The Play

Meet the Playwright

Women: Then & Now

Historical Context: The Enlightenment

Commissioning a Play

The Science of Isaac Newton

Additional Resources

What is a woman’s legacy? Is it the discoveries she brings to the world through her career? Is it the children she brings into the world as a mother? Two female scientists in two different centuries struggle with these questions … and their clocks are ticking.

In 18th-century France, Émilie du Châtelet works side by side with her devoted friend and lover Voltaire to unlock the mysteries of Newton’s physics. In modern-day New Jersey, an astrophysicist named Olivia studies the birth of planets while enjoying a private life with her husband, Peter.

When Émilie discovers she is pregnant, she is certain she will not survive childbirth. She pushes herself to finish her great scientific work in the nine months she has left to live. Olivia is on the verge of her great scientific discovery but finds herself pulled toward being a mother. Unable to have children of their own, Olivia and Peter turn to Millie, a light-filled young woman with a secret, to be their surrogate.

As the story unfolds, vast differences and striking similarities emerge between the past and present as questions of art, science, love, family and motherhood forge a connection through the centuries.

**surrogate** mother – a woman who agrees to become pregnant and give birth to a child that she will not raise but hand over to a contracted party, like a couple who cannot have children of their own.
Women: Then & Now

Although the women in Legacy of Light have similar interests, spirits and struggles, the times in which they live are very different. Life for women has changed significantly from the 18th century to the 21st century.

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<thead>
<tr>
<th>Marriage</th>
<th>18th-century France</th>
<th>21st-century America</th>
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</thead>
<tbody>
<tr>
<td>Women's families chose suitable husbands for them based on social standing. Marriages united families, wealth and power. Most women were married before they turned 20.</td>
<td>Most women are free to date as many men as they wish and marry for love when they decide it is the right time— or not marry at all.</td>
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<thead>
<tr>
<th>Childbirth</th>
<th>18th-century France</th>
<th>21st-century America</th>
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<tbody>
<tr>
<td>5% of women died in childbirth. Midwives, who were housewives with no formal training, were responsible for helping women give birth. Wet nurses breastfed the babies of upper class women.</td>
<td>0.00013% of women die in childbirth. Highly trained obstetricians deliver babies. Women breast feed their children or use formula.</td>
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<tr>
<th>Domestic life/family</th>
<th>18th-century France</th>
<th>21st-century America</th>
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<tr>
<td>Women stayed home to take care of their children and were often responsible for educating them as well.</td>
<td>Women can work if they choose; working mothers sometimes struggle to balance their professional lives with raising children. Some women feel pressured to “have it all.”</td>
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<tr>
<th>Education</th>
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<th>21st-century America</th>
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<tbody>
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<td>Women received no formal education. Any learning had to be pursued independently. Only 25% of women were able to read.</td>
<td>Women can pursue as much education as they wish. 14% more women than men attend college. 99% of adult women can read.</td>
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<th>Law/politics</th>
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<td>Women were not permitted to vote or run for public office. They were unable to own property or request a divorce. They had no custody rights to their children.</td>
<td>Women are eligible for any public office and have run for president. They are able to own property, get divorced, and have primary custody rights to their children.</td>
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<th>Career</th>
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<td>Women were unable to pursue any career seriously. Their primary roles were wife and mother. Any art or writing by a woman was typically published under a man’s name.</td>
<td>Women may pursue nearly any career they wish. More than 60% of women hold jobs.</td>
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Activity! In a small group, brainstorm limitations women still face in America today. Then, predict how they will overcome these limitations and what advancements will be made in the next 100 years.
The characters Émilie and Voltaire are based on real people that lived during the Enlightenment. Émilie du Châtelet and François-Marie Arouet (pen name Voltaire) were partners in science, love and life. Together, they wrote *Elements of Newton’s Philosophy*. Voltaire said du Châtelet “was a great man whose only fault was being a woman.” Voltaire is known for his wit and as one of the greatest French writers and philosophers.

