

# Rube Goldberg Design Brief

## Foundations of Technology

### 2010 –2011

Name: \_\_\_\_\_

Partner's Name: \_\_\_\_\_

Period: \_\_\_\_\_

This is an Engineering Design activity for which you will have to come up with your own unique problem/opportunity solutions. There are no WRONG answers except ones that do not work. There are only solutions that are more efficient than others. You must complete the assignment within the time allotted to you or you will not receive all of the credit possible.

This is the first time this project has been attempted in this class. There is no doubt that questions and problems will arise during the activities associated with the project. The class will discuss any issues that arise which affect the class as a whole. Individual issues will be discussed as needed. The intent of this project is to promote growth in your thinking, creativity, problem-solving and design skills. It is hoped that the completed projects will also provide a means of showing off this growth.

Grading will be done on the project, its building process and on the weekly instruction done related to the involved technological systems. Time spent in-class and out of class should be logged in the journal/portfolio.

**Assignment:** Using the Rube Goldberg idea, build a machine that will pop an inflated balloon in the most complex, “over engineered” way possible.

**Objective:** Recognize, identify & model technological systems.

#### **Guidelines:**

- All materials should come from “junk” that you find.
- Ideas may come from any source (family/friends, books, internet...).
- Project construction must be done by the student(s).
- The machine must contain at least 15 separate steps to pop the balloon.
- The machine must utilize at least two forms of each of the basic technological systems (Electrical, Mechanical, Structural) and one form of Fluid Power, and Communication
- The completed machine must be portable.
- You may work with one partner (unless assigned otherwise by the teacher).
- Daily progress must be recorded in your written journal.
- Extra credit will be given for pictorial and video journals.
- The machine must function from start to finish without intervention at least once while the teacher is watching.
- You must be able to move the completed machine through the door.
- You must make a presentation to others describing your machine.
- Class time will be divided between instruction and building time.
- Sketches of sub-systems must be completed prior to building in class.
- The project will continue until completion, or the end of the class. Progress will be monitored.

Things the teacher will be looking for:

- |   |  |    |                                |
|---|--|----|--------------------------------|
| 1 | Attention to the Design Brief            | 6  | Finished by assigned deadlines |
| 2 | Efficient and effective use of materials | 7  | Quality of construction        |
| 3 | Design process steps are followed        | 8  | How well the machine works     |
| 4 | Used time well to test ideas             | 9  | Quality of record keeping      |
| 5 | Quality record keeping                   | 10 | Effort to succeed              |

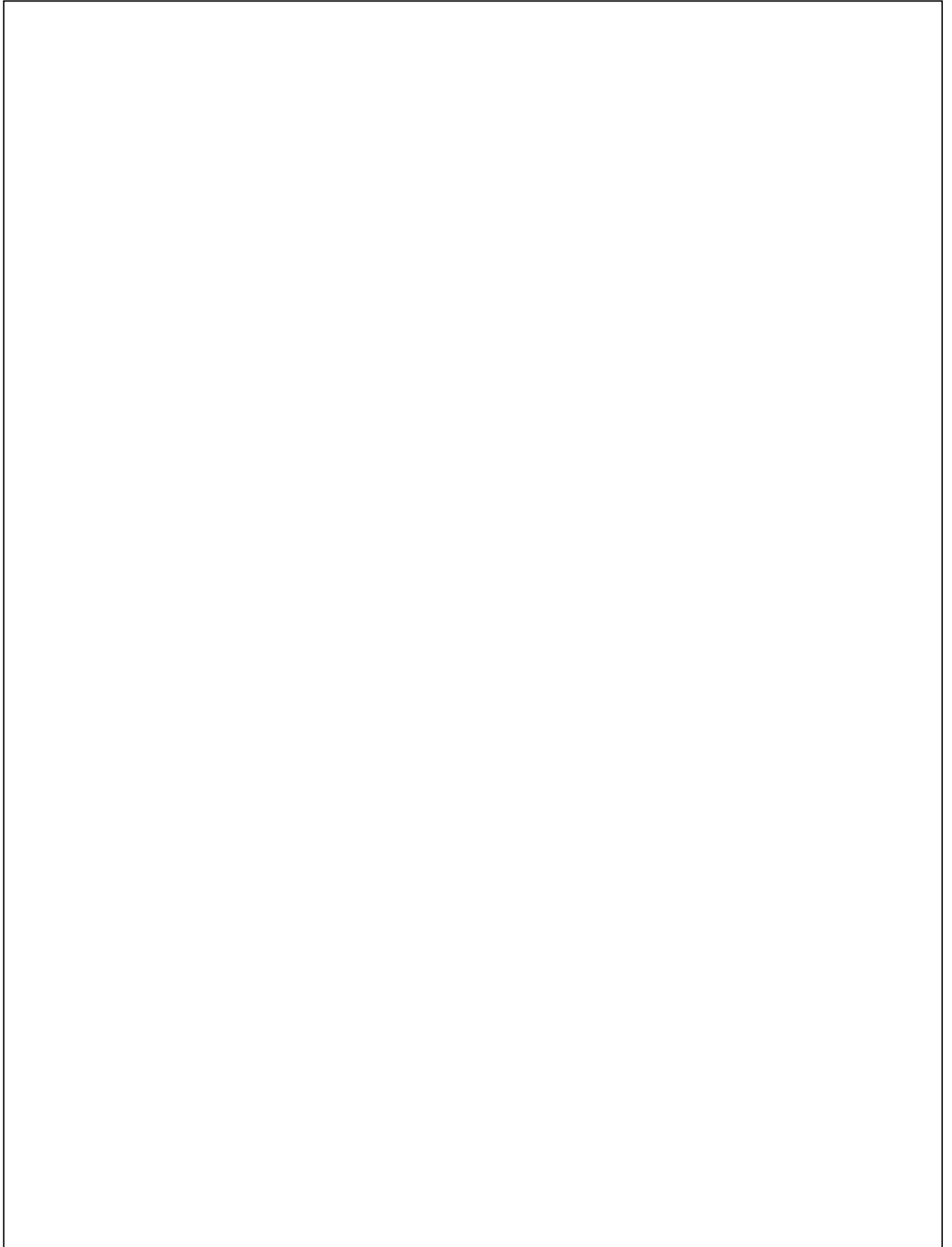
## Grading Rubric

Criteria	5 No Deficiency	4 Minor Deficiency	3 Major Deficiency	0 Complete Deficiency
Attention to the Design Brief <i>(rules followed)</i>				
Efficient and effective use of materials <i>(waste)</i>				
Design process steps are followed <i>(in journal)</i>				
Finished by assigned deadlines				
Quality of construction <i>(works multiple times)</i>				
How well the machine works <i>(popped the balloon)</i>				
Used time in class well <i>(no wasted time)</i>				
Daily and/or Weekly journal/portfolio kept				
Presentation made to others <i>(in class or at lunch)</i>				
Quality Collaboration or Individual Work				





Drawing or sketch of your idea for \_\_\_\_\_



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