

# Upper Elementary Quick-Reference Guide

## Lesson Planning Resources

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## Programming Computer Science Concept Videos

### Drawing and Animation

- [Drawing Tools](#)
- [Costumes, Backdrops, and Animation](#)
- [Sequences](#)

### Events

- [Events](#)
- [Broadcast Events](#)

### Loops

- [Repeat Loops](#)
- [Forever Loops](#)

### Variables

- [Coordinate Planes](#)
- [Variables 1: Keeping Score](#)
- [Variables 2: Variables and Loops](#)

### Conditionals

- [If/Then](#)
- [If/Else](#)
- [Operators](#)

### Functions

- [Functions](#)
- [Functions with Boolean Inputs](#)
- [Functions with Number Inputs](#)

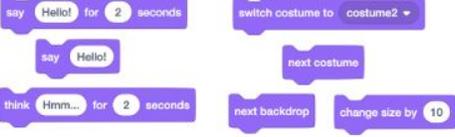
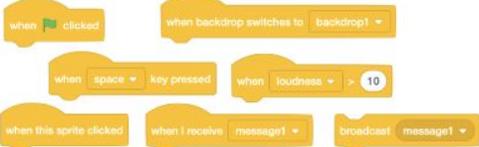
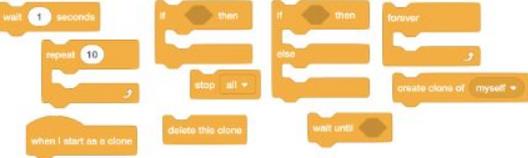
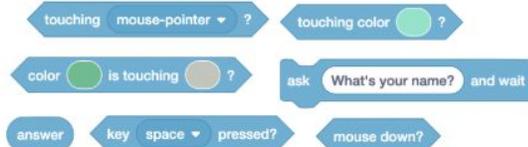
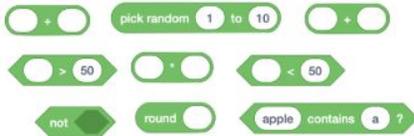
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## Common Challenges and Questions for Getting Started

<i>Question/Challenge</i>	<i>Answer</i>
Why is the starter sprite still there when I add a new sprite?	There can be multiple sprites in every program. To remove the starter sprite, click on the trash can above its picture in the sprite menu.
When I press the green flag to run my program, nothing happens.	In order for your sprite to follow instructions when you click the green flag, all of the blocks need to be connected to the “when green flag clicked” block.
How do I get my sprite to do all of the commands instead of just one?	The blocks need to be snapped together in order to tell your sprite to perform all of the commands. If blocks are not snapped together, you would need to click each block individually to instruct the sprite to do something.
How do I make multiple sprites do something?	Students may forget that they have to program each sprite individually. Show students how to click on each sprite to bring up the code for that sprite.
Which event block should I use?	<p>The right event block depends on what you want to happen in your program. Ask students, What do you want to happen in your program?</p> <p>If you want a sprite to do something when the user clicks on it, use the “When this sprite clicked block”.</p> <p>If you want a sprite to do something when the user presses a specific key, use the “When ___ key pressed” and use the dropdown to choose the key you’re looking for.</p>

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## Programming & Computer Science Basics

Category	Blocks	Function
<b>Movement Blocks</b>  Motion		Move characters
<b>Appearance Blocks</b>  Looks		Change characters' appearance
<b>Sound Blocks</b>  Sound		Play a sound
<b>Events Blocks</b>  Events		Start a script in the sprite/stage
<b>Control Blocks</b>  Control		Control parts of a program
<b>Sensing Blocks</b>  Sensing		Detect information in the program
<b>Operators</b>  Operators		Math and logic operations
<b>Variables</b>  Variables		Save data
<b>My Blocks</b>  My Blocks		Customize your own block

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## Basic Programming Terms

Term	Definition
Sprite	<b>Sprite</b> is a term used to represent the character. We can tell Sprites to follow instructions with our programs.
Script	<b>Script</b> is a term used for each individual sequence of commands.
Costume	A <b>costume</b> is the appearance of a sprite - sprites can have more than one costume that they can “change” into. This is how we can animate a sprite.
Stage	The <b>stage</b> is the background of a project - like sprites, the stage can have scripts and different backdrops (similar to costumes)
Backdrop	A <b>backdrop</b> is the scene for the stage - each project can have multiple backdrops that can make different actions happen.

## Basic Computer Science Concepts

Concept	Definition
Programming	<b>Programming</b> is the ability to create sets of instructions for a computer to follow.
Sequence	A <b>sequence</b> is the specific order of instructions in a program. Multiple sequences can run at the same time.
Events	<b>Events</b> are circumstances that cause, or trigger, some code to run in a program.
Loop	A <b>loop</b> is a programming structure that repeats one or more commands (to program patterns).
Conditional	A <b>conditional</b> (‘if/then’, ‘if/then/else’) is a control structure that tells a program how to make a decision depending on if a condition is true or false.
Variables	<b>Variables</b> are like containers that hold one value (a number, text, or true/false value) at a time. They are useful for keeping a score, timer, etc.
Operators	<b>Operators</b> allow the user to perform mathematical operations, randomize numbers, evaluate booleans (true/ false values) as inputs, and join words or digits together.