

# Let's Scratch and Have Fun

## Beginner IT Camp

No experience needed!



## Hands-on IT – STEM<sup>4</sup> Workshops<sup>5,6</sup> - 2022:

1. IoT (Internet of Things) using Raspberry Pi and Scratch for 5th-6th Graders<sup>7</sup>. Parents/Guardians are welcome!<sup>8</sup>

- June 20-23, 8:30 AM – 10:00 AM (Mon.–Thur., 4-day), \$50 total, Classroom Building (CB104)

2. IoT (Internet of Things) using Raspberry Pi and Scratch for 7th-8th Graders<sup>7</sup>. Parents/Guardians are welcome!<sup>8</sup>

- June 20-23, 10:30 AM – 12:00 PM (Mon.–Thur., 4-day), \$50 total, Classroom Building (CB104)

3. IoT (Internet of Things) using Raspberry Pi and Scratch for 9th-12th Graders<sup>7</sup>. Parents/Guardians are welcome!<sup>8</sup>

- June 27-30, 8:30 AM – 10:00 AM (Mon.–Thur., 4-day), \$50 total, Classroom Building (CB104)

4. Webpage Design for 5th-10th graders<sup>7</sup>. Parents/Guardians are welcome!<sup>8</sup>

- June 27-30, 10:30 AM – 12:00 PM (Mon.–Thur., 4-day), \$50 total, Classroom Building (CB104)

**How to apply? Please visit [www.se.edu/ITcamp](http://www.se.edu/ITcamp) for more information.**

**Selection of participants will begin on May 20 and scholarships are available!**



Scratch<sup>1</sup>: A block-based drag-and-drop programming language by MIT – <https://scratch.mit.edu>  
Image credit<sup>2</sup>: <https://projects.raspberrypi.org/en/projects/lamp-web-server-with-wordpress>  
Image credit<sup>3</sup>: <https://projects.raspberrypi.org/en/projects/button-switch-scratch-pi>  
STEM<sup>4</sup>: Science Technology Engineering Mathematics

Each workshop<sup>5</sup>: **No prior IT experience needed**  
Each workshop<sup>6</sup>: kids (20 seats) and parents/guardians (10 seats)  
Grader<sup>7</sup>: for a student entering these grades in Fall 2022.  
Parents/Guardians<sup>8</sup>: **FREE OF CHARGE**

**H**ow did they get started? "... I wanted to make something that was fun for myself and my sisters. I wrote this little program ..."  
 – Mark Zuckerberg (Founder of Facebook)

With the technologies at our fingertips today, it has never been easier for almost anyone to create fun and interesting games and STEM projects, even with just a mobile device. Let's explore the new technologies out there and discover your untapped talents, so that you can enrich your life and anyone around you.

**Summer Hands-on IT-STEM Workshops:**

| Contents* (IoT)   | Workshops (WS) |      |      |
|---|----------------|------|------|
|   | WS-1           | WS-2 | WS-3 |
| 1. Introducing IoT (Internet of Things), Raspberry Pi, and Scratch 3  | ✓              | ✓    | ✓    |
| 2. Game Programming - Scratch 3   | ✓              | ✓    | ✓    |
| 3. Exploring Scratch Extensions   | ✓              | ✓    | ✓    |
| 4. Getting to Know your Raspberry Pi<br>Take a brief guided tour of your new computer   | ✓              | ✓    | ✓    |
| 5. Virtual IT Field Trip with Q & A<br>Choctaw Nation – IT Dept.  | ✓              | ✓    | ✓    |
| 6. Special Speaker: The IT Professional<br>A day in the life of an IT Professional and Q&A  | ✓              | ✓    | ✓    |
| 7. Starting your Raspberry Pi   | ✓              | ✓    | ✓    |
| 8. Hands-on with the Sense HAT<br>Use the sensors and LED matrix display of this add-on board   | ✓              | ✓    | ✓    |
| 9. Hands-on IoT Devices with Scratch<br>Use the things: LEDs, Sensors (soil moisture, temperature, humidity, distance, ... *), *: depends on the class progress |                | ✓    | ✓    |
| 10. Programming with Python (will be briefly covered).  |                |      | ✓    |
| 11. Let's Stargate the Present and the Future   | ✓              | ✓    | ✓    |

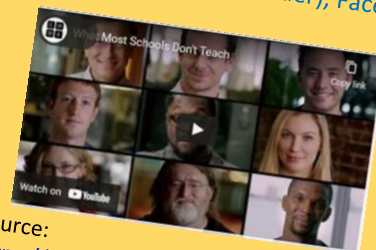
| Contents* (Webpage)  | Workshop-4 |
|--|------------|
| 1. Using Basic HTML Tags<br>Explore the basic HTML tags, tables, navigation menu                                 | ✓          |
| 2. Using the CSS (Cascading Style Sheet)<br>Explore the basic CSS style rules, ... etc.                          | ✓          |
| 3. Designing for the Mobile Web<br>Use responsive layouts to create mobile friendly webpages                     | ✓          |
| 4. Animating your Web Contents<br>Animate the word, images, and scrolling the contents                           | ✓          |
| 5. Virtual IT Field Trip with Q&A<br>A virtual IT Field Trip – Gabbart Communications                            | ✓          |
| 6. Special Speaker: The IT Professional<br>A day in the life of an IT Professional and Q&A                       | ✓          |
| 7. Enhancing the Webpage with Multimedia<br>Add and configure the image, audio, and video data                   | ✓          |
| 8. Putting It All Together<br>Apply the design and technological knowledge and skill to create your own webpage. | ✓          |

\*: The instructor reserves the right to make any adjustments to the contents and/or hardware as needed to meet the goals of the workshop, due to the global chip shortage.

**Acknowledgement:** this IT camp would not be possible without the help and support from the Dept. of CCPS, Southeastern Oklahoma State University, and the community.  
 Prepared by Dr. Ming-Shan Su, 4/25/22

**How old were they when they started?**

- Bill Gate (age 13), Microsoft
- Jack Dorsey (age 8), Twitter
- Mark Zuckerberg (6<sup>th</sup> grader), Facebook
- ...



Source: <https://youtu.be/nKlu9yen5nc> [5m:43s] by Code.org

**It is never too late or early to get started!**

**What is IoT?**



Source: <https://youtu.be/LlhmzVL5bm8> [3m:21s] by Eureka!

**Why Raspberry Pi?**

- This powerful yet low-cost single-board computer opens the doors of new experimental and application creation possibilities.



- The Pi 4 B (1GB) could have been as low as \$35 prior to Covid-19

Source: <https://youtu.be/owcZeUnSixM> [6m:08s] by European Space Agency, ESA



**Meet the IT Camp Team**

• <http://babbage.se.edu/itteam>