PRESENTS

Doctor Atomic

Teacher Study Guide

DIRECTOR’S REHEARSALS
Piano/Tech: Monday, September 29 & Wednesday, October 1, 2008
Orchestral: Monday, October 6 & Tuesday October 7, 2008

The Metropolitan Opera Guild
Doctor Atomic

Director’s Rehearsal Information

Music: John Adams
Libretto: Peter Sellars

Orchestra Rehearsal: Monday, October 6, 2008

Piano Rehearsal: Wednesday, October 1, 2008
Orchestra Rehearsal: Tuesday, October 7, 2008

Timing: 11:00 AM to 3:00 PM *

Cast: Kitty Oppenhiemer: Sasha Cooke
     J. Robert Oppenhiemer: Gerald Finley
     Edward Teller: Richard Paul Fink
     General Leslie Groves: Eric Owens

Conductor: Alan Gilbert
Production: Penny Woolcock
Set Designer: Julian Crouch
Costume Designer: Catherine Zuber
Lighting Designer: Brian MacDevitt
Choreographer: Andrew Dawson
Video Designers: Leo Warner and Mark Grimmer

Doctor Atomic DVD: Donated by Naxos of America

Special Thanks: Lou Barrella, Dzik, Zeke Hecker, Mike Minard

Created by: Melanie Gudesblatt & Allison Kieckhefer (212-769-7024)

*Please allow time to stay for the talkback session after each rehearsal.
All talkbacks end at 3:00 P.M.
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Opera, unlike almost all other art forms, was invented. It all started around 1600, when a group of men in Florence decided to revive the ancient Greek tradition of performing plays by singing every word.

The culprits were the Florentine Camerata. In 1600, the word of the day was *polyphony*: popular composers mastered difficult, mathematical rules that allowed them to layer many melodic lines on top of each other, producing new and increasingly striking harmonies. Then, suddenly, Camerata composers like Peri, Corsi, Caccini and Monteverdi starting writing music that was just the opposite— one singer singing one melody with minimal instrumental support—*monody*. Instead of using many overlapping voices to explain moments of extreme emotion, Camerata composers displayed all that feeling with only one voice— the *aria* was born. But monody was useful for a second, more radical purpose: to connect the arias, by having singers sing speech-like rhythms to move the plot along or convey dialogue. When they combined this new discovery, *recitative* with the arias they already invented, opera was ready to roll.

**Man is the measure of all things**

The invention of opera was the perfect capstone to the musical Renaissance period. During this time, many musicians reading Greek texts for inspiration focused on Plato’s doctrine of *ethos*— the idea that music does not merely depict emotions but can arouse them. According to this doctrine, music had the potential to be more than just a tribute to God – the right music could alter men’s feelings and actions. Some people worried that the doctrine of ethos only worked when the music was perfectly aligned with the words. Therefore, a madrigal, in which active polyphony meant that the words could not easily be distinguished, did not have the same potential to change someone’s emotions. Many of these critics were members of the Florentine Camerata, and they believed that monody was the answer. Monody not only allowed the music to transform the listener, but it also asserted the humanist values of the day— that one voice alone has the power to make real change. Many early opera writers underscored this point by choosing the myth of Orpheus, both showing and telling the audience the power of the solo voice.
The late Baroque gets serious
Many of the world’s first operas were part of a genre called opera seria: starring gods and heroes dressed in elaborate costumes singing in front of state-of-the-art backdrops painted to look like 3D landscapes (trompe l’oeil). Although opera seria echoes Greek drama in its subject matter, setting, and unity of time and place, opera seria writers were innovators too, frequently insisting on the importance of Christian justice and forgiveness. In fact, many opera serias conclude with a happy ending. These distinctly Baroque adaptations were made for the aristocratic audiences, who took the moral lessons in opera very seriously. In Italian opera seria, these orderly endings had to be achieved by the human characters, without the intervention of gods—providing an idealized model for rulers to follow. A spoonful of sugar made the medicine go down: these operas were an entertaining way to remind oneself of the responsibility of leadership. The attempts at tidiness in the libretto, as well as the often formulaic nature of the music, caused many later opera writers to disregard opera seria as outmoded or inflexible.

It’s a hit!
Opera boomed in popularity—35 opera houses were built in the twenty years after its invention—and the production teams didn’t have time to (or care to) keep up. Creating an “ideal world” is expensive—trompe l’œil sets with multiple-point perspective, lavish costumes, complex stage machinery and even blocking were reused from production to production. An opera set in ancient Rome would look exactly the same as an opera set in England. The music was also interchangeable! Singers were allowed to substitute arias from other operas at any point so long as the central emotion remained the same.

Opera seria is less frequently performed today not only because it is regarded as stiff and overly formal but because the music itself requires specialized singers. Male opera seria heroes sing what is for us unusually high. In their day, these roles were sung by castrati: men who had been castrated before puberty in order to preserve their high voices. Castrati were the best-trained and most popular singers in the opera seria world. Castrati became the first opera stars—commanding astronomical fees and enticing throngs of female admirers.
Pretension Police! Classical composers develop opera for the people

By the end of the 18th century, things weren’t looking good for European aristocrats. Revolutionary rumblings were spreading through the French middle class, and England already felt the blow of the American Revolution. Forward-thinking Enlightenment composers changed with the times, writing operas for the increasingly literate middle class. Some, like composer C.W. Gluck and his librettist Calzabigi, tried to do so by stripping away the excess of opera seria to form a more direct, personal message: reform opera. Other composers championed an existing alternative to opera seria: opera buffa, or comic opera. Some librettists, like da Ponte, used dramas with revolutionary political messages to create their opera buffa libretti, like the anti-aristocratic Le Nozze di Figaro. To make opera more accessible, composers sometimes wrote opera in the country’s vernacular or included spoken dialogue in a singspiel or opera comique (German or French operas, respectively, which include spoken dialogue). Some writers turned opera into something new altogether— the ballad opera— a comic play with musical interludes set to popular tunes sung by the actors themselves, the predecessor of American musical theatre.

Out with the old, in with the new

The same reforms which brought opera seria down to size influenced production: gods no longer needed to be hoisted in with cranes, and heroes did not need to don expensive-looking armor. Audiences wanted a show to be realistic. Many sets portrayed the insides of houses and the outdoors, while costumes began to draw from contemporary as well as historical dress. Even French opera houses, the last stronghold of frilly aristocratic opera, began to strip down their style when Gluck’s reform operas became popular in France.

Bel Canto sets off vocal fireworks

Even though the composition of opera seria waned after 1800, composers in the Romantic period were still interested in ornate, beautiful singing— sometimes at the expense of dramatic plots. Italian composers like Donizetti, Bellini, and Rossini invented a new elaborate, lyric style called bel canto. Like opera seria arias, bel canto arias usually followed a predictable formula— a smooth, sustained cantabile section followed by a bravura section where the singer got a chance to show off. The Romantic era put a premium on personal artistic expression— singers were allowed and even expected to improvise ornaments onstage.

Under pressure
Each bel canto opera may seem as if it took forever to write, but many bel canto operas were actually written in less than a month. Each Italian city-state supported several opera houses, and each wanted to outdo its neighboring provinces. Every season, an opera house would employ a resident composer, who was expected to rapidly write operas custom tailored to the demands of both the house’s impresario and the individual singers. Sometimes, composers were forced to change huge aspects of their work with very little notice. When the impresario of the Teatro Argentino in Rome told Rossini that he did not like the original overture to *Il Barbiere di Siviglia*, Rossini simply swapped in another overture that he had already written— which has become some of the most beloved music of the entire opera.

**Viva VERDI!**
Composer Giuseppe Verdi wrote highly inventive, impressively tuneful, and intensely dramatic operas which are some of the most frequently performed today. But even Verdi didn’t come out of nowhere— many of the themes expressed in his operas are great examples of late Romantic ideology. His works explore the deep tension between individual needs and duty to society, perhaps the most important conflict for artists in the 19th century. His involvement in the Italian Risorgimento— the unification of individual city-states into one nation— reflects a resurgence of nationalism all over Europe. During the Romantic period, Russian, Czech, Hungarian, and many other nations’ musical styles really came into their own when composers like Mussorgsky, Janacek and Dvorak wrote operas culling from the rich folk musical traditions of their respective countries.

**Lions and Tigers and Bears: On stage?**
Verdi often wrote in a style called *grand opera*, a term which has as much to do with how opera looks as how it sounds. Grand opera came from France, where opera productions were the Hollywood blockbusters of their day. Opera-goers craved novelty, seeking increasingly heart-wrenching plotlines, complex stage illusions and inventive orchestration. Productions worked with huge budgets and attracted massive crowds. The “super-sizing” of opera’s production demanded some re-organization backstage. The previously subordinate role of the stage director (then called the *metteur en scène*) took on much more importance, as they had to control the vast numbers of singers with small parts, chorus members, supernumeraries, and animals who flooded the stage; to ensure that performers knew how to respond correctly to special effects; and to see that principals were not lost in the huge new sets.

**It’s not over until the fat lady sings**
Richard Wagner changed everything. Though he was Verdi’s exact contemporary during the late Romantic period— both composing from about
1845-85— they wrote in very different styles. Wagner wrote operas with continuously shifting music—no distinctions between aria and recitative—where the voice is just one thread in the complex musical fabric. Like many German Romantic composers, Wagner made full use of the expanded orchestra to create a complex chromatic atmosphere full of strange and unexpected chords—sometimes beautiful and sometimes upsetting. In order to keep listeners from getting lost during his extremely long operas, Wagner associated short musical fragments with characters or ideas, and strung these pieces together to help tell the story. This invention— the leitmotif—changed opera forever.

**Gesamtkunst-what?**
Wagner isn’t just famous for his epic operas; he introduced a theory called gesamtkunstwerk, or “total art work.” He wanted people who saw his operas to enter a fully realized artistic dream world—and he did it all himself. It started when Wagner traveled to Bayreuth, Bavaria to look at a possible opera house in which to perform his famous Ring Cycle. Dissatisfied with the existing options, he made plans for a completely new opera house for Bayreuth, the Festspelhaus, which continues to produce his work to this day. Wagner wrote all his own libretti and supervised the construction of his sets and costumes. He even designed his own curtain which could be pulled back instead of up, to further invite the audience to enter his magical world. As if that wasn’t enough, Wagner invented his own tuba to play notes that no instrument in the orchestra could reach.

**Torchbearers: Strauss & Puccini**
The works of Wagner and Verdi are sometimes celebrated as the most supreme accomplishments of composition possible in opera—how could anyone attempt to write opera after such titans? Yet two bold, inspired composers of the late 19th century decided to see what else could be done with the art form. Richard Strauss followed Wagner in the celebrated German tradition, creating operas that featured huge orchestras, adventurous harmonies, and libretti that were scandalous or intellectual—or both. In Italy, Giacomo Puccini picked up where Verdi left off, composing operas that featured gorgeous melodies, strong characterizations, and crowd-pleasing, action-packed plots.

**True dat: Verismo!**
In the 1890s, an operatic style called verismo arose from a growing trend towards stark realism in French painting and literature. Artists became increasingly interested in the strenuous lives of the middle or lower-class, attempting to recreate their struggles accurately and objectively. The Italians
caught on, writing plays depicting the local customs and dialect of unsophisticated characters without sentimentality. Soon, composers began to use these literary models as material for new verismo operas— the first being Mascagni’s *Cavalleria Rusticana*. The music of verismo opera is as forthright as the libretto: direct and dramatic, uninterested in showoff-y arias. Puccini often wouldn’t write overtures, because he felt that they were an unnatural ornament.

**Thinking outside the box**

In the early twentieth century, opera’s production was the subject of visual art’s trend toward abstraction. Recoiling from the realism of war and the colossal death count it wrought upon Europe, many operas chose minimal sets to evoke rather than connote settings. Booming post-modern literary theory encouraged designers to treat operas as ahistorical works, often updating or removing elements which fixed a production to a previous time or specific place.

**You can teach an old dog new tricks**

Through the second half of the twentieth century, opera proved that it could stretch to encompass rapidly shifting cultural values and expanding definitions of music itself. Schöenberg and Berg adapted their twelve-tone compositional rules to opera with surprisingly popular results; Berg’s *Wozzeck* is a staple of the modern canon. The multiculturalism which has become a hallmark of twentieth-century life has had its stamp on opera—notably with Gershwin’s *Porgy and Bess*, bringing popular and pervasive jazz and blues sounds to the opera stage. Tan Dun’s *The First Emperor*, which premiered at the Met in December 2006, is a much-anticipated union of conventional Chinese opera and folk song and the Western operatic tradition. Who knows what the rest of the twenty-first century will bring!
WHO DOES WHAT AT THE METROPOLITAN OPERA

Far more goes into an opera than what you see on stage during a performance. Hundreds of singers, musicians, dancers, actors, designers, stagehands and many other Met employees work incredibly hard to prepare for an opera—sometimes, many years in advance. One of the exciting things about attending a Director’s Rehearsal is that you can see all of the people that are usually behind-the-scenes doing their jobs right in front of your eyes.

The conductor
The conductor is the music director of an opera; he or she has the last word on all musical decisions. One of the biggest decisions is the speed of the music, or tempo, which he or she conveys to the orchestra by keeping time with a baton or hand (though the baton tells the orchestra other things, too). The conductor also determines the balance of the music—which parts to emphasize and bring out. No matter what musical interpretations the conductor makes, he or she must be sure to keep the orchestra and singers together and to ensure that the singers can be heard above the orchestra.

According to James Levine, the true job of the conductor is to “get the music’s character right. You never hear of composers complaining about inadequate technical execution, or that the horns were cracking or the wind chords weren’t together. What you hear composers complaining about is falsification of what they’ve written, a misunderstanding of the point, the spirit, the... substance of the piece, of what it is all about.”

The stage director
The stage director is sometimes called the producer in opera, but they are more like the director of a play or movie than a theatrical producer. Just as the conductor makes musical decisions, the stage director has the final word on all theatrical choices. First, the stage director decides the over-all concept for a production. Then he or she works with a design team of the set designer, costume designer, choreographer, and lighting designer to create images and moods that convey their interpretation of the opera to the audience visually. He or she also collaborates with the conductor to make sure that the music and the staged show complement each other and create a unified performance. The director helps singers develop their characters and express them in keeping with the spirit of the production. Since one director cannot assist many characters at once and because rehearsal time is very short, the stage director is aided by several assistant stage directors, who stand on stage and literally walk characters through their movements in rehearsals.
The technical director
The designers, who are all hired to work on a single production, answer to a permanent member of The Met’s staff— the technical director, currently Joseph Clark. The technical director oversees the physical side of design. He or she makes sure that the designs that artists submit are brought into reality— that the sets are compact enough to be stored, light in weight enough to be changed quickly, and strong enough to support themselves. Once the technical director gives approval, The Met’s resident, unionized carpenters, painters, set and prop makers, costume shop staff, and wigmakers construct everything that goes onstage in a given production. New productions at The Met are designed to last for twenty years... the technical director makes sure that they will.

Principal singers
An opera singer’s work begins long before he or she is hired by The Met. For their voices to be able to fill enormous spaces without amplification, opera singers must train for many years. This is partly because they are trying to isolate and train their vocal cords: a mechanism about the size of your little finger nail. This is made doubly hard by the fact that unlike other musicians, singers can’t see their instrument, so all of their learning has to be by sensation.

Unlike almost every other type of performer, opera singers must memorize their entire part before rehearsals even begin. Fortunately for most singers, they are not singing a new role every single time; they often refresh roles that they have sung before. An opera singer has a repertoire of hundreds of hours of music that they can sing professionally after a very short period of preparation. Singers also have to be able to pronounce and understand the many languages in which operas are written— Italian, German, French, Russian; even Czech!

Opera singers also have to be convincing actors, taking on some of the most complex characters in literature. They sing and act while onstage under hot lights, performing blocking that can be awkward or difficult. Opera singers have to be able to sing running, jumping, dancing and even lying down! Period costumes like hoop skirts, cloaks and corsets can also be hot and uncomfortable. Opera aficionados have good reason to obsess over their favorite opera stars!
A QUICK GUIDE TO VOICE PARTS

**Soprano**: Sopranos have the highest voices. They usually play the heroines of an opera. This means they often have lots of show-off arias to sing, and get to fall in love and/or die more often than other female voice types.

**Mezzo-soprano, or mezzo**: This is the middle female voice, and has a darker, warmer sound than the soprano. Mezzos spend a lot of their time playing mothers and villainesses, although sometimes they get to play seductive heroines. Mezzos also play young men on occasion – these are called trouser roles.

**Contralto, or alto**: The lowest female voice. Contralto is a rare voice type. Altos usually portray older females or character parts like witches and old gypsies.

**Countertenor**: Also known as alto, this is the highest male voice, and another vocal rarity. Countertenors sing with about the same range as a contralto. Countertenor roles are most common in baroque opera, but some more modern composers write parts for countertenors too.

**Tenor**: If there are no countertenors on stage, then the highest male voice in opera is the tenor. Tenors are usually the heroes who get the girl or die horribly in the attempt.

**Baritone**: The middle male voice. In comic opera, the baritone is often the ringleader of whatever naughtiness is going on, but in tragic opera, he’s more likely to play the villain.

**Bass**: The lowest male voice. Low voices usually suggest age and wisdom in serious opera, and basses usually play Kings, fathers, and grandfathers. In comic opera basses often portray old characters that are foolish or laughable.
**Vocal coaches**
Fortunately, singers get help. The Met has voice coaches who help singers pronounce words, make sure that their singing style is in keeping with the style of the production and smooth out any rough spots. But the coaches don’t teach singers technique! To get to the Met, a singer must already be very accomplished.

**The prompter**
The best coaches are asked to be prompters. Prompters stand in a hooded box at the foot of the stage and help give singers cues, keep them in time with the orchestra, and remind them of any blocking or music they may have forgotten. Most importantly, the prompter must know the particular singers and be able to anticipate their problems before they arise. Because they must memorize all the music, words and blocking in an opera, the prompter is one of the hardest jobs at the opera house.

**The orchestra**
The orchestra plays the music of the opera. You can see them in the pit, below the foot of the stage. The Met has a regular orchestra with 92 members, as well as 44 associates who are scheduled as needed. Often opera orchestras include special effects specific to the opera being performed. Sometimes you can see unusual instruments in the pit. Some previously used at The Met include airplane propellers, type writers, and guillotines!

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<th><strong>A QUICK GUIDE TO THE FAMILIES OF THE ORCHESTRA</strong></th>
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<tr>
<td><strong>Strings:</strong> violins, violas, cellos, double bass</td>
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<tr>
<td><strong>Woodwind:</strong> piccolos, flutes, oboes, clarinets and bassoons</td>
</tr>
<tr>
<td><strong>Brass:</strong> trumpets, trombones, French horns, baritones and tubas</td>
</tr>
<tr>
<td><strong>Percussion:</strong> bass drums, kettle drums, timpani, xylophones, piano, bells, gongs, cymbals, chimes</td>
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**The chorus**
The chorus at the Met isn’t a consolation prize; it’s an intense, full-time job. Unlike the principals, the 82 member chorus (sometimes bigger for operas like *Aida* and *Boris Godunov*) must have perfect ensemble– anything less than immaculate attacks and cut-offs would detract from the production. The Met chorus has to learn large chunks of music for each opera, spend hours in rehearsals and sometimes perform in several different operas a week! In each opera, chorus members have to remember just as much as the soloists – the only difference is that they sing together rather than on their own.
The dance corps
The Met has a regular corps of sixteen dancers. The Met can also call on more than sixty associate dancers based on the style of dance required by each opera, such as classical ballet, flamenco, or modern dance.

