Make Your Own Virtual Pet in Scratch!

Introduction

Welcome to Make Your Own Virtual Pet in Scratch! We are so glad you joined us today, and are excited to show you how to make your own game.

What is We Can Code IT

We Can Code IT is a non-profit organization that teaches girls and women about technology and engineering in a fun, creative way.

What is Scratch

Scratch is a fun, easy to use, programming language. Basically, it's like scripting your own play. You make actors perform scripts on a stage. You can make games, art, animations, tell stories, and so much more, using Scratch.

What is our goal?

Our goal is to have you learn some programming basics and have fun while doing it! The end result today will be that you have created your own "virtual pet" game using Scratch. Feel free to make it your own! Change pictures, add your own scripts to the actors, play around and explore!

In programming there are often many ways to accomplish the same task. If you find a new way, great!

We also want to teach you about Computational Thinking, which means, you start thinking like a programmer. Don't worry about this, it will come naturally.

Copyright 2014, We Can Code IT, Inc. http://WeCanCodeIT.org

STEP 1: Open Scratch in your Browser.

Here is the URL (the web address): <u>http://scratch.mit.edu</u>

It will look like this

← → X 🗋 scratch.m	nit.edu				⇒ × =
	SCRATCE Create	Explore Discuss Help	P Search	Join Scratch Sign in	
	Create stories, Share with othe	games, and anim ers around the wo	ations ſld	when 🔁 clicked	
	A creative learning com	SEE EXAMPLES munity with 6,403,566 proj cators FOR PARENTS	Join scratch (ris free) eacts shared	move 10 str change color play drum 40 for 02 beats say Welcome to Scratch for 2 secs	
	Featured Projects				
	Rock Rain by sbelusy	Vers sets and it is the daily anythet for a new barrier barry outgoing the transmission of the set of the barrier set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the barrier set of the set of the set of the set of the barrier set of the se	Super Pixel Aquarium by DivideByZer0	Shopping Penguin AMV by Famingspite 0 0 1 0 0 1 7 0 1 7 0 1 7 0 1 7 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1	
Waiting for cdn2.scratch.mit.edu	Featured Studios			****	

//Comment: Do you see this page?

If (yourAnswer = true) then

Say "HURRAY!"; Else

raiseYourHand();

Step 2: Join Scratch so you can save your project!

Click on the Fish Picture to Join Scratch.



Fill out the username and password fields. Make these something memorable to you.

If you need help, then

raiseYourHand();

← → C 🗋 scratch.mit.edu			☆ » =
BREITH Create Ex	plore Discuss Help 👂 Search	Join Scratch Sign in	A.
Create stories, g Share with others Create stories, g Share with others	Ames, and animations Join Scratch It's easy (and free!) to sign up for a Scratch ac Choose a Scratch Usemame Choose a Password Confirm Password	Count.	
Featured Projects	1 2 3 http://www.energy.com/analysis	9 Penguin AllW 20 b theonygust	

When you click "Next," you'll be asked for an **email address**, amongst other information like your gender, and birth month and year. Fill out those fields, and continue filling out the registration information until finished.

We're almost there! Let's pause for a moment and talk about the weird way I've been writing.

At this point, you've seen a few of these statements If(you'veNoticedTheseStatements =

true) then

raiseYourHand();

Else

keepYourHandDown();

What are some of the things you notice about these statements?

What does this mean to you? How would you say it in English?

Step 3: Writing "pseudocode"

Computers are not very bright, but people are. If you bought a computer from the store and it didn't have an operating system, like Windows or Mac operating systems, then the computer would just sit there, looking at you with a blank stare.



A computer needs someone to tell it what to do. It needs very specific instructions!

That's where you come in!

Let's write down some instructions that a computer might understand. When you write this using English (or any other human language), it's called *pseudocode*.

Using pseudocode, let's tell the computer how a person raises her hand.

function raiseYourHand(){

//write your instructions here, between the curly braces.

}

Here is an example:

function raiseYourHand(){

put my arm up, towards the sky; point fingers

to the sky; if I am called on then put my arm

down to a natural position;

}

Your version may differ. This is the fun of programming, you get to make your own recipes!

