

*The Vermont Symphony Orchestra and the
Flynn Center for the Performing Arts*
present

A VSO SymphonyKids Concert



December 5, 2008

Made possible by:
Burlington City Arts
Chittenden Bank
Turrell Fund
The Concert Artist Fund with the
Vermont Community Foundation

Preparatory Materials for Teachers

Welcome to the 2008-2009 Flynn Student Matinee season!



Congratulations!

By attending a performance in the Flynn's Student Matinee Series you are joining more than 44,000 children and teachers from Vermont and neighboring states in valuing the educational and inspirational power of live performance. By using this study guide you are taking an even greater step toward understanding the value of the arts, and implementing them as vital and inspiring educational tools. This guide will help you and your students to anticipate, investigate, and reflect upon your experience at the Flynn. The study guide contains:

- Information about the show's content and the company who will present it
- History and vocabulary of the art form
- Contextual background on historic or cultural connections to the performance
- Activities designed to engage and sustain your students' interest before, during, and after the show
- Resources to help extend your exploration of the art form & content
- A hand-out sheet to send home to parents, so they can engage their children in discussion about the show

We're so glad to have you join us for another exciting season of Student Matinees. Enjoy the journey, and enjoy the show!

-Education Staff

Vermont Standards

This performance and the preparation and activities contained in this guide directly address several of Vermont's Educational Standards, including:

Teamwork

3.10 Students perform effectively on teams that set and achieve goals, conduct investigations, solve problems, and create solutions (e.g., by using consensus-building and cooperation to work toward group decisions).

Arithmetic, Number, and Operation Concepts

7.6 Students understand arithmetic in computation, and they select and use, in appropriate situations, mental arithmetic, pencil and paper, calculator, and computer

Thank you!

The Flynn Center gratefully acknowledges the **George W. Mergens Foundation** for its generous underwriting of the entire Student Matinee Series. We appreciate the additional support of the **Lintilhac Foundation** which also helps to make the matinees possible.

Special thanks to Burlington City Arts, Chittenden and the Turrell Fund for sponsoring this matinee.

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Program

Everyone knows that music involves counting (counting rests, for example). But count the ways that math and music intersect and you may not rest for a long time! We start with some basics: how many musicians in the orchestra, how many feet of tubing in a French horn, how many strings on a harp, etc. Then we get into some higher math: note divisions, meter, and the physics of sound. (We'll make these concepts understandable and fun with the help of some audience participation!)



Students will be challenged (can you play a rhythm of 4 against 7?) and intrigued (what's the Fibonacci series and why does a musician care?). In a very special segment, we'll hear a six-minute world premiere by Joshua Morris (student composer from St. Albans) inspired by six Six Word Stories written by students from the Young Writers Project. The equation is completed with the addition of conductor Anthony Princiotti and musical illustrations drawn from Aaron Copland's *Rodeo*.

Remember, this is NOT a concert—it is an educational presentation that also strives to entertain. A student who comes away from the experience saying, “Wow, that was fun”, will be more open-minded towards live classical music in the future.

Repertoire

Musical illustrations are drawn from a wide variety of composers. Some of the following pieces are represented in the performance by very brief excerpts for quick illustrations. We will play more substantial portions of the asterisked works.



Beethoven, Symphony No. 5
Beethoven, Symphony No. 7
Brahms, Symphony No. 1
*Mahler, Symphony No. 6
*Terry Riley, “In C”
*Desmond, “Take Five”
*Willson, “76 Trombones” from *Music Man*
*Copland, Four Dance Episodes from *Rodeo*
*Joshua Morris, “6x6x6: Six Miniatures for Orchestra” --
World Premiere

The Conductor

Anthony Princiotti

Because our music director, Jaime Laredo, is often traveling, the VSO also has a Principal Guest Conductor. Anthony (“Tony”) Princiotti was born in Connecticut, where his dad was a music teacher. He began playing the violin when he was four, and studied at the famous Juilliard School in New York City and at Yale University. He knew by the 10th grade that he wanted to be a conductor. In 1987 he received a conducting fellowship to study at Tanglewood with Leonard Bernstein.

Tony has been the music director and conductor of the Dartmouth Symphony Orchestra for nine years, and is also music director of the New Hampshire Philharmonic. As a violinist, he was for years a member of the renowned Apple Hill Chamber Players.



His favorite composers are Bach, Mozart, Beethoven, Brahms, and Mahler. (“Too hard to choose just one!”) In his spare time, he runs (45-50 miles a week), plays basketball, and does Tai Chi. He is a huge Patriots and Red Sox fan. In the summer, it’s not unusual to see Tony come riding up to a concert on his motorcycle! His pet peeve is people that are self-centered.

Tony enjoys lots of different kinds of music besides classical: swing, rock and roll, soul, some folk music, and some old-time country music. He lives in Walpole, NH, with his 13 year-old daughter Nora, who plays the violin.

Vermont Symphony Orchestra

The VSO is one of the oldest orchestras in the country; in fact, it is the oldest state-supported orchestra. It was founded in 1934, at which time the musicians in the northern part of the state and those in the southern part used to rehearse separately and then join forces for concerts! The VSO is now a fully professional, although part-time, ensemble, with musicians drawn mainly from the New England area.

Although based in Burlington, they play all over the state. Educational concerts are an important part of their mission. Last year they presented 232 youth performances! A total of 173 schools in 142 towns participated, and they estimate they reached over 28,000 schoolchildren.

The Composer



Joshua Morris, a fifteen-year old composer from St. Albans, has participated in the Vermont MIDI Project since 2006 and has had works performed at the Vermont MIDI

Project's Opus 13 concert by musicians from the Vermont Symphony Orchestra. His previous orchestral work, *In Bohemia* (2007), was premiered by the Vermont Youth Orchestra during Burlington's First Night 2008 celebration. Another new work will be premiered by the Vermont Contemporary Music Ensemble in early 2009.

When he's not composing, Joshua plays cello in the Vermont Youth Orchestra and studies privately with Dieuwke Davydov, a cellist in the VSO. He also studies piano and is a student of Elizabeth Metcalfe.

Josh is a home-schooled tenth-grade student who enjoys playing golf and Ultimate Frisbee. He lives with his parents and one cat in St. Albans.

David Ludwig, VSO New Music Advisor and Composer-in-Residence, has been Joshua's composition mentor for *"6x6x6: Six Miniatures for Orchestra."*

The Narrator



David Ludwig's music has been performed internationally by leading musicians in some of the world's most prestigious venues. His works have been performed in such major venues in the United States as Carnegie Hall,

Lincoln Center, the Kimmel Center, and the Library of Congress, and have been heard in Europe and Asia as well.

Born in Bucks County, Pennsylvania, Ludwig received his Bachelor's degree from the Oberlin Conservatory and his M.M. from the Manhattan School of Music. He is now in the Ph.D. degree program at the University of Pennsylvania, and is on the faculty of The Curtis Institute.

