



LESSON PLAN & TEACHER'S GUIDE

Genetics, history and the American eugenics movement

Aim

How can we as a society avoid the mistakes of the past to take advantage of the promise of genetics?

Time

This lesson can be adjusted to fill 1 or 2 classes.

Guiding questions

- What is eugenics?
- Why would improvements in healthcare that have the potential to save lives and reduce suffering through the use of genetic information cause people to worry about eugenics?
- How did the eugenics movement in the United States impact people?
- Why did some leaders think it would be beneficial to control who could have children and who could not?
- How can we avoid the mistakes of previous years so that society can benefit from advances in healthcare without the fear of unethical treatment?

Learning objectives

By the end of the lesson, students will be able to:

- Understand the role that society played in promoting the ideas of eugenics leaders.
- Analyze why the eugenics movement took root in the United States.

- Discuss the ethical implications of some current genomic technologies and how they relate to the past.
- Become aware of the organizations and laws that are now in place to help people take advantage of new advances in genetic knowledge without putting themselves in danger of eugenics.
- Understand that genetic information can lead to breakthrough medical treatments for devastating diseases.

Materials

Articles, handouts, laptop, projector or SMART board.

Standards alignment

Common Core Standards

[CCSS.ELA-LITERACY.RST.9-10.2](#) Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

[CCSS.ELA-LITERACY.RH.9-10.2](#) Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.

[CCSS.ELA-LITERACY.RH.9-10.3](#) Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.

[CCSS.ELA-LITERACY.RH.9-10.4](#) Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science.

[CCSS.ELA-LITERACY.RH.9-10.9](#) Compare and contrast treatments of the same topic in several primary and secondary sources.

Next Generation Science Standards

This pgEd lesson integrates some of the NGSS practices and cross cutting concepts associated with the following disciplinary core ideas. The relevant portion of each disciplinary core idea is written out below.

[HS-LS3: Inheritance and Variation of Traits](#)

LS3.B: Variation of Traits

- Environmental factors also affect expression of traits, and hence affect the probability of occurrences of traits in a population. Thus the variation and distribution of traits observed depends on both genetic and environmental factors.

Background information and note to teachers

New genetic technologies are allowing us to assess and alter our own DNA and the world around. With it comes excitement about the potential for treating disease, as well as fears that some applications (such as embryo screening, prenatal testing of fetal DNA, and genome editing) could lead to a new era of eugenics. This lesson will introduce students to the term “eugenics” and equip them with a foundation of historical knowledge about the eugenics movement that began in the United States in the early 20th century. The goal is for students to develop a more informed lens for discussing the benefits and implications of genetic technologies that are emerging today.

Eugenics is the philosophy and social movement that argues it is possible to improve the human race and society by encouraging reproduction by people or populations with “desirable” traits (termed “positive” eugenics) and discouraging reproduction by people with “undesirable” qualities (termed “negative” eugenics). Eugenic ideas about the value of different social classes have been used to justify discrimination, slavery, and genocide around the world for hundreds, if not thousands, of years. In the early 20th century, as geneticists began to widely recognize the basic principles of inheritance (discovered by Gregor Mendel decades before), the science of modern genetics played a significant role in advancing the arguments in favor of government policies in the United States prohibiting interracial marriage, restricting immigration, and sterilizing individuals against their will or without their knowledge. The scientific arguments were flawed from the beginning yet took root and grew. This history, known as the American eugenics movement, was supported and encouraged by a wide swath of people, including everyday citizens, politicians, scientists, social reformers, prominent business leaders, and influential individuals who shared a goal of reducing the “burden” on society.

Eugenicists argued that parents from “good stock” produced healthier and intellectually superior children. They believed that “traits” such as poverty, shiftlessness, criminality and poor work ethic were inherited, and that people of Nordic ancestry were inherently superior to other peoples, despite an obvious lack of evidence and scientific proof. In the early 20th century, not all scientists were supportive of the scientific underpinnings of eugenics. However, eugenicists were able to persuade the Carnegie Institution and prestigious universities to support their work, thus legitimizing it and creating the perception that their philosophy was, in fact, science.

