

Girls Code Club

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&& our wonderful volunteers!

INTRODUCTIONS

Going around the room, tell us your name and why you signed up for Girls Code Club. Coaches will start.

GROUND RULES: WHAT TO EXPECT

Girls Code Club is an inclusive environment where everyone should feel comfortable learning and asking questions! Our hope is that each and every one of you feel supported as you're learning to code. If at any point you are uncomfortable, please let one of your coaches know and we'll do our best to fix it!

In order to make sure everyone is able to learn and have fun, there are a couple rules:

- Show kindness to the other coders.
 - Making fun of, or being mean to, another student is absolutely not tolerated. If this happens, we will contact parents.
- Try your best, and learn from your mistakes.
 - NO question is a bad question!
 - When you're coding, if you get stuck we're here to help! Just raise your hand and someone will be there for you.
- Be an active listener and ask questions.
 - Please raise your hand if you *do* have a question, and we'll call on you as soon as we can.
- Encourage your peers and help them learn.
 - If someone is stuck but you understand what's going on, feel free to help! This is called *pair programming*.

ICE BREAKER: SORTING

In code, we sometimes have things called sorting algorithms. Algorithms are a set of instructions.

What does it mean to sort something?

The Game: Each person is going to get a piece of paper with an animal on it!

Goal: Sort yourselves from largest to smallest animal.

Rules:

- You cannot say any words, or make any sounds.
- You cannot show anyone your piece of paper.

You have 5 minutes... GO!

INTERNET SAFETY

Internet safety is SO important! Once you put something online, it can be up there forever. Because of this, we shouldn't be putting anything personal online.

What is an example of personal information that you shouldn't put on the internet?

Internet Safety Video -

<https://jr.brainpop.com/artsandtechnology/technology/internetsafety/>

Internet Safety Quiz #1 -

<https://jr.brainpop.com/artsandtechnology/technology/internetsafety/easyquiz/>

Internet Safety Quiz #2 -

<https://jr.brainpop.com/artsandtechnology/technology/internetsafety/hardquiz/>

INTERNET SAFETY: EXERCISE

Come up with a **username** that we can use for our CodePen projects. A username can be anything you want it to be, but shouldn't include any personal information.

Do NOT include your:

- name
- nickname
- age
- birthday
- address
- school or grade/level

You COULD include your:

- pet's name
- favorite animal
- favorite number or color
- what you want to be when you grow up
- a username you already use for the internet

Write your username on the back of your nametag!

You will be using this username for naming any CodePen's you create or to replace your actual name when we're coding. The point of a username is that you know who you are, but some random person on the internet won't.

Once you write your username, raise your hand and share it with the group!

Emma's username: **blue_f0x_C0der**

SHERO: RADIA JOY PERLMAN



Radia Perlman
1951 - Present
Computer Scientist, Mother of the Internet

The world would be a better place if more engineers, like me, hated technology. The stuff I design, if I'm successful, nobody will ever notice. Things will just work, and will be self-managing.

<https://www.facebook.com/watch/?v=834020684012360>



Jadia Joy Perlman is our SHEro of the month!

Perlman is a Jewish woman from New Jersey. Something that is really cool about her is that *she's still alive today!* In school, she played the piano and french horn, and

was really good at math. When she decided to pursue programming in college at MIT, Perlman was the only girl in her class. She worked with one of her professors to create a kid-friendly programming language and is considered to be a pioneer in teaching young children how to code. Her work inspired a lot of awesome groups like Girls Code Club!

Her Spanning Tree Protocol helped to support and reinforce networks as well as their security. Networks allow computers to talk to each other and share information. If the network is down, you can't do anything online!

Because of her protocol, and other work, she is often called "The Mother of the Internet", but she doesn't like this title. Her reasoning is that "the internet was not invented by one individual... I did indeed make some fundamental contributions to the underlying infrastructure, but no single technology really caused the internet to succeed." What is something you learned and/or liked about Radia?

<https://www.theatlantic.com/technology/archive/2014/03/radia-perlman-dont-call-me-the-mother-of-the-internet/284146/>



<https://www.thefamouspeople.com/profiles/radia-perlman-48491.php>

TYPING 101

Typing can be really tricky, but you need to do a lot of it when you're coding! We're going to start stretching our coding fingers with some fun typing games.

These games are already up on your laptop - please do not open any games that you are not being asked to play. If a coach or volunteer sees you on a website or game you're not supposed to be on, you'll be asked to stop playing (we have some code for you to try out instead).

Practicing lowercase and uppercase letters.

Lowercase letters are pretty easy! To type one, you just click the letter on your keyboard. To make an uppercase, or capital letter, you need to press and hold the "shift" key on your computer.

