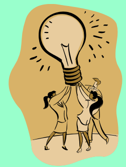
MessmanC_OrmeR_ED510_Unit_3_TEAM_Project



1. Identify the Problem:

You are designing a delivery mechanism. You have been given a light bulb. Your light bulb will be dropped from three feet to a concrete floor. The bulb will be held so that the screws are to hit the floor first. It is imperative that the bulb not break. Your grade depends on it (I'm sure there is a standard for this somewhere). You will be provided with six facial tissues, three rubber bands, a match box, a small balloon, and seven feathers. Your light bulb delivery mechanism will be dropped by me and no member of your team will be allowed to touch or disrupt the light bulbs drop to the concrete floor. These are your only instructions.

After finishing the exercise with Dale Henry, Ph. D. in our Unit 3 COMPLETE section we found that we are T's. In reflecting our weekly activities we communicated by phone and text mostly because our schedules required us to be present parents for important scheduled activities in our children's lives. Besides working full-time as teachers we spent our independent hours reading and working on task deadlines for NCU. This leads us to corresponding through media means intensely on Saturday. We brainstormed our ideas through discussions of the problem. We worked a few different ways to solve the problem creatively thinking about our own interpretation of size and shapes of the items (since they were not too specific) by the identified materials that could be used. Unfortunately we didn't have access to a variety of items to test the differences in materials we compiled. But there are models and video to show some of the varieties and theories behind our findings. In our attempts to identify solutions to the problem and find information on what might have been the background others outside of class have discovered we came across several insightful sources.

One site listed a retire engineer, tbrucenyc (Level 30 / Recording Engineer) who answered a similar question 3 years ago giving the following ideas. The feathers could be used to keep the bulb in position as it falls. The matchbox and tissues could cushion the base of the bulb on impact. The rubber bands have to hold everything in place.
http://www.askpedia.com/q/164E1/How_do_I_keep_a_light_bulb_from_dropping_when_it_is_dropped_from_three_feet

In our project we are allowed to use the following items:

6 tissue

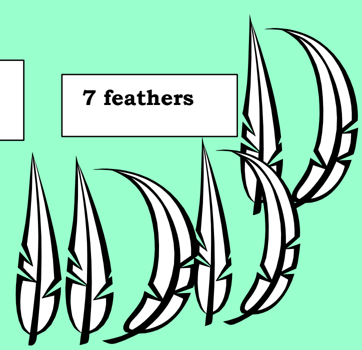
3 rubber bands

1 match box

Choose 1 light bulb

Choose 1 balloon

7 feathers



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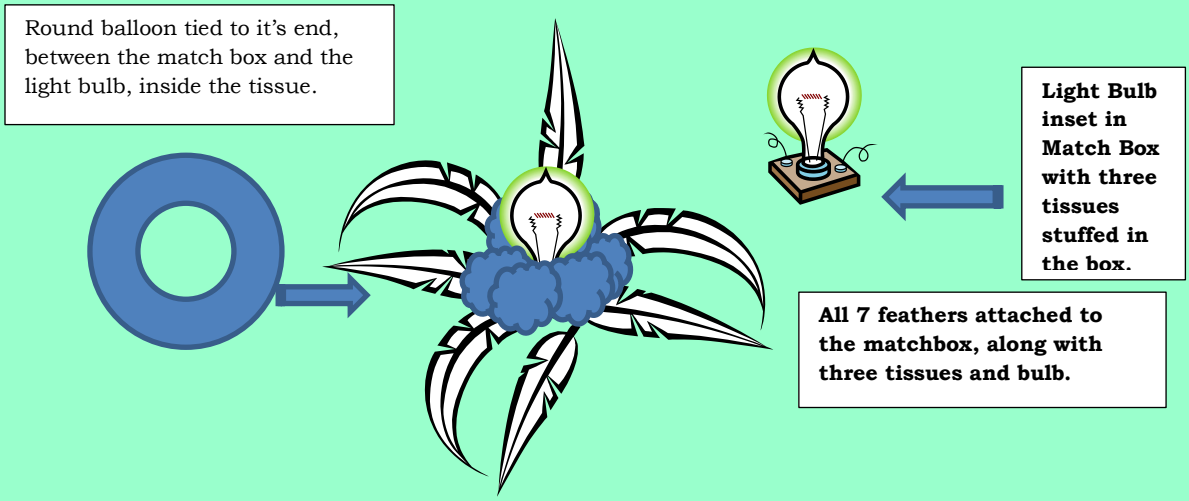


PBS Design Squad stated on their web site:

When engineers solve a problem, their first solution is rarely their best. Instead, they try different ideas, learn from mistakes, and try again. The series of steps engineers use to arrive at a solution is called the design process. We followed this process.

Brainstorming

• At this stage, all ideas are welcome, and criticism is not allowed. How creative can you be? We worked well together mostly trying not to over analyze it all and not hinder our approach.

• What specific goal are you trying to achieve, and how will you know if you've been successful? Of course we are will work at following the directions and work at not to breaking the bulb.

• What are some ways you can start tackling today's challenge? Using research and hands on ..

Designing

• Time to get realistic. Talk through the brainstormed ideas. We did it. What's really possible given your time, tools, and materials? We couldn't obtain all actual items to test all we wanted to do.

