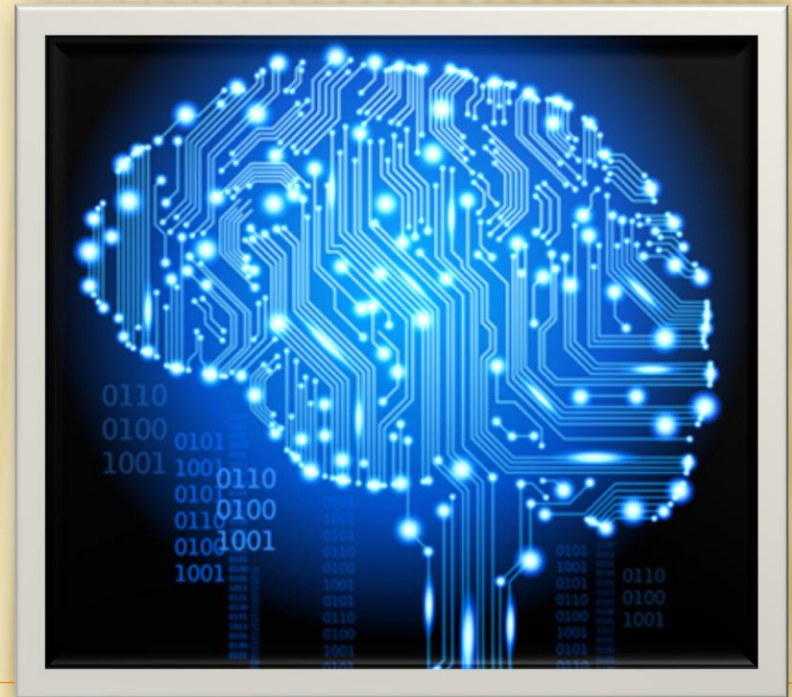


WHAT I HAVE LEARNED FROM MY STUDENTS!



MY BRAIN

Connect To Tech 5/09/14
Maria Brown – Sayville Public schools



**21st CENTURY
STUDENT
BRAIN**

EPIPHANY!

- ✘ **2012 RISE Freshman** – 6 students wanted to create APPS for RISE project (4 were girls)!
- ✘ My response was.....



...but, we took baby steps to research it further together!



- ✘ **2013 RISE Freshman** – 6 more students + 2 juniors + 4 sophomores wanted coding, APP development and game design!

