THE EDUCATION FUND

FOR EXCELLENCE IN MIAMI-DADE PUBLIC SCHOOLS

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Create and Code a Career

Project: **Create And Code A Career!**

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Sample Florida Common Core/CTE Standards

08.02 Use career resources to develop an information base that reflects local and global business-related occupations and opportunities for continuing education and workplace experience.

08.04 Design, initiate, refine and implement a plan to facilitate growth and skill development related to anticipated job requirements and career expectations.

08.06 Demonstrate an awareness of the potential impact of local and global trends on career plans and life goals.

LAFS.910.RI.4.1 & LAFS.910.SL.1.2

By the end of grade 9, read and comprehend literary nonfiction in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.

By the end of grade 10, read and comprehend literary nonfiction at the high end of the grades 9–10 text complexity band independently and proficiently.

LAFS.1112.RI.4.1 & LAFS.1112.SL.1.2

By the end of grade 11, read and comprehend literary nonfiction in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.

By the end of grade 12, read and comprehend literary nonfiction at the high end of the grades 11–CCR text complexity band independently and proficiently.

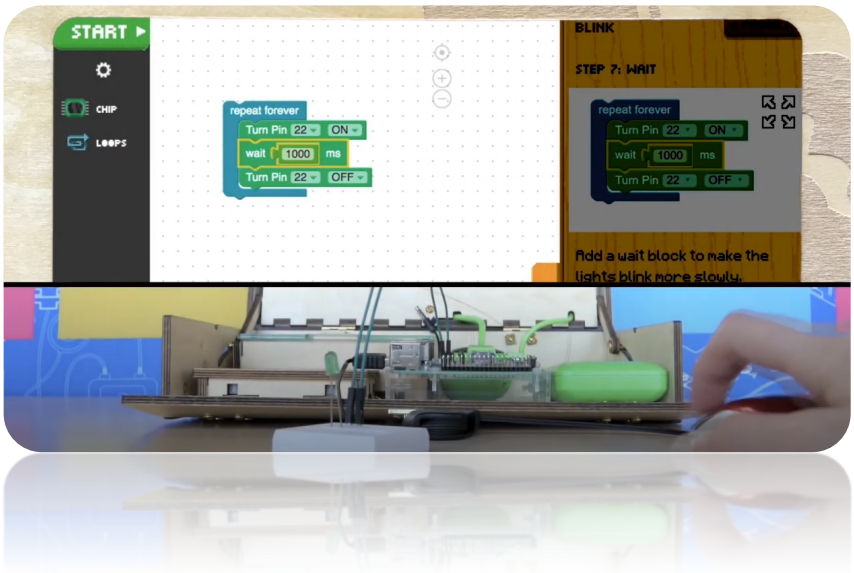
Disclaimer/Notation: *The above standards are specific to 9th, 10th, 11th and 12th grades, however, this project meets standards for all grade levels (K-12) in reading/language arts, social studies, visual arts, and many other content areas that integrate to a STEAM initiative. A multitude of Common Core standards are easily met across the curriculum using the following plans and lesson ideas.*

Goals & Objectives

The idea came to mind when I needed to find a way for all students to be able to grasp and have fun with a coding project as well as a career building and exploration project. All at the same time while teaching a digital technology and introduction to computers and digital tech. course. This idea has also stemmed from the challenge of finding different avenues for students to engage in a hands-on lesson and activity.

This project has allowed all levels of learners, all grade levels, and all levels of students with exceptionalities to learn and understand the types of interests and career possibilities, all while learning about the parts to a simple PC as well as basic coding skills. The project has aided in culturally responsive and respectful pedagogy as well as overall student engagement. The class attendance has increased as students want to participate in this activity and when it is known we will work in the lab with such tools, attendance has grown.

We all want our students to be prepared for the REAL world. We all want our students to be better prepared than we all we or are now. We can teach simple strategies with fun and engagement in many ways. Imagine though connecting students with a real-life lesson in careers and jobs in the tech world that are new, impact-driven, true, and that students will enjoy. Take all that and connect ground-breaking coding methods that are more and more a must in the tech world as jobs open up. All this can be achieved with this application!



