Project Exploration: STEM Facilitator

Date: Monday 3/26/2018

Lesson Plan #1: Intro, Bitmoji, and Coding Is a Maze

Learning Objective: Students will be introduce to the iPads and its regulations of usage through the concepts of Swift and XCode. Students will learn about Bitmoji App to develop and present their individual bitmoji. Students will engage in the Code is A Maze activities to learn how to write real code while competing in groups.

Materials:
● iMacs, Bitmoji, Wifi, Mazes

Agenda:	
9am-9:10am	Welcome & Breakfast
9:10am-9:30am	Icebreaker/Activity: I'm a Coder because _____ !
9:30am-10am	Additional Activity: Create Your Own Bitmoji
10am-12pm	Projects: Coding Is A Maze *P.E. Skill: Being Curious & Collaborating
12pm-12:30pm	Project Wrap Up & Discussion *P.E. Skill: Reflecting & Communicating
12:30pm-1pm	Conclusion & Lunch

Details:

9-9:10am	Introduction & Breakfast	Introduce facilitators and coding boot camp. - Introduce facilitators, goals of the program, two different coding languages, the OCS opportunity. *What is coding?* Coding is communicating to a computer and telling it what to do by processing technological information and instructions. A person can communicate to a computer the same way a dog owner can make demands to his/her dog. *Why is it important?*

		As technology is constantly advancing, new ways and methods are being improved from systems developed by code. Coding is the same as playing a sport or having a hobby. Coding is a language: Introduce Swift and XCode
9:10-9:30am	I'm a Coder Because _____ !	*Who can code?* Everybody can code. In a very general way, everybody codes every day by telling computers, phones, tablets, etc. what to do. Applications like Facebook and Snapchat are because of code. Coding comes with lots of skills and talents. **"I'm a coder because _____!" Activity** (@Kelsey can you make copies of that "I'm a coder because X" sheets?)

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9:30-10am	Create Your Own Bitmoji Coder	● Students create their own bitmoji and send it to the teacher with 3 hashtags that represent themselves, (#beautiful #smart #determined) ● Students then stand up and explain why their avatar looks the way it does, and the reason for their hashtags. ● As today is just a way to get used to the iMacs this would be pretty simple. If we could get a projector or Activate a way to Screen share (putting the bitmoji + hashtags on everyone's screen) that would be ideal
10am-12pm	Coding Is A Maze	Students will be shown 4 levels of different mazes. Each maze is harder and harder every time. With each maze, a time limit is given to create a competition among groups of students. The goal: write the correct code to get through each maze (start to finish) before the time runs out. Code keys: up, down, RT (right), LT (Left), Lturn (left turn), & Rturn (right turn) Start to End Key: START{ code/keys }END See below in example
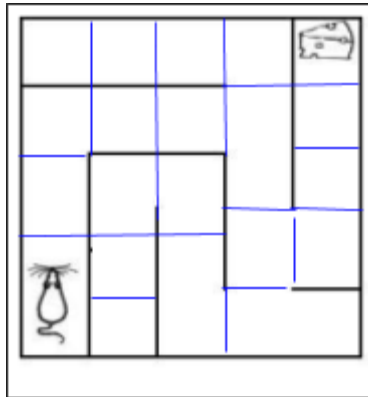
Level 1: Help Mr. Mice Eat His Meal!

Time Limit: 10mins

Answer:

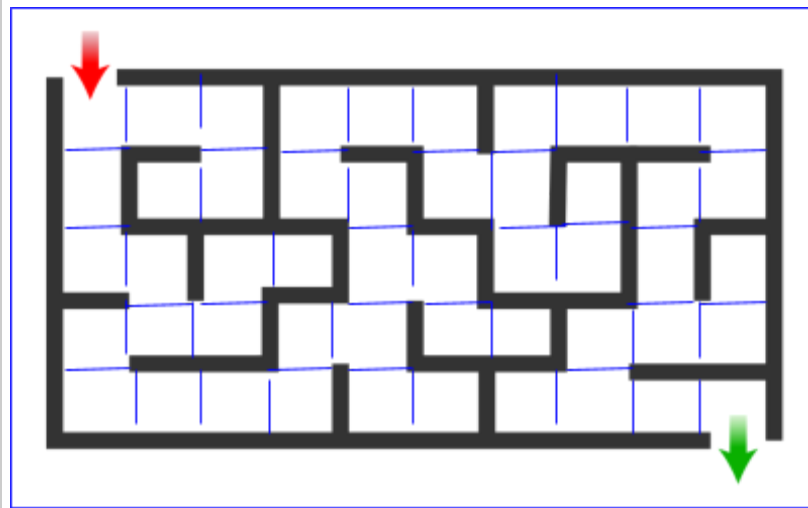START{up/up/rturn/RT/RT/RT/Rturn/down/Lturn/RT/Lturn/up/up/up}END
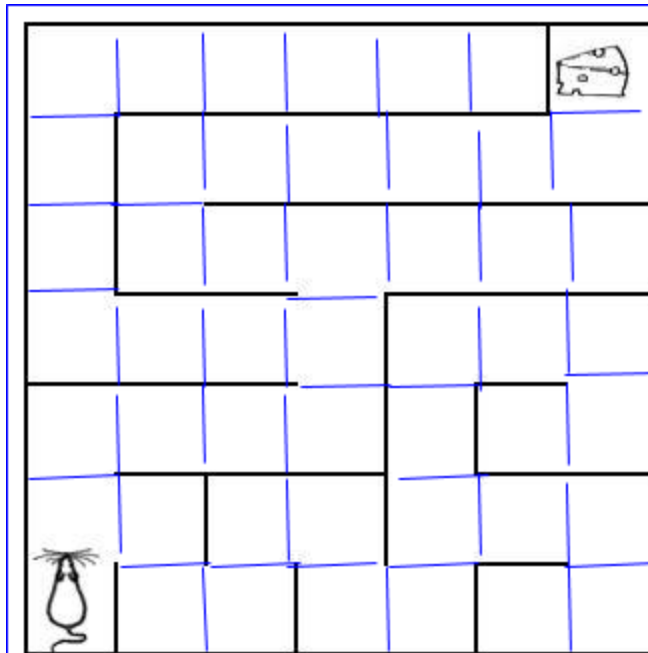
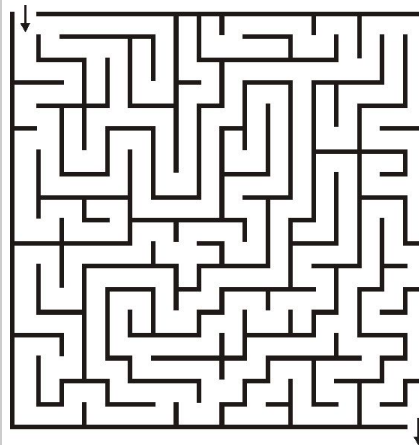Level 2: Help Mrs. Mice Eat Her Meal!

Time Limit: 15 mins

Answer:

Level 3: Get the Red Arrow to the Green Arrow
Time Limit: 20 mins
Answer:

Level 4: This Is Torture

Time Limit: 25 mins
***This maze is meant for students to fail. This level is more about the attempt and thought process as well as the emotional frustration and concentration for the discussion part.

12-12:30pm	Complex Problems & Discussion	Level 4 is meant for the students to get frustrated and fail. This is the perfect time to explain how and why coding is sometimes difficult and takes patience to actually get a task accomplished. Use this time to discuss with students and ask them questions: ● Was coding through these mazes easy or hard? ● What maze did you enjoy?

		● What type of thinking was different for each level? ● Did you get frustrated or tired? ● How does coding like this relate to real concepts of your life? ● Etc...
12:30-1pm	Introduce & Sign-Up for LRNG and LUNCH	Sign up for LRNG account as we will be using them correct? Also Lunch time!Students consume nutritional material

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Date: Tuesday 3/27/2018

Lesson Plan #2 : Single Photo

Learning Objective: Students will learn and develop the skills from the Make a Meme activities to apply for the SinglePhoto app. See how easy it is to build your very first app. With SinglePhoto, you'll build an app that not only shows something—like a photo— but also reacts when a user taps the screen. This simple app interaction is the basis of many apps, so it will come in handy as you expand your coding and app development skills. With this project, you'll also familiarize yourself with Xcode, Interface Builder, and Simulator, and learn how to use them together to build your own apps.
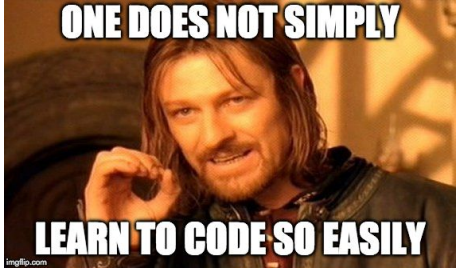
Materials:
● iMacs, Wifi

Agenda:	
9am-9:15am	Welcome & Breakfast
9:15am-10am	Icebreaker/Activity: Make a Meme
10am-10:30am	Introduce Project: **Single Photo**
10:30am-12:30pm	Project Work Time: **Single Photo** (Lesson 5 in Apple curriculum, First App)
12:30pm-1pm	Conclusion, Discussion, & Lunch

Details:

9am-9:15am	Welcome & Breakfast	Welcome students back for day two
9:15am-10am	Icebreaker/Activity: Make a Meme	Students will make their own Meme using https://imgflip.com/memegenerator website. Students will pick 2 pictures and develop two different memes: 1) Themed towards

		anything they want such as their favorite hobby, sport, friend, joke, place, etc. 2) Themed towards how coders feel when they are writing and creating a coding project.
		1)
		2)
		Students will then show each meme to the class and explain why they picked that photo and headline(s).
10am-10:30am	Introduce **Single Photo**	Explain and introduce Single Photo as 3 parts: **5.1: New Project** **5.2: Explore Your Project** **5.3: Edit the Storyboard** Please review the curriculum and instructions provided by Apple. (Lesson 5: First App)

10:30am-12:30pm	Project Work Time	Students will go through all parts of **Single Photo**: 5.1, 5.2, and 5.3
12:30pm-1pm	Conclusion, Discussion, & Lunch	Discuss the project and Lunch!

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Date: Wednesday 3/28/2018

Lesson Plan #3: QuestionBot

Learning Objective: Have you ever used a quiz app or wondered how Siri works? Many apps seem to have a "brain" of their own. With QuestionBot, you'll build an app containing the brains of a bot that responds differently to different questions. To do that, you'll learn how to store values in constants, represent text in code, define inputs and outputs, and more. This project helps you focus on understanding how the app works and the logic that's needed to make your app appear to have a "brain."

Materials:
- iMacs, Wifi

Agenda:	
9am-9:10am	Welcome & Breakfast
9:10am-9:30am	Icebreaker/Activity: Questions Only
9:30am-10am	Project: QuestionBot (Lesson 13 in Apple curriculum, QuestionBot)
10am-12pm	Individual Work Time
12pm-12:30pm	Project Wrap Up
12:30pm-1pm	Conclusion & Lunch

Details:

9:30	Questions only	Students perform the "Who's line is it anyway" game 'questions only' where the two teams play out scenarios (you are at war, you are trying to date the other team member, you are interviewing for a job) And the rule is the first person to laugh loses and must leave the scene,

		Last team standing wins.
10:00	Introduction	Instructor has to go through lessons 2, 3, 6, and 11. There is no alternative. There will be a lot of from the book. Luckily each one is only 3 pages.
12:30	**QuestionBot**	Question Bot lesson plan (Lesson 13) is very self explanatory but allows for a lot of customization. As you likely lost some students during the introduction you will need to meet them at their individual needs at this point. The good news is the amount of customization of in Question Bot means students should be busy. Remind students to practice in the playground before saving files.
1:00	Eating	Students consume nutritional material

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Date: Thursday 3/29/2018

Lesson Plan #4: ChatBot

Learning Objective: Now let's make QuestionBot even smarter. You want to use your app over and over again, and it would be helpful if it could "remember" your past interactions. With ChatBot, you'll build an upgraded version of QuestionBot that retains a history of the messages between the user and the bot. ChatBot is already partially built, so you can concentrate on learning the various skills needed to build the part of the app that keeps track of the conversation.

Materials:
● iPads, Wifi

Agenda:	
9am-9:10am	Welcome & Breakfast
9:10am-9:30am	Icebreaker/Activity:
9:30am-10am	Project: ChatBot (Lesson 16 in Apple curriculum, QuestionBot 2)
10am-12pm	Individual Work Time
12pm-12:30pm	Project Wrap Up
12:30pm-1pm	Conclusion & Lunch

9:30	Questions only	Students perform the "Who's line is it anyway" game questions only where the two teams play out scenarios (you are at war, you are trying to date the other team member, you are interviewing for a job) And the rule is the first person to laugh loses and must leave the scene, Last

		team standing wins.
10:00	Introduction	Lesson 16 is shorter albiet still a solid 16 pages of coding goodness. The sticking points will be The glossary between pages 95-96
12:30	**Chat Bot**	Similar to question bot students just need raw time and 1 on 1 time with this one. Luckily there is a lot of refinement to keep the students who ace it busy!
1:00	Eating	Students consume nutritional material