



LEARNING MODULES

GK-12 DISSECT at New Mexico State University

Title: Web Ad Iteration

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Discipline or Area: Inventions and Advertising

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School: Vista Middle School

Subject of class: Science

Grade: 6th

COVERAGE OF COMPUTATIONAL TOPICS

The concept of iteration as repeating a sequence of steps was used to make an advertisement in Scratch for an invention the students made in previous weeks.

OBJECTIVES

Students will learn how to write iterative structures in Scratch to advertise an invention.

EQUIPMENT AND MATERIALS

Computers

Notebooks / paper

BACKGROUND AND REFERENCES

The purpose of this module is to get students comfortable with clarity, correctness, and efficiency of algorithms. They will learn what these terms mean and how to score algorithms in each. Next, they will practice writing clear, correct, and efficient algorithms multiple times, which will culminate in the weather tool algorithm.

PROCEDURE

Provide detailed instructions on how this module is taught.

For the first day, I presented different examples of web ads I made using Scratch. I showed them how I used iterative structures in three different ways to catch people's attention. Next, we had them write down the steps of one of the algorithms so they would have an example to base theirs on. Then, we let them start creating their Scratch ads.

On the second day, I reviewed different examples of web ads I made using Scratch. I reviewed how I used iterative structures in three different ways to catch people's attention. Then, we let them continue creating their Scratch ads.

On the third day, we let them finish their Scratch ads for their inventions using iteration. We took screen shots of their ads and they will glue them to the poster of the web pages they designed for their inventions.

What were the "learning goals?"

The learning goals are to learn how to write iterative structures in Scratch and learn how to advertise in the form of a web ad.

How did you introduce CT?

Iteration was introduced as repeating a sequence of steps to reduce code and program writing time. The iteration was used in Scratch to catch viewers' eyes and pull them into looking at their advertisement for their inventions.

How could you assess the understanding of CT in this module?

CT assessment can be done by looking at the students' programs. If they function and use iteration correctly, then they understand the concept.

NOTES AND OBSERVATIONS

What were challenges you encountered in the overall development of the module?

The biggest challenge was getting the computers set up. Another challenge was getting all the students to change the name of their projects. Even after four weeks, there were still untitled projects. I noticed that the projects were mostly either very good with iteration or very good with advertising; it was rare to find a project with both iteration and advertising.

What was successful?

There is significant improvement on the vocabulary words. The kids loved working with Scratch and some kids really got into it and understood iteration. The kids' projects that had both iteration and advertising were very impressive.

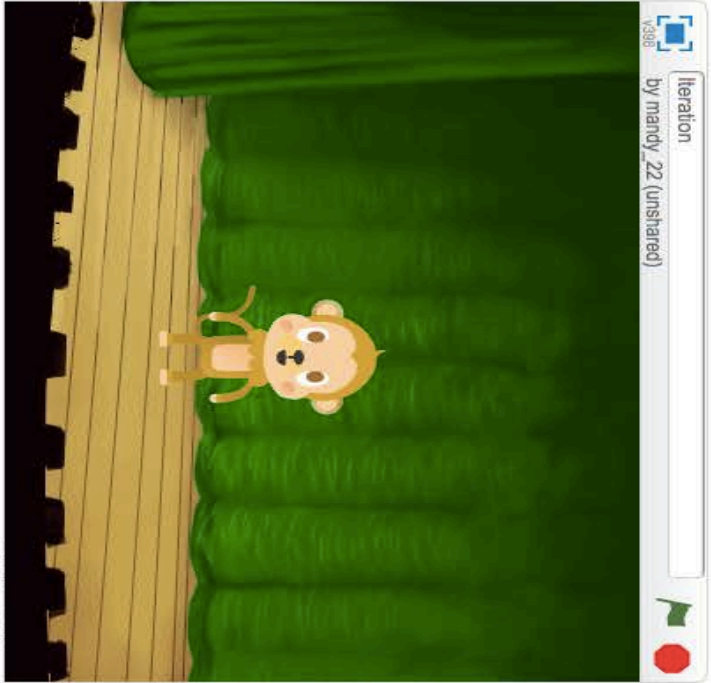
How was the students' reception to the content of the module?

The students love working with Scratch and I noticed that the kids who are usually not engaged are enthusiastic and working hard when using Scratch.

Example of what students wrote to base their iterative structures on:

Web Ad Iteration

1. Start When the sprite is clicked (Orange: Events)
2. Say something (dark purple: Looks)
3. Repeat (Yellow: Control)
 - a. Switch backdrop to: __ (dark purple: Looks)
 - b. Wait (yellow: control)
 - c. Switch backdrop to: __ (dark purple: looks)
 - d. Wait (yellow: Control)
4. Reset backdrop switch backdrop to: __ (dark purple: Looks)
5. Reset sprite move to x: y: (blue: Motion)
6. Stop all (yellow: Control)



Iteration
by mandy_22 (unshared)

New sprite: x: 240 y: 28

Sprites
Monkey2

Stage
5 backdrops

- Scripts
- Cosumes
- Sounds
- Motion
- Looks
- Sound
- Pen
- Data
- Events
- Control
- Sensing
- Operators
- More Blocks

