I. Introduction
   a. Attention - How many of you would like to have a car of your choice or embarrassed to be seen in the car you are driving around now?
   b. Relate To Audience - Soon we will all be out of college with a great job that Monmouth College helped prepare us for. With this new income we can look into an apartment but more importantly, who wants to be cruising in a brand new sports car.
   c. Establish Credibility - Like many of you, I am also looking forward to my job and looking into buying a new car for myself. Through extensive research, I have found nothing better than the new sports car of Mazda, the new Mazda RX-8.
   d. Thesis - Today I want to take the time and tell you why a Mazda RX-8 is the car for you.
   e. Preview of main points - I want to share with you some history and the design of the car and motor. I also want to give you an overview of the car itself, including: mechanical, exterior, interior, safety, available options, and price.

II. Body
   a. To fully understand what makes a Mazda RX-8, you must fully understand the mechanics of its famous engine.
      i. In 1967 Mazda introduced the idea of a motor known as the Rotary Engine.
         1. Another name for the rotary engine is known as the Renesis Motor.
         2. Other nicknames have evolved as well including the “wankle engine,” due to the movement of the engine itself.
      ii. What is a rotary engine and how does it work?
         1. Like a piston engine, the rotary engine uses the pressure created when a combination of air and fuel is burned. In a piston engine, that pressure is contained in the cylinders and forces pistons to move back and forth. The connecting rods and crankshaft convert the reciprocating motion of the pistons into rotational motion that can be used to power a car.
         2. In a rotary engine, the pressure of combustion is contained in a chamber formed by part of the housing and sealed in by one face of the triangular rotor, which is what the engine uses instead of pistons.
         3. The rotor follows a path that looks like something you’d create with a Spirograph. This path keeps each of the three peaks of the rotor in contact with the housing, creating three separate volumes of gas. As the rotor moves around the chamber, each of the three volumes of gas alternately expands and contracts. It is this expansion and contraction that draws air and fuel into the engine, compresses it and makes useful power as the gases expand, and then expels the exhaust.
      iii. Why is a rotary engine an acceptable choice in a sports car?
         1. In a rotary engine there are fewer moving parts as compared to that of a regular piston engine.
            a. The rotary engine in the Mazda RX-8 only has three moving parts where as the simplest piston engine has a minimal 40 or more moving parts.
            b. This is such a great idea that even aircraft manufactures has incorporated the idea of a rotary engine in their aircraft.
         2. The engine will also run smoother with a rotary engine.
            a. All the parts in a rotary engine move in the same direction
b. There is an internal balance with counterweights to reduce vibrations caused by movement of the motor itself.

b. Now that you understand the heart of this sports car, we will look into the history or the car.
   i. In 1978 Mazda introduced its RX series sports cars to America.
      1. This was the first car that Mazda installed a rotary engine
      2. The new idea of a rotary engine within a sports car would soon challenge the true American V8 powered cars in this time period including the corvettes and mustangs.
   ii. In 1991 Mazda entered the Le Mans Race and entered a car using a rotary engine similar to the one used in the new RX-8.
      1. This was the first time that a rotary engine has ever used in a 24 hour Le Mans Race.
      2. This was also the first time that a Japanese motor has ever won the 24 hour Le Mans Race.
   iii. The latest generation of the Mazda RX series was known as the Mazda RX-7.
      1. These cars were known as the Worlds best selling sports car for money and value and remember that includes all sports cars.
      2. It featured a twin turbo 255 hp rotary engine.
      3. The last year of production for a rotary engine from Mazda was in 1998 when Mazda dropped the production of this car.
      5. Two years later, the concept came to life and in summer of 2003 Mazda brought back a rotary engine car in the newest sports car today the Mazda RX-8. *(Now that you know a little about the history and evolution of the Rotary engine lets talk about this new sports car.)*

   c. Being a new car, the Mazda RX-8 has several advanced mechanical systems.
      i. The Mazda RX-8 is powered by a 1.3 liter twin rotor engine.
         1. There is the 238 hp engine for serious sports car feel and finesse.
            a. This is a naturally aspirated motor which means unlike previous models of the RX series there is no turbo.
            b. This engine will create 159 ft lbs of toque at 8500 rpm.
         2. There is also a lower output engine with 197 hp for those who would not like to be too sporty.
      ii. To put this power from the motor to your wheels you will have to have a good transmission. Mazda has created two types of transmissions available for the RX-8.
         1. For the serious sports car driver there is a six speed manual transmission.
            a. Thus sixth gear being an overdrive compared to a 4th or 5th gear.
            b. Simply flick the short-throw shifter and you’ve got your gear.
               i. The shift lever connects directly to the transmission, reducing distance between the gears.
               ii. Having such a close gear-ratio help the engine work to its full potential.
         2. For those who may not know how to work a manual transmission there is an available automatic transmission.
            a. The RX-8 is available with an electronically controlled 4-speed Sport AT automatic transmission, providing the driver with the option of fully automated shifts or the ability to manually select gears.
            b. Using the steering-wheel-mounted paddles or the shift lever, the desired gear can be selected by a simple flick of a finger or movement of the wrist.
iii. All sports cars have a finely tuned suspension as does the Mazda RX-8.
   1. The front suspension is a double wishbone design.
      a. This allows for precision control and handling as well as sharp steering response.
   2. The rear suspension is a multi-link rear suspension
      a. The suspension provides lateral stiffness for excellent handling and response while providing longitudinal compliance for improved ride quality with less noise.
   3. Lastly, there is an electronically assisted rack and pinion steering
      a. An electric control unit monitors both speed and steering torque and calculates how much assistance to give the driver.
      b. The rack drive system is driven directly by the electric motor, improving the feel of the steering wheel. *(Now that we got our car to go and handle, we have to find a way to stop it.)*

