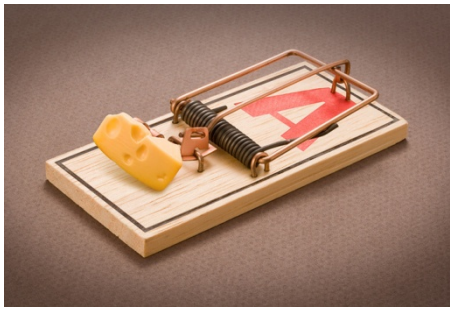
Name: _____

Class: _____

Grade 8 Mechanical Systems
Non-Exam Based Assessment

Mousetrap Machines!!

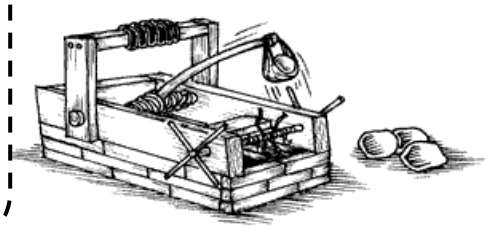


Your Mission:

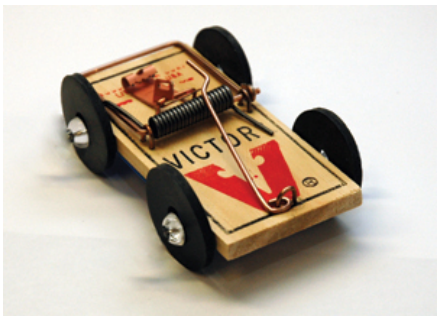
To Build A Mousetrap Racer

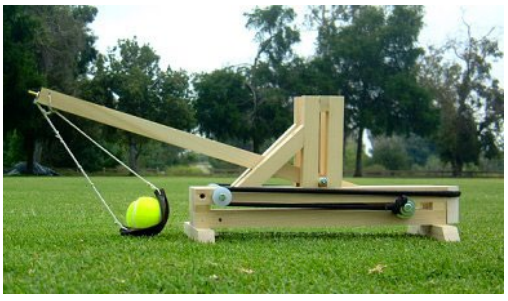
OR

A Mousetrap Catapult



The Mousetrap Racer	The Mousetrap Catapult
Your Task: To design and build a working model of a Mousetrap Powered Race Vehicle than can travel a minimum distance of 2 metres. **Materials:** The Race Vehicle is to be powered by a single mousetrap (provided to you). The other materials are up to you but the only power source you can have is the mousetrap. **Time:** You have 2 periods to construct your mousetrap racer. **Final Assessment:** You will complete an assessment/analysis of your racer based on the outcomes covered in the Mechanical Systems unit – this analysis will make up your 30% non-exam based assessment (NEBA) mark for the unit.	**Your Task:** To design and build a working model of a Mousetrap Catapult than can throw a hacky sack at least 2 metres. **Materials:** The Catapult is to be powered by a single mousetrap (provided to you). The other materials are up to you but the only power source you can have is the mousetrap. **Time:** You have 2 periods to construct your mousetrap catapult. **Final Assessment:** You will complete an assessment/analysis of your catapult based on the outcomes covered in the Mechanical Systems unit – this analysis will make up your 30% non-exam based assessment (NEBA) mark for the unit.





Preliminary Sketch

Materials

What materials will be required to build the mousetrap machine that your team has designed? Below is a list of some material that teams can consider. Remember that the more recycled materials that are used the better!

CD's, elastic bands, plastic spoons, cardboard, milk cartons, straws, glue (if you're going to use a glue gun you need to bring that and the glue), wires, popsicle sticks, tape, string, rulers, wood…are there other materials that you can think of?

Looking at your team's design, decide what materials can be used for each section or part of the machine and make a list of what your team will need to find. Decide who has what materials at home and assign each member to be responsible for various materials. Record who is bringing what materials and make sure you record what you need to bring for next class in your agenda!

****A box/container is required to store all of your supplies…please ensure that it is labeled****

Team Member's Name	Materials

Name: _____

Class: _____

Mechanical Systems –
Non-Exam Based Assessment
Mousetrap Machine Analysis

Now that you have completed your mousetrap machine it is time to analyze it and show off your knowledge of the unit's outcomes!!

Answer the following questions with respect to the mousetrap machine your group built.

a. What complex machine did your team construct? Describe its function.

b. Sketch a diagram of your machine below, labeling its various systems.

c. What subsystems/simple machines were incorporated into your mousetrap machine? What advantage did each simple machine provide?

Simple Machine / Subsystem	Describe its Advantage

d. What provided the input force necessary to power your machine? Where was the input force transferred?

e. What was the input distance? What was the output distance?

f. What factors impact the efficiency of your machine?

g. Which parts of your mousetrap machine worked well?

h. What would you change if you could make your mousetrap machine again?

i. Evaluating Mousetrap Machines:

Name 4 criteria you would use to evaluate other mousetrap machines in the class? Explain why you would use these criteria.

Evaluation Criteria	Explanation of Why