- move 10 steps
- turn 15 degrees
- turn 15 degrees
- point in direction 90
- point towards
- go to x: 11 y: -37
- go to mouse-pointer
- glide 1 secs to x: 11 y: -37
- 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

```
when clicked
  say Hello! Buy my invention! It's the best!
  repeat 10
    move 20 steps
    wait 0.5 secs
    move -20 steps
    wait 0.5 secs
  go to x: 11 y: -37
  switch backdrop to stage2
  stop all

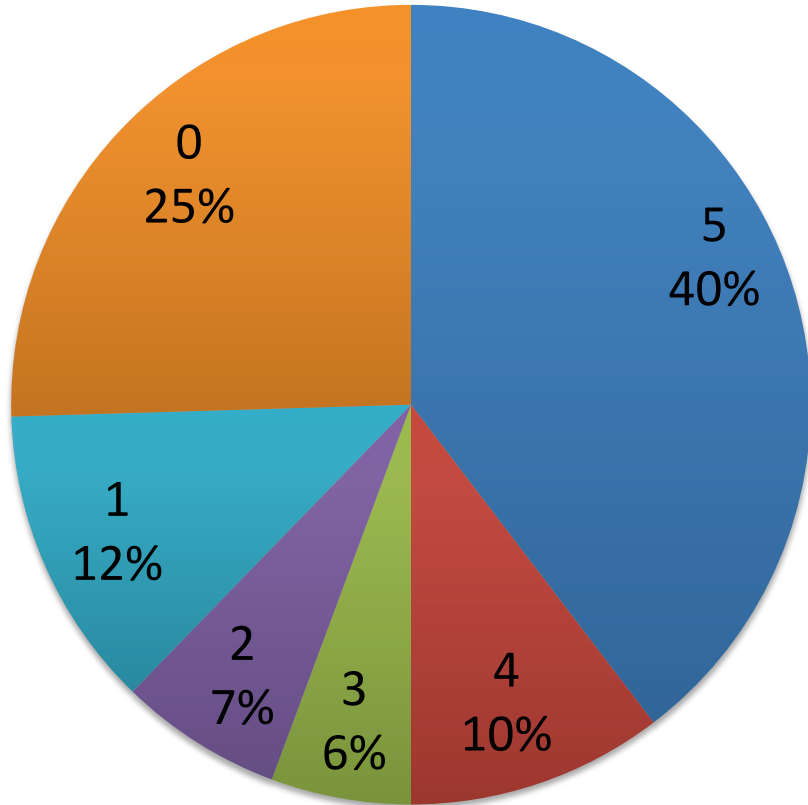
when space key pressed
  say Hello! Buy my invention! It's the best!
  repeat 10
    next costume
    wait 1 secs
  switch backdrop to stage2
  stop all

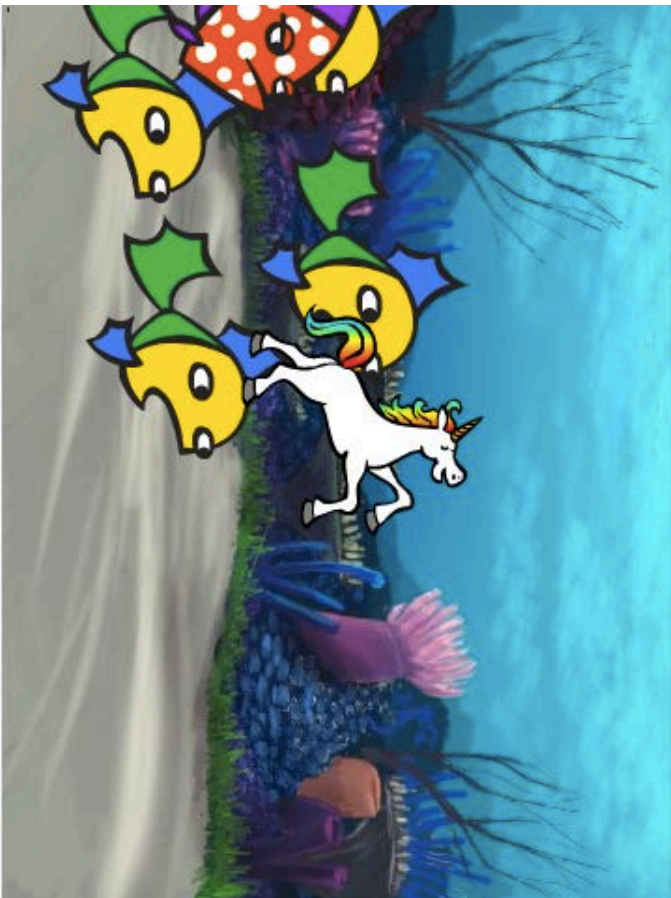
when this sprite clicked
  say Hello! Buy my invention! It's the best!
  repeat 10
    switch backdrop to backdrop1
    wait 0.5 secs
    switch backdrop to backdrop2
    wait 0.5 secs
    switch backdrop to backdrop3
    wait 0.5 secs
    switch backdrop to backdrop4
    wait 0.5 secs
  switch backdrop to stage2
  stop all
```

