

CLASS WORK:

POLYMER Materials & Board Game

**IDO – Industrial Design Outreach |
Spring 2006**

Project Instructor: Charles Odell

E-mail: codell@sfsu.edu

Class Site: SOTA - Academy of Arts & Science #147

Class Hours: Thursdays 1pm-3pm

Project: Materials Handling- Board Game Design

Purpose :

To introduce not only a common material used in design, but allow students to have a hands on experience with model making and the requirements of given tolerances. When the models are completed, they will be tested to measure the functionality of their “product”. The “look” or aesthetic of the product will be entirely up to the designer (students) as long as the design falls within the specifications.

Grading:	Bathroom list	10%
	Polymer making	10%
	Die design/making	20%
	Die testing	20%
	Board design	20%
	Rules and Objectives	10%
	Creativity/Craft	10%

Task one:

Manufacture a low grade polymer (synthetic rubber) by following this recipe:

5 Teaspoons white latex glue (25 mL)
4 Teaspoons water (20 mL)

Mix well in a plastic cup

Add
1 Teaspoon talc powder (5 mL)

Mix well for two minutes
(Optional) May add up to four drops of food coloring

Add
1-1.5 Teaspoons of saturated borax solution

Mix well for two minutes

When completely mixed, move glob of IDOugh to second cup and roll into a ball for easy handling.

Play with the material—see if it has the “polymer” characteristics discussed earlier: flows, stretches; is flexible, durable. Try pulling apart chunk quickly. See clean break of molecules. See flowing when pulled

Brainstorm how we could use our material and why it would be a good material for our applications (examples: plug up holes in walls, use as a shock-absorbing material within sole of shoe, glob to hold pins or paper clips, etc.)

Task two:

The item that is to be made out of Sculpey is a die (or a pair of dice) that will be tested after made with the clay and fired. The design is open to the designers imagination as long as there is at least one six sided die (so a balanced test can be preformed) is made. The die must be between $\frac{1}{2}$ and $\frac{3}{4}$ inch cube. Each side cannot be more than $\frac{1}{16}$ inch out of tolerance (The permissible deviation from a specified value of a structural dimension...) and can be sanded to shape or the designer can rough it out with their fingers as long as it falls within the prescribed design parameters. A ruler can be used to show the $\frac{1}{16}$ scale and could also be translated to standard decimal (i.e. $\frac{1}{16} = .062$).

Task three:

The die will be tested for functional accuracy. The die will be rolled sixty times and each roll will be noted (how many ones are rolled, how many twos,...) The expected result is $\frac{1}{6}$ result for each “pip”. The amount of each number rolled will be converted into a fraction and with the denominator being sixty.

Task four:

This portion will be for the designers to create a board game that uses their tested die (dice). They will need to design a board, an objective, rules, and create any extra bits and pieces to make the game more interesting (i.e. cards like in Monopoly). This is completely open to the designer’s imagination and a chance to have a lot of fun actually playing the game they have designed.

HAVE FUN!!



Classwork : Dice Testing - Tracksheet

IDO – Industrial Design Outreach

Spring 2006

Project Instructor: Charles Odell

E-mail: codell@sfsu.edu

Class Site: SOTA - Academy of Arts & Science #112

Class Hours: Thursdays 1pm-3pm

Project: Dice testing & Game board documentation

Roll Each Dice 60 Times:

COUNT RECORD

1

--

PIP RECORD

1 2 3 4 5 6

--	--	--	--	--	--

2

--

1 2 3 4 5 6

--	--	--	--	--	--



Grade Sheet:

Polymer Materials & Game Board

IDO – Industrial Design Outreach

Spring 2006

Project Instructor: Charles Odell

Class Site: SOTA - Academy of Arts & Science #112

Class Hours: Thursdays 1pm-3pm

Project: Polymers and Board Game

Mentor/s:

Student:

Homework - Bathroom List 10

Polymer Making 10

Die Design / Making 20

Die Testing 20

Board Design 20

Rules & Objectives 10

Creativity / Craft 10

Total points:

