

THE ATLANTA OPERA

2013-2014 SEASON | COBB ENERGY CENTRE



Tosca

GIACOMO PUCCINI

OCTOBER 5, 8, 11, 13, 2013

EXPERIENCE
THE **POWER** OF **OPERA**

OPERA GUIDE



The Atlanta Opera's elaborate *Tosca* set. (Photo: Tim Wilkerson)

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Dear Educator,

Hello and thank you for joining us for this production of Puccini's classic, *Tosca*. We are particularly excited about this production, as it opens our first season under the leadership of our new General & Artistic Director, Tomer Zvulun. We have many exciting and entertaining education and community offerings planned for the season, and look forward to sharing these with you!

The Atlanta Opera Student Shorts are fully-staged, abbreviated versions of the mainstage production. *Tosca* Student Shorts will feature the full Atlanta Opera Orchestra. Highlights from the three-act opera have been carefully selected and threaded together to create these special performances, providing students with the highlights of the 3-hour opera in about a third of the time.

This will be the first opera experience for many of your students and will be most thoroughly enjoyed with a bit of preparation before they arrive at the theater. This guide has been developed to acquaint both you and your students with the opera *Tosca*, as well as to familiarize students with the world of opera (vocabulary, history,

etc.) Our goal is to provide you with an innovative, multidisciplinary approach to teaching required skills and curriculum, including Georgia Performance Standards and National Arts Standards. Where applicable, you will find the corresponding standard(s) at the end of each activity or lesson.

Thank you again for allowing us to share this opera with you. It is our sincere hope that you enjoy the experience. We look forward to seeing you and your students at the opera!

Sincerely,

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The Atlanta Opera's 2006 production of *Tosca*. (Photo: Tim Wilkerson)

Are you unsure about how to act, what to wear or what you are going to see at the Opera? You are not the only one! Many others, students and adults, are nervous about their first trip to the opera. Read the truth behind some of the most popular opera myths and see if they answer some of your questions about the opera as well!

MYTH #1 OPERA IS BORING AND STUFFY.

Not true! Operas tell some of the most interesting, scandalous, and beautiful stories of all time. It is not unusual to find love triangles, murders, fatal illnesses, and messages from beyond the grave.

MYTH #2 OPERA IS SUNG IN A FOREIGN LANGUAGE SO I WON'T UNDERSTAND THE STORY.

We can help! It is true that many operas, like *Tosca*, are sung in languages other than English. This Atlanta Opera production will be sung in Italian. Since most people in our audience do not speak Italian, we project English translations, called *supertitles*, of the opera on screens above the stage. This way, you can follow along even if you do not understand the language. You also can read the synopsis of the opera before you arrive. Knowing the story will also help you follow along.

MYTH #3 I NEED TO WEAR A TUXEDO OR A BALL GOWN TO THE OPERA.

Most people dress up when they go to an opera performance. Frequently men wear tuxedos and women wear evening dresses to opening night. When attending performances on other nights or matinees, you can wear business attire or "Sunday" clothes. Wearing a suit or dress is not required – but dressing up can be a part of the fun of going to an opera performance.

MYTH #4 IF I'M A FEW MINUTES LATE, NO ONE WILL CARE. THE OPERA IS SO LONG, IT DOESN'T MATTER IF I MISS THE FIRST FEW MINUTES.

You don't want to miss the beginning! If you are not in your seat when the curtain goes up on an Atlanta Opera production, you will not be allowed to take your seat until after the first act or until the first intermission. This procedure prevents patrons from disrupting what is happening onstage or disturbing the rest of the audience. After the orchestra has tuned, the theater will become quiet. The conductor, or maestro, will then enter the pit. It is acceptable (and appreciated) to applaud the maestro's entrance. After all, he or she worked very hard to bring this performance to life!

Here are a few more tips to make your trip to the opera more comfortable.

1. Remember: the opera is a live performance. You can hear the performers on stage and that means they can hear you too! **Please refrain from talking or whispering during the opera.** It is distracting to others around you as well as to the singers. Please do not leave your seat during the performance. The *Tosca* Student Shorts will be one hour with no intermission.
2. If you have them, please turn off all cell phones, pagers, beeping watches and anything else that may go "beep" in the night!
3. Please do not take photographs or video or audio recordings of the performance.
4. If you like what you have seen and heard, let the performers know! It is okay to applaud at the end of songs, called arias, and at the end of a scene. You can even, call out "bravo" (to the men on stage), "brava" (to the women) and "bravi" (for all on stage). And of course, a standing ovation is always welcome!



Make-up artists and wig stylists work to ready singers for performances. (Photo: Jeff Roffman)

PRINCIPAL CHARACTERS IN THE OPERA

Floria Tosca

- Celebrated singer, *soprano*

Mario Cavaradossi

- Painter, *tenor*

Scarpia

- Roman police chief, *bass-baritone* or *dramatic baritone*

Cesare Angelotti

- Former Roman Consul, *bass*

A Sacristan

- *Bass*

Spoletta

- Police agent, *tenor*

Sciarrone

- Police agent, *baritone*

Jailer

- *Bass*

Shepherd Boy

- *Boy soprano*

him. A cannon shot is heard announcing the escape of a prisoner: Angelotti. Cavaradossi leaves with the pursued man in order to hide him at his villa. The Sacristan returns and gathers choristers around him, telling them they must rehearse for a special performance of a cantata that evening celebrating a defeat of Napoleon; Tosca will be the soloist. At that moment, the Roman chief-of-police, Baron Scarpia, arrives searching for Angelotti. His men find the Attavanti chapel open, but all that remains is a fan with the family crest on it, and the empty lunch basket. The Sacristan expresses amazement, as earlier he had noticed that the painter had not touched his meal. Scarpia puts two and two together and realizes that Cavaradossi had aided Angelotti's escape. Suddenly Tosca returns, and Scarpia uses the fan to convince her that Cavaradossi has fled with another woman, thus awakening jealousy in her. He hopes Tosca will then lead him to Cavaradossi and thus to Angelotti. He orders his spies to follow her as she leaves the church, then joins in the *Tè Deum* (an Early Christian hymn of praise), swearing he will capture not only the painter, but Tosca as well.