The eugenics movement became widely seen as a legitimate way to improve society and was supported by people such as Winston Churchill, Margaret Sanger, Theodore Roosevelt and John Harvey Kellogg (of Kellogg’s cereal). Eugenics became an academic discipline at many prominent colleges, including Harvard University. From the outset, the movement also had critics, including lawyer and civil rights advocate Clarence

Darrows as well as scientists who refuted the idea that “purity” leads to fewer negative gene mutations. Nevertheless, the United States became the first country to have a systematic program for performing sterilizations on individuals without their knowledge or against their will. The majority of people targeted for sterilization were deemed of inferior intelligence, particularly poor people and eventually people of color.¹

Between 1927 and the 1970s, there were more than 60,000 compulsory sterilizations performed in 33 states in the United States; California led the nation with over 20,000. Experts think many more sterilizations were likely performed, but not officially recorded.²

Adolf Hitler based some of his early ideas about eugenics on the programs practiced in the United States. He was its most infamous practitioner; the Nazis killed tens of thousands of people with disabilities and sterilized hundreds of thousands deemed inferior and medically unfit during the Holocaust. In the Holocaust, 6 million Jewish people were murdered, as well as many other millions of people including those of Slavic and Roma descent, gay people, political opponents, Soviet prisoners of war and many others deemed “undesirable” by the Nazi regime.

After World War II and the Holocaust, the American eugenics movement was widely condemned. However, sterilization programs continued in many states until the mid-1970s. In California, researchers are bringing lost histories from this era to light and have uncovered evidence that certain groups of people, including people of African, Indigenous, and Latinx ancestry, were victimized at rates higher than other groups. For more, see “[On a Eugenics Registry: A Record of California’s Thousands of Sterilizations](#)” from *NPR*.

The goal of this lesson is for students to engage in conversations that contrast the dangers of eugenics with the benefits that can come from genetic information and technology. Students will have a chance to debate and discuss the content of this lesson, even though complete consensus about the intersection of genetics and society will be difficult. pgEd’s companion lesson, “[Using primary sources to examine the history of eugenics](#)” is a chance for students to assess and discuss historical documents to deepen their understanding of eugenics and learn from their peers via the classroom activity.

¹ Black, Edwin, War Against the Weak: Eugenics and America’s Campaign to Create a Master Race (Dialog Press, 2003).

² Stern, Alexandra Minna, Eugenic Nation: Faults and Frontiers of Better Breeding in Modern America (Berkeley, University of California Press, 2005), p. 84.

This lesson is rich with examples and references; however, it is not a complete picture of the experiences of all the different groups of people and regions targeted by eugenic practices. To explore the wide-ranging impact of the eugenics movement further, we recommend using the "[Eugenics Archive](#)" maintained by Cold Spring Harbor Laboratory. Using the search function, you can seek documents specific to your state or geographic area, or more closely examine themes that are pervasive throughout this lesson by using keywords such as "disability," "poverty," or "immigration."

Outline of resources and activities in this lesson

1. Slideshow ([page 6](#), slide notes on [pages 7-17](#))
2. Discussion questions ([page 18](#), handout on [page 21](#))
3. Homework assignment ([page 19](#), handout on [page 21](#))
4. Short quiz (answer key on [page 19](#), handout on [page 22](#))
5. List of additional resources ([page 23](#))

Activities

Slideshow (45 minutes), discussion (15-20 minutes).

Genetics, history and the American eugenics movement

Part 1: SLIDESHOW (45 minutes)

The slideshow is broken into three thematic sections.

Section one

Slides 2-8 highlight advances in genetics, the potential benefits for improving health, and some of the ethical questions that are raised. As students explore recent breakthroughs in personalized medicine, prenatal testing, embryo screening, and genome editing, they may wonder:

- Who will have access to the benefits of genetic technologies and treatments?
- As science advances, what traits might people be able to choose or select against? What are the criteria for making such a decision? Who decides?
- Is there a difference between screening for a serious disease versus a cosmetic trait? Is there always a clear distinction between the two?
- How can genetic engineering be utilized for urgently needed cures and therapies, and at the same time, can we come to a consensus on the limits on how and when genetic engineering is used?

This lesson does not attempt to answer these questions; indeed, there are no simple answers. Rather, the goal is for students to think about possible uses of genetic technologies and some of the associated concerns about equity, access, and fairness. A key question for students to consider is who has the power to make decisions about people's health and safety.

Slides 2-8 cover many complex topics, and some teachers may opt instead to show a video that highlights these ideas. One video we recommend to teachers is "[Gene Editing & CRISPR: How Far Should We Go?](#)" from *PBS*. While not in exact alignment with the slides, many of the same ideas are expressed as students begin to think about the past, present and future of genetics. Teachers new to this topic may find *The Atlantic's* "[Disease vs. Difference: A question of eugenics?](#)" by Jill Rosenbaum via Retro Report and American Experience to be a helpful overview, and one that may be of interest to students.

Section two

Slides 9-21 provide a historical overview of the American eugenics movement by tracing both the legal implementation and societal response that made this movement possible. Students will be introduced to the harm caused by the eugenics movement.

Section three

Slides 22-27 illustrate some of the efforts in the scientific, policy and activist communities to safeguard against future injustices. It is valuable to explain to students that talking about historical injustices is not meant to dissuade people from taking advantage of potentially life-saving genetic technologies. The goal is that people are aware of the possibilities and better equipped to evaluate the benefits and risks of genetic technologies.

