

LESSON 5: October 21-28

Vocabulary added to our Wiki: Join command, Length command, Letter command, Hopscotch

Hello everyone -- The theme for this lesson deals with words and text.

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AHNJaguars



Bryan

MrSark



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Matt

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Zhanna

ZhannaC



Team 1 - Bridgid and Zhanna (FL and NY)

Team 2 - Bryan and Ruth (NY and TX)

Team 3 - Jessica, Maureen and Matt (TN, NY and FL)

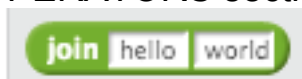
Observation #1: The Library is not 100% reliable. *Yes, I have said this to a few of you on the phone. I cannot find many references on the web but I am convinced that there is some quirk in Scratch regarding the library or perhaps they are having server issues. The only thing that has occasionally worked is UNSHARING then re-SHARING the file in question. I am in dialog with the Scratch support team on this and will report back to you.*

Observation #2: Scratch Traffic Congestion. *This was pointed out to me by Maureen yesterday and I know some of you have experienced this. Lots of schools and kids are on Scratch particularly during school hours so if you have trouble connecting, it might not be you.*

Observation #3: Team Viewer Bug. *This is a great story that I will retell for years. After spending close to 10 hours with tech support on the phone, one person explained to me that there was a quirky bug in their software on a screen where you enter the password and click. He told me I need to push RETURN/ENTER instead of clicking on LOGIN. Amazing! This must have been solved by grandchild of Grace Murray Hopper who found and named the first bug in the 1940s.*

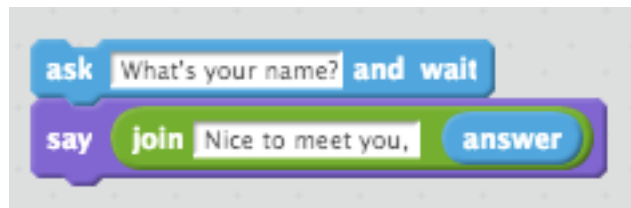
Let us push ahead with several commands that some of you have come across but I have not formally taught to you.

The JOIN command lets you combine words or phrases into one expression. You will find it in the light green OPERATORS section.

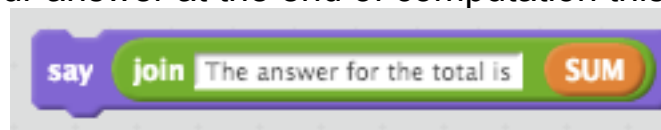


You can type any text into the white rectangles where it says "hello" and "world" including variables or even another JOIN command.

So you can be more elegant in your dialogue this way.



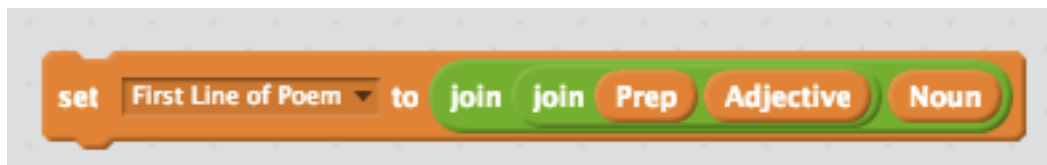
Or more elegant in your answer at the end of computation this way.



By putting two JOINS into a third JOIN you can have this one 4 part combo!



Or imagine if we were to pick a random prepositional phrase plus a random verb plus a random noun, we could have this first line of a poem.



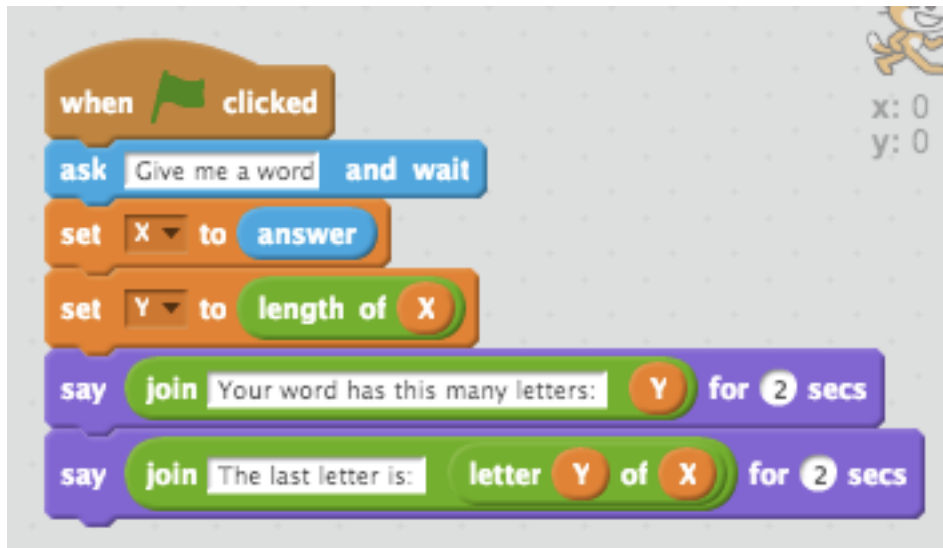
Another two commands that work on words are



