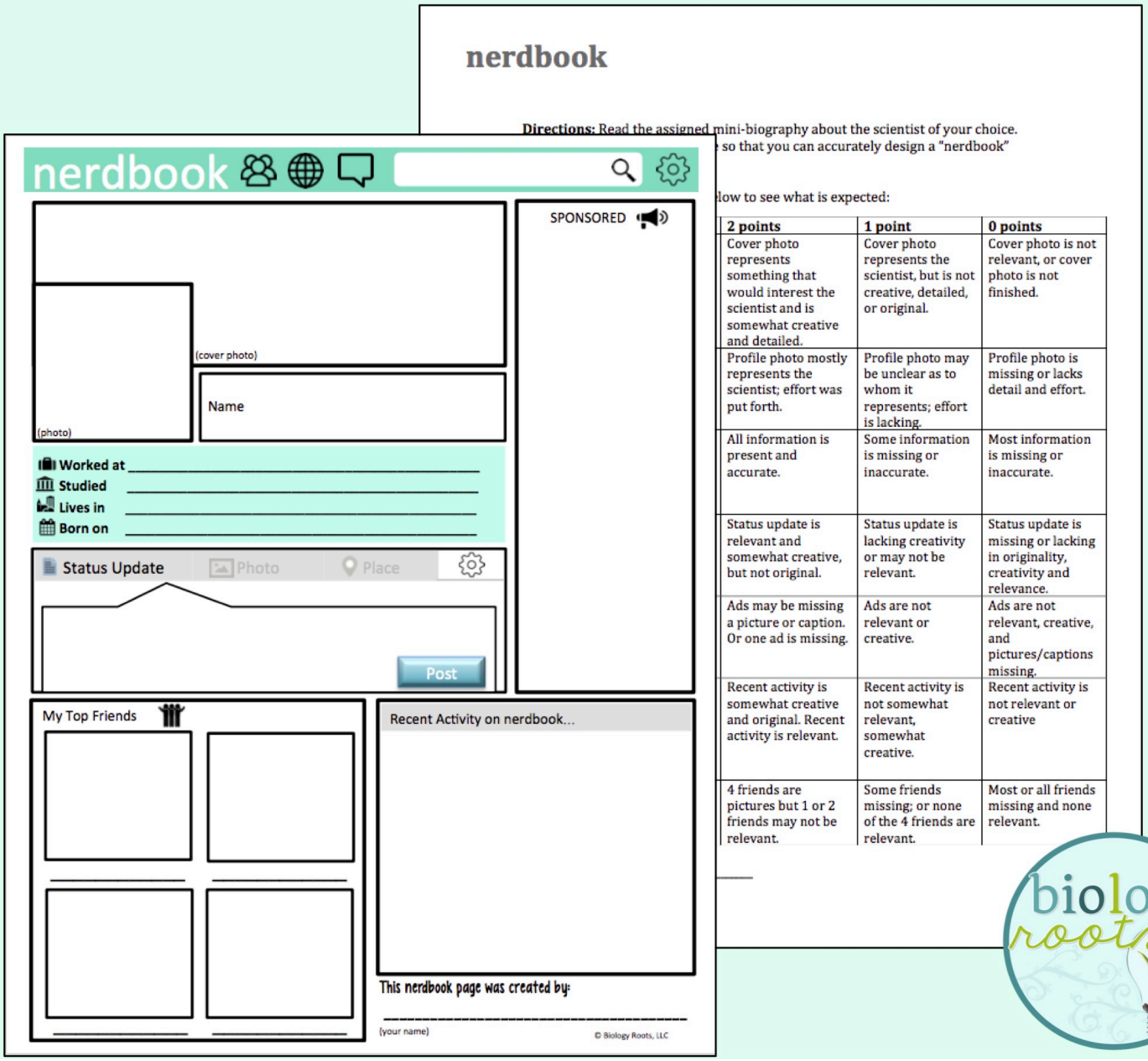
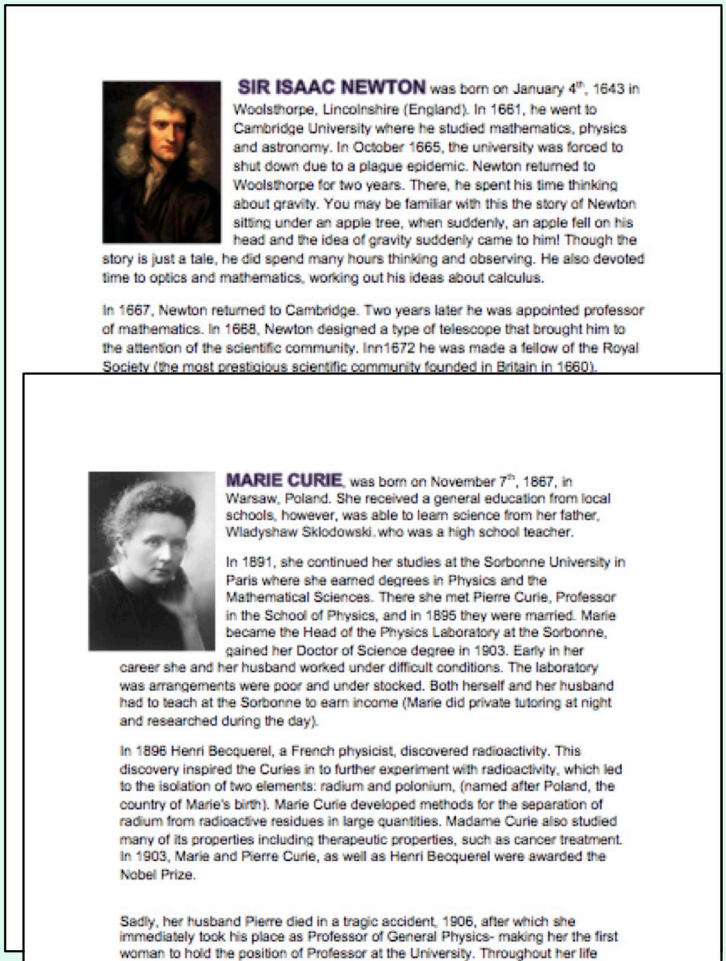
# PLAN "B": SOCIAL MEDIA FOR SCIENTISTS

