

W. J. Keenan High School



Advanced STEM Indicator

6.7: Students demonstrate their learning through performance-based assessments and express their conclusions through elaborated explanations of their thinking.

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- Scans of engineering notebooks
- Project REAL parent meeting agendas
- Biotechnical Engineering Forensic Assessment
- Introduction to Engineering Design Grand Engineering Challenges- Identifying problems and brainstorming



W. J. KEENAN HIGH SCHOOL

REAL News

Mike Price of Trimensional Robotics speaks to Project REAL

**Project REAL Parent
Meeting
September 26, 2013**

Tonight's Agenda

Principles of Engineering

1. Raegan Crewell – Introduction
2. Jaris Cochran – Simple Machines
3. Chibuzo Ibemere – Gears and Sprockets
4. Emmanuel Washington – Compound Machines
5. KeAundra Jones – Complex machine student build
6. Russell Quattlebaum – Complex machine student build
7. Kendra Entzminger – Food Energy
8. Briana Abraham – Hydroelectric Energy



On Tuesday, September 26th, Mr. Mike Price of Trimensional Robotics spoke to Project REAL students during Advisor/Advisee about the process of developing computer programs for large scale operations.

Mr. Price, who teaches at IT-ology CyberSaturday classes and mentors FIRST Team 1398, used his experience of developing a distribution system for school lunches for South Carolina as an example.

According to Mr. Price, computer programmers go through a four step design process:

1. **Analysis:** What data need to be organized?
2. **Design:** What are the software modules that are needed? How will each piece of information fit together?
3. **Testing:** What potential problems exist in the software? How can those bugs be prevented or fixed once they appear?
4. **Production:** How should the program be distributed and maintained?

We are grateful to Mr. Price for sharing his expertise and for all of his volunteer efforts within Project REAL. We encourage all students to participate in the CyberSaturdays at IT-ology as an excellent way to learn emerging technologies and stay competitive for college applications and beyond.



W. J. KEENAN HIGH SCHOOL

REAL News

Robo-Raiders Kickoff the 2012 FRC Season with Rebound Rumble

**Project REAL Parent
Meeting
January 19, 2012**

Tonight's Agenda

- **PTSA Fundraising Initiative Update for Senior Scholarships**

Robotics and Engineering Design & Development

1. The 2012 FIRST Robotics Game by X'Avier Douglas, TyKira Smalls, and Mia Mack
2. Pumpkin Chunkin' by Nathaniel Abraham
3. Building the MakerBot Thing-O-Matic by Nathaniel Abraham and Natalia Gathers
4. The Keenan Haunted Mansion by Natalia Gathers

*This Month's Editor:
Mrs. Bullington*

On January 7th, the Robo-Raiders visited Team 2815 at Dreher High School to watch the 2012 FIRST Robotics Competition Kickoff and game challenge. After several inspiration speeches by Woodie Flowers and Dean Kamen, the founders of FIRST, this season's challenge was revealed: Rebound Rumble.

The following is a description of the game from the FIRST competition manual:

Rebound Rumble is played by two competing alliances on a flat, 27 x 54 ft field. Each alliance consists of three robots. They compete to score as many basketballs into their hoops as they can during a 2 minute and 15 second match. The higher the hoop in which the basketball is scored, the more points the alliance receives.

The match begins with a 15-second Hybrid Period in which robots operate independently of driver inputs. During this Hybrid Period, one robot on each alliance may be controlled using a Microsoft Kinect.

Baskets scored during this period are worth extra points. For the remainder of the match, drivers control robots and try to maximize their alliance score by scoring as many baskets as possible. The match ends with robots attempting to balance on bridges located at the middle of the field. In Qualification Matches, a robot from each alliance will also try to balance on the white CoopertitionTM bridge to score additional ranking points for each alliance.

FIRST Team 1398 has already begun brainstorming our design and is looking forward to having a fantastic season!

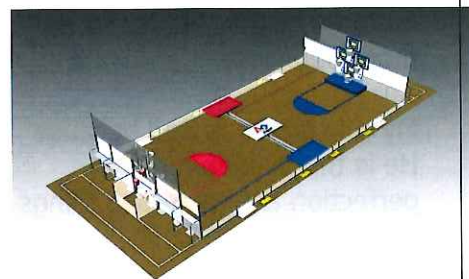


Image: Robot playing field.

Image and description extracted from the FIRST website 1/18/12:

<http://frc-manual.usfirst.org/viewItem/30#1.6>

January Students of the Month

BE Student of the Month



Name: Moriah West
Grade: 11th
Birthday: August 27, 1995

My favorite subject is English because it allows me to enter into my own world of imagination.

I am an aspiring surgical oncologist.

My strengths are my personality and my ability to work well with others.

Something I would like to improve about myself is my outlook on life. I strive to be more optimistic.

My role model is God because He is the definition of perfection and love- two things I strive to have.

I am involved in the following extracurricular activities: Delta Gems, tennis, student council, SC Youth Philharmonic Orchestra.

CIM Student of the Month



Name: Khadijah Heyward

Grade: 12th

Birthday: June 12th

My favorite subject is Anatomy and Math

One thing that I would like to improve about myself is my attitude.

I am an aspiring to work with Positive people and my peers .

I am involved in the following extra curricular activities: The manager for the girls volleyball team, and project REAL.

EDD Student of the Month



Name Nathaniel Abraham

Grade 12

Birthday 04/12

My favorite subject is *Engineering Design and Development*

My strengths are *Math, Engineering, and Technology*

One thing that I would like to improve about myself is *my engineering skills*

I am an aspiring *Robotics Engineer*

My role model is *My Parents* because *they have taught me a lot*

I am involved in the following extra curricula activities *Football and Robotics*

Students of the Month Continued...

IED Student of the Month



Name: X'Avier Alexzander Douglas

Grade: 9th

Birthday: February 17, 1997

My favorite subject is Math

One thing that I would like to improve about myself is my ability to sit still.

I am aspiring to work with children as a pediatrician

I am involved in the following extra curricula activities: Student Council (Vice-President), Young Kings, Robo-Raiders, Youth Council At Calvary Holiness Church Of God

Additional Information: I am the oldest of two children

DE Student of the Month



Name: Shane Moore

Grade: Senior

Birthdate: 7/9/1994

My favorite subject is: Math

The one thing I would like to improve is for me to stop talking so much.

I am aspiring to I am aspiring to become a successful man. I don't know what I want to be exactly yet. I am involved in cross country, golf, young kings club, ypd club

I will be attending SCSU in the fall of 2012

ATTENTION PARENTS AND FAMILY!

Please make sure you sign in today so that your child receives extra-credit in their engineering course. Also, have you signed up yet with Ms.. Hollis to bring a dish to the February 16th meeting?

Biotechnical Engineering Class Visits the SC DNA Learning Center at Clemson University



Chibuzo and X'avier inserting DNA into the chambers of the gel electrophoresis.

Last Thursday, the Biotechnical Engineering class, along with several biology students, traveled to the DNA Learning Center at Clemson University in order to participate in a genetic technology lab.

In this experiment, students completed their own DNA fingerprints for the DS180 Gene Locus. This is a non-coding gene, meaning it does not code for a known trait in humans.

In order to analyze their own DNA, students first needed to extract it from their cheek cells. They used a saline mouthwash to remove loose cells, then added detergents and reagents to open up the cell membrane and nucleus. Samples were then centrifuged and the cellular waste was removed.

Once the students had isolated the DNA, they used Polymerase Chain Reactions (PCR) to amplify copies of their DNA.

Students then practiced the technique of loading their DNA into a gel electrophoresis in order to solve a crime through DNA evidence.



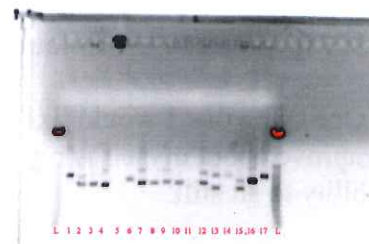
Mr. Coleman vortexes his DNA sample to mix the DNA with its solvent

After lunch, the students returned to the lab to view the results of their DNA mystery- it turned out that Megan was the culprit, based on comparing the different lanes of their DNA samples.

From this activity, the BE class learned how to isolate and interpret DNA evidence, and were also able to determine their genotype for the DS180 gene (whether they are homozygous or heterozygous for that gene).

Your DNA Fingerprint
W.J. Keenan HS
Kristin Bullington
DS180 Gene

This allows you to observe whether you are homozygous or heterozygous for this gene locus. As you can see, your alleles for this gene vary from one individual to the next. This is what we talked about in our class. Now imagine if you used 12 more gene loci to map between each of you. The chances that you would match with another individual between all 13 gene loci is near impossible. That is why it is considered a fingerprint. It is unique to you and you alone.



The results of our DS180 fingerprint.

Bits and Bytes

9/16/14

Decimal Base 10

0-9 ¹⁰ digits

10^0
 10^2

Binary is Base 2

Two digits 0-1

Why is 1011 eleven?

Place values	1	0	1	1
1000s	8	4	2	1
100s	2 ³	2 ²	2 ¹	2 ⁰
Value	8	0	2	1

= This is why

Hexadecimal is Base 16

Sixteen digits: 0123456789A B C D E F

10 11 12 13 14 15

Examples	3	A
Place values 16^n	16^1	16^0
Powers of 16^n	16^1	16^0
Value	48	10

Depends on the
hundreds
place

3 is in
Tens
place,
so one zero

→ 3A — No zero,
because it's
in ones
place

386 — No zero
1064 — zero
00 — 2 zeros

Blown to Bits

10/10/19

I believe that the Internet has greatly increased our freedom of speech. Literally everything, no matter how obscene or lacking in scientific or political value, is two clicks away on the world wide web. Internet in America defines what freedom is and how it works here. The interpretation of the Constitution should be affected by our changing technology. Times change and so should our rules. As advancements increase, so do our lives and how we interact with each other. Its interpretation should be updated to fit modern times.

+15/70

What was the interpretation you read about in BTB?
Because I think the authors came to a different conclusion

Impact of the Internet on?

10/14/14

a) Social Interaction

Social technology is the application of social science theories in technology. Social technology has made worthwhile impacts on communication.

b) Extending Human Ability

The Internet can be used by all, whether you have disabilities or not, due to amazing innovations in technology.

c) Economic Exchange

Businesses can sell, buy, or promote their products through the Internet. Doing taxes and sending/receiving bank accounts is much easier.

d) Parallel Computing

Impacts include multitasking and controlling power consumers. A form of competition.

e) Data Collaboration

Data sharing: making data used for scholarly research. Data collection: process of gathering info. for a variety of surveys.

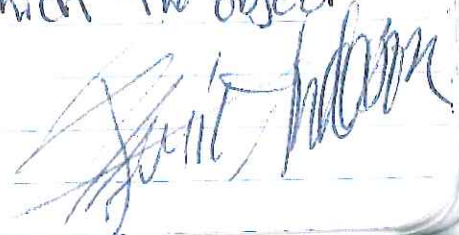
f) From and On Organizations

Applying for certain websites or store benefits have become much easier due to the ease and swiftness of the Internet.

09/29/14

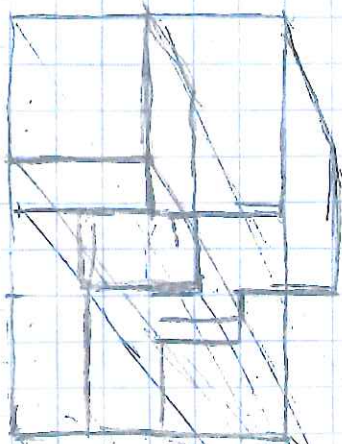
Perspective Drawings

- A perspective drawing offers the most realistic three-dimensional view of all the pictorial methods, because it portrays the object in a manner that is most similar to how the human eye perceives the visual world.
 - The one-point perspective is relatively simple to make.
 - A horizontal line, representing the horizon, is drawn across the upper portion of the paper. One vanishing point is identified somewhere on the horizontal line.
- The two-point perspective drawing
1. A horizontal line, representing the line/horizon. Two vanishing points are then identified, one on either end of the horizon line.
 2. A vertical construction line is drawn, which represents the overall height of the object. Two points are marked on this line, which represent a top and bottom corner of the "box" within which the object will be sketched.



Pg-30

One point - perspective Sketching 09/29/14



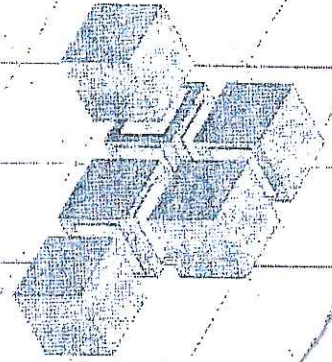
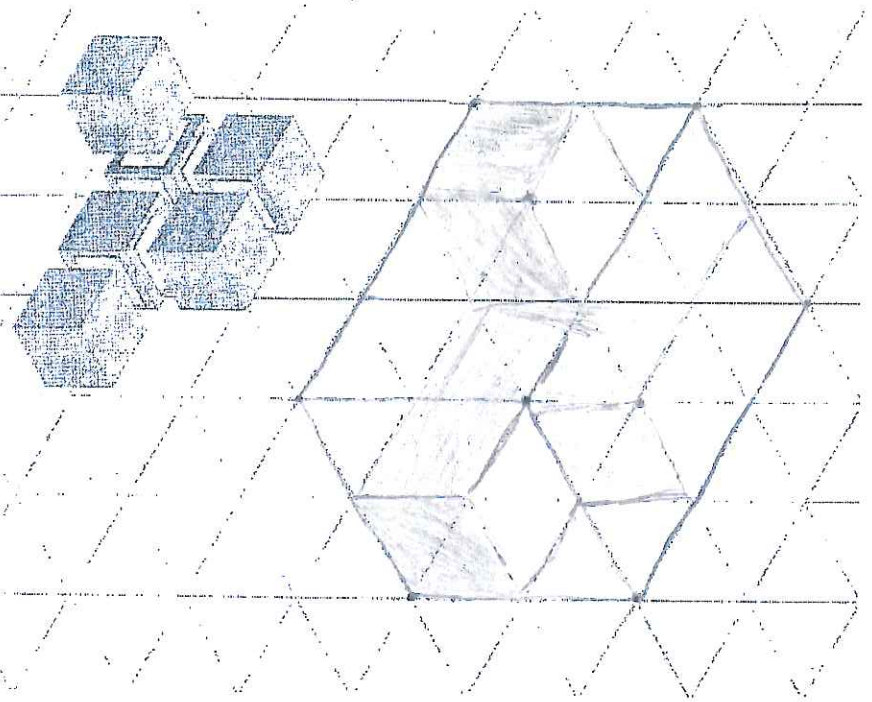
Felix Andersen

Construct the box
 1. Layout the box that will contain the
 isometric lines using points and construction
 lines.

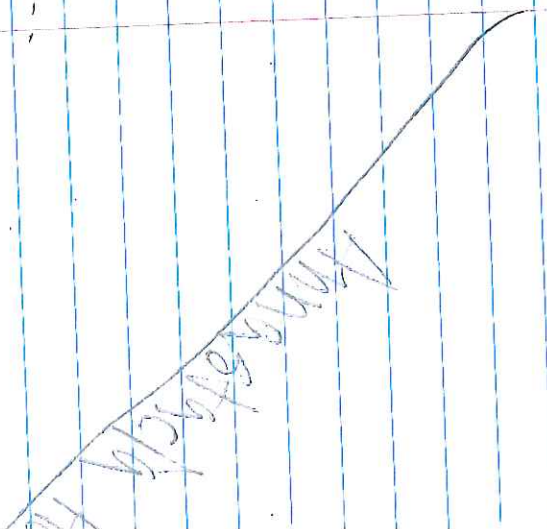
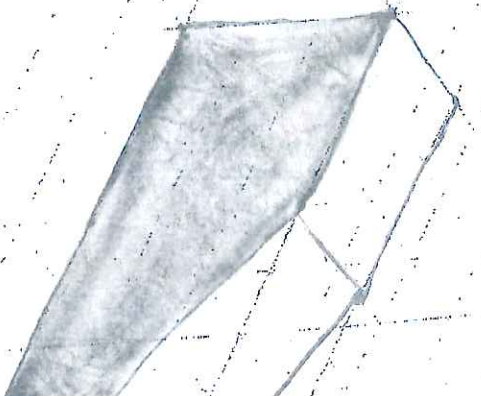
Steps: Outside.

Use points and
 points and construction
 lines to identify corners and edges of
 object faces that occur on the surface.

ISOMETRIC VIEW



1.9



Food Inic

9/18/14

☐ Who is responsible for making sure that our food is safe?

The people responsible for making sure are the CEO of food companies, scientists with the food industry, and the FDA. Everyone should have

Safety.

What conflicts are present in this dilemma?

+8/10

☐ Does it matter to you which companies produce your food?

