Maths e.g. – a learning and assessment resource for students and teachers at the school/university interface

Since 2000 we have been developing the maths e.g. e-assessment system at:

https://www.mathcentre.ac.uk:8081/mathseg/

for casual use (no sign up required) and a teachers’ interface at:

https://www.mathcentre.ac.uk:8081/mathsegteacher/teacher.jsp

where (after you sign up) tests may be composed by teachers from the 5000 or so question spaces, in a manner similar to shopping on Amazon (but entirely free). This generates a unique test URL to give to your students and which allows you to monitor your students’ progress. Instructions are given on the entry page.

The system also uses question spaces that encode the algebraic and pedagogic structure of each question and this is then realised at runtime by choosing randomised parameters (numbers, words, scenarios). Thus each question space generates thousands or millions of questions seen by students, thereby allowing virtually unlimited practice. If a student goes wrong, very full and intelligent feedback (based on common errors i.e. so-called mal-rules) is given with the question’s choice of parameters carried through into all features of the feedback (wording, equations using MathML and diagrams using SVG). This represents a rich learning environment and, being a standard web page, works accessibly on all browsers, PC, Mac or smart phone.

The interface is based around a tree structure comprising 29 main topics and numerous subtopics spanning GCSE, A level and year 1 undergraduate mathematics and some mathematically-oriented topics from Economics, Biosciences, Chemistry and Nursing. The difficulty for students can be knowing where they should look and expend effort so teachers will need to direct them. To facilitate this, it is possible to add links to individual questions or whole topics into any of your learning resources that supports web links (word, power point, pdfs, other web pages etc). For an individual question, just run any question and add the link to the url at the top of the question window to your resource.

For a topic or subtopic, note its pid number (displayed top right) and edit the following link:

https://www.mathcentre.ac.uk:8081/mathseg/topic.jsp?pid=114

(the 114 at the end links to Differentiation\Chain rule\Natural logarithms). It’s as easy as that.

It will not have escaped you that this is a good source of questions, generally ‘reverse engineered’ so that the answers come out nicely, that can be used in traditional assessments and exams. Just take what you want – no need for any attribution.

If you want to re-author any question in any other e-assessment package, or any learning package, take a look at the Javascript code using View Source and take what you want. Some questions use global functions which I can provide on request. If you do use maths e.g. in this way, please make whatever you create publicly available for all.

Please give maths e.g. a try and make good use of this extensive and popular resource that has been well road tested at Brunel University and elsewhere.

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