

BRAMALEA SECONDARY SCHOOL
TTI100 INTEGRATED TECHNOLOGY
FINAL EVALUATION PROJECT

January 2004

Teachers: Mr. Derochie
Mr. McDermott

GENERAL INSTRUCTIONS:

1. This is an individual assignment. You must design and build the project in class. Collaboration is allowed with peers, friends and parents only for brainstorming and research (surveys).
2. The project is to include all the steps of the design process. Marks have been assigned for each step of the process.
3. The course final mark is derived 70% for term work and 30% for this final project. This practical task will count for 25% of the 30% allotted to the final evaluation. It is therefore imperative that your best effort be made on this project. You must allocate your time in order to meet all the requirements for this project. The project documentation should be done in small chunks as you progress through the project so as not to interfere with studying for your exams.
4. Project timelines:
 - a. Investigation and Research - Friday January 9, 2004
 - b. Generation of Solutions - Friday January 9, 2004
 - c. Selection of Solution - Friday January 9, 2004
 - d. Working Drawings - Monday January 12, 2004
 - e. Project built Friday January 16, 2004
 - f. Project Documentation - Monday January 19, 2004
 - g. Presentation Poster - Tuesday January 20, 2004
5. The project should be able to be completed during class time. Extra class time will be available on January 13, 14 and January 15 to give students an opportunity to meet the deadline (only if required).

TTI JANUARY CALENDAR

Monday	Tuesday	Wednesday	Thursday	Friday
5 Risky Move Continues Final Evaluation Posted to TeacherWeb	6 Risky Move Construction Complete	7 Risky Move Testing Final Evaluation Hand-out	8 Final Evaluation Assembly Period 2	9 TAP Final Evaluation
12 Final Evaluation Working Drawing Due	13 Final Evaluation Room open after school	14 Moratorium Begins Final Evaluation Room open after school	15 Final Evaluation Room open after school	16 Final Evaluation Construction Complete by end of period
19 Written Test Final Evaluation Project Documentation Due	20 Final Evaluation Presentation Poster Due	21 English Exams PM	22 Exams Begin Grade 8 Parents Night Student Participation Welcome	23
26	27	28 Exams End	29	30 Semester II Begins

RUBBER BAND POWERED DRAGSTER CHALLENGE

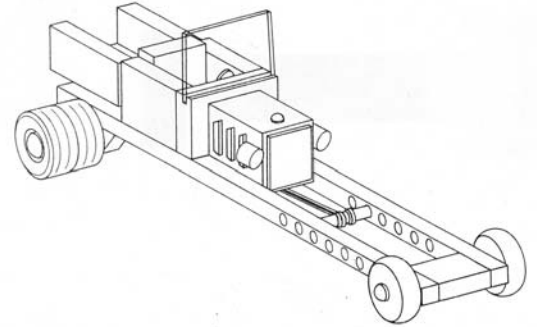
SITUATION

You work part time in a woodworking shop close to Bramalea School. While cleaning up one evening you realize a lot of small pieces of scrap wood is being thrown out. Talking this concern over with friends on the way to school, you come up with an idea to make small wooden projects to make good use of the scrap wood. Brainstorming this idea further, you decide on making small wooden vehicles that can be powered by rubber bands.

CHALLENGE

The purpose of this task is to allow you to demonstrate your knowledge and ability to apply the skills involved in the design process.

Your task is to develop a prototype of a rubber band car. The vehicle is to be attractive and designed for speed. The prototype will compete against students taking the TTI100 course.



CONTENT:

This task will address the following achievement chart categories:

Knowledge/Understanding

- knowledge of facts, technical terminology, procedures and standards
- understanding of concepts

Thinking/Inquiry

- thinking skills (e.g. generation of ideas)
- inquiry/design skills

Communication

- communication of information (e.g. idea sketches, working drawings)
- use of language symbols, and visuals (technical drawing)
- communicates proposal in writing

Application

- application of ideas and skills in familiar contexts
- transfer of concepts, skills, and procedures to new contexts
- application of procedures, equipment and technology (safety)

PROCEDURE

1. Put this information and any work in a duo-tang or folder. This duo-tang/folder must be brought to every TTI class.
2. Demonstrate your ability to conduct research . Find pictures of dragsters on the internet or in magazines etc. Find pictures or info on rubber band vehicles. Put this info in a one or two page appendix. Hand in by the due date.
3. Demonstrate your ability to effectively communicate your ideas. Sketch a minimum of three ideas for the dragster. Sketches may be isometric, oblique or orthographic projection drawings. Note: If drawn in orthographic you need at least two views. Hand in by the due date.
3. Make a list of materials required for the dragster. Gather the material. Small pieces of assorted wood, dowel and plastic are available in class.
4. Select the dragster that you will build and make an orthographic assembly drawing and a bill of materials. (Hint - Use extra detail drawings to clearly communicate your plan.) Hand in by the due date.
5. Construct the prototype of your dragster. Test the dragster and record the results. Time permitting paint and decorate the dragster.
6. Take a picture of your vehicle for your documentation.
7. Complete the one page documentation similar to the sample shown. Hand in by the due date.
8. Make an isometric drawing of your dragster. Use the ellipse templates to draw the wheels. Turn the drawing into a promotional poster to promote the dragster competition. Hand in by the due date.

EVALUATION

See the attached rubric

Your Name
Date

RUBBER BAND DRAGSTER DOCUMENTATION



Insert a picture of your dragster here

Race Order	Car Name	Mass (grams)	Length (mm)	Width (mm)	Height (mm)	Distance Travelled (ft)	Time to travel 20 ft (sec)

Design approach taken - explain how it worked.

Unique or clever features embodied

Materials of construction (mention unique parts you used or fabricated)

Reasons behind any significant design choices you had to make

Lessons learned (what you'd do differently next time)

Anything else you would like to add