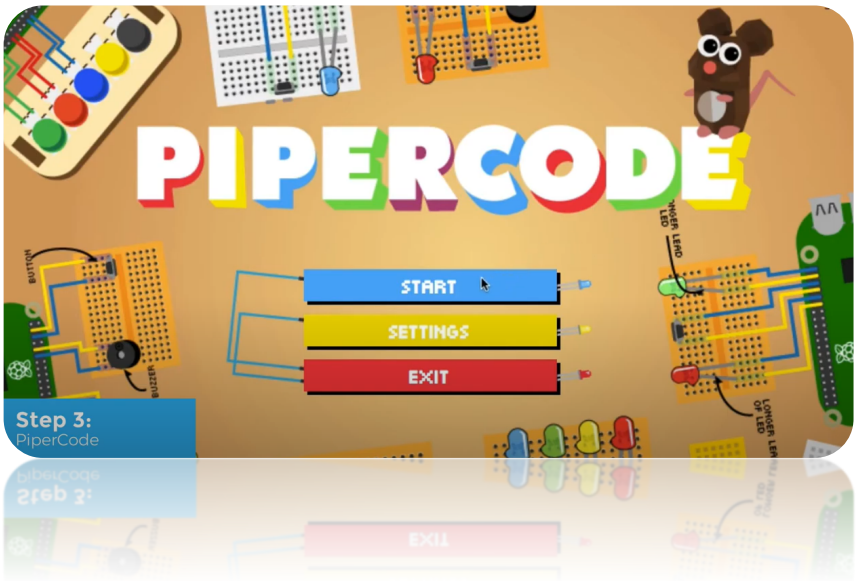
Project Overview

Students will each have the opportunity to work with real PC parts that are easy to manipulate and place together to make a real, working Personal Computer. Students will be able to learn about each component and why each is so important to the big picture. Students will use the built PC to use coding projects and aps that will allow them to understand ideas of what coding can do and what it looks like. Students will then research careers and jobs with PC and coding objectives.

Though some educators may find the idea of a student in primary grade levels building their own PC daunting, the Piper company has made the grasp a breeze. From there, we utilize simple programming language to have students gain knowledge of the importance of computer science and where it can lead.

Finally, by researching different career types, students will be able to gain a true understanding of their level of interest in either coding, PC application, design, IT, or many, many other areas of interest that fall in the realm of Information Technology.

The largest gap we see day in and out with our students is the avenue that is comfortable to each; the Piper kit allows students to enjoy many different platforms by first having students play a fun “Minecraft” style game that many are familiar with and expanding upon that knowledge. Once these steps are complete, many following lessons are adaptable to various grade levels and ages.



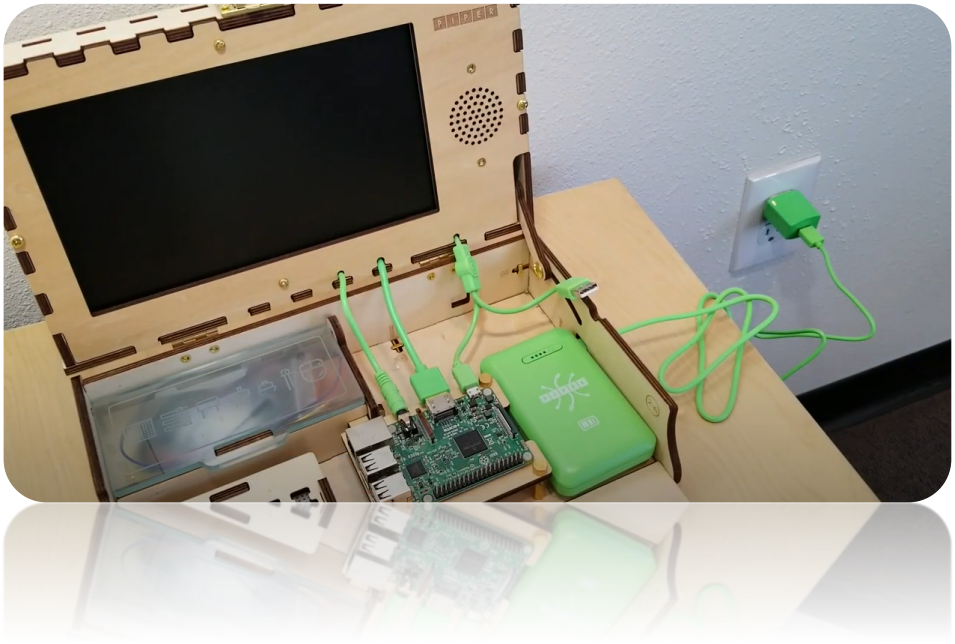
Step-By-Step Lesson Plan/Guide (For Teachers)

