

**CoderDojo Athenry**



**EXPLORERS**

**Code and Notes by Martha Fahy, 2018**

# CoderDojo Athenry

"Above all, be cool"



## Every week:

- ✓ Sign in at the door

## If you are new:

- ✓ Fill in Registration Form
- ✓ Ask a Mentor how to get started

**Make sure you are on the Athenry Parents/Kids Google Group:** email [coderdojoathenry@gmail.com](mailto:coderdojoathenry@gmail.com)



# Weekly Reminders



- Fire exit doors/main doorways must be kept clear **AT ALL TIMES**

- In the case of an emergency , please proceed in a calm and orderly manner to the nearest **Exit** and go to your **Assembly Point**



Do **NOT** take anything with you

If you have a child in another room, do **NOT** go to them, a Mentor will look after them



- Please leave passageways between desk and keep **CLEAR** at all times



**THINK  
SAFETY  
FIRST!**

- If power cable goes across passageways – must be **TAPED DOWN** ask mentor for tape



- **ONLY NINJAS** need a table - parents, please only use a chair







- If **FIRST AID** is required please alert a Mentor

**There are a number of trained first responders  
on site every week**

€2



+



# *Help us cut down on Single Use Cups*



***Bring your own cup (must have lid)***

**€1.50**



+



# Programming Languages

- Tell computer how to perform tasks
- C, C++, Java, Visual Basic, Python, JavaScript, PHP, HTML5

```
public static void calcWages()
{
    double rate, hrs, wage, over, total;

    rate = askForNumber("Enter Hourly Rate:");
    hrs = askForNumber("Enter Hours Worked:");

    if (hrs <= 40) {
        wage = rate * hrs;
        over = 0;
    }
    else {
        wage = rate * 40;
        over = (hrs - 40) * 1.5 * rate;
    }
    total = wage + over;

    JOptionPane.showMessageDialog(null, "Total wages are " + total);
}
```

**Some Java Code**

# Scratch's Interface

The image shows the Scratch interface with several key components highlighted in green text:

- Stage:** The top-left area where the character (Scratch Cat) is positioned on a white background.
- Sprite:** The bottom-left area showing the 'Sprites' panel with a single sprite named 'Sprite1'.
- Palette of Commands:** The central-right area containing a list of command blocks such as 'move 10 steps', 'turn 15 degrees', 'point in direction 90', 'go to x: 0 y: 0', 'glide 1 secs to x: 0 y: 0', 'change x by 10', 'set x to 0', 'change y by 10', 'set y to 0', 'if on edge, bounce', and 'set rotation style left-right'. A category menu on the left lists Motion, Looks, Sound, Pen, Data, Events, Control, Sensing, Operators, and More Blocks.
- Code:** The large grey area on the right where the command blocks are assembled into a script.

Additional interface elements include the 'Scratch' logo, menu bar (File, Edit, Tips), toolbar, 'Offline Editor' label, and a small 'x: 0 y: 0' coordinate indicator in the top right corner of the code area.

# The Stage

Full Screen



Starts/Stop



Stage  
1 backdrop

New backdrop:



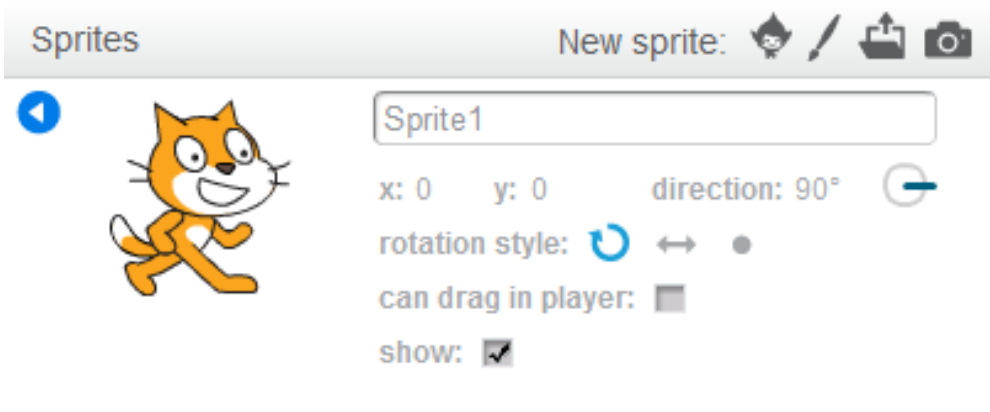
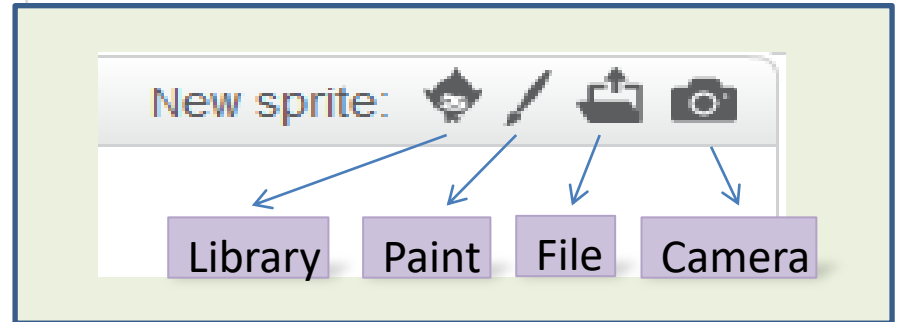
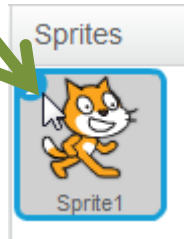
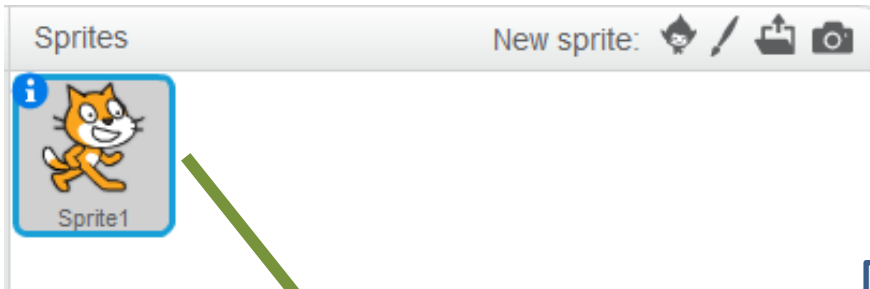
Library

