

Games, fun, AND computer science

Input, output, & joysticks



input



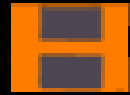
input



input



input



output



output



output

Input, output, & joysticks

more motion



Presenter: JC Irvine

I.T. Humor :)



Overview

- Background & Philosophy
- Resource Sharing
- Course Examples
- Student Feedback
- Future of Computer Science, Gaming and Our Students

javascript



ActionScript 3



Background

Students *choose* CTE classes

Enrollment drives course offerings

Programming can be perceived as dull

Games get kids attention

Let's create computer science programs revolving around game design

Philosophy

Teaching/Using *Office Suite* technology should not be the **only** exposure to computers student have

There may be no Sputnik-moment for computer science in the U.S.

STEM careers are considered higher wage careers

There are many free tools we **CAN** use within schools

Game Design & Programming

- A new way of teaching, learning, & “doing” Computer Science
- This school year is the Pilot Year
- Presenter Background:
 - 16 years teaching
 - Previous courses taught:
 - German levels 1-4,
 - Computer Studies (Office Suite)
 - Oracle Academy (SQL, java, PLSQL),
 - Web Design

School Information

- **William D Ford Career Tech Center**
(part of Wayne-Westland Community Schools)
- We serve students from 10 area high schools
- Building enrollment was 900+ in the Fall

Course Information

- Course Name:
Game Design and Programming
- Course site uses MOODLE on Wayne RESA
(online delivery of agendas, files, forums, quizzes, etc.)
- Two shifts offered daily – Max 25 students
(limited by number of PCs in the lab/classroom)
- ~19% of students attend Algebra
(4-5 hours away from CTE class per week)
- MORE?

Sharing Teacher Resources

Newly created
Google Group

<http://groups.google.com/group/CompSciMi>

Discussions have links
to shared documents

Google groups

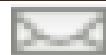
Join to continue
the conversation



CompSci Michigan

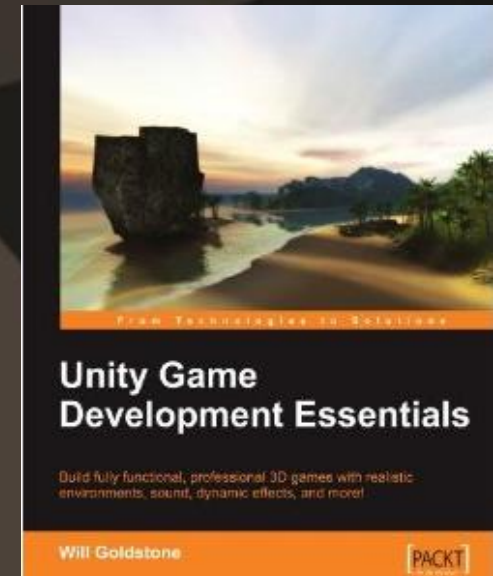
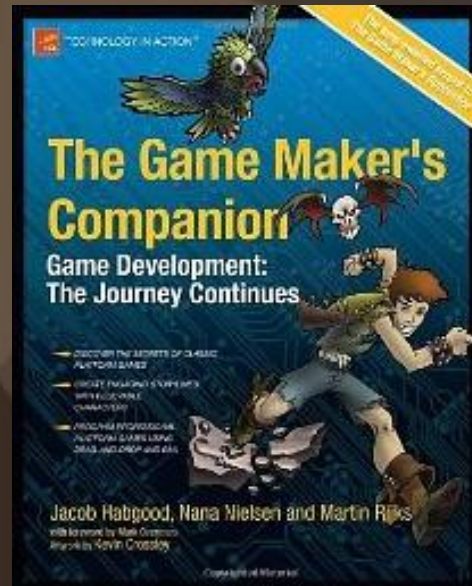
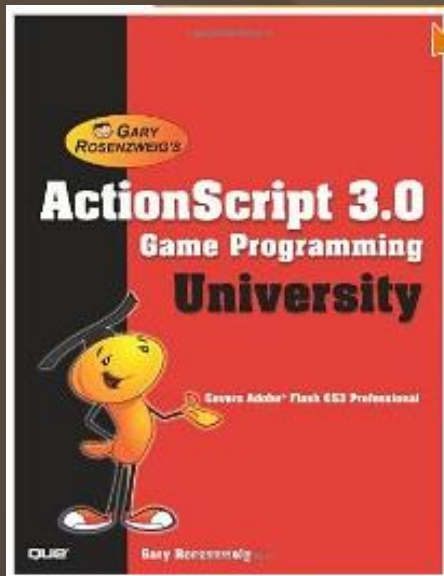
Trouble?