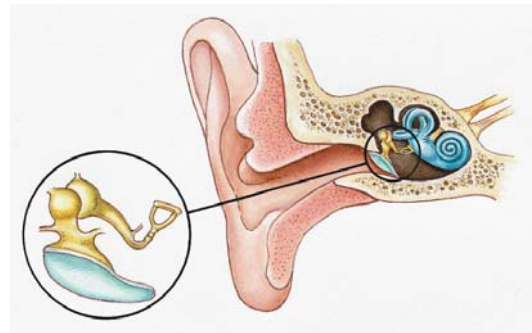
In 2003, David Ludwig became the VSO's Composer in Residence. Through a "Music Alive" grant from Meet The Composer, Ludwig is now also the VSO's New Music Advisor. In addition, Ludwig is a mentor for Vermont's MIDI project, he has acted as emcee/narrator for the VSO's orchestral youth concert "CREATE!," and he presents various programs in schools around the state. He is writing a double concerto for Jaime Laredo and Sharon Robinson that will be premiered and recorded in January of 2009.

Give Me an A! (The Science of Sound)

As part of “*Go Figure*” we talk about the tuning of the orchestra. Do your students know what is going on when the orchestra tunes? The oboe plays an A and the other instruments play their A’s and make any needed adjustments to make sure they are perfectly in tune. Then (with any luck) the music that follows will be in tune! Instruments do go out of tune for a variety of reasons, especially temperature fluctuations, so that’s why the orchestra retunes after the intermission, or sometimes even between pieces. The oboe is chosen to give the tuning note because (1) the oboe is an instrument that has limited ability to flex sharper or flatter itself, (2) it normally is pretty well in tune itself, and (3) its tone quality enables it to be heard easily through the mix of other instruments.

These days oboists always have an electronic device handy so they can check to make sure that their note is correct before they start in on their big responsibility! Most orchestras tune to A440, which means that the vibrating column of air produced on that note is vibrating 440 times per second. If you have a tuning fork, you can hit it and try to imagine 440 vibrations per second coming from it! (Dip it in a glass of water after you hit it to see the vibrations translated into something visual.)

Did you know that the three tiniest bones in the body are in the ear? These bones transform the air vibration into fluid waves in the inner ear and 16,000 microscopic cells bend in response and set off electrical impulses which the brain recognizes as sound. When the air vibrates 440 times a second we hear the tuning note. When the air vibrates twice as fast, 880 times a second, we hear the A that is one octave higher. If we hear the A that is an octave lower that air is vibrating at 220 times per second.



Every note in nature is a loud basic note with additional faint notes above it. These higher notes, called overtones, cannot be heard individually by the human ear, but it’s those overtones that make the difference between the sound of a flute, say, and a violin. By putting in carefully engineered overtones, a synthesizer or computer can imitate instruments, since the particular overtone series of each instrument dictates its timbre (the quality of a sound which is distinctive to a particular voice or instrument). In the “*Go Figure*” show, we’ll compare a MIDI (synthesized) realization of part of a piece to the acoustic version played by the full orchestra.

Another way of illustrating the concept of different overtone series and how they determine timbre is to have students close their eyes (or turn their backs) and have different instrumentalists play identical passages in identical pitches. Everyone will be able to identify the difference among the instruments, and the reason is because the strengths of their pattern of overtones is unique to the instrument.



Jean Sibelius, the famous Finnish composer, said he wanted in his music to transcribe not the music of his imagination but the music of nature. He thought he could hear chords in the murmurs of the forests and the lapping of the lakes. He once baffled a group of students by giving a lecture on the overtone series of a meadow!

Fibonacci Numbers and the Golden Section

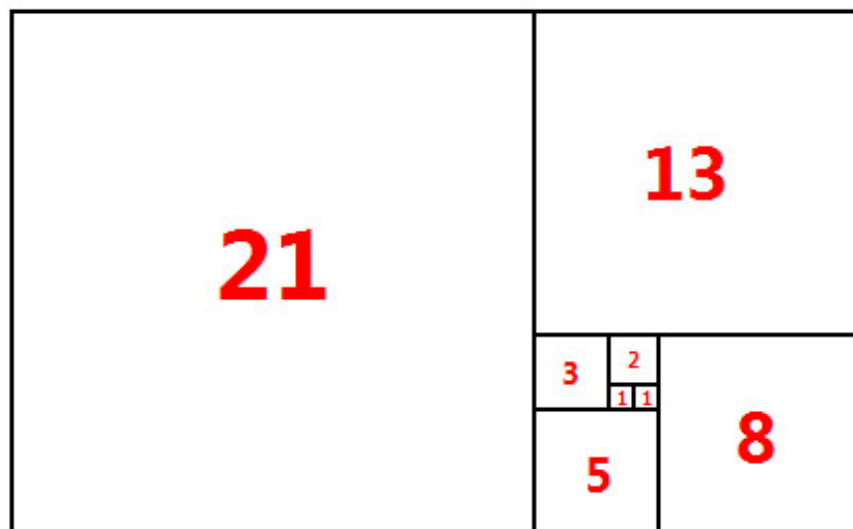


In mathematics, the Fibonacci numbers are a sequence of numbers named after Leonardo of Pisa, known as Fibonacci, who lived from 1170-1250. The first number of the sequence is 0, the second number is 1, and each subsequent number is equal to the sum of the previous two numbers of the sequence itself, yielding the sequence 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, etc.

Fibonacci sequences appear in biological settings such as branching in trees, the arrangement of leaves on a stem, the fruitlets of a pineapple, the flowering of an artichoke, the spirals of pine cone scales and sunflower florets, the proportions of a nautilus shell, a starfish, and an uncurling fern, and in the family trees of honeybees (among many others). Just click on Fibonacci on the web and you'll find a wealth of fascinating information about this topic!

In music, the Fibonacci numbers are closely related to the Golden Section and have influenced many composers in the structuring of their works. The Golden Section, a precise--and pleasingly proportionate--way of dividing a line, music, or anything else, showed up early in mathematics. It goes back at least as far as 500 B.C. and Pythagorus. To describe the golden section, imagine a line that is one unit long. Then divide the line in two unequal segments, such that the shorter one equals x , the longer one equals $(1-x)$ and the ratio of the shorter segment to the longer one equals the ratio of the longer one to the whole; that is $x/(1-x)=(1-x)/1$. The ratio is approximately .618, a value that has also been called the golden ratio, the golden number, the golden mean, and even the divine proportion.

Experts agree that the great violin-maker Stradivarius definitely used the Golden Section in determining the precise measurements of the f-holes in his incomparable instruments.



Mozart 'n Math

Considerable evidence suggests that Mozart dabbled in mathematics. According to his sister, Wolfgang “talked of nothing, thought of nothing but figures” during his school days. He sometimes jotted mathematical equations in the margins of his compositions! Musicologists have looked into the structure of his pieces (which are famous for their elegant proportions) and have found some evidence that he did indeed use the golden section at times. For example, in the first movement of his first piano sonata, the exposition and the recapitulation plus development consist of 38 and 62 measures, respectively. A 100-measure composition could not be divided any closer (in natural numbers) to the golden section than 38 and 62.