What did you notice about your pseudocode? How was it different than the example? Would you change anything?

Step 4: Create with Scratch



On the scratch web page, click "Create."

Remember:

If (needHelp = true) then

raiseYourHand();



Notice the tip bar on the right. Go ahead and follow along for the next several minutes, and play with Scratch!

Note: If the tip bar doesn't show, click "Tips" at the top of the screen, then click "Getting Started" from

the list that annears		-			
	Tinc			Save now 📕	WeCanCodeIT 🔻
Basic Virtual Pet		ostumes Sounds		4 5 s	ee project page
v424 by WeCanCodelT (shared)	Motion	Events		\odot	All Tips
Hunger -	Looks	Control	when up arrow key pressed when dow arrow		
	Sound	Sensing	chan 10	Step-by-Step Guides	
	Pen	Operators	Catting Charles	Getting Started with Scratch	
			Getting Started		

Step 5: What can you tell us about Scratch?

You've played around with Scratch, so what are some of the things you've noticed? Share with the class.

Did you notice colors, stages, actors, commands?

Step 6: Saving a Project:

SCRATCE 🛞 💷 Edit 🔻 Tips About	▲ キ X X ②	Save now 🚺 WeCanCodeIT
Cetting Started	Scripts Costumes Sounds	Share See project page
Vice by WeCanCodelT (unshared)	Motion Events Looks Control Sound Sensing Pen Operators Data More Blocks	x: 30 y: 0
your file	move (1) steps turn (* 15) degrees turn (* 15) degrees	
	point in direction 907 point towards	
Sprites New sprite:	X: -33 Y: 180	
Stape 1 sending: New backford:	change x by (1) ext x to (2) change y by (2) ext y to (2)	
	ff on edge, bounce	Q = Q

Look at the arrow in the image, above.

Name your project something memorable, like "Getting Started."

← → C' 🗋 so	cratch.mit.edu/projects/27	7031576/#editor													5	» =	6	
SCRATCH 🛞 F	ile▼ Edit▼ Tips About	4 + 2	C X 📀									Saved <mark>8</mark> WeCanCodeIT						
Getting Sta	New		Scripts	Costumes Sounds								St	iare	65	See projec	ct page		
v424 by WeCanC	Save now	Save New	Motion	Events											M	0	?)	
	Save as a copy	Save NOW	Looks	Control											and the second	×		
	Go to My Stuff		Sound	Sensing											x: 30			
			Pen	Operators											y: 0			
	Upload from your computer		Data	More Blocks														
				atoma 🕴		-		-										
	Revert					move	10 st	sbe										

Then Click File -> Save Now.

Here's some pseudocode explaining what we just did.

If (doneWithProject = true) then

```
nameProject(); clickFile();
clickSaveNow();
```

Step 6: Create Your Virtual Pet – move cat around with arrows

Click File -> New

This starts a new project.

← → C' 🗋 so	cratch.mit.edu/projects/27	031576/#editor												s »	Ξ
SCRATCE 🛞 F	ile▼ Edit▼ Tips About	4 * :	х ж 📀 👘									ed 🚺	s w	eCanCod	elT▼
Getting Sta	New	Now	Scripts Co:	stumes Sounds							Share	4	See	project p	age
v424 by WeCanC	Save now		Motion	Events										100	?
			Looks	Control										The second	
	Go to My Stuff		Sound	Sensing										x: 30	
			Pen	Operators										y: 0	
	Upload from your computer		Data	More Blocks											
					1.1										
	Revert		turn (1, 15, d			move (1	0 steps								





called Sprite1 is selected, and we are on the Scripts tab.

Scripts	Costumes	Sounds
Motion	Even	ts
Looks	Cont	rol
Sound	Sens	sing
Pen	Oper	ators
Data	More	Blocks

Click Events under scripts.



Step 6: Create Your Virtual Pet – move cat around with arrows (continued)

We are telling the computer to do something in this Scratch Program when the up arrow is pushed on your keyboard. This is our first step into the world of programming, and we are using Scratch as our programming language!

Let's continue!

