Computing in 2014

@DrTomCrick

http://www.computingatschool.org.uk

2nd December 2013

A Confession

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My name's Tom...and I'm a computer scientist.


NO!
DEADLINE

COMPUTING AT SCHOOL

EDUCATE · ENGAGE · ENCOURAGE

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Computing At School

Overview

CAS **promotes and supports the teaching of computer science** in UK schools.

Formed in 2008, **7500+ members at schools across the UK**; diverse membership: teachers, HE, government, industry, exam boards, parents

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What do we do?

CAS works on a number of levels:

- Subject Association for Computer Science
- Working at institutional level e.g. qualifications/training/CPD
- Advocacy at national policy level

Terminological Diversions

Terminological Diversions

Computer science is no more about computers than astronomy is about telescopes.

~~**Edsger W. Dijkstra**~~
Hal Abelson


Google
UK
computer science is
computer science is hard
computer science is not a science
computer science is it worth it
computer science is fun
computer science is
computer science is so hard
computer science is boring
computer science is not programming
computer science is not engineering
computer science issues
Google Search
I'm Feeling Lucky
New Privacy &

The Times They Are a-Changin'

ALAN TURING YEAR

2012


Raspberry Pi
(C)2011
Power
OK
PWR
FDX
LNK
10M
HanRun
HR901110A
1219

News and press notices

Computer science to be included in the EBacc

Share Print

Press notice

Press notice date: 30 January 2013
Updated: 01 February 2013

The Education Secretary, Michael Gove, announced today that computer science will be included in the EBacc.

The change is being made because of the importance of computer science for both education and the economy. The previous 'harmful' ICT curriculum was removed in 2012 and will be replaced soon with a new programme of study focused on computer science.

Today, the Education Secretary announced that computer science will be added to the list of separate science options (so there are now four separate sciences instead of the traditional three) in the EBacc. Pupils who sit any three of the four separate sciences and get at least a C in two of them will get the EBacc. For instance, a pupil who sits physics, chemistry and computer science and gets at least two Cs will fulfil the science requirement of the EBacc. This change has no effect on those doing the 'traditional' three separate sciences, it is just another option. The 'core plus additional' option is unchanged.

Connected to this

Articles

- Michael Gove speech at the BE Show 2012
  Michael Gove gives a speech at t BETT Show 2012 on ICT in the National Curriculum
  Speech

Links

- British Computing Society repo
- Google's announcement on the Raspberry Pi
- BCS scholarships

Press release

Facebook, Microsoft and BCS back government funding for computer science teaching

Organisation: Department for Education
Page history: Published 24 April 2013
Policy: Improving the quality of teaching and leadership
Topic: Schools
Minister: Elizabeth Truss MP

Education Minister Elizabeth Truss announces more than £2 million of funding so the best computing teachers can help train thousands more teachers.

NETWORK OF EXCELLENCE

COMPUTER SCIENCE TEACHING


public class foo{
public static void main(String args[]){
while(true)
System.out.println("PENIS");
}
}


THE
PROGRAMMING
LANGUAGE
BRIAN W. KERNIGHAN
DENNIS M. RITCHIE
ANSI
#include <stdio.h>
main()
{ printf ("Hello World!\n");

Programming $\subsetneq$ Computer Science

"For the majority, the world of software is a built world that, like a city, helps us to organise and consume. But it has been built by others. For the minority, software is merely a curtain that can be pulled aside to reveal a wild world of confusion, trial and error, but also of virtually unlimited creative and commercial potential. It is time for British schoolchildren to be granted access to this world."

The Times (November 2012)

Computational Thinking

"Computational thinking is the thought processes involved in formulating problems and their solutions so that the solutions are represented in a form that can be effectively carried out by an information-processing agent."

Jeannette M. Wing

Department
for Education

Computing programmes of study: key stages 3 and 4

National curriculum in England

Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

Key Themes

- Computational abstractions
- Algorithms and logical reasoning
- Boolean logic
- Using two or more programming languages
- Hardware + software $\rightarrow$ computer systems
- Wider legal, social, ethical issues of technology
- Using IT to solve real-world problems
- Creativity
- **Analytic, problem-solving, design and computational thinking skills**

The Future (from 1995)

Computing is not about computers anymore. It is about living.

Nicholas Negroponte


"YOUR COUNTRY NEEDS
YOU"

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