1. **What are the two types of friction that affect the performance of your vehicle?**

Rolling friction occurs when a wheel, ball, or cylinder roll freely over a surface. By adding a wheel my car could move and go the distance.  Static friction: This friction helped our car to stay in place and stable and not just roll of around. 

1. **What problems related to friction did you encounter and how did you solve   them?**

The problem we had with the rolling friction was that we didn’t know which one was the front and which one was the back at first, we put in the wrong way and it went backwards and no problem after that. 

1. **What factors did you consider deciding the number of wheels you chose in your design?**

We chose 4 wheals because when we searched it up 4 wheels had more rotational inertia compared to vehicles with fewer wheels and each wheel increased the rotational inertia. 

1. **What kind of wheels did you use in each axle? What is the effect of using large     or small wheels?**

we used CD wheels because the can slice through air with very little air resistance, and they have less rotational inertia.  

1. **Explain how Newton's first, second and third laws apply to the performance of your vehicle.**

The mousetrap automobile is an example of Newton's first law in action since it is propelled by the force of the mousetrap before moving and continues to drive until it collides with an object or is eventually stopped by gravity. Newton's second law states that whenever a force acts on a mass, acceleration results. 

1. **Discuss the effect of the length of the lever arm in the pulling force of your   vehicle.**

Lengthening the lever arm of the mouse trap will increase the quantity of string that can be pulled from the driving axle while reducing the pulling force. Although the length of the lever arm is reduced, the amount of string that can be drawn from the driving axle is increased.

1. **Discuss the types of energy transformations that occur in your car.**

The spring in the mousetrap serves as a reservoir for potential energy. The arm rotates forwards, converting the potential energy into kinetic energy. The driving wheel dowel, which is attached to the wheels and is turned by the arm pulling on the wound-up string, causes the vehicle to go ahead.

1. **List the energy types that are wasted in your car.**

The spring in the mousetrap serves as a reservoir for potential energy. The arm rotates forwards, converting the potential energy into kinetic energy.

1. **Discuss how you increased the efficiency of your vehicle (reduced the wasted output** energy).

The more times the string is wrapped around the dowel, the more effectively the mousetrap vehicle will work. The diameter of each wrap will expand as the string begins to bundle up into a bundle, resulting in fewer total wraps.