9/22/14

It does matter to me what companies produce my food, unfortunately I can't buy my own food. On a scale from 1 to 10, I place I give myself a four. For one, I do research most of the companies I buy from or at least the companies that

+10/10

☐ What individual or collective actions are you willing to take to improve our food system, and what would be their impact?

I'm more than willing to take individual action to improve the food system. I'm willing to eat locally grown organic foods and buy more of them. I'll also treat them, animals with respect. Buy sustainably. I don't have control over the right now. The impact would be that

Nora Franklyn

pg 9

pipet Calibration

8/26/14
4

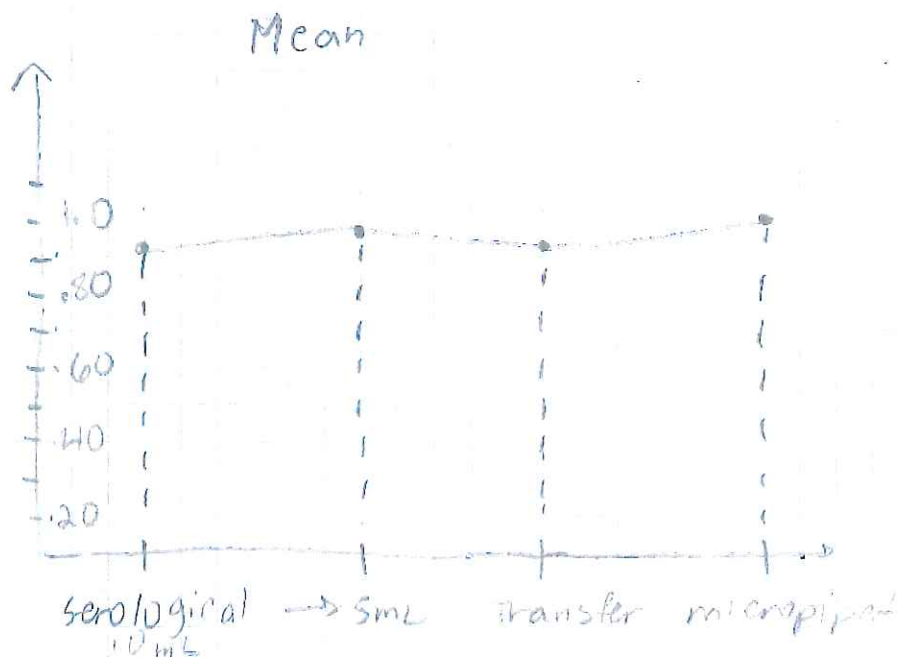
Lab Report

purpose: The purpose of pipet calibration is to observe how accurate the measurements are of using 10mL, 5mL, or 100, 1000 μ L of water in different pipets

Materials: computer
Excel
micropipettes
Transfer pipettes
serological pipette
plastic weigh boats.

problem: whether the instruments are calibrated correctly

Graph



Day One

10/14/74

March 22, 2000
Washington DC
April 1, 2000

Joe: ... travel ...
...
...

