



# Educator Toolkit

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# ABOUT MONTH OF CODE

Dear Educators,

Along with the Holidays, across the country the 1st week in December is known for the global [‘Hour of Code’](#) campaign, during which both children and adults are encouraged to try their hand at coding.

In Chicago, we are encouraging every child (and their family) not only to consume, but to create the apps, games and communications of tomorrow – and we are thrilled that CPS is a part of our initiative.

On December 4th, in partnership with CPS, [Chicago City of Learning](#) is launching Mayor Rahm Emanuel’s Month of Code, a month in which we’re making it easy and fun for children (and adults) to try their hand at coding - the necessary language of today and tomorrow.

**Running from December 4<sup>th</sup> – and continuing through the winter break until January 8<sup>th</sup>,** we’re encouraging students to get started with coding through a series of on-line coding activities provided by Chicago City of Learning that can be completed by kids and families at home, in the community, and at schools like yours.

CPS’ Computer Science for All and Family and Community Engagement 2 teams, for example, are organizing a school-based challenge and Winter Break events at Parent University sites, with Code 60+ digital badges awarded to all who complete the projects and with prizes for the students and schools with the most participation.

We can’t wait to see how many hours this year’s students will spend coding, and we hope that this packet will provide you with the tools your classroom needs in order to participate in Month of Code!

# FREQUENTLY ASKED QUESTIONS

## What is Month of Code?

In partnership with CPS, Chicago City of Learning (CCOL) is launching Month of Code, a month in which we're encouraging students (and their families) to engage in computer science and coding activities – the necessary language of today and tomorrow.

## What is coding? And why will students like it?

Everything digital is powered by coding, so when students start coding, they become empowered to program their own digital experiences.

Coding is the language of the future – and it's fun! Whether your students want to learn how to *program a robot, create an animation, design an emoji, construct a digital newspaper, or come up with their unique projects*, we have exciting coding activities for everyone!

## How does this benefit my students?

Learning and practicing computer science comes with many advantages:

- Students develop sophisticated life skills, as coding activities encourage *critical thinking, problem solving* and *creativity*.
- Learning coding helps students better prepare for *technological internship and job opportunities* in the future.
- Students can *follow their curiosity* and *explore* new possibilities that coding provides.
- Coding *empowers* students to not just be 'users' of technology, but *become creators*.
- Not only is coding fun and educational, but we're also offering students **prizes!** For every hour spent coding, students will earn a **Code 60+ digital badge**, and students with the highest participation will **win iPads!**

## What are the incentives for teachers?

We invite teachers to organize classroom coding activities, where students can work together to log more hours of code! While we're offering many incentives for students to participate, including digital badges and high-tech prizes, we also have **prizes for teachers!** On our site, we have an interactive city wide map, so when students and teachers participate in coding activities, **your school will get on the grid!** CPS schools with the highest participation will win **Chromebooks** so that students can continue their digital learning even after Month of Code is over.

## Does this challenge work on different devices?

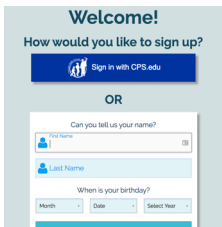
Yes, you can access Chicago City of Learning and the Month of Code challenges from any device, but you will need to know how to take a screenshot on the device you are using. In the "Resources" section of the Month of Code activities that require screenshots, there are links to instructions for how to take them on different devices. *You might have to help your students with this important step.*

# HOW TO PARTICIPATE

1.

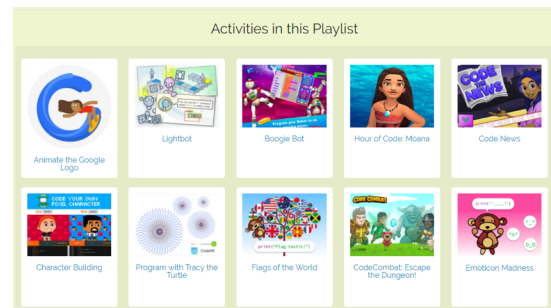
Have students LOG INTO Chicago City of Learning (CCOL) using their **cps.edu** email at [chicagocityoflearning.org/signup](http://chicagocityoflearning.org/signup)

*Note: if students do not have a cps.edu email, they can add their cps student ID to their account. You may also want to maintain a class list of emails and passwords so that you can help your students log into CCOL in the future!*



2.

Several coding activities will be waiting for your students when they visit or complete their CCOL portfolio.



3.

As students complete coding activities on CCOL, they earn the Code60+ digital badge. Each badge counts as an hour of code for your school.



\*See how your school is doing by looking at the map at [chicagocodes.org](http://chicagocodes.org).

4.

The challenge continues through Winter Break, and we will let you know how students can continue coding through the holidays. On January 8<sup>th</sup>, we will announce the school and individual winners!



## SHARE OUR

Please help us **spread the word** about Month of Code by sharing our flyer online and around your school. *Click here to [download the PDF version](#).*

# Mayor Emanuel's Month of Code

In partnership with  
**CODE60+**

**December 4, 2017-January 7, 2018**

Starting with CS Ed Week, Dec 4-10, 2017,  
Code60+, powered by Chicago Public School's CS4All, builds  
on the national Hour of Code movement. Moving to the  
next level, this month-long challenge is designed to bring  
Computer Science Education to life across our district.

**Participate and compete for prizes!**

Raffle prizes such as **brand new** iPads, Chromebooks, Code60+  
Swag for Students, Teachers, and Parents  
&  
for 2 lucky schools, a Chromebook cart with  
36 Chromebooks!

Thanks to generous donations from our partners and  
the support of grant foundations.

For more information, go to [www.CS4All.io](http://www.CS4All.io)



# SPREAD THE WORD!

**FOLLOW US** on social media:

## Chicago City of Learning

Facebook: @[ChicagoCityOfLearning](#)

Twitter: @[ExploreChi](#)

Instagram: @[chicagocityoflearning](#)

## Chicago Public Schools

Facebook: @[ChicagoPublicSchools](#)

Twitter: @[ChiPubSchools](#)

Instagram: @[ChiPubSchools](#)

**SHARE** with hashtags: #MonthofCode #ChicagoCodes

## IDEAS TO SHARE:

### FACEBOOK:




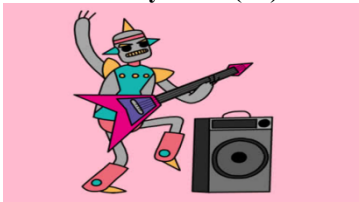
- *Interested in programming a robot, creating an animation, or designing your own computer program? Visit @ChicagoCityOfLearning and register for #MonthofCode to learn how to code, earn digital badges and win prizes!*
- *Want to learn the language of the future? Register for #MonthofCode at @ChicagoCityOfLearning to try your hand at coding and win high-tech prizes!*

### TWITTER:





- *@ExploreChi offers over 80 online coding activities for FREE! The more you code, the more badges you earn – and you can win prizes! #ChicagoCodes #MonthofCode*
- *@ChiPubSchools start coding with #MonthofCode and get your school on the grid! Learn how to code, earn badges, and win prizes! #ChicagoCodes*

# FOR YOUR REVIEW:




## FEATURED CHALLENGES AND STANDARDS

SNAP/Scratch	
<p><b>Animate Your Favorite Word</b></p>  <p>Animate the letters of your name.  <a href="http://ccol.io/5m06s">http://ccol.io/5m06s</a></p>	<p><b>Key CSTA Standards</b></p> <p><b>3A-AP-18:</b> Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p> <p><b>3A-AP-23:</b> Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.</p>
<p><b>Make it Fly with Scratch</b></p>  <p>Learn how to make your own flying character.  <a href="#">Link to Scratch</a></p>	<p><b>Key CSTA Standards</b></p> <p><b>1A-AP-14:</b> Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.</p> <p><b>2-AP-12:</b> Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p><b>3A-AP-23:</b> Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.</p>
<p><b>Make Music with Scratch</b></p>  <p>Make an interactive music project.  <a href="#">Make Music with Scratch</a></p>	<p><b>Key CSTA Standards</b></p> <p><b>3A-AP-16:</b> Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions.</p> <p><b>3A-AP-18:</b> Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p>
<p><b>Binary Hero (6+)</b></p>  <p>Make a game to play scrolling notes.  <a href="#">Binary Hero</a></p>	<p><b>Key CSTA Standards</b></p> <p><b>1B-AP-10:</b> Create programs that include sequences, events, loops, and conditionals.</p> <p><b>2-AP-12:</b> Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p>



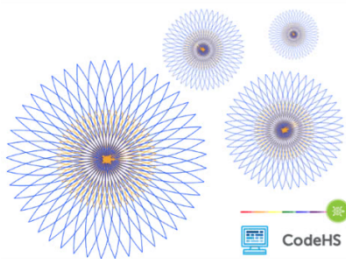
<p style="text-align: center;"><b>Create a Story</b></p>  <p style="text-align: center;">Tell a story with characters and backgrounds! <a href="#">Interactive Story</a></p>	<p style="text-align: center;"><b>Key CSTA Standards</b></p> <p><b>1A-AP-14:</b> Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.</p> <p><b>3A-AP-16:</b> Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions.</p> <p><b>3A-AP-18:</b> Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.</p>
<p style="text-align: center;"><b>Digital Divas Dance Studio</b></p>  <p style="text-align: center;">Help Roshanna teach the DYDivas to Dance No link - Built into CCOL</p>	<p style="text-align: center;"><b>Key CSTA Standards</b></p> <p><b>1A-AP-14:</b> Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.</p> <p><b>3A-AP-16:</b> Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p> <p><b>3A-AP-23:</b> Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.</p>
<b>IPAD Focus</b>	
<p style="text-align: center;"><b>Lightbot</b></p>  <p style="text-align: center;">Use programming logic to solve puzzles <a href="http://lightbot.com/flash.html">http://lightbot.com/flash.html</a></p>	<p style="text-align: center;"><b>Key CSTA Standards</b></p> <p><b>3A-AP-18:</b> Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p> <p><b>3A-AP-23:</b> Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.</p>
<p style="text-align: center;"><b>Boogie Bot</b></p>  <p style="text-align: center;">Program your dancing robot <a href="http://www.nybleapps.com/boogie-bot/">http://www.nybleapps.com/boogie-bot/</a></p>	<p style="text-align: center;"><b>Key CSTA Standards</b></p> <p><b>1B-AP-10:</b> Create programs that include sequences, events, loops, and conditionals.</p> <p><b>2-AP-12:</b> Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p>



<p><b>Moana: WayFinding with Code</b></p>  <p>Help Moana navigate her ship. (code.org)</p>	<p><b>Key CSTA Standards</b></p> <p><b>1B-AP-10:</b> Create programs that include sequences, events, loops, and conditionals.</p> <p><b>2-AP-12:</b> Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p> <p><b>3A-AP-23:</b> Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.</p>
<p><b>JavaScript</b></p>	
<p><b>Bestie Greeting Card</b></p>  <p>Code a greeting card with JavaScript! <a href="https://hourofcode.com/vidcard">https://hourofcode.com/vidcard</a></p>	<p><b>Key CSTA Standards</b></p> <p><b>2-AP-12:</b> Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p><b>3A-AP-16:</b> Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions.</p> <p><b>3A-AP-18:</b> Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.</p> <p><b>3A-AP-23:</b> Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.</p>
<p><b>Code News</b></p>  <p>Code a News Video <a href="https://hourofcode.com/vidnews">https://hourofcode.com/vidnews</a></p>	<p><b>Key CSTA Standards</b></p> <p><b>2-AP-12:</b> Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p><b>3A-AP-16:</b> Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions.</p> <p><b>3A-AP-18:</b> Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p> <p><b>3A-AP-23:</b> Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.</p>
<p><b>Character Building</b></p>  <p>Code your very own pixel character! <a href="http://schoolofcode.io/game-avatar">http://schoolofcode.io/game-avatar</a></p>	<p><b>Key CSTA Standards</b></p> <p><b>1A-AP-14:</b> Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.</p> <p><b>3A-AP-16:</b> Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p> <p><b>3A-AP-23:</b> Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.</p>

