Project Reports

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Search and Rescue Project

Planning Report:

Week of February 23

– Demonstrate that you understand the project
– Demonstrate that you have a strategy
  • Problem Definition
  • Physical Instantiation of functions
  • Function Tree
  • Specification Sheet
  • Other Planning Tools
Search and Rescue Project

Evaluation Report:

Week of March 9

– Problem definition
– System description
– Concept alternatives
– Concept evaluation
– Concept selection
– Preliminary results
Search and Rescue Project

Final Report:

Week of April 6

Written Reports:
- Less than 10 pages of text
- Appendices (as needed)

Oral Reports:
- 10 minutes (maximum) / 11 slides
- One Speaker
- Clearly labeled figures
Information for Final Presentation

• Introduction: Identify group, goals and competition score.
• Final Design: Present system goals / strategy
• Overview of Device: Describe assembled system
• Subsystems: Describe the individual tasks
• Bill of Materials
• Actual Performance
• Analysis of performance: What worked, didn’t work, what you would change to improve your score
• Closing Summary
Things you don’t report

- How many meetings you held
- Who was in charge of what subsystem
- Anything about brainstorming
- Design disputes within the group
- The long process of tweaking
Things you DO report

- The objective of the system developed by [your] team
- What was constructed
- How the design was selected
- How it performed
  - Did it meet expectations?
- Evaluation / analysis of performance and of design
Sections of the Final Report

- Title sheet
- Abstract
- Introduction
- Design Objectives
- Design Overview
- Alternative Designs
- Discussion
- Conclusion
Introduction

Define Needs, Functions and Challenges

Discuss Planning Tools ONLY to clarify the task.
Design Introduction:
An overview of a complex system

• What does the assembled system look like?
  – Cite an overview drawing here
• What objective is it designed to meet?
• What are its main components / features?
• In what order will those components be described?
Component Description:
The details of a complex system

- Which subsystem / component is this?
  - Insert illustration
- What function or goal does it address?
- What are its features?
- How does it work?
  (as needed)
- What problems does it raise?

Repeat until done!
Discussion

• Justify your design
  – What made this the best design?

• Analyze your system’s performance
  – How many points did it score?
  – How far did it advance?

• What would you change?
  – Review the design strategy
  – What lessons were learned?
Conclusion

Summarize your points:

• What design was selected?
• Why was this design selected?
• What was its performance
• What would you change?
An Example Presentation

- Display an overview of the complete system first
- Provide Slide Titles or descriptive captions for all figures
- Label all system elements
  - Labels reflect a consistent level of detail in each drawing
  - Color is used lightly to distinguish components

*effective presentations distinguish and describe system elements*
The Carnival Project

Carnival Goals were:

- Win at Horseshoes
- Knock down the milk bottles
- Collect treats
The Carnival Arena

Figure 1: Carnival.
Carnival Presentation 1
in line drawings

• Assembled, integrated system is shown before subsystems are presented
• Complete subsystem is shown before its components are presented
• Labels call attention to structures that are described.

Please Note:
1. Scores and analysis have been removed from this student presentation.
2. Dimensions were not required for Carnival drawings
Final Design: A Stationary System

- **Scissor Arm for Horseshoes**
- **Treat Retriever**
- **Double Sweeping Arms for Milk Bottles**
- **Weight Arm to power scissor arm**
Sweeping Arms Subsystem Deployed

- Pull String
- Trigger Pin
- Sweep Mousetrap
- Trigger Mousetrap
- Sweeping Arms
Catapult Subsystem Deployed

- Weight
- Launch Tube
- Hook for Treats
- Pull String
- Motor
System Fully Deployed
Judging

• Look like a team

• Demonstrate your system

• Prepare a display board

• Convey enthusiasm
Design Review Presentations
(How to Prepare)

• Give descriptive titles to your systems and subsystems

• Demonstrate functions without breaking the device

• Review the strong points—and weaknesses—of your system

• Know your team’s strategy for winning
Design Review Tips
(During the Judging)

• State which points your system is designed to collect

• State what design / performance qualities will make your system advance to the final round

• Show judges what your system does:
  – Extend drawer slides, Deploy arms, show video, etc.
Sample Judge Questions (General)

• How many points does a team need in order to advance?

• What are the characteristics of a winning system?

• Which other team is most likely to win? Why?
Sample Judge Questions (Specific)

• What makes your system a winner?

• What does your system do?

• What is unusual about your system?

• What could go wrong for your system?