• It's not cheating to look at other kids' projects. What can you learn by looking at them? We looked at ideas on-line and on Edmodo but our classmates seem to be as sneaky as we are. We found very little help but had others who were eager to offer ideas and wanted to help.

Building, testing, evaluating, and revising

• Does your design meet the criteria for success? We are very happy with the virtual and real findings and had a blast doing this project.

• What is the hardest problem to solve as you build your project? Working apart in the physical sense was the most challenging but we found our senses of humor and support was as important as our intensity to be successful.

• Why do you have to do something a few times before it works the way you want? Life is full of adjustments when using limited resources to make desired outcomes come to fruition.

Sharing solutions

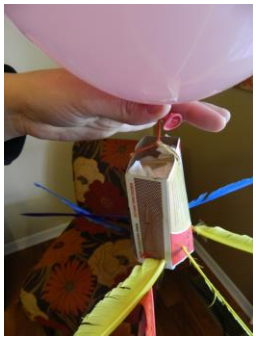
• What do you think is the best feature of your design? Why? It worked and we are done and know we are type T personalities. On the detailed side it was perceived by us in similar ways in which we wanted to solve it but the literal touching of the bulb was identified by Rochelle as Corinne just saw it a directional but not necessarily needing to make contact with the concrete.

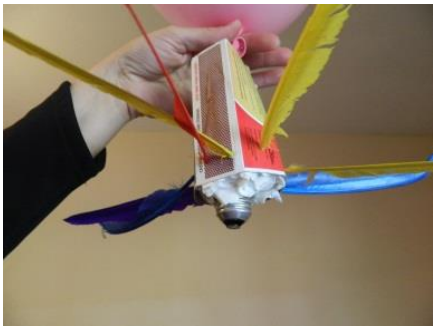
• What are some things everyone's designs have in common? Common materials and common goals seemed to face us with deciding how to manipulate locations and attachment of the items.

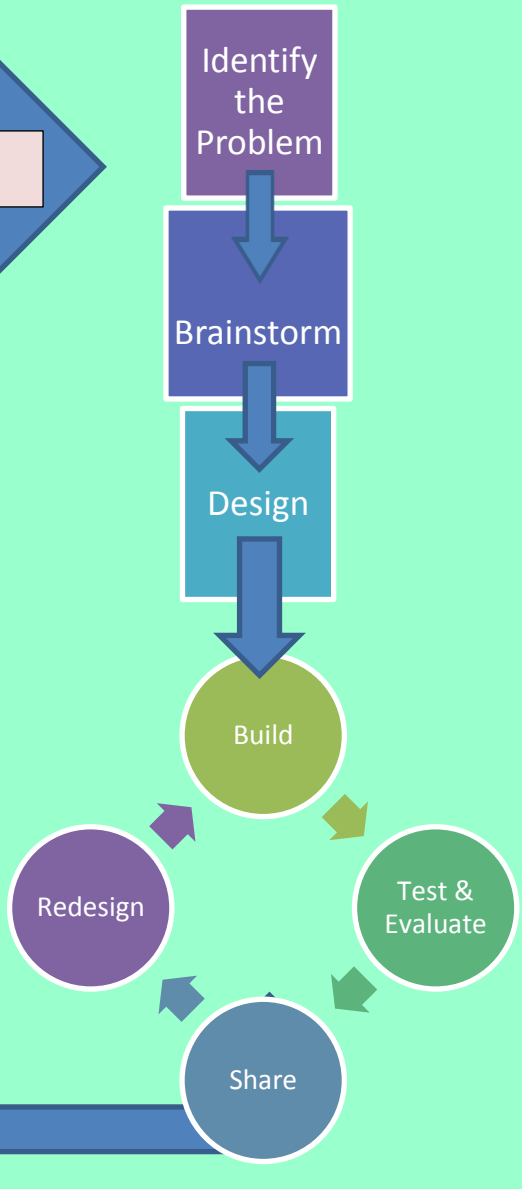
• What would you do differently if you had more time? We would try more variations to the design and increase the variables of height from which to drop it.

• What were the different steps you had to do to get your project to work the way you wanted?

INTRODUCING THE DESIGN







The video is attached to the email sent from Rochelle Orme for our project.

UNBROKEN SUCCESS!

This project let us ponder the PBS information that seemed to relate to our project and will help us in developing lessons for our students in connection to careers in science. Which is stated by…

WHAT DO ENGINEERS DO AT WORK?

Think creatively. Engineering is an ideal outlet for imagination and creative problem solving—the perfect field for independent thinkers.

Work with great people. Engineering takes teamwork. As an engineer, you'll be surrounded by smart, creative, inspiring people.

Solve problems and design things that matter. Engineers improve peoples' lives by tackling problems, improving current designs and coming up with solutions no one else has thought of.

Change the world and make a difference. Among many other pursuits, engineers develop systems that save lives, prevent disease, reduce poverty, and protect our planet.

http://pbskids.org/designsquad/pdf/parentseducators/DS_Act_Guide_complete.pdf

We are finding that great teachers do best when collaborating and can take many roles in teaching like that of inspiring engineers. We hope to instill these kinds of teamwork methodology and use of scientific approaches with our students in hopes of building cooperative learning success and enjoyment of meeting science standards and curriculum goals. We want to thank Professor Michael Kaelin at NCU for inspiring us to put many recent lessons to use.