Other famous “FIB-bers:”



In **Bela Bartok's** *Music for Strings, Percussion and Celeste*, the climax occurs at bar 55 of 89 in the first movement, and other Fibonacci numbers figure in the structure of the piece as well.



Thomas Tallis wrote a 40-voice motet called *Spem in Alium*, in which at the point of the golden section, there is a moment of absolute

silence and then all 40 voices enter together—the only time in the piece that this powerful effect occurs.



The recapitulation in the first movement of **Johannes Brahms' great Piano Sonata No. 5** occurs right at the Golden Section. We'll never know whether this was intended or coincidental, but it gives the piece a perfect balance!

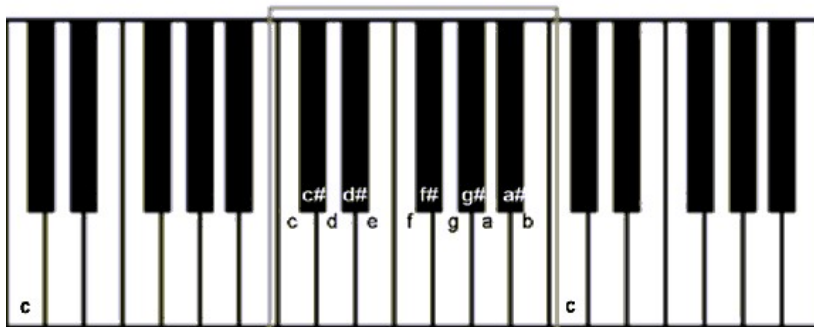
More musical math

Twelve is the number of steps it takes to go from middle C on a piano to the next C above or below. Twelve consecutive notes make up what is called the chromatic scale, so named because it suggests all the colors of a spectrum.

If you start a melody with 5 different notes, how many variations on the order of those 5 notes is possible?

You can make this into an activity: have students make a chart, such as ABCDE, ABCED, ABDCE, ABDEC, ABEDC, ABECB, ACBDE, ACBED, ACDBE, ACDEB, ACEDB, ACEBD, B...., ETC

(Answer: 120!) Considering that you could repeat some of these notes, and factoring in all the variables of rhythm, note length, and pitch, it's easy to see why an almost infinite number of melodies is possible.



Four Dance Episodes from Rodeo

Aaron Copland (1900-1990)



Although he never received a traditional musical education as a youngster, at the age of 21 Copland became the first American student accepted to study with the legendary Nadia Boulanger in Paris. When he came back to the U.S., he started writing music that some audience members found difficult to like. In his 30's, Copland suddenly decided to start writing in a simpler and more appealing style.

Copland's first big "western" was a ballet called *Billy the Kid*. It was very successful, but when the choreographer Agnes de Mille approached him about doing another western theme ballet, he was reluctant. (Maybe afraid he would repeat himself or get in a rut?) Finally she persuaded him to compose music for the lighthearted story of what she called "The Taming of the Shrew—cowboy style." *Rodeo* premiered in 1942 at the Metropolitan Opera House, and Ms. De Mille, who danced the role of the Cowgirl, had to come back on stage for 22 curtain calls! The ballet was repeated 79 times during the season that followed. In 1943, Copland excerpted the four parts that have become a standard part of the concert repertoire: *Buckaroo Holiday*, *Corral Nocturne*, *Saturday Night Waltz*, and *Hoe-Down*. *Rodeo* is unique in the extent to which it incorporates many traditional American folk tunes practically intact within the score.

The weekend rodeo in the American Southwest as described by Copland's marvelous music is a tradition where cowhands show off their skills, and may find themselves competing in a mating game as well. *Buckaroo Holiday* opens with a fanfare and segues into a quiet Cowgirl theme and then a rhythmic motif that evokes the trotting of horses. The tunes are based on the cowboy song "*If He'd Be a Buckaroo by Trade*" and the railroad song, "*Sis Joe*." The plot unfolds as the loner Cowgirl seeks the attention of the Champion Roper, who unfortunately is preoccupied with the more feminine Rancher's Daughter.

The Corral Nocturne portrays the lovelorn Cowgirl at sundown. In the *Saturday Night Waltz*, the musicians seem to tune up and then the cowboys and their girls pair off as the oboe begins a variant of the cowboy song, "*Goodbye, Old Paint*." The Cowgirl is alone until the Champion Roper approaches her, having lost to the Head Wrangler in winning the affections of the Rancher's Daughter—and registering the fact that the Cowgirl has come in a beautiful dress.

Hoe-Down (which begins with the well-known fiddle tune, "*Bonaparte's Retreat*," and also features elements of the Scottish dance, "McLeod's Reel", builds to a climax, slows as (surprise!) the Cowgirl and the Wrangler share a kiss, and (happy ending!) concludes with a final fanfare.

Note: The VSO will play portions of Buckaroo Holiday, Saturday Night Waltz, and Hoe-Down during "Go Figure" as demonstrations of different meters and the importance of counting rests correctly. Students will enjoy hearing the whole piece, which is easily available.

How to Listen to Symphonic Music



Listening to music – really listening – takes effort! Composer Aaron Copland wrote a book about listening, called *What To Listen For In Music*. This book has helpful hints on how to listen. Here is what Copland suggests...

What the composer "desires above all is to encourage you to become as **completely conscious** and **wide awake** as a listener as can possibly be developed... Music has an expressive power, some more and some less, but **all music has a certain meaning behind the notes** and that meaning behind the notes constitutes, after all, what the piece is saying, what the piece is about... **The ideal listener is both inside and outside the music** at the same moment, judging it and enjoying it, wishing it would go one way and watching it go another – almost like the composer at the moment he composes it; because in order to write his music, the composer must also be inside and outside his music, carried away by it and yet coldly critical of it..."

Copland encourages you to practice an "active kind of listening," where you are "not someone who is just listening, but someone who is listening for something." **Listening for a musical line is key.** A musical line is the way the melody or the tune, "rises and falls, as if it were a drawn line instead of a musical one."

Copland says, "Melodies, like sentences, often have halfway stopping places, the equivalent of commas, semicolons, and colons in writing. These temporary resting points, or cadences as they are sometimes called, help to make the melodic line more intelligible, by dividing it into more easily understood phrases... **The melodic line should be followed like a continuous thread which leads the listener through a piece from the very beginning to the very end.** Always remember that in listening to a piece of music you must hang on to the melodic line. It may disappear momentarily, withdrawn by the composer, in order to make its presence more powerfully felt when it reappears. But reappear it surely will, for it is impossible, except by rarest exception, to imagine a music, old or new, conservative or modern, without melody."

Are you worried that you might not be able to find the melody? **Finding the melody in the orchestra is much easier than you think!** As Copland points out, "The conductor... will be found giving his primary attention to the instruments who have the main melody. If you watch what he or she is doing, you will be able to tell, without previous knowledge of a piece, where the center of your interest should be."



Extension Activity: At the concert, watch the conductor lead the orchestra. Does the conductor often give attention to the instruments playing the melody? How do the conductor's gestures match the sounds and the moods in the music?