Paint

File

Camera

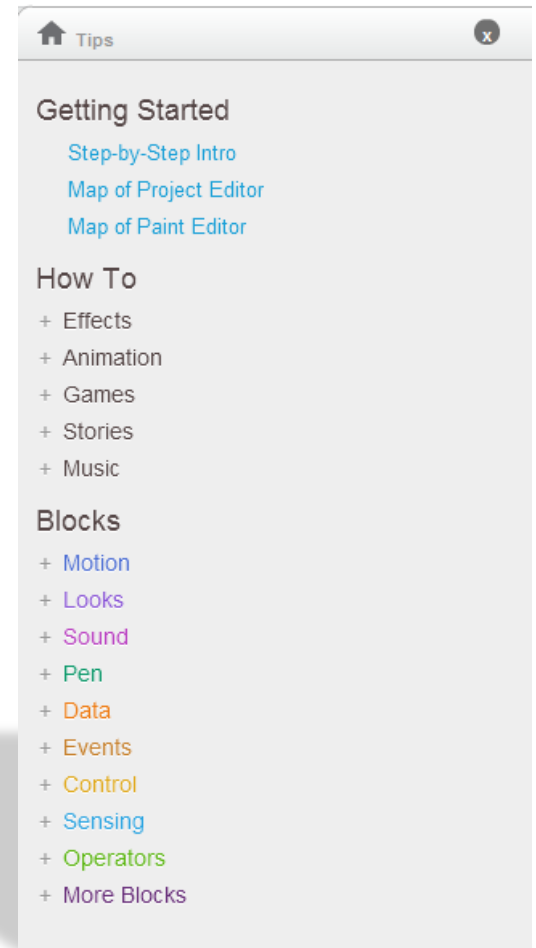
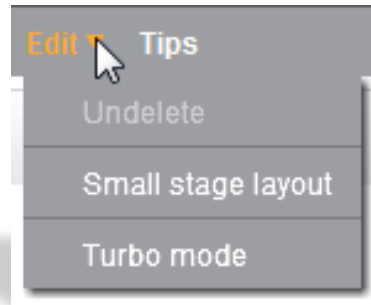
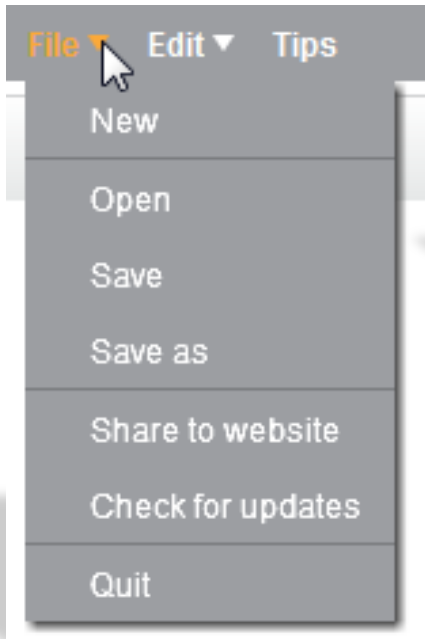
# The Sprites (your characters)



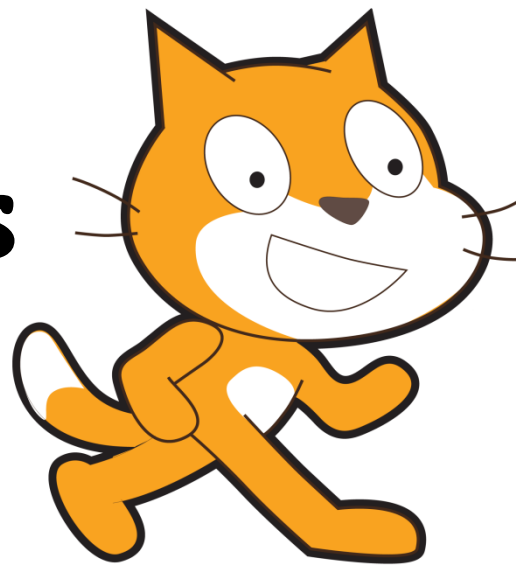




# Main Menu



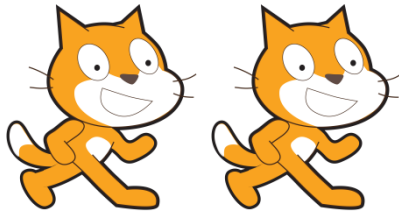
# Cursor Tools



Duplicate

Grow

Tips



Delete

Shrink



# Palette of Commands



# Motion



```
move 10 steps
turn ↺ 15 degrees
turn ↻ 15 degrees

point in direction 90
point towards

go to x: 21 y: -62
go to mouse-pointer

glide 1 secs to x: 21 y: -62

change x by 10
set x to 0
change y by 10
set y to 0

if on edge, bounce

set rotation style left-right

 x position
 y position
 direction
```

# Looks



say Hello! for 2 secs

say Hello!

think Hmm... for 2 secs

think Hmm...

