



**There is always
someone worth
learning for,
even if it's
yourself!**

~Kevin Little- educator~

Anybody can learn anything!
<https://code.org>



Kevin Little

CS Regional Coach

KLLittle@ed.sc.gov

Profile of the South Carolina Graduate



World Class Knowledge

- Rigorous standards in language arts and math for career and college readiness
- Multiple languages, science, technology, engineering, mathematics (STEM), arts and social sciences

World Class Skills

- Creativity and innovation
- Critical thinking and problem solving
- Collaboration and teamwork
- Communication, information, media and technology
- Knowing how to learn

Life and Career Characteristics

- Integrity
- Self-direction
- Global perspective
- Perseverance
- Work ethic
- Interpersonal skills

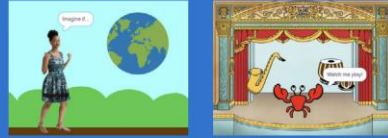
Animate a Name Cards



Animate the letters of your name, initials, or favorite word.

SCRATCH

Imagine a World



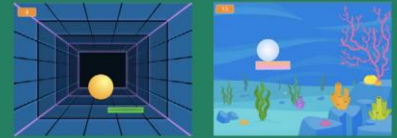
Imagine a world where anything is possible!

Chase Game Cards



Make a game where you chase a character to score points.

Pong Game Cards



Make a bouncing ball game and score points to win!

Make Music Cards



Choose instruments, add sounds, and press keys to play music.

Animate a Character Cards



Bring characters to life with animation.

Create a Story Cards



Choose characters, add conversation, and bring your story to life.

Let's Dance Cards



Design an animated dance scene with music and dance moves.

Scratch Review

Sprites

Functions

Events

Values

Conditions

Loops

Variable

Abstraction

Building from Scratch

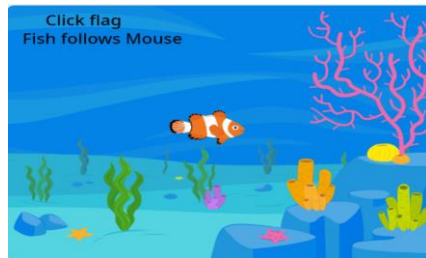
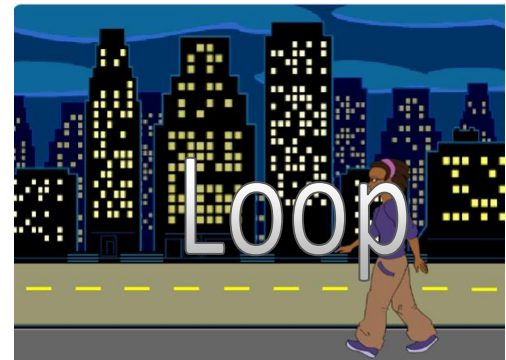
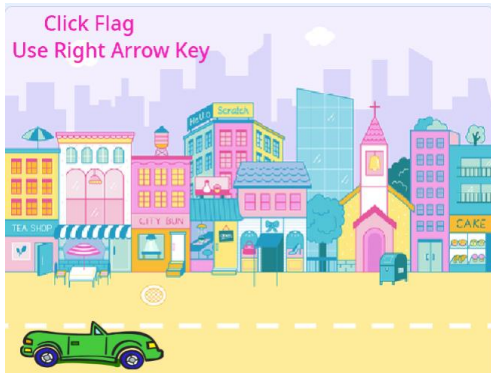


Table Setting Basics

TABLE MANNERS

Wash your hands before you eat.
Keep your elbows off the table and sit up tall.
Place your napkin in your lap.
Wait for everyone to be served before eating.
Food to mouth, not mouth to food.
Chew with your mouth closed.
Ask politely to be excused when you are done.
Say please and thank you.



1

```
when clicked  
go to random position  
glide 1 secs to x: 0 y: -8  
say What utensil you want to start with  
broadcast 1
```

2

```
when receive 1  
show  
glide 1 secs to random position  
glide 1 secs to x: 106 y: -17  
say select utensil for 4 seconds  
broadcast 2
```

```
when clicked  
hide
```

**Make your own
restaurant!**

Food safety project

By Luke Burke

Rules

info

Play!

Use the arrows to rotate the object to face in the direction of the hand. (1 of 1)



Questions



Thank You!

Loaner Program



[Sphero Bolt](#)

[Click to Learn More](#)



[Ozobot Evo](#)

[Click to Learn More](#)



[Lego Spike Prime](#)

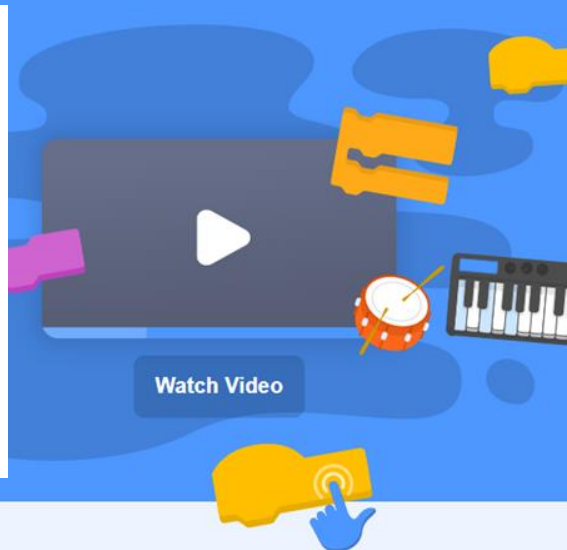
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Scratch is the world's largest free coding community for kids. Your support makes a difference.

[Donate](#)

Create stories, games, and animations
Share with others around the world

[Start Creating](#)[Join](#)[Watch Video](#)[About Scratch](#)[For Parents](#)[For Educators](#)

Featured Projects

Introduction to bit.ly/3YKSbAg Scratch

My name is _____, and I am a/an

name

_____.

Person, animal, or thing

My best friend is _____.

name

_____.

Person, animal, or thing

We like to play _____ at the _____.

sport

where

When we were younger. While playing we liked to listen to

_____, but if there was no music. We _____ until

song

verb

one of us would stop.

M
B

Welcome! We look forward to a great day.

Today's agenda.

- Profile of SC Graduate
- Overview of Scratch
- Vocabulary
- Build some code
- Have Fun!



[Scratch! for About](#)



Confirm your account!



Confirm your Scratch account

You just signed up for a new Scratch account with the username: **Little8568**

To finish creating your account, click on the link below:

Having trouble? Copy this link into your browser instead:

https://scratch.mit.edu/accounts/email_verify/WzEwODQxMzEzMiwia2xsaXR0bGVAZWQuc2MuZ292IixmYWxzV0:1pNy8O:KwW0v7DZuOJMnH34sx1QojwMA5s/?isRegistration=true

Scratch On!

—The Scratch Team

Using Scratch, children can create interactive stories, games, and animations.

Scratch is available for free, thanks to generous support from our donors. We are grateful to our Founding Partners: Massachusetts Institute of Technology, the National Science Foundation, and the Siegel Family Endowment.

[Privacy Policy](#) | [About Scratch](#) | [Make a Donation](#)

Confirmation Email

Does this email look weird? - [CLICK HERE](#)



Welcome to Scratch, Little8568!

With Scratch, you can program your own interactive stories, games, and animations—and share your creations with others in the community.

New to Scratch? Click the link below:

To learn more about the Scratch online community, go to our [Community Guidelines](#)

To discover project ideas, check out our [Ideas Page](#).

Scratch On!

—The Scratch Team

Using Scratch, children can create interactive stories, games, and animations.

Statement Blocks (h)

A. a copy of a Sprite that is made using the control block.

Boolean Expressions (e)

B. A mini program within a program that can execute at the same time

Conditions (g)

C. A placeholder for some value, muck like x and y

Loops (f)

D. A signal from one thread to another

Variables (c)

E. Evaluates to true or false

Threads (b)

F. include multiple executions of a statement

Events (d)

G. Something that must be true in order for something to happen.

Clone (a)

H. tells the computer to do something.



Tutorials



Shrink



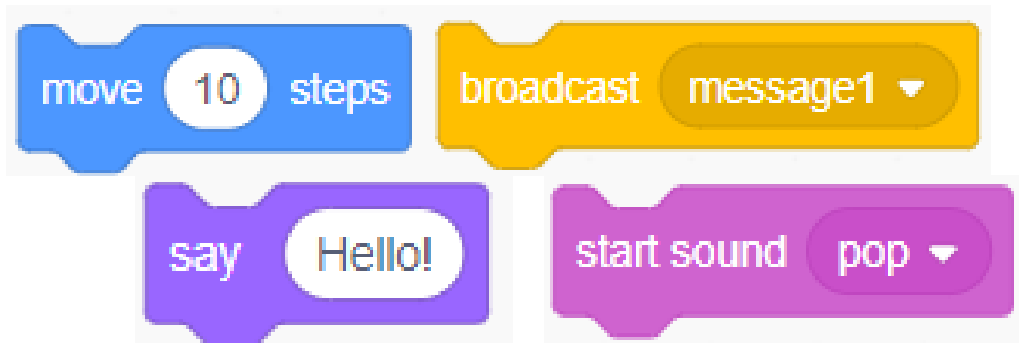
Close



Statement Blocks

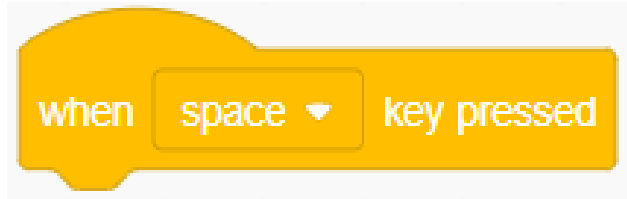
A statement tells the computer to do something.
(command or instruction)

Any block whose label reads like a command is a statement.



Conditions

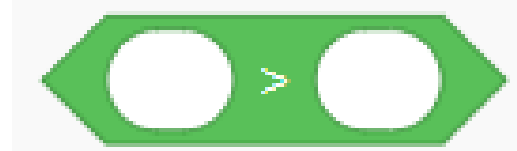
When Construct



Boolean Expressions

An expression that is either true or false.

Any block shaped like an elongated diamond is a boolean.



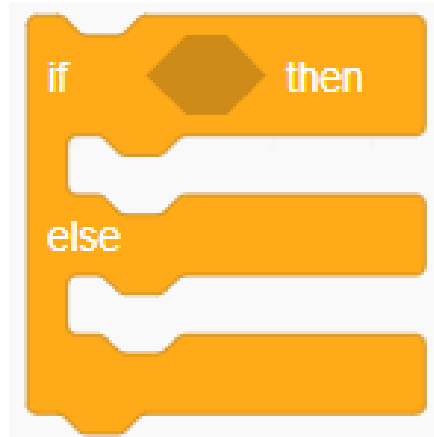
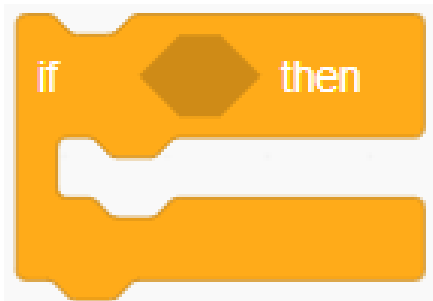
With Booleans Expressions can we construct conditions.

Conditions

Something that must be true in order for something to happen.

“Evaluates to true” or “evaluates to false”

Any block whose label says “if”, “if else”, “when”, or “until”



Loops

- ❑ Can include multiple executions of a statement
- ❑ Any block whose label begins with “forever” or “repeat”



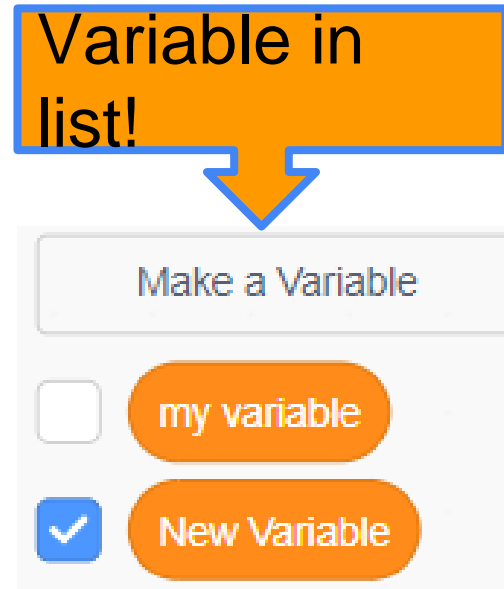
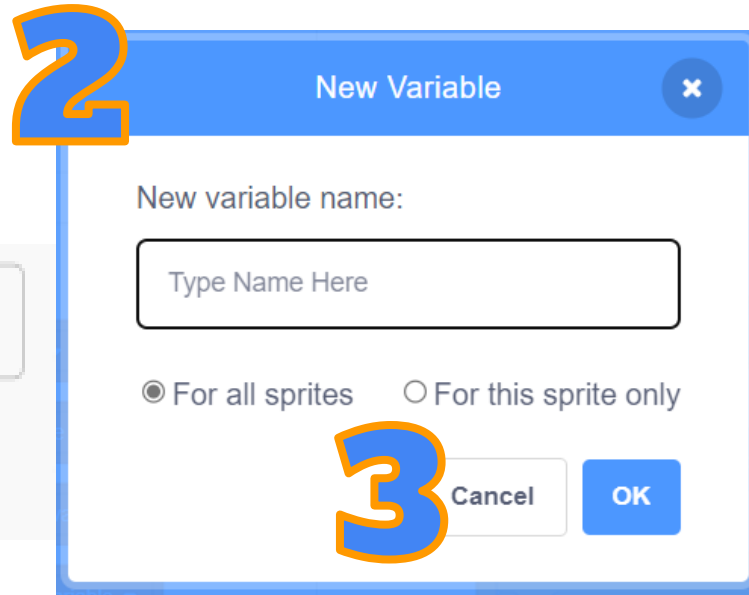
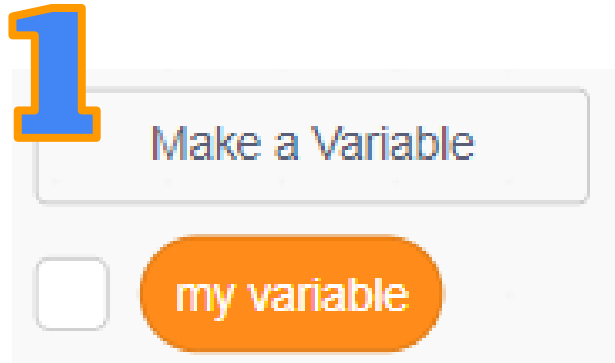
Variable

- ❑ A placeholder for some value, much like x and y are popular variables in algebra
- ❑ Represented with blocks shape like elongated circles, uniquely labeled by you



Creating a Variable

1. Click Make A Variable (Blocks Palette)
2. Name Variable(select preference)
3. Click OK



Threads

- ❑ A mini program within a program that can execute at the same time as other threads.
- ❑ Any block whose label begins with “when” essentially denarks the start of a thread
- ❑ Events or Control Block!



Events

- ❑ A signal from one thread to another
- ❑ Blocks whose label begin with “when” handle events
- ❑ Blocks whose label begin with “broadcast” signal events



Sprite 2

Sprite 1

Clone

- a copy of a Sprite that is made using the “Create clone of” control block.



Happy
Valentine's
day



Recruiting is NEEDED!

93% of parents want their child's school to teach computer science, but only 53% of high schools offer it.

More than 70% of superintendents and principals say offering computer science is just as important as offering subjects like English, math, history, and science.

50% of Americans rank computer science as one of the two most important subjects of study after reading and writing.

Students who learn computer science in high school are six times more likely to major in it, and women are ten times more likely.

Black students are more interested in CS and more confident in their abilities than white students but are less likely to enroll in a class.

In South Carolina, there are currently 6,272 open computing jobs with an average salary of \$77,383.

There are 60 colleges and universities in the U.S. state of South Carolina. Yet, there were only 806 graduates in computer science in 2019 and only 93% of all public high schools teach a foundational computer science course.

Public School Teacher Salary in South Carolina



Salary



Benefits



Job Description



Compare Jobs



Similar Jobs



Job Openings



Resume Critique

Based on HR-reported data: a national average with a geographic differential [i](#)

[View as table](#)

10%
\$35,555

25%
\$43,343

50%(Median)
\$51,896

75%
\$63,276

90%
\$73,637

Didn't find your job? [Click](#)



Are you ok with your students starting salary being higher than your max salary?

[Employers: Price Your Company Jobs](#) →

[Employees: View your Salary](#) →

You may get higher pay by adjusting the following factors:

Location ▾

Years of Exp. ▾

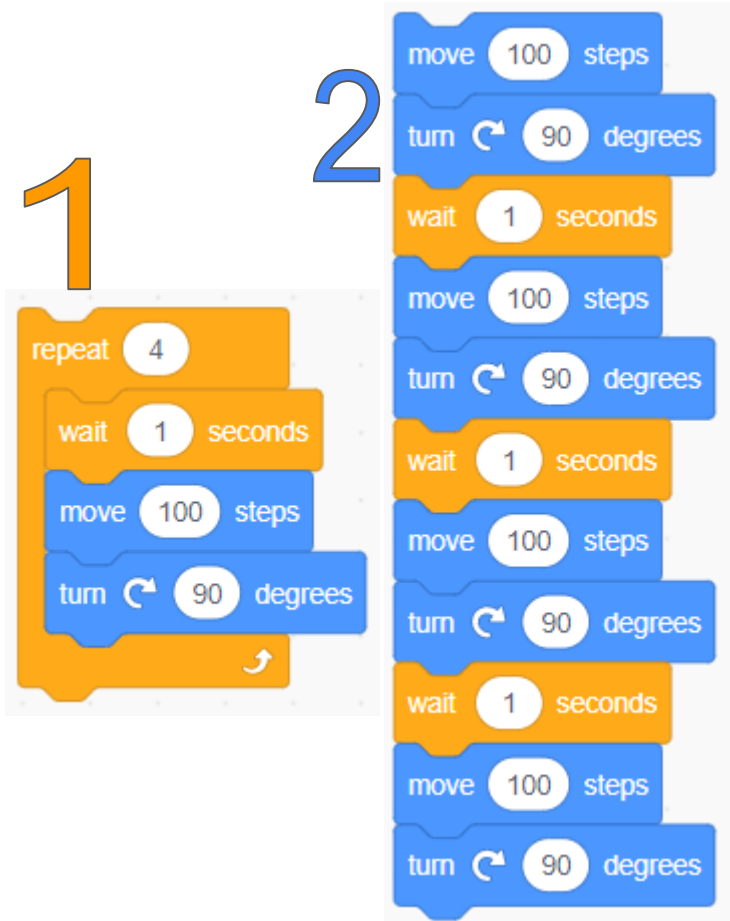
Education ▾

Direct Reports ▾

Performance ▾

Other ▾

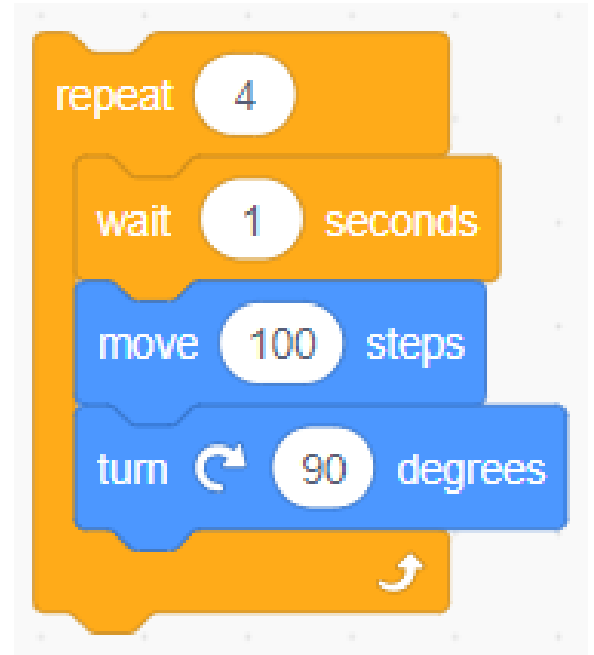
What shape will this code make?



Elegant

When a theory or model explains a phenomena clearly, directly or economically

Code with **BUGS** can never be elegant.



! CAUTION

Scratch

File Edit Tutorials

Code Backdrops Sounds

Motion

Stage selected: no motion blocks

Looks

- switch backdrop to backdrop1
- switch backdrop to backdrop1 and wait
- next backdrop

Sensing

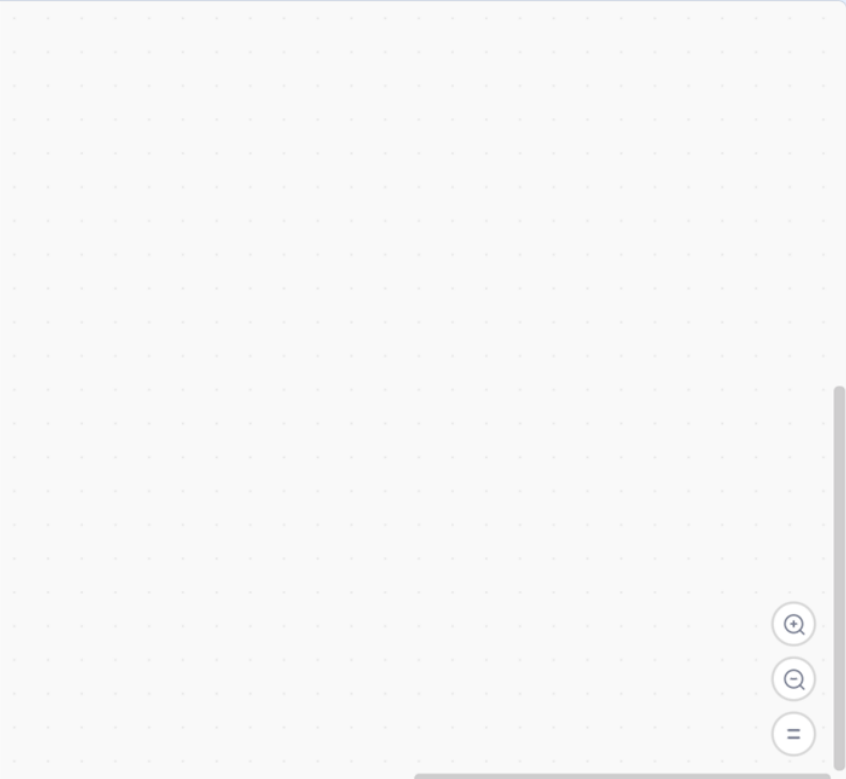
- change color effect by 25
- set color effect to 0
- clear graphic effects

Variables

- backdrop number

Sound

- play sound pop until done
- start sound pop



Stage

Sprite Name x y

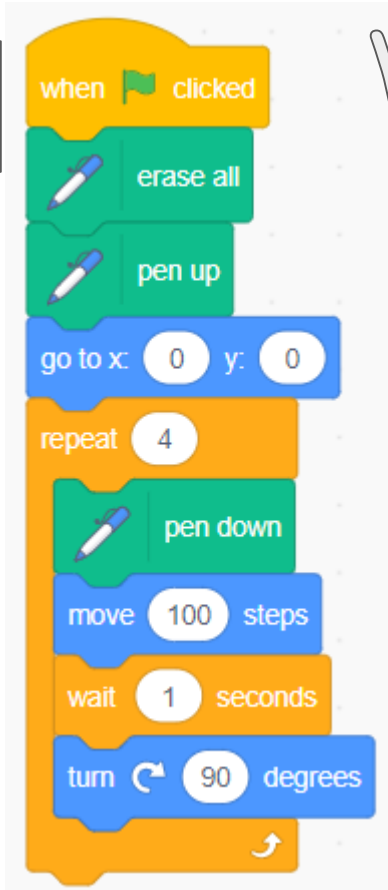
Show Size Direction

Abby

Backdrops 1

A female cartoon character named Abby is standing on the stage. She has a speech bubble above her head that says "Aha!".

1

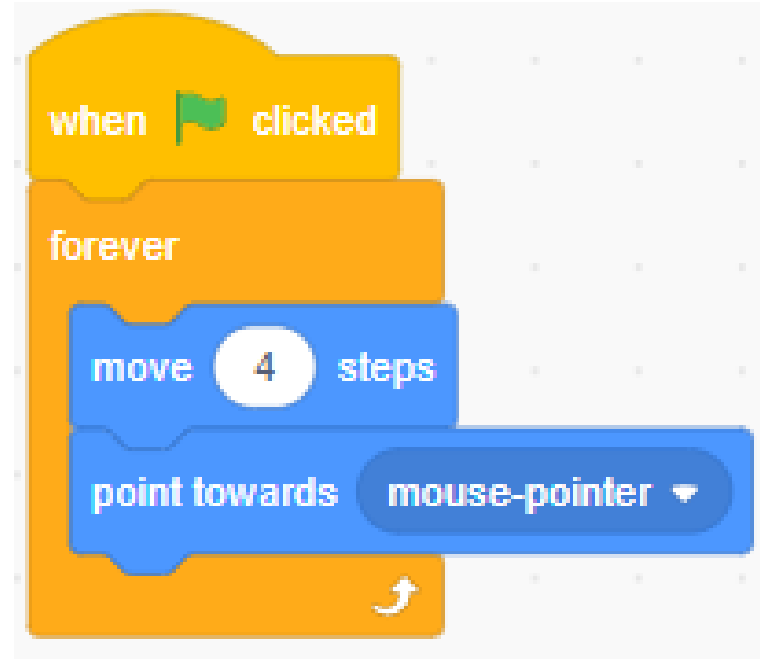


```
when clicked
  erase all
  pen up
  go to x: 0 y: 0
  repeat 4
    pen down
    move 100 steps
    wait 1 seconds
    turn 90 degrees
```

The image shows a Scratch script starting with a yellow 'when clicked' block. It is followed by two green 'pen' blocks: 'erase all' and 'pen up'. Then a blue 'go to x: 0 y: 0' block. An orange 'repeat' block with a count of 4 contains four blocks: a green 'pen down' block, a blue 'move 100 steps' block, an orange 'wait 1 seconds' block, and a blue 'turn 90 degrees' block. A small arrow at the bottom of the repeat block indicates it loops back.

What if I wanted to draw
the lines of the shape?

Follow Mouse



Follow Me

```
when green flag clicked
  forever loop
    if not touching mouse-pointer then
      move 10 steps
      point towards mouse-pointer
      wait .5 seconds
    if touching mouse-pointer and mouse down? then
      play sound Meow until done
```

The image shows a Scratch script on a grid background. It starts with a yellow 'when green flag clicked' block. Below it is an orange 'forever' loop block. Inside the loop, there are two 'if' blocks. The first 'if' block has a green 'not' block, a blue 'touching mouse-pointer?' block, and a green 'then' block. Inside this 'if' block are three blocks: a blue 'move 10 steps' block, a blue 'point towards mouse-pointer' block, and an orange 'wait .5 seconds' block. The second 'if' block has a green 'touching mouse-pointer?' block, a green 'and' block, a blue 'mouse down?' block, and a green 'then' block. Inside this 'if' block is a purple 'play sound Meow until done' block. At the bottom of the 'forever' loop is a white arrow icon.

Sprites



COSTUMES

1  
avery walkin...
102 x 193

2 
avery walkin...
49 x 194

3 
avery walkin...
98 x 191

4 
avery walkin...
48 x 194

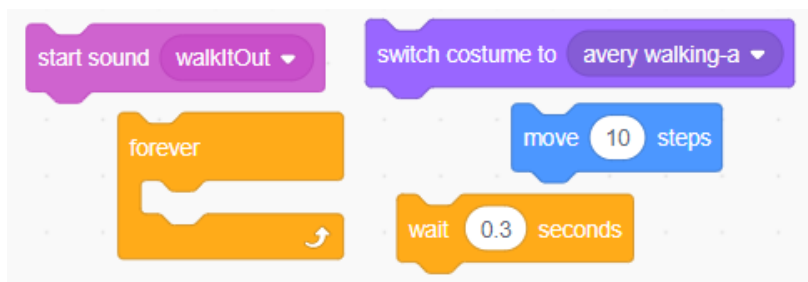
Using Blocks to Animate!