Click Motion

Drag "change y by [10]" in to the scripts area,

Attach it underneath the "when [up arrow] key pressed" block.

Test! Click the up arrow on your keyboard and see what happens.



Step 7: Test and Debug!

The best programmers test their creations as they go along. It's a way to see if your instructions are correct, and catch any issues as they happen.

How would you test to see if your Scratch code is working?

Did you test it? Is it working?

If not working, raiseHand() and debug();

What is debugging

Errors in programming are called bugs. We want to catch the "bugs" in our code as soon as possible.

Debugging is sort of like getting rid of bugs in your house. Bugs mess things up. There's a funny story about how computer bugs were named!

As the story goes, pioneer computer programmer **Admiral Grace Murray Hopper** coined the phrase in the early 1940s, when her computer crashed. Searching for the cause of the problem, Admiral Hopper discovered the original computer bug, inside her computer, was a moth.

As she removed the moth, her coworker asked what she was doing. "I'm debugging the machine," she answered. http://indianapublicmedia.org/amomentofscience/computer-bugs-

and-amazing-grace/

How do you fix these bugs? You review your work to see if it's a typo or a simple mistake, like not joining related blocks together, in Scratch. You ask for help. You look things up in books or online. You take classes to learn more. You practice, practice, practice!

Step 8: Duplicating and Code Reuse in Scratch

Now that your up arrow is controlling the cat, moving her up (name that axis, X or Y?), let's reuse that set of blocks, that code, to create events for the right arrow, down arrow, and left arrow.

Right-click on the set of blocks that you want to copy.

A menu will appear.

Select "duplicate" from the menu by left-clicking on "duplicate."



Drag the newly-formed set of blocks to an open space in the scripts window, then left-click to place it.

Now, click the drop-down on this duplicated set of blocks, to change when [up arrow] key pressed, to when [down arrow] key pressed.

Operators More Blocks			x: -/ y: 106
10 steps	when up arrow • key pressed change y by 10	when down arrow key chan up arrow down arrow	Change to down arrow
) 15 degrees		left arrow	

Now Test and Debug!

Step 8: What is missing?

Did you test the down arrow? What did you expect to happen? What *did* happen?

The cat still moved up when you pressed the down arrow, didn't she? Why?

How do we make her go down? *Hint: think of positive numbers as up and right, and negative numbers as down and left.*

Change the value of "change y by [10]" to the correct number [-10], under the duplicated block.

Test.



Step 9: Deleting Blocks and Considering X-axis

Duplicate the up arrow block again.

Drag it in to an available area of the scripts workspace.

Change "up arrow" to "right arrow"

Test

Debug: what is the problem?

Y is up and down. We don't want to change the Y position when we click the right arrow, we want to change the X position.

Let's disconnect the "change y by . . . " motion block from the "when right arrow key pressed" event by dragging it away from that block.



Delete the "change y by . . . " block by right-clicking it, and choosing "delete."

Now, attach the "change x by . . ." block under the "when right arrow key pressed" event, and leave the number at 10.

Test!

Step 10: On Your Own

Your goal is to create the when left arrow key pressed event programming on your own. Raise your hand if you are stuck.

Test!



If you are done and waiting,

- 1) Help someone else debug. Helping them will help you learn too!
- 2) Right click in an open area of the scripts window. What does "clean up" do?
- 3) Click around and see the different types of blocks available: Motion, Looks, Sound, Pen, Data, Events, Control, Sensing, Operators, and More Blocks.

Step 11: Add a backdrop

Let's dress up our stage by adding a backdrop of a room to it. This is where your pet will live.

Left-click on the image icon at the bottom left of your screen.



A new screen appears. Click the "Indoors" category and double- click a picture of an inside of a room.



Step 11: Add a backdrop (continued)



The result? A new backdrop in your game!

Step 12: Feed your Pet, add the look

Let's add a new sprite (another actor or prop) to the scene. This will be food for your pet. Doing this is similar to how you added a backdrop, but you click on the Add Sprite icon.



A new window will appear.



Step 12: Feed your Pet, add the look (continued)

You'll see your food item appear.