Many of the images are shocking and could be disturbing to students. These topics may be personal for students who have relatives who were affected by these events. Teachers may consider making students aware of this ahead of time and offer breaks or writing/reflection opportunities throughout the presentation.

The slideshow is located on the pgEd website along with this [lesson](#), and accompanying explanatory notes for the slideshow are provided below.

Slideshow notes

Slide 2

This lesson begins with an overview of advances in genetic technology and its implications for health, medicine and ethics. The lesson then traces the history of the American eugenics movement through historical events and documents. Finally, the lesson concludes by highlighting efforts to halt eugenic practices and looks ahead to emerging issues at the intersection of genetics, health, and informed consent.

Slide 3

Genetics is increasingly used in medicine to diagnose diseases, to identify potential health risks as well as options for prevention, and to choose medicines that are safer and more effective for each patient. Here, we give two examples. 1) Actor Angelina Jolie used genetic testing to identify the genetic risks of breast cancer that runs in her biological family, which informed choices about her own medical care. (She chose a mastectomy to reduce her cancer risk.) 2) Drug metabolism can be impacted by a person's genetic profile, and this can affect the dosage or whether the medicine is prescribed at all. The prescription bottle could represent any number of medicines, including ones commonly prescribed to young people. Details on these stories and examples can be found in pgEd's "[Introduction to Personal Genetics](#)" lesson plan.

Slide 4

Although genetic testing has been used for decades to select certain traits in human embryos, the story of the Nash family brought it into the public eye.

Pictured are siblings Molly and Adam Nash. Molly was born in 1994 with a deadly disorder called Fanconi Anemia (FA), a genetic condition that often leads to cancer. As a young child, Molly needed a stem cell transplant to save her life. Her parents wanted another baby and decided to use a method of embryo screening with the goal of conceiving a child who would not have FA and would be a perfect donor match for Molly. Using in vitro fertilization (IVF) and preimplantation genetic diagnosis (PGD) (technologies described in further detail in pgEd's [Genetics and Reproduction](#) lesson plan), Molly's brother, Adam, was conceived. When Adam was born in 2000, stem cells from his umbilical cord were donated to his sister. Since the transplant, Molly has recovered and both children are doing well.

The Nash family was one of the first in the United States to go public with their use of PGD for donor matching. While many people were supportive, the Nashes also faced criticism that Adam was a "designer baby" and suffered unjust risks, conceived only to help his sister. ['Little Frankenstein' conceived so Minnesota doctors could save sister, is now a happy teen,](#) *Star Tribune*, and video from ABC news, ["Nash family opens up."](#)

Slide 5

People have a range of opinions about the uses and limits of embryo screening, including the use of donor matching (as the Nash family did). In a 2015 study, a majority of the Americans surveyed thought it was acceptable to use PGD to select embryos in order to avoid serious illness or disability, or to identify a match for stem cell donation. Note that close to 20% of people stated it would be acceptable to screen for personality traits and other complex characteristics, which are poorly understood and not suited to this sort of technology. These results provide the basis for a discussion to ensure students understand that it is difficult to discover the genetic contributions to traits as complicated as personality, intelligence, sexual orientation, and strength. Another important point to make to students is that people could see this survey and feel a sense of marginalization, because of worries that some of their traits are undervalued by others and could be erased.

Slide 6

Beyond embryo screening, genetic technology now can be used to alter a person's DNA as treatment for disease – a concept known as gene therapy.

One technique that has attracted particular attention is called "genome editing." Clinical trials of genome editing to treat the blood disorder, sickle cell disease (SCD), are currently underway. One approach involves altering a patient's cells to produce a

naturally-occurring protein that is normally shut off in adults, with the goal of creating healthy red blood cells. These changes in the blood cells, which would not be passed down to future generations, are showing promise for patients in these early days of clinical trials. Details on the scientific ideas are included in pgEd's "[Genome editing and CRISPR](#)" lesson and in this NPR News article, "[New gene therapy shows promise for patients with Sickle Cell disease](#)", March 2019, by Karen Weintraub.

Slide 7

An area of scientific, legal, religious, and ethical debate is the use of genome editing in embryos, such that changes would be passed on to future generations. Since 2015, researchers have edited the genomes of embryos, but stated that they had not implanted those embryos into a person's womb. In November 2018, a scientist claimed that the first two children had been born with genes that had been edited in the embryonic stage. In this case, genome editing was used in an attempt to confer immunity to HIV infection. Lacking verified and reviewed results, the details of this work are unclear and have left the world with many unanswered questions. This case brings attention to many profound ethical issues about potential applications of genome editing in humans. As this story has unfolded in the media, the apparent departure from the accepted process around reviewing, authorizing, and conducting medical research has also drawn particular scrutiny.