Send me an email



irvinej@wwcsd.net

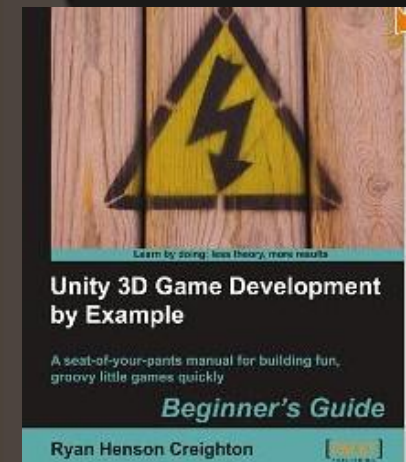
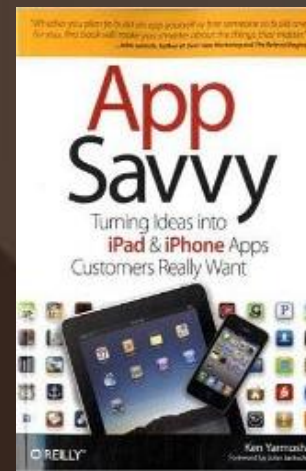
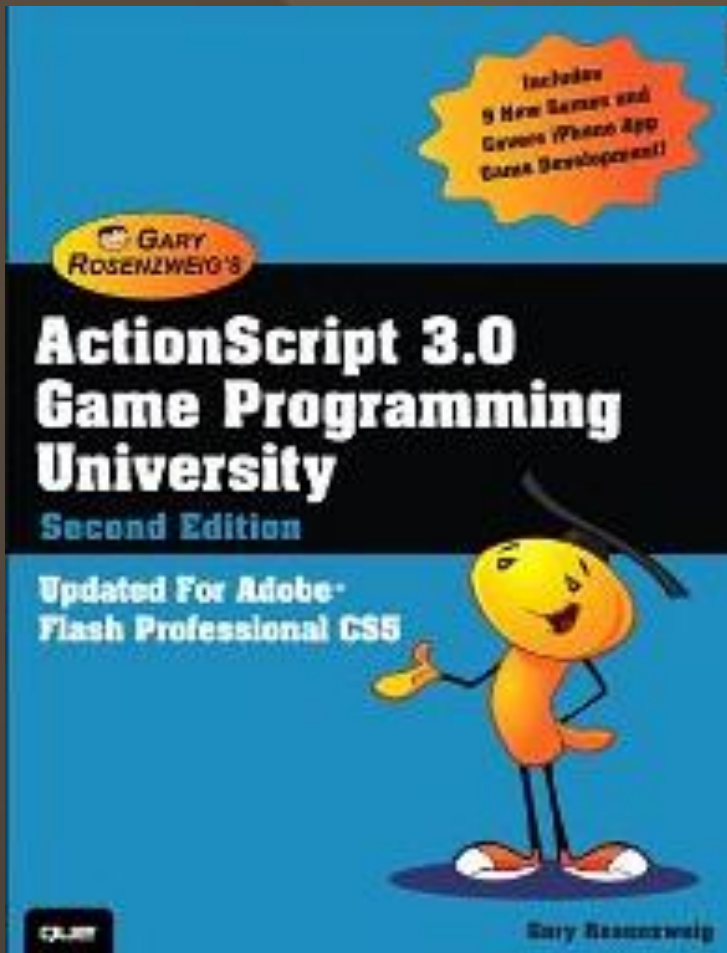
Course Books



Starting Point in August/September
Javascript tutorial/slides available online at:
w3schools.com

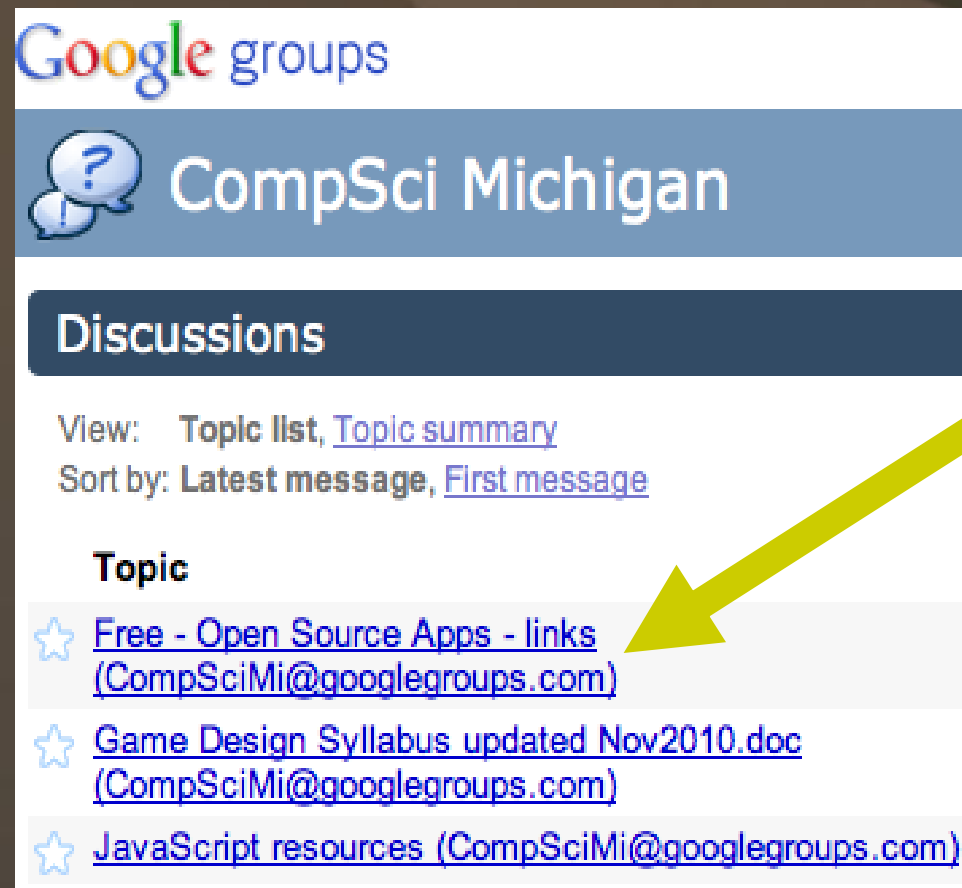
More Books

- 2nd edition of course book released: Jan. 2011
- This and other books available for you to look at today



