Source: East Anglian Daily Times (Essex) {Main}
Edition:
Country: UK
Date: Saturday 28, April 2012
Page: 53
Area: 202 sq. cm
Circulation: ABC 30590 Daily
BRAD info: page rate £2,720.00, scc rate £10.00
Phone: 01473 230 023
Keyword: SCORE



# Maths content 'too easy' in science tests

**A-LEVEL science exams do not contain enough maths questions, and those that are asked are often too easy, experts are warning. They raise concerns that papers in biology, chemistry and physics are failing to prepare teenagers to study these subjects at university or to work in related areas.**

**In a report, SCORE (science community representing education), a group of leading science organisations, calls for a review of the maths required for each of the three sciences and new guidelines to regulate the way maths is assessed in these subjects.**

**The study saw groups of experts analyse the type and amount of maths included in A-level biology, chemistry and physics exams taken in the summer of 2010, as well as the difficulty and appropriateness of it.**

**There was a feeling that areas of maths that underpin scientific ideas were missing from the tests. For example, in physics and chemistry, experts noted a lack of calculus; in biology, students were not being asked to convert measures into different units.**

**Under the current system, exams watchdog Ofqual sets the criteria for each A-level, and exam boards develop papers from this. The criteria for biology, chemistry and physics includes a list of mathematical requirements that underpin the scientific concepts in each subject, and exams are expected to reflect these, the report says.**

**It adds that there are no guidelines about the number of questions and marks in a paper that should require an understanding of maths.**

**It also raises concerns that competition between exam boards puts them off setting papers or assessments "that might appear difficult, for example by including more and more challenging mathematical content".**

**Prof Graham Hutchings, chair of SCORE, said the finding were "worrying".**

**"A significant proportion of the mathematical requirements – put in place by the examinations regulator, Ofqual, for each of the sciences – were simply not assessed and, if they were, it was often in a very limited way and at a lower level of difficulty than students will need to progress to degree level or into relevant employment.**

**"Mathematics enables students to understand and describe many scientific phenomena. Without learning some mathematical techniques, students are missing out on gaining a full understanding of the scientific ideas."**

**A second report, by the Nuffield Foundation, looked at six other subjects that require maths: business studies, computing, economics, geography, psychology and sociology.**

**It found differences in maths content across exam boards and that, by choosing different units or answering different questions in an exam, pupils could use less maths and still get the same grade as another student who used more maths.**

**An Ofqual spokesman said: "Mathematical content is an important aspect of the A-level science qualifications. We intend to consult in the summer on proposals to change the A-level system."**