show

hide

switch costume to costume2

next costume

switch backdrop to backdrop1

change color effect by 25

set color effect to 0

clear graphic effects

change size by 10

set size to 100 %

go to front

go back 1 layers

costume #

backdrop name

size

# Sound



play sound **meow**

play sound **meow** until done

stop all sounds

play drum **1** for **0.25** beats

rest for **0.25** beats

play note **60** for **0.5** beats

set instrument to **1**

change volume by **-10**

set volume to **100** %

volume

change tempo by **20**

set tempo to **60** bpm

tempo



# Pen




clear

stamp

pen down

pen up

set pen color to 

change pen color by

set pen color to

change pen shade by

set pen shade to

change pen size by

set pen size to

# Data

$$2x + 1 = 7$$

Make a Variable

Make a List

New Variable

Variable name:

For all sprites     For this sprite only

---



# Event



when  clicked

when  key pressed

when this sprite clicked

when backdrop switches to

when  >

when I receive

broadcast

broadcast  and wait

# Control

Do that  
10 times



wait 1 secs

repeat 10

forever

if then

if then

else

wait until

repeat until

stop all

when I start as a clone

create clone of myself

delete this clone

# Sensing



```
touching [ ] ?
touching color [ ] ?
color [ ] is touching [ ] ?
distance to [ ]
ask [What's your name?] and wait
answer
key [space] pressed?
mouse down?
mouse x
mouse y
loudness
video [motion] on [this sprite]
turn video [on]
set video transparency to [50] %
timer
reset timer
[ ] position of [Sprite1]
current [minute]
days since 2000
username
```

# Operator



+

-

\*

/

pick random 1 to 10

<

=

>

and

or

not

join hello world

letter 1 of world

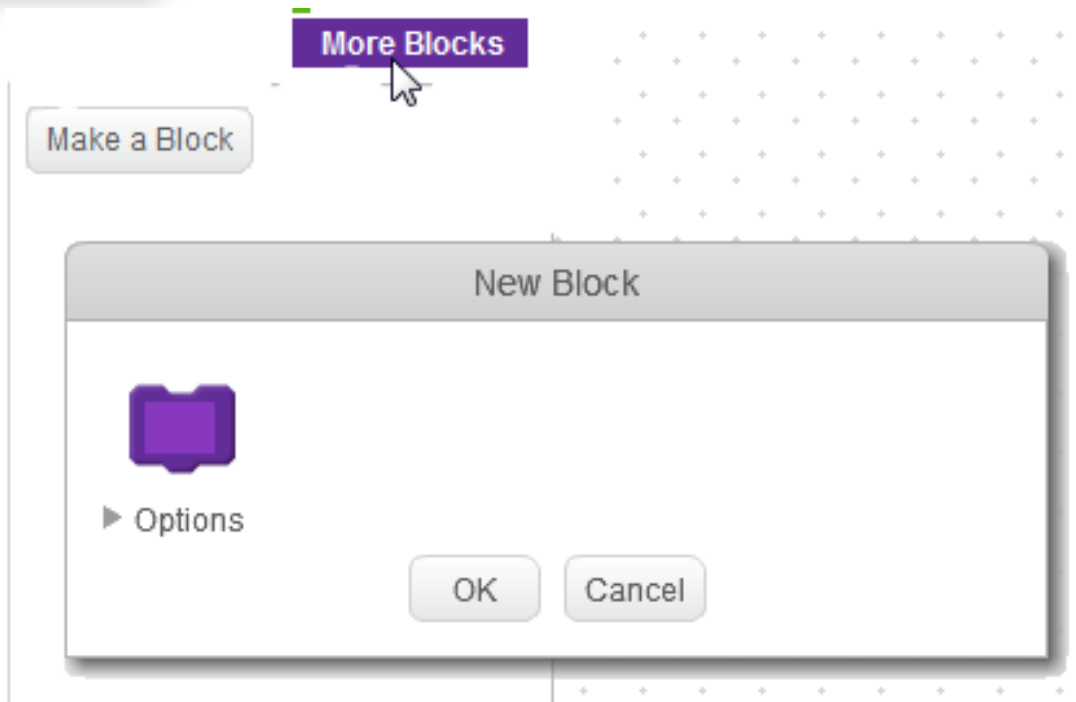
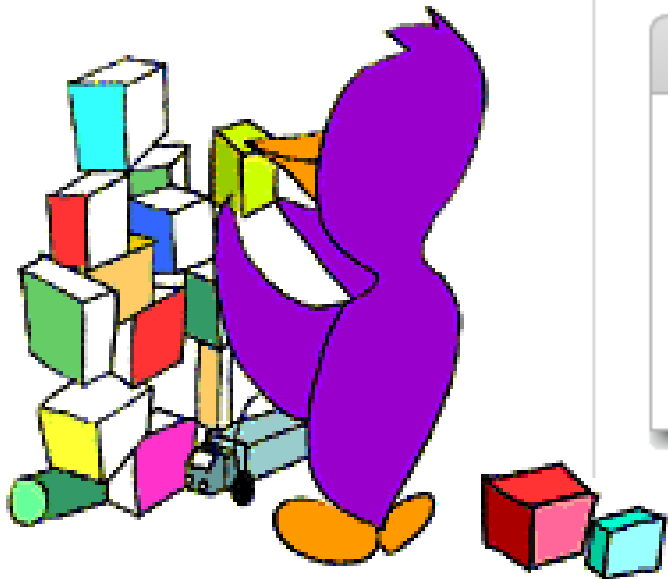
length of world

mod

round

sqrt of 9

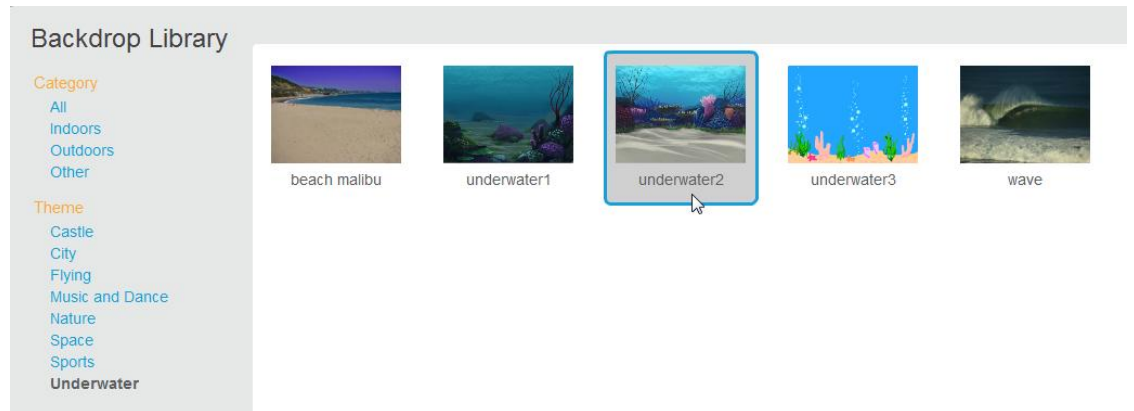
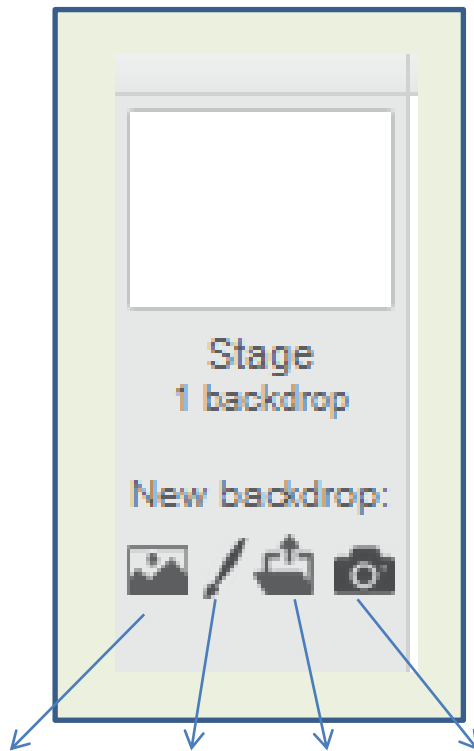
# More Blocks



Today's Ninja Challenge:  
Write Your **First** Piece of Code!  
Animate your Name



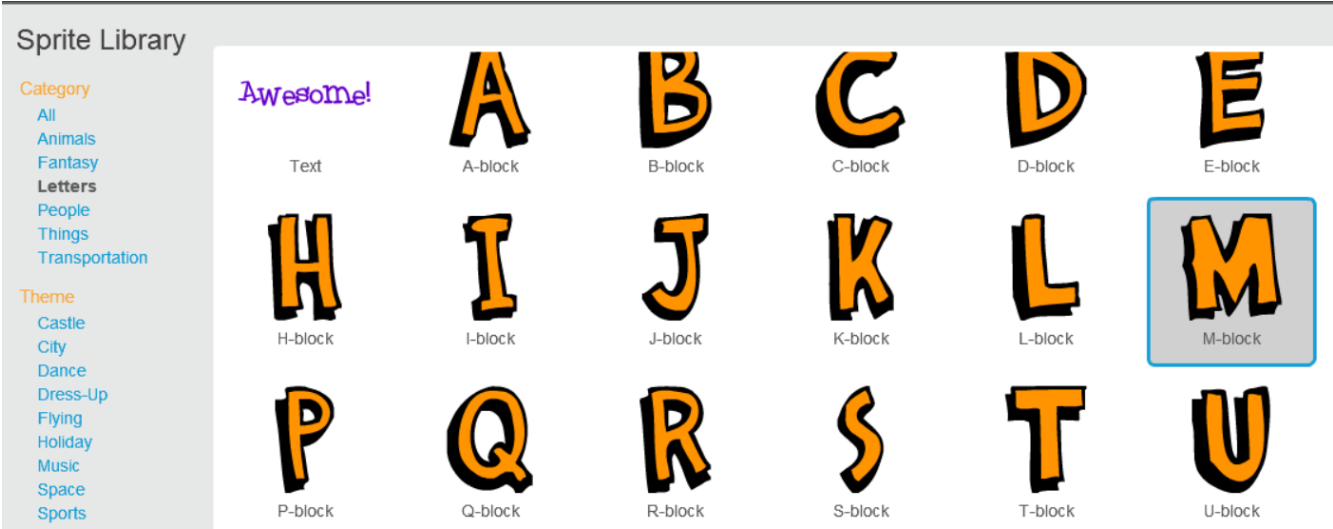
# Change the Background



Library Paint File Camera



**New Sprite:**  
Select from  
existing designs



**Tip:**  
Default size is big  
relative to stage:  
this shrinks it



Create a Sprite  
for Each Letter  
of Your Name



# Some ideas

when this sprite clicked

change color effect by 10

say Hello! for 2 secs