Slide 8

While many hope that genetic technologies can help to prevent or treat disease, there are many fears as well that the use of genetics (particularly when applied to reproduction) will lead to what is sometimes referred to as "the new eugenics" and "designer babies." These terms are often a short-hand to talk about worries that genetics will be used unfairly, to discriminate against groups of people, including people with disabilities. Another major fear is that only the wealthy will have access to the newest advances. *Pause at this slide to ask students the question posed on the slide: "What are the underlying concerns?"* Teachers can expect answers that include many of the concerns listed above – and this is the transition point in the lesson between the current state of genetics and the history of eugenics in the US and beyond.

From this point on in the lesson, students will learn about the American eugenics movement. They will explore the philosophies and agendas that drove the policies that allowed forced sterilizations, which aimed to prevent certain people passing on what were deemed "negative" traits to future generations. With a foundation in the history of the movement and an awareness of the people who were harmed and those who fought to end these unjust practices, students will be better informed to assess the benefits and implications of genetic technologies.

Slide 9

The American eugenics movement began in the early 20th century. The main goal was to improve society and reduce the burden of people who some considered to be inferior. That is, just as screening for intelligence and other “desirable” characteristics would be acceptable to some people today, it was similarly acceptable in previous decades.

Slide 10

The late 19th and early 20th centuries brought an enormous amount of change to the United States. The nation began to shift from an agrarian to an industrial economy and society, millions of immigrants arrived, and cities grew at an exponential rate. These changes created social challenges, including increased poverty, slums, disease and child labor. Eugenacists believed that immigrants from Southern Europe were genetically inferior, as were people living in poverty (i.e., they were poor because they were genetically predisposed to be lazy). Although incorrect, eugenacists believed that preventing poor people and immigrants from reproducing, thereby reducing the population of genetically inferior individuals, would solve many societal issues.

The Immigration Restriction Act of 1924 was strongly influenced by eugenacists, who lobbied and worked closely with members of Congress to shape the legislation. The act severely restricted immigration, particularly of Eastern European Jews, Italians (as well as other Southern Europeans), and Africans, and banned the immigration of Arabs and Asians. This act prevented thousands of European Jews attempting to flee the Nazis from entering the United States during the 1920s and 30s. According to the US Department of State website, “In all of its parts, the most basic purpose of the 1924 Immigration Act was to preserve the ideal of U.S. homogeneity.” Learn more about the impact of eugenics on US immigration here: <https://history.state.gov/milestones/1921-1936/immigration-act> and here: <http://www.eugenicsarchive.org/html/eugenics/essay9text.html>.

Slide 11

Despite many scientists’ skepticism and outright rejection, some people began defining different levels of intelligence through the use of specific tests. It was around this time that IQ tests were created. This illustration shows how people were categorized by the mental age that eugenacists believed they would reach and the type of work eugenacists believed they would be able to perform. Part of the goal of eugenacists was to show that “genetically inferior” people would become a burden to society.

Slide 12

Various states and organizations promoted “positive” eugenics by encouraging people who were deemed superior to have more children. The first “Fitter Family” contest, which was based on “Better Babies” contests, was held at the Kansas State Fair in 1920. Both types of contests took a deterministic view of genetics and biology and assumed that there were “good genes” for characteristics such as honesty, morality and industriousness that were passed on to children. The Red Cross originally sponsored these competitions; families were judged in categories including size of family, attractiveness, health and generosity.

Slide 13

Many states had laws forbidding interracial marriage from the late 17th century until 1967, when the Supreme Court ruled in *Loving v. Virginia* that such laws were unconstitutional. Eugenic ideas lent a new set of justifications for such laws by providing a pseudoscientific explanation for the perils of “race-mixing.” For a more detailed explanation, read a short piece by legal historian Paul Lombardo: <http://www.eugenicsarchive.org/html/eugenics/essay7text.html>.

Slide 14

Surgical sterilization, a procedure that prevents a person from reproducing, was a key tool of eugenics programs throughout the United States. Sterilization techniques could include hysterectomy, tubal ligation (“tying tubes”) and vasectomy. Forced sterilization programs were underway in many places by 1937, including Puerto Rico and other US territories. Under Law 116, one-third of women in their twenties were sterilized in Puerto Rico according to a report from the United States Department of Health, Education and Welfare. As such, the impact of that law persisted for generations. While overpopulation was cited as the reason for widespread poverty on the island – and therefore a justification for the sterilizations – historians argue that the history of colonization and the sugar industry better explain the poverty on the island. Additionally, Puerto Rico was without full constitutional rights until 1947 and did not have a democratically elected governor until 1948. *Law 116* remained in effect in Puerto Rico until 1960. For a brief overview of the eugenics efforts in Puerto Rico, see: <http://eugenicsarchive.ca/discover/tree/530ba18176f0db569b00001b>

