song. Do any parts sound similar?
 - 2) **Notate**—Scientists notate and study the pattern in whale songs as they try to understand how whales communicate. Try to notate the whale song with symbols you believe best represent the musical ideas. For a complete lesson plan, visit [www.pbs.org](#) and search for “[Mediterranean On the Rocks: The Sea Within the Sea.](#)”
 - 3) **Extend**— Many animal sounds like whale song and bird song are used for communication. Other environmental sounds, like rain, wind, or thunder have musical qualities as well. You will even hear musical qualities in man made sounds such as shoes clicking on the sidewalk, ticking clocks, honking horns, or moving trains. Spend some time outdoors listening to environmental sounds and trying to notate them.
 - 4) **Compare**—George Crumb uses unusual compositional techniques to imitate the sounds of the whale, ocean waves and seagulls. Use the listening maps to compare these sounds from nature to the sounds in the recording of *Vox Valaenae*.
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USING THE LISTENING MAPS WITH *VOX BALAENAE***ART EXTENSION:**

Visualization is a strategy that good readers often use when they try to picture the meaning of written text. Teachers often ask children to draw a picture that represents a particular passage they would like to visualize. This same strategy can be very effective when trying to visualize music. Try representing your understanding of these movements with a picture or painting.

Consider working with an art specialist to have children represent the basic ideas or mood of the movement. Artwork can be either linear like a listening map, or just a general representation of the movement. Consider the following things:

Which colors best represent the sounds in the recording?

Which types of lines should be used?

Do you want to use realistic images or abstract ideas and shapes?

Which medium would best represent this movement?

Can you find a way to show melody, rhythm, dynamics, and tone color of the instruments?

General Discussion Questions

USE TRANSPARENCY #1

Look at the name of the composition and at the names of the different movements. (*Vocalise for the beginning of time, Sea Theme, Archeozoic, Proterozoic, Paleozoic, Mesozoic, Cenozoic, Sea-Nocturne for the end of time*) Consider these questions for general discussion:

1. Why do you think Crumb chose these titles?
2. Why do you think the final theme is titled *Sea Nocturne for the END of time*?
3. Can you tell when one section ends and another begins?
4. Can you identify sounds of nature throughout the composition?

Vocalise . . . For the beginning of time

USE TRANSPARENCY #2A & 2B

This movement uses the flute to imitate the sound of the whale. To do this, the flutist must use a variety of unconventional techniques, including singing into the flute and flutter tonguing. Sometimes the flutist sings the same things she is playing into the flute, and at other times she sings long tones while playing rapidly on the flute.

- 1) **Sounds of Nature**—Listen to the first portion of the *Vocalise*. Compare this to the whale song. How is the timbre of the flute used this way similar to the timbre of the whale song?
- 2) **Compositional Techniques**—Discuss the compositional techniques. How would you describe the mood? What makes you say this? Do you notice harmony, or times when more than one instrument plays at the same time? Which instruments are used? What do you notice about the melody? Can you sing along with this

music? What do you notice about the beat? Can you tap your foot to this music? How does the composer create these sounds? Why do you think the composer made these choices?

- 3) **Understanding the structure**—Examine the listening map and look for symbols that are similar. Use the listening map to predict the various flute techniques, as well as pattern and repetition in the music.

Other movements

Consider these same questions as you use the listening maps to understand the other movements of *Vox Balaenae*. Can you hear this structure when you aren't looking at the listening maps?

Sea Theme

USE TRANSPARENCY #3

Archeozoic

USE TRANSPARENCY #4

Proterozoic

USE TRANSPARENCY #5

Using Visualization

Listening maps are not provided for the remaining movements. You can still focus your listening without the listening maps. Do you get the sense of a certain mood for each movement? Can you identify some of the unusual compositional techniques used for the music? Can you identify structure or repetition?

EXPLORING COMPOSITION

As a culminating activity following the live performance of *Vox Balaenae*, consider using the ideas from George Crumb's *Vox Balaenae* to create an original composition about the endangered whale or any other important environmental issue. If the children have studied the whale in science class, discuss how they might represent some of the things they learned as ideas in their compositions. Consider breaking the class into small groups and assigning each group a different movement to compose.

Composition doesn't need to be a daunting task, and you can improve the quality of student work by focusing their attention on some main ideas.