SYNOPSIS

ACT I

Cesare Angelotti, a political prisoner who has just escaped from the jail at Castel Sant'Angelo, seeks refuge in the Attavanti chapel of the church of Sant'Andrea della Valle. He hides at the approach of the Sacristan (an official in charge of the sacred vessels, vestments, etc., of a church or a religious house) who is soon followed by the painter Mario Cavaradossi. The Sacristan recites the *Angelus* (Latin for Angel; it is a Christian devotion in memory of the Incarnation) while Cavaradossi climbs the scaffold and begins to work on his painting, pausing to admit that his portrait of the Mary Magdalene was first inspired not only by an unknown lady who came to pray to the Virgin, but also by his beloved Floria Tosca, a famous Roman opera singer. The scandalized Sacristan leaves. Angelotti comes out of hiding and asks for Cavaradossi's assistance. The painter, thrusting a lunch basket into his hands, urges Angelotti back into the chapel as the voice of Tosca is heard. He hides as Cavaradossi admits Tosca into the church. She demands to know why she was kept waiting, and suspects Cavaradossi of talking to another woman. He reassures her of his love, and the pair agree to meet that evening at Cavaradossi's villa. With Tosca gone, Angelotti reappears and Cavaradossi vows to save



The Atlanta Opera's 2006 production of *Tosca*. (Photo: Tim Wilkerson)



The Atlanta Opera's 2006 production of *Tosca*. (Photo: Tim Wilkerson)

ACT II

Scarpia is dining alone in his quarters in the Farnese Palace, anticipating the pleasure of bending Tosca to his will. His henchman (a corrupt and ruthless subordinate), Spoletta appears and reports that Tosca has led Scarpia's spies to a remote village, and though Angelotti was not to be found, they had arrested Cavaradossi. The painter is brought in as Tosca's voice is heard from the concert in the courtyard below. Tosca, who had been summoned by Scarpia, is shocked to see Cavaradossi who quietly warns her to reveal nothing about Angelotti. Scarpia tries to get the location of Angelotti's hiding place from her, but she insists that she knows nothing. When

Cavaradossi, however, is put to torture in the next room, she reveals the secret, asking Scarpia for Cavaradossi's freedom in return. Scarpia has Cavaradossi brought back in. Delirious from torture, Cavaradossi hears Scarpia order his men to the villa, curses Tosca and cries defiance at the tyranny of Scarpia and the foreign oppressors he represents. Word arrives that the earlier report of Napoleon's defeat at Marengo was incorrect. Instead, Napoleon was the victor. Cavaradossi cries out with joy and is dragged from the room to prison. Tosca pleads for her lover's life, and Scarpia offers her an exchange: if she will give herself to him, he will give Cavaradossi back to her. In despair, she pleads for mercy, protesting that she has never done anything to deserve being faced with such a terrible choice, but realizes she must agree to the bargain. Scarpia tells Tosca there must be a mock execution, and circuitously orders Spoletta to make preparations for a real one. He then prepares a safe-conduct pass for Tosca and Cavaradossi, and comes to claim his prize. She grabs a knife from the table and stabs him, then takes the pass and flees the room.

ACT III

On the terrace of Castel Sant'Angelo, outside the prison, the voice of a shepherd is heard at dawn while one by one the bells of Rome strike the hour. Cavaradossi is brought in for his execution, which is an hour away. He bribes the jailer with a ring for permission to write a farewell letter to Tosca. Left alone, he recalls pleasant memories of her. She suddenly hurries in, explaining that there is to be a mock execution in which he is to pretend to have been shot. She also tells him about Scarpia's murder and of the safe-conduct pass that will get them out of Rome before the murder is discovered. He can hardly believe the news and looks in wonder at the delicate hands that did so much to save him. The lovers ecstatically plan for the future, but are interrupted by the arrival of the soldiers. As the firing squad advances and takes aim, Tosca retires with a final word to Cavaradossi about how to fall realistically. The soldiers fire and Cavaradossi falls. Tosca bids him to wait until they are gone, and then asks him to rise and come away with her. She hurries to Cavaradossi and is horrified to discover that he is dead and that the execution was real after all. Distant shouts announce that Scarpia's murder was discovered. As Spoletta, Sciarrone and the soldiers rush in to seize Tosca, she climbs to the fortress parapet and leaps to her death.

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GIACOMO PUCCINI (1858 – 1924)

Giacomo Puccini was born in Lucca, Italy on December 22, 1858. Puccini was fifth in a family of seven girls and two boys. His father died when he was a young boy, leaving his mother to care for Giacomo and his six siblings.

They had very little money, but his mother had great dreams for Giacomo. She arranged for his uncle, Fortunato Magi, to give him music lessons. Giacomo began work at age 11 as a church organist to contribute to the family's finances, and later earned money by teaching music and playing in Lucca's taverns. Puccini saw his first opera when he was 18 years old. Too poor for train fare, he walked 20 miles to see Verdi's *Aida*, and it totally changed his life. He knew that he would not become a church musician like his father, but would turn to opera. He made plans to move to Milan, the center of Italian opera and the home of La Scala, the most famous opera house in Italy. Giacomo enrolled in the Milan Conservatory and began meeting the most influential people in the opera business, slowly working his way up the career ladder. During this time, Puccini lived the life of a poor student. He shared an apartment with two other artists, always scraping for money. His lifestyle during this period later served as inspiration and motivation for *La Bohème*.