1

```
start sound walkItOut
forever
  switch costume to avery walking-a
  move 10 steps
  wait 0.3 seconds
  switch costume to avery walking-b
  move 10 steps
  wait 0.3 seconds
  switch costume to avery walking-c
  move 10 steps
  wait 0.3 seconds
  switch costume to avery walking-d
  move 10 steps
  wait 0.3 seconds
```

2

```
start sound walkItOut
forever
  next costume
  move 10 steps
  wait 0.3 seconds
```



Decomposed

Fair Use

107. That section of the Copyright Act says that there's no copyright infringement if the use of the material is fair, in other words "for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research.

4 Fair Use Factors

1. The purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes

Quoting a song's lyrics in a review of the song, the album or a concert where the song was performed.

2. The nature of the copyrighted work

Including a clip of a news program in a show commenting on how the news program handled the event covered

3. The amount and substantiality of the portion used in relation to the copyrighted work as a whole, and

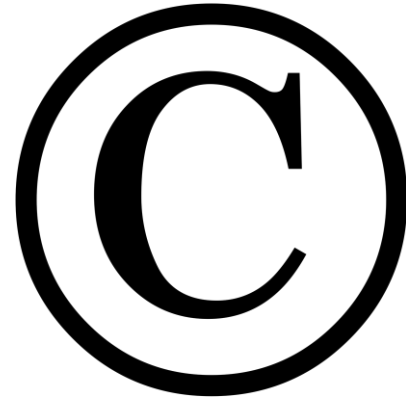
Paraphrasing text from a novel or nonfiction book in a collegiate essay.

4. The effect of the use upon the potential market for or value of the copyrighted work... Showing a nature documentary to a biology class.

Copyrights may last how long?

(Choose all that apply)

- a. 25
- b. 50
- c. 70
- d. 95
- e. 120



January 1, 1978

Learning Blade Missions

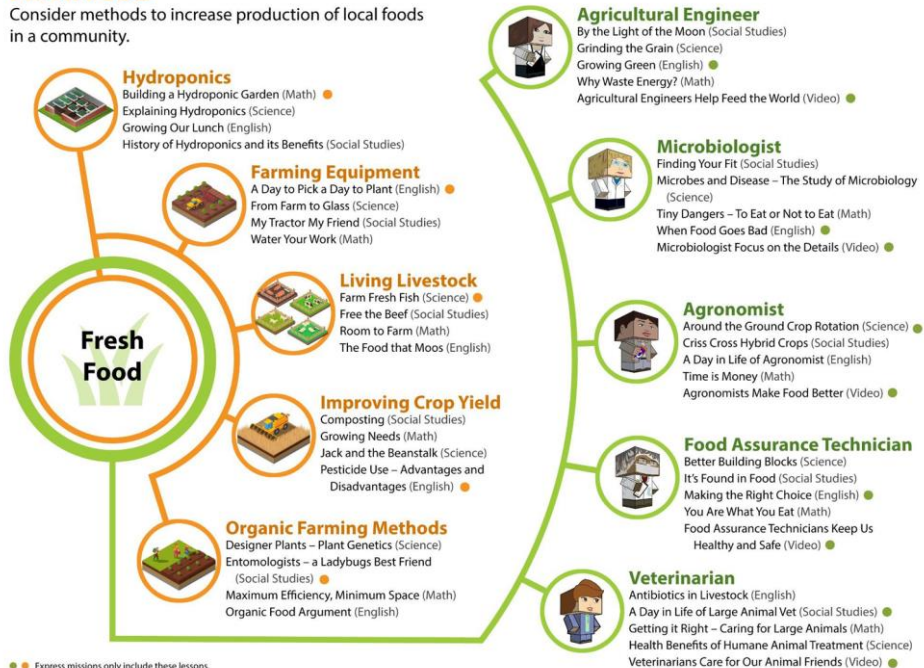
Entrepreneurship

Set up a new business with a focus on entrepreneurship.



Fresh Food

Consider methods to increase production of local foods in a community.



Access free account at LearningBlade.com/SC

Sherri Smith
(shlsmith@ed.sc.gov)