Click the "I" in the image of your food item, and rename your food to "Food"



Test. Move around. It's looking good, but nothing much is happening. Let's change that!

Step 13: Feed your Pet, make a variable to store the amount of food

You have a stomach. You fill it up, and it empties. It's a place to store (and process) food. Well, we need to mimic storage of food in Scratch.

We store values in special blocks called "variables." Variables are a type of data. Their values can vary, hence the name "variable."

Click on the Cat Sprite

Click Data

Click Make a Variable



Name your variable Hunger, then click the Ok button.

			New \	/ariable
			Variable name: Hu	nger
		1	For all sprites	○ For this sprite only
			Cloud variable	e (stored on server)
(<u>}</u>		ОК	Cancel

Step 13: Feed your Pet, make a variable to store the amount of food (continued)

Drag the "set Hunger to 0" block in to the scripts window.

Change the value to 5 (we'll say that 0 is starving and 10 is full, so 5 is right in the middle) This

is called "initializing" the variable.



Test: the "Set Hunger" block by double clicking on it. Did it change the Hunger variable to 5?

Step 14: Starting the program

So far, so good, but how do we start the program in order to set the Hunger variable to 5? A special event object comes in to play.



The green flag starts the program.

Click Events

Drag the "when flag clicked" event on to the script area, and attach "set Hunger to 5" on it.



Step 14: Broadcast a Message



We're going to do something special now. We are going to "broadcast," or a shout out, to a new message. It's like phoning a friend. Let's broadcast a new message simply count down time, and subtract a number from Hunger every 10 seconds. Just like you get hungry when you don't eat over time, so will the cat.

Drag "broadcast [message1]" on to the "set Hunger . . . " block.

Click the dropdown by the word "message1" and left-click on "new message."

A new window will appear.

n thi		+ Hunner to 5
	New Message	message1 👻
n ba Mes	sage Name: getHungry	- 19 P
n lo	OK Cancel	
_		

Name the message getHungry, and click the OK button.

Step 14: Add a Listener



Now, let's have an event pick up that message, like a friend who will always pick up a phone call.

Locate "when I receive [message1]" in the events area.

Drag that block to a blank area in the scripts window.

Change the dropdown to "getHungry" instead of "message1."

Pseudocode Time!

When feeling hungry, is your stomach less full or more full? What variable should we change? How often should we do this? Do you get hungry once, or does it happen over time, and go on and on until you eat?

Share your thoughts with the class.

Step 15: Adding Code to the Listener

Did your pseudocode read something like this?

	forever				
	wait	10 se	:CS		
	chang	je Hung	ger 🔻 I	by -1	
		(ئ_	1.01		

Find and attach the two control blocks, and 1 data block to the "when I receive getHungry" event listener.

Test! (Click the flag and wait 10 seconds. Did Hunger go down?) If

(needHelp = true) then

raiseHand();

If you are waiting . . . find out what happens when you wait by 1 second. What happens if you change hunger by a different value? See what other items can **Control** the program flow?

Step 16: Understand "Loops" or "Iteration"

In the real-world, many of the same things happen over and over again.



The sun rises every day. You eat several times a day. You sleep every night. You have a birthday every year.

When you do something over and over again, in a cycle, you might say it's a "loop." Another word for this is "iteration."

Programmers use loops/iteration to their advantage! Why write something many times when we can simply call the same commands over and over again inside the loop?

Go to Sleep Loop Pseudocode

Forever																
Wait [24] Hours		1	2		199			-		1						
Brush teeth		1	w	her	1	[F	ece	ive		geti	Hun	gry	-	J		
Wash face			fo	rev	/er	1		J		1						
Put on pajamas				W		1		se	cs	<u> </u>		-		ć.		
Lie down in bed				ch	an 	ge	H	ung	jer	•	by	L	1			
Close Eyes																
Fall Asleep																
Does this seem a little bit like our "forever" loop?																

Step 17: Add a Feed (getFull) Event Broadcast

We need to add another event broadcast, like we did for getHunger, but this one will be called getFull. We will add code to simulate what happens when the cat eats.