Puccini could not have succeeded without the friendship of Giulio Ricordi, the most important publisher in Italy. Ricordi saw great promise in Puccini, and believed he would become a great opera composer. He paid Puccini a stipend for several years and supported his early attempts at writing opera. His faith in Puccini was paid back

beyond the wildest expectations. The Ricordi publishing house would own the performance rights to four of the most popular operas ever written: *La Bohème*, *Tosca*, *Madama Butterfly*, and *Turandot*.

In 1893, at age 35, Puccini premiered his first successful opera, *Manon Lescaut*. It launched his career and made him a front runner in the search for a successor to the great Giuseppe Verdi. Then followed two big hits, *La Bohème* in 1896 and *Tosca* in 1900. After their success, Puccini was in the limelight, overseeing productions of his operas in Europe's greatest theaters. When Verdi died in 1901, Puccini became the future of Italian opera, and he knew that the opera world would expect nothing but the best. His next opera, *Madama Butterfly*, had to be a success.

Madama Butterfly did become a huge success, but it cost Puccini seven years of strife. The opera was cursed with delays, a car accident which severely injured Puccini, a disastrous premiere, and five revisions. In the end, Puccini triumphed with one of the world's most popular operas.

With three tremendous successes behind him and a seat at the top of the opera world, Puccini entered a long period of creative struggling, experimentation, and limited successes. He took a six-year hiatus following *Madama Butterfly*, due in part to the suicide of one of his personal servants and an ensuing court battle. After the buzz died down, Puccini returned to the music world premiering *La Fanciulla del West* at the Metropolitan Opera in New York City in 1910. Though it had a lukewarm reception by American audiences, it remains a staple in Italian opera houses.

He would live another 17 years and compose five more operas but only one, *Turandot*, would match the fame of his "big three".

Turandot was Puccini's final masterpiece. Diagnosed with throat cancer in 1923, Puccini battled to complete his most beloved project before his health failed. But he fell short, suffering a fatal heart attack after surgery in November, 1924. *Turandot* was completed by another composer. Unlike many composers, Puccini died a wealthy man, with an estate valued at \$24 million in today's money. His only direct living descendant is his granddaughter, Simonetta Puccini, a retired teacher of literature who devotes her time to researching her grandfather's works. She owns and operates the "Villa Museo Puccini", on the grounds of which Puccini is buried, along with his wife and son.

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The century during which Puccini lived and worked was alive with literary genius. While he was composing his operas, others were busy telling stories with ink and paper. The amount of great literature that was written in the 1800s is amazing. It was a century filled with intellectual energy, energy preserved in the writing of many great men and women. The list below is only a select list of authors who lived in the 19th century.

LEWIS CARROLL (1832-98)

Alice's Adventures in Wonderland (1865)

Through the Looking Glass (1871)

STEPHEN CRANE (1871-1900)

Red Badge of Courage

CHARLES DICKENS (1821-70)

A Tale of Two Cities (1859)

Great Expectations (1860-61)

EMILY DICKINSON (1830-86)

Poems include:

'The Chariot,' 'The Snake'

'There's a Certain Slant of Light'

'I Died for Beauty'

GUSTAVE FLAUBERT (1821-80)

Madame Bovary (1857)

NATHANIEL HAWTHORNE (1804-64)

The Scarlet Letter (1850)

The House of the Seven Gables (1851)

VICTOR HUGO (1802-85)

The Hunchback of Notre Dame (1831)

Les Misérables (1862)

HENRIK IBSEN (1828-1906)

A Doll's House (1879)

Hedda Gabler (1890)

RUDYARD KIPLING (1865-1936)

The Jungle Book (1895)

EDGAR ALLAN POE (1809-49)

Stories include:

"The Tell-Tale Heart" (1845)

"The Murders in The Rue Morgue" (1842)

Poems include:

'The Bells' 'The Raven' (1845-49)

'Annabel Lee' (1849)

ROBERT LOUIS STEVENSON (1850-94)

Treasure Island (1883)

Dr. Jekyll and Mr. Hyde (1886)

BRAM STOKER (1847-1912)

Dracula (1897)

HENRY DAVID THOREAU (1817-62)

Walden or Life in the Woods (1854)

Poems of Nature (1896)

LEO TOLSTOY (1828-1910)

War and Peace (1863-69)

Anna Karenina (1874-76)

Short stories include:

"The Death of Ivan Ilych" (1886)

MARK TWAIN (1835-1910)

Tom Sawyer (1867)

Huckleberry Finn (1894)

A Connecticut Yankee in King Arthur's Court (1889)

OSCAR WILDE (1854-1900)

The Importance of Being Earnest (1895)

The Picture of Dorian Gray (1891)

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SUGGESTIONS FOR FURTHER RESEARCH AND DISCUSSION:

1. Choose two literary works by two different authors on the list to read and research. Do you see any similarities in the works? Are there themes or similarities that may be attributed to events, thoughts, fashion or fads of the time? Are these themes still relevant in modern literature? If so, how might they be communicated by authors today?
2. Can you think of any operas based on any of the literary works on this list? What are they and who are the composers? Is the music similar in style to that of *Tosca*? How is it alike/different?



GEORGIA PERFORMANCE STANDARDS

ENGLISH/LANGUAGE ARTS HIGH SCHOOL:

The student deepens understanding of literary works by relating them to their contemporary context or historical background, as well as to works from other time periods.

