

- 1. **Psychology STEM:** Clive Wearing is an accomplished musician who lost his ability to form new memories when he became sick at the age of 46. While he can remember how to play the piano perfectly, he cannot remember what he ate for breakfast just an hour ago. James Wannerton experiences a taste sensation that is associated with the sound of words. His former girlfriend's name tastes like rhubarb. John Nash is a brilliant mathematician and Nobel Prize winner. However, while he was a professor at MIT, he would tell people that the New York Times contained coded messages from extraterrestrial beings that were intended for him. He also began to hear voices and became suspicious of the people around him. Soon thereafter, Nash was diagnosed with schizophrenia and admitted to a state-run mental institution. Nash was the subject of the 2001 movie "A Beautiful Mind."
- 2. **Physics STEM:** Galileo was instrumental in establishing observation as the absolute determinant of truth, rather than "logical" argument. Galileo's use of the telescope was his most notable achievement in demonstrating the importance of observation. He discovered moons orbiting Jupiter and made other observations that were inconsistent with certain ancient ideas and religious dogma. For this, and because of how he dealt with authorities, Galileo was tried by the Inquisition and punished. He spent the final years of his life under a form of house arrest. Because others before Galileo had also made discoveries by observing nature, and because repeated observations verified his findings, his work could not be suppressed. After his death, his work was verified by others, and his ideas were eventually accepted by the church and the scientific community. (3) (Gendered terms: 5)
- 3. **Biology STEM:** Johann Gregor Mendel (1822–1884) was a lifelong learner, teacher, scientist, and man of faith. As a young adult, he joined an Augustinian monastery in what is now the Czech Republic. Supported by the abbey, he taught physics, botany, and natural science at the secondary and university levels. In 1856, he began a decade-long research project on inheritance patterns in honeybees and plants, ultimately focusing on pea plants as his primary model system. In 1865, Mendel presented the results of his experiments with nearly 30,000 pea plants to the local Natural History Society. He demonstrated that traits are transmitted from parents to offspring independently of other traits and in dominant and recessive patterns. In 1866, he published his work "Experiments in Plant Hybridization" in the proceedings of the Natural History Society of Brünn. ⁵ ⁶ (Gendered terms: 9)
- 4. **Chemistry STEM:** Dmitri Mendeleev in Russia (1869) and Lothar Meyer in Germany (1870) independently recognized a periodic relationship among the properties of the known elements. Both published tables arranging the elements by increasing atomic mass. But Mendeleev went a step further than Meyer: he used his table to predict the existence of elements that would have properties similar to aluminum and silicon, but were not yet known. The later discoveries of gallium (1875) and germanium (1886) provided strong support for Mendeleev's predictions. Although Mendeleev and Meyer long disputed over priority, Mendeleev's contributions to developing the periodic table are now more widely recognized. 7 (Gendered terms: 2)
- 5. **Psychology STEM:** B. F. Skinner, a leading behaviorist, believed that behavior is motivated by the consequences we receive for it—reinforcements and punishments. His idea was that learning is the result of reinforcement: actions followed by positive outcomes are strengthened, while those followed by negative outcomes are weakened. In Skinner's view, the environment alone shapes observable behavior; internal thoughts or motivations were not necessary to understand behavior. He demonstrated this with inventions like the "Skinner box," where an animal (such as a pigeon or rat) learns to perform a behavior (e.g. press a lever) to obtain a reward. By carefully controlling outcomes,

he was able to show how an organism's behavior could be conditioned through reinforcement. 8 9 (Gendered terms: 4)

- 6. **History Humanities:** In eighteenth-century America (as in Great Britain), the legal status of married women was defined by coverture, meaning a married woman (a feme covert) had no independent legal or economic status apart from her husband. She could not conduct business or buy and sell property on her own. Her husband controlled any property she brought into the marriage, although he could not sell it without her agreement. Married women's status did not change after the American Revolution—wives remained economically dependent on their husbands. The women of the newly independent nation did not demand the right to vote, but some, especially the wives of elite statesmen, began to agitate for equality under the law between husbands and wives, and for the same educational opportunities as men. 10 11 (Gendered terms: 7)
- 7. **History Humanities:** Murray's more radical ideas championed woman's economic independence. She argued that a woman's education should be extensive enough to allow her to maintain herself—and her family—if there was no male breadwinner. Indeed, Murray was able to make money of her own from her publications. Her ideas were both radical and traditional, however: Murray also believed that women were much better at raising children and maintaining the morality and virtue of the family than men. 12 (Gendered terms: 9)
- 8. **History Humanities:** During Thomas Jefferson's presidency, the United States sought to explore its vast new Louisiana Territory. Jefferson appointed Meriwether Lewis, a young Army captain, to lead an expedition, and Lewis in turn chose William Clark as co-leader. In 1804, Lewis and Clark's "Corps of Discovery" set out to map the territory and document its resources. As they traveled up the Missouri River, they faced harsh storms, swarms of gnats and mosquitoes, and encounters with unfamiliar wildlife (elk, buffalo, grizzly bears). Along the way they also encountered various Native American nations. The corps set about making friends with Native tribes while simultaneously asserting American power. Lewis would sometimes awe the locals by firing his air rifle a relatively new technology as a demonstration. The explorers followed Native customs by distributing gifts (shirts, ribbons, kettles) as goodwill offerings. They presented native leaders with medallions bearing Jefferson's image and invited them to visit their new "Great Father" in the East. These "peace medals" would help future explorers identify friendly groups. Not all encounters were peaceful; some Native warriors rejected the Americans' intrusion. On one occasion Lewis inadvertently caused tension with the Blackfeet, and a skirmish led members of the corps to kill two Blackfeet men. ¹³ ¹⁴ (Gendered terms: 2)
- 9. **History Humanities:** In 1533, England's King Henry VIII broke from the Catholic Church so he could divorce and remarry, hoping for a male heir. His second wife, Anne Boleyn, also failed to produce a male heir, and when she was accused of adultery, Henry had her executed. His third wife, Jane Seymour, at long last delivered a son, Edward, who ruled only a short time before dying in 1553 at age fifteen. Mary, the daughter of Henry VIII and his first wife Catherine, then came to the throne, determined to restore Catholicism. She earned the nickname "Bloody Mary" for the many Protestants (often burned alive) she ordered executed during her reign. ¹⁵ (Gendered terms: 9)
- 10. **History Humanities:** Harriet Tubman was a legendary figure in her own time and beyond. An escaped enslaved person herself, she returned to the South thirteen times to lead over 70 enslaved people including her family and friends to freedom along the Underground Railroad. Tubman distinguished herself for her tireless efforts helping other enslaved men and women escape. Born enslaved in Maryland around 1822, Tubman suffered greatly under slavery but found solace in Christianity; she finally made her own escape in the late 1840s. She would become the most famous "conductor" on the Underground Railroad. ¹⁶ (Gendered terms: 7)

