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Thomas Dewar once said, "The mind is like a parachute that won't work unless you open it." The mind is so powerful that when it opens, many wonderful opportunities await. STEM has made our lives so much easier because of intelligent discoveries and concepts which have been put in place. Learning about STEM has inspired me to pursue a career in that field. One thing that sparked my interest in the field of STEM was parachutes and how they work. The purpose of a parachute is to slow the motion of an object falling that's in the air. Throughout World War II, parachutes were commonly used to send supplies and paratroopers for surprise attacks. The STEM that's behind the parachute is correlated with terminal velocity and the two shapes of a parachute.

First and foremost, we have terminal velocity, which is concerned with the maximum amount of velocity and speed attained by an object when it falls. Terminal velocity is composed of the pull of gravity, drag, and velocity. The gravitational force is the mass which is the amount of matter that's stored within an object. Gravity accelerates as a person falls when gravity pulls them down faster. The force of drag is the opposite of the force of gravity. Consider it more like a magnet. When skydivers jump out of an aircraft and as they begin to accelerate, gravity is pulling that person quickly towards the earth. This only lasts a short time before the force of drag kicks in along with the force of gravity. According to the engineering design for parachutes video, when the forces of drag and gravity collide, the skydiver will no longer accelerate, keeping that person still when falling. The only way for the skydiver to gain speed is to fall with their head down.

This is where the math comes into play. When parachutes are pulled open, they're often seen as two different shapes: a round parachute and a rectangular parachute. Round or circular parachutes were used in the military in the past, but they are no longer commonly seen. The reason for this is that you will have no control over the parachute and your chances of landing safely are quite low. In that situation, the best thing to do is to pray to God to steer the parachute to a safe place. Then there are rectangular parachutes, also known as ram-air parachutes. The advantage of these types of parachutes is that you have more control over them, and your chances of landing safely are very high.

When designing a parachute, you must understand terminal velocity and the rate at which the parachute descends. According to the engineering and design for parachute video, to calculate the descend rate, first weigh your parachute to determine its mass, then multiply it by the acceleration of gravity which would be 9.81, and that will give you the force of gravity, which would be equal to the force of drag. Second, you must determine the area of your parachute, and you do so by multiplying length times the width if your parachute is rectangular, and area equals pi times radius squared if your parachute is circular. Next, plug in your answer to equation one-half times the air density, which is 1.22kg, times the decent rate, times the area of the parachute, times the drag coefficient, which is approximately 1.0-1.4 for an average person. Once you have the equation solved, you will get your velocity in meters per second. Lastly, you would have to predict how long your parachute would take to fall by plugging in the velocity for speed and the distance of two meters and then do a test run.

In conclusion, understanding the concepts of how parachutes work and the STEM behind them, which focuses on terminal velocity and the shape of the parachute, has opened my mind and inspired me to pursue a career in engineering. Technology has come a long way. Every once in a while, something new gets invented that makes life so much easier. In 2040 who knows what to expect, but I think there may be robots going to take over the world. I know for a fact that new technologies would make the navy and the marine corps even stronger. The reason being is because that it will improve military defenses and counter many threats that may seem impossible to counter. Audrey Hepburn once said, "Nothing is impossible the word itself says I'm possible."