ENGLISH/LANGUAGE ARTS:

Reading And Literature

The student demonstrates comprehension and shows evidence of a warranted and responsible explanation of a variety of literary and informational texts.

ENGLISH/LANGUAGE ARTS:

Reading Across the Curriculum

The student participates in discussions related to curricular learning in all subject areas.

The student establishes a context for information acquired by reading across subject areas.

ENGLISH/LANGUAGE ARTS:

Reading and World Literature

The student demonstrates comprehension by identifying evidence (i.e., examples of diction, imagery, point of view, figurative language, symbolism, plot events, main ideas, and cultural characteristics) in a variety of texts representative of different genres (i.e., poetry, prose [short story, novel, essay, editorial, biography], and drama) and using this evidence as the basis for interpretation.

The scientific world during Puccini's time was undergoing a revolution. There were many major scientific discoveries, the fields of microbiology and geology were developed, radiation was discovered and Darwin's theory of evolution was published. Electricity was being used in increasingly complex ways that would directly effect everyday life as we know it.

THE SCIENCE OF GEOLOGY

The developer of Geology was **Sir Charles Lyell**, born in 1797 to a wealthy Scottish family. After studying at Oxford, his parents sent him on a tour of Europe. This journey, the first of many, was a time for him to make geologic observations. Later in his career, he traveled to the United States, also to observe geologic formations. These opportunities for widespread fieldwork allowed Lyell to begin to see a unified view of earth history.



Sir Charles Lyell

Lyell's *Principles of Geology*, which arose from these and subsequent travels, was an important text in the 19th century for anyone wanting to study geology. His *Principles*, besides being influential, was also revolutionary. The popular view of geologic history at the time was Catastrophism, which said that most of earth's geologic history could be reduced to a short time of flooding and violent upheaval.

In the first volume of *Principles* (1830), Lyell attacked this view, arguing instead that geological phenomena could be explained in terms of currently observed natural processes operating gradually over long periods of time. This concept was called Uniformitarianism.

Lyell himself expected that his three volumes of *Principles* (1830, 1832, 1833) would be widely criticized, due to his strong disagreement with Catastrophism. However, this was not the case, as the books were widely read and praised. Moreover, as the three volumes were republished, he updated each new edition to include his and other geologists' latest findings.

Besides his work with geology, Lyell was also a skilled zoologist (zoology is the study of animals). In fact, he combined the two fields of study when he classified the Tertiary rocks of northern Italy. Unlike many geologists of the time, who relied on differences in rock type, Lyell emphasized differences in fauna. He defined "Different tertiary formations in chronological order, by reference to the comparative proportion of living species of fossil [shells] in each."

Again, this new approach was successful. He defined four periods of time, now known as epochs: New Pliocene (renamed Pleistocene by Lyell), Older Pliocene, Miocene, and Eocene. These names, with some modifications, are still used today.

Lyell's *Principles* was enthusiastically read by **Charles Darwin** before his voyage on his ship the *Beagle* (1831-1836). Lyell's description of the vastness of geologic time undoubtedly established a frame of mind that paved the way for Darwin's development of the theory of evolution. Darwin and Lyell became friends after Darwin's return. Lyell helped Darwin publish his ideas, and eventually supported his theory.

Lyell died in 1875. He was praised by Darwin who stated: "The science of geology is enormously indebted to Lyell – more so, as I believe, than to any other man who ever lived."



Lewis Latimer

THE SCIENCE OF ELECTRICITY

Puccini was born into a world of candles and died in a world of electric light. This development would have a great impact on his operas. The visual layout of an opera production depends on light. The lighting effects add drama and enable the audience to visually experience the story. Through costume, set, and lighting, the illusion of another time and place is created on the stage. Specifically, the lighting gives the entire scene mood and depth. This enables the designer to use light to create feeling and movement to accompany music. Few realize the huge improvement electrical lights bring to the production of modern opera.

This change came about by the scientific research of several Americans. The first and most important of these was Thomas Edison of New Jersey. While he was working on his experiments, he would stay in his lab for weeks, if not months, at a time. He would work through the night and often he would continue on with his research and experiments without taking a bath for weeks. His focus was on developing a lasting filament for his electric light bulb. Later he worked on power generation and many other uses of electric power.

Edison was also a man who judged a person by the content of their character. He recognized brilliant men of science without respect to the color of their skin. He hired Lewis Howard Latimer and Granville T. Woods, both African-Americans, to join his company.

Lewis Latimer, born the son of a former slave, joined the Navy at age sixteen during the Civil War. His interest in drawing and mechanics got him his first position with the patent soliciting company of Crosby and Gould in 1865, and in a few years he was chief draftsman. In 1876, Latimer was given the job of drawing the blueprints for **Alexander Graham Bell's** recently invented telephone. He was well on his way towards a prosperous career in mechanical engineering.

In 1879, Latimer became head of the U.S. Electric Lighting Company in Bridgeport, Connecticut and began his real interest in the future of electricity. By 1882, he received a patent for the manufacturing process of carbon filaments in light bulbs. This giant process of carbon filaments in electrical lighting improved the duration and conductivity of the filament itself. In 1884, Latimer became the only black member of Edison Pioneers, the specialized scientific team who worked for the Edison Company. Here, he helped bring Thomas Edison's electrical lighting system to Canada and the cities of New York, Philadelphia, and London. By this point, Latimer was also an accomplished writer. He produced the first textbook on the Edison electric system.