change y by 30

wait 1 secs

change y by -30

set mosaic effect to 30

play sound computer beeps1

change size by 50

wait 1 secs

change size by -50

forever

change color effect by 25

change size by -50

wait 1 secs

change size by 50

forever

change color effect by 30

# At the End ...

Upload your project to the Scratch Website

Access it  
from home



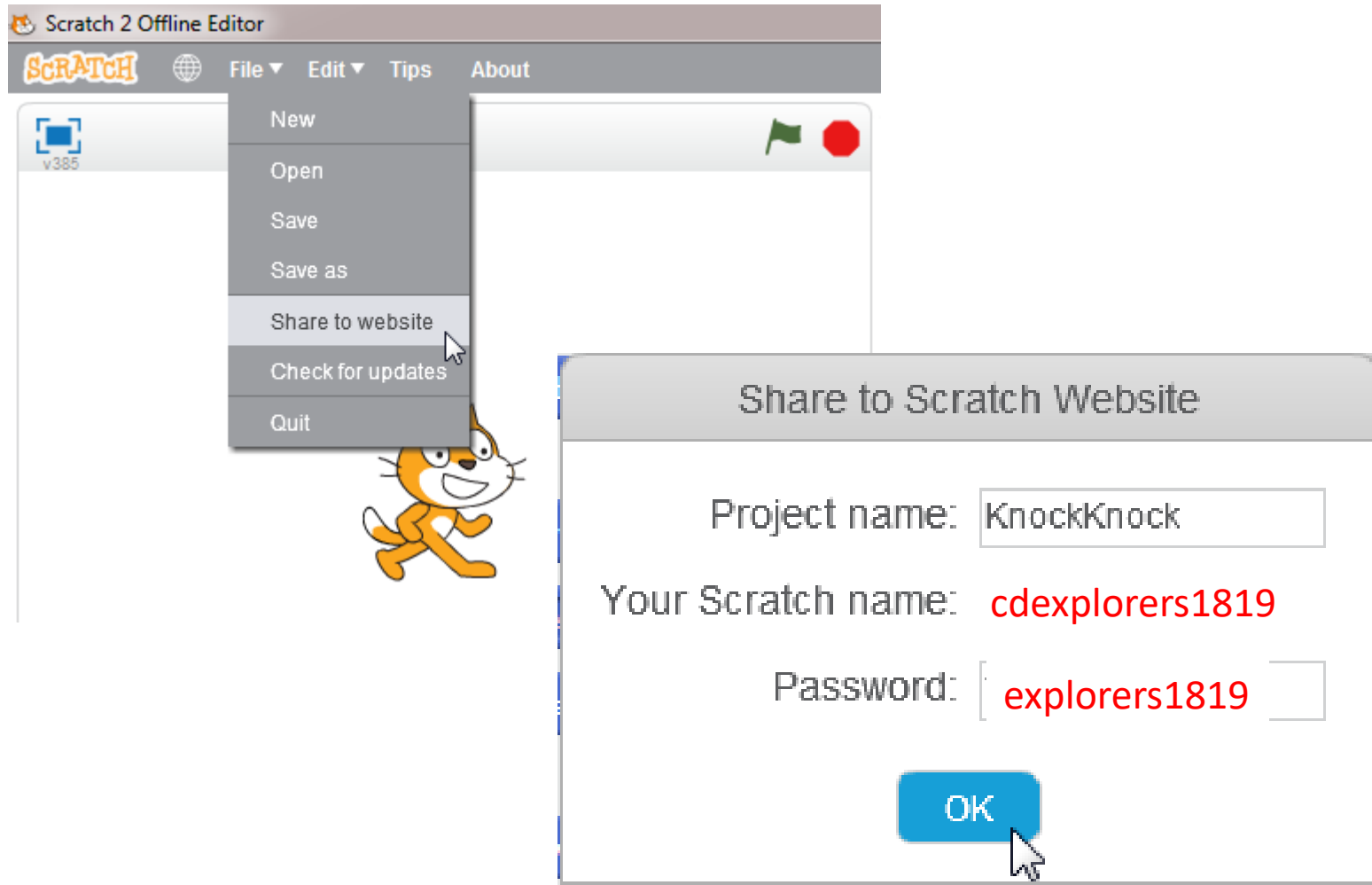
Improve it



Show your  
friends!