Software Tools

- Link available in Discussion section of Google Group



The screenshot shows the Google Groups interface for the 'CompSci Michigan' group. At the top, the 'Google groups' logo is visible. Below it, the group name 'CompSci Michigan' is displayed with a question mark icon. A dark blue bar contains the word 'Discussions'. Underneath, there are links for 'View: Topic list, Topic summary' and 'Sort by: Latest message, First message'. A section titled 'Topic' lists three discussion items, each with a star icon and a link to the discussion page. A yellow arrow points from the text in the adjacent list to the first topic: 'Free - Open Source Apps - links (CompSciMi@googlegroups.com)'.

Google groups

CompSci Michigan

Discussions

View: [Topic list](#), [Topic summary](#)
Sort by: [Latest message](#), [First message](#)

Topic

- ★ [Free - Open Source Apps - links \(CompSciMi@googlegroups.com\)](#)
- ★ [Game Design Syllabus updated Nov2010.doc \(CompSciMi@googlegroups.com\)](#)
- ★ [JavaScript resources \(CompSciMi@googlegroups.com\)](#)

Software Tool Sample

- Aviary – audio and more
- Jam Studio – audio
- Game Maker
v8 for PCs w/free version
v7.5 for macs 10 hr trial
- Unity 3



Sample Student Projects

- Modified versions of:
 - Pong – Team & revisions
 - Asteroids – Team & revisions
- Slot machine test - solo
- Game Maker creations for Scholastic contest
 - Team or solo
- PowerPoint presentations
 1. Copyright,
 2. Game Features for Eval
- Portfolio presentations
 - Recordings/Demos/Tutorials of CompSci topics

Sample Reaction to Projects

- Excitement
- Enjoyed problem solving even with early games like pong
- Enjoyed peer feedback and revision stage
- Appreciated different skills sets of team members

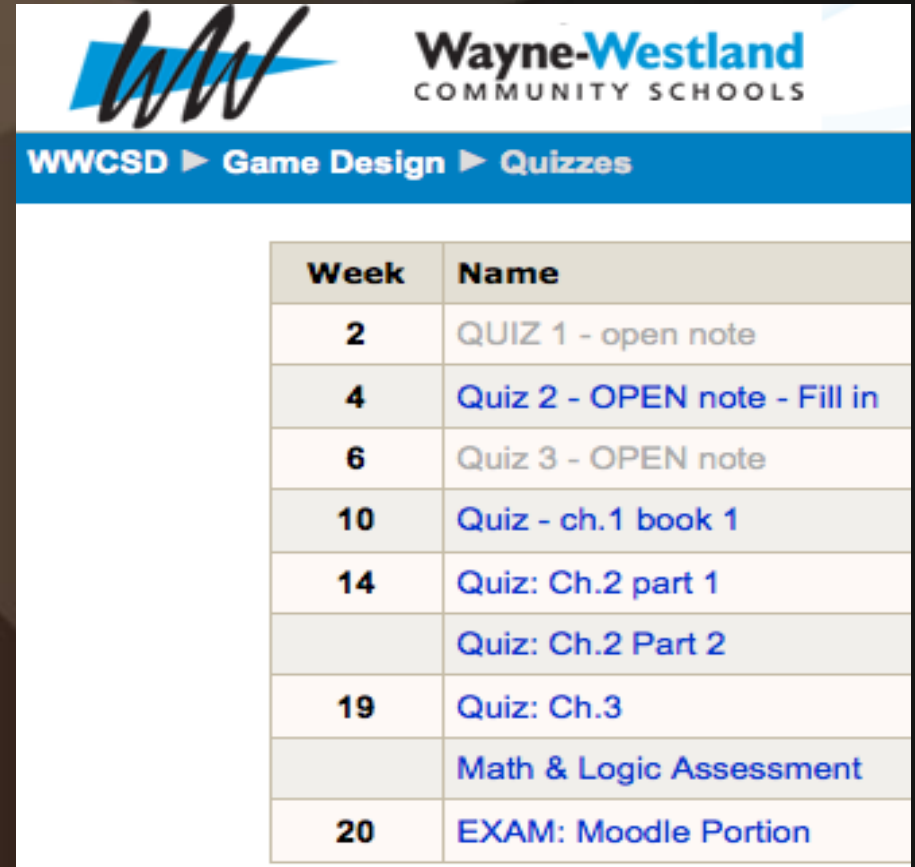
Example Quizzes & Tests

Quiz creation effort is up front, allows:

- Automatic scoring
- Feedback for students

Moodle helps with:

- Multiple attempt quizzes
- Scoring average, high score, etc.
- Question analysis



Week	Name
2	QUIZ 1 - open note
4	Quiz 2 - OPEN note - Fill in
6	Quiz 3 - OPEN note
10	Quiz - ch.1 book 1
14	Quiz: Ch.2 part 1
	Quiz: Ch.2 Part 2
19	Quiz: Ch.3
	Math & Logic Assessment
20	EXAM: Moodle Portion

Example Quizzes & Tests

Which command/keyword displays simple text in Flash's output window? It is similar to document.write in javascript in programmer to use this command to test and debug code.

