

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Grade: \_\_\_\_\_/400 points

# Mousetrap Vehicle Engineering Design Brief

**Challenge:** To create a vehicle that will travel at least 10 feet that is propelled only by a mousetrap. Your goal is to make the vehicle travel the farthest distance possible. One point extra credit is earned for every foot your vehicle travels past 10 feet. *The design activity is in the blue Technology Education book on pages 446-447 for your reference.*

**Restrictions:** The vehicle must fit in a 12 inch by 12inch square. There is no height restraint. A fulcrum with a maximum length of 10 inches may be attached to the mousetrap.The fulcrum may extend over the one foot by one foot perimeter of the vehicle. You will be given only one mousetrap and 3 feet of string. You will not be given replacements if you break these supplies.

**The vehicle design is worth 100 points, the vehicle itself 200, and the review questions are 100 points. If you only make the vehicle, you will earn a 50F.**

**Instructions:**

1. Research (20 points): Use the internet and research wheels and axles. You are researching how you are going to make your vehicle roll. Will you use wheels, spheres, cones, cylinders or something else you created to make the vehicle move? Once you have found a helpful website, list the web address below and write down two pieces of information that you think will help you solve this design challenge. (DO NOT write [www.google.com](http://www.google.com))

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

2. (40 points) Brainstorm and draw thumbnail sketches of possible ideas below or on a separate sheet of paper that is stapled to this sheet. (Include dimensions and special instructions).

3. (40 points) Then write a very detailed paragraph (40+ words) explaining how you plan to build the prototype of your vessel. You should write this paragraph before you start construction!

**Review questions: (Answer in complete sentences. 20 points each.)**

1. What did you changes or additions did you make to your original design?
  
2. How far did your vehicle travel in feet?
  
3. Which vehicle in the class traveled the farthest? Why did their car travel so far?
  
4. In your opinion, what is the best way to optimize the use of a mousetrap in this assignment?
  
5. If you had to do this project again, what would you change and what would you keep the same?

<b>Points</b>	<b>Description</b>	<b>Student Evaluation</b>
20	<b>Vehicle traveled 10 feet.</b> (2 points earned for each foot traveled. 9 feet = 18/20 points). If your vehicle travels 40 feet, give yourself 30 extra credit points.	
20	<b>Using the mousetrap as the <u>ONLY</u> source of movement.</b> 20 points for successfully using the mousetrap as the sole source of propulsion.	
20	<b>Length.</b> 20 points for being 12 inches or less. 1 point off for every 1/4" over.	
20	<b>Width.</b> 20 points for being 12 inches or less. 1 point off for every 1/4" over.	
20	<b>Fulcrum Length.</b> 20 points for being 10 inches or less. 1 point off for every 1/4" over.	
100	Total Grade	