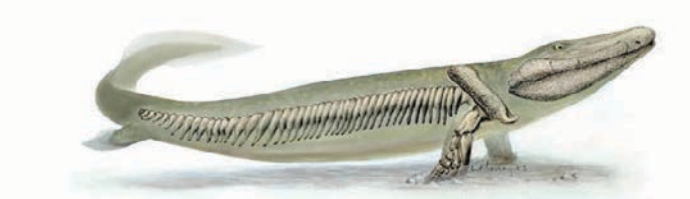
Learning in Concert 2015-2016

ADAPTATIONS IN MOTION: ANIMAL AND MUSICAL

NEW BEDFORD SYMPHONY ORCHESTRA

"Life is neither static nor unchanging." J. Auel

Adaptation in the field of biology is described as a change in the structure of an organism where it becomes better suited for survival in its environment. As environments change, so do organisms. This gradual, dynamic process can be traced back through time, as the 2015-2016 *Learning in Concert* program follows the transformation from ancient fish to modern day tetrapod (four-limbed vertebrates), from life in the sea to life on land. Over the course of this three-phase program, we will investigate the specific adaptation of locomotion by investigating the anatomy of various organisms to uncover the ways in which they moved, swam, crawled, jumped and walked. We will begin with early aquatic creatures and move to transitional species like Tiktaalik, the revolutionary new scientific discovery marking the fish that first emerged from water to begin life on land.

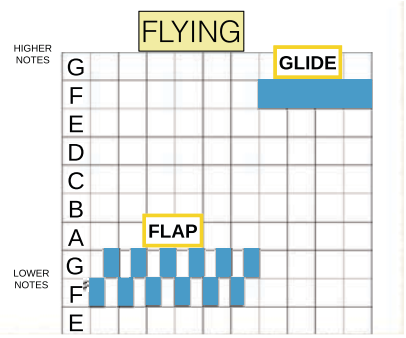


Tiktaalik, illustration by Kalliopi Monoyios

Adaptation in music, often referred to as thematic development or transformation, is described as a gradual, structural change of a musical idea throughout a piece of music. Using vivid examples of classical music performed live by NBSO musicians, the *Learning in Concert* program will trace the evolution of a musical idea as it is transformed and adapted throughout a piece of music. By changing the motion of a melody from steps to skips to leaps, from low to high, or gradually accelerating or slowing the rhythmic motion, composers can gradually transform the form, structure and motion of a musical idea as it unfolds throughout a piece of music.

In the first phase of our program, we will hear how classical music demonstrates the same principles of locomotion as shown in various species. Musical compositions will be paired with specific types of locomotion, from swimming to climbing, to running and flying. The children will hear the undulating rhythmic and melodic motion of fish swimming in the sea; the oscillating, crawling motion of music that moves like a lizard on the land; or even the hopping, jumping motion of music that moves like a kangaroo. We will use TRAM (tempo, range and motion) throughout the entire *Learning in Concert* program as a cross-disciplinary tool to guide the children's analysis of how music moves and how animals move.

Throughout the performance, children will have the opportunity to compose original melodies that imitate specific types of animal locomotion using our giant, magnetic, graphing TRAMboard. Our newly inducted "TRAMologists" will continue exploring various forms of motion in music and biology as our program progresses throughout the school year.

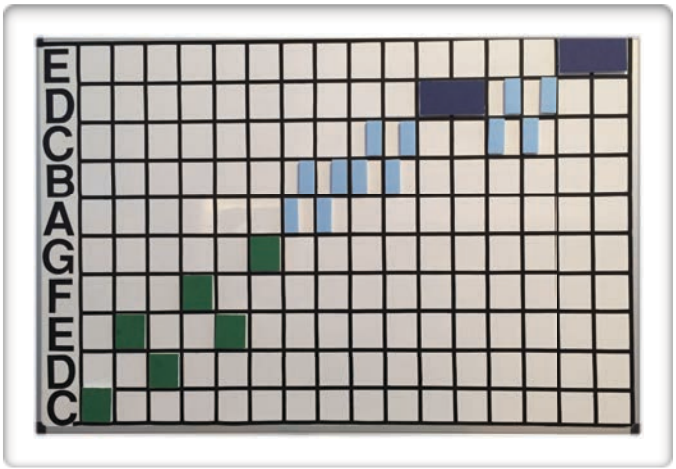


In the winter, our program moves into the classroom as students receive a visit from the Buttonwood Park Zoo. Our zoo experts will bring live animals into the classroom to allow the students to see firsthand the specific adaptations that have aided each animal in its ability to move. The students will use TRAM as a guide to analyze and identify different types of locomotion in species found within Buttonwood Park Zoo.