Answer:

What's the difference between = and ==?

- Choose one answer.
- a. = is used for assigning a value, == is used to compare a variable's data type
 - b. == is used for assigning a value, = is used for comparing things
 - c. = is used for assigning a value, == is used for comparing things
 - d. there is no difference

Match the array terms/commands with the usage/effect

changes the array by adding a new element to the end

removes/takes off the last element from an array

returns the number of items in the array (the array is NOT changed)

removes/takes off the first element in an array

finds & returns the location of something within an array

can examine/use a particular element from an array (the array is NOT changed)

Choose... ▾

Choose... ▾

Choose... ▾

Choose... ▾

Choose... ▾

Choose... ▾

Example Questions:

- Fill in Answer
- Multiple Choice
- Matching

Student Feedback – Jan 2011

Students Surveys conducted:

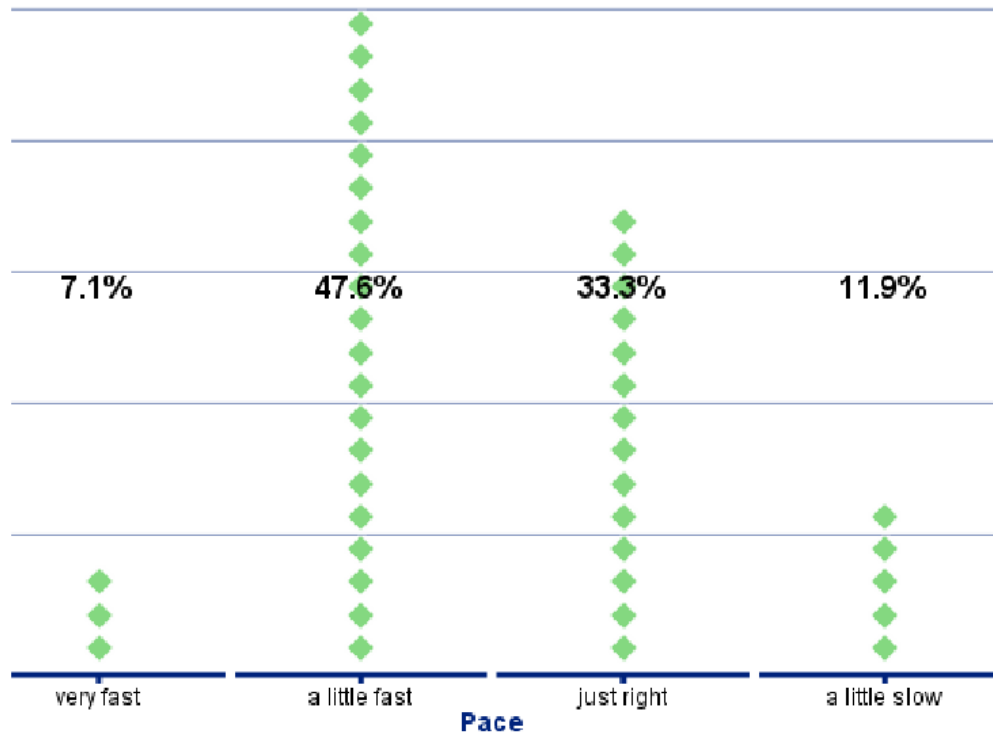
September 2010

January 2011

May 2011 (planned)

