

THE ELIXIR OF LOVE

The Elixir of Love: Science

GAETANO DONIZETTI

Science Lesson: 19th Century Pseudoscience & Quackery

Students Will

- Read: "The Characters", "The Story of the Opera", "Our Composer, Gaetano Donizetti", and "Our Librettist, Felice Romani"
- Study Timeline: Donizetti and The World Around Him
- Research Quack Medicines and Devices of the 19th century
- Give a Presentation in Class

Copies for each Student

- "The Characters", "The Story of the Opera", and "Our Composer, Gaetano Donizetti"
- **Activity Sheet**

Copies for the Teacher

- Science Lesson: 19th Century Pseudoscience & Quackery
- "The Characters", "The Story of the Opera", "Our Composer, Gaetano Donizetti", "Our Librettist, Felice Romani"
- **SAMPLE ANSWER KEY: Activity Sheet**

Getting Ready

- Read: "The Characters", "The Story of the Opera", "Our Composer, Gaetano Donizetti", "Our Librettist, Felice Romani"
- Gather pens, pencils and additional writing paper if needed
- Prepare Library and/or Internet access for student research
- Art Supplies, if applicable

Pseudoscience & Quack Medicine

Definitions:

Pseudoscience: a claim, belief or practice which is presented as scientific, but does not adhere to a valid scientific method, lacks supporting evidence or plausibility, cannot be reliably tested, or otherwise lacks scientific status.

Quack: an unqualified person who claims medical knowledge or other skills

Quackery: the methods and treatments used by unskillful doctors or by people who pretend to be doctors

In the opera, Doctor Dulcamara, seller of the Elixir of Love, is described as a “quack physician who sells mysterious liquid (elixir) as medicine to anyone he can convince to part with their money.” One of the ways Doctor Dulcamara tricks Nemorino into buying the elixir is by claiming that he is a “man of science, with many famous clients” even though he really never shows any real evidence that his elixir works. “Doctor” Dulcamara, as far as we can see, is a quack who practices pseudoscience in order to dupe people into buying his product.

While elixirs, worm pills, and snake oils may sound like something from a fictional tale such as *The Elixir of Love* or something out of a Harry Potter movie, it was not long ago that these bottled “medicines” were marketed to consumers with claims to cure a host of ailments. In the U.S., before the passage of the 1906 Pure Food and Drug Act, practically anyone could bottle a mixture and sell it as medicine without question or regulation. Therefore, during the 19th century, it was common for traveling salesmen claiming to be doctors and scientists or drug companies to bottle mixtures promising to cure everything from coughs to constipation. Some of them were nothing more than colored water while others contained dangerous ingredients such as opium and alcohol.

Considering that our composer, Donizetti, lived during the 19th century, it is not difficult to understand why he chose to write an opera involving a salesman who claims to be a doctor selling an elixir that will fix one’s love life.

Guided/Independent Practice

Student Assignment

In small groups, have the students research quack medicines or medical devices invented during the 19th century, particularly during Donizetti’s lifetime, 1797-1848. Decide if you would like your students to answer all or select questions on the **Activity Worksheet**. Students can present their answers to the class.

Depending on your grade level, the ability of your students, and time constraints, student groups may simply present the quack medicine or medical device to the class answering the questions on the **Activity Sheet** or you may want to have them present a visual and/or written project of your choosing.

Evaluation

Have students share their findings with the class.

Did students answer all required questions in their presentation?

Do the students have an understanding of what quack medicine is?

Additional Materials: Timeline: Donizetti and the World Around Him

TEKS: Science

Grade 6-8 (112.26.B.4.A/B) (112.27.B.4.A/B) (112.28.B.4.A/B)

Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to: relate the impact of past and current research on scientific thought and society, including the process of science, cost-benefit analysis, and contributions of diverse scientists as related to the content; make informed decisions by evaluating evidence from multiple appropriate sources to assess the credibility, accuracy, cost-effectiveness, and methods used.

Biology, Chemistry (112.42.C.4.A/B) (112.43.C.4.A/B)

Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student; relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.

Chemistry (112.43.C.4.A/B)

Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student; relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.

Correlates

Language Arts, Social Studies

Gardner's Intelligences

Verbal-Linguistic, Visual-Spatial

Bloom's Taxonomy

Knowledge, Comprehension, Analysis, Evaluation

Bibliography

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Warrack, John and West, Ewan, *The Oxford Dictionary of Opera*, Oxford University Press, 1992.

The Characters

Adina: (soprano) A landowner and confident young woman who seems to be all business. However, her choice in literature reveals a romantic side. Adina dreams of falling in love with a handsome hero. When Belcore shows up, however, she has enough sense to know that marrying a man whom she hardly knows would be foolish. When Nemorino tells her of his love for her, she is not impressed. But when he later acts uninterested, she finds that she does indeed have feelings for him. She must realize both which man truly loves her and which man she really loves.

