

Coding a Food Chain

Grade 4, Habitats and Communities

Coding Handout: Extension

Here's a link to the completed project: https://scratch.mit.edu/projects/769766788

Step 1: Re-Code the Tree

First, re-code the tree. Create a new variable named "Lives." Under the "When green flag clicked" code, add a "set lives to 3" at the top. Move the "show" to the very top. Then, delete the entire "if/then" statement to start fresh. Add an "if/then" statement at the bottom of the forever loop. In between the "if" and "then," add a comparison block. Drag a "lives" variable to the first spot, and change the "50" to "0." Inside the "if/then" loop, drag a "hide" statement.

Start a new code with the "when the green clicked" block. Add an "if/then" statement. In between the "if" and "then," add a comparison block. Drag a "level" and change the "50" to "0." Inside the "if/then" statement, add "touching grasshopper." After the "then," add "change lives by 1" and "hide." Finally, after the "else," add "change lives by –1."



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Step 2: Re-Code the Grasshopper

Next, re-code the grasshopper. Delete the entire "if/then" statement to start fresh. Add an "if/then" statement at the bottom of the forever loop. In between the "if" and "then," add a comparison block. Drag a "lives" variable to the first spot, and change the "50" to "0." Inside the "if/then" loop, drag a "hide" statement.

Start a new code with the "when the green clicked" block. Add an "if/then" statement. In between the "if" and "then," add a comparison block. Drag a "level" and change the "50" to "1." Inside the "if/then" statement, add "touching mouse." After the "then," add "change lives by 1" and "hide." Finally, after the "else," add "change lives by -1."

when 🏴 clicked				
set Lives to	3			when space - key pressed
show				if Level = 1 then
set size to 50 %				for taughing Manager () they
point in direction pick	random	0 to	360	if touching Mouse1 • ? then
forever				 change Level by 1
move 10 steps				hide a second second second second
				else
if on edge, bounce				change Lives by -1
if Lives =	0 t	hen		
hide				
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Step 3: Re-Code the Mouse

Then, re-code the mouse. Delete the entire "if/then" statement to start fresh. Add an "if/then" statement at the bottom of the forever loop. In between the "if" and "then," add a comparison block. Drag a "lives" variable to the first spot, and change the "50" to "0." Inside the "if/then" loop, drag a "hide" statement.



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Start a new code with the "when the green clicked" block. Add an "if/then" statement. In between the "if" and "then," add a comparison block. Drag a "level" and change the "50" to "2." Inside the "if/then" statement, add "touching owl." After the "then," add "change lives by 1" and "hide." Finally, after the "else," add "change lives by -1."

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if	_ives =		then									
hide												
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Step 4: Re-Code the Owl

Lastly, re-code the owl. Add a second "if/then" statement at the bottom of the "forever" loop. Add a comparison block between the "If" and "Then." Drag a "Lives" variable to the first spot, and change the "50" to "0." Inside the "if/then" loop, add "go to x:0 y:0." Then add a direction block. Add a text block and change the text to "Game over." Add a stop this script.



		when 🛤 clicked
		point in direction pick random 0 to 360
		forever
		move 10 steps
		if on edge, bounce
		if Level = 3 and key space • pressed? then
		go to x: 0 y: 0
		point in direction 90
		say You win! for 2 seconds
		stop this script 💌
		if Lives = 0 and key space - pressed? then
		go to x: 0 y: 0
		point in direction 90
		say Game over for 2 seconds
		stop this script 👻
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You're all done with the extension activity. Try it out and have fun!