Software used: InspireData

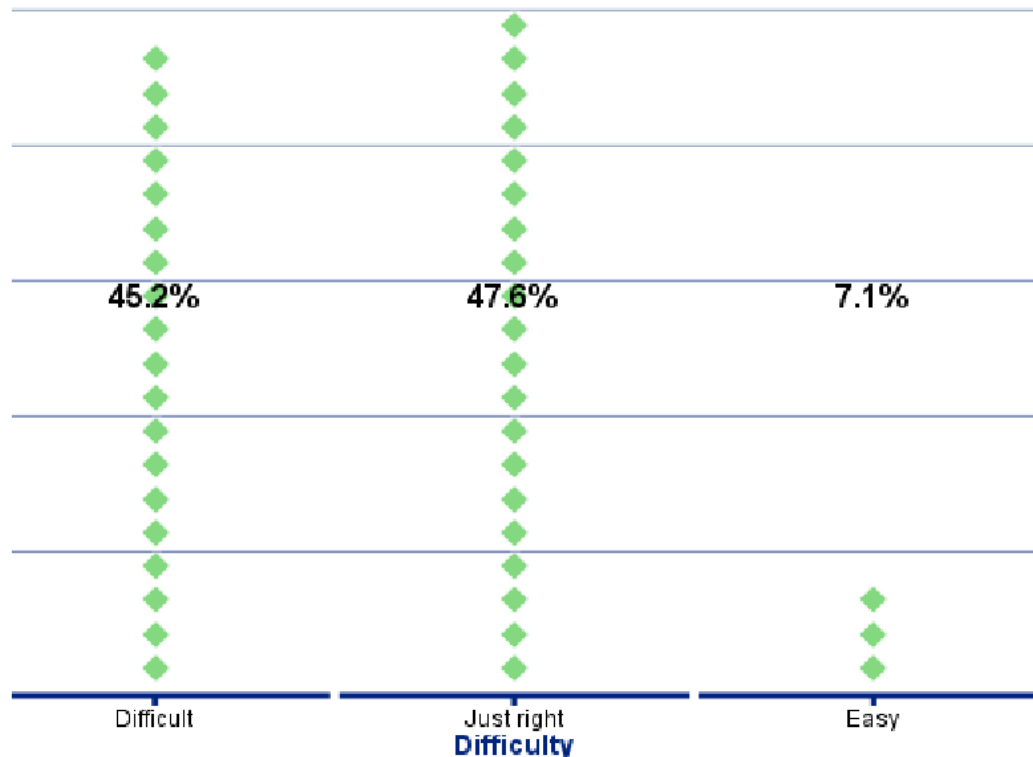
Pace of the Class



Options:

- Very slow
- A little slow
- Just Right
- A little fast
- Very fast

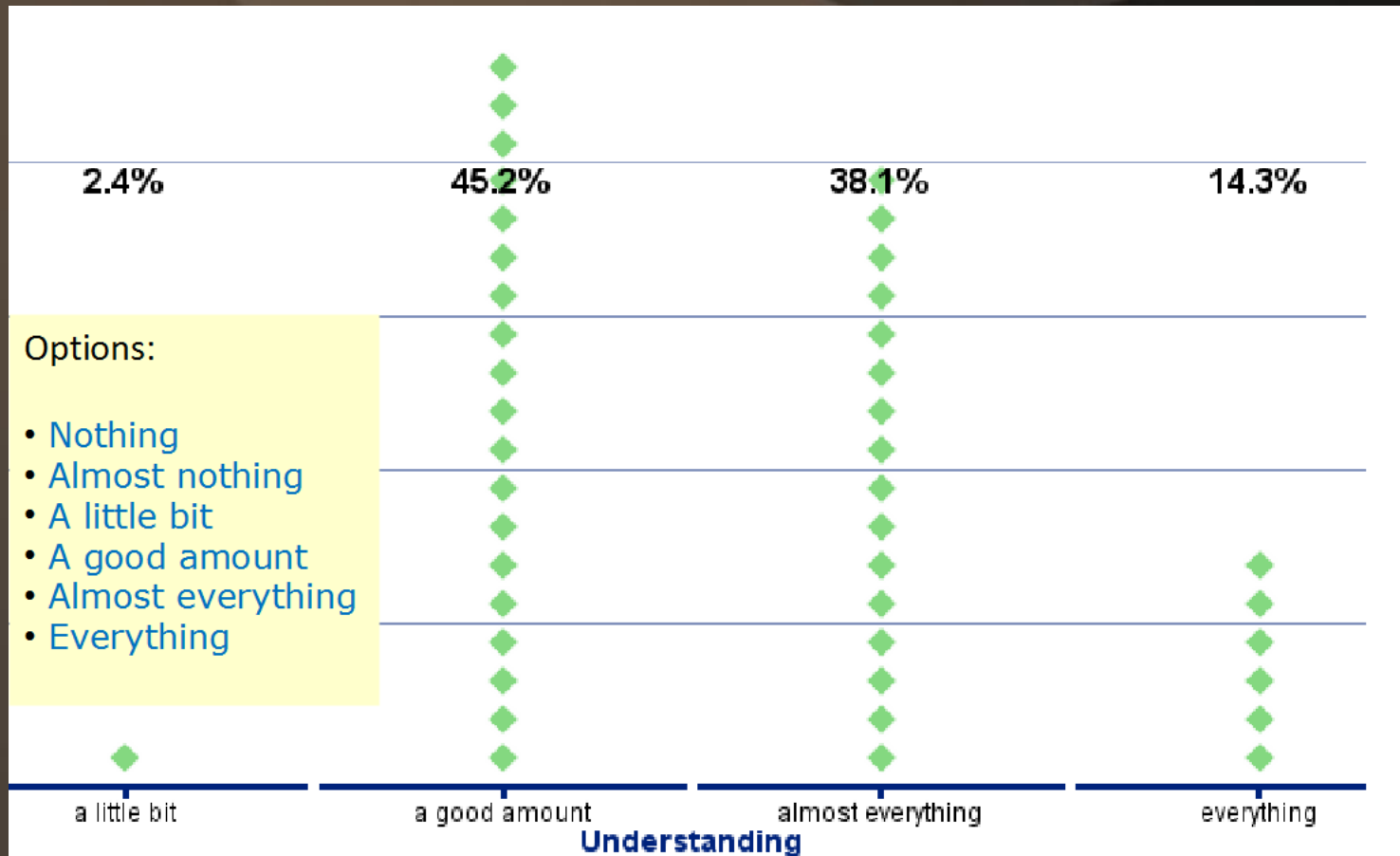
Course Difficulty



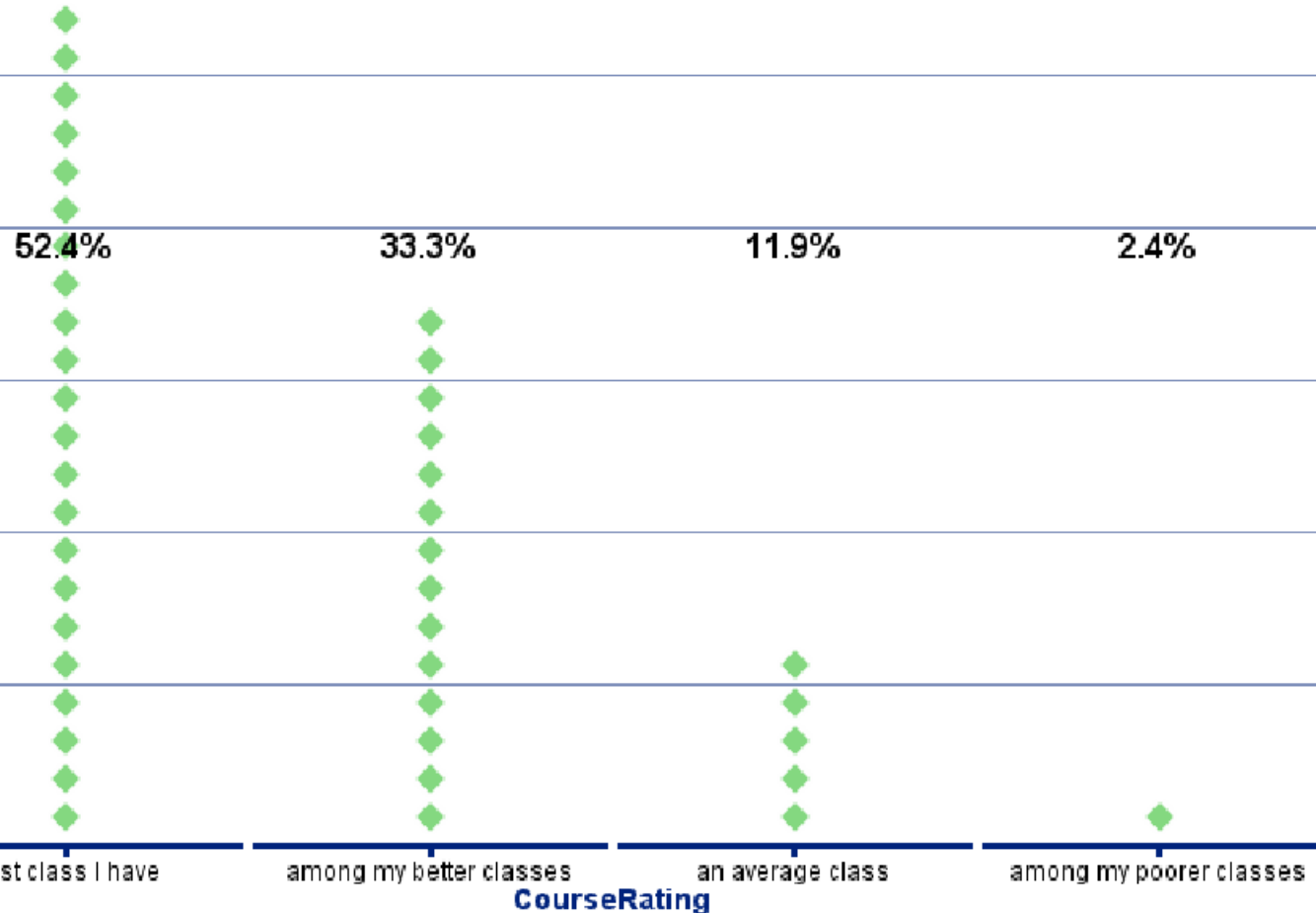
Options:

- Too Difficult
- Difficult
- Just Right
- Easy
- Too Easy

Student learning/understanding



Course Rating



Options:

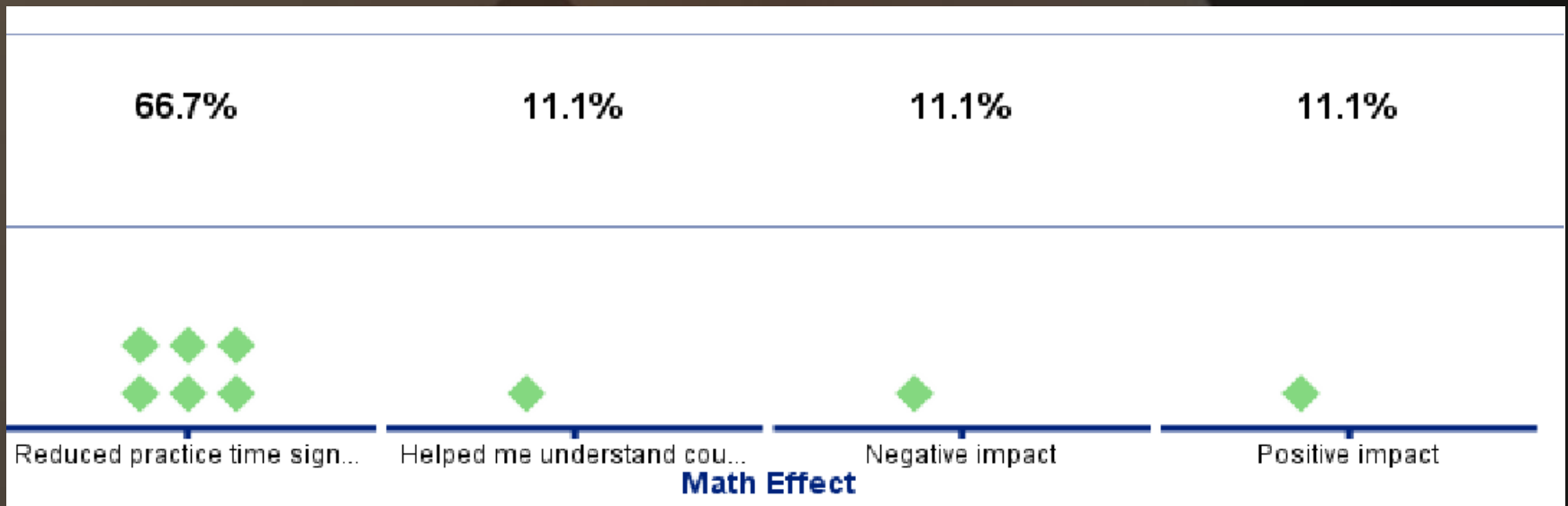
- Among my poorer classes
- An average class
- Among my better classes
- Best class I have