**Activity!** Choose one or two characters from history and write a short story about them. The story can be set in their time or in another setting. Balance facts about them and your imagination to tell a compelling, truthful story.

**Real Characters**

**Gabrielle Émilie du Châtelet** (1706-1749) and **François-Marie Arouet/Voltaire** (1694-1778)

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**Historical Context:**

**The Enlightenment**

Before the mid-18th century, religion, authority and superstition were the most powerful forces. Born into their positions, royalty ruled over people and country. People believed that God decided people’s roles in life before they were born, and, therefore, attempting to better oneself went against God’s will. There was little popular regard for science or rational thinking.

Later in the 18th century, however, there was a major shift away from such thinking as artists, scientists and intellectuals came forward, seeking knowledge based on evidence not religion. This era is known as the Enlightenment.

Philosophers, like Voltaire, questioned the social structure, arguing that royalty born into power had no actual merit and, therefore, should not be allowed to govern. People like Voltaire believed that fate did not make rational sense. Instead, they theorized that all humans are born free, equal and able to succeed in life based on individual potential. Where do you recognize this Enlightenment philosophy in the modern world?

**Activity!** The Enlightenment helped lay the foundations for the modern world. Research an important figure from the Enlightenment. Write about that person’s contributions to their time and the influence their work has had on the modern world.

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**Commissioning a Play**

Arena Stage is committed to expanding the canon of American plays and is constantly seeking to introduce new, exciting plays. One major way Arena does this is by commissioning plays.

This begins with the theater noticing a talented new playwright or deciding to take on a new play by a well-known writer. First, Arena and the playwright decide what the play should be about. Then, Arena gives the writer a timeline with deadlines for different drafts of the play, and the writing begins. Throughout the process, feedback is given, revisions are made, and there is usually a reading, at which Arena staff and sometimes the public can hear the play read by actors and respond to it.

When it is decided that the play is finished and ready to produce, Arena has the option to either produce the play or release it, which allows the playwright to submit the work to other theaters.

**canon** – a catalog or list, a collection

**commissioning** – in theater, when a theater contracts a playwright to write a play or musical

**Activity!** In small groups discuss a new story or important issue that should be made into a play. Together, write a proposal of what the play will be about and why the story should be told. As a group, write the two-minute version of the play. When you think the play is ready for production, rehearse it and perform it for your class.
Sir Isaac Newton (1643-1727) laid the foundations for modern science. He invented the first reflective telescope. He discovered that white light contains the full color spectrum. Newton also invented the varieties of math (calculus) needed to prove his scientific theories.

Newton's laws of motion and understanding of gravity helped him accurately predict the motions of the stars and planets. These three laws also gave people a better understanding of the physical world:

1. An object at rest tends to stay at rest, and an object in motion tends to stay in motion with the same speed and in the same direction, unless acted upon by an unbalanced force. This law is often known as the law of inertia.

2. Acceleration is produced when a force acts on a mass. The greater the mass of the object being accelerated, the greater the amount of force needed to accelerate the object. In other words, heavier objects require more force to be moved than lighter objects.

3. For every action there is an equal and opposite reaction.

In Legacy of Light, we watch Émilie translate, criticize and interpret Newton's Principia, his great work on gravity. We also see Olivia’s great scientific discovery – made possible because of Newton's work centuries earlier.

Additional Resources

Books/Plays:
Candide by Voltaire
Extraordinary Women Scientists by Darlene R. Stille
Émilie du Châtelet: Daring Genius of the Enlightenment by Judith P. Zinsser
The Sins of Sor Juana by Karen Zacarías

On the Web:
The Physics Classroom: www.glenbrook.k12.il.us/gbssci/phys/Class/newtlaws/u2l1a.html
Émilie du Châtelet: the genius without a beard: http://physicsworld.com/cws/article/print/19569

Sub/Text

For links and research related to Arena Stage productions, compiled by Arena Stage dramaturgs, please visit Sub/Text: Your Virtual Dramaturg at www.arenastage.org/season/08-09/sub-text/.

dramaturg – a theater specialist who does research for productions and represents the intentions of the playwright