Granville T. Woods also started his career early, by becoming a fireman-engineer for the railroads in Missouri at age sixteen. Through the pursuit of mechanical and electrical engineering jobs, Woods was able to open a factory in Cincinnati, Ohio in 1881. Specializing in the manufacturing of telephone and telegraph equipment, Woods invented a more powerful telephone and transmitter and by 1885 sold his "telegraphony" apparatus to American Bell. By combining the transmission of signal and oral messages through the line, with telegraphony, the complexity of Morse code was greatly decreased. Woods continued to invent and in 1887 patented a communication system between moving trains and railway stations which increased the safety and efficiency of railway travel.

In 1890, at a theater in New York, Woods became interested in the dimming apparatus utilized by the electrical lighting system in the performing arts community.

His next project improved the dimming system by decreasing its energy output and the threat of electrical fires common at the time. Woods became a giant in the electrical and mechanical world, accumulating over one-hundred and fifty patents. He invented the electrified “third rail” configuration that powers the New York, Philadelphia, and Chicago subways as well as the overhead conducting system, still used to power trolleys. He died in 1910, a celebrated man of science.

THE THEORY OF RADIATION

Marie Curie was born in Warsaw, Poland to the Sklodowska family in 1867. Her early years were troubled by poverty; however, she never lost her quest for knowledge. She traveled to Paris to study mathematics and physics at the Sorbonne where she was able to earn degrees in both subjects in 1893 and 1894 with honors.

As a college student, she met her future husband, the scientist Pierre Curie. One year after they met they married and began to raise a family. Together they were pioneers in the study of radioactivity. Marie joined her husband, who had been given the directorship of a lab at a leading institute. For her doctoral thesis, Maria decided to study radiation, which had been discovered a few years earlier by **Henri Becquerel**. While working on radiation, she discovered that uranium pitchblende and the mineral chalcocite gave off four times the amount of radiation that was expected from the uranium content. From this

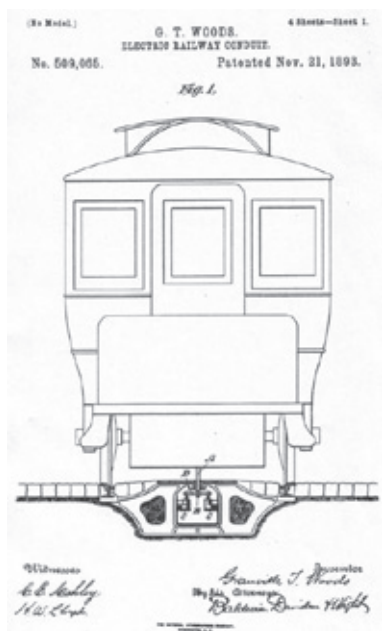


Marie Curie

discovery she theorized that something else was present that was emitting the higher degree of radiation. Pierre realized the importance of his wife's discovery and joined her in her work. Over the next year they discovered two elements; one was named for Maria's native country of Poland and was called polonium; the other they named radium. Once they had discovered these, they began to focus on separating the elements from their compound sources so that they could document the chemical properties of each new element.

In 1903, Marie received her doctorate for her research in radioactive substances. With her husband and Henri Becquerel she received the Nobel Prize in physics for the joint discovery of radioactivity. After Pierre was killed in a car accident, Marie assumed his position as a lecturer at the Sorbonne. She became the first female professor at the school, in 1908. In 1911, she won her second Nobel Prize for chemistry after she successfully isolated pure radium.

Later she worked in the application of x-rays in medicine. As a result of the work of Marie Curie and her husband Pierre, the deeper understanding of the nucleus of atoms was achieved. Their research also led to the hypothesis that the splitting of the atom would release great power. From this theory, the atomic age was born.



Granville T. Woods' "third rail" patent illustration.

THE THEORY OF EVOLUTION

In 1857, a year before Puccini's birth, a book about the science of evolution was published that would change the way people saw the world. It was written by **Charles Darwin** who was born in Shrewsbury, England on February 12, 1809. His father was a doctor and his mother was the daughter of the famous porcelain maker, Josiah Wedgwood. He studied for the priesthood at Cambridge University, but then turned his attention to geology and natural history.

After he graduated, a professor encouraged him to join a five-year scientific expedition as an unpaid naturalist. Charles accepted the advice of his professor and joined a voyage in 1831 on Her Majesty's ship *Beagle*. His job was to study the geology and biology of the Pacific coast of South America and Pacific Islands such as the Galapagos. This decision changed his life and formed the basis of research that changed the way people thought about the sciences of biology and geology. His work also had a profound impact upon theology and sociology, as people pondered the implications of his findings to religious beliefs and their social relationships.

Darwin reported some of his vast data in England's *Journal of Researches* in 1839. He told some scientists of the conclusions he had reached and was admitted into England's elite Royal Society. During the 1840s, he published three books on his geological research. These books laid the groundwork for people to accept the idea that things in nature change over time.

Over twenty years after he returned home, Darwin published his most controversial theories in a book called "The Origin of Species". From his meticulously-kept notes and records, he theorized that all species on earth had evolved from other earlier species. It is from this concept



Darwin's finches

that the term evolution comes. This idea led to great controversy when people began to realize that his theory also applied to human beings as well as other forms of life.

Darwin's theory of evolution focused upon the idea that creatures struggle for survival. This leads them to engage in a process he called natural selection. In this process, creatures that are better able to adapt to changing ecological conditions would survive and pass on to their young the predisposition needed for survival under changing environmental situations.

A good bit of his ideas on this topic were based on research he had compiled while on the Galapagos Islands. He noted three different yet similar types of finches. These birds all looked alike except for one major difference. The birds on one island that ate large seeds had very powerful and large beaks; those on another island that ate smaller seeds had smaller beaks, and those on still another island that ate insects had fine beaks. This led him to theorize that the birds had evolved to address the food types most available in their local ecological food chain. This concept of adaptation was revolutionary.

