

Mackinac Island Toy Design Company

Est. 2011

Using the information from the Toy Design- Machine and Mechanisms Presentation, and any information you already know or furthered researched; Design and build a toy incorporating a simple machine for a 3 to 5-year-old child for **The Mackinac Island Toy Design Company**. Of all models submitted, three will be chosen.

Tackling this project, you will use the **5-Step Design Process** which is as follows:

1. Identification of problem, need or “customer”.
2. Concepts and Ideas.
3. Compromise Solutions
4. Models and/ or Prototypes.
5. Production and or working drawings

Step 1: Identification of problem, need or “customer”.

In this step you will need to ask and answer a number of questions. For example you may ask; who is your customer? What are they asking for? What does the customer want you to do? What are you trying to do? Are there any codes or standards you will need to address? What is the market potential? What type of price bracket are you aiming for? Etc. At this point however, there is no **solution**.

Step 2: Concepts and Ideas:

In this step you will do things such research ideas, look at what others have done in the past, look at similarities between what you want to do and another object/ design. **Many, many, many** ideas are collected, *reasonable and otherwise*, for possible solutions to the problem and **many,many,many** sketches are produced. No attempt to evaluate the ideas at this stage, and all notes, research and sketches are dated and signed and saved for later use and record and proof.

Step 3: Compromise Solutions:

All ideas need to have careful consideration and combined into one or more promising compromise solutions. Look at the pros and cons and readdress the questions you came up with in Step 1. Refine your sketches and develop them further to study more detailed items.

Step 4: Models and/ or Prototypes:

A scale model is constructed to study, analyze, and refine a design. It is also a way of physically showing your client the idea. A full sized working model is called a “prototype”. The best models are the ones made of the actual materials planned on being manufactured with, but sometimes alternative materials are acceptable. In addition to physical models, 3D computer models can also be built. Often at times when a designer reaches this step they realize something that was unknown before and have to go back to Step 2. This is not considered a failure, just part of the design process.

Step 5: Production and or Working Drawings:

Draft drawings that fully describe the object you have designed so it can be manufactured and produced.

Required Toy Design Project Submittals:

- (1) Documented evidence of fulfillment of the 5-step design process. All research, sketches, etc must be submitted in an organized and labeled fashion.
- (2) Model and/ or Prototype of the toy.
- (3) Production and or Working Drawings of the toy.
- (4) Project Proposal Outline (*See following example*)

YOUR COMPANY NAME

PROJECT SCOPE

Order # _____

Account# _____

To: Mackinac Island Toy Company
1420 Bogan Lane
Mackinac Island, MI 49757

From: You and your business partner's names

Date: 00.00.0000

Overview

Project Background and Description

Describe how this project (toy) was developed. Explain how the toy works/ what the purpose of the toy is. Explain how it meets the requirements ask by the Mackinac Island Toy Company, (It is design for 3-5 year olds, it incorporates a simple machine, its safe, etc.)

Come up with an estimated cost on how much the toy will cost to manufacture, and how much you will sell each unit to the Mackinac Island Toy Company, and how much you would suggest for them to sell in the stores. Consider factors such as material costs, manufacturing costs, paying your employee wages and benefits, shipping costs and any other factors that you would have to consider in the manufacturing of your toy.

Estimated Cost

Figure an estimated cost on how much the toy will cost to manufacture, and how much you will sell each unit to the Mackinac Island Toy Company, and how much you would suggest for them to sell in the stores. Consider factors such as material costs, manufacturing costs, paying your employee wages and benefits, shipping costs and any other factors that you would have to consider in the manufacturing of your toy. Showing a client a cost layout is always beneficial verses just stating a number.

Production Timeline/ Schedule

Give an estimated time-frame on how long it will take your company to fulfill a toy order once the M.I.T.C. places an order for toys. This may vary depending on the number of toys they order. Explain/ show in your proposal your planned timeline from days to process the order, days to manufacture the toy, time to package, time for shipping, etc.

State how much money is required from the M.I.T.C., in a form of a down payment once they place an order and how long they have until they need to pay the full amount.

Guarantee

Outline the guarantee your company gives that goes along with your toy. Explain how you guarantee your production quota and schedule will be fulfilled for the M.I.T.C. Explain how you stand behind your product and what you will do in case a defect happens for a consumer.

Additional Information

Include any other additional information you feel is important to include within a professional project proposal.

