

Title: Programming the Future

Item Blurb: This Blast explains the history of coding and its place in modern life, showing how this will impact the future.

Driving Question: What role does coding play in our lives?

Background (700-800L):

Karlie Kloss became famous as a supermodel. Now, she's an entrepreneur and coder. Many people think coding is an important skill for the future. They're trying to bring coding to young people.

Kloss started a free coding camp for girls. This camp is called Kode with Klossy. On March 16, 2018, the company said it will get bigger. It will now host 50 camps in 25 cities. Kloss founded this company in 2015. Her goal was to inspire teenage girls. She wanted girls to work towards tech careers. "Too few girls are encouraged to pursue STEM at an early age," Kloss told CNET. "So we set out to provide more opportunities to learn code and change the way it's taught." Kloss is one of many people supporting children and teenagers in learning coding. Coding has quickly gained popularity in recent years. However, it has been around for a long time.

The first modern computer coders in the United States were six women, according to the World Economic Forum. They worked for the military in the 1940s. Nathan Ensmenger is a professor of informatics and computing at Indiana University. In a 2009 study, Ensmenger said people saw coding as a women's job back then. At that time, "'coding' was a 'static' process that could be performed by a low-level of clerical worker," Ensmenger said.

Ensmenger says that many people today assume coders are male. One reason for this could be aptitude tests. Employers hired based on tests in the 1950s and 1960s, according to the Smithsonian Magazine. These tests favored "male" personality traits. Women now make up 24 percent of the computing workforce, according to 2016 research from consulting company Accenture. The home computer became popular in the 1980s. Computer advertising at that time was aimed at young men. This widened the gender gap. Kathryn Parsons is the founder of the coding education group DECODED. "The number of women in technology is worryingly low," Parsons said. "Women don't see technology as aspirational but it's actually very empowering to have that vocabulary."

Organizations are now focusing on how to get everyone into coding. In 2013, the Bureau of Labor Statistics said that there would be 1.4 million computer-science-related jobs by 2020. There would only be 400,000 workers who could fill those jobs. What is keeping people out of coding? One of the reasons is a lack of education. Deborah Seehorn is the chair of the board of the Computer Science Teachers Association. "If [employers] don't help nurture this group of students coming through school now, they're not going to have future employees," Seehorn said.

Many think coding will be important in future jobs. Kim Wilkens is a Virginia teacher. She sees coding as important now. “[Computer science is] running our lives now, and ... it enhances what’s possible in the classroom,” Wilkens said. Some have worked to bring coding directly to students. Tim Bjarin is the president of technology analytics firm Creative Strategies Inc. He thinks coding should be a mandatory school subject. “[It] would also help [students] gain a greater understanding of how technology is designed ... this type of knowledge could be important in a future working environment,” Bjarin said.

Engineer Basel Farag disagrees. He says that people shouldn’t have to learn coding. He says coders should like the subject. “I do believe that engineering and programming are important skills. But only in the right context, and only for the type of person willing to put in the necessary blood, sweat and tears to succeed,” he said. “I would no more urge everyone to learn to program than I would urge everyone to learn to plumb.”

What do you think? To what extent are you interested in a tech career? Would you like to learn how to code? Do you think coding should be a mandatory school subject? Or should students get a choice? What role does coding play in our lives?

Background (900-1000L):

Karlie Kloss first gained fame as a supermodel, and now she can put “entrepreneur and coder” at the top of her resume. Many people — from celebrities to teachers to engineers — believe coding is an important skill for the future. They are trying to bring the subject straight to the future of the workforce: young people.

Kloss started a free coding camp for girls called Kode with Klossy. On March 16, 2018, the company announced it will expand. It will now host 50 camps in 25 cities in the United States in 2018. When Kloss founded this company in 2015, her goal was to inspire teenage girls to pursue careers in the tech industry. “Too few girls are encouraged to pursue STEM at an early age, so we set out to provide more opportunities to learn code and change the way it’s taught — by making it fun, collaborative and creative,” Kloss told CNET. Kloss is one of many people supporting children and teenagers in mastering coding. Coding has quickly gained popularity in recent years. However, it has actually existed for a long time.