## Nerdbook page for scientists

- -Students must make Nerdbook pages for one (or two) of the following scientists: Gregor Mendel, Charles, Darwin, Isaac Newton, Marie Curie.

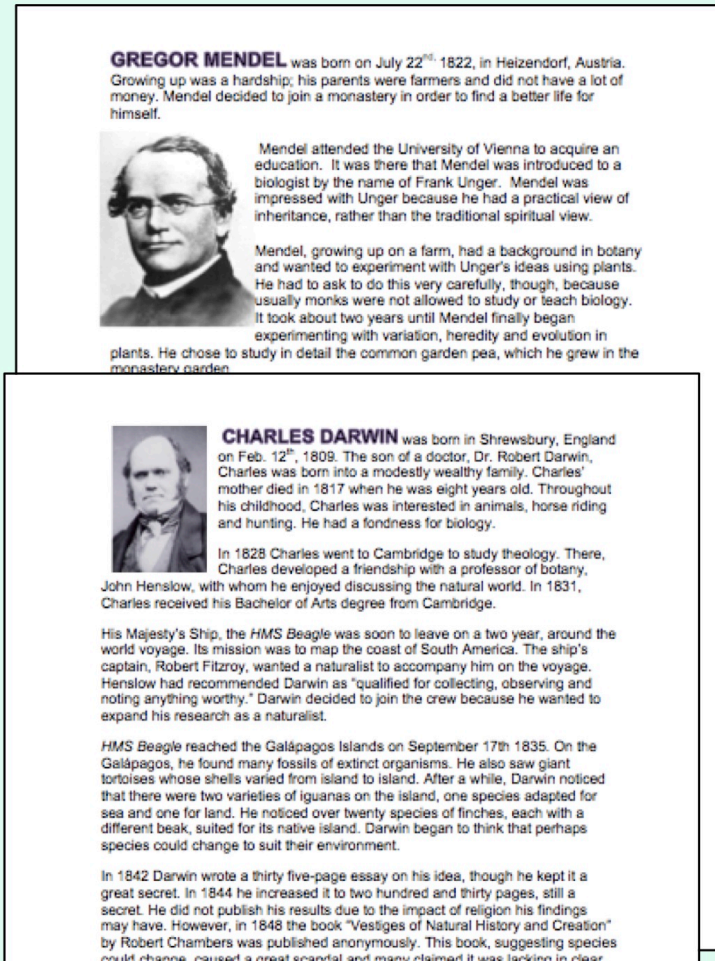


- Students use the biographies to create the scientist's Nerdbook page (1 per student).
- Rubrics also included.



**SIR ISAAC NEWTON** was born on January 4th, 1643 in Woolsthorpe, Lincolnshire (England). In 1661, he went to Cambridge University where he studied mathematics, physics and astronomy. In October 1665, the university was forced to shut down due to a plague epidemic. Newton returned to Woolsthorpe for two years. There, he spent his time thinking about gravity. You may be familiar with this the story of Newton sitting under an apple tree, when suddenly, an apple fell on his head and the idea of gravity suddenly came to him! Though the story is just a tale, he did spend many hours thinking and observing. He also devoted time to optics and mathematics, working out his ideas about calculus.

In 1667, Newton returned to Cambridge. Two years later he was appointed professor of mathematics. In 1668, Newton designed a type of telescope that brought him to the attention of the scientific community. Inn1672 he was made a fellow of the Royal Society (the most prestigious scientific community founded in Britain in 1660).



**GREGOR MENDEL** was born on July 22nd, 1822, in Heizendorf, Austria. Growing up was a hardship; his parents were farmers and did not have a lot of money. Mendel decided to join a monastery in order to find a better life for himself.

Mendel attended the University of Vienna to acquire an education. It was there that Mendel was introduced to a biologist by the name of Frank Unger. Mendel was impressed with Unger because he had a practical view of inheritance, rather than the traditional spiritual view.

Mendel, growing up on a farm, had a background in botany and wanted to experiment with Unger's ideas using plants. He had to ask to do this very carefully, though, because usually monks were not allowed to study or teach biology. It took about two years until Mendel finally began experimenting with variation, heredity and evolution in plants. He chose to study in detail the common garden pea, which he grew in the monastery garden.



**MARIE CURIE**, was born on November 7th, 1867, in Warsaw, Poland. She received a general education from local schools, however, was able to learn science from her father, Wladyshaw Sklodowski, who was a high school teacher.

In 1891, she continued her studies at the Sorbonne University in Paris where she earned degrees in Physics and the Mathematical Sciences. There she met Pierre Curie, Professor in the School of Physics, and in 1895 they were married. Marie became the Head of the Physics Laboratory at the Sorbonne, gained her Doctor of Science degree in 1903. Early in her career she and her husband worked under difficult conditions. The laboratory was arrangements were poor and under stocked. Both herself and her husband had to teach at the Sorbonne to earn income (Marie did private tutoring at night and researched during the day).

In 1896 Henri Becquerel, a French physicist, discovered radioactivity. This discovery inspired the Curies in to further experiment with radioactivity, which led to the isolation of two elements: radium and polonium, (named after Poland, the country of Marie's birth). Marie Curie developed methods for the separation of radium from radioactive residues in large quantities. Madame Curie also studied many of its properties including therapeutic properties, such as cancer treatment. In 1903, Marie and Pierre Curie, as well as Henri Becquerel were awarded the Nobel Prize.