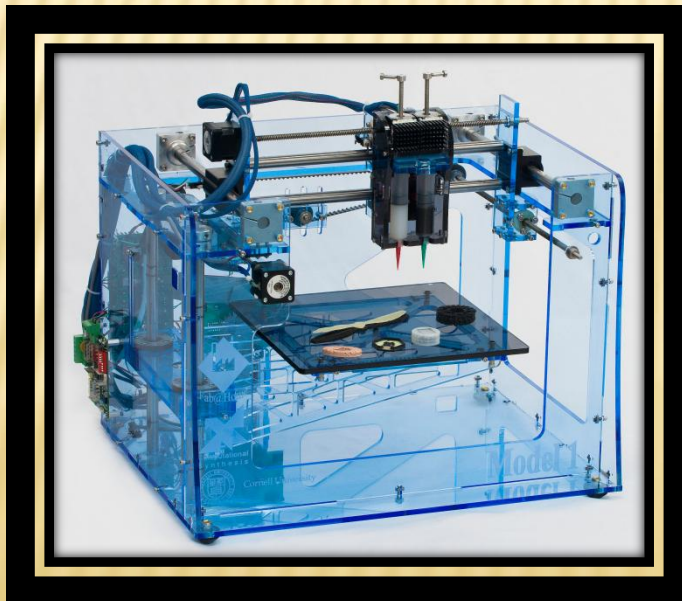
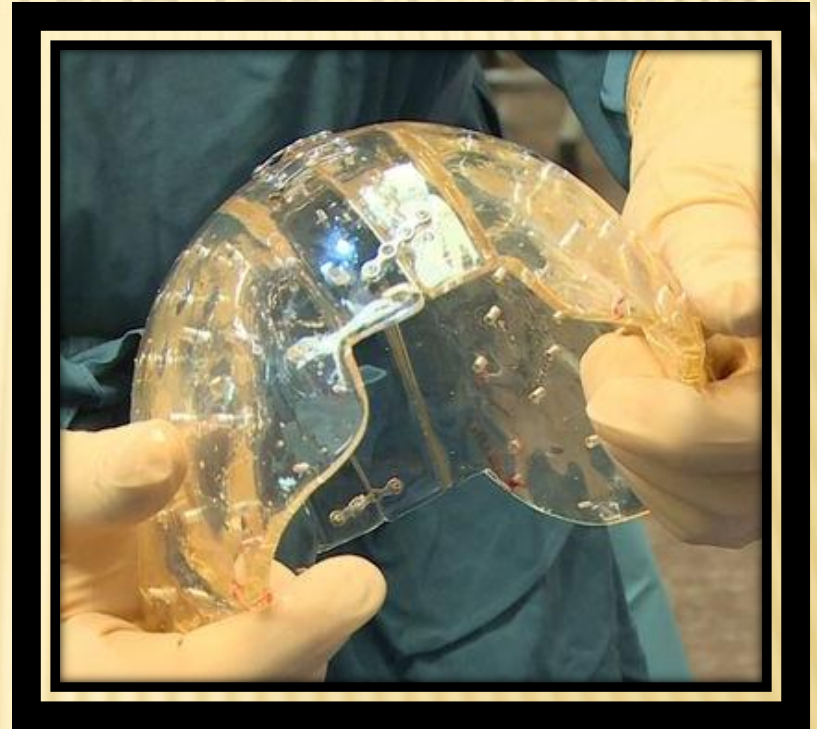


- ✘ **LAST WEEK**– More than 1/3 of the students enrolled in RISE now desire this type of education – SOME come to school at night to learn along with 2 elementary school children (SEED) and 3 MS Enrichment Students!

ARE OUR STUDENTS PREPARED FOR THE 21ST CENTURY?

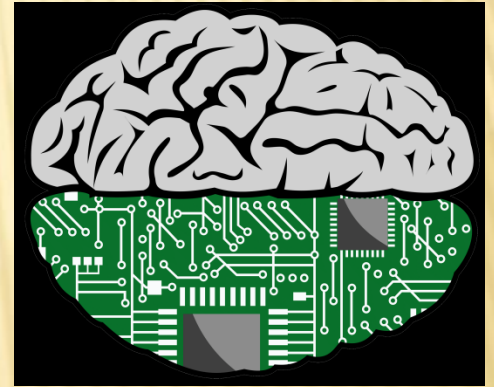
- ✖ **Headlines:** *Woman has entire SKULL replaced with plastic made using a 3D printer in Holland*

The Mirror
3/27/2014



STEAM & K-12 CODING

“Code is the universal language of the 21st Century” ... Steve Jobs



```
01 // Simple formatting
02 if ( $GLSALS['fix_token_case'] ) fix_token_case( $tokens );
03 if ( $GLSALS['fix_builtin_functions_case'] )
04   fix_builtin_functions_case( $tokens );
05 if ( $GLSALS['replace_inline_tabs'] ) replace_inline_tabs(
06   $tokens );
07 if ( $GLSALS['replace_phptags'] ) replace_phptags( $tokens );
08 if ( $GLSALS['replace_shell_comments'] )
09   replace_shell_comments( $tokens );
10 if ( $GLSALS['fix_statement_brackets'] )
11   fix_statement_brackets( $tokens );
12 if ( $GLSALS['fix_separation_whitespace'] )
13   fix_separation_whitespace( $tokens );
14 if ( $GLSALS['fix_comma_space'] ) fix_comma_space( $tokens );
15 // Add in you call to new function here
16 if ( $GLSALS['fix_round_bracket_space'] )
17   fix_round_bracket_space( $tokens );
```


