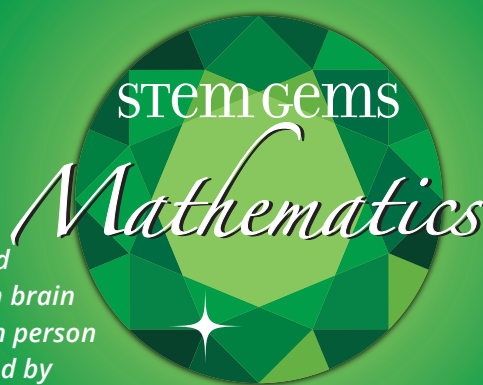


## STEM Gem Career: NUMBER THEORY MATHEMATICIAN

STEM Gem:  
MELANIE MATCHETT WOOD

*"Math is something that you get better at by practicing and doing and by hard work. It's not a matter of having a math brain or not having a math brain. It's not as if you can be a math person or not a math person. It's something that by working at and by practicing, you will get better at. The 'I'm not so good at it' excuse is a statement about how much work you've put in."*



Is a career as a Number Theory Mathematician in your future? Creativity drives everything STEM Gem Melanie Matchett Wood does. She uses tools from algebraic geometry to study things about primes and uses primes to study the geometry of spaces. Her work is at the heart of all online encryption and security tools. Read her story and digest. Watch one of her videos. Then, with your STEM Gems Tribe, **discuss, explore, reflect,** and **act.**

### DISCUSS

1. How do Number Theory Mathematicians like Professor Wood make a difference in the world?
2. What experiences did Professor Wood have that led to her pursuit of a career as a Mathematician?
3. What is Professor Wood's educational background?
4. What are some of the challenges that Professor Wood faced along her journey?
5. What are some of Professor Wood's key accomplishments?
6. What inspired you most about Professor Wood's story?
7. Professor Wood says: *"Math is something that you get better at by practicing and doing more and by hard work. It's not a matter of having a math brain or not having a math brain. It's not as if you can be a math person or not a math person. It's something that by working at and by practicing, you will get better at. The 'I'm not so good at it' excuse is a statement about how much work you've put in."* How does Professor Wood's statement resonate with you?

## EXPLORE

1. To pursue a career as a Number Theory Mathematician, what college majors should you consider? What colleges and universities have programs in these areas?
2. What companies hire Number Theory Mathematicians? What is the salary range for a Number Theory Mathematician?
3. What classes should you take in middle and high school to prepare for college and a career as a Number Theory Mathematician?
4. Name at least two other women Number Theory Mathematicians. How are they similar to Professor Wood?
5. What professional organizations support women in Mathematics? What programs are available for middle and high school students?

## REFLECT

Professor Wood's math talent earned her a write-up in *Discover* magazine titled "The Girl Who Loved Math." Such a title suggests that girls who love math are rare, which substantiates societal gender biases. Have you ever been made to feel that math is not for girls? What can you do to overcome such biases?

## ACT

It's time to step outside your comfort zone. Name one concrete thing you will do before your next meeting that will have you one step closer to becoming a STEM Gem. Blog about it. Include it in your written or photo journal. Hold yourself accountable.

***Work hard. Be brave. Stay curious.***

**BE A GEM!**

*Stephanie Espy*

P.S. I'd love to hear about your journey. Share on Facebook, Twitter, or Instagram and tag @STEMGemsBook #STEMGemsTribe, or email me at [tribe@STEMGemsBook.com](mailto:tribe@STEMGemsBook.com).