## Python

### Program with Tracy the Turtle (6+)



Learn to Program by drawing shapes  
<https://hourofcode.com/codehsturtle>

### Key CSTA Standards

**1A-AP-14:** Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.

**1B-AP-10:** Create programs that include sequences, events, loops, and conditionals.

**3A-AP-18:** Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.

**3A-AP-23:** Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.

### Flags of the World (6+)



Draw flags from around the world!  
<https://hourofcode.com/grokflags>

### Key CSTA Standards

**1A-AP-14:** Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.

**2-AP-12:** Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.

**1B-AP-15:** Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.

**3A-AP-23:** Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.

### CodeCombat: Escape the Dungeon!



Code your way through Kithgard Dungeon  
<https://hourofcode.com/cocom>

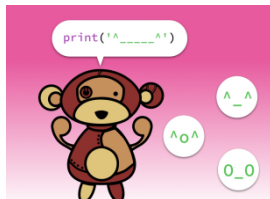
### Key CSTA Standards

**1A-AP-14:** Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.

**1B-AP-15:** Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.

**3A-AP-23:** Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.

### Emoticon Madness



Code your own emoticon  
<https://groklearning.com>

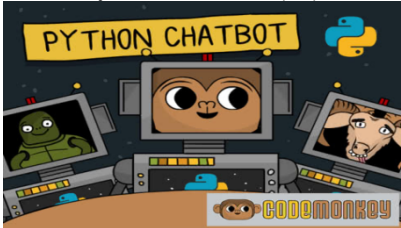

### Key CSTA Standards

**1A-AP-14:** Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.

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**1B-AP-15:** Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.

<p><b>Karel the Robot</b></p>  <p>Help Karel do her job  <a href="https://hoc.nclab.com/karel/">https://hoc.nclab.com/karel/</a></p>	<p><b>Key CSTA Standards</b></p> <p><b>1A-AP-14:</b> Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.</p> <p><b>1B-AP-10:</b> Create programs that include sequences, events, loops, and conditionals.</p> <p><b>1A-AP-11:</b> Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.</p>
<p><b>Python Chatbot (6+)</b></p>  <p>Code a chatbot that can interact with users.  <a href="https://www.playcodemonkey.com">https://www.playcodemonkey.com</a></p>	<p><b>Key CSTA Standards</b></p> <p><b>1B-AP-11:</b> Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.</p> <p><b>3A-AP-18:</b> Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p>
<p><b>Phone Apps</b></p>	
<p><b>Build an iPhone Game</b></p>  <p>Build an iPhone game in your browser  <a href="https://hourofcode.com/makeschool">https://hourofcode.com/makeschool</a></p>	<p><b>Key CSTA Standards</b></p> <p><b>2-AP-12:</b> Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p><b>1B-AP-12:</b> Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.</p> <p><b>3B-AP-22:</b> Modify an existing program to add additional functionality and discuss intended and unintended implications (e.g., breaking other functionality).</p>
<p><b>Tim Selfie App</b></p>  <p>Create an App to take Selfies with Tim  <b>Challenge PowerPoint</b></p>	<p><b>Key CSTA Standards</b></p> <p><b>1B-AP-12:</b> Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.</p> <p><b>3A-AP-18:</b> Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.</p> <p><b>1B-AP-15:</b> Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p>

## Balloon Popping Game



Code a Balloon Popping Android Game!

[Challenge PowerPoint](#)

## Key CSTA Standards

**1B-AP-10:** Create programs that include sequences, events, loops, and conditionals.

**2-AP-12:** Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.

**3B-AP-13:** Illustrate the flow of execution of a recursive algorithm.

**1A-AP-11:** Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.



## ABOUT CHICAGO CITY OF LEARNING

The first of its kind in a major U.S. city, Chicago City of Learning (CCOL) is a groundbreaking initiative that joins together learning opportunities for young people in a way that allows them to think about, pursue and develop their interests.

Launched in the summer of 2013 by Mayor Rahm Emanuel, CCOL has grown into a year-round initiative that allows young people to discover, engage in and have evidence for out-of-school learning opportunities they pursue beyond the classroom.

CCOL connects students to a network of over 100 citywide youth serving organizations and is supported by a digital infrastructure that customizes the experience. The CCOL platform provides thousands of searchable in-person opportunities, online activities and individual portfolios that document and track student accomplishments.

Every Chicago Public School student has a CCOL portfolio – they just need to activate it and start exploring! And finding things to do is easy – just go to “Explore Activities”.

The platform provides customized recommendations to students based on age, location and interest. This informal learning is then captured and students can use their online portfolio to help them as they transition into academic and professional life.

We know there are opportunity gaps that exist in Chicago, and our goal is to narrow those gaps so youth can pursue their true passions.

We also aim to create a smarter city that will learn from the gaps we identify and work to more intelligently and collaboratively resource our neighborhoods



# CONTACT INFORMATION

As you help your students get started with Month of Code, the Chicago City of Learning and [Computer Science For All](#) teams are here to support you.

We want to hear about your experience in the classroom and how we can make it even easier for your students to start coding!

Please reach out with questions at:

- [Chicago@CityofLearning.zendesk.com](mailto:Chicago@CityofLearning.zendesk.com)
- [CS4all@cps.edu](mailto:CS4all@cps.edu)

Happy Coding!

Chicago City of Learning