Slide 15

Eugenicists used the US legal system to create a pathway for programs where people could be sterilized by local and state public health authorities. Carrie Buck was born in 1906 to a poor mother who was eventually committed to the

Virginia State Colony for Epileptics and the Feeble-minded. Carrie was placed in foster care. At age 17, Carrie became pregnant as the result of being raped, most likely by the nephew of her foster parents. Her foster parents then committed her to the Virginia State Colony on the grounds of feeble-mindedness, promiscuity and incorrigible behavior. In 1927, Carrie was the plaintiff in the Supreme Court case *Buck v. Bell*, which established that the state has the right to force a person to be sterilized without their consent. Carrie was sterilized to prevent passing along "feeble-mindedness," which she, her mother and her daughter were all declared to exhibit. (Note: Reporters and researchers who later interviewed Carrie described her to be of average intelligence.) While many cases have criticized the *Buck v. Bell* ruling, technically, the decision has never been overturned.

Slide 16

In 1927, the 8-1 ruling in *Buck v. Bell* established the right of the state to sterilize people deemed unfit to procreate. Supreme Court justice Oliver Wendell Holmes, writing an opinion that represented the majority of the justices, argued that the interest of the state to improve the gene pool superseded that of the individual's right to maintain bodily integrity. He wrote:

"We have seen more than once that the public welfare may call upon the best citizens for their lives. It would be strange if it could not call upon those who already sap the strength of the State for these lesser sacrifices, often not felt to be such by those concerned, to prevent our being swamped with incompetence. It is better for all the world, if instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes. Three generations of imbeciles are enough."

(<https://supreme.justia.com/cases/federal/us/274/200/>)

Slide 17

The pedigree was an important tool that eugenicists used to trace the pattern of inheritance in a family. This slide shows a pedigree from a woman sterilized by the state of Maine. Eugenicists "scored" family members and traced the lineage of "defective" as well as "superior" individuals. Pedigrees traced traits such as immoral behavior, degeneracy, criminality, disease, shiftlessness, intelligence and feeble-mindedness. While there was essentially no sound scientific basis for the inheritance of these types of characteristics, the creation of pedigrees based on these characteristics, nevertheless, helped to establish these ideas as legitimate science. For a

critique of eugenics research, refer to the essay by expert Garland E. Allen:
<http://www.eugenicsarchive.org/html/eugenics/essay5text.html>.

Slide 18

This slide shows a quote from Adolf Hitler in 1931, recalled in the memoirs of former Nazi major general and Hitler's economic advisor, Otto Wagener. This quote was one of several instances recorded in Hitler's conversations and writings in which he claimed to have learned from American eugenic policies. The slide also includes an excerpt from a 1934 editorial in the *New England Journal of Medicine*, one of the most prestigious medical publications in the United States, which commended the sterilization program implemented in Nazi Germany.

German scientists and eugenicists were greatly influenced by the work of prominent American eugenicists, the two groups exchanging papers and visiting one another's labs and offices. The United States passed its first law allowing sterilization in 1907, 26 years before Germany passed their laws. The Rockefellers, who were oil and banking magnates, used their family wealth through their foundation to help support the German eugenics program. They funded the program where Josef Mengele worked before he became a physician at Auschwitz, for which he is known as the "Angel of Death". (Note: The Rockefeller Foundation later paid to relocate approximately 300 Jewish scholars out of Germany to escape Hitler's regime.) After a 1934 visit to Germany, where over 5,000 people were being sterilized each month, California eugenics leader C. M. Goethe stated to a colleague:

"You will be interested to know that your work has played a powerful part in shaping the opinions of the group of intellectuals who are behind Hitler in this epoch-making program. Everywhere I sensed that their opinions have been tremendously stimulated by American thought... I want you, my dear friend, to carry this thought with you for the rest of your life, that you have really jolted into action a great government of 60 million people."

[Black, Edwin, *War Against the Weak: Eugenics and America's Campaign to Create a Master Race* (Dialog Press, 2003).]

Slide 19

The Nuremburg Code was established in 1947 as a result of the "Doctor's Trial," which was intended to bring justice to victims of medical experimentation in Nazi Germany. Among the lengthy list of crimes that were prosecuted in the trial were the Nazi's efforts to develop mass sterilization techniques that could be performed without the victims being aware of it, including secretly

exposing them to dangerous x-rays. The Nuremberg Code sought to prevent such atrocities from happening again by establishing protections around voluntary consent and safety in medicine and research. One of the core protections of the Nuremberg Code is the informed consent of willing participants. These codes have guided the development of many medical and research studies with positive outcomes, including successful clinical trials and drug development. Details on the x-ray experiments can be found on page 49 of [Trials of War Criminals: Before the Nuremberg Military Tribunals under Control Council Law No. 10. Vol. I](#), U. S. Government Printing Office, 1949.