The stage manager
In order to keep all of the elements of opera under control, the stage manager must be highly skilled in many different areas. This makes being an opera stage manager a much tougher position than a theatrical stage manager. He or she must follow the score throughout the opera to give all the technical cues, as well as be an expert in stage craft, making sure that the lights, costumes, sets, stage machinery and choreography work on stage. A stage manager must also be able to cope with the enormous pressure of keeping such a complicated operation running smoothly. There are usually assistant stage managers as well, who not only assist the stage manager in cueing lights, special effects and scene changes but make sure that artists, props, furniture, and costumes are backstage when needed.

The crews
Many people assist the artistic designers in making their designs look great. Stagehands set up the stage, while flymen raise and lower sets fixed to the grid, or “fly” above the stage. Costumers, make-up artists and wig staff make the principals look stage-ready.

But that’s not all!
In many respects, The Metropolitan Opera is a business just like any other. It needs many administrators, publicity representatives, a technology support staff, development advisors, and even security personnel. But because it is the Met, there are some employees that you would never find at your average business—like the archivists, Met Titles writers and the many people that work together to make the weekly radio broadcasts happen. 1,500 people work for the Met every season... no wonder it is considered one of the greatest opera houses in the world!
Story of *Doctor Atomic*

**Act I**

**Scene 1**


Work on the atomic bomb approaches its culminating point. Physicists, engineers, and US military personnel are laboring under intense pressure from Washington to have the bomb tested and ready for use within the next two weeks. J. Robert Oppenheimer—“Oppie” to his friends—has brought the brightest minds in physics and engineering to a remote mesa in what was assumed to be a race against their German counterparts. But now Germany has surrendered, and many of the scientists are beginning to question the necessity of its use in Japan. General Leslie Groves, Army commander of the project, while aware of Oppenheimer’s vague but troubling past involvements with the Communist party, has up to now been able to persuade the government to look the other way because of Oppenheimer’s great value to the program.

After the opening chorus, Edward Teller confronts Oppenheimer in the lab. Teller’s obsession with his dream of a thermonuclear weapon, the “Super,” has caused difficulties with other scientists. Teamwork is difficult for Teller, and Oppenheimer excuses him from the group collaboration. Teller shows Oppenheimer a letter he has just received from another physicist, the Hungarian Leo Szilard, urging all the scientists involved in atomic energy to take a moral stand against the bomb’s use and to sign a letter to President Truman: “We alone are in a position to declare our stand.” Oppenheimer admonishes Teller and other scientists not to involve themselves in “political pronouncements.”

Robert Wilson, a committed, idealistic physicist (and the youngest division leader at Los Alamos) is organizing a meeting in his technical area to talk about the social and moral implications of the “Gadget” (code word for the bomb). Oppenheimer, well aware of Wilson’s liberal affinities, objects to the plan. “You could get into trouble if you had such a meeting.” Wilson also has a petition for the President that he hopes everyone will sign: “Atomic attacks on Japan cannot be justified until we make clear the terms of peace and give them a chance to surrender.” Oppenheimer, who has just returned from Washington, describes the decision to bomb Japanese cities, focusing on civilian targets. “We should seek to make a profound psychological impression on as many inhabitants as possible.”

**Scene 2**

The Oppenheimers’ house in Los Alamos

Oppenheimer and his wife, Kitty, are alone at home. It is a warm summer night, but Oppenheimer is preoccupied reading reports. Kitty asks him: “Am I in your light?” Roused, Oppenheimer responds to her in rich, atmospheric stanzas by one of their favorite poets, Baudelaire. For a few brief moments, they are transported into the
intoxicated climate of the poem, and then it’s time for Robert to go to work. “Those who most long for peace now pour their lives on war,” Kitty, alone, declares. “A world is to be fought for, sung and built: love must imagine the world.”

Scene 3

It is the night of the test of the first atomic bomb. Truman is in Potsdam negotiating the spoils of Europe with Churchill and Stalin. The pressure on Oppenheimer and General Groves to achieve a successful test is unyielding: the Americans need to have a nuclear weapon as a trump card to play against the Russians.

As predicted months before, a massive summer electrical storm is lashing the test site. The bomb, already partially armed for detonation and hoisted on a high tower, is in danger of being struck by lightning. Groves, beside himself with frustration and anxiety, berates Chief Meteorologist Frank Hubbard, who warns the general that attempting the test in these conditions is extremely dangerous. Captain Nolan off the Army Medical Corps tries to impress upon Groves the deadly toxic properties of plutonium that are only now beginning to be understood. An accident at the test site could render hundreds of military and scientific personnel fatally ill with painful radiation poisoning. Already panic is starting to take hold, and several enlisted men have had to be removed under sedation. Groves dismisses all staff to confer with Oppenheimer alone. “Oppie” gently humors Groves about the latter’s chronic weight problems, and the General confesses many failed attempts to control his diet. Groves leaves to catch two hours of sleep. Oppenheimer faces his own personal crisis alone in the desert, recalling the Holy Sonnet by John Donne: “Batter my heart, three-person’d God.” It is the poem that inspired him to name the test site “Trinity.”

Act II
Scene 1
The Oppenheimers’ house

It is two in the morning, July 16. Two hundred miles from the test site, Kitty and her Tewa Indian maid, Pasqualita, are watching the night sky for signs of the blast. (Women were prohibited from entering Alamogordo.) Pasqualita occasionally checks on the Oppenheimers’ sleeping child. Kitty, in a long soliloquy, sings of the war, of death, and of the resurrection of the spirit: “Now I say that the peace the spirit needs is peace, not lack of war, but fierce continual flame.”

Orchestral Interlude
Rain over the Sangre de Cristos Mountains. Seven-month-old Katherine Oppenheimer awakens, crying. Pasqualita takes the baby and comforts her, singing a lullaby.

Scene 2

The plutonium bomb has been mounted on the detonation tower and all personnel have been cleared from the surrounding blast area. Robert Wilson has to climb the tower one last time to attach a measuring instrument to the bomb. From the top of the tower he can feel the wind and rain buffet his face, and he sees flashes of lightning in the distance. Jack Hubbard is at the foot of the tower, making wind velocity measurements ordered by Groves. Wilson confesses his extreme anxiety about being around the bomb in the middle of an electrical storm. To Hubbard, a test in the middle of such weather is a “blunder of the first magnitude,” and he points out that the high winds could scatter lethal radioactive debris for miles. While Wilson and Hubbard are at the tower, Groves, Oppenheimer, and the others wait nervously at the Base Camp observation bunker for the storm to pass.

The scientists’ talk returns to an unsettling concern: whether or not the detonation might set off an uncontrolled chain reaction ending in the destruction of the earth’s atmosphere. Teller muses: “Might we not be settling off a chain reaction that will encircle the globe in a sea of fire?” Rumor has it that Enrico Fermi, one of the team’s most respected scientists, has been taking bets on whether such a calamity might occur. Oppenheimer notes pointedly that such a result is not possible, but it hardly brightens the mood of gloom pervading the test site. With the rain still coming down, Groves disregards Hubbard’s warnings about the storm and Oppenheimer orders all personnel to prepare for the test shot at 5.30 A.M.

Scenes 3 and 4
The final countdown begins at 5.10 A.M. Groves, always fearing sabotage, complains to Lieutenant Bush about the behavior of individuals who have caused endless security headaches: “This program has been plagued from the start by the presence of certain scientists of doubtful discretion and uncertain loyalty.”

Oppenheimer, whose normally thin frame has shrunken even further to 98 pounds, is in a state of extreme nervous exhaustion. Everyone waits, each absorbed in his own thoughts. “Memories, Regrets, Spasms, Fears, Afflictions, Nightmares, Rages, and Neuroses” overwhelm the hours between the minutes. Pasqualita has her own visions: “News came on the frost, ‘The dead are on the march!’”

At Base Camp, the men make a betting pool. Each tries to guess the yield of the bomb. Oppenheimer surprises everyone by his pessimistic prediction of three kilotons—“a fizzle,” Teller calls it. Even Groves is unable to conceal his waning faith. Teller scoffs at their timidity and predicts a 45-kiloton explosion.

The night sky is suddenly filled with a terrifying vision of Vishnu as described in the Bhagavad Gita: “At the sight of this, your Shape stupendous, full of mouths and eyes … terrible with fangs … when I see you, Vishnu … with your mouths agape and flame-eyes staring—all my peace is gone; my heart is troubled.”

At zero minus ten minutes, Groves becomes concerned that Oppenheimer, “our high-
strung director,” is going to have a nervous breakdown. A warning rocket arches in the sky and a siren sounds. Everyone rushes to their places in the trenches. Then the storm breaks, and the sky over Ground Zero suddenly clears. At zero minus two minutes, another warning rocket goes off but sputters out prematurely. At zero minus 60 seconds, a third rocket appears in the morning sky, signaling the final 60-second countdown. Base Camp resembles an outpost of the dead: rows of scientists and Army personnel lying facedown in shallow ditches. There is no movement or whisper of activity, only the rhythmic countdown over the loudspeaker. At zero minus 45 seconds, an engineer flips the switch for the automatic timer. The triggering circuits begin to fire in rapid precision. “Zero minus one.” There is an eerie silence, and then an era begins.

