
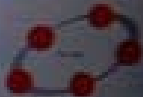


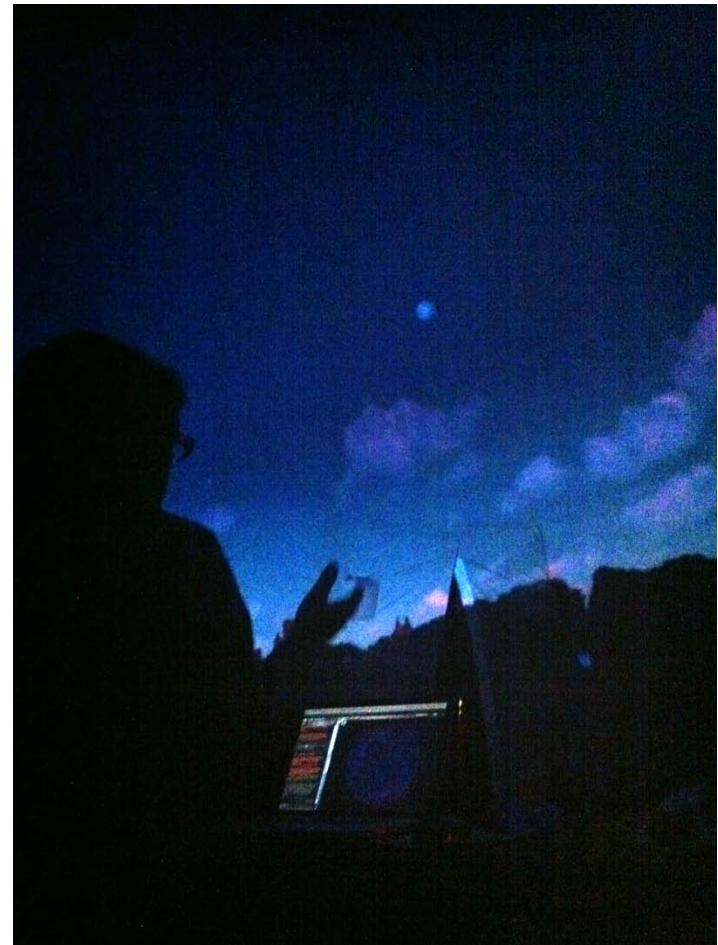
# Quantico STEMposium 2012

 Welcome to the Quantico STEMposium! 

## Star Lab Dome - Outside



## Inside







*Digital*  
**STARLAB**  
[www.starlab.com](http://www.starlab.com)

# Support Technology

## G6 Communications Mobile Unit

Supporting events from the Marine Corps Marathon to meetings of the Joint Chiefs Kids especially enjoyed the video teleconferencing.







# USMC

## RAPID RESPONSE RADIO SYSTEM



- 
- NARROWBAND 12.5-KHZ CHANNEL DIGITAL VOICE RADIO COMMUNICATIONS IN THE DOD FREQUENCY RANGE
  - PROVIDE A TIA-102/PROJECT 25 COMPLIANT SYSTEM
  - PROVIDE INTEROPERABLE COMMUNICATIONS BETWEEN THE USMC AND STATE, LOCAL, AND FEDERAL PUBLIC SAFETY RADIO USERS
  - MOBILE SHELTER HOUSING ALL SYSTEM COMPONENTS
  - 50-FOOT TOWER ANTENNA MAST
  - TEN RF CHANNELS AND ALL REQUIRED SUPPORT EQUIPMENT
  - DISPATCH CONSOLE WITH VOICE LOGGING RECORDER
  - RADIO/TELEPHONE INTERCONNECT CAPABILITY
  - BACKWARD COMPATIBLE

























# Engineering Challenges

Sharing What Happened  
in Classes

QMHS Students Set Challenges  
for Younger Students







An

's Edition







Science  
Technology  
Engineering  
Math

LEARNING FROM FAILURE

Thinking for Kids

Russell Elementary School

cantilever

RUSSELL KIDS ARE SPECIAL PEOPLE



Science  
Technology  
Engineering  
Math



**LEVER FOR YOU**

Levers are simple machines that can help you do work more easily. They are used in many different ways, from opening a door to lifting a heavy load. Levers are classified into three types: first class, second class, and third class. Each type has its own unique characteristics and uses.



**WHY THE LEVER**

Levers are simple machines that can help you do work more easily. They are used in many different ways, from opening a door to lifting a heavy load. Levers are classified into three types: first class, second class, and third class. Each type has its own unique characteristics and uses.



cantilever

Russell Elementary School

**Thinking for Levers**

Levers are simple machines that can help you do work more easily. They are used in many different ways, from opening a door to lifting a heavy load. Levers are classified into three types: first class, second class, and third class. Each type has its own unique characteristics and uses.



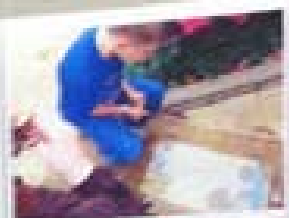
Levers are simple machines that can help you do work more easily. They are used in many different ways, from opening a door to lifting a heavy load. Levers are classified into three types: first class, second class, and third class. Each type has its own unique characteristics and uses.

Please take one!





Science  
Technology  
Engineering  
Math



cantilever

Russell Elen



## LEARNING FROM FAILURE

How can failure lead to success?

1. Create a boat out of **one** piece of aluminum foil and place it in the water. Predict how many pennies you think your boat will hold before it fails and sinks.
2. Place pennies in your boat gently, one-by-one. Watch the boat carefully as it gets close to sinking.
3. Can you change your boat design to hold more pennies? Try again using the same foil or **one** new piece.
4. What did you learn from watching your boat sink?



Want to know more? See back of sign.













# SOUNDPROOF PACKAGE

Can you engineer a package that reduces noise?

## Engineering Fields

- acoustical engineering
- materials engineering
- package engineering

## Engineering Concepts & Skills

- open-ended problem-solving
- engineering under constraints
- properties of materials

## Supplies

- 2 identical small containers with tight-fitting lids (film canister size)
- 10 pennies or dry beans
- 2 identical one-quart plastic containers with lids
- A variety of testing materials, enough of each to fill two one-quart containers: felt, foam cushion, cotton balls, bubble wrap, newspaper, tissue paper, paper towels, quilt batting, netting, foil, Styrofoam packing peanuts, etc.
- Soundproof Package activity sign (Appendix A)

## Advance Preparation

- Gather testing materials, including items that will muffle sound as well as items that will not muffle sound. Be sure to have enough of each material to fill the inside of a one-quart container.
- Prepare two noisemakers by placing 5 pennies or dry beans inside each small container, taping over the sealed lids, and using the marker to label each one "noisemaker."
- Event tip: Place loose materials into separate bins to keep the activity station organized.



## Advance Preparation Supplies

- marker
- tape







# Learning from Failure