Backpack




Percentages of Iteration Assessment Scores






x: 240 y: -180

New sprite: 

Sprites

Stage
3 backdrops

New backdrop: 

Fish2

Fish3

Unicorn

Scripts

Costumes

Sounds

Motion

Looks

Sound

Pen

Data

Events

Control

Sensing

Operators

More Blocks

move 10 steps

turn 15 degrees

turn 15 degrees

point in direction 90

point towards

go to x: -240 y: -36

go to mouse-pointer

glide 1 secs to x: -240 y: -36

change x by 10

set x to 0

change y by 10

set y to 0

when this sprite clicked

repeat 5

move 50 steps

wait 0.7 secs

say You should listen to them! for 2 secs

repeat 10

move 50 steps

wait 0.5 secs

move -20 steps

wait 0.5 secs

go to x: -240 y: -36

when clicked

play sound ripples

say Hey! Hey you try my fish feeder and just see what it can do!!! for 4 secs

repeat 10

play sound ripples

move 50 steps

wait 0.5 secs

move -20 steps

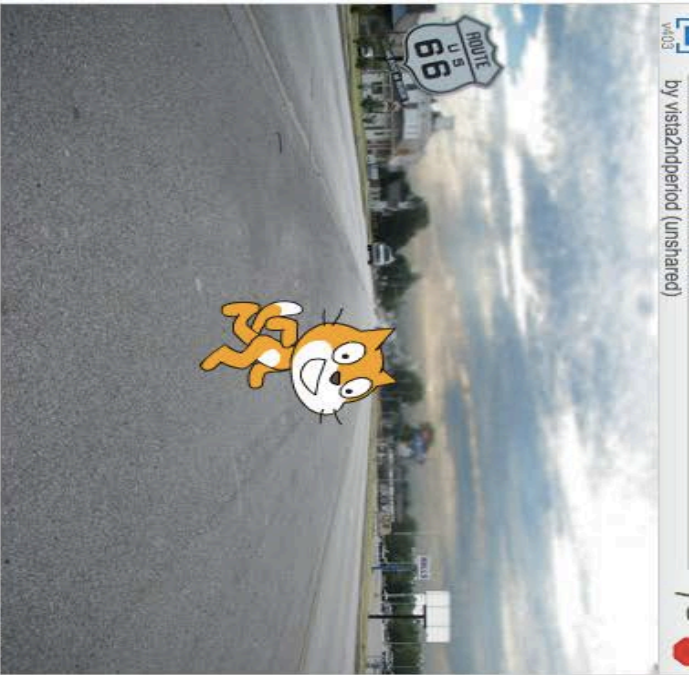
wait 0.5 secs

move 50 steps

wait 0.5 secs

move -20 steps

go to x: -126 y: -51



x: 240 y: -180

New sprite:

Sprites



Stage
1 backdrop



- Motion
- Looks
- Sound
- Pen
- Data
- Events
- Control
- Sensing
- Operators
- More Blocks

- move 10 steps
- turn 15 degrees
- turn 15 degrees
- point in direction 90
- point towards
- go to x: 13 y: -8
- go to mouse-pointer
- glide 1 secs to x: 13 y: -8
- change x by 10
- set x to 0
- change y by 10
- set y to 0

```
when clicked  
say Hi! Do you wish you could get rid of anger that you have on the road? Well, than come and buy the MARY-BEAR road rage patch for 5 secs  
repeat 10  
  move 10 steps  
  wait 3 secs  
  move 10 steps  
  wait 3 secs  
  go to x: 13 y: -8  
switch backdrop to backdrop1  
stop all
```

x: 13
y: -8



x: 240 y: -180

Sprites



Stage
9 backdrops



New sprite:



- Motion
- Looks
- Sound
- Pen
- Data
- Events
- Control
- Sensing
- Operators
- More Blocks

- move 10 steps
- turn 15 degrees
- turn 15 degrees
- point in direction 90
- point towards
- go to x: -120 y: -114
- go to mouse-pointer
- glide 1 secs to x: -120 y: -114
- 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

```

when clicked
  switch backdrop to boardwalk
  wait 0.5 secs
  say Nah for 2 secs
  say You should buy Javier New Nail Gathering Gadget for 2 secs
  say How can live with out Javier New Nail Gathering Gadegel for 2 secs
  repeat 5
    switch backdrop to backdrop1
    move 10 steps
    wait 0.5 secs
    switch backdrop to backdrop2
    move 10 steps
    wait 0.5 secs
    switch backdrop to backdrop3
    move 10 steps
    wait 0.5 secs
    move 10 steps
    wait 0.5 secs
    switch backdrop to backdrop4
    wait 0.5 secs
    switch backdrop to backdrop5
    wait 0.5 secs
    switch backdrop to backdrop6
    wait 0.5 secs
    switch backdrop to backdrop7
  go to x: -120 y: -114
  switch backdrop to beach malibu
  stop all
  
```