



INVESTIGATE: *to examine the particulars of so as to learn about something hidden, unique, or complex.*

This year you will pursue an investigation of your choice. There are several options to choose from...

1. Rube Goldberg Project
2. Mousetrap Car Project
3. Science Investigation
4. Blue Man Group Contest

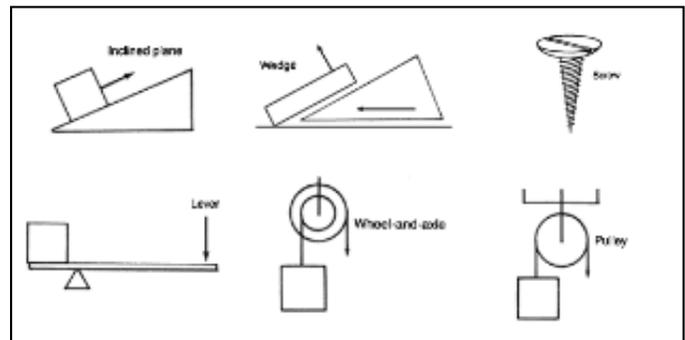
BASIC PROJECT REQUIREMENTS

1. Rube Goldberg Projects

Simple machines and the art of making the simple complex . . .

Rube Goldberg was the master of making the simplest of tasks very complex. While Goldberg created his on paper from his imagination, you will be creating yours in real life.

1. Your challenge is to create a 'Rube Goldberg' - like project making sure to include each of the simple machines (shown right). Each should be labeled or identified on/in the final project. You must include each simple machine at *least* twice. The screw will need some attention as they must be an active part of the contraption, not just an assembly fastener.



Your contraption must take at least 15 seconds (20 seconds teams) to complete its task.

You may elect to video your project at home if it is not possible to transport it or if it is too large or fragile to demonstrate in class. (All projects will be presented.)

2. You may ***NOT*** use fire ***or*** other hazardous materials without:

A. A signed letter from your parents ***AND***

B. Your parents notify me by phone that they have given you the okay. (Nature Academy phone 335-5762)

3. You may work alone or in **pairs**. (Pairs have additional requirements)

4. There are many sources of inspiration for Rube Goldberg contraptions on both the internet as well as in movies. (*Back to the Future* , *Ferris Bueller's Day Off* and *Wallace and Gromit - The Wrong Trousers* are good examples.) **Be sure your creation is your own!**

5. Begin by brainstorming a list of at least 15 simple tasks.

2. Mousetrap Car Project

The Mousetrap Car Project puts your practical mechanical problem solving skills to the test. While its objective seems relatively simple, the successful execution will take all your skills and knowledge about force and distance, gearing (up/down), minimizing weight, maximizing strength and being creative as well! School record is 1.5x the length of the gym, student record is the length of the gym!!

2. You must construct a vehicle that will travel at least five meters (ten meters teams) using only the power from the spring of a standard mousetrap (I will supply you with the first one needed)
3. The mousetrap must stay with the vehicle and cannot be used to “launch” the vehicle (catapult) The mousetrap can be disassembled for its parts.
4. If you are unsure, please check with me before you get too far in its development. We will use the kitchen floor as our testing grounds (hard linoleum - low rolling resistance) Gym for final runoffs.
5. That’s pretty much it. Sounds easy, eh?

3. Science Fair - Informal

This is basically the same as a formal science fair investigation with the exception of having a wider range of choices in how you present your project. While a formal project has dimensions and requirements for board size, what can be displayed, etc; here you may choose to do a powerpoint, involve the class with samples of your investigation (food, drink, survey, etc) or ??? Be creative! Formal science fair guidelines which can be of help in organizing your project can be found at:

<http://science.santacruz.k12.ca.us/pdfs/ScienceFairGuide.pdf>

4. Blue Man Group Musical Instrument Invention Contest

The Blue Man Group and Scholastic Books have teamed up for a middle school challenge.

The “Invent an Instrument Contest” is a competition for students in grades 5-9 designed to inspire and reward creativity and original thinking, as well as to help students develop awareness of connections between science, math, and performing arts.

Blue Man Group creates its own instruments out of PVC pipe and other unusual materials.

Students will use their ingenuity, creativity, and sense of fun to invent their own original, never-before-played musical instrument out of repurposed or everyday objects.

More info at... <http://www.scholastic.com/blueman/>

There you have it. Four choices for how to pursue your Lifeskills of Curiosity, Problem Solving, Effort and Perseverance. Your *decisions* will be due _____.