



**HIGHLANDS
INTERMEDIATE**

SCIENCE CLUB

**KORI, RILEY, MICHELE,
ROBYN**

HIS SCIENCE CLUB



<http://firstlegoleague.org/challenge/thechallenge>



MATE

<http://mohs-robotics-competitions-2/hawaii-robotics-competitions-2>

COMPETES IN:

FLL

ROBOFEST

MATE

SEAPEARCH

SCIENCE OLYMPIAD

SCIENCE FAIR



http://www.nhcs.net/science/new_hanover_county_science_fair.htm



Exploring the World of Science

FLL THEMES

LAST YEAR: FOOD
SAFETY



<http://firstlegoleague.org/challenge/2011foodfactor>

THIS YEAR: SENIOR
SOLUTIONS

OUR SOLUTION:
AQUAPONICS GARDEN

← INSPIRED PROJECT
FOR FLL, ROBOFEST,
SCIENCE FAIR



<http://firstlegoleague.org/challenge/2012seniorsolutions>

AQUAPONICS GARDEN RELATED SCIENCE FAIR

COMPARED HOMEMADE VS.
COMMERCIALLY
PURCHASED BIOPODS

DESIGNED A ROBOTIC OWL
TO SCARE BIRDS AWAY
FROM AN AQUAPONICS
GARDEN

DESIGNED A RAT TRAP
WITH ROBOTIC SENSORS



EXAMPLES OF THIS YEAR'S SOLUTIONS

- * SENIOR PROBLEM: LIMITED SPACE IN CARE HOMES, NURSING HOMES, APARTMENTS, ETC.
- * DEVELOPING AN EASY AND COST EFFECTIVE BUCKET AUAPONICS SYSTEM FOR SENIOR CITIZENS



EAST CITY FARMING HOME

AQUAPONIC BUCKETS:

- * SMALL (LESS SPACE NEEDED)
- * CHEAP SOLUTION (\$5- \$10)
- * HERBS- SENIORS WILL BE ABLE TO SMELL THE SCENT
- * TAUGHT SENIORS HOW TO USE IT



