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### The intelligent textbook that helps students learn

07 August 2012 by [Michael Reilly](#)  
Magazine issue [2876](#). [Subscribe and save](#)

*Want to know more about your subject? Type in your own question and artificially intelligent software will construct a new page to answer your query*

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SITTING down with the Inquire system is, at first, a lot like trying to cosy up to an intimidatingly dense biology textbook. Sure, its presentation on the iPad is slick, but that can't hide the fact that you are in for a tough old read.

That is until you highlight the first bit of particularly impenetrable text. Suddenly a list of questions pops up in the right-hand margin. Touch one and you are whisked away to a Wikipedia-like page full of information specific to the concept you are stuck on. Terms like "chloroplast" and "plasma membrane" are succinctly defined, and the page explains how each concept fits into the wider field of biology.

Want to know more? Type in your own question and artificially intelligent software will construct a new page to answer your query.

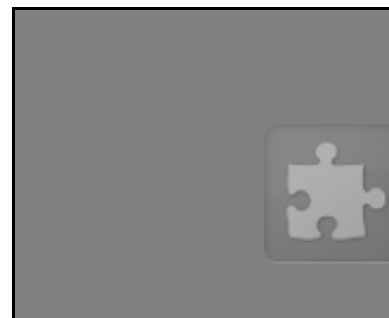
The aim of [Inquire](#) is to provide students with the world's first intelligent textbook, says its creator David Gunning of Seattle-based [Vulcan](#). At first glance, the system just looks like an electronic version of [Campbell Biology](#), the tome that forms the bedrock of biology classes for first-year university and advanced high school students in the US. But behind the scenes is a machine-readable concept map of the 5000 or so ideas covered in the book, along with information on how they are all related.

When a student asks a question - "what does a protein do?", for instance - the system first converts it into a more structured query, such as "what is the function of a protein?", and then uses this to search and find results from the



What does that mean? (Image: ...)

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## [Inquire: an intelligent Textbook that Helps Students Learn](#)

[newscientist.com](#) Aug 7 2012

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When a student asks a question - "what does a protein do?", for instance - the system first converts it into a more structured query, such as "what is the function of a protein?", and then uses this to search and find results from the concept map.

Earlier this year, the team recruited 72 first-year students from De Anza College in Cupertino, California, to put the system to the test. Students were given either the full Inquire system, the Inquire system with the query function switched off, or a paper copy of Campbell Biology. They were then asked to spend 60 minutes reading a section of the book, 90 minutes on homework problems, and to take a 20-minute-long quiz.

Students who used the full Inquire system scored a grade better on the quiz, on average, than the other groups. "When we did our assessment, we didn't see any Ds or Fs, which we did see in the control groups," says Debbie Frazier, a high school ...

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