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GEORGIA PERFORMANCE STANDARDS

SCIENCE: GRADE EIGHT

Students will be familiar with the forms and transformations of energy.
Students will explore the wave nature of sound and electromagnetic radiation

SCIENCE: GEOLOGY

Students analyze how scientific knowledge is developed.
Students will understand important features of the process of scientific inquiry.

SCIENCE: PHYSICAL SCIENCE

Students will distinguish the characteristics and components of radioactivity.
Students will investigate the properties of electricity and magnetism.

SCIENCE: ZOOLOGY

Students will explain the evolutionary history of animals over the geological history of Earth.

INTRODUCTION

Opera combines all of the fine arts: music, drama, visual art, and dance. The performance of an opera includes many craftspeople: costume designers, seamstresses, stagehands, makeup artists and wigmakers; the musicians in the orchestra, the singers in the chorus, and the dancers on stage; the artistic director, stage director and choreographer; the engineers running the computers and lighting. How have major inventions over the centuries affected the opera performances we see? Let's find out!

FOREIGN LANGUAGES

If so many operas are in foreign languages how can we understand the story, the humor, or the dramatic situations in which the characters find themselves? Throughout history, on-stage conventions have helped audiences understand the stories of their favorite operas. Period costumes, magnificent stage sets and elaborate dances describe the time and place in which the opera is set. The stage direction and choreography communicate elements of the story. The music conveys emotions and the subtexts of the story. Many opera companies, however, offer their audiences a little more help, with the aid of modern technology. Using large screens above or beside the stage, English translations are projected. These Supertitles do not include every word that is sung, but enough to understand the story. As the technology advances, opera companies have begun to move from using slide projectors to computers to project the Supertitles onto the screens. *Tosca* is sung in Italian with English supertitles.

THE SINGERS

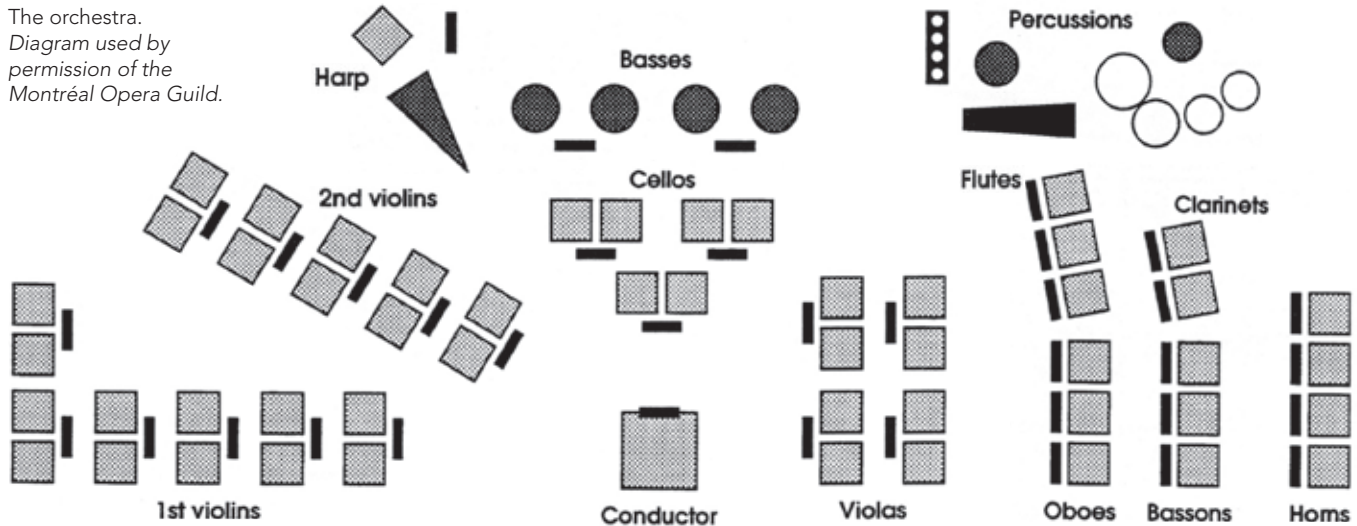
Over the years, the singers have changed, too! In early Italian operas, singers did very little acting on stage, focusing on showcasing their voices. Operas often resembled concerts, more than plays. By Mozart's time in the late 18th century, however, singers were encouraged to play out the action in the story, adding the dramatic element that we see on stage today. At that time, the singers sometimes did not always "look the part" they were singing. The singers sometimes did not look like princesses or lovely young maidens, and the prince may not have looked young and handsome. The *bel canto* style of singing, which literally means "beautiful singing," was favored in Italian opera, especially in the operas of Rossini, Bellini and Donizetti. This style focuses on the voice as the most important expressive element in the opera. It is more important than the words and even the orchestra. In later operas by Wagner and Berlioz, the orchestra became a partner with the singers, rather than an accompanist. This meant that the singers had to produce even more power to be heard over a large, rich symphonic orchestra.

THE ORCHESTRA

The orchestra provides a framework for the opera by playing recurring themes and providing musical clues to the drama while accompanying the singing. But the orchestra wasn't always as we see it today. In the 17th century, some operas were intended for entertainment at private parties, primarily at weddings. The principal accompanying instruments were a continuo (a small organ) or harpsichord and a few viols (stringed instruments). In the 18th century, Mozart began to write his operas for an orchestra of 20 musicians and harpsichord and he was the first composer to add clarinet to his opera orchestra. The small-scale accompaniment, however, was still often used during a *recitative*, a musical selection in which the singing imitates the sound of spoken words and helps to move along the story line. (Arias, on the other hand, are more melodic and are often written to express strong emotion, rather than to tell parts of the story.) By Wagner's 19th century, the opera orchestra had increased in size, mostly due to large symphonies composed by Beethoven (b. 1827). Wagner referred to opera as "music drama" and is one of the few composers who wrote the libretto (the book or story of the opera) as well as all the stage directions and music! Many composers work with colleagues to complete one or more of these elements. [FYI: Beethoven only wrote one opera, *Fidelio*. Just as he persistently made changes and corrections in his other works, Beethoven composed four different overtures for this one opera.]