Lupita: possible yellow fever
Gonorrhea

Felix: ... chills
... encephalopathy
fluid build up

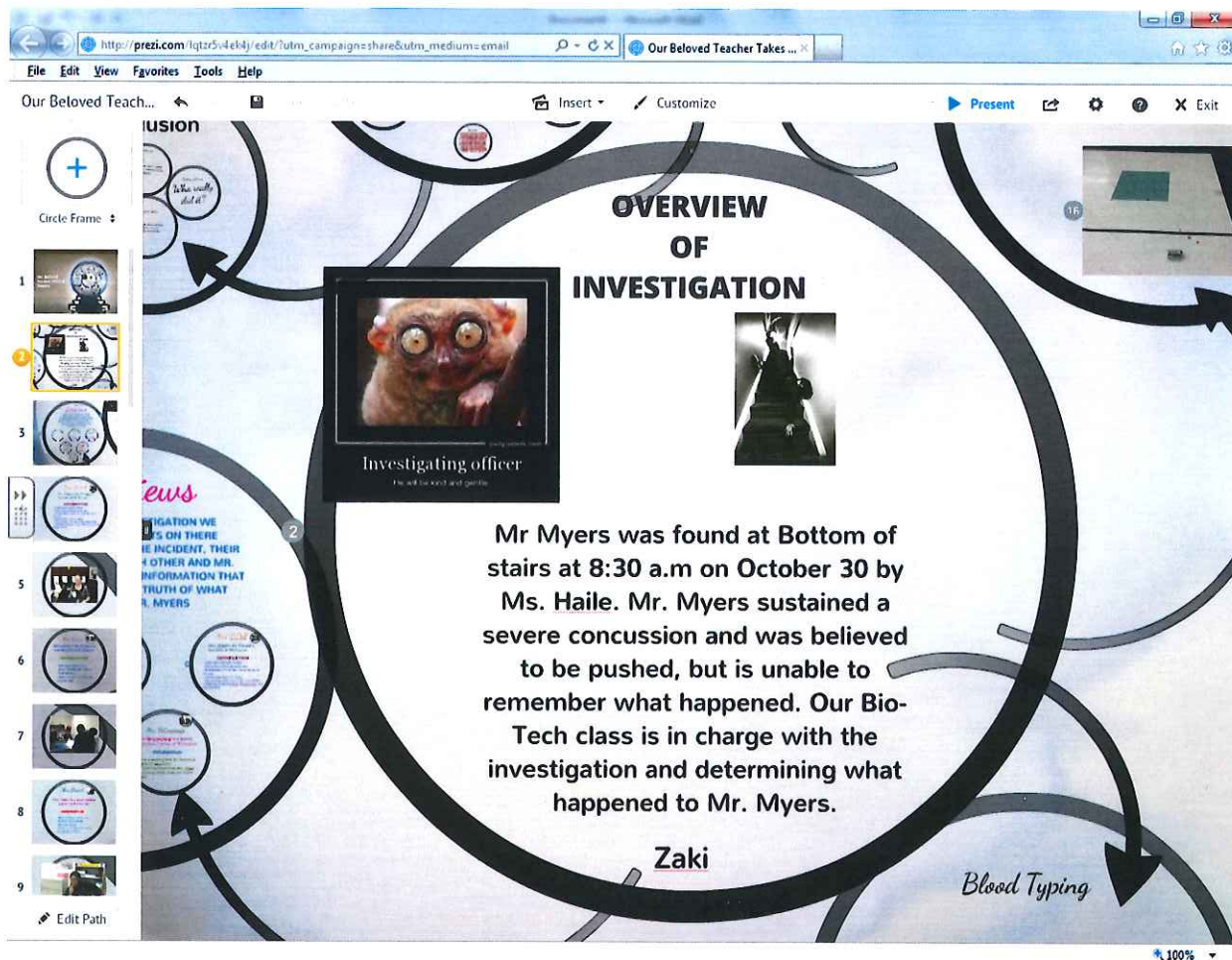
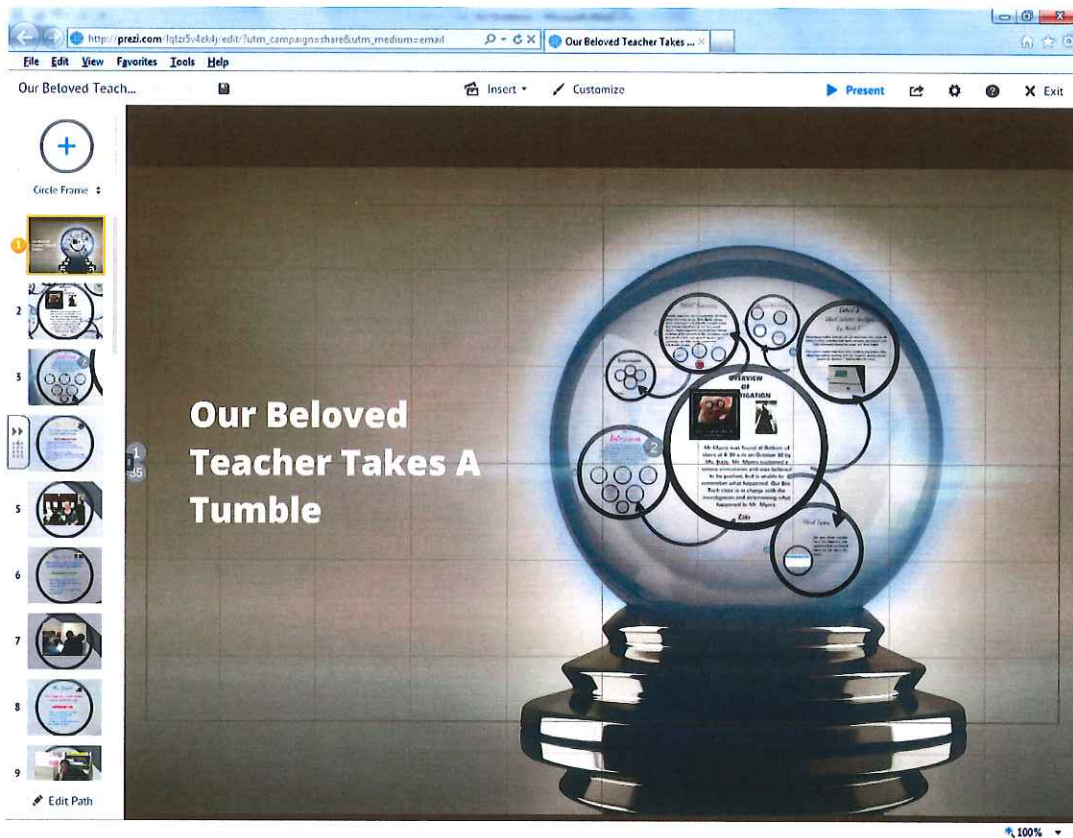
Joel
I predict, due to the ...
symptoms ... he is
experiencing. Signs of chlamydia, due
to sexual activity ... 6 month
period.