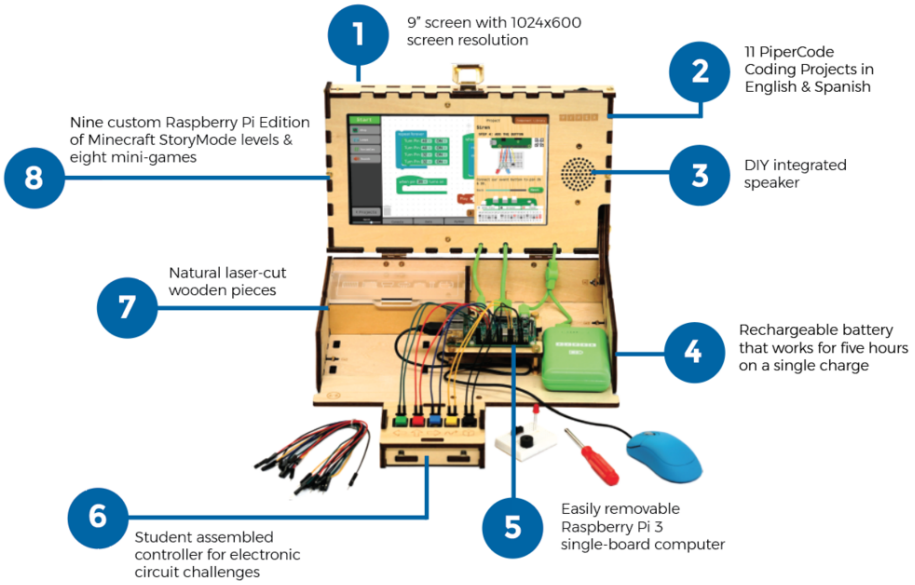
1) Do not be afraid to appreciate the fact that many of your students will grasp this activity wither ease, while others will find this quite challenging; just like any assignment, there are always over-achievers and those who will need a boost.
2) Do not be afraid to realize that some students will know more than y9ou do about the system, how parts work, and how to configure different options. Just as how some students become teacher-aids in the class, you will soon find advocates within your class setting to help you with this kit – this is a power up!
3) For one day or each class period, unpack all the Piper PC parts with your students/classes and see how many of the individual components students know about or have some concern or question about. The less the students understand the better as there is more room to learn.
4) On day two, students gain a foundation of the parts to the package. With your aid, students assemble the Piper PC kit either in small groups – if you buy more than one kit – or within a single class period and possibly recorded for future students to see the progress. This step may also be gratefully accomplished during an afterschool club or event.
5) On a third-class day, one the kit is assembled, and students understand the components and why everything came as needed, your students with your aid can turn on the kit and begin to follow the simple steps to progress through the built-in challenges and activities.
6) Once the built-in activities and steps are exhausted – this timeline will greatly vary on class size and need for scaffolding – your students can move on to using the kit PC for other activities such as coding and training resources within the IT/PC world.
7) After students exhaust many activities beyond this, students will now want to research and gain ideas to how this can be applied to their everyday lives – an example would be an IT administrator or computer programmer or game developer. The sky is literally the limit!
8) A final summary from each student could take place either in small groups or individual presentations to showcase their findings and where their interests are. students may want to present a PowerPoint to the class or turn in an essay, or a small short movie with photos even. The possibilities are endless, and each project will be vastly different.
9) A grading rubric to follow along the way has been provided for your aid that can be altered for your own individual needs and class setup.

How-To Guide (For Students)

https://www.youtube.com/watch?v=JoSpocgB1T4&list=PLIzXrPJL6UEHwGR1FRqcan234cW_EsGx2

(Students and teachers can follow the many videos from the official Piper YouTube channel to watch and learn all the very best how-to and step-by-step guides available for individualized grades and levels!)





