Secret Engineer: How Emily Roebling Built the Brooklyn Bridge

by Rachel Dougherty

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Real women, real lives: Rachel Dougherty's picture-book biography of Emily Roebling begins with the words "Emily Warren was a bright shiny spark who loved to learn." It was this love of learning that guided her throughout her life, leading her to study subjects in the 1850s and 1860s - astronomy, algebra, etc. - that most young women didn't, and then to delve into the investigation of suspension bridges and caissons alongside her husband. When Washington Roebling, the chief engineer of the Brooklyn Bridge, became too ill to work during its construction, it was Emily, armed with the knowledge she had tirelessly pursued, that took over. And she didn't stop learning; she taught herself as she oversaw construction of the "Eighth Wonder of the World" in his place; when the Brooklyn Bridge opened in 1883 she was the first to cross it. Many today still don't consider Roebling an engineer despite her nearly single-handed achievement (her posthumously written New York Times obituary firmly states "Emily Warren Roebling was not an engineer"), but we emphatically disagree. Although self-taught, Roebling's engineering skills were essential to the

bridge's completion, and the strength of her overall intellect can not be underestimated; after the Brooklyn Bridge was complete, she studied law at NYU and argued in an Albany law journal for equality in marriage.

Questions to ponder with your kids: *Secret Engineer* does a wonderful job explaining some pretty hefty engineering concepts; be sure to go over them with your kids after you're done reading to make sure they understand! Ask them to define two new engineering terms ("caisson" and "catenary curve" are our suggestions!) and then revisit the four parts of the Brooklyn Bridge. Once you're done, design your own bridge, and think specifically about supports like cables, caissons, and catenary curves. Even better - build a model of it with items you have around the house! Be sure to spend some time thinking about women like Emily Warren Roebling and how they have contributed to STEM too. Unfortunately, there are many stories like Roebling's in which women received little or no credit for their scientific achievements. Read more biographies of women in STEM, spend some time doing research, and start doing the work to correct and revise STEM history to be STEM "HERstory." The more we tell and share stories of women in STEM like Roebling, the more we will change the narrative and give women scientists and engineers - formally trained or not - the credit they deserve.