Of students in Algebra 1 or 2...

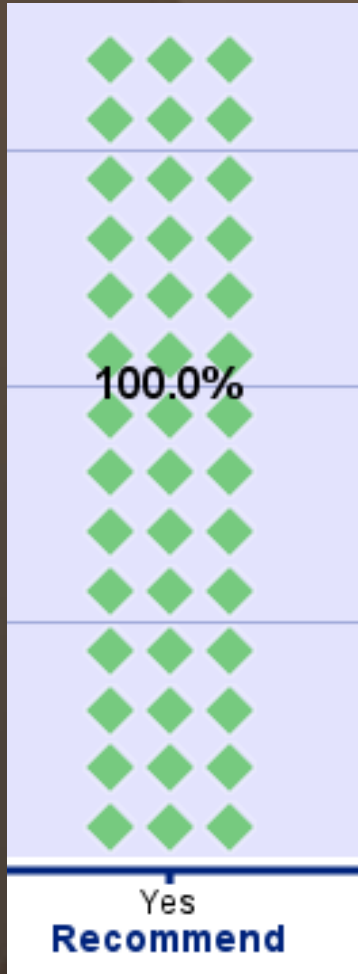
(19% of class)

Options Available:

- Positive, Negative or NO Impact
- Helped me understand course math
- Reduce practice time in CTE course significantly



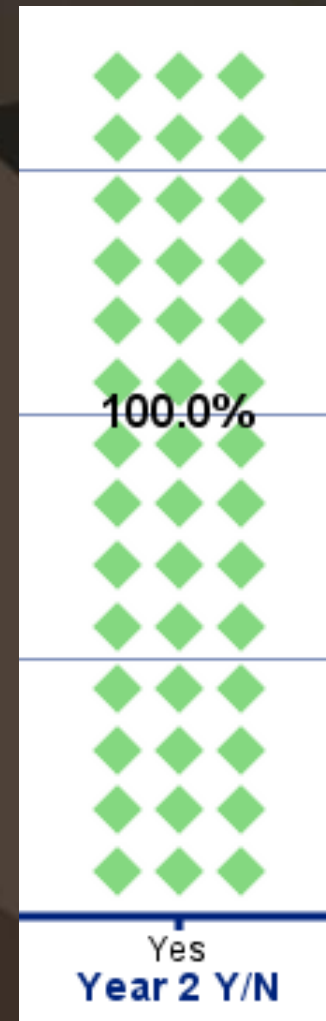
Recommend Class?



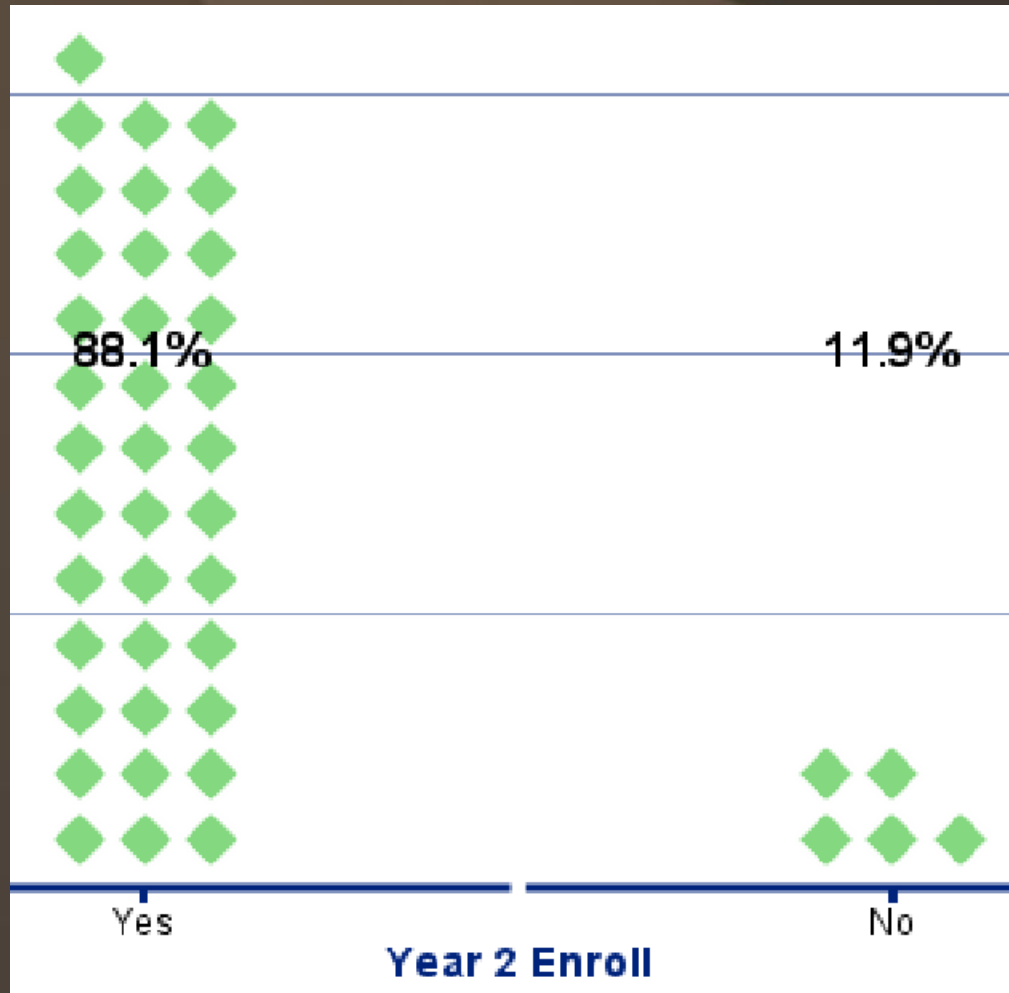
Options:

- YES
- NO

Should there be a Year 2?



If you *COULD* sign up for a 2nd year, would you?



Options:

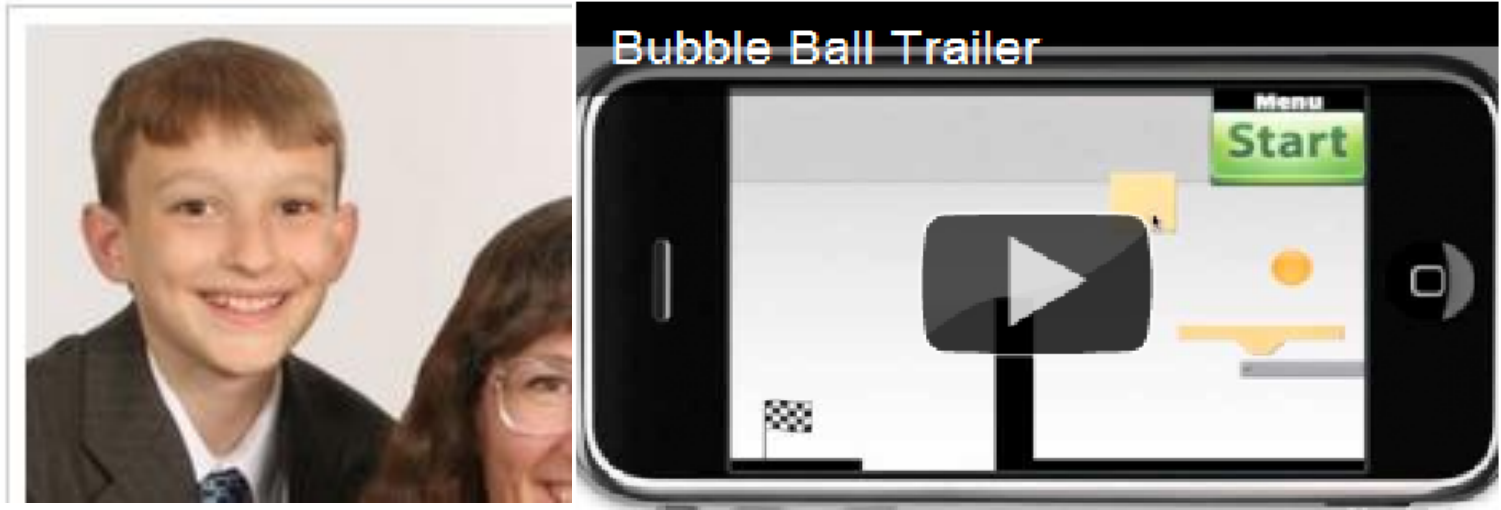
- YES
- NO

Student chances to shine

- Peer Evaluations – Testing & Feedback
 - Game Testing is both serious work and play
 - Students serve as sample 'client' base
- Competitions:
 - Scholastic: Video Game Category
 - Local colleges (e.g. UM Dearborn Engineering Day)
- App Stores

Can kids do this?
OH YEAH!

8th grader's iPhone game plucks Angry Birds' feathers



No. 1 spot on Apple's top free apps chart.

Future of Gaming...

- Check out the CES Keynotes from Jan. 2011
- Smart Device (phones & tablets) sales booming
- Nintendo & Sony have new/upcoming handheld systems
- Microsoft Kinect sold 8 million units in 60 days

Future of Computer Science...

- Teachers in different parts of the state are offering clever, new programming courses:
 - XNA and Xbox Programming (L'anse Creuse)
 - App Inventor, XNA, Unity3, C++ (Jackson)
- Join the discussion online
 - Gather resources
 - Share ideas

Future of Computer Science...

- It's challenging NOT to be a (teacher) ISLAND of technology within a school/district
- Resources are available
- Though a work in progress, I'll share what I've got :)
- Collaboration online can build stronger programs for our students and communities

Thank you!

... any questions?

Reminders:



irvinej@wwcsd.net