Keyboard Climber 2 -

<https://www.tvokids.com/school-age/games/keyboard-climber-2>

Speed typing (letters).

Flappy Typing - https://www.kidztype.com/flappy-typing_be35d9cfe.html

Speed typing (words).

Keyboard Ninja (all letters) - <https://www.typing.com/student/game/keyboard-ninja>

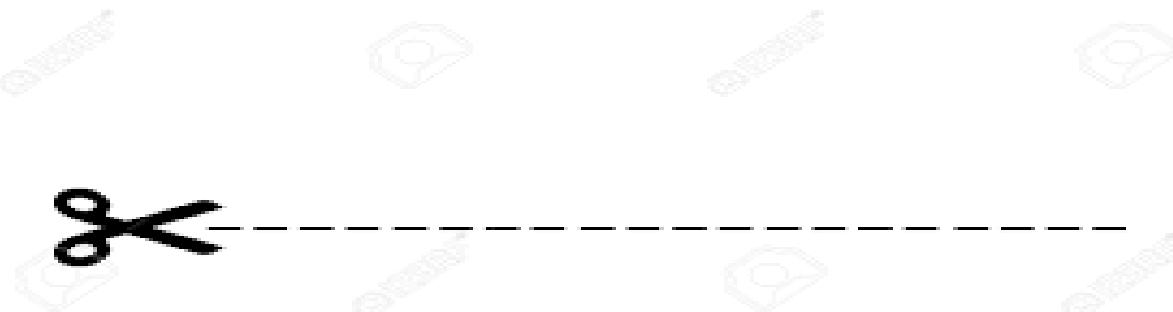
ADVANCED: HERO PLAQUE

Each year, we have the opportunity to get a plaque created in the Lancaster Science Factory that will be dedicated to this year's Girls Code Club! Last year, we created a plaque for Margaret Hamilton.

Because a lot of you are returning coders, you are going to be able to choose who we create a plaque for this year. Here are our options!

- **Hedy Lamarr** - an actress who laid the groundwork for WiFi and GPS
- **Carol Shaw** - the first female video game developer
- **Anita Borg** - focused on women in technology. She created organizations that helped women discover and move to technology, and also supported women already in the field.
- **ENIAC Women** - 6 women who developed on the ENIAC machine, calculating missile trajectories during war
- **Galdys West** - used her math skills to perfect GPS and arrival times by accounting for the curvature (roundness) of the Earth
- **Shaffi Goldwasser** - a professional in cyber security, created security questions to help protect your sensitive information

These are all very wonderful and inspirational women! Once you've chosen who you'd like to have a plaque made for, please write their name on the line below. A coach or volunteer will come around and collect your response.



I Vote For => _____

ADVANCED: VARIABLES

A variable stores information so you can use it later. The value of your variable can change throughout the course of your program, but they have to stay the same type. The variable type could be a:

- Number
- String (text)
- Boolean (true or false, yes or no)

When you're creating a variable in your code, it's called a **var** (short for variable) in JavaScript. You can also use **const**, short for constant, to tell your code that the variable will never change. Example: var apples = 3

In Python, you don't need any of that!

JavaScript

var apples = 3

Python

apples = 3

How many apples do we have?

What if we change it like this:

apples = 5 + 3

How many apples do we have now?

You can also create your variable, and use its value in math! This example will tell us how many pets Emma has. What does **pets** equal?

cats = 3

dogs = 1

geckos = 1

pets = cats + dogs + geckos

Try it yourself! Use the interactive code editor to tell us how many pets you have. If you don't have any pets, you could tell us how many pieces of clothing you're wearing right now (example: shirt, pants, shoes, socks, glasses, hat).

https://www.w3schools.com/python/python_variables.asp

Disclaimer: The above link will direct us to W3Schools. This website is a useful tool for learning different languages and includes a code editor where you can create code and play around with variables. *This website does not save anything you type in an editor.* It's purely for practice!

What do you think happens if we try to add strings together? Remember that strings are text on a screen or page. We tell our code that it's a string by adding double-quote marks before and after the word.

```
color = "green"
food = "bean"
word = color + food
```

What is **word**? What if I wanted to put a space between "green" and "bean"?

Exercise: Using integers and strings, create the following sentences.

1. Emma has 5 pets.
2. The year is 2022.
3. There are 6 colors in the rainbow.
4. Girls Code Club has 9 sessions.
5. If my parents were going to adopt a cat tomorrow, I would name it ____.
6. My favorite thing I did this summer was ____.
7. I want to learn ____ in Girls Code Club this year.
8. My favorite food is ____.
9. My favorite number is ____.
10. I know the following coding languages: ___, ___, ____