Additional Activities that Connect to the Story of Doctor Atomic

See Page 20 for “Guilty or Innocent?” Activity

See Page 22 for “Artistic License” Activity

See Page 25 for “Extra! Extra!” Activity

See Page 28 for “Style Points” Activity
Meet the Characters – *Doctor Atomic*

**J. Robert Oppenheimer** (Baritone): As director of the Manhattan Project he is a charismatic and respected leader. Yet his massive amount of responsibility causes great internal moral conflict – trusted by important political and military minds in Washington he is obligated to finish the atomic bomb, yet his strong moral fiber makes him teeter on the brink of breakdown.

**Kitty Oppenheimer** (Mezzo-soprano): Oppenheimer’s loving wife, she is afforded tremendous insight through her observations of her husband. She, like Pasqualita, prophetically contemplates the realities of the situation.

**Edward Teller** (Baritone): Teller is a physicist working on the Manhattan Project whose edgy and jaded personality makes it hard for him to collaborate with others. He insightfully poses the moral questions and raises the difficult points that everyone else is trying desperately to ignore.

**Robert Wilson** (Tenor): Young and motivated, Wilson’s enthusiasm for the project conflicts with his idealistic humanitarian perspective. He deeply wants to be a hero and “save civilization,” but his subconscious awareness of the darker reality makes reconciliation difficult.

**General Leslie Groves** (Baritone): The military head of the Manhattan Project, Groves serves as the politically-minded character who contrasts Oppenheimer and the other scientifically-oriented physicists. As such, Groves views the bomb as a means to an end. The intense pressure from Washington makes him unforgiving and temperamental, and he often bullies the others to expedite their work.

**Jack Hubbard** (Baritone): An honest yet nervous man, Hubbard is the chief meteorologist for the Trinity test site and meekly succumbs to Groves’ bullying.

**Captain James Nolan** (Tenor): As the Army Medical Corps physician at Los Alamos, he has the unfortunate task of being the bearer of bad news. Slightly sarcastic but always honest, Nolan earnestly conveys the harsh realities of the bomb’s toxic effects as well as diagnoses the widespread panic.

**Pasqualita** (Contralto): The Oppenheimers’ Tewa (Native American) maid, her indigenous songs eerily foreshadow events to come. She offers a soothing and calm voice, which counters the manic energy and anxiety of the scientists.
**Music of Doctor Atomic**

**The Bare Necessities – Minimalist Music**

Before beginning to talk about the music of *Doctor Atomic*, one of the first operas of the 21st century, it’s a good idea to quickly (and painlessly!) review some of the hallmarks of operas from 1600-2000, as many of the techniques that make *Atomic* such an innovative work were developed in reaction to the sounds of opera’s 400 year history.

Very simply, operas traditionally consisted of two types of music: recitative, which was highly rhythmic, closely resembled speech, and was used primarily to move along the story line, and set pieces such as arias, which were used to give insight into the characters’ emotional states, much like soliloquies in drama. Arias traditionally feature flowing melodies, or memorable musical passages; they are opera’s “number one hits”, and often now found repurposed as catchy jingles in commercials.

Traditional opera audiences knew what to expect to hear: the music followed very regular patterns, moving step by step, measure by measure (always on the downbeat, or strong first count) from one key to the next, from recitative to aria, through several acts. Some of these were strict compositional rules carefully instructed in conservatories, others were more or less conventions that composers could choose to ignore if they so desired.

Around 1850, some things began to change. Composers were still taught all the rules in school, but they disregarded them off for new-fangled ideas. There were still plenty of show-stopping arias, but recitatives fell by the wayside as composers began to through compose their works. By the time the twentieth century rolled around, it was even difficult to identify an aria as both story and music flowed seamlessly from scene to scene and singer to singer.

**The Bare Necessities – Minimalist Music**

During the twentieth century, composers like John Adams looked for ways to link the present with the past, and reconcile opera’s compositional history with the new opportunities made available through the acceptance of jazz and other popular music became more or less “legitimate.”

One way they did this was by going back to the basics of music: using primarily rhythm, simple melody, and a few basic chords, they created a musical movement called minimalism. Minimalist works take these few elements and establish a basic pattern and then slowly allow that pattern to evolve throughout a piece. The resulting subtle and incremental changes eventually result in the entire work shifting to a new melody, a new main rhythm, or a new tonality or set of chords.

People tend to have strong reactions to minimalist music – they either love it because of its subtlety, or hate it because it is so static. John Adams is often connected with minimalism because of the nature of some of his early works, but even he has referred to works of this style as “those Great Prairies of non-event.”

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Minimalism Version 2.0: John Adams’ take on Minimalism

John Adams isn’t a strict minimalist – in *Doctor Atomic* Adams adapts some of the overarching rules of minimalism but does not stick strictly to its details.

Perhaps the most striking minimalist reference is Adams’ presentation and manipulation of time throughout the opera. The entire opera is basically one giant ticking clock, counting down to detonation. As discussed, strictly minimalist pieces will often present a simple figure and manipulate it over a long period. In *Doctor Atomic*, however, Adams composes musical clocks that literally “tick” as they mark time.

- **Listen: “tick-tock” (6:22)** The first of such clocks occurs during the opening chorus. As the chorus expresses the uncertainty concerning the bomb (“We do not know when the first explosion will occur nor how effective it will be”), two instruments in the orchestra, the oboe and English horn, play a metronomic “tick-tock.” The specific sound quality of the instrument pair makes the clock sound oddly unsettled; this feeling is emphasized by syncopated brass chords that punctuate the music. Instead of an easily identified strong beat in the beginning of each measure (ex: 1 2 3 | 1 2 3 | 1 2 3 etc.), **syncopation** is when weak beats are accented and conflict with the established pulse (ex: 1 2 3 | 1 2 3 | 1 2 3 etc.). Consequently, these unprepared accents disrupt our sense of time, acting like the stubborn inner mechanisms of a clock about to break.

- **Listen: Act II, Scene 3 (47:58)** Another great example occurs in the vocal accompaniment during Act II, Scene 3. As we reach the climax of all the characters’ delusional episodes and Oppenheimer’s voice rings out in acute awareness, the choral accompaniment reminds everyone of the inevitable with their syncopated “ticks.” Their soft irregular pulsing acts like a subconscious affirmation of the unavoidable consequences of the atomic bomb’s success.

“Make it New”
Aside from the minimalist aspects in *Doctor Atomic*, we can also identify references to another musical style, **modernism**. Modernism came about in the early 20th century, and is a grab bag of musical techniques linked by the historical tradition they grew out of. All the musical eras that preceded modernism, namely the baroque, classical, and romantic, were written within strict boundaries. Modernism took the rules, and stretched them to their limits in every direction. Let’s look at some modern moments in *Doctor Atomic*.

- **Listen: Act I, Scene 1 19:43** In much of the “classical” music we are accustomed to (and especially in opera) we listen for lyrical and memorable melodies. Instead of these smooth and connected tunes, however, jagged melodic lines often occur in modern works. When Wilson is supporting a moral stand against the bomb (19:43), for example, his melody is jerky, uneven and moves great distances between notes that are relatively uncomfortable to sing. In the span of 25 measures of music, Wilson hits low notes and high notes that are up to 17 pitches apart – now that’s a HUGE range of notes! **Key Question: Do you think you could sing his vocal line after listening to it once?**

- **Listen: Right before Oppenheimer’s big solo of Act I (1:11:32)** If the weird sounds and strange jumpy melodies are modern ways of stretching sound, then extreme rhythmic complexity is a modern way of manipulating time. Pre-modern music, with its strict guidelines, is often structured in a clear and balanced rhythmic frame; in modern
works the accessibility of the rhythms becomes clouded by the use of **syncopation** (Refer back to the definition of syncopation above if you need to). Right before Oppenheimer’s big solo at the end of Act I (1:11:32), the orchestra’s introduction is full of syncopation, which serves to disrupt our sense of time and makes us feel unsettled. Listen to the different instruments, each one coming in at a different and unpredictable time – can you count a steady beat?

- **Listen: Very end of Act I (1:17:51)** For more practice you can also listen to the very end of Act I, keep on the look out for the same elements, such as syncopation and jagged punctuations in the different instruments.

- **Listen: the Overture** Another element of modernism that is important to note for *Doctor Atomic* is the incorporation of sounds outside the traditional orchestra. Many modern pieces use non-traditional instruments (such as a typewriter) or replicate sounds from the outside world (such as the sound of an airplane propeller), but the use of these elements in “classical” music is a relatively new trend. Listen to the Overture at the beginning of the opera – in the score the first part is only labeled “electronic soundscape.” This refers to a specific combination of electronic sounds that Adams combined to create a musical texture.

**Key Question:** What “instruments” or sounds do you think Adams incorporated into his soundscape?

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**A Modern Take on Familiar Forms**
As we are now well aware, because *Doctor Atomic* is still a modern work, and Adams is a modern composer, we have to take examples of formal structures with a grain of salt. The “arias” and “recitatives” of *Doctor Atomic* are more like cousins of classical forms rather than siblings. Adams manipulates and stretches these structures to fit his narrative as with other aspects of his musical style, but not to the point that they are unrecognizable.

**Speech-like Music**
- **Listen: Oppenheimer and General Groves’ dialogue in Act I, Scene 3 (1:07:35)** Many of the “recitative” sections in *Doctor Atomic* are jagged and syllabic, mirroring real speech. Listen to the dialogue between Oppenheimer and General Groves in Act I, Scene 3 (1:07:35). Listen to their musical lines, and try to notice whether or not it sounds syllabic or whether it is smooth and flowing; also try to listen for the range, that is, how high or low they sing – you might notice that sometimes their vocal lines repeat pitches and jump around to mimic speech patterns.

**Freeze Frame**
Since the arias in *Doctor Atomic* are much less controlled by an arbitrary formal structure, we call them **ariosos**, which are like arias in that they are used to convey emotion and thought, but are different in that they are much freer in form.