Sadly, her husband Pierre died in a tragic accident, 1906, after which she immediately took his place as Professor of General Physics- making her the first woman to hold the position of Professor at the University. Throughout her life Curie promoted the use of radium to alleviate suffering. Marie and her daughter, Irene (who also won a Nobel Prize) worked together during World War I to help promote radium. Through the effort of Marie and her colleagues, the University of Paris opened the Radium Institute's Curie Laboratory, which Marie Curie became the director of in the year 1914.
Marie retained her enthusiasm for science throughout her life and did much to establish a radioactivity laboratory in her native city of Warsaw. In 1929 President Hoover of the United States presented her with a gift of $ 50,000, donated by American friends of science, to purchase radium for use in the laboratory in Warsaw.

Curium, element 96, is named in honor of Marie Curie. Francium, element 87, is named for France, site of the Curie Institute where it was discovered. Marie died at the age of 66 on July 4th, 1934 in Paris.



**CHARLES DARWIN** was born in Shrewsbury, England on Feb. 12th, 1809. The son of a doctor, Dr. Robert Darwin, Charles was born into a modestly wealthy family. Charles' mother died in 1817 when he was eight years old. Throughout his childhood, Charles was interested in animals, horse riding and hunting. He had a fondness for biology.

In 1828 Charles went to Cambridge to study theology. There, Charles developed a friendship with a professor of botany, John Henslow, with whom he enjoyed discussing the natural world. In 1831, Charles received his Bachelor of Arts degree from Cambridge.

His Majesty's Ship, the *HMS Beagle* was soon to leave on a two year, around the world voyage. Its mission was to map the coast of South America. The ship's captain, Robert Fitzroy, wanted a naturalist to accompany him on the voyage. Henslow had recommended Darwin as "qualified for collecting, observing and noting anything worthy." Darwin decided to join the crew because he wanted to expand his research as a naturalist.

*HMS Beagle* reached the Galápagos Islands on September 17th 1835. On the Galápagos, he found many fossils of extinct organisms. He also saw giant tortoises whose shells varied from island to island. After a while, Darwin noticed that there were two varieties of iguanas on the island, one species adapted for sea and one for land. He noticed over twenty species of finches, each with a different beak, suited for its native island. Darwin began to think that perhaps species could change to suit their environment.

In 1842 Darwin wrote a thirty five-page essay on his idea, though he kept it a great secret. In 1844 he increased it to two hundred and thirty pages, still a secret. He did not publish his results due to the impact of religion his findings may have. However, in 1848 the book "Vestiges of Natural History and Creation" by Robert Chambers was published anonymously. This book, suggesting species could change, caused a great scandal and many claimed it was lacking in clear, scientific evidence. Charles decided that using his knowledge from the Voyage of the Beagle, he could support his claims and theories of natural selection.

Darwin worked long and hard on his book until he received a letter from a younger friend, Alfred Wallace. Wallace had sent Darwin an essay outlining his theory of evolution, strikingly similar to Darwin's. Also, the Captain of the Beagle, Caption Fitzroy, had published his findings. These circumstances may have lead Darwin to finally publish his findings.

On November 24th, 1859, Darwin's book was finally published. *The Origin of the Species* was five hundred pages long, and sold its initial print run of 1250 copies in one day. Darwin's book was incredibly successful, and, although receiving at the time much criticism, is the basis of today's evolutionary theories

Darwin died in 1882, and never lived to see how much impact his findings would have on the scientific world. At the time of his studies, his findings mostly had an impact on religion. It was not for another fifty years that his findings would have an impact on biology.

**STUDENTS CAN HAVE FUN BEING CREATIVE IN SCIENCE CLASS WHILE LEARNING ABOUT DIFFERENT SCIENTISTS!**

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