An Introduction to Code

I. Everybody Can Code

I believe that everybody can code! I believe that everybody is already a coder. I'll prove it.

What does this "👋" (a waving gesture) mean? Hello, hi, etc.

What does this "👍" (a thumbs up gesture) mean? Yes, good, etc.

Does anybody know what this (ASL gesture/sign for Thank You) means? Thank you, thanks, etc.

What is code?

These gestures are code. Have you heard of Morse Code? That's code too. Code is just a way of communicating that is different than our normal way of communicating (speaking or writing in our preferred language). In the context of Computer Science Education Week and the Hour of Code, "code" means a way of communicating with a computer.

What is coding?

Coding is writing down the things that you want to say to a computer. We often call these written things a program. Coding is also called "computer programming".

Where is code?

Code is all around us. Outside of the school, it is in cars, buses, traffic signals, airplanes, signs, stores, etc. Inside the school, it is in computers, phones, TVs, watches, smart boards, motion sensors to save energy, central heating unit, etc. Code is even in electrical outlets, light bulbs, thermostats, door bells, door locks, garage door openers, refrigerators, bathroom scales, etc. And does anybody play video games?

Why is code important?

We use code to tell computers to do stuff that it makes sense for them to do. Computers can help us do things that they are much better at than we are. Computers don't make mistakes. Computers are fast! Computers can receive information, perform calculations, and transmit information much faster than we can. Computers don't need to eat or sleep. Computers don't get bored or distracted.

II. Code In Action (Demonstration)

A 5 minute demo to show how easy it is to write a simple program using free tools from the Internet that will work on both Windows and Mac. I'll write a small program to control a USB light connected to my laptop to turn it on/off and change its colors to your school's colors.

III. How to be a Coder

If you want to talk to computers, you need to learn a language that they understand — these are called "programming languages". The programming language I used in my demo is called "JavaScript". In addition to learning programming languages, you need to continue to focus on your core education.

You have probably have heard a lot about STEM (Science, Technology, Engineering, and Math). Those are very important classes to help you become a coder. However, other classes are very important too.

An Introduction to Code

Since coding is communicating and writing, you need to continue to learn how to communicate well in your natural spoken and written language — so your Language Arts classes are a very important to becoming a coder.

Since coding is creative, you need to continue to learn how to unlock your creativity and ability to express yourself — so your Art and Music classes are very important to becoming a coder.

Language arts, arts, and music also teach you about an important thing called "composition" — how to put simple things like words, brush strokes, or musical notes together to make something. Composition is really important to becoming a coder.

Did you know that 99% of your body is made up of only 6 elements: Carbon, Oxygen, Hydrogen, Nitrogen, Phosphorous, and Calcium? If I held those elements in my hand, would I have 99% of a person? No! Why not? Because I didn't put them together in the right way. How does our body put them together in the right way? Have you heard of DNA? Another name for DNA is "genetic **code**". We're made from code too!

Mother nature has been coding a lot longer than any human. She is a great teacher and the whole world is her classroom. So, if you want to become a coder, don't forget to go outside and discover, observe, and learn from nature. She will help you become a great coder.