ADVANTAGES OF COMPUTER SCIENCE & CODING

- × **CODING** & **STEAM** - Develops computational and critical thinking skills and promotes student creativity while using new technology as the tool!
-

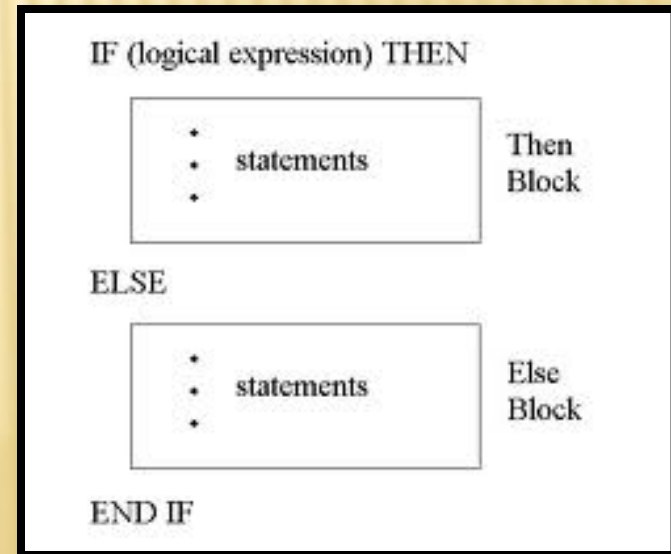


COMPUTATIONAL THINKING

Computational thinking will be a fundamental skill used by everyone in the world by the middle of the 21st Century.

- ✗ – Just like reading, writing, and arithmetic.
- ✗ – “Imagine every child knowing how to think like a computer scientist!”

Jeannette M. Wing
Department Chair Computer Science Department
Carnegie Mellon University



WHILE RESEARCHING, I LEARNED THAT:

- ✗ **STATISTICS (National Average):**
- ✗ Undergraduate Class of 2011 (Source: Ellis, 2012)

Engineering students – highest paid starting salaries of \$61,872

Computer engineering majors were the highest-paid of that bunch, bringing in a whopping **\$70,400** a year.

- ✗ **Other starting salaries (2011):**

Business (48K)	Economics (54K)	Health Sciences (45K)
Math & Science (40K)	Communications (39K)	Social Sciences (35K)
	Education (39K)	

I LEARNED THAT: RISE STUDENTS

- ✖ Scratch (elementary)
- ✖ An Hour of Code



Interactive Holiday Cards

✖ Coder DoJo

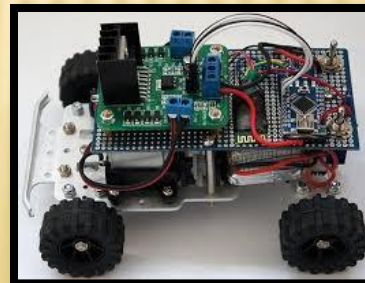
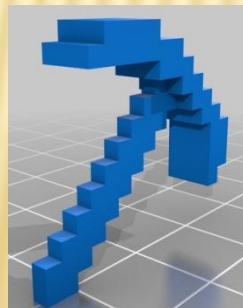
✖ Transitioned from Scratch to coding html in 2 – hours with Noise Ivy!

NOW – intermediate -advanced html/Thimble to create a RISE TECH Webpage using all code – business ready skills by managing it under my supervision.

✖ Next Year – KidOYO,
Designing Applications, educational games,

Python, Arduinos

....robots?



WHAT ELSE HAVE I LEARNED?

- ✗ ...that I know very little about coding, game design, app design, creating webpages, using html, C++, Java, Python, etc...
- ✗ That it takes ME at least twice as long to learn and process the basics of coding than it does for students.
- ✗ Coding = fun!



RISE TECH
Workshop
April 2, 2014

Noise Ivy

I LEARNED OUR BRAINS ARE DIFFERENT!

...but most importantly, that by learning how to code and engage the students in FUN educational activities, it removed a huge generation gap!

- NEW way for adults to connect to students!

✕ I also learned that coding requires a tremendous amount of creativity, math , and science!