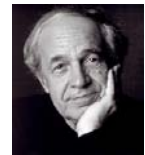
Brought to you by the number twelve

A particular arrangement of twelve notes is called a series, or row. Twentieth century twelve-tone (serial) composers made it a rule to use all 12 notes before they could repeat one of them. In serial composition, the idea is not necessarily to consider the row a theme in and of itself, but to employ it as a kind of fund of notes. The composer can use the row in retrograde (go backward from the last note) or in inversion (turn it upside down) or in retrograde inversion. The row can also be transposed up or down the scale. All told, the chromatic scale contains a huge number of permutations: to be exact, 479,001,600!



Oliver Messiaen went beyond the notion of serialism. He arranged note lengths (quarter, eighth, sixteenth, etc.) in a scale parallel to the scale of pitches. He also made rows of dynamic levels (p, pp, f, ff, etc.) and of attack styles (accented, staccato, legato, etc.) A particular note was always assigned the same values. For example, in a particular piece the high Eb would always be a 32nd note, always played ppp, and always slurred. The idea of “scales of rhythm” was not new, having already been theorized by **Henry Cowell**, but Messiaen was the first to coordinate all of the variables in one system.

Pierre Boulez went even further with this concept. He organized Messiaen’s parameters into sets of twelve, along the lines of twelve-tone writing. Pitches did not repeat until all twelve had sounded. Durations did not repeat until all twelve had been used. The result was a type of music in constant flux.



Harry Partch, the great West Coast non-conformist composer of the early twentieth century, questioned why there had to be only 12 notes in the scale. He invented his own scale that was made up of 43 notes! Since normal instruments are incapable of producing such microtonal shadings, Partch invented his own.... He started by building an “Adapted Viola,” and eventually fashioned an entire private orchestra of bowed, plucked, and keyboard instruments!

Advanced Geometry

A recent study published in *Science Daily* states that three music professors have devised a new way of analyzing and categorizing music that takes advantage of the deep, complex mathematics they see enmeshed in its very fabric. The trio has outlined a method called “geometrical music theory” that translates the language of musical theory into that of contemporary geometry. They take sequences of notes, like chords, rhythms, and scales, and group them into families. They then assign a mathematical structure to these families and represent them by points in space, much the way x and y coordinates, in the simpler system of high school algebra, correspond to points on a two-dimensional plane. Researchers hope these new discoveries may offer a way to compare different styles of Western and non-Western music.

Added Value...More Interesting Facts & Figures on Math & Music

IF YOU BUILD IT...WILL THEY LISTEN?



The composer **Iannis Xenakis** pursued a parallel interest in architecture and worked as a designer in the studio of Le Corbusier, specializing in complex architectural models with undulating (wavy) shapes.

He applied those models to musical space, writing out waveforms on graph paper and then translating them into conventional notation.

BY THE NUMBERS

At the premiere of **Igor Stravinsky's** *Rite of Spring* in 1913, the density and dissonance of the music caused mutterings, laughter, whistles, and shouts. Then at the beginning of the second section--a dance for



adolescents entitled "The Augurs of Spring"--a quadruple shock arrived, in the form of harmony, rhythm, image, and movement. At the outset of the section, the strings and horns play a crunching discord. They are one semitone apart, and they clash at every node. A steady pulse propels the chord but accents land every which way, on and off the beat.

One two three four five six seven eight one TWO
three FOUR five six seven eight
One TWO three four FIVE six seven eight
ONE two three four five SIX seven eight

Even Diaghilev, the ballet impresario, quivered a little when he first heard the music. "Will it last a very long time this way?", he asked the composer. Stravinsky replied, "Till the end, my dear." The chord repeats some two hundred times.

RANDOM ACTS OF MUSIC

John Cage made history in 1963 by presenting an epic, almost day-long performance of **Erik Satie's** piano piece, *Vexations*. At the top of the music appears this instruction: "In order to play this motif 840 times, one would have to prepare oneself in advance, and in the utmost silence, through serious immobilities." On September 9 and 10, 1963, at the Pocket Theater in New York City, a team of twelve pianists played from 6:00 pm until 12:40 pm the next day. *The New York Times* sent its own team of eight critics to cover the event. One of them ended up performing!



Cage was fascinated by the *I Ching*, or *Book of Changes*, which uses random operations to generate any one of 64 hexagrams, each describing a different state of mind or being. The piano cycle *Music of Changes*, written in 1951, depended on the *I Ching* throughout: successive rolls of the dice determined what sound would be heard, how long it should last, how loud it should be, what tempo should be observed, and how many simultaneous layers of activity should accumulate. Cage would later make musical decisions based on imperfections in manuscript paper, star charts, and computer-generated numbers.

-From *The Rest is Noise*, by Alex Ross

ARITHMOMANIA



Speaking of repetition...some musicologists have ventured that **Gustav Mahler** suffered from *arithmomania* (a compulsion to count objects) which would account for the hyper-repetitive nature of some of his compositions, in particular the scherzo movement from his *Fourth Symphony*.

6x6x6

A very exciting part of *“Go Figure”* will be the world premiere of a piece written by Joshua Morris, a home-schooled tenth grader from St. Albans. When we met with Geoff Gevalt, the director of the Young Writers Project, and told him we were doing a program about numbers and music, he came up with the bright idea of collaborating on a piece of music based on Six Word Stories. The great American writer Ernest Hemingway said he believed it was possible to write a story in only six words. His most famous example is: “For sale: baby shoes. Never used.”

Students participating in the Young Writers Project from across the state submitted six word stories, and we chose six of them. We asked Joshua to write one minute’s worth of music per story. The result is *“6x6x6: Six Miniatures for Orchestra,”* which will be premiered (and recorded) on December 5 at the Flynn. The students who wrote the stories have been invited to be present to read their stories as the piece unfolds, and most of them are able to join us.

Here are the stories:

“Before the light hit the earth.”

--Bailey Walker, grade 9, North Country Union H.S., Newport

“People finally stopped reading the newspapers.”

--Camille Bower, grade 10, Mt. Mansfield Union H.S., Underhill

“The aliens transported the cow away.”

--Emily Patch, grade 12, Rutland High School

“Her ghost restless haunts the castle.”

--Amie Schiller, grade 10, Brattleboro Union H.S.

“I knew I should have walked!”

--Christopher Smith, graduated last year, Spaulding H.S., Barre

“No, sir, it’s a bird shop.”

--Misha Kydd, grade 10, Mt. Mansfield Union H.S., Underhill

Ask your students to try to imagine the kind of music that might be inspired by each of these stories. Perhaps they would like to try their hand at writing Six Word Stories as well! Practice makes perfect, so they say. We’re thrilled your students are coming. *“Go Figure”* will be very fun.

Now see how easy it is?!

(Those last three sentences were six words long!)

