



Welcome to

Science, Technology, Engineering, Math and Medicine (STEMM)

SUMMER CAMP

Sponsored by the NE FL Regional STEM2 HUB, Florida State College at Jacksonville and the National Security Agency. Our Community Partners include Boys and Girls Clubs of NE FL and Nassau County, Communities-in-Schools, and the Girl Scouts of Gateway Council. We have crafted an exciting summer camp that should be full of STEMM learning, activities and fun that we hope your student(s) will enjoy...**so let's get started!**

(Please review the attached daily agenda that we will use to access out STEM Activities and ZOOM Webinar)

STEM SUMMER CAMP CURRICULUM WEEKLY SCHEDULE

Monday A.M. Session 10:00 – 12:00	
Resources: Please login to resources prior to lesson start 1 ea - Computer w/internet facilitator and student Email – to receive link to join meeting on Zoom.	Tynker Account – Python 101 for each student (username and password provided by STEM2HUB irobot
10:00 – 10:10 Intro to STEM Camp F. Robinson 10:10 – 10:50 Intro and Python Basics L1 “Python 101” (Lessons 1.1 – 1.13)	Welcome Message Objective: Write code in Python syntax w/ basic commands. Write, run and correct code.
Break 10:50 – 11:00	
11:00-11:20 Individual Physical Activity Using Pseudocode write algorithm to move a robot around the perimeter of your room. Evaluate your space, plan movement around obstacles, make turns, estimate distances, etc.	Objective: Learn notation method of writing down programming concepts in a structure or outline. “irobot” - Block Code skill application: Write the created algorithm in block code and run. Select “Code Now”
11:20 – 12:00 Python Loops L2 Lessons (2.1-2.9) Facilitor: Complete STEM2HUB Progress Sheets Email to: jonathan@stem2hub.org	Objective: Write loops in Python. Use commands for repetitive instructions until a condition met.
Facilitators: Students survey link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx	Students complete online survey. This is for use in future development and continuous improvement activities. Survey Link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx
12:00 – 1:00 Lunch Break All	
P.M. Session 1:00 – 3:00	
1:00 – 1:50 Intro and Python Basics L1 “Python 101” (Lessons 1.1-1.13)	Objective: Write code in Python syntax using commands. write, run and correct code. “Python 101”
Break 1:50 – 2:00	
2:00 -2:20 Individual Physical Activity Using Pseudocode write algorithm to move a robot around the perimeter of your room. Evaluate your space, plan movement around obstacles, make turns, estimate distances, etc. Facilitor: Complete STEM2HUB Progress Sheets Email to: jonathan@stem2hub.org	Objective: Learn notation method of writing down programming concepts in a structure or outline. “irobot” - Block Code skill application: Write the created algorithm in block code and run. (Create a shape) Select “Code Now”
Facilitators: Students start survey link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx	Students complete online survey. This is for use in future development and continuous improvement activities. Survey Link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx

STEM SUMMER CAMP CURRICULUM WEEKLY SCHEDULE

Tuesday A.M. Session 10:00 – 12:00	
Resources: Please login prior to lesson start.	Game Design Set up a game, create events, obstacles and score.
10:00 – 10:10 Intro to Game Design	<u>Create a Game</u>
10:10 – 11:00 Design a Game and Create a game – Lessons 1-9	Objective: Learn how to set up a game, create events, obstacles and score. Apply programming skills, design a game “Flappy Bird” In this lesson, learners get an introductory experience with computer science and create a game using basic block code.
Break 11:00 – 11:10	
11:10 – 11:45 Game Design – “Try it yourself”	Objective: Create your own game. Apply skills learned, design your own new game or modify game.
Facilitators: Students start survey link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx	Students complete online survey. This is for use in future development and continuous improvement activities. Survey Link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx
12:00 – 1:00 Lunch Break All	
P.M. Session 1:00 – 3:00	
1:00 – 1:10 Intro to Game Design Code.org	Create a Game
1:10 – 2:00 Design a Game and Create a game – Lessons 1-9	Objective: Learn how to set up a game, create events, obstacles and score. Apply programming skills, design a game “Flappy Bird” In this lesson, learners get an introductory experience with computer science and create a game using basic block code.
Break 2:00 – 2:10	
2:10 – 2:45 Game Design – “Try it yourself” Facilitator Action: Complete STEM2HUB Progress Sheets Email to: jonathan@stem2hub.org	Objective: Create your own game. Apply skills learned, design your own new game or modify game.
Facilitators: Students start survey link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx	Students complete online survey. This is for use in future development and continuous improvement activities. Survey Link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx

STEM SUMMER CAMP CURRICULUM WEEKLY SCHEDULE

Wednesday A.M. Session 10:00 – 12:00	
Resources: Please login prior to lesson start.	Tynker Account – Mambo Drones Facilitators: Please be sure students have logged into their account. Create obstacle course with on-site materials (chairs, paper marker to land drone on floor, etc.)
10:00 – 10:10 Four forces of Flight	Objective: Learn about Aviation - where you can go from here.
10:10 – 10:50 Drones 101 - First Flight (Lessons 1-11)	Objective: Learn the fundamentals of becoming a Drone Pilot. Learn to code a flight path.
Break 10:50-11:00	
11:00 – 12:00 Virtual Class – Aerobatics Do it Yourself Project (Lessons 1-11) 11:20-12:00 On-Site only: Live Demonstration Dr. Graves Facilitator: Complete STEM2HUB Progress Sheets Email to: jonathan@stem2hub.org	Objective: Virtual - Learn and apply advanced piloting maneuvers. Drone coded to take off, fly forward, adjust speed, make turns, make turns by degrees, use flip commands and land. Virtual: Solve the navigation maze puzzles – Virtual students remain onlin with Ms. Aleong On-Site: Timed Drone racing (using controllers) Students learn basic controller functions and maneuvers. Timed race through obstacle course. Facilitators create simple obstacle course.
Facilitators: Students start survey link: https://nefstem.domains.unf.edu/	Students complete online survey. This is for use in future development and continuous improvement activities. Survey Link: https://nefstem.domains.unf.edu/
12:00 – 1:00 Lunch Break All	
PM Session 1:00 – 3:00	
1:00 – 1:10 Four Forces of Flight	Objective: Learn about becoming a Pilot
1:10 – 1:50 Drones 101 First Flight (Lessons 1-11)	Objective: Learn the fundamentals of becoming a Drone Pilot. Learn to code a flight path.
Break 1:50 – 2:00	
2:00 – 2:45 Virtual Class – Aerobatics Do it Yourself Project (Lessons 1-11) 2:20-3:00 On-Site only: Live Demonstration Dr. Graves Facilitator: Complete STEM2HUB Progress Sheets Email to: jonathan@stem2hub.org	Objective: Learn, apply advanced piloting maneuvers. Drone coded to take off, fly forward, adjust speed, make turns, make turns by degrees, use flip commands and land. On-Site: Timed Drone racing (using controllers) Students learn basic controller functions and maneuvers. Timed race through obstacle course. Facilitators create simple obstacle course.
Facilitators: Students start survey link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx	Students complete online survey. This is for use in future development and continuous improvement activities. Survey Link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx

STEM SUMMER CAMP CURRICULUM WEEKLY SCHEDULE

Thursday AM Session 10:00 – 12:00	
Resources: Please login prior to lesson start.	EV3 Lego Robot - Lego Mindstorms Installed Coder Z – each site will have their own link please
10:00 – 10:10 Intro Lego Mindstorms Video	Lego Mindstorms – Robotics League Competitions
10:10 – 10:45 Guided EV3 Block Coding Lego Mindstorms – Dr. Graves	Objectives: Coding blocks, movement, motors, straight, turns, speed. EV3 Sandbox Virtual Demonstration- Dr. Graves
10:45-11:00 Virtual Coding Demonstration Ms. Aleong	Coding Demonstration by Ms. Aleong
Break 11:00 – 11:10	
11:10 – 11:45 EV3 Educator Vehicle (EV) Live demo w/Dr. Graves; Set-up Procedures Online Students Only: Remain on Zoom with Ms. Aleong	Objective: Become familiarized with the EV3 Robot, coding components, learn how to program to navigate commands of a) moving forward, b) backward, c) turning, and d) more. Facilitators please use the zoom link for Dr. Graves to participate in Live Demonstrations. Online students please remain on with Ms. Aleong to continue Coding
Facilitators: Student survey: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx	Complete online survey for continuous improvement activities.
12:00 – 1:00 Lunch	
PM Session 1:00 – 3:00	
1:00 – 1:10 Intro Lego Mindstorms – Video	Lego Mindstorms – Robotics League Competitions
1:10 – 1:45 Guided EV3 Block Coding Lego Mindstorms – Dr. Graves	Objectives: Coding blocks, movement, motors, straight, turns, speed. EV3 Sandbox Virtual Demonstration- Dr. Graves Coding Demonstration by Ms. Aleong
1:45 – 2:00 Virtual Coding Demonstration Ms. Aleong	
Break 1:50 – 2:00	
2:00 – 2:45 EV3 Educator Vehicle (EV3)) Live demo w/Dr. Graves Online Students Only: Remain on Zoom with Ms. Aleong	Objective: Become familiarized with the EV3 Robot, coding components, learn how to program to navigate commands of a) moving forward, b) backward, c) turning, and d) more.
Facilitators: Students survey: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx	Students complete online survey. This is for use in future development and continuous improvement activities. Survey Link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx

STEM SUMMER CAMP CURRICULUM WEEKLY SCHEDULE

Friday A.M. Session 10:00 – 12:00

Resources: Please login prior to lesson start	Web design account (guided set up during intro)
10:00 – 10:10 Intro Web Design	Objective: Learn about the internet and the World Wide Web
10:10 – 11:00 Web Design Fundamentals	Objective: Learn the fundamentals of setting up an account, site development, colors, themes, tools, navigation and multimedia.
Break 11:00 – 11:10	
11:10 – 11:45 Web Design “Try it Yourself”	Objective: Guided practice (Create individual site) Choose theme, develop content, add graphics and multimedia.
11:45 – 12:00 Facilitators link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx	Students complete online survey. This is for use in future development and continuous improvement activities. Survey Link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx
Lunch Break All 12:00 – 1:00 pm	
PM Session 1:00 – 3:00	
1:00 – 1:10 Intro Web Design With WIX	Objective: Learn about the internet and the World Wide Web
1:10 – 2:00 Web Design Fundamentals	Objective: Learn the fundamentals of setting up an account, site development, colors, themes, tools, navigation and multimedia.
Break 2:00 – 2:10	
2:10 – 2:45 Web Design “Try it Yourself”	Objective: Guided practice (Create individual site) Choose theme, develop content, add graphics and multimedia.
2:45-3:00 Facilitators: Have students start survey link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx	Students complete online survey. This is for use in future development and continuous improvement activities. Survey Link: https://www.unf.edu/coehs/STEM2_Hub_Camps.aspx