Mrs. Brown ≠

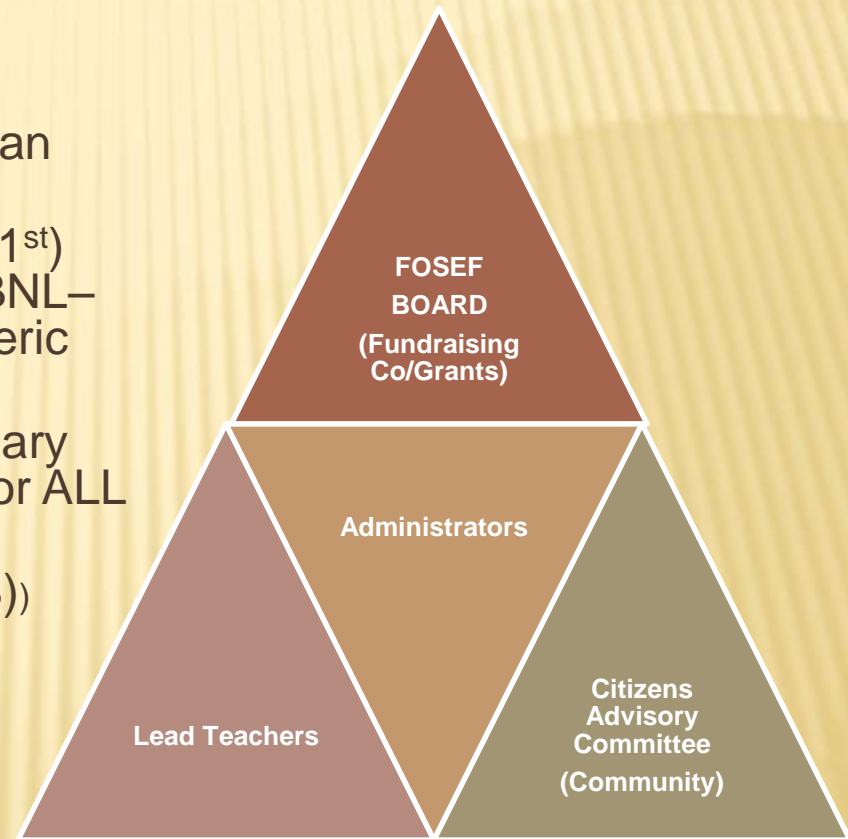


HOW DO WE BRING MORE CODING (K-12) TO SAYVILLE STUDENTS?

- ✖ Game design can be integrated into any curriculum at any level!(Common Core/NGSS)
- ✖ But...teachers need to want to learn it!
- ✖ For those teachers who **do** want to learn it, they will need professional development.

FRIENDS OF SAYVILLE STEAM (EDUCATION FOUNDATION) PLAN FOR SUPPORT FUNDING

- ✕ Board of Directors
- ✕ Professional Grant Writer – Pamela Donovan (STEAM \$\$)
- ✕ Honda Grant Proposal (\$75,000.00 – May 1st)
Letters of support from: Connect to Tech, BNL–OEP (M. Morris), BNL Division of Atmospheric Sciences (E.Lewis), Noise Ivy.
- ✕ Professional fundraising company (Legendary Events)- 1ST EVENT November 2014 (\$\$ for ALL Teachers – not just STEAM).
- ✕ 15 Lead Teachers (Elementary, Middle, HS))
- ✕ Citizens Advisory Committee (Parents/Community Members – (K-12 representation) 12 volunteers
- ✕ _____
- ✕ FREE ONLINE TRAINING/CURRICULA (MIT/Code Academy; Code.org, Alic.org, etc...)
- ✕ Noise Ivy – Consultants – Initial Training
- ✕ Ken Kranz – Advanced Training (Coder Dojo – Sayville)



I HAVE ALSO LEARNED....

That by listening to my RISE students and working ***with*** them, I have grown both professionally and personally!

Thank you!

“The true sign of intelligence is not knowledge but imagination. “

- Albert Einstein