The first modern computer coders, or programmers, in the U.S. were six women, according to the World Economic Forum. They worked for the military in the 1940s, during World War II. Nathan Ensmenger is a professor of informatics and computing at Indiana University. In a 2009 study, Ensmenger said people saw coding as a women’s job at this time. Back then, “‘coding’ was a ‘static’ process that could be performed by a low-level of clerical worker,” Ensmenger said.

However, Ensmenger says that many people today assume coders are male. One reason for this could be aptitude tests. Employers hired based on tests that favored “male” personality traits in the 1950s and 1960s, according to the Smithsonian Magazine. Women now make up 24 percent of the computing workforce, according to 2016 research from consulting company Accenture.

The home computer became popular in the 1980s. Computer advertising at that time skewed towards young men. This widened the gender gap. Kathryn Parsons is the founder of London-based coding education group DECODED. “The number of women in technology is worryingly low,” Parsons said. “Women don’t see technology as aspirational but it’s actually very empowering to have that vocabulary — that language and knowledge. Technology skills are hugely important for the future.”

Education organizations are now focusing on how to get girls — and all students — into coding. In 2013, the Bureau of Labor Statistics projected that there would be 1.4 million computer-science-related jobs by 2020. There would only be 400,000 workers qualified to fill those jobs. So, what is keeping people out of coding? One of the culprits is a lack of education. “If [employers] don’t help nurture this group of students coming through school now, they’re not going to have future employees,” said Deborah Seehorn, chair of the board of the Computer Science Teachers Association.

Many think coding will be critical in future jobs. Kim Wilkens is a Virginia teacher. She views coding as critical, period. “[Computer science is] running our lives now, and ... it enhances what’s possible in the classroom,” Wilkens said in an interview with Slate. To fill this need, some have worked to bring coding directly to students. Tim Bajarin is the president of technology analytics firm Creative Strategies Inc. He believes coding should be a mandatory school subject. “[It] would also help [students] gain a greater understanding of how technology is designed ... this type of knowledge could be important in a future working environment,” Bajarin said in an interview with Time magazine.

Engineer Basel Farag disagrees. He argues that enforcing coding lessons for everyone is a mistake. He thinks only people who are passionate about the subject should take it on. “I do believe that engineering and programming are important skills. But only in the right context, and only for the type of person willing to put in the necessary blood, sweat and tears to succeed,” he wrote in an article for TechCrunch. “I would no more urge everyone to learn to program than I would urge everyone to learn to plumb.”

What do you think? To what extent are you interested in a career in technology? Would you like to learn how to code? Do you think coding should be a mandatory school subject? Or should students get a choice? What role does coding play in our lives?

Background (1100-1200L):

Karlie Kloss first gained fame as a supermodel, and now she can put “entrepreneur and coder” at the top of her resume. Many people — from celebrities to teachers to engineers — believe coding is an important skill for the future, and they are trying to bring the subject straight to the future of the workforce: young people.

On March 16, 2018, Kloss’s free coding camp for girls, called Kode with Klossy, announced it will expand into 50 camps in 25 cities in the United States in 2018. When Kloss founded this company in 2015, her goal was to inspire teenage girls to pursue careers in the tech industry.

“Too few girls are encouraged to pursue STEM at an early age, so we set out to provide more opportunities to learn code and change the way it's taught — by making it fun, collaborative and creative,” Kloss told CNET. Kloss is one of many people supporting children and teenagers in mastering coding. Though coding has rapidly gained popularity in recent years, it has actually existed for a long time.

The first modern computer coders, or programmers, in the U.S. were six women, according to the World Economic Forum. They worked for the military in the 1940s, during World War II, when people perceived coding as a women's job, according to a 2009 study by Nathan Ensmenger, a professor of informatics and computing at Indiana University. At that time, “‘coding’ was a ‘static’ process that could be performed by a low-level of clerical worker,” Ensmenger said.