1. **Inspiration**—George Crumb was inspired to write this piece when he first heard recordings of the humpback whales singing. Go back and listen to the recordings of the whale "songs" again to let students focus on the sounds. Consider creating an "experience" that will trigger creativity in the students. It might be a trip to an Aquarium, the beach, a performance, or a movie or book connected to the science curriculum. You might even have students spend a few quiet moments outside just listening.
2. **Experimentation**—Crumb experimented with sounds and used instruments in unusual as well as usual ways. Focus the student's attention on the various instruments that may be available to them. If you have access to Orff instruments, the metallophones might be a good choice. Standard orchestral percussion instruments are good choices, as well as homemade percussion instruments, body percussion, or various created sounds. Spend some time experimenting with the various ways that the instruments might be used. Which instruments will you use? How will they be played? Will more than one instrument be played at a time? Will any of the instruments play continually throughout the movement? Will you play loudly or softly?
3. **Repetition**—Encourage the students to use repetition in various ways to bring unity to the composition. Repetition can occur within a single movement, or it can include ideas that are repeated in several movements. Remind them that they may repeat melodic ideas, rhythmic ideas, or unusual sound effects. Each repetition does not need to be exactly identical. They can repeat a
- rhythm on different notes or different instruments, repeat a melodic idea on a different pitch or with a new rhythm, or use a single instrument for several sounds, etc.
4. **Revision**—Revision is an important part of the writing process, and one that students are likely accustomed to in their Language Arts classes. Help them revise their work by sharing it and receiving "complements and suggestions" from classmates. The teacher also plays an important role in the revision process by asking questions and guiding students to explain the choices they make.
5. **Notation**—When all the compositions are complete, ask the students to record their work. They do not need to use standard musical notation, but only to record the ideas and the instruments in the order that they appear, much like the listening map in *Vocalise*. A melody can be notated with a line showing contour, or rhythm can be shown with long and short dashes, etc. Additional notes or words can be written to explain special sound effects.

COMPOSITION
IN VISUAL
ART

[John Dahlsen](#) creates visual art with an environmental message. Many of his digital prints were created from collections of brightly colored plastics found along the beach. The found objects are sorted by shape, color, texture, etc. to bring unity to his compositions.

[Chris Jordan](#) explores environmental art in a slightly different way—by artistically representing statistics about waste, recycling, and the environment. You will likely recognize the common objects in his work.

You can explore other environmental artists at the [Green Museum](#). As an extension, create your own environmental art.

LITERARY ELEMENTS & MUSICAL COMPOSITION

ENVIRONMENTAL THEMES:***Have to Have a Habitat: Eco-Tunes for Home and School***

Bill Oliver, Glen Waldeck and the Otter Space Band

Environmental Songs for Kids

Coco Kallis

Earthsong

Sally Rogers

The Great Kapok Tree

Lynne Cherry

The Lorax

Dr. Suess

The Tree

Dana Lyons and David Lane

The Tin Forest

Helen Ward & Tim Anderson

Just a Dream

Chris Van Allsburg

In many ways musical composition is similar to literature. Many of the themes we see in literature are also found in music and the other arts, and many of the same compositional techniques or ideas for writing literature can also be used for composing music.

Literary Themes

The Voice of the Whale is program music because it conveys ideas related to the life of the Humpback Whale. George Crumb wrote this piece to make the audience think about the impact that human actions have on the endangerment of the species. Most literature and many forms of music have one or more themes. The theme of endangerment can also be found in the folk song *Call me the Whale*, by Paul Kaplan. In the instance of folk songs, the words communicate the theme.

The theme of endangerment is also evident in the children's book *Earthsong* by Sally Rogers. The tune from the traditional children's folk song *Over in the Meadow* is set to new lyrics in a song called *Over in the Endangered Meadow*. The illustrations in the book depict a number of endangered species, including the whale, the panda, the Bengal tiger, and others in their natural habitats.