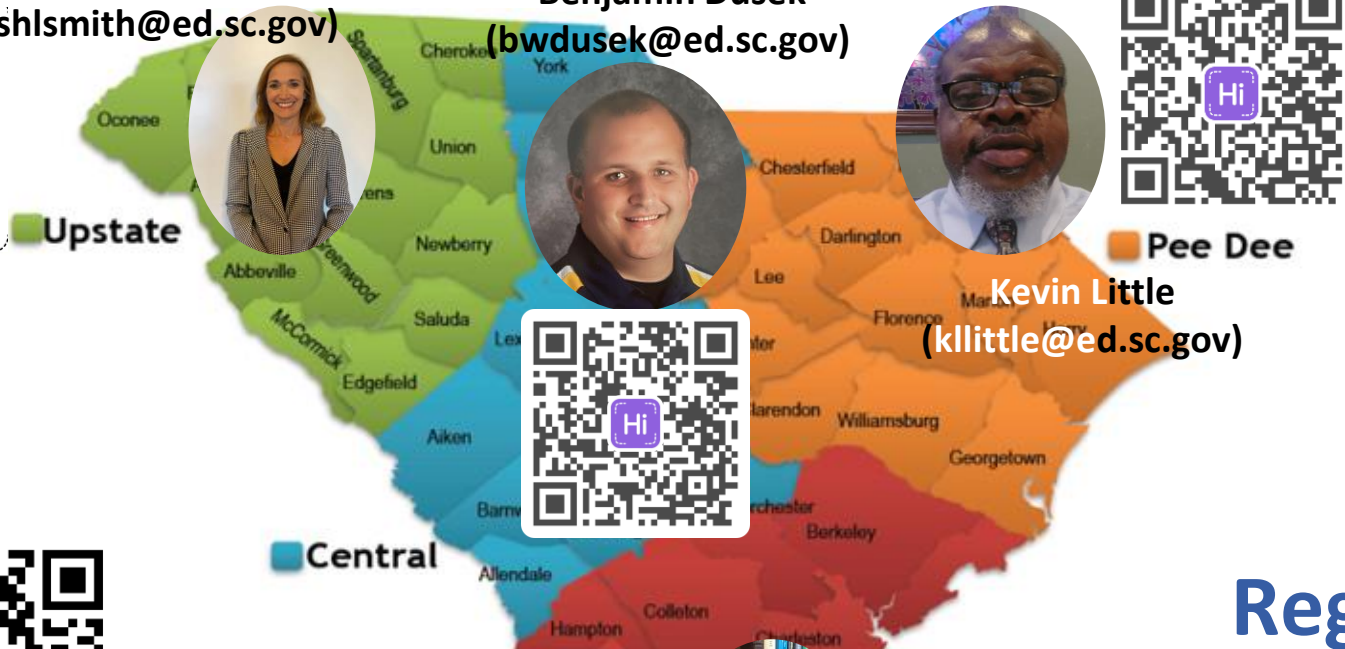
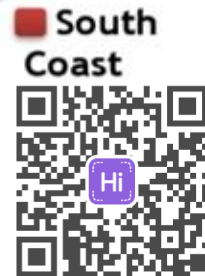
Benjamin Dusek
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Kevin Little
(kllittle@ed.sc.gov)



Matthew Neal
(mhneal@ed.sc.gov)



Regional CS Listserv
bit.ly/rcs4sclist

Regional Coaches Contact

Copter Game

```
when green flag clicked
  forever loop
    if not touching color yellow?
      change y by -1
    if key up arrow pressed?
      change y by 3
    if key right arrow pressed?
      change x by 3
    wait 0.01 secs
```

```
when green flag clicked
  go to x: -180 y: -40
  repeat until touching color red?
    if not touching color yellow?
      change y by -1
    if key up arrow pressed?
      change y by 3
    if key right arrow pressed?
      change x by 3
    if x position > 230
      say well done
      stop script
    wait 0.01 secs
  broadcast gameover
  stop script
```

Adding levels

```
when green flag clicked
  broadcast level 1
  go to x: -167 y: -24
  repeat until touching color purple?
    if not touching color yellow?
      change y by -1
```

```
when I receive level 1
  switch to background background1
  stop script

when I receive next background
  next background
  stop script
```

Extensions

The screenshot shows the Microsoft Word ribbon with the 'Extensions' group selected. The ribbon is blue and contains several icons and text labels. Below each icon is a small white box with text. The icons and their corresponding text are:

- Music:** An icon of a piano keyboard, a yellow balloon, and a clock. Below it, the text reads: "Music! Play instruments and beats."
- Fun:** An icon of a pencil and a lightbulb. Below it, the text reads: "Fun! Generate fun stories."
- Video Drawing:** An icon of a hand drawing on a screen. Below it, the text reads: "Video Drawing! Draw pictures with fun stories."
- Text to Speech:** An icon of a speaker with sound waves. Below it, the text reads: "Text to Speech! Make your stories talk."
- Synthesis:** An icon of a map of the United States with a large letter 'A' in the center. Below it, the text reads: "Synthesis! Generate fun stories with speech."
- Illustration:** An icon of a colorful house. Below it, the text reads: "Illustration! Generate fun stories with illustrations."

Below the ribbon, there are two more icons in a grid:

- LEGO MINDSTORMS EV3:** An icon of a LEGO Mindstorms EV3 robot. Below it, the text reads: "LEGO MINDSTORMS EV3! Make interactive stories and plots."
- LEGO MINDSTORMS EV3:** An icon of a LEGO Mindstorms EV3 robot. Below it, the text reads: "LEGO MINDSTORMS EV3! Make fun stories and games."

In the bottom right corner, there is a small video feed of a man with glasses and a purple shirt, speaking into a microphone.

Upload Image

Scratch Tips

**Add Images
From Outside
Scratch**

BootUp



Toggle Music

Scratch Tips

Toggle Music With a Button 

BootUp 



MUSIC 