Lupita: ... Gonorrhea is the
... frequent ...
... and vomiting.

I predict he has some ... of
... from, working in the
... also I may ...
... lead to the
... lesion ... have been
... to a ... which led to
... on his ...



Biotechnological Engineering Forensic Assessment: Who Shoved Mr. Myers Down the Stairs?



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File Edit View Favorites Tools Help

Our Beloved Teach... Insert Customize Present Exit

Circle Frame

1 2 3 4 5 6 7 8 9

4 Edit Path

Eva

Interviews

TO KICK OFF THE INVESTIGATION WE INTERVIEWED 5 SUSPECTS ON THERE WHEREABOUTS DURING THE INCIDENT, THEIR RELATIONSHIP WITH EACH OTHER AND MR. MYERS, IN ORDER TO GAIN INFORMATION THAT COULD LEAD US TO THE TRUTH OF WHAT HAPPENED TO MR. MYERS

Mr. Smith
Mr. Smith is a recent teacher at Mr. Myers' school.
Mr. Smith is a recent teacher at Mr. Myers' school.
Mr. Smith is a recent teacher at Mr. Myers' school.

Mr. Lopez
Mr. Lopez is a recent teacher at Mr. Myers' school.
Mr. Lopez is a recent teacher at Mr. Myers' school.
Mr. Lopez is a recent teacher at Mr. Myers' school.

Mr. Jones
Mr. Jones is a recent teacher at Mr. Myers' school.
Mr. Jones is a recent teacher at Mr. Myers' school.
Mr. Jones is a recent teacher at Mr. Myers' school.

Mr. Brown
Mr. Brown is a recent teacher at Mr. Myers' school.
Mr. Brown is a recent teacher at Mr. Myers' school.
Mr. Brown is a recent teacher at Mr. Myers' school.

Mr. White
Mr. White is a recent teacher at Mr. Myers' school.
Mr. White is a recent teacher at Mr. Myers' school.
Mr. White is a recent teacher at Mr. Myers' school.

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Circle Frame

7 8 9 10 11 12 13 14 15

4 Edit Path

After gathering our information from the suspects we did not conclude anything. Next, we had to do things like analyze blood and discuss gathered information.

100%

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File Edit View Favorites Tools Help

Our Beloved Teach... Insert Customize Present Exit

Circle Frame

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Our Beloved Teacher Takes ...

Mr. Myers.

Blood Typing

We took blood samples from the suspects, and matched it to the blood found on the top of the stairs.

Our Beloved Teacher Takes ...

mat
four
stair

	Actual Sample	Mrs. Gunter	Mrs. Odell	Mrs. Lomas	Mrs. McCummings	Mrs. Boyd
Anti A	Yes	No	Yes	No	No	Yes
Anti B	No	No	No	No	Yes	No
Blood Type	A	O	A	O	B	A

As you can see from this chart that Only 2 suspects match the Blood Sample, and that is Mrs. Boyd, and Mrs. Odell.

http://prezi.com/hqtr5v4ekdy/edit/?utm_campaign=share&utm_medium=email

File Edit View Favorites Tools Help

Our Beloved Teach...

