Answer the following questions completely (include formulas and/or calculations where appropriate). Your answers may be written below or typed and submitted on SEQTA. It must be a minimum of 300 words.

1. What are the two types of friction that affect the performance of your vehicle?  
      
   The type of friction that affected the performance was the sliding friction and spring friction.
2. What problems related to friction did you encounter and how did you solve them?

It encounters the problem sliding friction because it was on different type of surface such as the wooden made it spin out. Then we tested it on the concrete what is rougher surface what has more friction that stopped the mouse trapped from sliding out. If we had more time we could've added balloons to increase the grip of the wheels.

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

We choose four wheels because it helped with the balance of the mouse trap car but also helped 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’s as wheels what is 4.7 inches, we used those wheels because they are extremely light, thin and large. That also means since they are thinner, they have less friction what makes them go a further distance and is light so there was no unnecessary weight.
2. Explain how Newton's first, second and third laws apply to the performance of your vehicle.

The mousetrap car does not move to the force mousetrap itself moves and then only comes to a stop until gravity or something stops it that relates to Newtons 1st law. The 2nd law is since we used very light materials the faster the mouse trap went cause it had less mass then it could use more force to make it go further and faster. The 3rd law is for every action (force) in nature there is an equal and opposite reaction. It relates to the mouse trap car because when we winded up the string

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

If you make the mousetrap car lever longer then it will reduce the pulling force and will pull the axle making the wheels to spin faster then the shorter one.

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

When the string is twisted with the axel is creates potential energy and when we release the lever it is converted into kinetic energy

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

The energy what is wasted is the heat and sound energy

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

Sturdy base, longer lever, the wheels was thinner so there was less friction and air resistance and we burnt the end of the string so it was frayed.