Nemorino: (tenor) An employee of Adina's who has been in love with her for a long time. Nemorino is shy and is not confident that Adina could have feelings for him. Up to now, she only seems to care about herself. When Nemorino sees Belcore ask Adina to marry, he knows that he must act quickly or lose any chance of marrying Adina himself. He is desperate enough to spend the last of his money on a love potion. Just as he is about to give up hope, he sees a sign that Adina does have feelings for him.

Belcore: (baritone) A handsome and successful army officer, Belcore is convinced that he can win over any woman. He feels that he deserves the most beautiful wife he can find, and that any young woman would jump at the chance to marry him. When he asks Adina to marry him, he is surprised that she hesitates. Belcore thinks that he will get Nemorino out of the way by signing him up for the army. Nemorino is only interested in the signing bonus, which will buy more elixir.

Doctor Dulcamara: (bass) A quack physician who sells a mysterious liquid as medicine to anyone he can convince to part with their hard earned money. He convinces Nemorino that this "magic" elixir will help him only after Nemorino tells him he is looking for a love potion like the fabled one in the story that Adina was reading.

The Story of the Opera

The villagers are coming in from a long, hot day. They enjoy hearing Adina read from the story of *Tristan and Isolde* and the magic love potion. Nemorino watches from a distance, yearning for even a word from Adina. He approaches her afterwards and professes his love. She shoos him away with brisk (and beautiful) words about the need for fickleness.

The army is in town. Sergeant Belcore enters, intent on storming the heart of Adina, the most beautiful and successful girl in town. She seems impressed. Nemorino is full of disgust and despair.

A cart pulls up carrying the Great Dr. Dulcamara, bearing pills and potions for every kind of ailment. He is most proud of his cure-all elixir. Nemorino approaches him quietly and asks whether he possesses the love potion of Queen Isolde. Absolutely, Dulcamara assures him. He will have damsels fawning over him. But he must wait a day for it to work. (Dulcamara has never heard of Isolde, the potion is a cheap Bordeaux, and the time would allow the Doctor to leave town.) He downs the flask and immediately feels robust enough to ignore Adina the next time he sees her. To get even, she consents to marry Belcore. Nemorino, horrified, begs her to wait another day.

Everyone is assembled for the wedding of Adina and the sergeant. Adina privately murmurs that she's waiting to sign the marriage contract until Nemorino arrives. Nemorino seeks out the doctor to ask for another bottle of the elixir. Dulcamara agrees to wait until he can borrow the money. Belcore strides by, puzzled by Adina's postponement. Nemorino laments that he is penniless. Belcore suggests he join the army and receive the volunteer bonus. Nemorino, jubilant, signs and takes the cash back to Dulcamara for another bottle.

Suddenly the village girls surround Nemorino. He thinks this is the effect of the elixir; he does not yet know that his uncle has died and left him a fortune. Adina has felt responsible for his enlistment, but her guilty feeling turns to jealousy and sadness when she sees him with all the girls. Dulcamara offers her the elixir, but she assures him she can win Nemorino back on her own.

Nemorino was by no means indifferent: During all the confusion he noticed a tear upon Adina's cheek. He is sure she cares for him. Adina approaches Nemorino and shows him that she has bought back his military contract. He feigns indifference, and she finally confesses her love. Belcore struts by, finds them together, and consoles himself by proclaiming that the world is full of women for him. Dulcamara redoubles his boasting: The magical elixir can make poor men into millionaires and can bring true love.

Synopsis by Santa Fe Opera

Our Composer, Gaetano Donizetti

Gaetano Donizetti was born in Bergamo, Italy on November 29, 1797. His father was the caretaker of the town pawnshop and his family was very poor. Although there was no tradition of music in the family, Donizetti showed talent for music at an early age. He was able to study music thanks to the help of Simone Mayr, a priest and teacher at the Saint Maria Maggiore church. In 1806, Mayr provided Donizetti with a full scholarship to attend a new school created to train musicians and choristers for the church's services.

Donizetti did not have a beautiful singing voice, but was able to prove himself by composing chamber and religious works. In 1814, Mayr helped Donizetti travel to Bologna, Italy to study with Padre Mattei. By 1822, Donizetti had moved to Naples, Italy to compose for the theatre.

During the next 12 years, Donizetti composed 31 operas for theatres in Naples, Rome, and Milan. In 1830, he premiered his 33rd opera, *Anna Bolena*, in Milan, Italy. This opera brought Donizetti great fame both in Italy and in countries around the world. He followed this success with *L'elisir d'amore*, a masterpiece in comic opera, in 1832. In 1835, Donizetti composed two bel canto operas: *Lucia di Lammermoor*, his most famous opera, and *Maria Stuarda*.

Donizetti was known for working at a frenzied pace. It was still the early days of composers working without wealthy patrons. His only financial security was the money he could earn for each opera. Donizetti sometimes found himself working with bad libretti rather than not working at all. *L'elisir d'amore*, however, was a remarkable libretto, and provided Donizetti with the story for one of his most enduring operas. He wrote the music for the entire opera in only 14 days.