- **Listen: Kitty’s arioso that opens Act I, Scene 2 (32:06)** Thinking back to the recitative example you just listened to, think about how different Kitty’s aria sounds, and **why** it sounds so distinct. Notice how much smoother her melody is. You should also pay attention to what Kitty says. Arias/ariosos aren’t just a place for sweeping tunes, they are also about expressing thought and emotion; notice the content of her text as well, how it is poetic verse as opposed to the cold and scientific text found in the recitative sections.
Indeed, Kitty’s reflective moments stand as emotional pillars that balance the tremendous amount of science and technology in the opera.

- **Listen: Oppenheimer’s arioso (72:26 or 1:12:26)** Oppenheimer experiences a similar moment of deliberation at the end of Act I. Left alone with the bomb, Oppenheimer confronts his inner demons in an anguished outpouring of music and speech (72:26 or 1:12:26). As with Kitty, listen to how expressive his words are and how connected and beautiful the melody is. This is an especially important moment in the opera, for it is one of only a few times we are privy to his innermost thoughts without the veil of science obstructing our view.

**Everyone Together Now!**
The chorus is an incredibly important element of opera. In *Doctor Atomic* Adams assigns two different roles to the choruses, which are to provide background information (fact), and to act as the conscious for the characters within the opera (emotion).

- **Listen: The choral introduction (3:08)** Directly following the Overture, even before any of the characters introduce themselves, the chorus appears (3:08). In the extended passage that opens the opera, the chorus offers a context for the action, that is, they explain what has been going on and where the opera picks up.

- **Listen: Atomic Information (11:21)** Similarly, when the women’s chorus interrupts a dialogue between Teller and Oppenheimer in Act I, Scene 1, they provide the scientific detail of the atomic bomb’s physical structure (11:21). The music is fluid and ethereal, almost like a hallucinatory episode or time out from the opera, in which the action stops so we can be given important scientific knowledge intuitive to Oppenheimer and Teller.

- **Listen: Setting the Ambiance (57:04)** In Act II between Scenes 3 and 4, however, the chorus establishes the atmosphere (57:04). Instead of supplying factual information to set a physical scene, the chorus sings in verse (quoting the *Bhagavad-Gita*) to convey emotion and mood. So close to detonation time and with emotions at an all-time high, the chorus acts like a collective inner conscious; they paint a vivid picture of the moral struggles and apocalyptic hallucinations experienced by the characters, bringing the heavy moral issues alive and to the forefront of everyone’s thoughts. Even the orchestra sounds different – unlike before, when it was almost a hazy interruption from the action, the music here is almost confrontational, and seemingly forces the characters and listeners alike to deal with their heavy emotional and moral baggage.

**Lay It on Me**
Another stylistic feature that is really important in Adams’ music is layering. Adams builds the narrative structure in a way that many distinct layers are woven together to create a complex and profound whole.

- **Listen: Layering (1:18:35)** In the last minutes of the opera (starting at 1:18:35), for example, Adams combines and overlaps many elements, such as a recording of a Japanese woman speaking, and of rocket sounds, as well as traditional notes and chords from orchestral instruments to create an evocative scene. When you listen to this section, try to hear the different musical components Adams uses, and how he layers them.

**Key Question:** Why do you think Adams might have aligned the parts like he did?
The Making of *Doctor Atomic*

**An Inspirational Commission**
The idea for *Doctor Atomic* did not spring from the mind of John Adams. Around the year 2002, the then-general director of the San Francisco Opera, Pamela Rosenberg approached Adams asking him to write an opera about Oppenheimer and the culmination of the Manhattan Project: the creation of the atomic bomb. The opera was originally conceived as part of San Francisco’s Animating Opera series, *The Faust Project*, which was an exploration of the Faust legend. This large-scale endeavor sought to identify characters and people that embody key aspects of the Faust character – a brilliant and arrogant figure, who, in his/her quest for divine knowledge ultimately succumbs to human failing. As such, Rosenberg had envisioned Oppenheimer as an “American Faust,” a man who understood and accepted, but was deeply troubled by his knowledge of the unimaginable force he unleashed unto the world. Adams was intrigued by the subject and accepted the proposition. In turn, he approached director Peter Sellars and poet/librettist Alice Goodman in hopes of resurrecting the same production team that created Adams’ first two operas, *Nixon in China* and *The Death of Klinghoffer*. Alice Goodman, however, eventually dropped out of the *Atomic* collaboration, leaving Sellars and Adams to compose the libretto and music, respectively.

**Shifting Focus**
Following the same approach they had taken from their two prior operatic collaborations, *Nixon in China* and *The Death of Klinghoffer*, and single previous “oratorio” (a staged musical setting of a libretto that is performed without scenery, costumes or action) collaboration, *El Niño*, Adams and Sellars immersed themselves in every available piece of relevant literature. They consulted a variety of sources on all topics even remotely related to Oppenheimer, the Manhattan Project, and the atomic bomb itself in order to piece together the most comprehensive picture. As they conducted this research, however, the original idea of Oppenheimer as an “American Faust” resonated less and less with Adams. Instead, the idea of a moral and psychological exploration against a historical backdrop seemed more appropriate. Of this shift in focus John Adams has said,

> …the more I read about [Oppenheimer and Los Alamos and the bomb], the more I realized that it was a story that had so many profound shadings to it – the issue of science, the issue of our perception of scientists, which is a completely different thing from science itself, [and] the issue of morality.¹

A Patchwork Approach: Part I
With their focus clarified and research completed, Sellars approached the libretto by carefully selecting a variety of excerpts from the sources he had sifted through, literally piecing together the text to the opera. As such, the text of the libretto is comprised of everything from declassified and scientific documents to recorded conversations and memoirs. Furthermore, Sellars utilized bits of poetry to balance emotion with cold scientific fact; he drew on a variety of poetic sources as well, from poems beloved by Oppenheimer to others that eloquently conveyed the sentiments and ambiance of the time. Despite their variety, all the bits of verse serve to convey the more human qualities of the characters.

Take for example, a bit of Oppenheimer’s text from Act I, Scene 1. In dialogue with Teller about the atomic bomb, Oppenheimer’s speech is riddled with scientific jargon. He says, “We are bedeviled by faulty detonators. One detonator fizzles or goes off a millionth of a second too early or too late.” For all its directness of diction, his prose grants us new factual knowledge but does not speak to the human qualities of Oppenheimer. In contrast, if we look at the end of Act I, Scene 3, Oppenheimer’s verse offers a perceptive look into the mind of this character and the moral turmoil he is experiencing. Quoting a holy sonnet by John Donne, Oppenheimer cries, “Batter my heart, three person’d God; For you as yet but knock, breathe, shine, and seek to mend; That I may rise, and stand, o’erthrow me, and bend; Your force, to break, blow, burn, and make me new.”

Perhaps fittingly, these poetic moments are set by Adams in a comparatively lyric musical style, pairing the flowing poetry with beautifully sung melodies. If we compare the same two snapshots, but this time musically, we will see a similar shift in expression. The first excerpt (Act 1, Scene 1, 12:28) is musically mechanical, and the text is conveyed in a jagged and unmemorable melodic line. The second bit of text (Act 1, Scene 3, 72:16 or 1:12:16), however, is delivered in a throbbing lyric melody set against a poignant instrumental accompaniment. Thus, these poetic dreams, coinciding with equally expressive music, serve as windows of insight into the more human threads of the opera. In an interview about the composition of Doctor Atomic, John Adams commented on the unique nature of the libretto, stating,

I was worried about how this method of libretto creation would work for Doctor Atomic. In an opera you need that personal interaction, clashes of will, strong emotions, anger, discord, love, hate – the whole gamut of human intercourse. The last thing we would want would be something historically accurate but emotionally frozen...but, in fact, [Sellars] did a brilliant job of solving that challenge...it’s every bit as involving and as realistic as anything I’ve seen in any other opera libretto.³

A Patchwork Approach: Part II
When the time came to write the music, Adams utilized a similar compositional methodology. After completing his own research, Adams decided on the general musical feel he wanted to give the opera. He was inspired by music of the immediate

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postwar period, specifically science-fiction movie music as well, as the “post-nuclear holocaust landscape” quality of some modern compositions. With these ideas in mind Adams combined an assortment of musical elements in a manner similar to Sellar’s libretto. Adams incorporated jumbles of electronic sound, a distorted recording of a popular tune in 1946, sound effects such as the hum of an engine or thunder, a recording of a Japanese woman speaking and Japanese children mumbling, a traditional orchestra, and even some untraditional orchestral instruments (such as a contrabass clarinet) into his musical score.

Composer’s Eye View: To each his/her own!

Every composer is different. Some first create a kind of “musical blueprint,” and once the melodies and harmonies have been outlined, they then write the music for full orchestra. Others write for orchestra from the beginning. Time is variable too – some composers compose really quickly, while others take years (While Mozart composed 6 operas in the last 5 years of his life, it took Brahms about 14 years to write his first symphony and Beethoven took ten years to complete his only opera, Fidelio!) Incredibly, Adams conceived Doctor Atomic for full orchestra from the very beginning, so even in its earliest stages it was not written with a “musical blueprint.” With his two previous operas, Nixon in China and The Death of Klinghoffer, however, Adams composed at the piano first and then created the parts for the orchestra later. Even more amazing is the fact that he composed the entire opera in less than 18 months! Compared with Nixon and Klinghoffer, each composed over its own 24-month period, this time span is pretty short for such a complex work.

Okay, so what will the Met do?

Doctor Atomic is still a young work. If we compare Doctor Atomic, which was only composed in 2005, with some famous operas in the canon, such as Puccini’s La Bohème (1897), Mozart’s Le Nozze di Figaro (1786) or Gluck’s Orfeo ed Euridice (1762), we can see a difference of up to 243 years! Often it takes many productions of a work to cement an opera’s place in the general musical canon (Alban Berg’s opera Wozzeck is probably one of the most recent operas to solidify its position in the canon, premiered in 1925). The Metropolitan Opera is only the third opera house to put on a production of Doctor Atomic, and the production itself is not only a Metropolitan Opera premiere, but is entirely new.

