The Power of Student Game Design

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"It is their creation…they care deeply about the product. It is very empowering to make something."
Laura Allen, President and CEO of Vision Education and Media

Key Concepts: Game Design

- **In creating their own games, students will learn by doing as both creators and consumers.**
- **Curriculum is presented in new ways, based in a medium the students are already excited about.**
- **Game design encourages students to think about the "big picture" and break it into smaller parts.**
- **Students approach storytelling from a new perspective, examining the identity and history of their characters, as well as the role of their audience.**
- **All possible progression, successes, and challenges that a player encounters are programmed into the game design.**

Key Concepts: Programming

- **Programming provides a new approach to traditional problem solving.**
- **Troubleshooting is an essential a tool that provides students with instant feedback and allows them to modify their games in a hands-on, Constructionist, environment.**
- **Students will learn by investigating programming issues and creating solutions to unique and personal challenges.**

Resources

LOGO

- http://el.media.mit.edu/logo-foundation/logo/index.html

MicroWorlds, LOGO Based Software that Allows Students to Design Games, Multimedia Projects, and Digital Narratives.

- http://www.microworlds.com/

- ***The Education Arcade***
- http://www.educationarcade.org/index.php

- **Vision Education & Media**
- www.vemny.org

- ***SIGGRAPH (Curriculum Samples & Resources)***
- http://www.siggraph.org/

- **Game On**
- http://www.gameonweb.co.uk/education/unit6.html

- **Social Impact Games**
http://www.socialimpactgames.com/

A Sample 7th Grade MicroWorlds Racing Game:

```
To Go
resett
launch [Instruct]
t1, forever [Direct]
t1, clickon
t1, setpos [326 -75]
setscore 3000
launch [Lock]
end

To Direct
let [key readchar]
if (ascii :key) = 28 [seth 270]
if (ascii :key) = 30 [seth 0]
if (ascii :key) = 29 [seth 90]
if (ascii :key) = 31 [seth 180]
end

To Instruct
announce[Use your arrow keys
to navigate through the city
streets. Be careful not to crash or
be caught by the police. You
only have 3 lives so watch your
health.]
announce[Run 1 lap through the
city with a time limit of 10
minutes. Either get first or
second place. The cops will be
after you if you don't race fast
enough.]
end

To Lock
forever [setlocked int time / 600]
forever [settime timer wait 600]
end

To Next
t1, clickoff
level1part2
t1, setpos [322 -75]
seth 270
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next2
t1, clickoff
level1part3
t1, setpos [-285 186]
seth 180
t1, forever [Direct]
```

```
t1, clickon
launch [Lock]
end

To Next3
t1, clickoff
level1part4
seth 180
t1, setpos [-5 187]
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next4
t1, clickoff
level1part5
seth 180
t1, setpos [-15 190]
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next5
t1, clickoff
level1part6
seth 180
t1, setpos [27 194]
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next6.1
t1, clickoff
level1part7right
setpos [112 16]
seth 90
t1, forever [Direct]
t2, setpos [218 -36]
t3, setpos [206 16]
t1, clickon
t2, clickon
t3, clickon
waituntil [touching? "t1 "t2]
announce[You've been caught by
the police you have to start from
the beginning again.]
t1, clickoff
level1
t1, setpos [326 -75]
launch [Then]
launch [Lock]
end

To Then
waituntil [touching? "t1 "t3]
announce[You've been caught by
the police you have to start from
the beginning again.]
t1, clickoff
level1
t1, setpos [326 -75]
end

To Next6.2
t1, clickoff
level1part7left
setpos [286 -26]
seth 270
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next6.3
t1, clickoff
level1part7down
setpos [55 195]
seth 180
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next7
t1, clickoff
level1part8
setpos [-351 -110]
seth 90
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next8
t1, clickoff
level1part9
setpos [-54 -189]
seth 110
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next9
t1, clickoff
level1part_10
setpos [70 -190]
seth 340
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next10
t1, clickoff
level1part_11
setpos [-105 -184]
seth 0
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next11
t1, clickoff
level1part_12_final
setpos [-102 -183]
seth 180
t1, forever [Direct]
t1, clickon
launch [Lock]
end

To Next12
launch [Lock]
t1, clickoff
setpos [326 -75]
t1, forever [Direct]
t1, clickon
level2
t1, clickoff
stop [lock]
end

To Continue
launch [NLI]
t1, forever [Direct]
t1, clickon
end

To NLI
announce[You made it to the
next level.]
announce[Now use your arrow
keys to move on the
highway.Run 3 laps with a time
limit of 30 minutes. Make sure
not to crash into the other cars
that are moving.]
end

To After
t1, clickoff
level2part2
t1, setpos [-270 172]
seth 180
t1, forever [Direct]
t1, clickon
end

To After2
t1, clickoff
level2part3
t1, setpos [-350 -177]
seth 45
t1, forever [Direct]
t1, clickon
end
```