In Events, drag "broadcast [getHungry]" and attach to the other "broadcast [getHungry]" block to call it once the program starts.

Click the dropdown of the newly added block, the last one in the flag group, and click "new message."

When the New Message window appears, add the message name getFull.

It's the same process as the getHungry block. There's nothing much new to test yet, so let's continue by adding an event listener for getFull.

Step 18: Add a Feed (getFull) Event Listener

Again, our listener hears your call, and responds by doing a set of things.

Let's flush this out together.

Pseudocode Time!

When should we check this? How fast should the cat's stomach fill up? Is there a maximum amount the cat can eat? When you eat, is your stomach less or more full? What variable should we change?

Write your pseudocode down and share your thoughts with the class.

Pseudocode for event listener getFull

Forever

If Cat is touching Food

If Hunger < 10

//10 is our "full" state.

Wait 3 seconds

Add 1 to Hunger

Step 18: Add a Feed (getFull) Event Listener (continued)



Review the blocks above. Do they match our pseudocode?

Find the blocks above and add them to your script workspace.

I know this is more challenging than previous exercises, but **give it your best try**. Ask a friend. Help a friend. Feel free to raiseYourHand()!

Test by clicking the Green Flag to start. Wait 5 seconds to see if hunger still goes down. Move your cat to the food bowl. Wait 3 seconds. Does the Food variable go up? What happens when you reach a hunger value of 10?

When on food, after 3 seconds, if Hunger is less than 10 AND

If (Hunger = previousHungerValue + 1) then

Celebrate!

Else

Debug.

Step 19: Add a checkGameOver Event Broadcast

We need to add at least one more event broadcast, like we did for getHunger and getFull, but this one will check if the game is over. The game is over if Hunger is below 0. Why? Because we're making it, and we call the shots! Call this event broadcast checkGameOver.

C X 🛛		Save no	ow 🔋 WeCanCode
Scripts Costumes Sounds		Share	4 See project p
MotionEventsLooksControlSoundSensingPenOperatorsDataMore Blocks	when right arrow very pressed change x by 10	when left arrow key pressed change x by -10	x: -77 y: -64
when clicked when space key pressed when this sprite clicked when backdrop switches to room	when clicked set Hunger to 5 broadcast getHungry broadcast getFull broadcast checkGameOver	when I receive getHungry v forever wait 10 secs change Hunger v by -1	
when loudness > 10	2 Message	e Name: checkGameOver Chang	e to checkGameOver
when I receive get broadcast getFull broadcast getFull and wait	when I receive getFull v forever if touching Food v? if Hunger < 10 wait 3 secs change Hunger v by	OK Cancel	Q = Q

In Events, drag "broadcast [getFull]" block and attach it after the "broadcast [getFull]" block. This calls the new event broadcaster once the program starts.

Click the dropdown of the newly added block, the last one in the flag set, and click "new message."

When the New Message window appears, add the message name checkGameOver.

You can test to see if anything is broken, but we won't see anything new until we add an event listener.

Step 20: Add a Game Over (checkGameOver) Event Listener

Again, this listener hears your call to the checkGameOver Event Broadcast, and responds by doing a set of things.

Let's flush this out together.

Pseudocode Time!

When should we check this? What variable(s) determine if the game is over? What should the variable value(s) be in order for the game to end? What should we do once the game ends?

Write your pseudocode down and share your thoughts with the class.

Our Pseudocode for event listener getFull

Forever

If Hunger < 0

//0 is our "game over" state.

Have the cat Meow (sound) Have the

cat Say "Game Over!"

Stop the game.

Step 21: Add a Game Over (checkGameOver) Event Listener (continued)



Review the blocks above. Do they match our pseudocode?

Find the blocks above and add them to your script workspace.

I know this is challenging, but **give it your best try**. Ask a friend. Help a friend. Feel free to raiseYourHand()!

Test by clicking the Green Flag to start.

Wait until your hunger becomes less than 0. Does the cat meow (if you have sound on your computer)? Does the cat say "Game Over?"

