

“Debug-It” Activities

These activities are intended to be used by students individually with little to no direct instruction from the teacher. These would be great to assign for students who finish the assigned project early.

Debugging is the process of locating and fixing problems in a section of computer code. This process is a great way to evaluate students' logical reasoning and problem solving skills when it comes to both the Scratch interface in particular and computer programming in general.

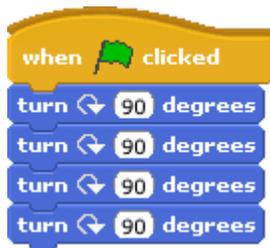
The basic process the students should follow is given below:

- 1. Run the program
- 2. Verify an error exists
- 3. Find the problem in the code
- 4. Fix the problem in the code
- 5. Go back to the first step

As a reference for teachers, each of the programs are displayed below with possible solutions as well. Please note there are many ways for the student to solve the problem and each answer is just one of the possibilities.

1. “I want the cat to spin in a circle but it's not working. Can you fix it?”

Broken Code

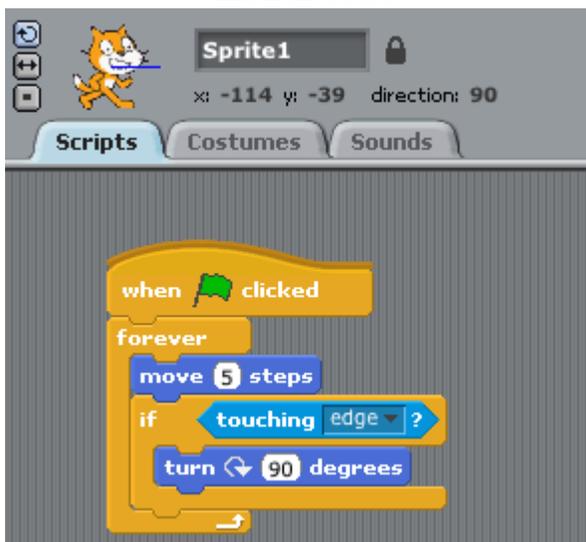


Possible Solution

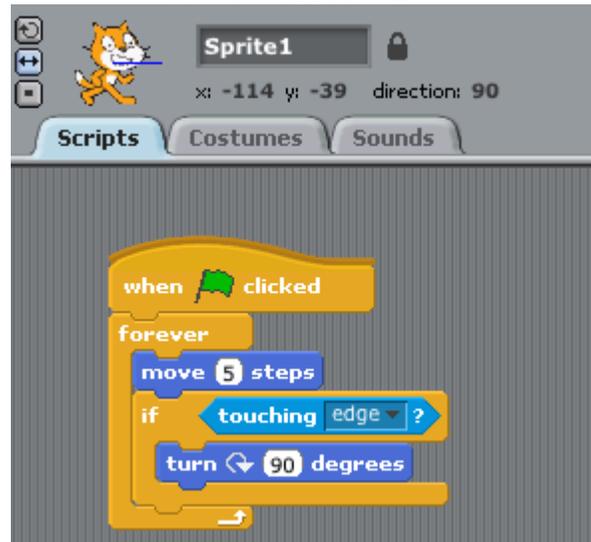


2. “I want the cat to walk back and forth across the screen but he keeps flipping upside down. Can you fix it?”

Broken Code



Possible Solution



3. "I want the cat to dance to some music but instead it's dancing after the music. Can you fix it?"

Broken Code

```
when green flag clicked
  play sound GuitarChords1 until done
  repeat 3
    move 10 steps
    wait 0.5 secs
    move -10 steps
    wait 0.5 secs
```

Possible Solution

```
when green flag clicked
  play sound GuitarChords1
  repeat 3
    move 10 steps
    wait 0.5 secs
    move -10 steps
    wait 0.5 secs
```

4. "I want the cat to start with his hat on and then run in place. It works the first time but not the second. Can you fix it?"

Broken Code

```
when green flag clicked
  wait 1 secs
  repeat 5
    switch to costume costume2
    wait 0.5 secs
    switch to costume costume3
    wait 0.5 secs
```

Possible Solution

```
when green flag clicked
  switch to costume costume1
  wait 1 secs
  repeat 5
    switch to costume costume2
    wait 0.5 secs
    switch to costume costume3
    wait 0.5 secs
```

5. "I want the cat to be able to move around the screen by using the arrow keys but it's not working. Can you fix it?"

Broken Code

```
when green flag clicked
  if key up arrow pressed?
    point in direction 0
    move 1 steps
  if key down arrow pressed?
    point in direction 180
    move 1 steps
  if key right arrow pressed?
    point in direction 90
    move 1 steps
  if key left arrow pressed?
    point in direction -90
    move 1 steps
```

Possible Solution

```
when green flag clicked
  forever
    if key up arrow pressed?
      point in direction 0
      move 1 steps
    if key down arrow pressed?
      point in direction 180
      move 1 steps
    if key right arrow pressed?
      point in direction 90
      move 1 steps
    if key left arrow pressed?
      point in direction -90
      move 1 steps
```