iv. One of the newest features available on the Mazda RX-8 is the Dynamic Stability Control.
   1. This is a safety and Stability Monitor.
   2. The multiple monitors will watch wheel speeds, steering angle, and brake function for which it then applies brake force according to one or more wheels to reduce engine output and reduce skids.
   3. The Mazda RX-8 is equipped with four wheel rotors, typical of ever sports car.
      a. It also features four wheels anti-lock brakes.
         i. This will reduce wheel lock up.
         ii. This will also help maintain steering during hard braking
         iii. Equipped with Electronic Brakeforce Distribution which will assist the ABS to achieve proper braking.

d. There are several Exterior options to note on the Mazda RX-8
   i. There are available 16 or 18 inch wheels with properly sized performance tires.
   ii. Flip our rear quarter windows.
   iii. Chrome tipped dual exhaust system is standard.

e. To match the beautiful exterior there is a fantastic interior to match it.
   i. There is leather seating and wrapped steering wheel with several available color options.
   ii. There is also room for 4 passengers in this car.
      1. This is special for a sports car creating a little more storage space including all your cheerleading clothes or golf bags and maybe a friend or two.
      2. Unlike many sports cars, the Mazda RX-8 has 4 doors: rear doors that fold out making accessing the rear of the car and easy thing to do.
   iii. There is a tri-gauge cluster making a beautiful accent on the interior as well

f. As many of you stated, safety is a major concern. Being a sports car and wanting to drive fast, everyone does make mistakes whether it is our fault or not.
   i. First there is safety by design.
      1. Mazda has engineered a new frame that is very strong as one can see how reinforced it is by looking at the picture.
      2. Mazda has also designed a large crumple zone so if an accident were to occur most of the impact would be absorbed by the car and not yourself.
   ii. There are several safety systems continually watching the cars as you drive included ABS, EBD, DSC and a Tire Inflation Monitor
   iii. There is a child seat anchor in the back for those who might be babysitting and have to make a quick trip.
   iv. Lastly there is 2nd generation front and side air bags and side curtains that cover the front and rear passengers.
g. Now that we have covered the mechanics, interior, exterior, and safety we look at the options available for this new sports car which makes it elite to other sports cars.
   i. Optional Navigation System
      1. First time that a navigation system is ever available in a sports car.
      2. This will help you get to where you need to be with a 7 inch LCD screen.
   ii. You do not want anyone stealing this car, so there is an upgradeable security option including shock sensors and engine immobilizer.
   iii. Power locks, windows and 8-way power seat with heaters and lumbar is the way to have comfort driving this sports car.
   iv. Many people with new cars quickly want to upgrade their stereo. There is no need to do this with a six in-dash CD player by Bose with a nine speaker system totally 300 watts including auto pilot.
   v. There is an available Moon roof for the late nights when you want to look at the stars.
   vi. Every sports car has a spoiler, it’s the style.
   vii. There is heated mirror for those cold frosty mornings
   viii. Xenon Headlights like those of elite car manufactures use such as BMW and Audi.
   ix. Fog lamps for days like the past few when it has been really foggy outside.
   x. And a rotary accent package which fills the interior with the rotary accent to remind of one of the power of this sports car.

h. I have put a lot of praise on how the Mazda RX-8 is a great sports car, but how does it match up to similar sports cars?
   i. The Mazda RX-8 has the best base price compared to the Infiniti G35 Coupe, Pontiac GTO, and Ford Mustang SVT Cobra.
   ii. The Mazda RX-8 has the best braking compared to the Infiniti G35 Coupe, Pontiac GTO, and Ford Mustang SVT Cobra.
   iii. The Mazda RX-8 has the second best city fuel economy compared to the Infiniti G35 Coupe, Pontiac GTO, and Ford Mustang SVT Cobra.
   iv. The Mazda RX-8 has the best road holding compared to the Infiniti G35 Coupe, Pontiac GTO, and Ford Mustang SVT Cobra.

i. I want to take the time and share with you that the motor for the new Mazda RX-8 has won the International Engine of the Year for 2003.
   i. What does this mean?
      1. International Award winning against all new motors worldwide.
      2. The motor of the Mazda RX-8 has proven that it can compete against all other sports cars.
   ii. Look at the sports cars that this motor has beaten.

j. Finally, we will look at the price of this pure sports car.
   i. The base cost of this car is $26,200 dollars.
      1. I want to remind you that the base price for this car was lowest among some of its competitors.
   ii. Fully loaded this car will cost $36,074 dollars.
      1. This price included every option available, some of which one may not want.

III. Conclusion
   a. Today I have taken the time to explain to you why the new Mazda RX-8 is the sports car for you.
   b. I shared with you some history and the design of the car and motor. I also gave you an overview of the car itself, including: mechanical, exterior, interior, safety, available options, and price.
   c. As several of us will be landing ourselves in great high paying jobs after college, we will be given the opportunity to spend our money. What better way to invest your money in a new Mazda RX-8.
Works Cited