About the Young Writers Project

The Young Writers Project (YWP) is an independent nonprofit whose aim is to engage as many students as possible to write, to help them improve, and to publish their best work. Strong writing skills help students develop self-confidence, hone critical thinking and learn, yet the majority of Vermont's and the nation's students cannot write at a proficient level. YWP runs three programs:

Newspaper Series YWP publishes student work in five Vermont daily newspapers each week. Additional student work is presented through Vermont Public Radio, Burlington City Arts, Vermont Stage Company, First Night/Burlington and Vermont Symphony Orchestra. Since September 2006, YWP has received nearly 10,000 submissions from students in more than 250 schools. More than 1,200 have been published. What students, teachers and readers say:

"The fact that the student writers published were not just the 'usual suspects' – the high-flying, honors-society, sports-playing kids – was significant."

– High school teacher

"You feel really good about yourself, like, 'Oh wow. People really like my work!'"

– High school student, on what it's like to get published

"It is astounding to realize the depth of thought these school children possess and their amazing ability to transfer their thoughts into the written word."

– A reader

After-School Website In 2006, YWP created youngwritersproject.org, a safe, interactive Web site where young writers share work, give and receive feedback and write about school, the news, books and their lives. Some 2,400 registered students have submitted 22,000 pieces of writing and

50,000 comments in the last year. YWP trains top college students to serve as mentors and provide constructive feedback online. What students say about youngwritersproject.org:

"Thank you so much for the amazing environment that you have helped to create. It's definitely gotten many of us through a lot of hard times and helped us sort out our lives and feelings in ways that we couldn't have done alone."

– High school senior

"Possibly I'll never be able to thank you enough for all your site has done for me. I realize how sappy this sounds, but it's nothing short of truth."

– High school freshman

The YWP Schools Project In 2007, YWP began to develop Web sites for use as digital writing classrooms. These customized, private Web sites are now integrated into the curriculum of 20 schools and after-school programs. Students are comfortable with the digital medium and like the socialization that occurs around the writing. Their learning – and self-confidence – is strengthened by peer-to-peer interactions. Engaged students improve their skills and disengaged students become more involved. What students say about the digital writing classrooms:

"The comments I have received from other people have helped me grow to be a better writer."


–8th grade student


"I used to hate writing, now I love it."


– 8th grade student

The Practical Angle: some math problems

Professional musicians fall into the category of artists, but they can't have their heads in the clouds! They have to be practical, too, and there are lots of times they have to call on their math skills. For example:


 A VSO concert is only supposed to last $2\frac{1}{2}$ hours at most. If it goes longer than that, the musicians receive overtime pay at a rate $1\frac{1}{2}$ times their usual rate. It accrues by the quarter hour. So if a musician normally got \$80 for a concert, in overtime pay his/her rate would be \$120 (1.5×80). And since there are 10 quarter hours in a $2\frac{1}{2}$ hour concert, the musician's overtime pay would accumulate at a rate of \$12 (120 divided by 10) for every fifteen minutes. If Melinda played a concert that started at 8:00 and ended at 11:00, how much would she earn? **(Answer: \$104)**

 Musicians usually get a 3% pay raise every year, but principal players get 40% more than section players. If you're on the orchestra committee, you need to be able to check the administration's math every year, to make sure the contract offered to the orchestra musicians reflects the right increment of added pay. Rehearsals are paid by the hour, and concerts are a flat fee. If Betsy (a section player) got \$30 per hour for rehearsal in 2006, how much did Richard (a principal player) get per hour of rehearsal in 2007? **(Answer: \$43.26)**


 Mileage is paid at one rate for lone drivers, at a different rate for riders, and there is additional compensation if a driver has multiple passengers. Jerry submitted his mileage for the summer tour as follows:


Lone driver: 875 miles
Driver with one passenger: 340 miles
Driver with two passengers: 160 miles
Rider: 77 miles

If lone driver pay is 27 cents a mile, if each extra passenger earns the driver an extra 5 cents a mile, and if riders get 6 cents a mile--how much did Jerry make in mileage for the summer tour? **(Answer: \$408.87)**

 Musicians who play two significantly different instruments during a rehearsal or concert are called doublers, and they get paid doubling, which is 25% more than regular pay. If someone plays a third instrument, they get tripling, which is another 15% on top of that. Peter was very pleased that in the October concert, he was asked to play clarinet, bass clarinet, and saxophone. If Peter's normal concert pay was \$100, what did he receive for playing in October? **(Answer: \$140)**

The Practical Angle, con't

 Musicians who belong to a musicians' union in a state other than Vermont are asked to contribute a small amount of their VSO pay to the Vermont musicians' union every concert. (It's voluntary.) Sandra belongs to the musicians' union in Albany, New York, but when she plays with the VSO she elects to have \$2.10 taken out of her pay check and given to the Vermont Musicians' Association. The maximum amount that the VMA asks any musician to contribute in a calendar year is \$30. How many concerts would Sandra have to play before these deductions from her paycheck discontinued? **(Answer: 14)**

 The musicians who have contracts with the VSO have to play a certain number of concerts every season in order to be in good standing. If they don't play the minimum required number of services for two years in a row, they lose their contract (some special circumstances apply, of course.) Principal players are required to play over 50% of the programs they are needed for. Different kinds of concerts count as a different number of points towards the player's minimum. The Made in Vermont tour and each of the Masterworks concerts counts for 1.5. The holiday pops tour, the summer pops tour, and the youth concert tour each count as one point. Waltz Night and Farmers' Night each count as ½ point. In the 2008/2009 season, Norman the principal bass player is needed for all the concerts, as follows:

Summer tour	Farmers' Night
Made in Vermont	Waltz Night
October Masterworks	March Masterworks
December Masterworks	May Masterworks
Holiday Pops	Youth concert tour
January Masterworks	

If Norman tells the personnel manager that he can play these concerts--

Summer tour	Waltz Night
Made in Vermont	March Masterworks
December Masterworks	Youth concert tour

--will he be in good standing, or will he get a warning that he needs to play more to make his minimum for the year?

(Answer: he would get 7 points out of a possible 13, so he'd be okay!)

Feel free to share these word problems with your students if they are advanced enough in math to tackle them. Have fun with the practical angle of music!!

Live Performance Etiquette

Live performance is nothing less than an extraordinary communication between audience and performer. The more the audience gives to the performer, the more the performer can give back to the audience. The performer hears the audience laughing, senses its sympathy and delights in the enthusiasm of its applause. Furthermore, each audience member affects those sitting near him or her, in addition to the performers onstage.



Because of the vital importance the audience plays in live performances, ***we suggest that you discuss the guidelines below with your students before bringing them to see the show.***

Also review some of the vocabulary on page 18 and discuss going to the theatre with your students. Some questions to ask:

How many of you have seen a live show before? What did you see?

Has anyone been to a sporting event?

What is the difference between seeing a play and attending a sports event? How is your role as an audience member different?

Give your energy and attention to the performers.

Laugh when you think something the performer is doing is funny. Clap after a song or section you particularly enjoyed. Your response really matters to the performers. If you are bored, think to yourself about what would make the show more interesting for you and remain quiet, so as not to distract the performers or the people around you.



At the end of the show, clap to show respect for the performers' time and energy.