However, Ensmenger says that many people today assume coders are male. One reason for this could be that employers hired based on aptitude tests that favored “male” personality traits in the 1950s and 1960s, according to the Smithsonian Magazine. Women now make up 24 percent of the computing workforce, according to 2016 research from consulting company Accenture. In the 1980s, the home computer became popular, but computer advertising skewed towards young men, widening the gender gap. “The number of women in technology is worryingly low,” said Kathryn Parsons, founder of London-based coding education group DECODED. “Women don't see technology as aspirational but it's actually very empowering to have that vocabulary — that language and knowledge. Technology skills are hugely important for the future.”

Education organizations are now focusing on how to get girls — and all students — into coding. In 2013, the Bureau of Labor Statistics projected that there would be 1.4 million computer-science-related jobs by 2020 — and that there would only be 400,000 workers qualified to fill those jobs. So, what is keeping people out of coding? One of the culprits: a lack of education. “If [employers] don't help nurture this group of students coming through school now, they're not going to have future employees,” said Deborah Seehorn, chair of the board of the Computer Science Teachers Association.

Many view coding as critical to future employability. Virginia teacher Kim Wilkens views it as critical, period. “[Computer science is] running our lives now, and ... it enhances what's possible in the classroom,” said Wilkens in an interview with Slate. To address this need, some have worked to bring coding directly to students. Tim Bjarin, the president of technology analytics firm Creative Strategies Inc., believes coding should be a mandatory school subject. “[It] would also help [students] gain a greater understanding of how technology is designed ... this type of knowledge could be important in a future working environment,” Bjarin said in an interview with Time magazine.

Engineer Basel Farag disagrees, and argues that enforcing coding lessons for everyone is a mistake. He thinks only people who are passionate about the subject should take it on. “I do believe that engineering and programming are important skills. But only in the right context, and only for the type of person willing to put in the necessary blood, sweat and tears to succeed,” he

wrote in an article for TechCrunch. “I would no more urge everyone to learn to program than I would urge everyone to learn to plumb.”

What do you think? To what extent are you interested in a career in technology? Would you like to learn how to code? Do you think coding should be a mandatory school subject, or should students get a choice? What role does coding play in our lives?

Poll: Do you think coding should be taught as a part of every school subject?

1. Yes. It will allow students to become fluent in coding, become more engaged in their subjects and see the possibilities for coding.
2. Maybe. While this idea offers a way to become literate in coding, it could take the focus away from other subjects and skills.
3. No. Other subjects are just as important, and having coding in every class would hurt each student’s ability to master other subjects.
4. No. Coding is like any other skill, and only those excited about it should learn how to do it.

Research Links:

[The First 1940s Coders Were Women — So How Did Tech Bros Take Over?](#)

Article: The History channel studies coding’s origins and the original programmers, and how the field became increasingly male-dominated throughout the decades.

[Please Don’t Learn to Code](#)

Opinion: An engineer argues why not everyone should learn to code, and why it is important only people passionate about the field should pursue it.

[Reading, Writing, ‘Rithmetic, ‘Rogramming](#)

Article: Slate discusses how ScratchEd wants to introduce coding into all subjects, and how different programs try to show the possibilities of what coding can create.

[Karlle Kloss Teaches Teenage Girls How to Code](#)

Opinion: The New York Times describes Kode with Klossy and how the experience has helped young girls and women learn to code.

[The Next Big Blue-Collar Job Is Coding](#)

Opinion: An argument that programming may transition away from creating the next Mark Zuckerberg to becoming the next blue-collar industry.

[The Economic Importance of Teaching Coding to Teens](#)

Article: The Atlantic emphasizes the importance of teaching teenagers how to code, looking at the STEM job market and the current failings of how instructors teach programming.

[Why Basic Coding Should Be a Mandatory Class in Junior High](#)

Opinion: An argument for why coding is an essential skill that children need to earn in skill in order to be successful in adulthood, and why junior high is the time to learn it.

Number Crunch: 89

[The percentage of coding jobs that require a Bachelor's degree, according to research from Burning Glass Technologies.](#)

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