Sample Project Scoring Rubric

Category	Points Possible	Excellent (Above & Beyond)	Very Good (80%)	Good (70%)	Fair (65%)	Points Received
Coding Concept (*Student understand basics to coding*)	30	25-30 Points	20-24 Points	15-19 Points	0-14 Points	
Career Ideas (*Student researches and presents findings*)	30	25-30 Points	20-24 Points	15-19 Points	0-14 Points	
PC Parts Identification (*Student is able to identify Piper PC Parts*)	30	15-20 Points	10-14 Points	5-9 Points	0-4 Points	
Participation (*Time and effort well spent well all project tasks*)	10	15-20 Points	10-14 Points	5-9 Points	0-4 Points	
Total Possible:	**100**	**80-100**	**60-79**	**40-59**	**0-39**	
Grade Equivalent:	**A+**	**A**	**B**	**C**	**D**	

Websites/Learning Ideas/Resources

https://www.playPiper.com/pages/educators
(Everything Piper PC has to offer for your students with kits, stand alone and other setups!)

https://www.youtube.com/results?search_query=Piper+computer+kit&page=&utm_source=opensearch
(Search results on many official videos for setup, aid, how to, and everything else, direct from the good folks at Piper!)

https://repl.it/talk/learn
(Repl.it web-based IDE site used to actually type and run simple computer programs that students themselves can learn from. Many tutorials, too!)

https://www.careeronestop.org/ExploreCareers/Assessments/interests.aspx
(Career exploration site which includes a 'career exploration' survey/assessment for all ages; to help determine where in the IT/STEAM world interests may be!)

https://education.minecraft.net/
(Almost every student has at least HEARD of this game, and most MDCPS machines have the software installed already! There are actually coding and build CHALLENENGES, and real assignments your students will love!)

https://www.w3schools.com/java/default.asp
(Learn JAVA! You and your students can do it with easy to follow steps!)

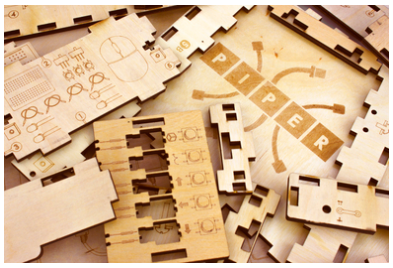
http://steam.dadeschools.net/#!/fullWidth/1860
(Is your school interested in getting a STEAM designation? It is a lot easier than you think! Check out this page for more!)

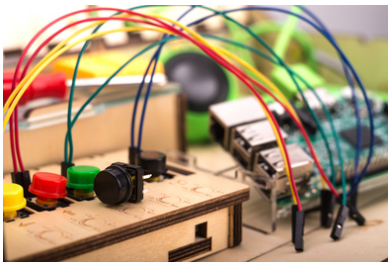
http://compute-it.toxicode.fr/
(A colorful take on understanding coding from a different type of perspective – a gaming mechanism as well!)

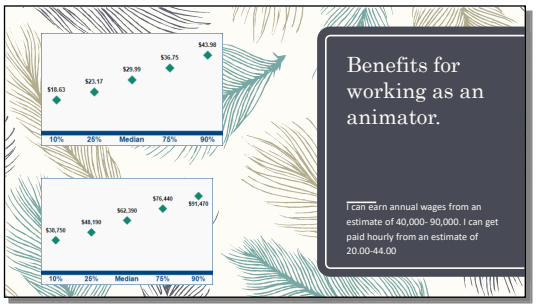
https://www.khanacademy.org/computing/hour-of-code/hour-of-code-lessons/hour-of-drawing-code/pp/project-self-portrait
(Student can create ART by using JAVA with Khan Academy's easy to use and script interface! Fantastic for all ages and levels!)

http://earsketch.gatech.edu/landing/#/
(Music and coding come together with this amazing resource from Georgia Technical Institute of Technology!)