Key Questions
1. How do you think the Met will stage the opera?
2. What do you think the bomb will look like? How would you design it?
3. If you were Sellars, what poems would you use in your libretto? Where would you put them to balance emotion and science?
OBJECTIVE: Students will examine the title “Doctor Atomic” to identify their preconceived notions and expectations for the opera. Students will also examine how their perceptions of a character change relative to how familiar they are with the plot and characters.

PREMISE: Consider the title of this opera – “Doctor Atomic” refers to the main character, J. Robert Oppenheimer. Despite its clear directedness, this title is also ambiguous. With the title “Doctor Atomic,” Oppenheimer could be a superhero, or just as easily be a mad scientist.

PROCEDURE:
Part A: Before knowing the opera
1. Before getting to know the opera (before looking at the libretto, listening to the music, etc.) have students think about the title.
2. Ask students to write, draw, or bring in a photo of how they picture J. Robert Oppenheimer based on each students' interpretation of the title.
3. Have students brainstorm ideas about Oppenheimer’s characters and compile a list of personality traits students expect Oppenheimer to possess.

Part B: After studying the opera
1. Have students reconsider the title now that they are familiar with the characters and plot.
2. Now have students reconsider Oppenheimer. On a different piece of paper have students draw or create (using artistic materials such as magazines) a picture of how they now visualize this character.
3. Ask students to compile a new list of character traits and adjectives they would use to describe Oppenheimer.
4. Discuss as a class or have students reflect in writing about how their view of Oppenheimer or the title may have changed.

Part C: After seeing the opera
1. Discuss how the Met's (Gerald Finley’s?) portrayal of Oppenheimer compares to students’ predictions.
   • What did students like about the portrayal?
   • What would students have changed?
   • Have students’ perceptions of Oppenheimer changed?
2. Ask students to use a graphic organizer to compare and contrast their ideas of Oppenheimer before, during, and after each stage.

REFLECTIONS:
1. Make a collage or mosaic of the visual representations to display
2. Have a discussion about first impressions and how they affect the understanding and communication of information. Questions you might want to address are listed below
   • How much information do we really receive the first time we see, hear or read something?
   • Consider the cliché “Don’t judge a book by its cover”
   • How do initial opinions compare to learned fact?

EXTENDING THIS ACTIVITY:
1. Ask students to consider alternative titles for the opera. Would they shift the focus of the title? Would they choose to highlight a different aspect of Oppenheimer’s personality or perhaps would they address a larger theme of the opera?
2. Consider references to similar characters in popular culture and/or history and compare and contrast them to Oppenheimer. Suggested starting points are Iron Man, and Nikolas Tesla.
**OBJECTIVE:** Students will be challenged to identify with the characters in the opera on a deeper level by relating their personal experiences to dramatic situations faced by the characters in order to find common ground.

**PREMISE:** At the end of Act I, General Groves and Oppenheimer make small talk while standing at the foot of the bomb. They discuss trivial matters such as dieting and counting calories. Though it may seem out of place, such comparatively menial conversation is quite appropriate, used by the two as a means of relieving the immense pressure they feel prior to the test detonation.

**PROCEDURE:**

**Part A: Discussion – Part I**
1. Discuss the end of Act I when Groves and Oppenheimer are alone at the test site with students. Consider the following questions:
2. What is going on dramatically – that is, where in the action are we, what has happened, and what do we expect to happen?
3. What are the characters feeling and why? Are the emotions different from what they should be feeling?
4. What do students make of their conversation topics? Why might they discuss these matters at this point?

**Part B: Discussion – Part II**
1. Have students pretend they were either Groves or Oppenheimer in this situation
2. How would they be feeling?
3. Would they cope in the same way? Why or why not?

**Part C: Application**
1. Have students write about a situation in which they felt stressed, pressured, and nervous, etc. Have students recall factual and emotional details of the situation.
2. How did they feel?
3. How did they cope?
If they were faced with a similar situation in the future, would they cope in a manner similar to Groves and Oppenheimer (Do students find it effective)? Why or why not?

**REFLECTION:** Have students reflect on their relationship with the characters in a discussion or in writing
1. Do students understand the characters or identify with them?
2. Encourage students to consider how their views of the characters might have changed over time.
OBJECTIVE: Students will become familiar and think critically about the character of *Doctor Atomic* through an interactive role playing exercise.

PREMISE: Characters in operas are as individual as you and I. Each one has a distinct personality and style that can tell us a lot about them as well as how they fit into the dramatic action.

PROCEDURE:

Part A: Critical Thinking
- Review the “Story of *Doctor Atomic*” through Act II, Scene 2 and have students identify all the characters in the opera (including minor ones)
- Assign each student a specific character, but the identity each student is assuming should be kept secret. Be sure that all of the characters are represented
- Ask the students a series of key questions that they should not answer aloud, but think about their responses. These leading questions should help students identify and understand their outer appearance as well as inner personality and mentality of their character.

Some suggestions are listed below
- When was the last time you cried?
- What is your social status?
- Who do you trust? Who can you trust?
- What do you want more than anything else?
- What’s standing in your way?
- What are you going to do to get it?
- Are you in favor of the Manhattan project?

Part B: Role Play
- Break the students up into small groups where each character is represented by one student
- Have students interact (keeping their answers to these questions in mind), asking each other the leading questions you had previously asked.
- Have students remain in character throughout and have them embody their characters entirely – including the character’s walk, posture, facial expressions, etc.
- Afterward, have the students guess who is acting as who.
REFLECTION:
1. Have students reflect in discussion or in their journals about their experiences. Suggested leading questions are:
   - What was it like being your character? What was easy? What was hard?
   - What clues help you figure it out?
   - Did your opinion of the characters change after reading Act II, Scenes 3 & 4?

EXTENDING THE ACTIVITY:
What physical qualities or attributes would students adopt to embody their character? What dramatic shifts did the students notice about their character?

Guilty or Innocent?

OBJECTIVE: Students will stage a mock trial to critically engage with the weighty moral issues presented by the opera.

PREPARATION:
1. Have students research the key events and people of the United States Judicial system as well as the structure and procedure of United States court trials
2. Have students research the historical details of the Manhattan Project and the aftermath of the Project.

PREMISE: Pretend that Oppenheimer is being tried on moral grounds following the creation of the atomic bomb. Stage a trial to decide whether or not Oppenheimer should be held morally accountable for the ramifications and consequences of the bomb he created. Determine if punishment is necessary, and if so, what punishment is appropriate.

PROCEDURE:
Part A: Pre-Trial
1. Elect students to act as Oppenheimer, Teller, and Wilson (and others if you choose), as well as judge, jury, prosecution and defense teams.
2. Have each student prepare for his/her individual role in the trial.
3. Have each student craft a persuasive statement arguing their character’s position. Each student should write an argument about what his/her character would say about the issue; those students playing personalities such as the judge should write about their role. (The judge, for example, would write about appropriate trial procedure so that he/she is prepared to appropriately run the mock trial).
4. Encourage students to incorporate outside examples or historical proof if appropriate.
Part B: Trial
1. Run the trial according to the United States trial system previously discussed

Part C: The Verdict
1. After all the arguments have been heard and all evidence has been presented, have the jury reach a verdict.
2. Hear the verdict, and if appropriate, determine sentencing
3. After the conclusion of the trial, discuss the outcome with the students. Additionally, discuss with students how they personally feel about the issues at hand. If appropriate, ask students if it was difficult to write a persuasive speech they did not agree with.

REFLECTION: Have students write in their journals about the mock trial experience. Discuss with students whether or not they agreed with the outcome of the trial.

EXTENDING THIS ACTIVITY:
1. Compare other historical instances where people have been tried for moral injustices. Notable examples are the Nuremberg Trials, the International Criminal Tribunal for Rwanda, and the Bosnia War Crimes Tribunal.
2. Can students think of other times where a person or group of people should have been held morally responsible?
3. What role does the nature of war and/or the government play in determining what is or is not morally reprehensible during these times of great unrest?
OBJECTIVE: Students will learn about the nature of opera as a medium of expression. Students will then explore and assess the limitations of the genre when dealing with or commenting on sensitive political and social subjects.

PREMISE: The nature of opera has often lent the genre a unique opportunity for expression. Its frequent use of outlandish, mythic and overblown plots, characters, and actions has made it particularly adept at addressing tough themes and touchy issues. However, even opera has its limits; before setting out on any operatic project concerning such subject material, it is these limitations that must be identified, understood, and shaped for a production to accomplish its artistic task.

PROCEDURE:

Part A: Discussion

1. Have students pretend that they are part of the composer, librettist, producer, etc. team that sat down in 2004 to write an opera on the atomic bomb (*Doctor Atomic*).
2. Discuss what the artistic limitations of the production team might be.
   - Have students first consider the following: What are their limitations? Why work on a controversial topic? What can you teach by doing such work? What and how do you teach it?
3. Consider what ideas or subjects the opera conveys musically, versus what information is relayed through the libretto text or visual representation, etc. Also consider how the opera engages with and presents the material. Some leading questions are listed below.
   a. Does the opera talk about it through metaphor or is material presented explicitly?
   b. Does it try to deal with it seriously?
   c. Is engagement touch-and-go or does the opera try to address certain ideas throughout?
4. Consider the audience – how will an audience receive the opera, and just *who* is their audience anyway? Consider if it is forced to deal only superficially with a touchy subject because of its audience, or whether it can deal more thoroughly with the material.
5. Also consider the *tone* (is the topic dealt with lightly, sarcastically or ironically? Furthermore, *can* it be dealt with in these ways?