Length finds "how many bytes" or "how many characters" long a word is or an alpha variable is. The Letter command identifies any specific character (or byte) of a word.

Note that you could have a variable above where it says "world."

Here is a simple program that uses both of them.



In step 4, we have the new command LENGTH so that the variable Y is assigned the length of X which is the word that the human entered. Most of you know the word "byte" but just in case, I will remind you that a byte is a keystroke or a character. So the word "larry" has 5 bytes and the text string "larry bird" has 10 bytes.

in step 5 you see the use of the JOIN command again. Once you start using JOIN, it will become of your favorites!

In step 6, the final step, you see the use of the LETTER command which is picking a specific byte of a certain variable.

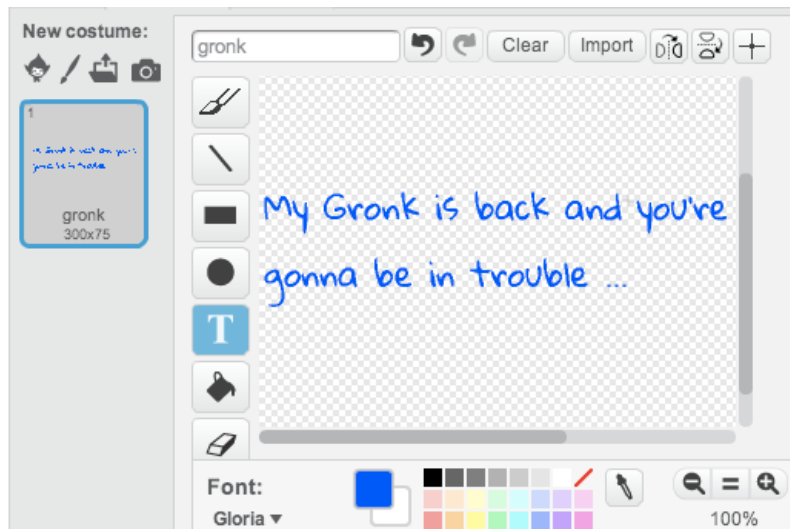
Hope this is all clear, but here is a HW problem that will get you to use these commands which as we all know is the only way to make it your own.

HW 5.1 Allow the user to enter a word. The computer then takes the word apart, stating each letter one at a time. So if the user types SCRATCH, the computer shows an "S" then a second later a "C", then a second later an "R" and so on.

BONUS CHALLENGE: Have the computer count how many vowels and consonants are in the word.

Next Topic: Adding a scrolling message. Video at <http://youtu.be/OBxX9mfyWwI> is 3 minutes.

Here is the idea. Animation is simply showing a repeated still picture at a different position every tenth (or fraction) of a second. So why not create a new sprite on a blank screen and use the text tool to type a word for this sprite. So that is just what I did, making a new Sprite called Gronk, clearing the screen and using the - to give me 100% view and more room to type.



Next I wrote this script for this Sprite



Notice that there is a new variable called GRONK.

The variable starts at 480 so that in the FOREVER LOOP, the animation begins at location 480,100 on the screen.

Each time through the loop, the variable GRONK decreases by 1 and so that produces the animation, displaying at 479,100 then 478,100 and so on. When GRONK gets below -400, we are at the left side of the screen so the IF/THEN statement sets it back to 480.

Trivia Pursuit? Gronk is the tight end of the New England Patriots and the song is based on a song from 1963 by the Angels called "My Boyfriend's back ..."



HW 5.2 Enhance your Tom Brady program from 4.1 (or any other big project you have been working on and are proud of) so that it has a scrolling message on the screen.

BONUS CHALLENGE: Make the text animation vertical instead of horizontal.

HW 5.3 Make sure your Tom Brady 4.1 program is shared and send a note to your team partner(s) and me once it has a scrolling message.

HW 5.4 Check out the Tom Brady 4.1 program by your team partner(s) and send him/her an email note after you have seen it, commenting on it and cc-ing me please.

Team 1 - Bridgid and Zhanna (FL and NY)

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Now for our team assignment which I will call 8.1 and is due by November 11th.

Because this will involve phone calls (or skypes or google hangouts or team viewer) with a person or persons not in your state, this assignment is due in three weeks on November 11th when we get to Lesson 8.

HW 8.1

The assignment is to work with your partner(s) and jointly write a paragraph or two on our wiki about one of the featured projects that you find intriguing and that all of you explore



You can find these featured projects at the bottom of the main Scratch window. The assignment is to decide on one and then study it, analyze it and talk about it. When done, please share on ONE PAGE of our Wiki info about this project:

- what you liked about it and what it does
- what programming techniques within that you understood and how they work
- what programming techniques at this point in time seem too complicated

The implicit goal is to get you to have a connection with someone else in our course who is outside of the state you live in. I want you to talk or skype or google hangout with another person. I am glad to help you if you want. For the team of three, I can easily give you access to the Summercore conference phone number so you can all dial in to a certain number and have a 3 way phone call (or you can use Google Hangout).

The explicit goal is for the rest of us to learn a bit from your team about something that the 2 (or 3) of you found interesting.

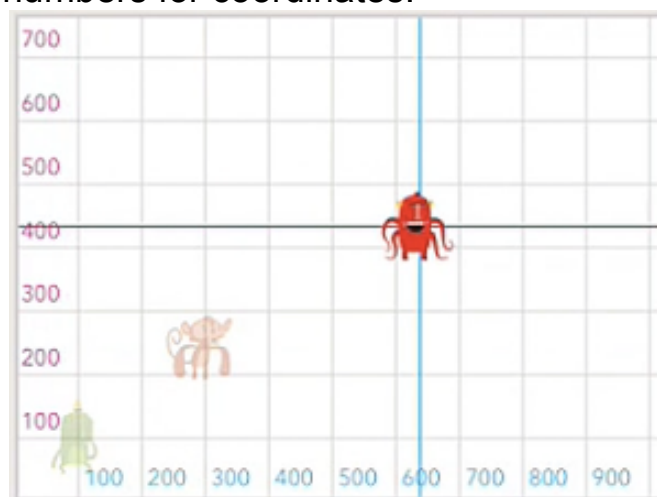
The following are **OPTIONAL** programs for the week. I am being careful in the last half of our course to limit the required work since I don't want to drive you crazy and don't want you stressed! I hope everyone at the very least reads through this hopscotch section and tries Hopscotch for at least 15 minutes if you have an iPad.

The free App called Hopscotch exists for the iPad. There is no website like Scratch where you can program from a Mac or PC so it is "iPad or nothing" even though the company website is www.gethopscotch.com.



If you have access to an iPad, I would like you to download the APP called Hopscotch.

Here is the Hopscotch grid where you program your sprites. The sprite that is bold is the one you are programming. Unlike Scratch, the (0,0) point is at the bottom left so there are no negative numbers for coordinates.

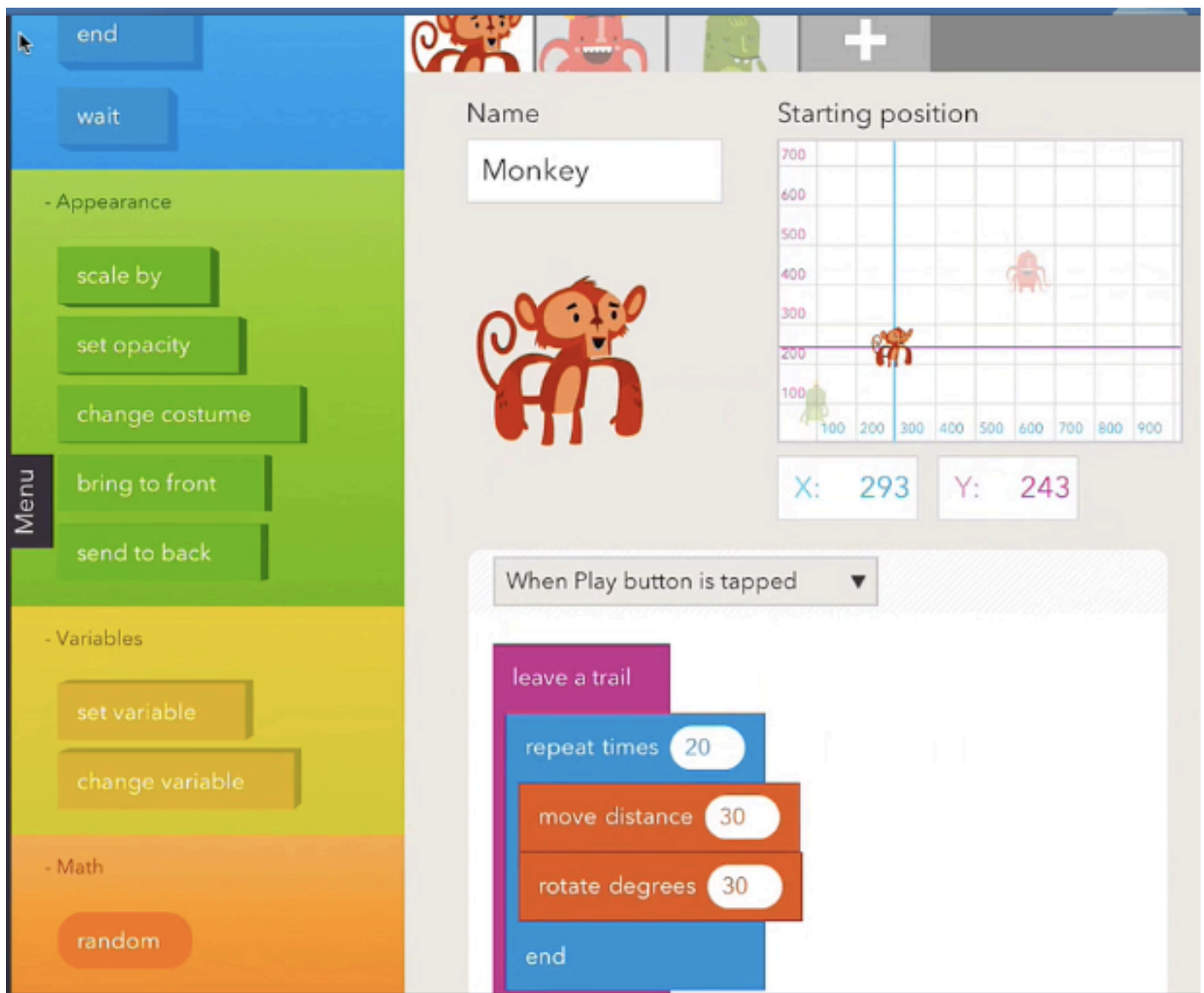


Instead of a shared library, the App lets you email your finished program to anyone on Hopscotch. This feature is easy to use and lets me (or someone else) see your program!



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A typical Hopscotch grid looks like this with the program commands on the left that you drag into the script area at the bottom right. You can make the program execute when you push PLAY or you can do something funky and make the program execute when you tilt the iPad to the left or even if you shake the iPad!



These video are my intro to Hopscotch, for those of you who are taking this option!

<http://youtu.be/ejtTUHUwvew>
<http://youtu.be/gpBRChZKwXc>
http://youtu.be/Ar_aYu-_WHI

Intro to Hopscotch (5 min)

Saving, Sharing and Intro to Variables (6min)

Text Objects and Variables (11 min)

Additionally, here are videos done by others on YouTube about Hopscotch, if you get into this.

3 minutes

<http://www.youtube.com/watch?v=r91MKZYDdUE>

3 minutes

<http://www.youtube.com/watch?v=4x5BtHIEAIQ>

90 seconds

<http://www.youtube.com/watch?v=yab4-PPjg-w>

teacher and student samples -- 4 min

<http://www.youtube.com/watch?v=HbrDio5Yp2Q>

the basics of movement with Paul Hamilton -- Lesson 1 -- 4 min

http://www.youtube.com/watch?v=9SuFr_MUPUU

Leaving a trail -- Paul Hamilton -- Lesson 2 -- 4 min

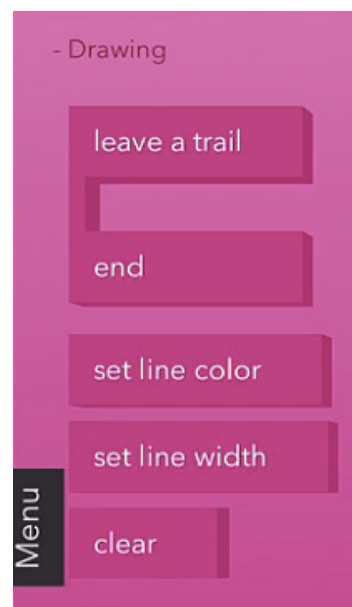
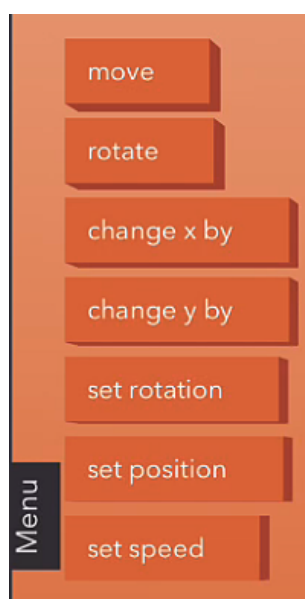
<http://www.youtube.com/watch?v=0-PVyKPAIOk>

multiple sprites -- 3 min -- octopus tries to get past the gorilla -- Paul Hamilton