Project Kit Resource Samples / Student Work Samples





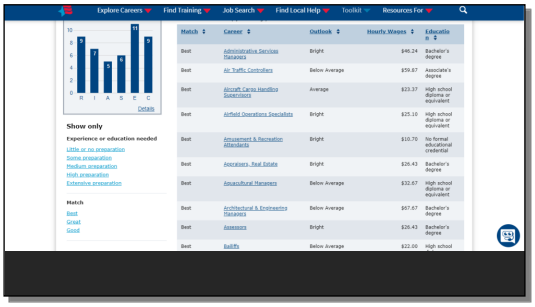


You should hire me because of my knowledge of computers and engineering

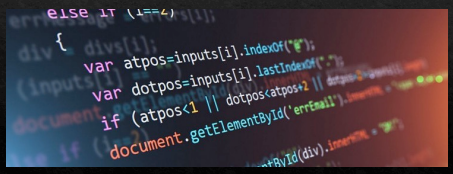
WHAT ELECTRICAL AND ELECTRONICS ENGINEERS DO

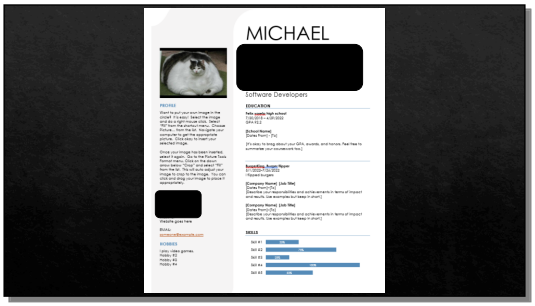
Electrical engineers design, develop, test, and supervise the manufacture of electrical equipment, such as electric motors, radar and navigation systems, communications systems, or power generation equipment. Electrical engineers also design the electrical systems of automobiles and aircraft.

Electronics engineers design and develop electronic equipment, including broadcast and communications systems, such as portable music players and Global Positioning System (GPS) devices. Many also work in areas closely related to computer hardware.

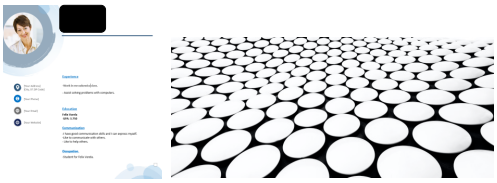


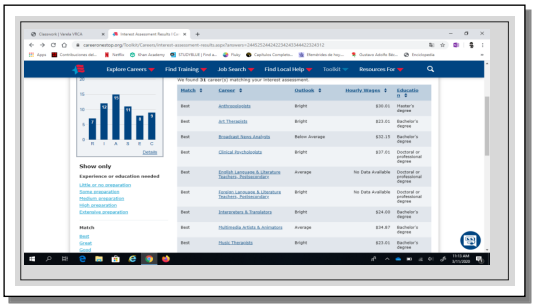
A software developer is a person who creates computer software.

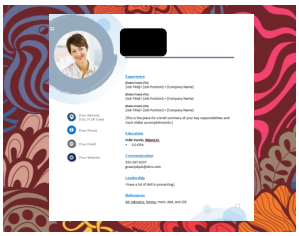




ELECTRICAL AND ELECTRONICS ENGINEERS

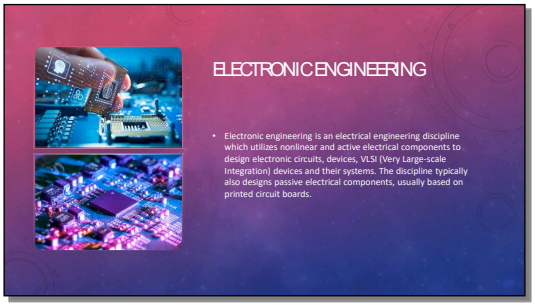






Resume

This is my resume, and that is my picture



Piper Mission

Piper provides equitable access to STEAM education by demystifying technology for students, teachers and families.

Piper Principals

Inspire: Piper empowers the inventors of tomorrow by helping them make connections today. Piper helps students' and families understand technology from the inside out. Piper inspires parents to connect with their student's education and inspire children to feel connected to STEAM today and for the rest of their lives.

Empower: Give students the tools, information, and understanding required to be empowered in STEAM and education. Provide users the information needed, along with the opportunities and curiosity to learn more.

Guide: Piper is centered around demystifying technology.
Connect: Piper provides real connections. It's a hands-on, fun, dynamic and challenging learning discovery that help both students and parents understand the value of STEAM and computer science.

Engage: Piper helps students engage with STEAM every step of the way. Piper fosters an engaging, hands-on, collaborative environment where learning can prevail, and connections can be made.

About Piper

Piper, Inc., an award-winning EdTech start-up providing best in class STEAM education opportunities was founded in 2014. From its San Francisco, CA headquarters, Piper creates compelling STEAM learning experiences for both individual learners (8 yrs.+) and for schools. Through student-centered, hands-on STEAM education experiences that reflect the most current pedagogy, Piper supports educators, students and classrooms. Piper supports educators with standards-aligned curricula and professional development to ensure successful implementations and maximum STEAM learning. Piper builds confidence in STEAM

through project-based learning, spreads digital fluency to students and learners of all backgrounds and inspires the inventors of tomorrow.

Buy Piper at: https://www.playPiper.com/products

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