



HOLT, RINEHART AND WINSTON

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Holt Launches Three New Quantum Artificial Intelligence Tutors
Tutors Support Chemistry and Physical Science Curriculum

Austin, Texas – January 21, 2004 – Holt, Rinehart and Winston announced today that three new Quantum Artificial Intelligence Tutors are now available to complement chemistry and physical science lessons in *Holt Chemistry*, *Holt Modern Chemistry*, and *Holt Science Spectrum Physical Science*, as well as Holt Professional Development for teachers. The three new Tutors: Stoichiometry, Chemical Reactions and Chemical Bonding, join six online Tutors that were released in January 2003, providing comprehensive instruction for student learning and teacher development.

The Quantum Tutors provide an on-demand, web-based educational resource for students who need personal coaching on difficult science concepts and for teachers, the Tutors may be used as a refresher or for lesson planning. Similar to a human tutor, the Quantum Tutors provide individualized hints, guidance, and advice throughout the solution, based on the student's or teacher's own work, ensuring a conceptually balanced and more meaningful understanding of the subject. The Quantum Tutors go beyond simply offering a correct answer; they use dialogue-driven technology to help the student or teacher understand why an answer is correct or incorrect. Students and teachers enter their own work just as they would on paper and the Tutor interprets their work and coaches them through the problem-solving process. Additionally, the Tutors follow progress, presenting increasingly more challenging problem-solving scenarios as students and teachers become more successful at a particular topic.

The Tutors are accessible online, can be used in class, in the computer lab or at home, and give hints and step-by-step instructions, enabling students and teachers to practice at their own pace on any problem of their own choice, not just from a selection of pre-stored problems.

“These new Quantum Tutors will give teachers another level of learning support to help students with difficult concepts in chemistry and physical science,” said Judy Fowler, Holt president. “Holt is continually seeking out the best available technology products to enhance our curriculum and supplementary resources. The Quantum Artificial Intelligence Tutors are examples of the best application of AI technology applied in education that we have seen today and it is exciting to distribute the Quantum products.”

“Our dialogue-driven technology takes Holt's Online Learning and Professional Development programs to a level never available before,” said Dr. Benny Johnson, president and CEO of Quantum and co-developer of the company's patented and patent-pending AI technologies.

“Combined with Holt’s exemplary online offerings, students and teachers will significantly improve conceptual understanding, allowing them to experience successful mastery of important science content,” said Rebecca Renshaw, executive vice president at Quantum.

The original six Tutors in the Holt portfolio addressed the complex science topics of: Elements, Ionic Compound Formulas, Mathematics of Chemical Formulas, Measurement, Equation Balancing, and Oxidation Numbers.

About Holt, Rinehart and Winston

Holt, Rinehart and Winston is a leading publisher of textbooks and educational materials for grades six through 12 and is part of Harcourt Education, a global education provider serving students and teachers in PreK through grade 12, adult learners, and readers of all ages. The Harcourt companies are Harcourt School Publishers; Holt, Rinehart and Winston; Harcourt Achieve (including the Rigby and Steck-Vaughn imprints); Harcourt Assessment; Classroom Connect; Harcourt Canada; and Harcourt Trade Publishers. For further information, please call (800) 992-1627 or visit www.hrw.com or www.harcourt.com.

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About Quantum

Quantum Simulations, Inc. is a business-to-business provider of artificial intelligence tutoring engines that power existing software, hardware and distance learning products, inspiring students from middle school through college to solve science problems. Satisfying an unmet need for on-demand tutoring, the software uses an interactive dialogue tool that challenges students to understand *why* an answer is correct, measurably improving comprehension and test performance. With funding from the U.S. Department of Education and the National Science Foundation, Quantum Tutoring Engines are integrated with Web, wireless and CD-ROM learning products, providing a strong competitive edge for educational companies. For further information, please visit www.quantumsimulations.com.

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For More Information:

- Jennifer Harrison, for Holt, Rinehart and Winston: 916-716-0636, jennifer@JHarrisonPR.com
- Matthew Hart, Holt, Rinehart and Winston: 512-721-7832, mhart@hrw.com