Part B: Creation

1. Now pretend that students were commissioned to create a new opera on a recent controversial topic. Have a group of students pick a recent controversial topic and, using their gained knowledge of artistic limitations, write about how they would present their topic in an operatic setting.
2. First have each group solidify what angle they want to take and what they want their message to be. Some suggestions are listed below
   a. a satire
   b. a social commentary
   c. an objective presentation of fact
   d. a dramatization
3. Then have students consider their limitations with specific regard to their topic – what are they allowed or not allowed to do? Have them consider what might be appropriate or distasteful, and how to find a balance in order to best convey their point.
4. Have students consider all aspects of opera including, but not limited to, tone, target audience, costumes, sets, character demeanor and speech, etc.
5. Encourage students to incorporate magazine cutouts, pictures, etc. to enhance their projects.

REFLECTION:
1. After each group has formulated a clear picture of their opera have each group present their “opera” to the class. Have students explain their artistic choices, especially how each aspect (costumes, tone, sets, etc.) is within the limitations previously discussed.
2. Assess students’ understanding of the limitations of expression in opera based on their work.
3. Discuss how the students’ operas present and deal with these significant and touchy issues as compared to other expressive mediums, such as newspapers, music, art, etc. (for example, an article from the New York Times, CNN report, or piece of artwork).
4. Discuss what might happen if a medium were to breach its limitations and deal with a subject inappropriately.

EXTENDING THIS ACTIVITY:
1. Consider the ways in which opera deals with and depicts other disciplines, such as physics. Is it okay for opera to stretch other concrete disciplines for the sake of its artistic medium? You might want to discuss the first few choral stanzas of the opera (they were changed from the original text due to scientific inaccuracy). How long can we sit in suspended disbelief?
2. Engage with other operas by John Adams and compare how they deal with heavy subject material.
OBJECTIVE: Students will learn to identify with characters on a deeper level by having them step into the characters’ minds and write a narrative from the point of view of individual characters. Students will be able to develop journalistic writing skills.

PREMISE: Much like characters in literary novels, various characters in opera have different points of view, opinions, and motivations. These distinctions, though sometimes small, can cause major dissimilarities between how one character interprets a series of events or construes another character. Have students pretend they are writing a newspaper article about the events of the opera as viewed through the lens of one of the characters in the opera.

PROCEDURE:

Part A: Preparation and Introduction

1. Discuss how to write a narrative piece and show examples of such writing.
2. Discuss with students: narrative style, tone, and audience
   a. What are different mediums of conveying news and how do they differ? (for example: TV, radio, newspaper, magazine)
   b. Who are the different audiences for these various mediums?
   c. What is tone?
   d. What kind(s) of tone(s) are appropriate for each medium of narration? (for example, an article in the New York Times about a major event would be based on facts not opinions)
3. Discuss the main characters in the opera
   a. Identify all the characters that contribute to or comment on the action
   b. Create a visual representation (outline, web, etc.) of the characters and their relationships to one another
   c. Discuss each individual character’s viewpoint on the action in the opera
4. Display the process of writing a narrative and provide students with a handout if needed so they may make an outline

Part B: Application

1. Have each student pick a character and medium (such as TV, Radio, newspaper, magazine, etc.)
2. Using their knowledge of their character and information on their selected medium, students will write an article or script conveying the action of the opera’s plot
   a. The narrative should clearly reflect the perspective of the character, highlighting their character’s motivations and viewpoint. Students should distill the story down to the dramatic moments most important to the specific character they have chosen.
b. Students should also create a title for their article as befits the manner of their selected medium and their character's point of view.
3. You may allow students to cut up old newspapers and magazines to enhance their projects.
4. After each student has written their article, have them present it to the class.

REFLECTION: Assess writing for understanding of the narrative process

EXTENDING THIS ACTIVITY:
1. Have students repeat this activity substituting a book they have studied or another similar source
2. Students may publish their pieces in “newspaper,” “magazine,” etc. format
3. This project can be enhanced by using computers or other available technology for the students to compose, print, and publish their articles.
OBJECTIVE: Students will engage creatively with Doctor Atomic by formulating their own production take on the opera.

PREMISE: One of the most exciting aspects of opera directing is putting a new spin on classic stories. A director’s choices about setting, blocking and design concept can greatly influence the meaning of a work.

PROCEDURE:
Part A: Discussion
1. Have students identify central themes in Doctor Atomic. (for example: science vs. morality, do the ends justify the means?, etc.)
2. Split the students up into small groups. Have each group choose one theme to concentrate on.
3. When each group has chosen a theme, ask students to brainstorm adjectives that describe how their theme makes them feel. (for example: bold, angry, forlorn, on edge, daring, adventurous, powerless, etc.)

Part B: Creation
1. Have students create a unified design concept inspired by their theme-derived adjectives. Encourage students to consider shapes, colors, building materials, angles, space, setting, abstract vs. realistic. (For example: a “bold” production might feature bright colors, sharp angles and smooth surfaces. An “angry” production might features dark colors and worn furniture.)
2. Have students create, sketch, or describe set, costume, and lighting designs for their production.

REFLECTION: Have students reflect in writing about how the manner of presenting information can affect how the material is understood.

EXTENDING THE ACTIVITY:
1. Discuss what acting style(s) might accompany the different productions and why
2. After seeing the opera, discuss with students how their production ideas compared to the director’s.

Some suggested questions to consider:
• How did the director’s staging differ from yours?
• Were there any similarities between your staging and the director’s?
• Was there anything the director did that you didn’t agree with? What and why?
• Why do you think the director made the choices he/she did? What was he/she trying to highlight or emphasize?
**OBJECTIVE:** Students will engage critically with the multilayered narrative in *Doctor Atomic* by creating their own visual interpretation of the narrative elements in the opera.

**PREMISE:** The story of *Doctor Atomic* is told on many artistic levels. Characters are very complex, history and poetry are used interchangeably, traditional musical instruments are played at the same time as electronic noise, etc. Create a visual representation of the operatic “quilt” of *Doctor Atomic* by having each student depict one layer or aspect of narrative on a quilt square, and ultimately putting them together to form the large-scale story.

**PROCEDURE:**

**Part A: Preparation and Discussion**
1. Discuss with students the multilayered nature of the opera. Consider how the many elements of operatic narrative (libretto, music, historical context, etc.) all exist on many levels – the libretto, for example, is made up of declassified government documents, transcripts of conversation, as well as many poems of varied origin and meaning.
2. Have students identify examples of the individual elements of the narrative. Some suggestions are listed below.
   a. History: declassified documents in the libretto, archived photos, World War II information
   b. People: Japanese, Americans, American Indians
   d. Music: electronics, records, regular orchestral instruments

For example, students might choose to depict a particular poem in the libretto – such as Oppenheimer’s recitation of a Holy Sonnet by John Donne (Act I); a student may choose to creatively express the text of the poem, or superimpose the imagine of an agonized Oppenheimer over a faded portion of the text or any other expressive combination of this (or any other) scenario.

**Part B: Creation**
1. Have each student pick an aspect of the narrative – it can be textual, historical, musical, artistic, etc.
2. Have each student depict his/her element in their quilt square. Encourage students to creatively depict their element. For example, students may wish to use shapes to make more realistic pictures within their square (such as using a circle and tube-shapes to depict the atomic bomb), or create a collage of pictures or magazine cutouts to describe a person, place or thing.
3. After students have created their quilt square, have each student explain what aspect of the opera he/she focused on and how it is important to the overall operatic narrative.
4. Have students create an arrangement of the squares in order to create a quilt. Encourage students to creatively and consciously place squares to create the quilt;
discuss students’ reasons for their placement of the squares and their interpretation of the quilt as it relates to this opera. Also discuss how this opera and other art forms (visual arts, literature, etc.) can be seen on many levels, and how such a deep understanding can affect appreciation and reception.

**REFLECTION:**
1. Discuss different arrangements of the quilt squares and what the differences between the different designs might be.
2. Display the narrative quilt.

**OBJECTIVE:** Students will think about setting by comparing the world of the opera to today’s. Students will then explore alternate settings for the story of Doctor Atomic.

**PREMISE:** Opera lets us explore many exciting and fantastical people, places, times, and dramatic situations. Yet, for all of opera’s far-fetched elements, there are also universal themes and situational relationships to be found. Doctor Atomic is both a timeless tale and an expedition into the magical world of opera.

**PROCEDURE:**
**Part A: Introduction**
1. Have students research and discuss the setting of Doctor Atomic
2. Using a chart or other means of comparison, have students contrast present day from mid 20th-century America
3. Have students research the following.
   - How would students travel?
   - What is the social landscape like?
   - What are some current events?
   - What was the state of medicine? technology?
   - What racial divisions are present?
   - What is going on in politics?

**Part B: Application and Creation**
Now have students brainstorm other controversial issues in history.
1. Brainstorm moments in history where morality conflicts with science and technology. Some suggestions are listed below.
   - Cloning
   - Stem cell research
   - The Red Scare, McCarthyism
   - The right to bare arms

A Real Dilemma
2. Break students into groups, and have each group create an outline for a new opera on one of these contentious moments. Have students consider the following:
   • Who are the main characters?
   • What real-life events would you include?
   • What sources would you use for the libretto?
   • What type(s) of music would you include?
   • What is the opera’s time frame (48 hours, 1 month, 2 years?)

REFLECTION: Have students reflect in their journals about their artistic choices

EXTENDING THIS ACTIVITY:
Have students fill out the rest of their opera outlines, considering the following:
   • Where would you put the arias?
   • Where would you put the recitative?
   • Would you include a chorus? If so, where would you use it?
OBJECTIVE: Students will apply their knowledge of musical communication to first predict what might happen in the opera, and later, enhance their understanding of the dramatic action.