Keep testing. Click the Flag again, and see if your full game works by moving your cat to the food bowl. Wait 3 seconds. Does the Food variable go up? What happens when you reach a hunger value of 10? Do the values still decrease when you have waited around 3 seconds and are away from the bowl?

```
If test is true then
```

Congratulations!

Else

Debug.

Share Your Project in Scratch

Save your project by going to File, then clicking Save Now.



The Project Page

Scharch	Create	Explore	Discuss	Help	P Search		🖂 🕫 🕒	WeCanCodelT -
Basic V	Virtual F	Pet					8 scripts 2 sprites	See inside
V424 Hunger (A Very Simple Virtual Click the Flag to start. Keep your cat's hunge Use arrow keys to more	Pet game in Scratch. r from going below 0. ve around.	
			otes ar	nd Cre	edits	Notes and Credits Created for the We Car Scratch" Workshop. By Mel McGee and Min game x animatic @ Shared: 20 Sep 20	n Code IT "Create Your Own V ra Getrost ons x WeCanCodeIT x 14 Mc	rifual Pet in
* 0	• •	Studios	Embed	Report thi	s		O	1 ¥ 1
Com	ments (0)						Studios (0)	View all
Turn off	commentina							

After you click "Share," you will end up on your project page. Fill out the instructions, as well as the Notes and Credits. If you are building off of someone else's project, it's important to give them credit. You would want the same, right?

Follow We Can Code IT on Scratch!

In the Search bar, type in WeCanCodeIT (no spaces), and click Enter on your keyboard.

← → C C scratch.mit.edu/users/WeCanCodelT/									
Schatch	Create	Explore	Discuss	Help	WeCanCodeIT		\bowtie	8	

Click the first link. That's us!

All	Users	Projects	Forums	Studios		
About 7	results (0.12 s	seconds)			Sort by: Relevance *	
					powered by Google ** Custom Search	
WeCar	CodelT or	Scratch	$\langle -$	Cliv	ck	

Click the Follow Button.

SCRATCH Create Explore Discus	ss Help Q Search		~ -
Wecastcalit New Scratcher Joined 1 month, 2 v United States	weeks ago	Click	
About me We Can Code IT empowers girls and women in technology. We offer coding and technology workshops, motivational materials, and mentorship. What I'm working on	Featured Project	What I've been doing WeCanCodelT is now following the studio We Can Code IT Virtual Pet Works Ø minutes ago WeCanCodelT was promoted to manager of Untitled Studio 8 minutes ago WeCanCodelT was promoted to manager of Untitled Studio 19 minutes ago	
	Basic Virtual Pet	Virtual Fee 29 minutes ago Report this user	
Shared Projects (5)		View all	
Basic Virtual Pet	efault Loo Scratch Tutorial- Make	Make Giga Walk Make Pico Walk.	
	Create Explore Discustion VeCanCodeIT New Scratcher Joined 1 month, 2' United States About me We Can Code IT empowers girls and women in technology. We offer coding and technology workstonal materials, and mentorship. What I'm working on Shared Projects (5) Basic Virtual Pet Uritual Pet - D	Image: Weak of the series o	Action 1000000000000000000000000000000000000

Get Back to Your Stuff and Create Your Own Adventure!

🗋 scratch.mi	t.edu								
	SCRATCH	Create	Explore	Discuss	Help	P Search		× 8	WeCanCodeIT -
	What's H]?		Scratch News	TY	stuff - manage projects and studios View all			
Click the F	older ico	n to get	back to) your st	uff.			Click	

scratch.mit.edu/mystuff/			
SchATCH Create Explore	Discuss Hel	p 🔎 Search 🔀 🖪	WeCanCodeIT -
	My Stuff	+ New Project	+ New Studio
	Sort by 👻		
All Projects (5)			
Shared Projects (5)		Basic Virtual Pet Last modified: 36 minutes age Click Title for Project Page	① 1 ③ 0 ① 1 ③ 0 ①
Click See Inside for	Code	See inside	● 0 0 Unshare
My Studios (3)		Virtual Pet - Default Look and Feel	⊙ 43 @ 0

Click "See Inside" to get back to your Scratch Code

OR

Click the title of your project to see the Project Page.