If you think the show was fabulous, give the performers a standing ovation! Applause is as old as humanity itself as a way to show appreciation or approval. Let the performers know that you value that work they have done by putting your hands together and making some noise while they take their curtain call. If you were disappointed in the show, clap softly; loud expressions of disapproval are not appropriate.

Unlike movie theaters, eating, drinking, and chewing gum are restricted to the lobby.

These activities create noises and smells that distract other audience members and soil the very elegant environments in which live performance occurs.

Talk only before and after the performance.

Talking during the show will cause you and the people sitting near you to miss a line, dance step or bar of music that you can't witness again. There are no pause buttons, rewind options or volume controls in live performance. What you miss cannot be recaptured!

Elements of Music

Concertmaster – the leader of the string section in the orchestra; the principal first violinist. He/she sits closest to the conductor, and signals the musicians to tune before the concert begins.

Concerto – a composition normally for one solo instrument accompanied by orchestra.

Duet – a composition for two instruments or voices.

Glissando – sliding swiftly up or down, playing all the tones. (On the piano keyboard, this is done by playing all the white keys, using the fingernail or the first finger or thumb.)

Glockenspiel – a pitched keyboard percussion instrument with metal bars; informally called “bells.”

Grand piano – Distinct from an upright piano or a spinet, the grand piano is horizontally oriented (table style). A baby grand has a shorter case; the largest “grand” is 9 feet long.

Green Room A room backstage where performers can wait or relax. Before electricity, lime was used in stage lighting. At this time, the sitting room was just to the side of the stage and consequently the ambient glow of the limelight caused the waiting performers to appear green. The Flynn's *MainStage* “green room” is actually on a separate floor downstairs from the stage.

Harmonic – overtones in the harmonic series. Playing harmonics on stringed instruments refers to the manner of playing in which a string is touched lightly so that only a portion of it is set vibrating rather than the whole length, resulting in a thin, silvery tone.

House The part of the theater where the audience sits. A “full house” refers to a performance in which all seats are full. To “paper the house” is to give away many free tickets to a show.

Mallet – a special stick with a cloth or yarn-covered head designed for striking percussion instruments.

Melody – a succession of pitches arranged to create a tune or theme. Leonard Bernstein, a well-known composer, once described melody as the singing side of music just as rhythm is the dancing side.

Movement – a portion of a larger composition; like a chapter in a book.

Orchestration – the art of combining instruments of the orchestra in order to communicate the composer’s ideas.

Ovation Prolonged fervent applause.

Pit The floor of the house in a theatre. The Flynn has a pit that can raise up to extend the apron, or

descend to keep the orchestra below audience level, so that they do not block our view in performances where they accompany action occurring onstage.

Pizzicato – “pinched:” a method of plucking stringed instruments with the fingers, rather than by drawing the bow across the strings.

Proscenium The arch or frame that surrounds the stage opening. The term also refers to the physical layout of the Flynn's *MainStage*, in which audience members all face one direction, towards the stage. *FlynnSpace* is not (and does not have) a proscenium.

Solo – by oneself, to play alone; a piece written for one featured instrument.

Sustain pedal – the pedal on the piano which allows the vibrations to keep sounding without being dampened.

Symphonic – pertaining to “symphony,” which in Greek means “sounding together.” A symphony is a large work for orchestra, usually in four movements.

Tremolo – “trembling:” the quick repetition of the same tone or tones.

Vibration – the oscillation of an air column creates a sound wave that is perceived as pitch or tone.

Wings The areas offstage to the left and right of the stage.

Activities: Getting Started

Getting the Most out of Live Performance

A live performance is an exciting process with many steps. It takes a lot of people working together, making many decisions and solving scores of problems. What follows is a collection of exercises through which your students can experience what it might be like to create a live performance.

We have found that it's most effective to experience some of these exercises *prior* to attending the performance. Once students have had a chance to make creative choices themselves, they become better equipped (and more attentive) audience members, able to appreciate the performance with a critical eye, watching for specific choices being made and often comparing them to their own. Doing the exercises after the show can help the students analyze the performance choices further.

A Note to Teachers

It is important to remember that the haiku composition idea should be considered an inspirational springboard for the student works. Experiment with having students compose pieces inspired by other forms of poetry, works of art, or simply musical ideas.

Composing with Haiku and *Building Your Own Instruments* are educational outreach activities designed by Ford Made in America, the program which brought composer Joseph Schwantner to Burlington for the premiere of his piece *Chasing Light*...in October.

Schools who get involved in these FMIA educational activities are encouraged to give feedback to the Vermont Symphony Orchestra. All schools who use the materials will be entered into a drawing for a free visit from our composer-in-residence, David Ludwig, who presents a variety of wonderful programs for youth.

To access the Ford Made in America materials, go to the VSO website (www.vso.org) and click on the link you see on the home page. The DVD is also accessible as a link on this same website.

Activity: Composing with Haiku

The first activity covers writing simple poetry in the form of haiku and then composing music based on that poetry. Haiku is an ancient Japanese poetic form that was formalized in the late 19th century. Haiku takes the form of a three-line poem with a pattern of 5-7-5 sound units that roughly correspond to English syllables. Haiku are often linked to a theme having to do with nature or the seasons.

Following is a classic haiku by the Japanese poet Matsuo Basho (1644-1694):

Old pond
A frog jumps into
The sound of water

Western writers and poets embraced haiku:

Whitecaps on the bay:
A broken signboard banging
In the April wind

-Richard Wright

Activity: Composing with Haiku, Pt. 1

PART ONE: Writing haiku poetry

Synopsis: Students will write poetry in haiku form, using traditional syllabic and content guides

Goal: To create haiku that can be used as inspiration for musical compositions

Time needed: One 40-minute classroom session; optional homework

Materials: Paper and pencil (not pen), Board space

Teacher prep: Read above to understand more about haiku (note that the word is both singular and plural).

Procedure: Tell students that they are going to write poetry using a specific Japanese poetry form called haiku. Write the following poem by the Japanese master Matsuo Basho on the board:

Temple bells die out.
The fragrant blossoms remain.
A perfect evening!

Ask the students to count the number of syllables in each line (5-7-5) and to comment on the subject matter of the poem. Tell the students that the traditional Japanese haiku takes nature as a subject, and sometimes indicates the season. What season is this poem set in?

Write the following poem by Michael Collings on the board:

Freeway overpass--
Blossoms in graffiti on
Fog-wrapped June mornings

Tell students that haiku are perfectly adaptable to urban settings as well. Ask students to count the syllables. Note that nature and the season are highlighted, even in an urban setting.

Tell students that there is one additional thing necessary to make a traditional haiku—the “twist” or “cutting.” This twist is a somewhat subtle change in the subject of the poem, so that there is a slight difference in perspective at the end, although both beginning and ending of the haiku must relate to each other. The twist can take place after the first or second line, and is often indicated by punctuation (dash, colon, or period).

In the above two poems, where does the “twist” occur?