PREMISE: Almost all operas are preceded by an Overture or Prelude. The purpose of this little bit of pre-opera music is not only to physically preface the ensuing drama, but also to introduce the ambiance or character of the opera as well as important musical themes or ideas.

PROCEDURE:
Part A: Listening and Predictions
1. Before getting to know the opera (before looking at the libretto, listening to the music, etc.) listen to the Overture.
2. Discuss with students how the music makes them feel and why.
3. Based on the sound of the Overture, ask students to predict what they think will happen in the opera – will it be sad or happy, deep or lighthearted? Encourage students to consider the following musical aspects to provide dramatic clues as they make their predictions.
   a. instrumentation (how many? What kinds?)
   b. rhythm (does the rhythm sound angular and jumpy or does it smoothly flow together?)
   c. dynamics (how loud or soft is the music?)
   d. tempo (how fast or slow is the music?)

Part B: Listening and Discussion
1. After getting to know the opera revisit the Overture – listen to it once more.
2. Now that students have knowledge of the drama, ask students to consider what elements of the drama they can identify in the music of the Overture. (For example: the pounding drums and unsettled brass accent chords remind me of Oppenheimer’s heavily beating heart and great moral conflict.)
3. Discuss whether or not students perceptions of the Overture or action have changed and why.

REFLECTION: Have students write in their journals about how context clues can shape and enhance one’s understanding of action, characterization, etc.
OBJECTIVE: Students will engage critically with the music of *Doctor Atomic* to create their own monologue aria.

PREMISE: Opera is drama – characters experience the entire spectrum of dramatic situations and feelings that we encounter in daily life. In opera, these emotional experiences, crises, and catharses are organized into arias.

PROCEDURE:
Part A: Critical Thinking
1. Review the “Music of *Doctor Atomic*,” especially the section on arioso style in *Doctor Atomic* entitled “Freeze Frame.”
2. Listen to two contrasting musical excerpts, paying attention to how Adams uses the music to convey the different emotional and mental states of Kitty and Oppenheimer. In addition to the distinct vocal qualities, focus on the different instruments, as well as the rhythms and styles they play.
   - Kitty’s arioso that opens Act I, Scene 2 (32:06) is warm, comforting, and flutters with a teasing love
   - Oppenheimer’s arioso (72:26 or 1:12:26) is dark, tense, solemn and conflicted.

Part B: Creation
1. Ask students to brainstorm a list of dramatic situations that might be followed by an aria-like moment of reflection in their own lives.
   Suggested scenario possibilities are listed below.
   - Your crush asked you out on a date
   - You didn’t get into your top choice college
   - Your best friend told the whole school your biggest secret
2. Have students each pick a scenario and write a short monologue that expresses how they would feel in the situation.
3. Then have each student reduce his/her monologue to 4-5 sentences that best capture their emotions.
4. Once students have done so, have them describe how they would set their mini-monologue to music. Encourage students to consider the following elements and how they would arrange their sentences using the list below to create an aria.
   a. instrumentation (how many? What kinds?)
   b. rhythm (does the rhythm sound angular and jumpy or does it smoothly flow together?)
   c. dynamics (how loud or soft is the music?)
   d. tempo (how fast or slow is the music?)

*Note: Students can use words to describe the elements of music that would enhance their mini-monologue*

For example: for the sentence “My heart started pounding” a student might describe or compose a drum beating slowly and softly that progressively gets louder and faster.
REFLECTION:
1. Have students share their arias with the class by either performing or explaining them.
2. Discuss how music impacted the scenario.
3. Have students reflect about how music can enhance emotion and more vividly shade dramatic situations.

OBJECTIVE: Students will apply their knowledge of how music can communicate emotions, or a general mood (etc.) to create mood music for other narrative situations.

PREMISE: Just as writers of literature or those who create visual arts often do, music composers frequently choose specific instruments, themes and textures to set a mood or depict a non-musical thing or idea musically.

PROCEDURE:
Part A: Introduction
1. Review with students the background of the opera
2. Listen to the Orchestral Interlude in Act II (57:04), where we can hear the furious storm pummeling the Trinity test site and surrounding area.
3. Discuss with students:
   a. What does the music sound like to them?
   b. How does it make them feel?
4. Now thinking about musical aspects, discuss with students how Adams creates this atmosphere musically. Musical elements to consider can include, but are not limited to:
   a. **instrumentation** (how many? What kinds?)
   b. **rhythm** (does the rhythm sound angular and jumpy or does it smoothly flow together?)
   c. **dynamics** (how loud or soft is the music?)
   d. **tempo** (how fast or slow is the music?)

Part B: Application and Creation
1. As a class, brainstorm a list of other scenarios/story beginnings where a composer might use the orchestra to create a specific mood. Some suggestions are listed below.
   - “It was a dark and stormy night…”
   - “Once upon a time in a land far far away…”
   - someone waking up to a sunrise
   - swirling emotions/ a person’s inner conflict
Part C: Creation

1. Divide students into groups and have each group decide which situation/story beginning they want to “compose” for.

2. First have each group create a list of adjectives to describe their situation. The adjectives will help the students figure out how they want their musical mood to sound. For example, some adjectives for “It was a dark and stormy night...” could be tumultuous, jumpy, unsettled, harsh sound, opaque...

3. Then, taking this list of adjectives and using their knowledge of musical expression and the previous discussion, have students write (in words) how they would set the scene for their scenario.
   - Each group should consider instrumentation, rhythm, dynamics, tempo, and other aspects to help set an appropriate mood.

4. When students are finished have them share their musical moods and explain their artistic choices.

REFLECTION: Have students write in journals about how music can create a background context – encourage them to think about what might happen if the mood set by the music did not match what was going on dramatically – why might a composer choose not to have music fit a dramatic situation or emotion?
OBJECTIVE: Students will apply the knowledge they have gathered about musical communication to “compose” a musical timeline for other dramatic situations as well as expand this expressive potential through the use of non-traditional instrumentation.

PROCEDURE:

Part A: Discussion
1. Listen to the Overture and discuss:
   - What “instruments” do students think comprise Adams’ soundscape (that is, nontraditional “instruments”?)
   - What do students think Adams’ is trying to depict in the Overture, and is it effective?
   - How does it make students feel and why?

2. Look at the excerpt of Adams’ score and after listening to the clip of the excerpt, discuss with students how Adams composed the ending, paying particular attention to Adams’ placement of all the elements in his musical palette.
   - How is the bomb (and its explosive success) depicted musically?
   - What outside elements does Adams incorporate (other than regular musical instruments) to help tell the story of the bomb?
   - How does Adams start, stop, overlap, and phase the different musical elements?
   - How does it make students feel and why?

3. Brainstorm other situations where the incorporation of unconventional instruments and sounds might be useful and effective. A musical example is Tchaikovsky’s 1812 Overture, which incorporates a cannon; scenarios might include a construction site, the seashore, a city scene, a carnival, rain storm, etc.

Part B: Creation
1. Divide students into groups and have each group decide which situation they want to “compose” for.

2. Using their knowledge of musical expression and the previous discussion, have students construct a musical timeline for their scenario.
   - Each group will decide what kinds of “instruments” would be in their orchestra and their reasoning. Students can draw on traditional instruments, but also must incorporate nontraditional “instruments” to create a vivid musical picture
   - Each group will decide the layout of the timeline – that is, how the elements will be arranged, phrased, etc.
Part C: Presentation ("Performance")

1. After each group has created their musical timeline, each group will present their musical timeline to the class
2. The rest of the class will have to guess what each group’s situation is and explain their reasoning

REFLECTION: Have students reflect in writing about how the manner of presenting information can affect how the material is understood.

EXTENDING THIS ACTIVITY: Have students perform their musical timelines.
The Composer

John Adams

Start ‘Em Young

Born February 15, 1947 and raised in New England, John Adams learned the clarinet from his father, playing it in community orchestras and marching bands. At around eight years old, Adams decided that he would be a composer, and at age ten he began composing, hearing the first performances of his orchestral pieces while still a teenager. Equipped with a wild musical imagination but without sufficient theoretical technique, Adams began studying music at Harvard University.

Perpetual Music Dilemma: Conduct or Compose?

His compositional drive notwithstanding, Adams showed great promise as a conductor. For two years during his undergraduate study Adams was afforded the opportunity to conduct one of the two orchestras at Harvard. This position introduced Adams to many works in the classical repertoire while providing hands-on experience, a unique chance for such a young musician. But, this was not the only perk of the job – his great success at the position got him noticed by great music composer, conductor, author and lecturer Leonard Bernstein. Bernstein was so interested in Adams that in 1968 he invited Adams to Tanglewood, where many famous conductors’ careers had been launched. Adams faced a crisis: go to Tanglewood to pursue a great career with Bernstein as a mentor and guide, or stay at Harvard to return to his first love, composition. Ultimately Adams declined the offer from Tanglewood and remained in Cambridge to pursue a future in composition.

The Long and Winding Road

Now set on composition, Adams set out on the long path toward finding a mature yet individual language. Complicating matters further was the vast array of musical styles bombarding Adams. Just at the time he resolved to develop his personal expressive vocabulary the wonderful possibilities of rock and jazz were beginning to take hold. Again Adams was faced with a dilemma as he tried to reconcile the openness and sensuality of these popular genres with the calculated and rationalized approach of traditional music.

Adams ultimately finally found his individual musical style, one more-academically based in minimalism, around the age of thirty. His first in this new personal mature style is a piano work entitled Phrygian Gates, first performed in 1978. In 1982, Adams joined the faculty at the San Francisco Conservatory of Music. After ten years in this professorial position, Adams became the Composer in Residence with the San Francisco Symphony, where he composed several of his most important orchestral works, including Harmonium in 1981, Grand Pianola Music in 1982, Harmonielehre in 1985 and El Dorado in 1992.
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