# Uploading to Scratch Website



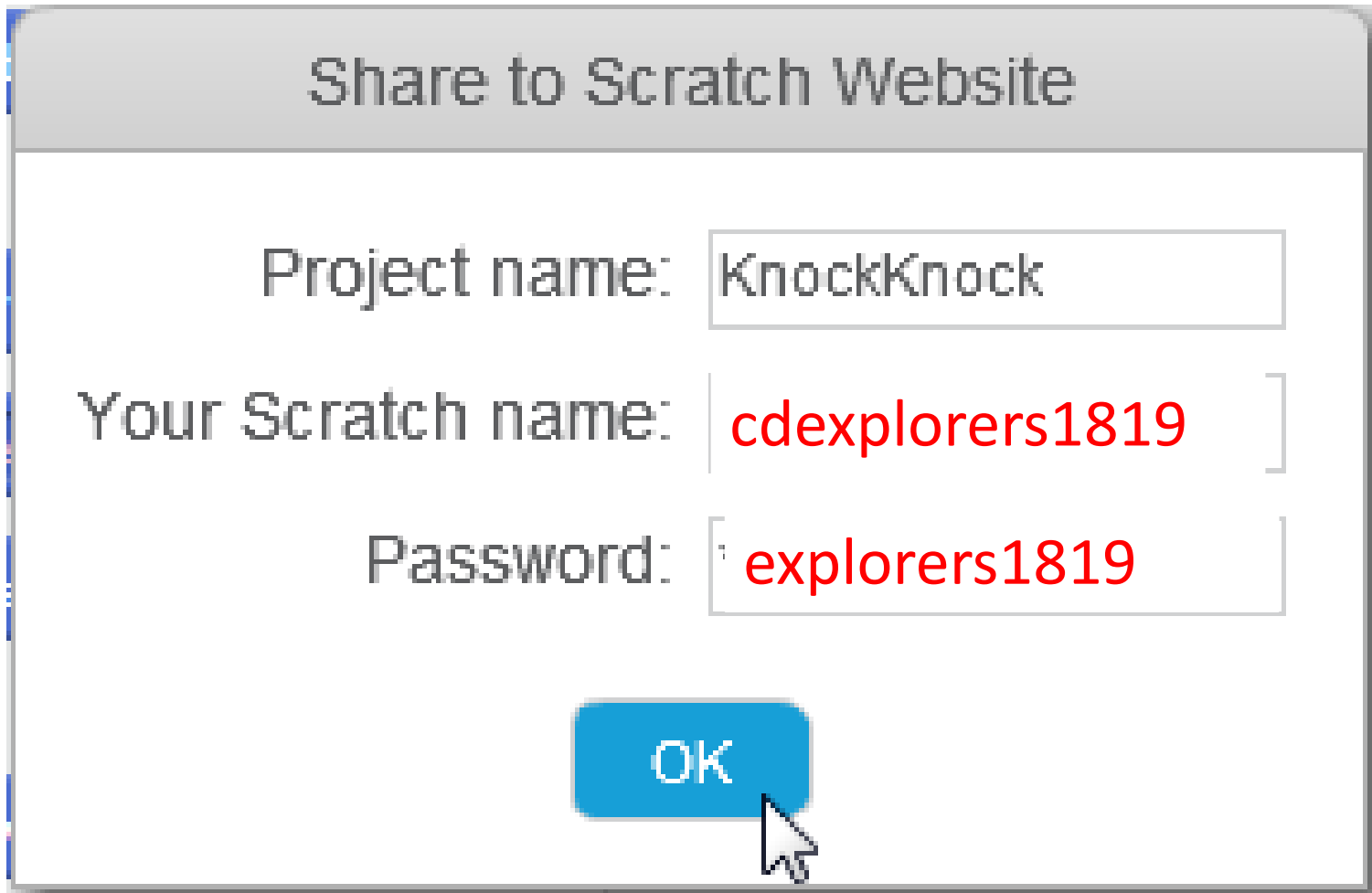
# Uploading to Scratch Website

Share to Scratch Website

Project name:

Your Scratch name:

Password:

A dialog box with a grey header bar containing the text "Share to Scratch Website". Below the header are three input fields. The first is labeled "Project name:" and contains the text "KnockKnock". The second is labeled "Your Scratch name:" and contains the text "cdexplorers1819" in red. The third is labeled "Password:" and contains the text "explorers1819" in red. At the bottom center of the dialog is a blue button with the text "OK" in white. A mouse cursor is pointing at the bottom right corner of the "OK" button.

# Keep In Touch!

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