However, the Nuremberg Code was not a cure-all, and, as slides 20-24 show, it did not halt unethical practices related to the American eugenics movement and forced sterilization. By WWII, many scientists in the US had largely rejected earlier scientific theories that had provided the justification for the eugenics movement, but many of these ideas about who was and who was not fit to reproduce had already taken root in many state governments and public health initiatives. With the weight of the US legal system behind the practice, due to *Buck vs. Bell*, sterilizations continued. In many cases, forced sterilizations came to a halt through the activism and advocacy of the groups of people being targeted. To learn more about an example of unethical research practice that occurred despite the existence of the Nuremberg Code, see "[US Public Health Service Syphilis Study at Tuskegee](#)."

Slide 20

This pamphlet, which aimed to persuade the public about the merits of sterilization, was published by an organization called the Human Betterment League of North Carolina. James Hanes (of the Hanes clothing and hosiery company) founded the organization in 1947. The goal of the organization was to promote the sterilization of those deemed mentally unfit. North Carolina had an aggressive state-run push to sterilize people. Initially, 85% of those sterilized were women and girls; in the 1960s, the sterilization of men largely ended, at which point 99% of those sterilized were women and girls. Many were rape victims who were deemed "promiscuous." Others were considered to be intellectually inferior, classified as "morons," "idiots" or "feebleminded." People with mental illness as well as physical illness, such as epilepsy, were also sterilized.

According to the task force established in 2011 by North Carolina Governor Beverly Perdue, 2,990 of the almost 7,600 sterilizations in North Carolina were performed on people between the ages of 10 and 19. The total number of 7,600 includes only those operations directed by the state eugenics board and not those performed locally, and likely unreported, by an individual doctor or hospital.

Slide 21

Indigenous people were specifically targeted for sterilization, as part of a longer history of mistreatment and erasure of Indigenous people in the United States (“Indigenous” refers to ethnic groups who are the original inhabitants of a geographic area, before the later arrival of settler or colonial populations). This image, produced by the US Department of Health, Education and Welfare in 1974, sought to link sterilization to increased wealth and happiness. The image depicts a larger family with 10 children, parents who are unhappy, and less wealth, represented by the lone horse. In 1976, the US Government Accounting Office released its finding that 3,406 sterilizations were performed at 4 of the 12 Indian Health Service (IHS) centers between 1973-1976. Given the number of stories they and other community members had heard about indigenous women being forcibly sterilized, Dr. Constance Redbird Pinkerton (a Choctaw-Cherokee physician) and Marie Sanchez (a chief tribal judge) each decided to conduct their own research. Through their efforts to document the experiences of many indigenous people, they found significant differences with the number of procedures that were recorded. As a result, some researchers believe that the number of women who were sterilized is much higher than initially reported. Adding to the trauma of these events is the evidence that many of the sterilizations, often done without consent, were conducted at IHS centers that were intended to help and support people living on reservations. Read more at [“The Little-Known History of the Forced Sterilization of Native American Women”](#) from *JSTOR Daily*.

Slide 22

Protests against forced sterilization took place around the nation during the 1970s, including the one in North Carolina depicted in this slide. Though many individuals opposed the practice from the start, protests against forced sterilization grew out of the civil rights and women’s movements. Many states, including California, outlawed the practice in the mid and late 1970s. Though the *Buck v. Bell* Supreme Court decision allowing the practice has never been overturned, many cases at the state and federal level reject these ideas.

Slide 23

People continued to protest federal sterilization laws in court, as illustrated in this slide about the 1978 *Madrigal v. Quilligan* case.

Madrigal v. Quilligan was a federal class action suit against the doctors and Los Angeles County Hospital, brought by ten working-class Latinx women who were forcibly sterilized or sterilized without their consent. The case was inspired by women talking with one another and coming forward, and more broadly, by the Chicano Movement

that sought rights and fair treatment for Mexican migrants, among others. While the judge decided in favor of the defendants, the case was key in revising the way in which informed consent was carried out in the medical industry. Until the lawsuit, consent forms were only in English and consent was often sought during active labor and with threats of withholding everything from pain medicine to future welfare benefits. Additionally, rules such as waiting periods for decisions about sterilization after birth were implemented. The details of this case are described in the documentary “No Más Bebés” and in the article, “[When Doctors Took ‘Family Planning’ into Their Own Hands](#)” from the *New York Times*.