Working in pairs, have students write a haiku. Remember, the syllabic form must be 5-7-5, nature must be highlighted with possibly a season indicated, and there should be a twist or cutting.

Optional homework assignment:

Write two or three haiku. Consider using a classroom topic as a subject. A social studies or science topic might be appropriate, especially considering the nature theme.

Activity: Composing with Haiku, Pt 2

PART 2: Creating haiku compositions

Synopsis: Students will compose short pieces inspired by their haiku, both in form and in subject, performed on their classroom instruments

Goals: Students will understand more about this poetic form, and gain experience in music composition using a strict form.

Time needed: One 40-minute classroom session

Materials: Paper and pencil (not pen), board space, simple classroom instruments

Teacher prep: Read this study guide to understand more about haiku poetry

Optional: read “Building Your Own Instruments” and watch the corresponding DVD segment, accessible on the VSO website. Note: if you don’t have enough instruments for all of your students, sound events can also include things like the single hit of a pencil on a desk or a long sung note. A sequence of sounds, such as slow clapping moving to fast clapping, also works nicely.

Procedure: Follow the procedures in Part 1 on page 20 to write haiku poetry. Have students choose four or five haiku to become group haiku.

Using the “Building Your Own Instruments” instructions and corresponding DVD available on the VSO website (www.vso.org), have students build several instruments from various instrument families (strings, percussion, woodwinds, brass).

Working with groups of approximately six students, compose simple haiku pieces.

Each piece can have 17 “sound events” to represent the 17 syllables of the poem. An event might be as simple as a single strike of a balloon drum, the blowing of the French hose, or even a sequence of sounds, such as playing the straw panpipes up and down the scale. In other words, there might be more than 17 actual sounds in each piece.

The actual haiku poem may be helpful in deciding what kinds of sound events are included. For example, a poem about falling snow may have sound events that are soft and ethereal. An interpretation of Basho’s frog pond might include “ribbits” and splashing sounds.

Extensions and variations: While repetition in haiku is not part of the poetic form, repetition and variation are intrinsic in music composition. Encourage students to repeat some of their motifs (repeated image or sounds), looking for any memorable ones that can become a “hook.”

Performance: When performing the haiku pieces, be sure to have a student read the original haiku first, and then perform the musical interpretation.

Assessment: After creating the haiku pieces, consider choosing the most successful ones to create a piece that can be performed at a school or community concert. You may even want to have an entire class perform a haiku piece that was written by a group of students.

Reflecting After the Show



It is often *after* the show that the real learning begins. You and your class have had a shared experience – and it's in reflecting on the experience together that you will learn the different kinds of responses the show elicited. Sharing these responses gives students opportunities to learn about things that they didn't see or hear. It helps them broaden their perceptions and hone their evaluative skills, cementing what they themselves think. The process also addresses these Vermont standards:

Aesthetic Judgment (5.4) Students form aesthetic judgment, using appropriate vocabulary and background knowledge to critique their own work and the work of others, and to support their perception of work in the arts, language, and literature.

Point of View (5.5) Students develop a point of view that is their own (for example, personal standards of appreciation for the arts, language, and literature).

Discussion Questions

1. Which people in the orchestra normally stand when they play?
2. Did it look as if there were about the same number of men and women in the orchestra? What about younger people and older people?
3. Did some musicians share their sheet music or did they all have their own copies on the stand?
4. Did all of the instruments play the same amount, or did some play more and some rest more?
5. Can you think of some instruments that you saw at the concert that you have seen somewhere else? (strolling violinist in restaurant, quartet at wedding, brass band, street musicians)
6. Did any of your thoughts or feelings about classical music change as a result of attending this concert?

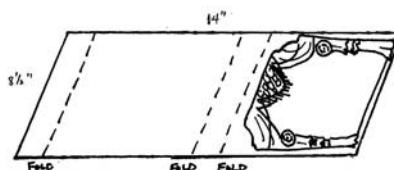
The Stage Picture

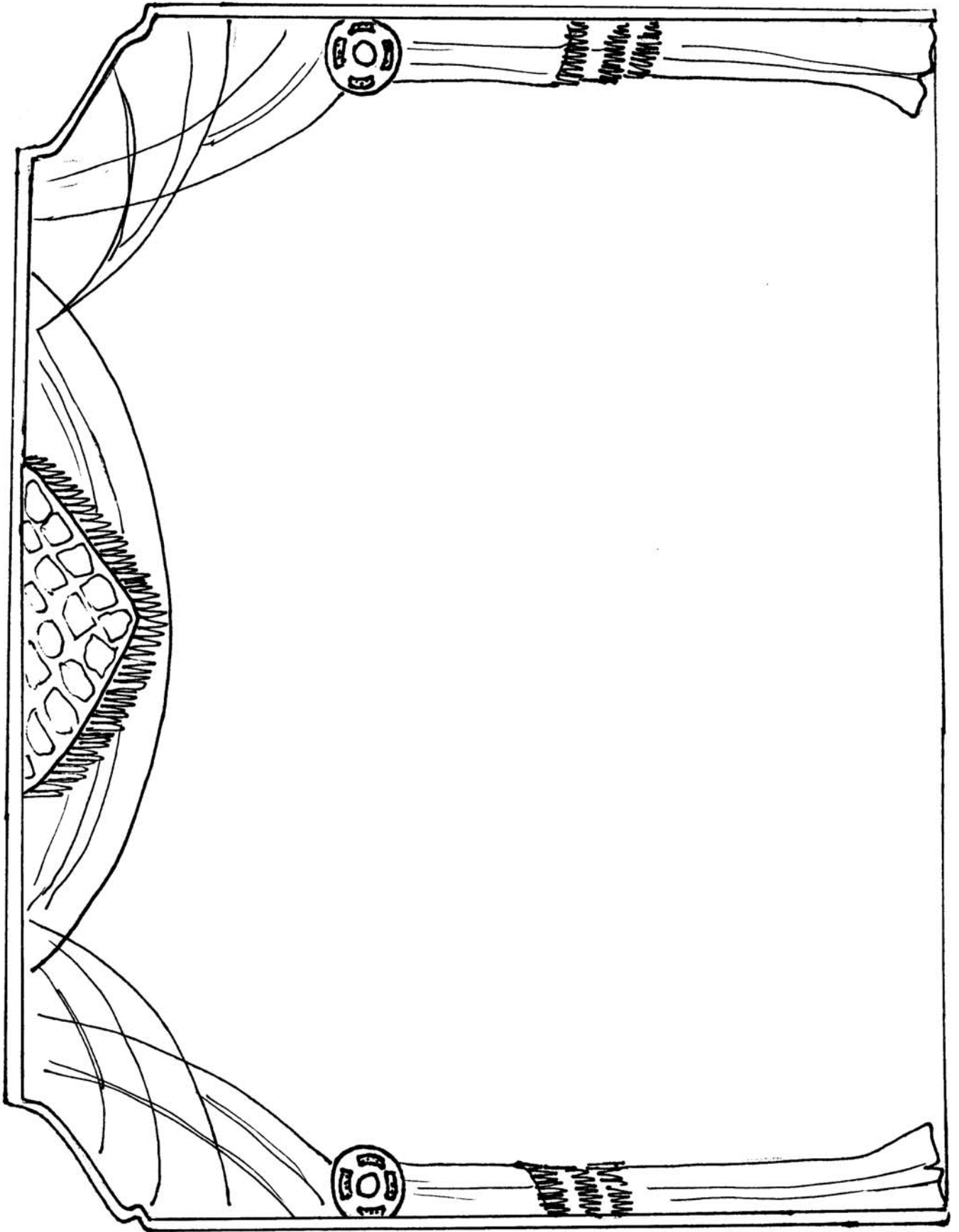
On page 23 you will find a picture of the Flynn stage & proscenium arch. Make copies of this image for your students, and ask them to draw the moment that they remember most from the performance. When completed, compare and contrast the memories and point out how and why different moments held meaning to different children.

