Summer of Code 2016

PROJECT SCIENTIST CODERS

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Filling the STEM Pipeline

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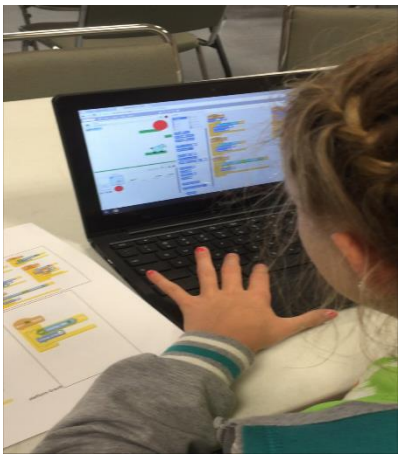
A summer full of 78 young, bright minds were taught how to code and interact with their digital world at a week-long Code Camp developed by Project Scientist and hosted by Caltech Code Camp this summer. This is Project Scientist's goal, to stimulate and inspire more young girls to fill the STEM pipeline. This project is headed by Sandy Marshall.

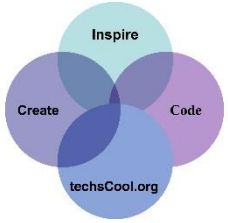
TechsCool was glad to be a part of this program. TechsCool is in its 3rd year of teaching young students how to code. Coding is the equivalent of learning how to read and write in the digital age. Coding is creating and implementing and debugging solutions for the computer to execute. Coding helps develop critical thinking and collaboration skills.

These coding and computer knowledge building classes were FUN and incredibly effective in supporting whatever career these girls ultimately choose.



The week was filled with lectures on internet protocol, routers and If/Then decision making and elimination code repetition with For Loops.

The internet is rife with stories of how important gender equality is to these technology companies and society as a whole. Project Scientist is making huge strides in filling that gap. These young ladies are tomorrow's tech leaders.



Digital Citizens

These young minds are learning how to interact with and control the digital world they live in.

Critical Thinking

These girls; K-8th grade designed their own Scratch computer games. Each element and construction of the game helps build critical thinking skills, by answering what does this character do next? How do I code for the next event? How do I plan for the next level?

FAST FACTS

71%

71% of jobs in 2018 will require STEM skills

58%

IN 2013 58% OF THE BACHELORS DEGREES ARE EARNED BY WOMEN

24%

In 2013, only 24% of The STEM workforce is female.

The need for Project Scientist was based off a vast amount of research that shows **girls with a high skill, aptitude, and talent for STEM subjects are not currently served or identified at a young age**. Underserved and unidentified girls are not provided STEM opportunities at a pace, depth, and breadth commensurate with their talents and interests. It is Project Scientist's charter to change the world's view of "who" a scientist is and "what" a scientist does. The vision of Project Scientist is to transform the face of STEM by nurturing today's future scientists who will lead the world in solving tomorrow's greatest challenges!

The Curriculum was built around the ubiquitous Raspberry Pi platform. This allowed for a plethora of learning opportunities, including python and Scratch programming, interaction with the internet and routers, and understanding hardware components of a computer.

Science and Engineering Practices

Part of the curriculum modelled the internet and routing packets from client computer to the destination website. In this exercise the students traversed a path, encountered congestion points and delivered an out-of-order message which needed to be re-ordered to be understood properly.

Iteration was another part of the curriculum. After a project was working the students refined and changed parts of the code to enhance it, make it harder or easier to play their computer games that they designed. That is part of the engineering process of IMAGINE, PLAN, CREATE, and IMPROVE.

Why Programming and Why Python?

Why Python? First, let's figure out why you should learn a programming language at all. Well, here are some great reasons:

You use computers (laptops/desktops/tablets) almost every day of your life. If you learn programming, you will understand how computers work. You will know what goes behind the scenes when you run an application.

Writing programs makes you better at articulating your thinking.

Computer science careers are in high demand, especially in Silicon Valley.

EVEN IF YOU DO NOT BECOME A COMPUTER SCIENTIST OR PROGRAMMER FOR LIVING, KNOWING HOW TO PROGRAM WILL MOST LIKELY BE VALUABLE IN ANY CAREER YOU CHOOSE!

PROJECT SCIENTIST ENGAGES GIRLS WITH AN APTITUDE AND PASSION FOR SCIENCE BY UTILIZING HANDS-ON EXPLORATION AND FEMALE PROFESSIONALS FROM THE FIELD AS ROLE MODELS.

Learn to Code;

Code to Learn

www.techsCool.org