Slide 24

Elaine Riddick has been an outspoken survivor of North Carolina’s forced sterilization program. She was born into poverty and raised by her grandmother. At the age of 13, she was raped by a man in her neighborhood and became pregnant. She gave birth in March 1968 and was sterilized immediately afterward without her knowledge or consent. Her grandmother, who was illiterate, signed the consent form for sterilization out of fear that Elaine would be sent to an orphanage if she refused. Elaine did not discover what had happened to her until she married and tried to conceive a child. In 2011, the governor of North Carolina established a commission to determine how much to compensate Elaine and the estimated 1,500 to 2,000 other living victims of sterilization. There was much debate about whether any amount of money could compensate for not only the loss of fertility, but also the branding of victims as feebleminded and promiscuous.

Elaine Riddick’s case is discussed in detail in David Zucchino’s January 2012 article, “[Sterilized by North Carolina, she felt raped once more](#),” in the *Los Angeles Times*. If time allows, you may choose to show your students this news clip from the Associated Press that describes Riddick’s fight for justice. “[Elaine Riddick has been fighting for 40 years to get compensation from the state of North Carolina](#)”.

Slide 25

North Carolina became the first state in the United States to approve payments to victims of its eugenic sterilization programs in 2013, after 10 years of debate and legislative votes. The state officially sterilized at least 7,600 people. According to the February 2018 article “[Final payment goes out to 220 eugenics victims](#)” in the *Winston-Salem Journal*, reparations of \$50,454 have been paid to 220 victims in three installments between 2014 and 2018. The only other state to pay compensation is Virginia, agreeing in 2015 to pay victims \$25,000 each. See “[Forced Sterilization Victims in Virginia Awarded Compensation](#)” in the *Roanoke Times*.

Slide 26

Sterilization continues to make headlines in recent years, often as it relates to incarcerated people and criminal sentencing. Investigative reporting revealed in 2014 that from 2006-2010 at least 132 inmates in California prisons were sterilized illegally. The sterilizations were characterized by unsigned consent forms, falsified documents, and women stating they were coerced. Much of the sterilization programs were propelled forward through racism and promises of economic relief and stability. One of the doctors involved in high percentage of the sterilizations noted to a reporter, on the subject of the economics of sterilization, that the costs of sterilizations were small “compared to what you save in welfare for these unwanted children.” New laws were passed as a result to better protect inmates and improve consent procedures. Read more in *USA Today*, “[California Female Inmates Sterilized Illegally](#).” In 2018, a woman awaiting sentencing underwent sterilization, after the judge suggested this could favorably impact how long she was incarcerated. Many argued this was coercive, as the pressures of a possible shorter sentence make true informed consent impossible. More on this case in the *Washington Post*, “[Judge suggests drug-addicted woman get sterilized before sentencing, and she does.](#)”

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NIH protections for human research continue to adapt to the changing field of genetics. In addition to state-level action, the United States government works to ensure that progress in science, research and technology proceeds in an ethical and socially acceptable manner, so as not to see echoes of the past repeated. The National Institutes of Health (NIH) oversees the funding and conduct of millions of dollars in medical research. The NIH conducts many clinical trials and funds research to look at the implications of new technologies and plays an important role in making sure medical research is fair, safe and equitable. They require coursework, training, and external review bodies to oversee research, offer certifications of confidentiality, and note on their [homepage](#) as part of their mission “to ensure that individuals such as women, children and minorities are included in clinical research in a manner that is appropriate to the scientific question under study.” At the same time, federal agencies continue to struggle to recruit a fair and representative sample of the population to participate fully in the benefits of scientific advancement. Examples are cited in the *ProPublica* article, “[Black Patients Miss Out on Promising Cancer Drugs](#).”

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Part 2: IN-CLASS DISCUSSION (15-20 minutes)

The following questions for discussion are included on a handout for students on [page 21](#) of this document. Distribute the handout and divide students into pairs or small groups to discuss. Allow 10-15 minutes for small group discussion and then bring students back together for a whole class discussion, as time allows. You may want to revisit some of the slides during the discussion.

1. Why did some scientists, politicians, social reformers and business leaders think they should prevent specific groups of people from having children while encouraging others to have large families? What were they hoping to accomplish?
2. Should the government or doctors have the right to decide that a certain person or group of people should not have children? Are there circumstances in which it would be justified to prevent certain people from having children? If so, what would such circumstances be? If not, why not?
3. There was no sound scientific basis for eugenics, and yet categories such as “feeble-minded” were created for classifying individuals. Eugenacists also believed that qualities such as poverty, criminality, and good or bad work ethic were passed down through genes. Why do you think so many people believed these ideas? What do you think was appealing to some people about them? Explain.
4. Informed consent is a key component of safe and ethical medical and scientific research. Discuss how the Nuremberg Code defines informed consent. How did the Madrigal vs. Quilligan lawsuit advance the rights of patients?
5. It is not uncommon for individuals or couples to decide against having children so as to avoid passing along a trait that they believe they carry (e.g., susceptibility for a deadly disease such as Huntington’s or Tay-Sachs). Could such decisions be considered eugenic? Why or why not?

