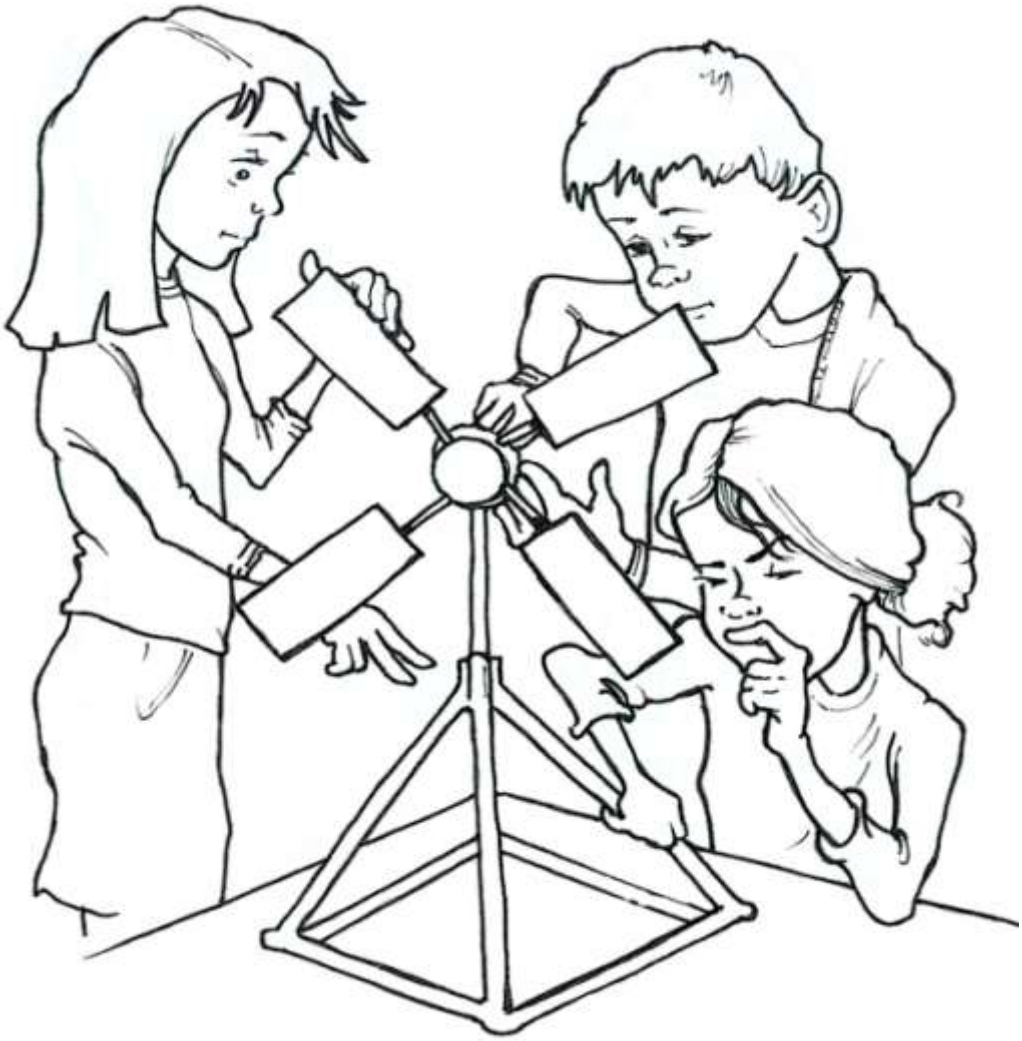
DESIGN IT!
HIGH SCHOOL



Name: _____

Semester or Trimester: _____

Year: _____

Teacher: _____

Class Section: _____

DESIGN IT! HIGH SCHOOL

THE ENGINEERING DESIGN PROCESS

1. Define a problem that addresses a need.
2. Identify criteria, constraints & priorities.
3. Describe relevant scientific principles and knowledge.
4. Investigate possible solutions and use concept of trade-offs to compare solutions in terms of criteria and constraints.
5. Design and construct at least one proposed solution.
6. Test proposed solution(s), collect and process relevant data and incorporate modifications based on data from testing or other analysis.
7. Analyze data, identify uncertainties, and display data so that the implications for the solution being tested are clear.
8. Recommend a proposed solution, identify its strengths and weaknesses and describe how it is better than alternative designs as well as identifying further engineering that might be done to refine the recommendation.

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Introduction

Engineers use the engineering design process to build things and make changes in the world to meet human needs and fulfill human hopes, similar to the way scientists use the scientific inquiry process to extend human knowledge.

The engineering design process is one way to put science to work to solve problems.

This notebook represents the work of the student named on the front cover during a particular semester or trimester. Students record their work as they proceed through steps of the engineering design process while they explore how science can be used to solve practical problem.

1 The Problem

Define a problem that addresses a need:

2 Criteria, Constraints and Priorities

Identify criteria, constraints and priorities:

3 Relevant Principles and Knowledge

Describe relevant scientific principles and knowledge**:**

4 Possible Solutions

Investigate possible solutions and use concept of trade-offs to compare solutions in terms of criteria and constraints**:**

5 Proposed Solution(s)

Design and construct at least one proposed solution:

6 Testing the Solution(s)

Test proposed solution(s), collect and process relevant data and incorporate modifications based on data from testing or other analysis:

7 Analysis

Analyze data, identify uncertainties and display data so that the implications for the solution being tested are clear:

8 Recommended Solution

Recommend a proposed solution, identify its strengths and weaknesses and describe how it is better than alternative designs as well as identifying further engineering that might be done to refine the recommendation: