What can AP Computer Science Contribute to Business Education?

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What is AP Computer Science?

• AP Computer Science A
  • The emphasis of this course is computer programming
  • The current programming language is Java
  • The AP subset of Java is small in order to make it easier to test students’ abilities
  • The AP exam is composed of multiple choice and free response questions
  • The AP exam is not taken on a computer
  • Other topics include the ethical use of technology and the definitions of a computer’s hardware
What is AP Computer Science?

• AP Computer Science A

• AP Computer Science Principles
  • This course was implemented in the 2016-2017 school year
  • The course was piloted throughout the country for several years, with the first students taking the APCSP exam in May, 2016
  • The AP exam consists of two performance tasks that are completed in class with teacher supervision and submitted to the College Board as well as a multiple-choice exam
  • Instead of focusing on computer programming, the course explores several areas related to computing
The Big Ideas of APCSP

Creativity
- Students create artifacts
- Artifacts are creative
- Students collaborate on ideas

Abstraction
- Students learn to move from specific to general
- Varying levels of abstraction are explored
- Students explore models

Data & Information
- Students process data
- Discussion of trade-off of computer vs. hands-on
- Using data to review
- Using data to project

Algorithms
- Students explore how algorithms are created
- Algorithms are evaluated
The Big Ideas of APCSP

**Programming**
- Students develop programs to:
  - Solve specific problems
  - Explore personal areas of interest
  - Use mathematical and logical properties

**The Internet**
- History
- How it works
- Cybersecurity

**Global Impact**
- Students explore how computers have changed the world
- Enabled communication
- Enabled innovation
- Potential Effects
How can APCS help with my Business Students?

What are the connections between APCS and Business Education?
Comparing the Business Pathways and the APCS courses

Business, Management, and Administration

• Demonstrate employability skills required by business and industry

• Demonstrate creativity by asking challenging questions and applying innovative procedures and methods

• Apply technology as a tool to increase productivity to create, edit, and publish industry-appropriate documents

AP Computer Science

• Students learn how to communicate effectively through the use of technology

• Creativity is one of the Big Ideas in APCSP

• Students learn to collaborate and challenge each other with ideas for programs

• Students learn effective and appropriate uses of technology
Comparing the Business Pathways and the APCS courses

Human Resources Principles

• Analyze the data and respond to results of job description analysis, development, and design

• Analyze various evaluations content, format, and frequency used by existing companies for a particular career area

AP Computer Science

• Students learn the most efficient ways to analyze data and write programs to collect and process data

• Programs can be written to make comparisons between company evaluations

• Students discuss the ethical implications of using technology versus other methods
### Comparing the Business Pathways and the APCS courses

#### Entrepreneurship
- Detail the importance of technology to business operations and performance
- Manage and operate a business through daily tasks and activities of a small business
- Manage the image of the business by critiquing the logo, slogan, online, and social presence of the business

#### AP Computer Science
- Students learn how technology can affect the global community as well as the ways technology can be abused
- Students use programs and technology to run simulations and model scenarios
- Web pages are investigated and designed for message and clarity
NBEA National Standards for Business Education

• The NSBE are based on the conviction that business education competencies are essential for all students.

• Because all students will encounter a business environment that is characterized by diversity

• Because all students will use technology as a tool for managing information, all students need to hone the learning skills that foster flexible career paths and confidence in adapting to a workplace that demands retooling

• Technology has accelerated the pace and frequency of change not only in business but also in life

www.nbea.org/newsite/curriculum/standards
FBLA Competitive Events – 2017 NLC
Competitive Event Topics

• 3-D Animation
• Business Financial Plan
• Coding & Programming
• Computer Game & Simulation Programming
• Digital Video Production
• E-Business
• Emerging Business Issues
• Graphic Design
• Mobile Application Development
• Social Media Campaign
• Website Design
Who can become an AP Computer Science teacher?

- BSEd and MED in Mathematics Education
- 16-year veteran of high school teaching
- 11 years of experience teaching AP Calculus
- Grew up using a Commodore 64 and programming in BASIC
- Experienced internet browser
- Willing
How do you become an AP Computer Science teacher?

• Attended National AP Convention in Orlando
• Attended week of training at KSU each summer for 3 years
• Attended one-day workshops
• Joined College Board AP Community
• Taught the class
What can I use in my AP Computer Science classroom?

- IDE – Integrated Development Environment – BlueJ, etc.
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- Scratch – [https://scratch.mit.edu](https://scratch.mit.edu)
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- Scratch – https://scratch.mit.edu/projects/editor/?tip_bar=home

- CS Unplugged - http://csunplugged.org/
  - (Public Key Encryption Video)
Two Kinds of STEM Certification –
  • Program
  • School

Two Avenues of STEM Certification
  • Georgia DOE -

  • AdvanceEd -
North Oconee High School elects to pursue STEM certification
Several years of discussion as to how to approach
Decision made to pursue Advance Ed certification
Decision made to go with Program certification initially, with the goal to expand to whole school
Cohort of 50 9th graders in 2017-2018
Intention is to pursue aggressive AP course load with mandatory CTAE pathway completion
Initially, STEM students will complete Agricultural pathway, with plans to increase CTAE fields as program develops
Currently, math, science, and CTAE teachers are collaborating, with teachers from each field bringing classes together, taking turns in each other’s rooms, etc.
Document, Document, Document
Goal is to apply over the summer of 2017 with review team visiting Fall semester, 2017
If we become STEM certified, we get an additional teaching position, which is planned to be for an Engineering teacher