Lesson 3

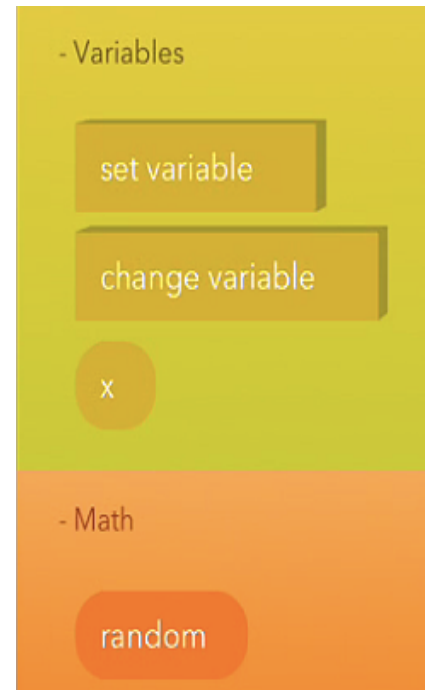
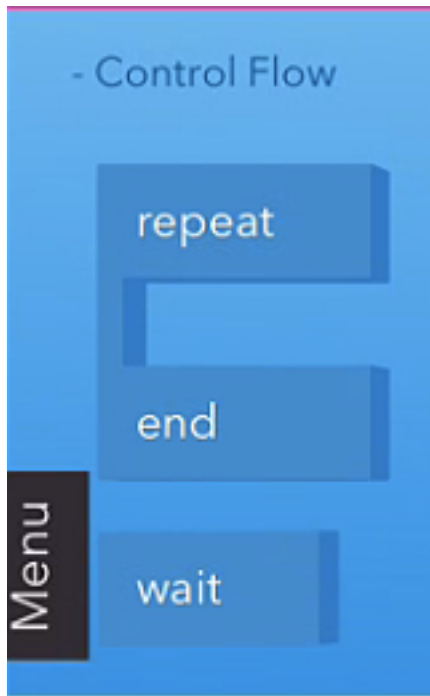
http://www.youtube.com/watch?v=TOMx6dK_IRY

Here are two of the menus of Hopscotch. Notice the important LEAVE A TRAIL on the right which is obviously important! You will find it fascinating to see "similarities and differences" with Scratch. Someone once said "the more you know about the other language the more you know about your own."



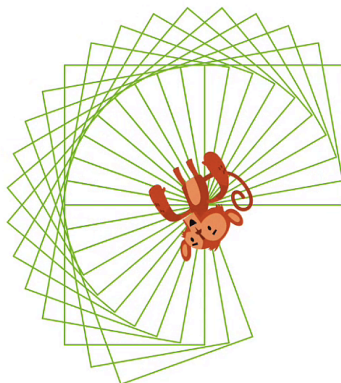


Here are three more of the Hopscotch menus. The SCALE BY command in limegreen is cool since it lets you make your sprite shrink or grow. The REPEAT loop gives you the ability to say # TIMES once you add it to your program.



HW 5.5 OPTIONAL Using Hopscotch on an iPad

Here is the sample program I would like you to create, similar to what we did in a previous lesson.



HW 5.6 OPTIONAL Make Your Initials on Hopscotch

I have added Hopscotch to our WIKI vocabulary so that those of you who do things on Hopscotch can ask questions or can update each other. I am curious how many of the 7 of you spend time this week on Hopscotch!



Assignment 5A: Read this handout

Assignment 5B: Watch the videos highlighted in yellow in this PDF (also posted on summercore.com/videos for redundancy)

Assignment 5C: Schedule a 30 minute phone call or skype with me

Assignment 5D: Please continue to contribute several entries to our WIKI which is located at the tinyurl.com/sconlinec webpage

Assignments 5E: HW Summary

HW 5.2 Enhance your Tom Brady program from 4.1(or another major program) so that it has a scrolling message on the screen.

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Have a good week!

Steve



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