

Play the game, but write the software too

Children to learn writing computer programs. By Greg Hurst, Education Editor

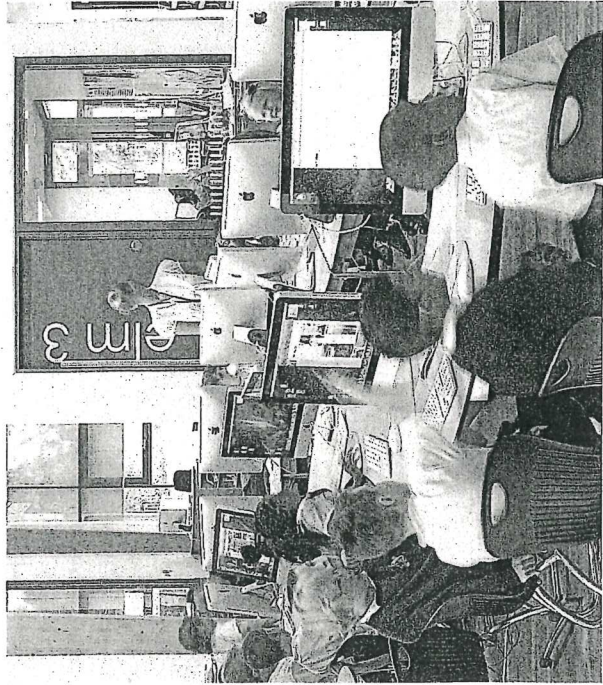
1 CHILDREN WILL learn to write computer programs from the age of seven in the first step of a revolution in the way that schools teach technology.

2 Learning to code will be taught in primary school alongside science and history to equip young people to understand and navigate the digital world.

3 Experts from technology and gaming companies who have been asked by the Government to draw up a plan for computer science teaching say that the key is to begin coding at a young age.

4 Their plan will form the basis of a national curriculum for computer science from September 2014. Michael Gove, the Education Secretary, is scrapping the current information and communication technology (ICT) programmes, declaring them boring and out of date.

5 Children will learn what an algorithm is, write simple programs and learn computational thinking by 7 and should be able to design and build a mobile phone app by 11. Those who go on to GCSE level should be able to write a program sophisticated enough to solve a Su Doku puzzle.



A school in Essex where children are taught in an open-plan computer suite. In future, British children will have to learn to write computer programs, beginning at primary school age. | PHOTO: Getty Images

6 A-level students would be expected to write elementary program languages.

7 The plan is likely to be welcomed by Mr Gove, who asked software industry leaders to act as advisers to the Department for Education in developing the new curriculum. He has specified that teachers training to become primary ICT specialists must be able to code in two programming languages and explain concepts such as selection, repetition, variables and relational operators.

8 The level of demand may

alarm teachers, particularly in schools where subject specialists are rare and class teachers cover most or all subjects.

9 The authors of the plan say that recruiting and training teachers to instruct children in coding, abstraction, decomposition and other computational thinking is its biggest challenge and may take 15 years to complete.

10 In many schools the subject focuses largely on developing skills to use software packages such as Word, PowerPoint and Excel and too often neglects instruction in coding.

11 The industry's proposed curriculum, on which it is conducting a rapid online consultation, was developed by experts from companies such as Google, Microsoft, IBM, Facebook and BT via the BCS Academy of Computing.

12 Bill Mitchell, the body's director, said: "Primary school children enjoy learning how to write computer programs and they are good at it. It will have a really profound influence on their education — just think of what you could then do at secondary school and

then at sixth form and university."

13 Young children could create games and should grasp the basic principles over a term, he said. "Young children have remarkably analytical minds when they are focused and where they are given the motivation to do that."

14 Simon Peyton-Jones, of Microsoft Research, said that although coding was important grasping the concepts behind it was even more so. "There is a clear distinction between programming and the discipline underpinning it," he said. "We have a once-in-a-generation opportunity to make a significant change to what our kids learn. It is very, very fluid, very exciting."

15 Simon Milner, Facebook's public policy director for the UK and Ireland, said that familiarity with coding was hugely valued by employers. "We have a dearth of high-quality graduates and young people who are fit and ready to come and join web developers, games developers, marketing companies."

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1-3 TO CODE programmieren — alongside neben — science Naturwissenschaft(en) — to equip (aus)rüsten — to navigate (navigiert) s. zurechtfinden in — to draw up entwerfen — computer science Informatik.

4-5 N. curriculum zentraler Lehrplan für England + Wales — Education Secretary / Department of ... (B.E.) Bildungsminister / -ministerium — to scrap ausrangieren — current (karant) aktuell — out of date inaktuell, nicht mehr zeitgemäß — algorithm (algoriðem) — computational (kòmputérfjónal) rechnerisch; numerisch — GCSE = General Certificate of Second-

(sefistnketud) ausgeklügelt, anspruchsvoll — A-level Abitur.

6 To welcome begrüßen — adviser Berater — to specify (spesfat) im Einzelnen darlegen — to train lernen; in der Ausbildung sein — concept Begriff — variable (vearabl) — relational operator (rþorente) (Programmiersprache) Vergleichsoperator.

7-9 To cover abdecken — subject Unterrichtsfach — to recruit (ríkrut) anwerben, einstellen — to instruct unterrichten — decomposition (ðíkkompóziðn) Zerlegung — challenge (tjálmínd) Herausforderung.

10-12 To conduct a consultation e-e Beratung; e-e Absprache

sixth form Oberstufe — to grasp (gruip) erfassen, begreifen — term Schuljahresdrittel — to have an analytical mind analytisch denken können — focused konzentriert.

13-14 Research (rísst) Forschung — distinction Unterscheidung — to underpin s.th. erw. zugrunde liegen — significant (-) bedeutend, wesentlich — to be fluid (flud) im Fluss sein — public policy director Leiter der Öffentlichkeitsarbeit — familiarity (femiltærn) Vertrautheit — to be hugely valued (væljud) enorm geschätzt werden — dearth of (ðsð) Mangel an — to be fit and ready h.: das Rüstzeug haben und bereit sein.

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