Insert Customize Present

Detail 4

Polymerase Chain Reactions

Briana Abraham

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Circle Frame

Edit Path

100%

Introduction to Engineering Design- Grand Challenges to Engineering: Identifying the Problem and Brainstorming

Prevent Nuclear Terror: By: L. Vo Anderson

From the beginning of the nuclear age, we materials suitable for making a weapon have been accumulating around the world. Nuclear security therefore represents one of the most urgent policy issues of the 21st century. Engineering faces the formidable challenges of finding all the dangerous nuclear material in the world, keeping track of it, securing it, and developing its diversion or transport for terrorist use.

Human Activities Contributing to the Challenge	Questions to Answer/Questions needed to be answered
<ul style="list-style-type: none"> • Terrorist's intentions • President Obama tries to prevent nuclear war • Can the US find a way to give up their nuclear weapons while other have them? • Is the US getting their funds? 	<ul style="list-style-type: none"> • The development of a precise device • "Nuclear can waste" consists of a sophisticated security system that considers what path by which we can in a complex field • How can we be sure all countries have got rid of their weapons? • How will people communities who are going to use resources that are nuclear security waste?

Solutions:

- Improve the nuclear system
- Tap in other foreign countries to combat nuclear security (GPS)
- Nuclear Terror is prevented by forming peace treaties with certain countries during that period of time. A/C

Questions:

- How is it harmful to the world?
- How is it helpful?
- How can we find all the dangerous nuclear material in the world?
- How can we be sure all countries have got rid of their weapons?
- How will people communities who are going to use resources that are nuclear security waste?

Advance Health Informatics

Health informatics is a discipline that requires knowledge in medicine, computer science, and other fields to improve the quality of patient care. This is a challenge for engineers with their medical background to become more efficient for the future's medical problems.

Human Activities Contributing to the Challenge	Solutions to Address Challenge / Questions needed to be answered
<ul style="list-style-type: none"> • Improving data and patient information • Computer network to help patients to know what to do before the doctor's visit • Improving data by using more data • Improving data by using more data • Improving data by using more data 	<ul style="list-style-type: none"> • When having medical problems, engineers should be able to solve every medical problem • How can we find all the dangerous nuclear material in the world? • How can we be sure all countries have got rid of their weapons? • How will people communities who are going to use resources that are nuclear security waste?

What is Infrastructure?

Infrastructure is the construction of fundamental systems that support a community, such as energy, transportation, water, and sewer systems. It is a challenge for engineers to find a way to improve the quality of patient care.

Human Activities Contributing to the Challenge	Solutions to Address Challenge / Questions needed to be answered
<ul style="list-style-type: none"> • Improving data and patient information • Computer network to help patients to know what to do before the doctor's visit • Improving data by using more data • Improving data by using more data • Improving data by using more data 	<ul style="list-style-type: none"> • When having medical problems, engineers should be able to solve every medical problem • How can we find all the dangerous nuclear material in the world? • How can we be sure all countries have got rid of their weapons? • How will people communities who are going to use resources that are nuclear security waste?

Restore and Improve Urban Infrastructure

Manage the Nitrogen Cycle

- The nitrogen cycle plays a central role in the production of food. Plants convert nitrogen from the air into amino acids. Our bodies depend on amino acids for growth, repair, and energy. Nitrogen is also a key component of DNA and RNA.

Human production of additional nitrogen means have now disrupted the nitrogen cycle. One of the major contributors are fertilizers and plants like soybeans that convert nitrogen-producing microbes.

How does nitrogen enter the path?

Human disruption of the natural balance of the cycle was both direct and indirect.

Activities in my technology class have been at analyzing factors, despite the nitrogen cycle.

We should not depend on synthetic urea and try to rely less on synthetic.

Why is synthetic nitrogen so important?

We should find ways to make the position more secure to help food be more abundant.

So it becomes very important to help us stay safe.

The main reason why we need to be careful is that it's not a natural cycle.

When you use synthetic nitrogen, you're adding a lot of nitrogen to the soil. This is not a natural cycle.

If we keep adding more synthetic nitrogen, we're adding more and more synthetic nitrogen to the soil.

The main reason why we need to be careful is that it's not a natural cycle.

The main reason why we need to be careful is that it's not a natural cycle.

The main reason why we need to be careful is that it's not a natural cycle.

