**Why Math? Smarter Decision-Making for a Better World – An Open Letter to High Schoolers**

Dear Remarkable Middle and High School Students,

Did you know that people are happier, healthier and richer because of math, numbers and equations? I was a high schooler once, so I understand that, at times, the world of math can seem like an endless sea of numbers, leaving you to wonder, “How is this useful? Do people really need to know this? Will I ever use it?” Simply put, yes, people apply math every day to make better decisions. Let me share some fun examples.

* **Touchdowns in the World of Football**

Imagine your favorite NFL quarterback in the final quarter of the Super Bowl. Picture it: It’s fourth-and-goal, and your team needs to decide between going for a touchdown or settling for a field goal. Behind the scenes, math is at play helping teams analyze the situation, calculate probabilities and make strategic decisions that could lead to victory. In your day-to-day life, math can help you make better choices, like figuring out the best time to tackle homework or when to take a break.

* **The Stream of Packages at Your Doorstep**

Do you ever wonder how the shirt you ordered online arrives at your doorstep like clockwork? It isn’t as easy as someone putting the shirt you want in a box and giving it to a UPS driver who shows up at your address. It involves thousands more steps, but it’s not magic, it’s logistics! Shipping companies use math to optimize routes, minimize costs and ensure your packages arrive on time.

* **Unmasking the Shadows of Human Trafficking**

Think of math as a superhero fighting crime. Analytics is used to identify hot spots for crime, and analysts partner with local law enforcement to bring down offenders and break up criminal syndicates. By looking at online posts and tracking crimes on the dark web, math experts help to cut down on crime and save lives. Classic good versus evil, where the math nerd wears the cape.

* **Megahits and CGI**

In the world of entertainment, math plays a vital role in creating jaw-dropping CGI effects. It helps bring imagination to life on the big screen, making movies and video games more exciting. These same methods are used to solve other problems as well; video games are an alternate universe, and methods that work in virtual reality can work in real life, too. This is leading to new solutions when it comes to the electrical grid (power plants and transformers, but not the robot kind) and electric vehicles.

* **Healthcare Heroes Behind the Scenes**

Healthcare relies on math to guide research, understand diseases and develop life-saving treatments. Your doctor relies on math to determine the best course of action for your health. When you were stuck at home taking a math class virtually due to COVID-19, math and science experts were using their knowledge to make sure there were enough vaccines to go around and enough hospital beds available to care for the sick. They also devised ways to safely bring students and teachers back to school (sorry, not sorry).

These examples barely scratch the surface, but as you navigate the world of equations and puzzles, remember that math is more than just numbers – it’s a tool for making better decisions. It helps analyze situations, solve problems and save lives.

Embrace the numbers, dance with the equations and let the awesome power of math illuminate your journey.

Wishing you a future filled with endless curiosity and smarter decision-making!

Sincerely,

The members of INFORMS (The Institute for Operations Research and the Management Sciences)

P.S. The meaning of “The Institute for Operations Research and the Management Sciences” is another letter for another day.