The orchestra that you see at opera houses today consist of between 45 and 120 musicians, depending on the requirements of the composer. It is made up of several sections: strings, woodwinds, brass and percussion. It is situated in the orchestra pit, the area which is in front of the stage. The orchestra is seated lower than the stage so that the sound of the singers' voice may travel over it. The orchestra pit in the John A. Williams Theatre at the Cobb Energy Performing Arts Centre has a retractable cover. The cover is removed for Atlanta Opera productions to accommodate the orchestra. For some other performances at the theatre, the pit may be closed to allow for extra seating in the theatre.

The orchestra.
Diagram used by
permission of the
Montréal Opera Guild.



THE STAGE

Power to the stage! Even before electricity was available, Monteverdi used torches to light his early opera, *Orfeo*, in 1607 and all of Mozart's operas (1769 - 1791) were staged with candle-powered and reflected oil lamps around the front of the stage. While Wagner's Festival Theatre at Bayreuth (1870s) had one of the first electric generators in all of Europe, electricity continues to enhance fantastic opera performances in many ways in opera houses around the world. At the Metropolitan Opera at Lincoln Center in New York, for example, four stages move hydraulically: one stage lifts and moves to the side as another replaces it with the scenery for the next act. This changes work the stage crews need to do and allows for more elaborate and grandiose sets and smoother scene changes. Engines controlled by computers make this possible as well as controlling lighting and special effects on stage.

THE OPERAS

Where do the stories for operas come from? Are they all love stories like *Tosca*? Throughout the history of opera, these stories have come from many sources, including myths and history, are funny and tragic, take place hundreds of years ago or in modern times, and address topics including love, death, and fantasy.

Myths have been the inspiration to many composers for highly imaginative operas. Ideas of the ancient world, primarily from the Greeks, were popular themes in architecture, painting and drama at the time of early operas. Even in the 19th century, Wagner was fascinated with many of the same tales, though they had since evolved into Nordic folktales. "The Lord of the Rings" stories are very much like many of Wagner's "music dramas," including greedy dwarves and the precious golden ring that makes one invincible.

Traditional stories of medieval kings and queens, magicians, and great knights are favorite topics for opera. Classic literature has also provided the basis for many operas. Popular themes from literature include various Shakespeare plays and the adventures of Don Quixote. Some operas, especially in more recent times, have been inspired by actual events. *Andrea Chenier* (1896) by Umberto Giordano was based on the life of the poet Andrea Chenier, a supporter and then victim of the French Revolution and *Nixon in China* by John Adams reflected actual events in the 1970s. There is even an opera written in the 1960s based on the life of Lizzie Borden!

Grand opera is a term that is often heard in opera circles. Grand opera means grand everything: big stage sets, big voices, big orchestra! Grand opera was popular in Europe in the mid-19th century. Grand operas include huge crowd scenes and feature a wide range of emotions and events, including heroic feats, great passion and intense suffering within a religious or romantic story. One of the best-known grand operas is Verdi's *Aida*.

Composers from different countries and periods of history use different styles of writing. In his writing, Puccini matches specific instruments and combinations of instruments to dramatic moments, allowing the orchestra to create the atmosphere for the scene. Music scholars agree that Puccini's style of writing emphasizes melody, and he uses *leitmotif* to connect characters (or combinations of characters). A *leitmotif* is a recurring musical theme, associated with a particular person, place, or idea. Wagner also used this tool in his operatic works. Another distinctive quality in Puccini's works is the use of the voice in the style of speech: characters sing short phrases one after another as if they were talking to each other.

WHAT HAVE YOU LEARNED?

List the four fine arts:

1. _____
2. _____
3. _____
4. _____

In what language is *Tosca* written and performed? _____

What do the singers do to help the audience understand what is happening in the opera?

What are Supertitles? _____

Name two ways in which stages were lit in the early days of opera:

1. _____
2. _____

What is a recitative? _____

What is a bel canto? When was it popular? _____

What is leitmotif? _____

What are two themes/story ideas that are often seen in opera? _____

Do you think *Tosca* is an example of grand opera? Why or why not?

GEORGIA PERFORMANCE STANDARDS:

MUSIC: MIDDLE SCHOOL CHORUS: 8; MUSIC: HIGH SCHOOL CHORUS: 8
Understanding relationships between music, the other arts, and disciplines outside the arts

MUSIC: MIDDLE SCHOOL CHORUS: 9; MUSIC: HIGH SCHOOL CHORUS: 9
Understanding music in relation to history and culture

Ticket sale revenue does not cover the cost of producing an opera, but it is a major component of keeping the budget balanced. With that in mind, how does The Atlanta Opera decide what to charge its patrons for tickets? Currently, The Atlanta Opera has tickets priced at 5 levels ranging from \$26 to \$133. Price is determined by seat location in the Cobb Energy Centre.

Your job is to compute the pricing structure of the auditorium with the goal of making \$150,000 over 4 performances. Your lowest ticket should cost \$25. The highest should cost \$140.

- Decide how many levels of ticket prices you'll need between \$25 and \$140 and how many seats are in each level.
- Set your ticket prices. Calculate how many of each ticket you'll have to sell to meet your goal.