Movements

Vox Balaenae, the Latin title for *The Voice of the Whale*, is approximately twenty minutes in length when played from beginning to end. George Crumb organized the musical ideas into movements, which are similar to chapters in a book. The movements represent the evolution of the humpback whale from the beginning of time through extinction. The first movement, *Vocalise for the beginning of time*, is

followed by a *Sea Theme*, five movements named after Geological Eras, and finally returning to a *Sea-Theme for the end of time*. These movements are intended to organize major ideas within the composition. (SEE TRANSPARENCY 1)

Imitating Sounds of Nature

Onomatopoeia is a technique that writer's use to communicate ideas more effectively. Onomatopoeia refers to words that imitate the sounds of objects or actions. Some common examples are words like drip, splash, buzz, cuckoo, crash, or boom. The book *Listen to the Rain*, by Bill Martin Jr. and John Archambault uses poetry to depict a rainstorm. The book is filled with onomatopoeia that imitates the sound of the rain, such as drip-drop, pitter-patter, and hurly-burly. Likewise, the book *Garage Song* by Sarah Wilson and Bernie Karlin uses onomatopoeia related to automobiles and machines.

Rather than using words to imitate the sounds of nature, George Crumb used musical techniques through *The Voice of the Whale* to imitate whale song, ocean waves, and seagulls. To create the sounds that he wanted, Crumb used some unusual techniques. For instance, the flute player sings and blows into the flute at the same time to create an eerie sound similar to the whale song. The pianist reaches inside the piano and strums the strings to create the sound of the ocean waves. The cellist uses a sliding effect on the strings to create a sound similar to seagull cries.

Mood

Many writer's work very hard to establish a mood, or tone for literature. Think about the famous opening line "it was a dark and stormy night." This line appears

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in many places, including the first line of Madeleine L'Engle's novel *A Wrinkle in Time*. When you hear this phrase, it immediately sets a tone of danger, mystery, or fright.

The mood of each movement of Vox Balaenae is different. Some, like the *Sea-Theme for the end of time*, are quite peaceful, and serene, while others, like the *Mesozoic* are energetic or exultant. The mood is changed for each movement by changing the dynamics (loud/soft), the tempo (fast/slow), the choice of instruments, the number of instruments playing at any given time, the way the instruments are played, by changing the melody, harmony or rhythm, or any other technique that the composer can imagine.

Harmony

Harmony is the musical idea of using more than one sound at a time. The various parts work together to create a new sound. Consider Paul Fleishman's book *Joyful Noise: Poems for Two Voices*. This poetry is intended to be read aloud by two readers at the same time. One reader reads the left column and the other the right. Sometimes they take turns reading individually, sometimes they are reading together in unison, and sometimes they are reading different words at the same time—in harmony. Fleishman's book *Big Talk: Poems for Four Voices* uses a similar technique with four readers. The voice of each reader is unique, and most listeners can distinguish the distinct qualities of each. The different voices combine together to create a texture.

Many types of music, including classical music, use harmony and texture to make the music more interesting. In *The Voice of*

the Whale, you will hear three distinct instruments throughout—piano, flute, and cello. This composition often sounds as though there are more than three instruments, because each instrument may be played in several different ways, creating an entirely different timbre each time.

Sometimes you hear only one instrument at a time, sometimes you hear two or three instruments at the same time. Often the parts for each instrument are woven together so that the parts alternate. At other times, one instrument is emphasized more while the others play in the background.

Pattern and Structure

Repetition and predictability are important to the structure of many traditional children's stories. Consider the predictability in *Goldilocks and the Three Bears*. Some books or songs use repetition to bring predictability to text. This is very common in cumulative books and songs such as Barbara and Ed Emberley's *Drummer Hoff*, or Pam Adam's *There was an Old Lady Who Swallowed a Fly*.

Sometimes the structure and repetition is not as obvious because it is found in the rhythm of the verse, rather than in the words. Consider the verses from *Rumble in the Jungle* by Giles Andreae and David Wojtowycya. Can you identify the predictable structure? Which words should rhyme? Which lines are the same length? Can you hear the rhythm? Pattern, structure, and predictability are important elements for unifying the sounds we hear in music. Many types of music use some elements of pattern, repetition, or predictability.

PATTERN AND STRUCTURE IN POETRY

Couplet—A pair of lines that rhyme

Cinquain—a five line poem with a syllable count of 2-4-6-8-2 on each respective line

Diamante—a seven line poem shaped like a diamond

Enclosed Rhyme— a four line poem in which the first and fourth and the second and third lines rhyme

Haiku—three unrhymed lines of five, seven, and five syllables

Extension:
Write poetry about endangerment

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