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Part 3: ASSESSMENTS & HANDOUTS

Homework assignment

The handout on page 21 also includes the following two questions that can be used as homework for teachers looking to extend the lesson. Asking students to provide written answers to the discussion questions above is another possible way to assign homework for this lesson.

1. Until 1967, it was legal for states to bar people from marrying someone of another race. The laws that prevented such marriages were called anti-miscegenation laws. How do you think these laws reflected eugenic ideas?
2. How can we, as a society, both benefit from genetic technologies as well as prevent such technologies from being used to discriminate against certain groups? Explain.

“Genetics, history and the American eugenics movement” quiz answer key

(see [page 22](#) for quiz)

1. **What is eugenics? In what decade in American history did eugenics become a popular idea?**

Eugenics is the philosophy and social movement that argues it is possible to improve the human race and society by encouraging reproduction by people or populations with “desirable” traits (termed “positive” eugenics) and discouraging reproduction by people with “undesirable” qualities (termed “negative” eugenics). It became a popular idea in the United States in the 1920s. See [page 3](#) of this document for more possible answers.

2. **What authority did the Buck v. Bell Supreme Court decision give to state and local governments?**

The Buck v. Bell Supreme Court decision gave states the right to sterilize people it deemed unfit to procreate.

3. **Who is Elaine Riddick?**

Elaine Riddick is an activist bringing attention to the history of women who were sterilized by the government against their will or without their consent. She was sterilized as a teenager after getting pregnant as a result of being raped. As an adult, she came forward and has helped lead the effort to have victims of sterilization compensated by the state of North Carolina.

4. What are some of the protections in place in the United States that protect people participating in scientific research?

Possible answers include the Nuremberg Codes and the Human Subjects Research protections via the National Institutes of Health. Also, while the *Buck v. Bell* ruling has never been overturned, many state laws and other statutes exist to protect individuals from eugenic practices and more broadly from medical misconduct.

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STUDENT HANDOUT: DISCUSSION QUESTIONS

Name: _____ Date: _____

Questions for in-class discussion:

1. Why did some scientists, politicians, social reformers and business leaders want to prevent specific groups of people from having children while encouraging others to have large families? What were they hoping to accomplish?
2. Should the government or doctors have the right to decide that a certain person or group of people should not have children? Are there circumstances in which it would be justified to prevent certain people from having children? If so, what would such circumstances be? If not, why not?
3. There was no sound scientific basis for eugenics, and yet categories such as “feebleminded” were created for classifying individuals. Eugenecists also believed that qualities such as poverty, criminality, and good or bad work ethic were passed down through genes. Why do you think so many people believed these ideas? What do you think was appealing to some people about them? Explain.
4. Informed consent is a key component of safe and ethical medical and scientific research. Discuss how the Nuremberg Code defines informed consent. How did the Madrigal vs. Quilligan lawsuit advance the rights of patients?
5. It is not uncommon for individuals or couples to decide against having children so as to avoid passing along a trait that they believe they carry (e.g., risk for a deadly disease such as Huntington’s or Tay-Sachs). Could such decisions be considered eugenic? Why or why not?

Questions for homework:

1. Until 1967, it was legal for states to forbid people from marrying someone of another race. The laws that prevented such marriages were called anti-miscegenation laws. How do you think these laws reflected eugenic ideas?
2. How can we, as a society, both benefit from genetic technologies as well as prevent such technologies from being used to discriminate against certain groups? Discuss.

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QUIZ

Name: _____ Date: _____

1. What is eugenics? In what decade in American history did eugenics become a popular idea?
2. What authority did the Buck v. Bell Supreme Court decision give to state and local governments?
3. Who is Elaine Riddick?
4. What are some of the protections in place in the United States that protect people participating in scientific research?

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ADDITIONAL RESOURCES & RELATED LESSONS

Additional resources for teachers

1. [Image Archive on the American Eugenics Movement](#), *Cold Spring Harbor Laboratory*.
2. [Eugenics in the United States](#), *Wikipedia*.
3. [Timeline of the American Eugenics Movement](#), *Facing History and Ourselves*.
4. [Imbeciles: The Supreme Court, American Eugenics, and the Sterilization of Carrie Buck](#), by Adam Cohen

Related pgEd lesson plans

[Using primary sources to examine the history of genetics](#)
[Genome editing and CRISPR](#)