CONSIDER THE FOLLOWING

- The Cobb Energy Centre seats approximately 2,700.
- Base your budget and pricing structure on selling 75% of the tickets available – it's good to be conservative and not anticipate a complete sell-out of each performance.
- Check out The Atlanta Opera's website (atlantaopera.org) for some ideas about their seating levels.

Do your calculations in the space provided below:

Used by permission of the Pittsburgh Opera

GEORGIA PERFORMANCE STANDARDS

MATHEMATICS:

Students will make connections among mathematical ideas to other disciplines;
Students will understand and apply linear equations in one variable;
Students will represent and evaluate quantities using algebraic expressions;
Students will communicate mathematically

OBJECTIVE

Students will display an understanding of form as a musical element.

WHAT IS FORM

Form in music is the structure, plan, or design of a piece. According to the Oxford Dictionary of Music, “a musical form is the structural outline - comparable to an architect’s ground plan...”

The concept of form in music may also be compared to the concept of form in poetry. While musical form is determined by the sequence of musical material, poetic form is determined by characteristics such as rhyme schemes and patterns of syllables.

Below are some poetic forms you may have studied. Ask students to define each and describe its form.

Haiku

3 lines: first line has 5 syllables, second line has 7 syllables, third line has five syllables

Limerick

5 lines: first, second and fifth lines rhyme; third and fourth lines rhyme

Sonnet

14 lines: rhyming scheme of either abba abba cdcdcd OR abab cdcd efef gg

What other poetic forms have they studied? Are the students able to illustrate other forms?

Listed below are some frequently used musical forms. Letters of the alphabet represent main musical and melodic ideas.

Strophic

(A, A, A, A, etc.)

Song Form

(A B A) *Note: Opera arias are often in this form!*

Rondo

(A B A C A) *Note: Pop songs are often in this form!*

Ask the students to think of songs or pieces written in any of the above forms. What are they?

Example: Twinkle, Twinkle Little Star is ABA.

CREATING FORM

Non-music teachers may omit this section or substitute another creative activity such as writing poetry, writing music using non-traditional notation or drawing.

Have the students work in small groups to sequence the rhythmic patterns listed below to create one of the forms listed above.

A 3

4

B 3

4

C 3

4

Have the students perform their composition for their classmates. Can the students identify the forms their classmates have used?

REFLECTION QUESTIONS

Assess the student's understanding of musical form.

1. What is form in music?
2. How is form in music similar to form in poetry? How is it different?
3. What are other areas of study in which you might find similar ideas of form and structure?
4. Using capital letters to identify the main musical ideas, describe the following musical forms:
Strophic
Song Form
Rondo
5. How do you think listening for the form of a piece of music can help you better understand that piece?
How can it help you better understand an opera?

FOLLOW-UP

Have the students review the translation (Appendix A) and listen to Maria Callas sing “Vissi D’arte” (aria-database.com/translations/tosca02_vissi.txt). Have the students write a poem describing either Tosca’s character or the situation about which she sings in “Vissi D’arte.” Make sure that the poem has a clear, definable form.

Georgia Performance Standards

ENGLISH/LANGUAGE ARTS: WRITING

The student demonstrates competence in a variety of genres.

ENGLISH/LANGUAGE ARTS: READING AND LITERATURE

The student demonstrates comprehension by identifying evidence (i.e., examples of diction, imagery, point of view, figurative language, symbolism, plot events and main ideas) in a variety of texts representative of different genres (i.e., poetry, prose [short story, novel, essay, editorial, biography], and drama) and using this evidence as the basis for interpretation.

MUSIC: CHORUS AND GENERAL MUSIC

Reading and notating music; improvising melodies, variations and accompaniments; composing and arranging music within specified guidelines; Listening to, analyzing and describing music; Understanding relationships between music, the other arts and disciplines outside the arts.

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The Atlanta Opera's 2006 production of *Tosca*. (Photo: Tim Wilkerson)

"VISSI D'ARTE"

TOSCA'S ARIA FROM TOSCA

Vissi d'arte, vissi d'amore,
 non feci mai male ad anima viva!
 Con man furtiva
 quante miserie conobbi aiutai.
 Sempre con fè sincera
 la mia preghiera
 ai santi tabernacoli salì.
 Sempre con fè sincera
 diedi fiori agl'altar.
 Nell'ora del dolore
 perchè, perchè, Signore,
 perchè me ne rimunerì così?
 Diedi gioielli della Madonna al manto,
 e diedi il canto agli astri, al ciel,
 che ne ridean più belli.
 Nell'ora del dolor
 perchè, perchè, Signor,
 ah, perchè me ne rimunerì così?

Translation by Rebecca Burstein
 rburstei@brynmawr.edu
 aria-database.com

I lived for my art, I lived for love,
 I never did harm to a living soul!
 With a secret hand
 I relieved as many misfortunes as I knew of.
 Always with true faith
 my prayer
 rose to the holy shrines.
 Always with true faith
 I gave flowers to the altar.
 In the hour of grief
 why, why, o Lord,
 why do you reward me thus?
 I gave jewels for the Madonna's mantle,
 and I gave my song to the stars, to heaven,
 which smiled with more beauty.
 In the hour of grief
 why, why, o Lord,
 ah, why do you reward me thus?



The Metropolitan Opera Company production of *Tosca* with Gabriella Tucci as Tosca, singing "Vissi d'arte," toured the country in 1968. She debuted with the Royal Opera House and The Metropolitan Opera in 1960 as Cio-Cio-San in *Madama Butterfly*; she continued to sing with The Metropolitan Opera until 1972.
 (Photo: The Metropolitan Opera Company, 1968 *Tosca* touring season program book / The Atlanta Opera archives)