Make it 3-D!

If you wish, you can also make a 3-D version of the stage for students to use as the basis of a diorama.

- Shrink the image to 64% and place it at the bottom of an 8 1/2" x 14" paper.
- Have students color in the curtains and cut out the space inside the curtains.
- Fold the paper in half, and fold the edge of the white portion between the top of the Flynn stage and the half-fold to form the ceiling. Create an equal size space for the stage floor by folding the other end of paper.
- Fold all corners to create an open-ended box and tape together. If you wish, reinforce the paper with cardboard to make it more sturdy.
- Lead students to fill the stage with whatever they remember most from the performance, like scenery, puppets, etc. They can even reenact a favorite scene on their very own Flynn stage!





Resources

Reading for Grades 1-3

Kuskin, Karla. *The Philharmonic Gets Dressed*. Harper Collins Publishers, 1982.

Introduces members of the orchestra and their instruments as they dress for a performance. Good introduction to the orchestra for younger students.

Hayes, Anna. *Meet the Orchestra*. Voyager Books, 1991.

Introduction to an animal orchestra, their instruments and how they all work together.



Reading for Grades 1-8:

Levine, Robert. *The Story of the Orchestra*. Black Dog and Leventhal, 2001.

Includes CD with 40 selections of famous pieces, 1-2 minutes long, with descriptions of instruments and composers. Recording of some of the world's most beautiful music. Good resource for all grades.

Reading for Grades 7-8:

Ardley, Neil. *A Young Person's Guide to Music*. Dorling Kindersley Publishing, 2004.

Includes CD and illustrations of the progress of a work from composition to performance. Also includes musical history and references.

Ganeri, Anita. *The Young Person's Guide to the Orchestra*. Harcourt and Brace & Company, 1996.

Includes CD narrated by Ben Kingsley with the music of Benjamin Britten and descriptions of sounds made by each instrument. Detailed information about the families of the orchestra with close up color photos of the instruments.

Smith, Tim. *The NPR Curious Listener's Guide to Music*. Grand Central Press, 2002.

Internet:

<http://www.vso.org/>

Vermont Symphony Orchestra's website.

<http://www.meetthemusic.org/>

The American Symphony Orchestra League is one of several supporters of this new website, which allows visitors to "get acquainted with a new featured piece every two weeks, find live performances, and buy recordings."

http://www.dsokids.com/2001/rooms/DSO_Intro.html A website by the Dallas symphony orchestra that classifies instruments by family, such as percussion. Also includes a "teacher lounge" and a "kids only room." 1-8 grades and teacher resource.

<http://www.youngwritersproject.org>

Visit to read – and hear – more of the students' work.

<http://www.ywpvt.net>

Visit for a short movie and more information about The Young Writers Project's Schools Project.



The Flynn Center for the Performing Arts

On November 26, 1930, the Flynn Theatre opened its doors. People swarmed to see Vermont's newest and biggest



“entertainment palace.” The entrance had exciting, new art deco designs on the walls and the lighting fixtures, still visible today. Art deco took its inspiration from Aztec and Mayan ruins, recently discovered, from nature, and from electricity, newly arriving in Vermont. Encourage your students to look for designs that reflect these sources.



The new entertainment complex—built at a cost of \$500,000—was the brainchild of entrepreneur (and theater namesake) John J. Flynn and his investors in Queen City

Realty. The original plan was to create a stage for visiting vaudeville troupes—companies with a variety of acts by comedians, singers, and dancers.

But after building the largest proscenium in the state with a sophisticated “fly” system for set changes, John J. Flynn recognized the public's growing interest in “talkies”—films where you could hear the voices—and therefore opened the Flynn as a movie theatre instead. Because the old silent films had live music, a Wurlitzer organ was installed and played by local musical legend Art Brown between



the short films and feature films. Often the words of the songs appeared on the screen accompanied by a tiny bouncing ball, to encourage the audience to sing along. Though the organ is long gone, the organ grills are still there. Encourage your students to find them.

In 1981, the Flynn Theatre re-opened its doors as a performing arts center. By then movie theaters of the Flynn's size were no longer financially viable. Instead, movies were being shown at “multiplex” cinemas with many screens.



The Flynn Theater would no doubt have been demolished like hundreds of others across the country if it did not have remnants of the stage and fly system from the vaudeville era. But when Lyric Theater Company, founded in 1974, performed a musical on the Flynn stage, people woke up to the potential of this important resource. Dedicated community activists (among them Andrea Rogers, the Flynn's executive director since 1981), raised the money to purchase and restore the then-faded Flynn Theatre to its original luster. Upon re-opening, the Flynn began showcasing local groups as well as artists of national and international renown.

Today, the Flynn Center for the Performing Arts not only houses its original Main Stage but also FlynnSpace, a black box theater below ground, and enjoys a national reputation for its innovative presentations in both venues. In 2000, we added two studios to provide theater, dance and music classes to children, teens and adults. Our educational outreach extends beyond the Flynn with workshops in schools for teachers and students. Where would we be without this vital community resource?



This guide was written by the Vermont Symphony Orchestra and Flynn Center Education staff members.

Permission is granted for teachers, parents, and students who are coming to Flynn shows to use this guide for educational purposes only.

Handout for Parents



Dear Parents,

Today our class traveled to the Flynn Center for the Performing Arts to see a performance by the Vermont Symphony Orchestra entitled *VSO: Go Figure!* Use this worksheet to jump-start an interview with your student about the performance – not only will you get to learn what your student experienced at the Flynn, but it will also help him/her to process and reflect upon the onstage material.

If your conversation piques your interest in the show and you'd like to see more, you can check out the Flynn's Study Guide online at: http://www.flynncenter.org/education_pages/studyguides.shtml

What type of art form did you see onstage? (Dance? Theater? Music?)

What was the performance about? (Was there a theme? What did the performance explore?)

What did you like or dislike about the performance? How did it make you feel? (Energized? Drained? Inspired?)

What did you learn from the performance? (Did it spark any new thoughts you hadn't had before?)

Was there a piece that you particularly liked or disliked? If so, why?

What 4 adjectives would you use to describe the performance or the performers?

Did you have a favorite moment? Tell me about it.