Some students will get a visit from Kalliopi Monoyios, a Denver-based scientific illustrator whose visual representation of Tiktaalik was the result of a collaboration with the paleontologists who made this exciting discovery in the Arctic. She will talk with students about the process of creating a scientific illustration when the animal no longer exists and where the shape and structure of the fossils are used as your primary guide. She will also bring with her the model of Tiktaalik's fossils (currently housed in the Harvard Museum in Cambridge) for our students to explore.


Scientific Illustrator: Kalliopi Monoyios

In a separate classroom visit from the NBSO, our students will create their own musical adaptations as they take one musical idea and develop several adaptations. By altering the musical idea's melodic and rhythmic motion the students will take one musical theme that imitates fish gliding and swimming in water and then compose other versions which gradually transform to imitate the motion of various tetrapods that developed the ability to crawl, walk, jump or run on land. The NBSO will then collect all of our students' musical adaptations, from all participating schools, and score them for a new piece for orchestra.

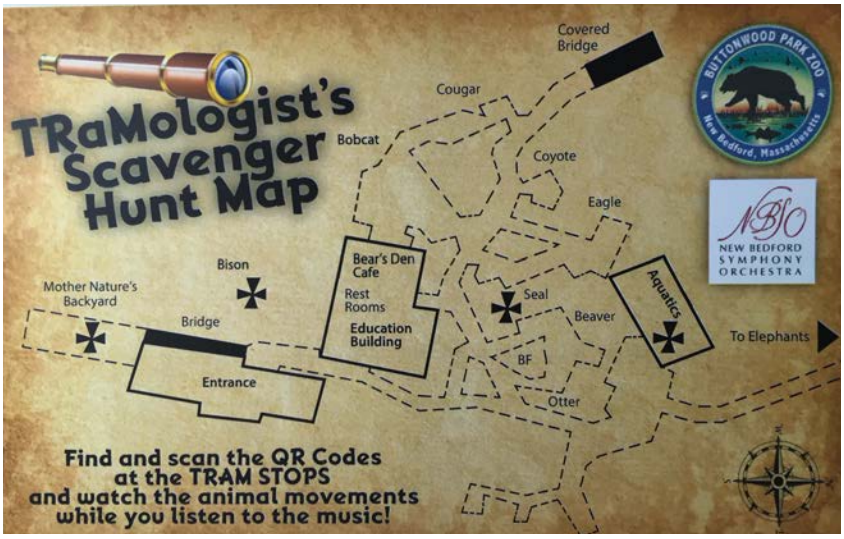


YOUNG PEOPLE'S CONCERTS

NBSO World Premiere of
ADAPTATIONS IN MOTION
composed by the Children in
50 Local Elementary Schools

At the Young People's Concert in early spring, the New Bedford Symphony Orchestra will perform the World Premiere of *Adaptations in Motion*, where our student composers, using various compositional techniques, skillfully created musical adaptations that replicate through music the gradual progression of ancient species who moved from swimming and gliding in water to moving, walking or running on land. Throughout the premiere performance, student-created scientific illustrations of the different species explored throughout the curriculum will be featured on a large screen suspended above the orchestra alongside illustrations from Kalliopi Monoyios and other notable scientific illustrators.

Every student will also receive a free pass to our local zoo with a special TRAM map to guide them through the exhibits. The zoo will have designated TRAM stops where students can see observe different types of animal locomotion. While at each TRAM stop, a parent can scan a QR code on their phone which will then launch a video performance of our musicians playing the piece that matched the specific motion of each species (crawling, flying, running, climbing etc.).



TRAM STOP

Look
and
Listen

The *Learning in Concert* program is designed as a unified, comprehensive, multi-phase curriculum project partnering the NBSO with local schools. *Learning in Concert* uses a concept-based arts integration model where a musical concept is explored alongside other art and academic areas that authentically share the same concept. This model promotes learning through active connection-making as it allows the children to develop deeper and more flexible understandings than would have been possible by learning in one subject alone. *Learning in Concert* uses traditional forms of educational outreach programs that are commonly in use, such as the in-school ensemble program and the Young People's Concerts. However, with a unified curriculum that runs through both programs and the addition of individual classroom visits partnering with classroom and fine arts teachers, *Learning in Concert* provides high impact experiences that span an entire school year and yield measurable results in music and other academic areas.

Terry Wolkowicz, 2015