Gaetano Donizetti suffered many tragedies. His parents died within weeks of each other in 1836. Donizetti and his wife had three children all of whom died in infancy. On July 30, 1837 Donizetti's beloved wife, Virginia, also passed away. It was during this tragic time that Donizetti had signed a contract to write the opera, *Roberto Devereux*.

In 1840, Donizetti moved to Paris, France. While there, he wrote most of his operas in French. In 1842, Donizetti became the main conductor of the Austrian court in Vienna, Austria, but kept his association with the Paris theaters. In all his dealings with the theaters, librettists, and singers, his colleagues described him as kind and respectful. Donizetti wrote *Don Pasquale*, his brilliant comic opera, in 1843. It was during rehearsals for *Don Pasquale* in Paris, France that

Donizetti began to show signs of ill health. By 1845, he had a stroke, his health worsened, and he was admitted to an insane asylum.

Donizetti was almost completely paralyzed by the time his friends brought him home to Bergamo, Italy. Here, they looked after him until his death on April 8, 1848. He was first buried in a cemetery in the borough of Valtesse in Bergamo. Donizetti's remains were later transferred to the church cemetery of Saint Maria Maggiore in Bergamo. There, he was buried near the grave of his teacher, Simone Mayr.

Our Librettist, Felice Romani

Felice Romani (Librettist), (January 31, 1788 - January 28, 1865) was born in 1788 in Moneglia, Italy. He was born to a poor family and often sick as a child, but he worked hard and grew up to study law and literature in Pisa. He eventually became a literature professor at the University of Genoa. Romani spent some time traveling through Europe and then moved to Milan where he met the Bavarian composer, Simon Mayr. He wrote two librettos for Mayr, and other composers in Milan were very impressed with his work. Romani was hired as a librettist for La Scala, the most famous opera house in Italy.

The excellence of Romani's writing style, noted for the spare use of poetry and lack of pretense, made him extremely popular with composers. He worked with all of the most important Italian composers of his day and wrote works in almost every operatic genre. Some of the operas are still performed today and include Donizetti's *The Elixir of Love*, *Anna Bolena*, and *Lucrezia Borgia*. He never created original plots or subjects, but preferred to adapt his librettos from already existing works. *The Elixir of Love*, for example was based on a French opera.

Name_____

Date_____

Activity Sheet

Questions:

1. What is the name of the quack medicine or medical device you found? What year was it invented?
2. Briefly explain why you chose this medicine or device.
3. Who invented it and what was his or her occupation? (*i.e. a doctor (real or quack), scientist, salesman, company, etc.*)
4. Where was it invented? (country, city, state, etc)
5. What illnesses or ailments did the inventor claim it cured?
6. Describe it. What are its ingredients? (*Or components if it is a device*)
7. Did it do what the inventor claimed it would? (Yes or No) Why?
8. Did it lead to any real medical science discoveries, treatments or inventions?
9. Do you know of any quack medicines and medical devices that exist today? If so, give an example.
10. Where did you find the information about your particular medicine or device?

SAMPLE ANSWER KEY: Activity Sheet**Questions:**

1. What is the name of the quack medicine or medical device you found? What year was it invented? **Dr. McMunn's Elixir of Opium; mid-1830s**
2. Briefly explain why you chose this medicine or device. **This medicine was found in 2003 by the Odyssey Marine Exploration crew among items recovered from the SS Republic, a ship which was lost in a hurricane in 1865. The Republic sank shortly after the Civil War carrying cargo intended to help provision the shops, depots and drugstores of the war-torn South.**
3. Who invented it and what was his or her occupation? (*i.e. a doctor (real or quack), scientist, salesman, company, etc.*) **Dr. John B. McMunn; a doctor A. B. & D. Sands drug company (bought recipe in 1841 and began selling it).**
4. Where was it invented? (country, city, state, etc) **USA**
5. What illnesses or ailments did the inventor claim it cured? **Relief of "convulsions and spasmodic action," as well as "pain and irritation, nervous excitement and morbid irritability of body and mind; "not habit-forming"**
6. Describe it. What are its ingredients? (*Or components if it is a device*) **It is Bottled Morphine.**
7. Did it do what the inventor claimed it would? (Yes or No) Why? **Yes because morphine is an opiate and opiates can help with pain and it also causes drowsiness so it would calm nervousness. No because it did not CURE what caused the pain or nervousness. It only treated the symptoms. Dr. McMunn also claimed it was non-habit forming, but opium addiction was very common during the 19th century and caused terrible withdrawal symptoms when people stopped taking it.**
8. Did it lead to any real medical science discoveries, treatments or inventions? **Yes. It was this kind of quack medicine that led to regulations being put into place such as dosing instructions, the 1906 Pure Food and Drug Act, and the FDA requirements that all drugs be safely tested before being marketed and sold to the public.**
9. Do you know of any quack medicines and medical devices that exist today? If so, give an example. **Weight loss drugs and energy drinks.**
10. Where did you find the information about your particular medicine or device?

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