- 11. **Sociology Humanities:** When filling out a form, you are often asked to provide your name, address, birth date, and sex or gender. But have you ever been asked for both sex and gender? Sociologists distinguish these concepts. Sex refers to physical or physiological differences between males and females including reproductive anatomy and secondary characteristics like height or muscularity. Gender, by contrast, refers to behaviors, traits, and social roles that society attributes to being female or male ¹⁷ ¹⁸. A person's sex, as determined by his or her biology, does not always correspond to that person's gender. For example, a baby boy born with male genitalia will be identified as male, but as he grows, however, he may identify with feminine aspects of culture ¹⁹. Characteristics of sex do not vary significantly across human societies (for instance, females generally menstruate and can lactate), whereas characteristics of gender may vary greatly between societies. In U.S. culture, wearing a dress is considered feminine but in many other cultures, garments like sarongs or robes are worn by men and are considered masculine. Even in Scotland, a male wearing a kilt (a skirt-like garment) does not appear feminine in his culture ²⁰. (Gendered terms: 8)
- 12. **Sociology Humanities:** In 1971, sociologist Frances Heussenstamm had a theory about police prejudice. To test her idea, she conducted an experiment. She chose 15 student volunteers—Black, White, and Hispanic—each with a perfect driving record. She placed a Black Panther bumper sticker on each of their cars as a provocative stimulus, then asked the students to drive as they normally would. She wanted to see whether seeming support for the Black Panthers would change how these good drivers were treated by highway police. The dependent variable was the number of traffic stops or citations the students received 21 22. The results were striking: one student was pulled over three times in three days (and quit the study), and after 17 days the 15 drivers had collected a total of 33 traffic citations. Heussenstamm halted the research once her funding for fines ran out—and once her* participants' enthusiasm did too. 23 (Gendered terms: 4)
- 13. **Anthropology Humanities:** *Michelle Brown spends long days observing blue monkeys, red-tailed monkeys, and baboons in a conservation park in Uganda. She records the behavior of these primates as they find food, communicate, and fight with one another. She collects urine and feces to analyze hormone levels, intestinal parasites, and DNA. She** wants to understand how primates compete as individuals and groups for access to various foods in their environment. ²⁴ (Gendered terms: 3)
- 14. **Education Humanities:** JT is reapplying to college after taking time off to work and save money for tuition. He finds his current job unfulfilling and knows college could help him pursue a career he enjoys with a better salary. However, his family and friends in their small community don't understand why he wants to go to college; they fear he will change and drift away from them. When JT asks a close friend for help with his college application, his friend refuses, saying he doesn't support the decision and worries they won't hang out like before. Undeterred, JT then asks his family if he could move back home while attending school so he can save the money he earns for his expenses. They, too, refuse to help him, believing he* would be burdening them. ²⁵ (Gendered terms: 11)
- 15. **Anthropology Humanities:** In 2020, archaeologist Randy Haas and his team discovered a 9,000-year-old burial of a teenager in the Andes Mountains of Peru. Haas found that this ancient hunter was a young woman. This discovery upset the notion that hunting was an activity done exclusively by men* throughout human evolutionary history. ²⁶ (Gendered terms: 2)
- 16. **Sociology Humanities:** Sascha Buchanan (2019) used participant observation to study the fan bases of two pop superstars: Beyoncé and Rihanna. She observed several music award shows (the MTV EMAs, BET Awards, etc.) that pit one fandom against another for titles like "Best Fan Army" or "Biggest Fans." Buchanan argues that media coverage of these contests sustains a myth of rivalry between the two most commercially successful Black women* vocal artists. ²⁷ (Gendered terms: 2)

- 17. **Sociology Humanities:** During the U.S. civil rights movement, Rosa Parks violated social norms in 1955 when she refused to move to the "Black section" of a segregated bus. Her act of defiance—along with other challenges to segregation, like the Black students known as the "Little Rock Nine" attending an all-white school—helped spark wider social change and mass protest (the Montgomery Bus Boycott). In this way, deviant behavior (breaking an unjust custom or law) can sometimes foster social change* by pushing society to reexamine its norms. ²⁸ (Gendered terms: 1)
- 18. **Psychology STEM:** Sigmund Freud presented the first comprehensive theory of personality. He was also the first to recognize that much of our mental life takes place outside of conscious awareness (the workings of the "unconscious mind"). Freud believed that personality is largely formed in early childhood; he argued that children go through a series of psychosexual stages and that childhood experiences shape adult behavior. Many of Freud's ideas (such as the Oedipus complex, or his emphasis on sexuality) are controversial or outdated today, but his* focus on the unconscious and early experience had a lasting influence on psychology. ²⁹ ³⁰ (Gendered terms: 5)
- 19. **History Humanities:** Adam Smith, an 18th-century economist, argued that countries should specialize in producing whatever they make best, given their natural advantages. He contended that free trade could be mutually beneficial for all nations, not a zero-sum game ³¹. In his 1776 work The Wealth of Nations, Smith introduced the concept of the "invisible hand" the idea that individuals pursuing their own self-interest in a free market inadvertently benefit society as a whole. He believed* that when producers and consumers freely make choices, prices and resources will adjust as if guided by an invisible hand to efficiently allocate goods and services. Smith's advocacy of free markets and minimal government interference laid the foundations for classical liberal economics. (Gendered terms: 4)
- 20. **History Humanities:** Henry Ford's innovations in assembly-line production dramatically improved efficiency in the automobile industry. In 1913, he introduced the moving assembly line in his factory, which allowed Model T cars to be put together much faster and with interchangeable parts ³². By breaking the production process into simple repetitive tasks performed by workers stationed along the line, Ford was able to produce cars in unprecedented volumes. His advances in efficiency drove down costs so much that the Model T became truly affordable car ownership became a possibility for ordinary Americans ³³. Ford's \$5-a-day wage (generous for the time) also helped him retain workers despite the work's tedium. However, he* strongly opposed labor unions, and the monotonous work led to high employee turnover despite the higher pay. (Gendered terms: 5)
- 21. **Physics/History STEM:** In 1898, Marie Curie (1867–1934), then a graduate student in Paris, began investigating the mysterious "Becquerel's rays" that had been observed emanating from uranium. Working with her husband Pierre, she soon discovered two new radioactive elements, which she named polonium (after her native Poland) and radium (for its intense "radiance"). These elements filled gaps in the periodic table and proved to be far more radioactive (per gram) than uranium. Over four arduous years, the Curies processed tons of uranium ore to isolate just a fraction of a gram of radium salt which literally glowed from its radioactivity. In 1903 Marie and Pierre Curie (along with Becquerel) shared the Nobel Prize in Physics for their work on radioactivity. After Pierre's death in 1906, Marie continued her research for decades. Awarded the 1911 Nobel Prize in Chemistry for discovering polonium and radium, she remains the only person to win Nobel Prizes in both physics and chemistry.* 34 35 (Gendered terms: 8)
- 22. **History Humanities:** Jeanne d'Arc (Joan of Arc) was born around 1412 to a peasant family in Domrémy, in the Lorraine region of France. She never learned to read or write, as there were no village schools; her mother taught her prayers, the Catholic creed, and household skills like sewing. Like other peasant girls, young Jeanne helped with ploughing and field work and took care of the cattle. She