Create Your Own Adventure: Project Page

You can Share your project outside of Scratch with your friends by clicking Embed, and giving them the URL of your project page. You can also add your project to Facebook, Twitter, or even code in a Web Page from the Embed area.

SCRATCH	Create	Explore	Discuss	Help	P Search		🖂 💈	WeCanCodelT -
	1 1 1 1 1 1					Scratch" Workshop. By Mel McGee and Mira Get	rost.	
						game x animations x	WeCanCodelT	x
						③ Shared: 20 Sep 2014		Modified: 20 Sep 2014
* 0	• 0	Studios	Embed		First, Click "E	Embed"	•	9 1 🖗 1
Embed		Embed proje	ct on other wel	bsites	Share			х
<ifran height="4</ifran 	ne allowtrans 02''	parency="true	" width="485"		f 9			
src="http:	://scratch.mit	.edu/projects/	embed/270324	7	http://scratch.mit.e	du/projects/27032470/#edit	URL of yo	our project
Cupy and pa		Special Embed code for web sites.						

Create Your Own Adventure: Add Fun or Rest to your Virtual Pet

Try adding more code to your pet to handle Fun and / or Rest.

Let's try adding Fun into the equation!

Add a new sprite.

Click on the new sprite button. Choose a picture, I chose a star.



Place your star on the stage.

Click the cat again. (The last sprite on the stage that you click will go to the front, plus we will see the cat's code).

Add a new Data Variable called Fun

Initialize the Fun variable to 5 and place in the Flag block, after the Hunger's initialization.

Create a new broadcast message called checkFun, add it to the Flag block, after the checkFood broadcast event.

Duplicate the event listener code block for checkFood (right-click on the start of the block set, then select duplicate, then place the blocks), but change the name to checkFun, and decrease the Fun variable instead of the Hunger variable. Also consider changing the amount of time for the wait block.

Update the checkGameStatus event listener code block to add both the Hunger AND Fun variables and see if the result is less than 0 before ending the game.

Follow the same process for Rest, or any other activity in which you want your virtual pet to engage.

Create Your Own Adventure: Paint a New Sprite

Scratch allows you to select sprites from their library, but you may also paint your own sprites, upload your own pictures to use as a sprite, and more!

Let's start by painting a new sprite.

Scr TCH 🌐 File 🔻 Edit 🔻 Tips About 💶 👫 💈	く 米 🤨			Saved 🚺 WeCanCodelT 🔻
Basic Virtual Pet	Scripts Costumes Sounds			🦃 See project page
Hunger	New costume:	5 6	Clear Add Import	00 2 + 30
00000000				
	costume1			
	T			
lig the				
1° Palipu	Ø			
·ibrush	E75			
29 y: -180				
Sprites New Sprite Paintnew sprite				
s cackarops New backdrop:		•	N	Q = Q 100%
	-0			Bitmap Mode Convert to vector

Click the paintbrush icon above the spite window region.

The rightmost window changes to an artist's canvas. Explore by dragging your mouse in this area. Click different colors, Different shapes. See what they do!

You can use these sprites as characters and props, in the same way we used the cat and the food!

Create Your Own Adventure: Upload an Image File to Use as a New Sprite



Click the New sprite: folder icon.

Locate the puppy.png file in My Documents and double-click on it to start the upload.





Click on the cat to see its code.

For every block set, right-click and duplicate, then drag onto the dog thumbnail in the Sprites window. This will copy the code from one sprite to the other.

Test.

Notice all values may go up and down by 2x since the cat and dog are moving together. This will happen if they are on top of each other.

Save as a different file name to be safe, then delete the cat from the Sprites window.

Keep Coding!

Links to We Can Code IT

Please follow us and spread the word by sharing our posts!

Web: http://WeCanCodeIT.org Facebook: http://facebook.com/WeCanCodeIT Twitter: http://twitter.com/WeCanCodeIT Follow us on Scratch: http://mit.scratch.edu/users/WeCanCodeIT Email us at hello@WeCanCodeIT.org

We have monthly workshops. Sign up for our newsletter online to get all the info!