HOW/ WHAT WE DID

INTERVIEWED EXPERTS

DID RESEARCH

WENT TO LIBRARIES

EMAILED AND CONTACTED
PEOPLE

CONDUCTED SURVEYS



BUCKET AQUAPONICS SYSTEM

STARTED WITH OKRA,
SAGE AND ROSEMARY

USED COCONUT SOIL,
DIDN'T WORK

CHANGED TO GREEN
ONIONS AND GRAVEL

CURRENTLY USING
TILAPIA, SHRIMP, NEW
GUPPIES

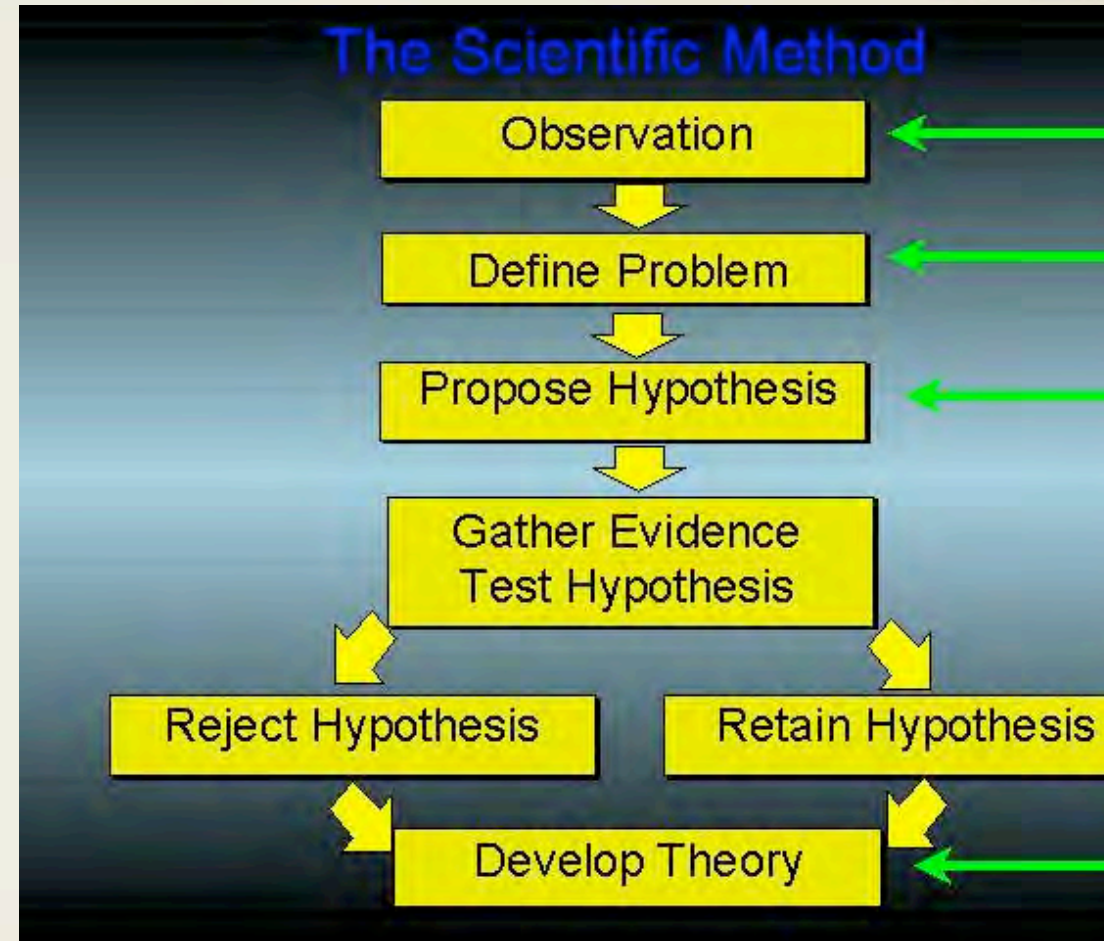


LESSONS

RESEARCH SKILLS

EXPERIMENTAL DESIGN

DIFFICULT TO CONTROL
BIOLOGICAL SYSTEM



LESSONS CONT...

TIME MANAGEMENT

- REGULAR FEEDINGS
- DATA COLLECTION
- DIVISION OF LABOR

WRITING SKILLS

COMMUNICATION SKILLS

TECHNOLOGY SKILLS

TEAMWORK SKILLS



FRUSTRATIONS

PLANTS WEREN'T
GROWING

SPOT TO PUT THEM

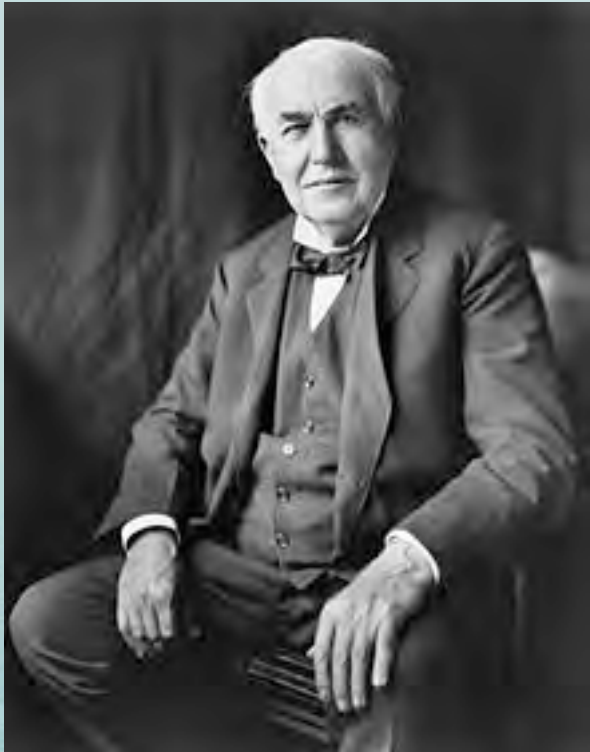
PLANTS WERE STOLEN

FISH DYING WHICH
CONTAMINATED WATER

FEEDING SCHEDULE



WE HAVEN'T FAILED, WE'VE
FOUND 10,000 WAYS THAT
DON'T WORK



-Thomas Edison

Success!



- * MOVED BUCKETS INTO A GATED GARDEN
- * TRANSFERRED BUCKETS TO SENIOR CITIZEN'S HOME FOR FINAL TESTING

THE END

ARE THERE ANY
QUESTIONS OR SUGGESTIONS?