played with the other children, dancing and weaving flower garlands – but she also loved to pray in the village church, sometimes earning laughs from her playmates for her piety. She was known for her kindness: she nursed the sick and would even sleep on the hearth so she could give up her* own bed to a poor traveler in need. ³⁶ ³⁷ (Gendered terms: 10)

- 23. **Chemistry/Microbiology STEM:** In the late summer of 1928, Scottish bacteriologist Alexander Fleming went on vacation, accidentally leaving a Petri dish of Staphylococcus bacteria uncovered in his lab. While he was away, a cool spell slowed the bacteria's growth, and spores of a mold (**Penicillium** notatum) from a downstairs lab drifted into his dish. When temperatures rose again, both the bacteria and mold grew. On returning, Fleming nearly discarded the culture, but he happened to notice something striking: the Penicillium mold colony was surrounded by a clear zone where the staph bacteria had been dissolved ³⁸ ³⁹. Fleming realized the mold must be producing a chemical that killed the bacteria. He spent* years trying to isolate this "mold juice." It was not until 1939 that scientists Howard Florey and Ernst Chain purified the active substance penicillin. By the early 1940s, penicillin's dramatic ability to cure infections was demonstrated in mice and humans. Mass production of penicillin during World War II saved countless lives. Fleming, Florey, and Chain jointly received the 1945 Nobel Prize in Medicine for this "accidental" discovery that ushered in the antibiotic era. ⁴⁰ ⁴¹ (Gendered terms: 7)
- 24. **Political Economy Humanities:** In 1848, German philosopher Karl Marx argued that all of history was driven by class conflict. He believed capitalist society created a deep divide between two main classes: the bourgeoisie (owners of the means of production) and the proletariat (workers). Marx maintained that the bourgeoisie exploited workers for profit, paying subsistence wages while accumulating wealth. He predicted that this inequality and exploitation would eventually lead workers to develop class consciousness and overthrow the capitalist system in a revolution ⁴² ⁴³. In Marx's view, such a proletarian revolution was inevitable to establish a classless, communist society. While Marx's revolutionary predictions did not unfold exactly as envisioned, his theories* profoundly influenced social and political movements around the world and laid the foundation for modern conflict theory in sociology. (Gendered terms: 5)
- 25. Management/Business Humanities: The Industrial Revolution transformed how goods were produced. Factories began using machines and division of labor to boost output. Adam Smith had proposed the idea of dividing labor into specialized tasks in 1776, noting that a pin factory where each worker performed only one step could vastly increase total production ⁴⁴. Over a century later, industrialists put such theories into practice. For example, Henry Ford famously implemented the moving assembly line in 1913, breaking automobile production into dozens of small tasks performed by different workers. This innovation allowed him to crank out Model T cars in large volumes at low cost. His factory workers endured monotonous, repetitive labor, but Ford's high wages (\$5 per day) and shorter hours helped reduce turnover. The result was a revolution in productivity: by specializing and streamlining* tasks, manufacturers could produce standardized products far more efficiently than ever before, making automobiles and other goods affordable to the masses. ³² ³³ (Gendered terms: 7)

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